Riksbank Evaluation, 2015-2024

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Executive Summary

This independent evaluation of the Sveriges Riksbank was commissioned by the Finance Committee of the Sveriges Riksdag. Covering 2015–2024, it assesses the conduct of monetary policy in Sweden with respect to achieving price stability; the use and consequences of unconventional policy tools; the clarity and effectiveness of the Riksbank's communication, including forward guidance; and the quality of its forecasting and scenario analysis. It also evaluates Swedish monetary policy in an international context including the exchange rate framework, and examines the Riksbank's foreign exchange reserve framework. Finally, this review considers how institutional coordination across fiscal, financial-stability, and debt-management authorities shaped policy outcomes.

Our assessment draws on three complementary analytical approaches. First, we adopt a historical perspective, recognizing that Sweden's macroeconomic framework, shaped by reforms implemented after the early 1990s crisis, continues to influence today's policy choices. Second, we ground our evaluation in economic theory, empirical evidence, and comparative experience, drawing on lessons from peer central banks. Third, we incorporate qualitative insights from extensive interviews with policymakers, Riksbank staff, academics, and market participants, which helped us understand how decisions were made under uncertainty and how the policy framework functions in practice.

Throughout the evaluation period, the central question is whether the Riksbank achieved its objectives while maintaining credibility, managing risks, and coordinating effectively with other institutions. Sweden entered the period with a strong institutional foundation. This included an established inflation-targeting regime, stringent fiscal rules, a separate macroprudential authority at the Finansinspektionen (the FSA), and a National Debt Office (the NDO) responsible for debt management and crisis-liquidity operations. Even so, experiences over the decade considered in this evaluation exposed some shortcomings in how monetary-policy and other authorities interact, even in times of crisis.

Overall, we find that the Riksbank acted with determination in exceptionally challenging circumstances, and many decisions were reasonable given the information available. With the benefit of hindsight, some weaknesses and areas of underdevelopment are now evident: the scale and composition of QE; limitations in risk assessments, including implications for the balance sheet and capital needs; forecasting weaknesses; and gaps in the relationship between monetary policy, fiscal policy, and debt-management authorities. Taken together, these issues call for targeted reforms, not a wholesale redesign of Sweden's monetary framework.

Assessment of Monetary Policy: Unconventional Tools and Their Consequences

Pre-Covid (2015–2019)

When the evaluation period began, Sweden faced persistent inflation undershooting, drifting expectations, and an appreciating krona. Earlier monetary policy decisions had placed relatively greater weight on financial-stability risks, particularly household indebtedness, which resulted in a tighter stance than implied by inflation developments alone. As inflationary pressures weakened, the Riksbank reduced the policy rate and it eventually reached zero. In this context, the Riksbank decided to employ unconventional tools: negative interest rates, QE, and forward guidance.

These measures contributed to the return of CPIF inflation toward target by 2018–2019. Evidence reviewed in the report indicates that negative rates were impactful initially, but probably exhibited diminishing returns at lower levels. The empirical evidence on the effectiveness of QE over that period is mixed, with identification challenges and divergent findings on how such purchases impact inflation. Nonetheless, structural modelling evidence suggests that the combined package of negative rates and QE boosted output and lifted inflation, largely through real depreciation of the krona.

That said, the Riksbank did not have a sufficiently developed framework for assessing the evolving risks of unconventional policies. Balance-sheet expansion increased exposure to interest-rate and valuation losses, while prolonged QE raised questions about market functioning. Financial-stability implications of the long period of monetary expansion were acknowledged, but not factored systematically into policy decisions. Communications, though generally quite clear, did not always articulate the tradeoffs, or the rationale for the persistence of asset purchases in the later years of the decade. Limited communication between institutions, rooted in Sweden's post-1992 framework, at times reduced the consistency of monetary policy, macroprudential actions, and debt-management decisions.

The Covid-19 Crisis (2020–2021)

The pandemic demanded rapid and forceful action. The Riksbank successfully deployed a broad set of tools. These included large-scale asset purchases to restore market functioning, funding operations to secure bank liquidity, a US dollar swap line, a funding-for-lending facility, and supportive forward guidance. The Executive Board judged that cutting the policy rate below zero would have limited effect in a supply-constrained environment, and instead focused on addressing market dysfunction and supporting the availability of credit.

This initial crisis response was highly effective. Market strains eased, financial conditions stabilized, and confidence improved. The only significant misalignment was the

corporate bond purchase programme, which was announced early but implemented later when market stress had subsided. This timing issue was likely due to insufficient resources at the Riksbank and could be mitigated in the future by assuring an adequate level of operational capacity, even in tranquil times. As the acute phase passed, however, QE evolved from a market-stabilization tool to a monetary-stimulus tool. Several Executive Board members expressed concerns about cost-effectiveness, balance-sheet risks, and the signalling implications of continued purchases. A framework that had distinguished more clearly between crisis response and standard stimulus objectives and assessed the net benefits of policy actions would have aided the calibration and communication of monetary policy choices.

The Inflation Surge and Policy Tightening (2022–2024)

Inflation in Sweden rose sharply from mid-2021, driven by global supply disruptions, energy-market dynamics, and strong external spillovers. Domestic core inflation also increased. The Riksbank responded with forceful rate hikes, ultimately reaching 4 percent. The tightening was broadly aligned with international peers. While Sweden's wage-setting model helped restrain second-round effects, the policy tightening nevertheless appears to have been proportional and necessary to sustain the credibility of the monetary framework.

A key weakness during this period was the continuation of QE re-investments well into 2022, even as policy pivoted toward tightening. Earlier communications commitments likely contributed to the delay in shrinking the balance sheet. This meant that the balance sheet was larger for longer, increasing interest-rate and mark-to-market risks and complicating the interaction with the National Debt Office's issuance strategy. A clearer framework for unwinding unconventional tools might have mitigated these issues.

Assessment of Forecasting and Analytical Capacity

A forward-looking inflation-targeting regime relies on robust forecasting and scenario analysis. The Riksbank's forecasting approach had performed well in stable periods, but struggled in the face of the unprecedented shocks of 2020–2022. This challenge was not unique to Sweden as central banks globally faced similar difficulties amid extraordinary uncertainty.

The most significant forecasting errors over the evaluation period occurred during 2021-2022, when the Riksbank systematically under-predicted inflation. Forecasts assumed rapid reductions in inflation as supply constraints eased, but global bottlenecks, energy price dynamics, and external spillovers to the Swedish economy turned out to be more persistent than expected. This highlighted limitations in modelling the effects of large and unusual shocks, global linkages, and tail risks.

These forecast errors reveal limitations across the Riksbank's modelling tools. Nowcasting models, which normally provide reliable short-term signals by combining high-frequency indicators, reacted too slowly when historical relationships broke down during the pandemic and subsequent supply disruptions. MAJA, the Bank's main DSGE model, performed well in stable conditions, but struggled with the unprecedented shocks of 2020–22. The issues with the forecasts can be traced to the roots of the inflation surge, the size of the shocks, the importance of new inflation channels, and to some instability of assumed structural relationships. Reduced-form statistical tools, such as BVARs, faced similar difficulties, and judgmental overlays sometimes reinforced the belief that inflation pressures would be temporary.

Scenario analysis, while a strength of the Riksbank relative to many peers, was not used to its full potential during this period. Alternative scenarios did not sufficiently explore adverse or nonlinear risks. These might have included more persistent supply constraints, shifts in pricing behaviour, or prolonged energy shocks. Unfortunately, policy discussions tended to focus heavily on the baseline projection with scenario analyses used more to communicate uncertainty. As a result, uncertainty and tail risks were likely under-weighted in decision-making.

The experience highlights the need for continued investments in high-frequency data and nowcasting tools, investment in MAJA and other policy models, and a more systematic integration of scenario and risk analysis into Executive Board deliberations. The Riksbank's overall analytical capacity is strong; the priority now is to adapt its tools to an environment in which large shocks and structural breaks may be more common.

Monetary–Fiscal Interaction and Institutional Coordination

Sweden's post-1990s macroeconomic policy framework rests on three core pillars: an independent Riksbank operating flexible inflation targeting; a fiscal authority bound by strict rules; and macroprudential powers assigned to the FSA. The framework is supported by the National Debt Office, whose responsibilities for debt management and crisis-liquidity facilities shape the broader environment in which monetary policy is conducted. This institutional design reflects a strong form of monetary dominance in that inflation control is not subordinated to short-term fiscal pressures. This is because the Riksbank is tasked with maintaining price stability, while fiscal policy is constrained by rules that limit discretionary expansion. The regime has delivered substantial benefits in terms of low public debt, anchored inflation, and been important for providing Sweden with a stable macroeconomic environment.

However, it has also constrained the macroeconomic tools available when inflation per-

sistently undershot target and when the policy rate reached the zero lower bound (ZLB). In that environment, and without meaningful fiscal expansion, the Riksbank effectively faced a choice between deploying unconventional monetary policy with unknown effects and potential risks, or tolerating a prolonged deviation of inflation from its target. Unconventional tools, such as negative interest rates and large-scale asset purchases, were therefore the only viable option within the existing regime. They shifted significant interest-rate and valuation risk onto the Riksbank's balance sheet, which materialised when interest rates rose after the inflation surge, and resulted in large mark-to-market losses and the subsequent need for a government capital injection.

Two alternative strategies could, in principle, have reduced the burden on the Riksbank and produced a more balanced policy mix. One option would have been a joint monetary and fiscal expansion, which might have supported demand more effectively at the ELB. However, there would have been concerns about the integrity of the fiscal framework, which weighed against such an approach. A second option would have combined QE with a shortening of the government debt maturity profile, shifting part of the interest-rate risk toward the fiscal authority rather than concentrating it at the Riksbank. Instead, the National Debt Office continued to issue longer-term securities, many of which the Riksbank purchased, increasing the maturity mismatch and amplifying balance-sheet losses when rates rose.

We do not take a definitive position on whether any of these options would have been preferable, but the experience of the last decade highlights the value of strengthened information-sharing, a more structured consideration of feasible joint strategies, and clearer communication about how chosen policies allocate balance-sheet risks across institutions. It also underscores the need to better understand how fiscal, debt-management, and macroprudential decisions interact with monetary policy within Sweden's institutional framework.

Sweden's Exchange-Rate Policy and FX-Reserve Management

Sweden's floating exchange rate regime choice, introduced in the early 1990s, was shaped by the country's earlier experience with exchange-rate instability, fiscal imbalances, and financial crises. The exchange rate regime has supported monetary-policy independence and helped the economy absorb external shocks. Public support for this framework has been robust. Over the evaluation period, however, the krona weakened persistently despite Sweden's solid fundamentals. Given Sweden's deep integration with Europe, thin krona-market liquidity, and the sensitivity of flows to global risk sentiment, the exchange rate has, at times, been driven more by international forces than domestic conditions.

International experience shows that exchange-rate regime choices are neither inevitable nor immutable, as countries with broadly similar economic structures to Sweden have chosen different exchange rate regimes. For instance, Finland adopted the euro in 1999 (after joining the EU in 1995) and Denmark has maintained a hard peg against the Euro since 1999, while Norway (not an EU member) remained with a float. Since Sweden last evaluated euro adoption in 2003, the euro's role in invoicing and financial integration has deepened, inflation outcomes between Sweden and the euro area have largely converged, and the krona has depreciated materially. Against this backdrop, the balance of costs and benefits may have shifted sufficiently to justify a structured review of the exchange-rate framework. We do not recommend a particular alternative, but instead emphasise the need to clarify strategic options as the environment evolves.

Foreign-exchange reserves are an important item on the Riksbank's balance sheet. As the report documents, Sweden's reserves are held to provide foreign-currency liquidity to Swedish banks during periods of stress, to meet international obligations, and to enable FX intervention when warranted. Sweden's high degree of openness to trade in goods, services, and financial assets, and its large, internationally active banking system justify maintaining substantial reserves, particularly in USD and EUR, where liquidity needs are most acute.

Before 2022, reserves were partially funded through foreign-currency borrowing arranged by the National Debt Office. Under this structure, exchange-rate risk was ultimately borne by the state and absorbed implicitly through the consolidated public sector balance sheet, rather than appearing explicitly on the Riksbank's own balance sheet. From 2022 onward, the Riksbank shifted to financing the reserves on its own balance sheet, making exchange-rate movements directly visible in its equity position. The Riksbank later introduced hedging to reduce this volatility. The hedges have helped stabilise equity, but they have also made the reserves framework more complex to operate. The absence of a transparent, published framework for determining reserve adequacy, composition, and risk appetite further complicates public understanding of the role reserves play and how they should evolve.

Taken together, the behaviour of the krona, Sweden's deep integration with the euro area, and the evolving risk profile of the FX-reserve framework underscore the value of a more systematic assessment of Sweden's exchange-rate and reserve-management arrangements. The issue is not whether the float has failed, as it has delivered important benefits. The issue is whether, in light of structural shifts since the early 2000s, Sweden would benefit from a clearer articulation of objectives and trade-offs across the full range of feasible regimes.

Recommendations

The decade under review challenged central banks globally. The Riksbank met these challenges with professionalism, transparency, and a willingness to engage with complex trade-offs. Inflation is returning toward target, credibility is preserved, and Sweden's institutional framework remains strong by international standards.

Nonetheless, the evaluation identifies areas where targeted reforms would enhance the resilience and clarity of the framework. These recommendations focus on: improving the governance of unconventional tools and balance-sheet policy; enhancing information sharing between monetary and fiscal authorities; strengthening forecasting, modelling, and risk assessment; reinforcing the framework for financial stability; and reassessing Sweden's external policy framework, including FX-reserve management. Table 1 summarises the recommendations found in Section 10.

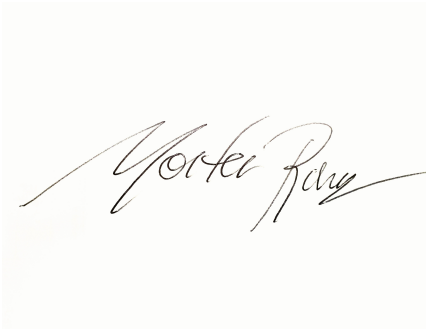
Table 1: Recommendations

Area	**Recommendations**
1. Framework for Monetary Policy Tools	1.1 Establish a structured framework for assessing the net benefits of unconventional tools, differentiating clearly between asset purchases related to market-functioning or to monetary stimulus. 1.2 Set predefined principles for exit strategies for unconventional tools. 1.3 Improve communication and transparency regarding the expected benefits, risks and contingencies of unconventional tools, respecting the accountability provisions in the new *Riksbank Act*.
2. Monetary-Fiscal Policy Interactions	2.1 Enhance information sharing between monetary and fiscal authorities, particularly in the case of deep downturns, while respecting institutional independence. 2.2 Consider the alignment of the debt-management strategy with unconventional monetary operations. 2.3 Review implementation of the Riksbank's equity framework.
3. Forecasting, Modelling, and Risk Assessment	3.1 Invest in further improvements in main forecasting model, MAJA. 3.2 Further develop high-frequency and real-time data. 3.3 Instutionalize scenario analyses in decision processes. 3.4 Formalise the participation of the Head of Research in monetary-policy deliberations (without voting rights).
4. Financial Stability Framework	4.1 Support swift action by the Riksbank in times of crises, while respecting new consultation rules. 4.2 Reduce fragmentation and establish stronger coordination mechanisms for macroprudential policies. 4.3 Publish regular joint systemic risk assessments.
5. Sweden's External Policy Framework	5.1 Undertake a systematic review of the Sweden's exchange-rate regime. 5.2 Develop, formalise, and publish a quantitative framework for reserve adequacy. 5.3 Clarify institutional responsibilities for reserve financing and hedging. 5.4 Commission an independent external review of the reserve framework.

Final Reflections

One of Sweden's enduring strengths is the commitment to regular external evaluations of monetary policy. Throughout this review, we found a mature, open, and constructive process, marked by transparency and a willingness to learn. This culture is a key reason why the Riksbank commands respect internationally. With the targeted reforms recommended here, Sweden is well positioned to navigate an increasingly complex global environment, while maintaining the stability and credibility that have long underpinned its economic success.

It has been a privilege and an honour to contribute to the evaluation of the Riksbank, and we thank the Finance Committee of the Sveriges Riksdag for their trust.



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1 Introduction

This is the fifth evaluation of Swedish monetary policy commissioned by the Finance Committee of the Swedish Riksdag. This evaluation covers the decade from 2015 to 2024 and addresses the full set of issues outlined in the terms of reference for Sweden's review of monetary policy (see Annex 1 for the mandate). The work on the report started in November 2024 and was completed at the end of 2025 when it was submitted to the Riksdag for translation.

We are grateful to Committee on Finance, and to Thomas Hagberg in particular, for their assistance in the process of completing the review. We are especially indebted to Marianne Nessén for her expert support throughout the process. She provided essential insight, data, and references, and efficiently organised our consultations. Her contributions were essential to the completion of this evaluation.

We are also grateful to everyone we have interviewed during the process of producing this report. To inform this review, we conducted 29 interviews with 43 individuals, including market participants, academics, current and former Riksbank policymakers and staff, government officials, and other stakeholders (see Annex 2). These interactions consistently affirmed that the Riksbank is widely regarded as a credible and respected institution, a conclusion supported by our independent analysis. All the discussions with Riksbank staff and beyond, have been frank, informative, and we have learned a lot from these interactions. We have found interviewees to possess a remarkable level of insight into the topics that we sought information on, and to be dedicated to providing services for the benefit of Swedish society. We also examined peer-reviewed research, Riksbank Executive Board and staff publications, and other relevant materials (see the References).

During the first half of the period (2015–2019), the Riksbank responded to persistent undershooting of its inflation target and declining inflation expectations by employing negative nominal interest rates, and asset purchases. While the use of these unconventional tools varied across advanced economies, many peer central banks faced similar challenges related to the zero lower bound (ZLB) on interest rates. In particular, concerns emerged about the efficacy of such tools and their potential adverse effects on financial stability, particularly in housing markets. A feature more unique to Sweden during this time was the sustained depreciation of the krona, despite no clear economic justification.

Just as inflation was returning to target and policy rates were beginning to normalise, the Covid-19 pandemic struck, to the detriment of lives and livelihoods across the globe. In the second half of the period (2020–2024), the Riksbank again deployed extraordinary policy measures to counteract the pandemic's economic and financial fallout, and later tightened policy in response to the surge in inflation. Like other central banks, it operated

under heightened uncertainty, including the atypical nature of the pandemic recession, severe disruptions to global supply chains, and the economic consequences of Russia's illegal invasion of Ukraine in 2022.

Although inflation is now near target and the krona has shown some signs of strength, questions have resurfaced about the effectiveness and risks of extraordinary monetary policy tools, including in relation to fiscal policy. Additional concerns have emerged regarding whether the Riksbank's own monetary and foreign exchange reserve policies contributed to past krona weakness.

Our recommendations aim to enhance the Riksbank's ability to navigate future challenges by strengthening its technocratic legitimacy, transparency, and accountability in the following areas: monetary policy tools, forecasting, fiscal-monetary policy mix, macroprudential policy governance, foreign exchange reserve management, and foreign exchange policy.

The remainder of the review is organised as follows. Section 2 sets the stage with a brief institutional history of the Riksbank, highlighting its relationship with the government and key cultural features relevant to monetary policy decision-making. Section 3 reviews the Riksbank's monetary policy actions over the evaluation period. Section 4 provides an in-depth review of the effectiveness of the Riksbank's use of both conventional and unconventional monetary policy tools. Communications, which are critical to successful policy implementations and outcomes, are discussed in Section 5, followed by assessments of the Riksbank's forecasting performance and models used in forecasting in Section 6. Given that the burden of stabilizing the macroeconomy fell largely on the Riksbank over the evaluation period, issues related to the monetary-fiscal policy mix are discussed in Section 7. In section 8 we focus on the role of the world economy for Sweden, and, in particular, issues surrounding the exchange rate. Section 9 evaluates foreign exchange reserve management, and the final section presents our recommendations and conclusions.

2 The Institutional Framework

Sweden's macroeconomic framework is characterised by a target-based design with a clear division of responsibilities across institutions. The Riksbank is a central player in this architecture with responsibility for the payment system, monetary policy, and for responding to episodes of financial stress (e.g., as the lender of last resort). The Riksdag is responsible for fiscal policy, while the FSA (Finansinspektionen) oversees financial regulation. A final important institution is the National Debt Office, which functions as the central government's bank and is in charge of central government debt issuance, but also has duties that overlap with all of the three other institutions. This institutional framework bears the hallmarks of the past events that shaped its design. Although it has proven successful in fulfilling its aims, it is important to remain forward-looking, and consider how evolving economic and geopolitical conditions might impact its functioning in the future.

We begin with a sketch of Sweden's current institutional framework, then outline the historical developments that shaped it. This provides context for evaluating the Riksbank's performance, and for considering our recommendations.

2.1 Sweden's Current Macroeconomic Framework

2.1.1 Monetary Policy and the Role of the Riksbank

Monetary policy in Sweden is conducted by Sveriges Riksbank. The Riksbank is an authority of the Swedish Parliament, and its obligations are guaranteed by the Swedish State. Its activities, organizational framework, and capital provisions are governed by *The Sveriges Riksbank Act* (SFS 2022:1568). This *Act* was passed by the Swedish parliament in November 2022, replacing the 1999 *Riksbank Act*, which had formalised the operational independence of The Riksbank and formally established price stability as its primary mandate.

The Riksbank is in charge of the Swedish payments system, and it is the sole supplier of Swedish Kronor.[1] The Riksbank is a member of the European System of Central Banks and a shareholder of the European Central Bank.[2]

The principal objective of the Riksbank is to "*maintain permanently low and stable inflation.*" Without jeopardizing that goal, it is also tasked with contributing "*to a balanced development of production and employment*," and "*to the stability and efficiency of*

[1]The Riksbank currently operates and oversees Sweden's central payments infrastructure through the RIX system. In June 2024, it agreed to enter into contract negotiations with the European Central Bank to migrate RIX to the T2 platform for large-value payments.

[2]As Sweden is a member of the European Union, the Riksbank is part of the European System of Central Banks and a shareholder of the European Central Bank, in accordance with the Treaty on the Functioning of the European Union.

the financial system, including the ability of the public to make payments." With these objectives, the updated *Act* defines the Riksbank's mandate in place since January 2023 as *flexible inflation targeting* in which economic and financial stability take secondary roles relative to the inflation target. The 1999 *Riksbank Act* that guided the Riksbank until the end of 2022 was more narrowly focused on *strict inflation targeting*. In practice, however, the update of the mandate of the Riksbank primarily formalises how the mandate was conceived under the 1999 *Act*. Inflation targeting is operated within a floating exchange rate as set out in the *Exchange Rate Policy Act* (1998:1404).

The Riksbank is tasked with operationalizing the definition of "low and stable inflation," subject to parliamentary approval. The specification of the inflation target has changed during the period considered in this report. Until September 2017, the Riksbank targeted a 2 percent annual consumer price index (CPI) inflation rate. In September 2017, the target was redefined as 2 percent (year-over-year) inflation rate of the consumer price index with a fixed interest rate (CPIF) implemented within a band of variation of one to three percent. The revised CPIF inflation target leaves out household mortgage rates from the inflation target. The motivation for focusing on the CPIF is that changes in inflation deriving from monetary policy's direct impact on the costs of mortgages – which are included in the CPI inflation rate – are considered temporary.[3] The band of variation allows for "small" deviations of inflation from the target in recognition of the fact that inflation may not be exactly on target in the very short run. To pursue its inflation-targeting mandate, the Riksbank has operational autonomy over a number of instruments, including deposit and credit facilities for financial institutions, repurchase facilities, Swedish government security purchases/sales facilities, foreign exchange interventions, and reserve requirements.

Governance with regard to monetary policy decisions reinforces the operational independence of the Riksbank. Monetary policy decisions are taken exclusively by the Riksbank Executive Board, with reference to its mandate and without introducing unreasonable risks to its finances. The Executive Board has five members who are appointed by the General Council of the Riksbank for a period of five or six years. Executive Board members cannot be fired (unless they have taken part in illegal activities), which is an important aspect of the independence of the Riksbank. The Governor, currently Erik Thedéen, Chairs the Board. The Board also includes four Deputy Governors, currently Per Jansson, Aino Bunge, and Anna Seim. Until the 10th October 2025, it also included Anna Breman. She has since left the Executive Board to take up a position as Governor of the Reserve Bank of New Zealand. Her replacement was not yet known at the time of writing this report. The Board

[3]When the Riksbank increases the policy rate in an attempt to reduce overall inflation in the economy, the CPI may display a short-run increase in inflation due to pass-through of the policy rate to mortgage rates. The CPIF inflation measure leaves out this direct channel from policy rates to inflation.

has eight scheduled monetary policy meetings per year, as well as biweekly Executive Board meetings in between these monetary policy meetings. As discussed in Section 5, monetary policy decisions are communicated with a high degree of transparency.

2.1.2 Financial Stability and the Role of the FSA

Although financial stability is a secondary mandate of the Riksbank, financial sector regulation and supervision is under the independent authority of Finansinspektionen, the FSA. The FSA is an authority of the Swedish Government that has responsibility for the soundness of individual financial institutions, and for the financial system as a whole. It issues "Föreskrifter och allmänna råd från Finansinspektionen" (FFFS), which are regulations and general guidelines, and recommends amendments to financial sector legislation. Importantly from a financial stability perspective, the FSA is responsible for macroprudential measures such as the counter-cyclical capital buffer and borrower-based requirements for residential mortgages.[4]

The FSA is headed by a Board of Directors that consists of eight members. The Head of the FSA is government appointed – and can be replaced – by the government thus implying less institutional independence relative to the Riksbank. There is no contemporaneous overlap in the FSA and Riksbank board membership, but Martin Flodén, former Executive Board Member and Deputy Governor of The Riksbank (2013-24), is currently a member of the Board of Directors of the FSA. Moreover, the current Governor of the Riksbank, Erik Thedéen, was Head of the FSA from 2015-2022 (when he became the Governor of the Riksbank).

Despite the delegation of financial sector regulation to the FSA, the Riksbank's role in financial stability extends well beyond its responsibilities for the payments system. It has a long history of responding to severe financial sector disruptions, consistent with the traditional role of central banks as lenders and market makers of last resort. The Riksbank has supported financial stability through actions such as extending collateralized credit, entering into swap agreements with financial institutions, implementing liquidity support measures, and purchasing or selling financial assets. Since the new *Riksbank Act* came into force in January 2023, the Riksbank has had less operational independence in using these tools for financial stability purposes than before, and less than when using them for monetary policy purposes. Under the new framework, the Riksbank is required to consult with the FSA and the Swedish National Debt Office before proceeding, unless immediate action is necessary.

[4]See Rangvid (2024), and Muellbauer and Kaszowska-Mojsa (2024) for assessments of these tools.

2.1.3 Fiscal Policy, the Government and the Riksdag

Fiscal policy is the domain of the Swedish Government, although its budget is subject to approval of the Riksdag. Sweden operates fiscal policy subject to a well-defined fiscal framework. The *Budget Act* sets out a number of rules, including a net lending target, which currently corresponds to a surplus of one-third of a percent of GDP over the business cycle.[5] The debt anchor provides a benchmark for consolidated public-sector gross debt, including that of the central government, municipalities, and county councils. It is currently set at 35 percent of GDP. If the debt-to-GDP ratio deviates from this anchor by more than five percentage points, the Government must, by means of a communication to the Riksdag, explain the underlying causes and outline planned corrective measures.

On the spending side, the *Act* stipulates that the Government must propose an expenditure ceiling for central government spending (including old-age pension payments) for the third year ahead. Based on this, the Riksdag sets a ceiling which may only be changed in the event of a change in government or in response to a crisis requiring fiscal intervention. These national rules are complemented by a balanced budget requirement for local governments.

External monitoring of adherence to the targets and other metrics of fiscal performance is carried out by the Swedish Fiscal Policy Council, the Swedish National Financial Management Authority, and the National Institute of Economic Research.

2.1.4 The National Debt Office

A fourth institution that matters in the macroeconomic framework is the National Debt Office, a government institution established in 1789. The principal objective of the National Debt Office is to minimise the costs of the central government's financial management. It is governed by a Board of nine members, two staff representatives, and an audit committee. The Head of the National Debt Office is appointed by the Swedish government and can be replaced by the government, similar to the FSA. No individuals serve concurrently on the boards of the National Debt Office, the Riksbank's Executive Board, or the FSA.[6]

The National Debt Office has a notably broad mandate. It provides banking services for the central government, manages existing government debt and raises new loans, provides state guarantees and loans, is responsible for deposit insurance and investor protection schemes, and manages government support for banks. It even secures financing for nuclear waste management.

[5] See: https://www.government.se/government-of-sweden/ministry-of-finance/central-government-budget/the-fiscal-policy-framework/

[6] Riksbank Execute Board Members currently have restrictions on outside engagements that may conflict with their responsibilities.

This portfolio includes a mix of responsibilities that are, in some other countries, shared between the central bank and the treasury. In the US, for example, the Federal Reserve provides banking services for the central government, and the government "current account" is an important component of the fed's balance sheet. The US Treasury takes care of debt management. The latter, as we will discuss later, is important as far as the Riksbank use of quantitative easing is concerned. Moreover, the National Debt Office's role in bank support, deposit insurance, and certain crisis-management tools, overlap with the financial-stability mandates held by both the Riksbank and the FSA.

2.1.5 Other Aspects of Sweden's Macroeconomic Reality

The institutions discussed above are the pillars of Sweden's macroeconomic policy framework. There are other aspects of Sweden's economic landscape that are important for understanding the backdrop against which the Riksbank must deliver a stable monetary environment.

First, wage setting in Sweden has since the Industry Agreement in 1997 been characterised by "norm-setting" wage agreements between labour unions and employers' organizations in the manufacturing sector (Calmfors (2025)). These agreements are widely regarded as essential for maintaining Sweden's international competitiveness in this export-oriented sector. The wage norm established in manufacturing has economy-wide relevance. Private employers' organizations generally insist that wage increases in other industries do not exceed this "benchmark," labour unions coordinate their wage demands around the norm, and it serves as an implicit guide even for white-collar workers in the private sector. Furthermore, wage negotiations in the public sector also take the wage agreements in the manufacturing sector into account, and are therefore not completely de-anchored from the norm either.

This institutional arrangement plays a central role in mitigating the risk of wage–price spirals and in managing unexpected inflationary episodes such as that of 2021–2022. As we will discuss later, the sharp decline in real wages during this period shaped the degree to which the Riksbank needed to raise rates to tame the rise in inflation.[7]

Secondly, Sweden is deeply integrated in the world economy through trade in goods, services and financial assets. A standard measure of trade openness, the sum of the value of Sweden's exports of goods and services and its imports relative to its GDP, exceeds

[7]The norm-setting agreements have many other implications too. Mogstad, Salvanes and Torsvik (2025) argue, for example, that wage compression in Sweden, and in other Nordic countries is important for understanding why income inequality is low relative to many other industrialised economies, although they also point out that there may be negative side effects through reducing the returns to education and to labour market skills, in general.

100 percent. Sweden imports not only goods for consumption from other countries, but also materials, technology and capital goods that are essential for the productivity of the Swedish economy. Swedish companies participate in global supply chains and rely heavily on foreign markets to sell their goods. On the financial side, Sweden has claims on foreign entities, and foreign investors hold many claims on Sweden. The gross asset and liability positions exceed 300 percent of annual GDP and, on the net, Sweden holds financial claims on the rest of the world corresponding to around 40 percent of GDP.

Such a high-degree of global integration means that shocks in other parts of the world have repercussions on the Swedish economy, through both supply and demand channels. Because the Riksbank operates the inflation target in a floating exchange rate regime, actions to control inflation must consider the sensitivity of the economy to variations in the krona, through trade flows, pricing of goods and services, and cross-border flows of assets and factor incomes. We will discuss issues related to this in some detail in Sections 8 and 9.

2.2 Summing Up: The Current Framework

In summary, Sweden's macroeconomic framework rests on three main pillars: i) an independent central bank operating a flexible inflation target under a floating exchange rate regime; ii) an autonomous financial sector regulator undertaking micro and macro-prudential regulation, with the Riksbank stepping in when needed to deal with financial instability, iii) a fiscally-constrained government following strict budgetary rules. The National Debt Office provides both complementary and overlapping services. This overlap makes it all the more important that the Riksbank, National Debt Office, and FSA coordinate closely and are clear about their respective roles, especially in periods of stress.

2.3 Historical Background

The Riksbank was founded in 1656 and formally established as a government-owned entity in 1668, making it the oldest central bank in the world.[8] It was originally established to maintain the domestic coinage at its right and fair value, but spent much of its early history being subordinate to the Swedish Parliament, which amounted to implementing government direction to finance politically-favoured activities.[9]

The Riksbank issued bank notes almost from its inception, but in its early history it did so in competition with other banks, with the exception of a short period in the early

[8]The central bank was called "Stockholms Banco" until it failed in 1664, with the Riksdag officially taking over the bank in 1668 and renaming it the Riksens Ständers Bank. It was renamed the Sveriges Riksbank in 1867.

[9]For a fulsome historical timeline see https://www.riksbank.se/en-gb/about-the-riksbank/history/

19th century. It also competed with commercial banks in the deposit market. Private issuance of bank notes sometimes required direct government support for financial stability reasons. For instance, during the 1856–1857 crisis, the Riksbank extended credit to the Skånes Enskilda Bank so it could continue the payments on its notes (Fung, Hendry and Weber (2018)).

A regulatory reform of banking regulation in the latter part of the 19th century that effectively removed any implicit public guarantees catalyzed growth in the Swedish commercial banking system. In response, the Riksbank's role was redefined; the *Riksbank Act* of 1897 gave the it monopoly power over the issuance of bank notes, and in 1903 it assumed its modern role as Sweden's "bank of banks" when commercial banks were given the option of re-discounting bills at the Riksbank.

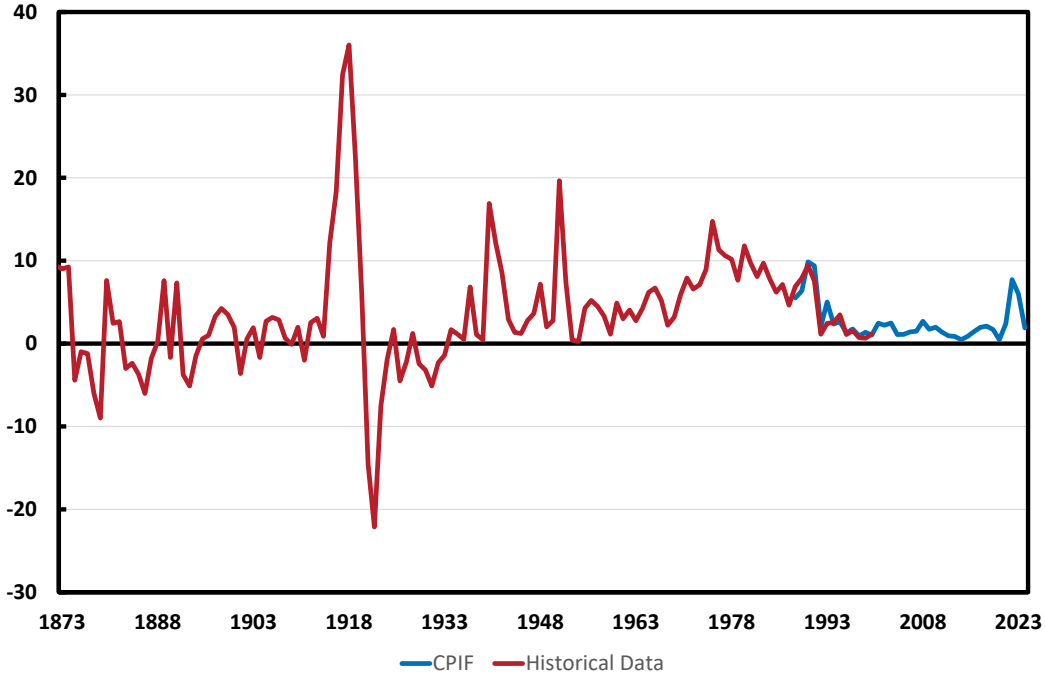
2.3.1 From the Gold Standard to Price Level Targeting (1873–1939)

During much of the 19th century, inflation in Sweden was highly volatile, fluctuating between periods of rapid growth in prices to periods of substantial deflation. This instability was accompanied by highly volatile year-to-year per capita growth well beyond the experience of modern economies. Such volatility can be highly problematic, and Sweden's quest for monetary stability eventually led it to join the Gold Standard in 1873, at a time of economic growth and structural change. Under the Classical Gold Standard, the currency was convertible into gold and the exchange rate was effectively fixed vis-á-vis other currencies on the standard. Various versions of exchange rate pegs persisted in Sweden, with only short interruptions, until the 1992 crisis.

Adopting the Gold Standard initially helped Sweden achieve lower and more stable inflation. Mean inflation fell from 1.81 percent in the 1801-72 period to 0.54 percent in the 1873-1913 period, and its volatility (as measured by the standard deviation of the annual inflation rate) declined from 7.4 percent to 4.2 percent. However, inflation returned when World War I led to suspension of the Gold Standard and the krona was floated (Figure 1). The krona float was followed by a period with very high exchange rate volatility which witnessed, first, a large appreciation of the krona against both the US dollar and the Sterling from 1915-1918, and then an equally large depreciation of the krona at the end of the war (Figure 2, Panel A). The broader krona index experienced similar volatility over the period (Figure 2, Panel B).

In this light, it is understandable that Sweden was among the first countries to return to the gold standard (de facto in 1922, de jure in 1924; see Jonung (1984)) after the end of World War I. The 1920's was a period with generally low, often negative, inflation rates, but the Gold Standard ultimately dissolved during the Great Depression. The Swedish economy

Figure 1: Swedish Annual Inflation Rates, 1873 - 2024

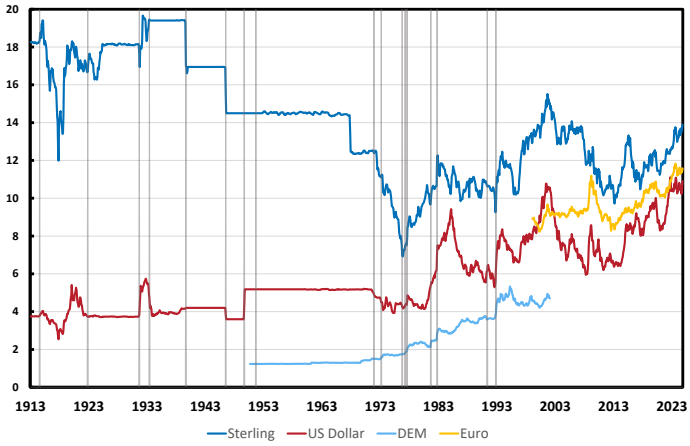


Note: Annual change in price index. Historical data 1873-2000. CPIF 1988 - 2024.
Sources: Historical data from Edvinsson (2005). CPIF from Statistics Sweden.

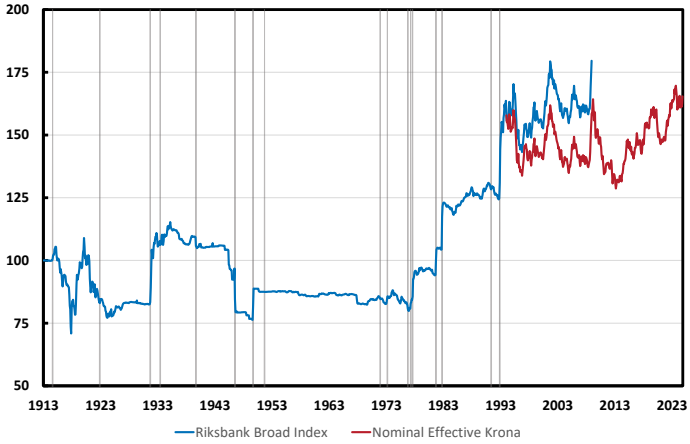
suffered significantly from the economic repercussions of the global economic downturn, experiencing substantial reductions in export revenues and large capital outflows. With the Swedish foreign exchange reserves under considerable strain, the krona became the target of speculative attacks when Britain relinquished gold convertibility in September 1931.

This crisis prompted Sweden to float the exchange rate later that month. On the same day that parity was abandoned, the Swedish government, following consultation with prominent economist Gustav Cassel, announced a commitment to preserve price stability. This led to a landmark decision in 1933, when the Riksdag approved a regime of floating exchange rates combined with price level stabilization. Sweden thus became the first country to adopt formal price-level targeting as a monetary policy framework (Berg and Jonung (1999)). Still, exchange rate volatility became a growing concern: the krona depreciated significantly against both the dollar and the sterling, as well as more broadly. In an attempt to stabilise the economy, Sweden reverted to a pegged exchange rate regime.

Figure 2: Selected Exchange Rates



(a) Bilateral Krona rates



(b) Broad Nominal Krona Indices

Note: The Riksbank broad index (1913 -) is from Bohlin (2010). The nominal effective krona index is the so-called KIX index (1994 - 2024). Indexed values, 1913=100. Vertical lines show changes in the exchange rate regime.

Sources: Sveriges Riksbank.

Initially, they followed a unilateral peg to the Sterling in 1933 and then, as the Sterling's credibility weakened, to the US Dollar in 1939.

2.3.2 Monetary-Fiscal Conflict, Bretton-Woods, and Exchange Rate Pegging (1945–1992)

As WWII neared its end, the independence of the Riksbank was effectively eliminated by the Swedish Government, which insisted on a low interest rate policy. Although legal provision for this policy had existed already in the 1933 *Act*, from 1944 it became a defining feature of Swedish postwar macroeconomic management. The resulting tension between the government's aim for low interest rates and the Riksbank's concern for price stability culminated in the resignation of the Riksbank Governor in 1948. Sweden's framework at this stage is best characterised as one of "fiscal dominance," with the Riksbank's monetary policy objectives effectively subordinate to the government's fiscal policy objectives. We will return to the concept of fiscal dominance in Section 7.

Sweden joined the IMF and the Bretton-Woods system in 1951 and thus effectively implemented a multinational peg to the US dollar, further reducing monetary autonomy and placing fiscal policy as the main tool for stabilization policy. The Riksbank was effectively reduced to controlling credit supply to contain the inflationary pressures induced by its subordinated mandate of implementing low interest rates. To do this, it relied on administrative tools, such as lending caps enforced on banks and limits on foreign currency holdings by households and firms. In the early 1950s, Sweden suffered high inflation despite exchange rate volatility having been effectively eliminated under the Bretton-Woods system. The subordination of monetary policy proved costly: between 1948 and 1957, the Sweden's price level rose 55.5 percent compared to an increase only 17 percent in the US.

In 1957, the Riksbank broke with the low-rate policy by raising interest rates, allowing credit quantity controls to be partially relaxed. The resulting credit expansion boosted the development of real estate markets, but restricted capital access elsewhere. Consequently, inflation stabilised in Sweden after 1957 and remained relatively low until the early 1970s, when US fiscal imbalances induced instability of the Bretton-Woods system and prompted revaluations of many currencies against the US dollar. The Swedish krona was appreciated by 7.5 percent against the US dollar in December 1971 and by a further 5.6 percent in February 1973. On both occasions, the krona was depreciated against gold.

Given the breakdown of the Bretton-Woods system, Sweden chose to leave the international currency arrangement in March 1973 and join the European currency snake arrangement (a narrow exchange-rate band among EEC members), even though it was not itself an EEC member. However, Sweden's macroeconomic performance in the wake of the OPEC oil shocks was weak, even relative to peers, prompting devaluations of the krona in 1976 (3 percent) and 1977 (6 percent). Later in August 1977, Sweden further devalued the krona by 10 percent, exited the currency snake, and adopted a unilateral peg against

a basket of currencies.

At the same time, Sweden reluctantly followed the wave of financial deregulation that was taking place across much of the world. Sweden lifted loan caps on commercial banks, allowing them to reduce bond holdings and expand lending. Inflation, however, remained high and government debt had been on a rising trajectory since the late 1960s, although debt-to-GDP remained low by international standards.[10] In 1981 and 1982 Sweden devalued the currency again by 10 and 6 percent, respectively, after which followed some calm up to 1991.

In May 1991, Sweden decided to peg to a basket of currencies of the EMS (an "ECU" basket). But by 1992, speculative attacks against European currencies that were triggered by disappointing macroeconomic outcomes of the core of the EEC, including the slow growth of Germany following the reunification, forced the Riksbank to defend the currency with interest rates as high as 500 percent. A crisis package passed by the Riksdag temporarily eased market pressure, but capital outflows persisted. The result was a banking crisis, a deep recession, accompanied by a collapse in investment and in house prices. On November 19, 1992, Sweden exited the ECU peg and, once again, allowed the krona to float.

2.3.3 Inflation Targeting and Institutional Separation (1993–present)

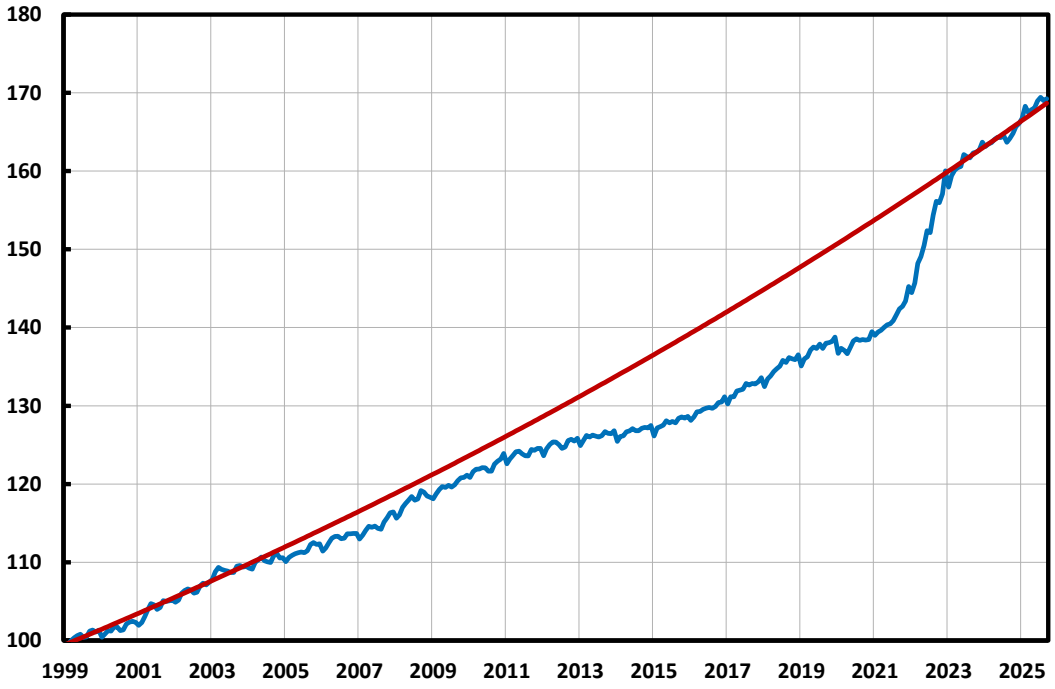
This history of repeated attempts at operating pegged exchange rate regimes is important for understanding why the crisis gave rise to a rethinking of the Swedish monetary system, and brought some consensus that the many attempts of bringing about monetary stability through exchange rate pegs had failed. Indeed, the crisis of the early 1990s and the transition to a floating exchange rate regime prompted a fundamental reorientation of monetary and fiscal policies, laying the foundations of the Swedish macro-economic framework that is in place today.

In 1993 the Riksbank introduced a formal inflation target of 2 percent (originally defined by the annual change in the consumer price index later, and then, in 2017, redefined in terms of the consumer price index with a fixed interest rate, CPIF, inflation rate with a tolerance band of $\pm$ 1 percentage point). As mentioned earlier, the *Sveriges Riksbank Act* passed in 1999 granted the Riksbank formal independence, and an Executive Board was created to oversee monetary policy decisions, aligning the governance structure with international best practices. This *Act* gave the Riksbank a clear inflation target mandate without explicitly allowing for secondary concerns about the economy. At the same time, Sweden institutionalised a strict separation between monetary and fiscal authorities as a

[10] This trend was briefly reversed in the mid-1980s, but accelerated again from 1989 onwards.

means to minimise the risk of fiscal-monetary tensions, whether through subordination of monetary policy or public debt accumulation. The Riksbank was given a clear mandate to maintain price stability, while fiscal policy was also reined in, initially with the introduction of a surplus target in 1997. The FSA's role during the 1990s was supervisory, but it did not yet have a mandate for oversight of systemic financial risk.

Figure 3: CPIF in Sweden and a 2 percent trend



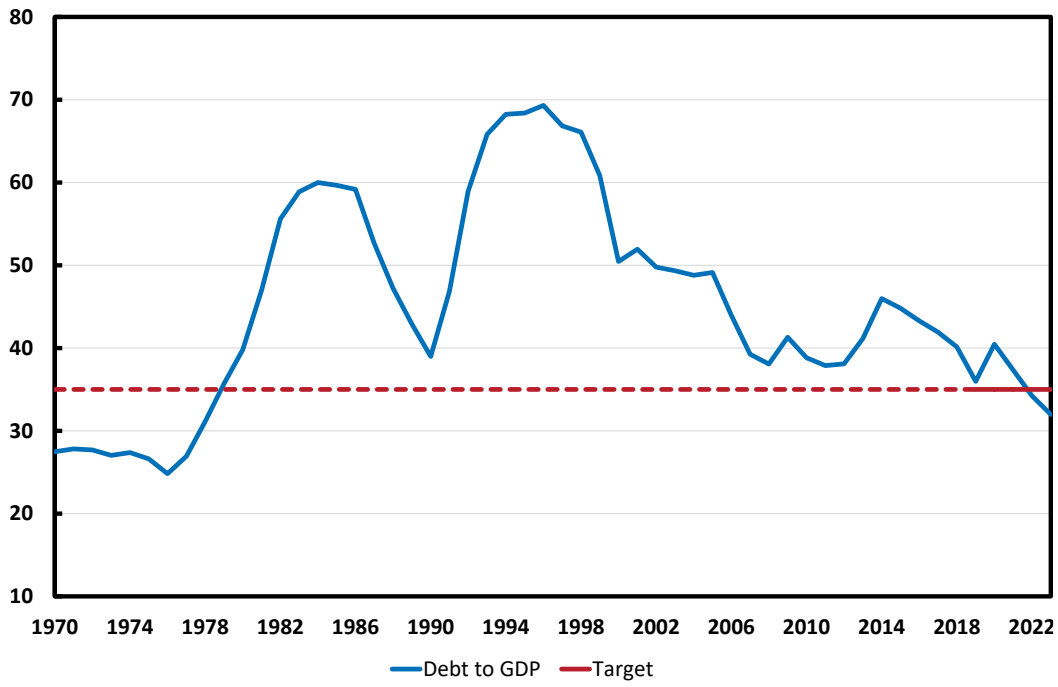
Note: The CPIF index in levels from 1999 vs a 2 percent trend line.
Sources: Statistic Sweden and own calculations.

Since the introduction of an inflation targeting framework with a floating exchange rate, inflation in Sweden has fallen and become less volatile, while the frequency of large changes in the value of kronor has declined, albeit perhaps at the cost of higher short term volatility. While inflation has occasionally diverged from the target, the performance of the Riksbank in anchoring long-run expectations has been highly successful. Figure 3 illustrates the CPIF in Sweden from 1999 to the end of 2024 together with a hypothetical trend line consistent with a constant two percent annual inflation rate. Rather remarkably, the CPIF at the end of 2024, was almost exactly at the level consistent with the 2 percent annual growth rate starting in 1999. This chart also makes it clear that the evaluation

period involves a catch-up to trend after inflation significantly undershot its target in the early 2010s, an episode we will discuss in Section 3.[11]

Stabilization of inflation coincided with a marked downward trend in public-sector indebtedness, which fell from approximately 70 percent in the mid-1990s to around 35 percent by 2023 (see Figure 4). Thus, the restrictive fiscal framework appears to have been successful and allowed Sweden to introduce a 35 percent debt-to-GDP target in 2019.

Figure 4: Public debt to GDP in Sweden



Note: General government consolidated gross debt (the so-called Maastricht debt) divided by nominal GDP. Target is the debt anchor introduced in 2019.

Sources: European Commission (AMECO) from 1996, earlier period IMF.

2.4 Thinking Ahead

Sweden's institutional framework has been shaped by historical experience with inflation, exchange rate instability, fiscal imbalances, and financial crises. Since the early 1990s, it has

[11] Note that in the inflation-target regime there is no reason for why past under- or overshooting of inflation should be corrected for over time as there is a price-level targeting regime. The fact that CPIF has recently caught up with its two period annual trend is most likely by coincidence.

proven highly effective in delivering monetary and fiscal stability. The framework emerged as a response to the economic volatility of the 1970s to the early 1990s. The popular support for this framework has also been robust. A non-binding referendum in 2003 on whether to join the Euro resulted in 55.9 percent of the voters rejecting this option.[12] As discussed earlier, the period prior to the design of the current policy regime was marked by high and variable inflation, rising debt, and political pressure on monetary policy. The period since the introduction of the new macroeconomic framework has witnessed Sweden achieve low and stable inflation, alongside more prudent and sustainable public finances.

That backdrop has now changed along several important dimensions:

- *Shifting inflation dynamics*: The early part of the evaluation period was characterised by global disinflationary pressures, financial deepening, and relative macroeconomic calm. For much of *this* period, the central challenge for Riksbank and many other central banks was *undershooting* the inflation target rather than exceeding it. Since the Covid-19 pandemic, attention has shifted to inflation driven by multiple and overlapping global supply shocks. This has revived awareness of upside risks to inflation. While a return to zero lower bound on interest rates should not be discounted, policymakers are likely to face heightened tradeoffs between inflation control, financial stability, and growth.

- *Large and uncommon shocks:* The Covid-19 crisis and Russia's invasion of Ukraine introduced extraordinary uncertainty and required exceptional interventions. These events have tested the speed, coordination, and flexibility of fiscal, monetary, and financial authorities.

- *Structural economic transformation:* Sweden's economy, as many other advanced economies, has seen a rise in services (at the expense of manufacturing), digitization, and global supply-chain exposure. These developments may alter the transmission of monetary policy and the nature of economic fluctuations.

- *Deeper global and regional integration:* Since the fall of the Berlin Wall, Eastern Europe and China have become increasingly integrated into global trade and production networks. Over the same period, Sweden has deepened its economic integration with the EU and, since 1998, established institutional links with the European Central Bank through its participation in the European System of Central Banks (ESCB). This has increased external spill-overs from the world economy to Sweden, and raised questions about Swedish monetary policy autonomy.

[12] For the full results, see https://www.val.se/valresultat/folkomrostningar/euro-2003.html

- *Emerging geopolitical tensions:* Rising global fragmentation, security risks, and the weaponization of economic policy tools (e.g. sanctions, export controls, energy leverage) require greater attention to economic resilience and institutional adaptability.

Taken together, these factors suggest that Sweden's macroeconomic framework, while fundamentally sound, may require selective adaptation. The principles of clear institutional separation, central bank financial and operational independence, prudent fiscal policy, and accountability continue to be critical. But new circumstances demand that we take a step back to consider adjustments to how these principles are implemented, particularly regarding coordination, policy mix, and accountability in crisis settings.

These are issues that we will return to after having reviewed the Riksbank performance over the last decade.

3 Monetary Policy Actions, 2015-2024

Against the shifting economic backdrop discussed in the previous section, the Riksbank faced a number of challenges just prior to the evaluation period that are essential to understanding the policy context of the 2015-2024 period.

In the immediate aftermath of the Global Financial Crisis, despite a decisive policy rate cut in December 2008 (from 3.75 percent to 2 percent), inflation in Sweden declined significantly and 2009 witnessed seven consecutive months of deflation. In February 2009, the Riksbank reduced the policy rate to 1 percent, in April 2009 0.5 percent, and in July 2009 to 0.25 percent. Despite these actions on the part of the Riksbank, inflation in late 2009 and early 2010 remained low and significantly below its two percent target. This development induced concerns about persistent inflation undershooting (Figure 5). However, like many other policy makers during this period, the Riksbank also worried that keeping interest rates low for too long might fuel excessive household borrowing and produce unsustainable increases in property prices. At that time, the Executive Board noted that macro-prudential tools, such as stricter loan-to-value ratios or amortization requirements, could be more effective than monetary policy to offset these risks (Sveriges Riksbank (2010b)). However, these tools were at that time largely untested and control was left primarily to the FSA.

Amid these and other concerns, the Executive Board decided to raise the policy rate from 0.25 percent to 2 percent between mid-2010 and mid-2011. After a short-lived uptick in CPI inflation (most likely due to the impact of the policy rate on mortgage interest rates), inflation started declining fast in the autumn of 2011. At the same time, on the international scene, financial stress was intensifying in the Euro Area. By late 2011, external conditions had deteriorated further, the Swedish krona had strengthened, and inflation was consistently undershooting its two percent target (Figures 3 and 5). In response to these developments, the Riksbank eventually reversed course in November 2011 at which point a policy rate reduction period was initiated. The gradual reductions in the policy rate did not manage to reverse the decline in inflation which continued its steep decline reaching levels close to 0 from the autumn of 2012. The Riksbank therefore continued its interest rate cuts, and by late 2014, the policy rate reached zero.

The initial episode of increasing the interest rate in 2010-11 prompted criticism from Deputy Governor Lars Svensson, among others, who argued that the Riksbank had effectively sacrificed inflation and employment in pursuit of macro-prudential goals, see Svensson (2013), Svensson (2014). Seen with the benefit of hindsight, there are questions concerning the decision to hike interest rates in 2010-2011. While the episode is likely to have

cooled down the housing market,[13] it did not help the Riksbank in its pursuit of the two percent inflation target. There is also evidence that it may have been a contributing factor in preventing unemployment to fall back to its pre-GFC level in this period, see Coglianese, Olsson and Patterson (2025). Moreover, the episode created the backdrop for the subsequent introduction of unconventional monetary policies in an attempt to restore the credibility of the monetary target. In particular, undershooting the inflation target induced concerns about inflation expectations drifting away from the stated two percent inflation target.

This context shaped monetary policy over three key sub periods:

1. **The pre-Covid years (2015–2019)**, focused on bringing inflation back to target;
2. **The Covid response (2020–2021)**, aimed at restoring market functioning and stabilizing the macroeconomy; and,
3. **the post-pandemic period (2022–present)**, marked by actions to contain and reverse the sharp rise in inflation.

We will now discuss each of these sub periods.

3.1 The Pre-Covid-19 Period

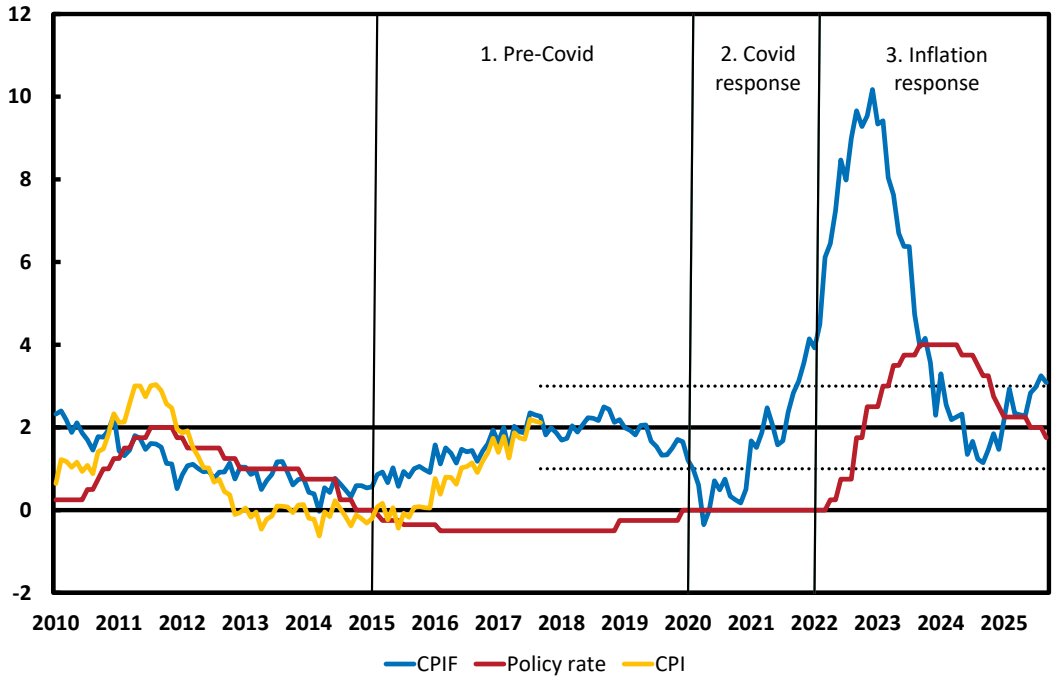
The key challenge faced by the Riksbank in this period was to bring inflation back to target after the contractionary policy stance in 2010-11 and the subsequent interest rate cuts from late 2011 to late 2014 had brought the policy rate to zero.

At the beginning of 2015, Swedish inflation was below its two percent target and inflation expectations were declining. Faced with this situation, the Riksbank followed the lead of the ECB, which had introduced negative nominal interest rates in June 2014 (see Table 2). In February 2015, the Board unanimously agreed to cut the policy rate to -0.10 percent, and further cuts brought it to -0.35 percent by July. This marks the beginning of the Riksbank's use of "unconventional monetary policy" (i.e. negative policy rate, quantitative easing (QE), and forward guidance), a topic that will be discussed in more detail later in this report. The minutes from the February meeting cited the bank's "own investigations and discussions with other public authorities and market participants" as reassurance that a negative policy rate would not create any "technical issues that would be difficult to manage"(see Sveriges Riksbank (2015a)).

These actions were accompanied by QE, large-scale asset purchases, in the form of government bond purchases totaling SEK 135 billion by year-end. The primary objective

[13] Berggren, Mammos, and Strid (2024) find evidence that monetary policy shocks have large effects on the housing market in Sweden.

Figure 5: Inflation and the policy rate in Sweden



Note: Percent. CPIF is the 12-month change in the CPIF. CPI is the 12-month change in the CPI. Until September 2017, the Riksbank was targeting a 2 percent CPI inflation rate, thereafter it has targeted a 2 percent CPIF inflation rate. The dotted lines show the upper and lower limits of the variation band introduced in 2017 when the Riksbank started targeting the CPIF inflation rate rather than the CPI inflation rate.

Sources: Sveriges Riksbank and Statistics Sweden.

of these actions was to raise inflation through QE asserting downward pressure on longer term interest rates with the aim of inducing cheaper borrowing conditions for Swedish economic entities, and avoiding a stronger krona given the ECB's stimulative stance (Sveriges Riksbank (2015b)). Still, the minutes around that time also note some financial stability concerns in the face of accommodative monetary policy, with some members calling for the FSA to tighten borrower-based macroprudential measures (Sveriges Riksbank (2015a)).

By February 2016, the policy rate reached a low of -0.50 percent, and Riksbank communications reaffirmed its commitment to both negative rates and bond purchases. The policymakers emphasised the continued need for monetary policy to support demand and to bolster inflation expectations. Over this easing period, some members of the Executive Board expressed concerns about the extent of monetary policy easing. For instance, Deputy Governor Ohlsson entered a reservation against the cut in July 2015, and, later, Deputy

Table 2: Summary of Riksbank Monetary Policy Actions in the pre-Covid period*

Period	**Policy Rate Path**	**Inflation & Policy Rationale**
Feb. 2015	0.00% → –0.10%	Inflation fell below zero. Riksbank cut the policy rate into negative territory for first time, initiated QE (SEK 10 billion government bond purchases). Aimed to counteract low inflation expectations, ward off deflation, and avoid krona appreciation.
Mar–July 2015	–0.10% → –0.35%	Inflation remained close to 0%. Riksbank expanded QE. Exec. Board stressed the need to act forcefully, signaled readiness to do more.
Feb. 2016–end 2017	–0.35% → –0.50% then held	Inflation gradually rose, reaching around 2% by mid-2017. Despite improving inflation, rate cuts and QE continued (further SEK 45 billion added). Riksbank emphasised caution, wanted to entrench expectations, worried about counter productive movements in the krona.
2018	–0.50%→ –0.25%	Inflation near target. Increased policy rate by 25 basis points in December; QE re-investments maintained. The Board signaled a future rate hike but highlighted external risks and krona sensitivity. Total bond holdings around SEK 330 billion.
Jan.–Dec. 2019	–0.25% → 0.00%	Inflation close to 2%. Riksbank ended negative rate policy. Cited inflation stability, balanced growth, and financial side effects of negative rates (e.g., on bank margins). Reinvestment of bond holdings continued; portfolio peaked near SEK 380 billion (approx. 35% of government bond market).

* NOTE: Inflation refers to the CPI until September 2017, the CPIF thereafter.

Governors Ohlsson and Flodén voted against the final cut in February 2016 (Sveriges Riksbank (2015c, 2016)).

As inflation slowly approached 2 percent, internal debates on the Executive Board became more pronounced, with Deputy Governors Flodén and Ohlsson voting against further bond purchases in April 2019, citing diminishing policy transmission and growing balance sheet concerns (Sveriges Riksbank (2019a)). Still, others argued that ending QE prematurely would damage policy credibility and risk inflation slipping below its target again.

By October 2019, a majority of Executive Board Members favoured ending negative rates by year-end, citing progress on inflation and a slack labour market (Sveriges Riksbank (2019c)). In December, the policy rate was raised to zero. The Board expressed the view that negative nominal rates had supported inflation and growth, while at the same time emphasizing the need to preserve policy flexibility in case conditions deteriorated (Sveriges Riksbank (2019d)).

The Riksbank's adoption of negative interest rates and QE coincided with a return of CPIF inflation toward the 2 percent target by 2018 and 2019. Flug and Honohan (2022) credit this to the Bank's "policy vigour" and use of "novel instruments," arguing that policy actions were "well-judged" and "effective." Empirical evidence of the effectiveness of these unconventional policy tools will be explored in Section 7.

3.2 Covid-19 Response

Just as the Riksbank had decided to end QE and had succeeded in bringing the policy rate up from negative territory to zero, Sweden and the world economy faced the challenge of dealing with the Covid-19 pandemic. The pandemic brought with it many unknowns and fears about the impact on the economy.

The unusual and dramatic nature of the crisis brought with it a high degree of uncertainty and concerns about financial perils. Global markets seized and domestic financial institutions braced themselves for systemic liquidity shortfalls. In the worst case scenario, Sweden faced the prospect of a collapse in demand, a sharp increase in unemployment, and severely impaired credit flows. Inflation had only just reached 2 percent, and there was genuine risk that it would fall again and, with it, long-term inflation expectations. Sweden's health policy choices in these circumstances were initially much less prescriptive in terms of introducing restrictions on individual behaviour than in many other countries. Nonetheless, Sweden did not avoid elevated uncertainty about the economic impact of the health crisis. Indeed, as a small open economy, Sweden was vulnerable to economic spillovers from what was unfolding in the rest of the world.

In this context, the Riksbank moved quickly to preserve monetary and financial stability,

choosing a combination of targeted asset purchases, lending facilities, and forward guidance to restore market function and support the real economy. The Executive Board decided to leave the policy rate at zero percent, given the view that rate cuts would be ineffective in an environment in which normal consumption was restricted (Jansson (2021)). This view seems, with the benefit of hindsight, to be very reasonable and informed.

The Riksbank's QE response in 2020–2022 came in two phases:

- **Phase 1**: In this first phase QE was implemented to stabilise credit markets under systemic stress;
- **Phase 2**: QE interventions to support inflation and growth in a low-rate environment.

3.2.1 Phase One (March–June 2020): Stabilizing Stressed Markets

The Riksbank's initial use of QE measures were swift and forceful, see Jansson (2021) for a comprehensive review of the Riksbank's Covid response. In March 2020, the Executive Board introduced a SEK 300 billion programme to buy a broad range of securities, including government bonds, municipal bonds, covered bonds, and commercial paper. Importantly, these instruments were applied to address severe dysfunction in key credit markets rather than primarily to provide monetary stimulus as when QE was applied in the 2015-19 period. Asset purchases were part of a broader liquidity strategy that also included enhanced weekly operations in kronor. Beginning in March, the Riksbank offered loans at the policy rate with maturities of three and six months to ensure banks' access to stable funding. Collateral requirements were eased to widen access, by removing the rules on limits for covered bonds as collateral for credit with the Riksbank. The interest rate on the Riksbank's standing lending facility was cut from 75 to 20 basis points above the Policy rate in March and was further lowered to 10 basis points above the policy rate in July.

In parallel, the Riksbank launched a dollar liquidity facility, in which Swedish banks were offered access to up to USD 60 billion through weekly auctions against collateral. This was aimed at easing global funding pressures and maintaining access to dollar liquidity. Although take-up was moderate, the facility served as a vital backstop during heightened global uncertainty.[14] As conditions in international markets improved, demand for USD funds provided by the facility fell sharply, and it was phased out between March and September 2021.

The Executive Board consensus in this period was strong, with members sharing a unified sense of urgency. Board members agreed that preserving the transmission mechanism

[14]The USD 2 billion lent through the facility was funded from the Riksbank's own foreign-currency reserves, and the temporary Federal Reserve swap line was not used.

and stabilizing credit flows was essential to fulfilling the Riksbank's inflation target mandate under these extraordinary circumstances. The May 2020 Financial Stability Report (FSR) underscored the risk of a deterioration in banks' lending capacities with potential adverse consequences for the property sector (Sveriges Riksbank (2020b)). At that time, the minutes did not highlight any particular unease with the scale or composition of asset purchases, although they did acknowledge the risks to the balance sheet, which were viewed to be manageable (e.g. Sveriges Riksbank (2020a), Sveriges Riksbank (2020c)).[15] In addition, the November FSR made it clear that the risks and vulnerabilities posed by the support measures were viewed as being subordinate to the need for acute crisis management (Sveriges Riksbank (2020f)). The Riksbank also acknowledged the complementary actions taken by the FSA to introduce supporting measures, such as reducing the counter-cyclical capital buffer to zero.

Alongside bond purchases and liquidity operations, the Riksbank also launched a "Lending to banks for onward corporate lending" programme (i.e., funding for lending). Up to SEK 500 billion was made available to banks at the policy rate, on the condition that they maintained or increased lending to non-financial firms. The Executive Board viewed the programme as a necessary complement to its asset purchases, especially given the prominence of bank-based intermediation in Sweden's corporate credit market. Several members emphasised its targeted nature: unlike QE, which worked through market-wide channels, this tool was designed to safeguard real-economy credit flows directly (Sveriges Riksbank (2020d)). The programme was replaced with a simpler version in March 2021. The total take up of funding was only around SEK 164 billion, and the programme was terminated in September 2021 as take up at that point had completely stalled for several months, and the Swedish economy had largely recovered. The Executive Board generally agreed that the full package of interventions would be more effective than lowering the policy rate, given the nature of the shock. That said, the minutes made a point of stating that future reductions in interest rates could not be ruled out (Sveriges Riksbank (2020c)).

3.2.2 Phase Two (June 2020–Dec 2021): Return to Monetary Policy QE

As the immediate market distress receded after the outbreak of the pandemic, the Riksbank pivoted toward continuing QE, but now, as in the 2015-2019 period, as a monetary policy instrument with the purpose of stimulating inflation and economic activity. The Executive Board raised the asset purchase envelope from SEK 300 billion to SEK 500 billion in June 2021. While these purchases were initially viewed as essential to stabilizing housing credit

[15] Risks to the balance sheet stemming from monetary policy actions are covered separately from those related to other activities such as the foreign exchange reserves.

markets, by mid-2020 the consensus of the Executive Board members was that the balance of risks was such that considerable monetary policy stimulus would be needed for a while. Still, there was some discussion of potential upside risks to inflation coming from both demand and supply factors, particularly by Deputy Governor Jansson (Sveriges Riksbank (2020c))

This transition marked the entry into classic quantitative easing, with the rationale being to depress long-term yields, support credit, and push inflation back to target. The new corporate bond program, announced in July 2020 (SEK 10 billion initially), was (due to set-up costs) not launched until September 2020, arguably after the initial disruptions in those markets had already receded. In the end, the full SEK 10 billion amount was purchased, but it remained small in scale relative to the Riksbank's other asset purchases and to the size of the corporate bond market. This suggests that its primary contribution operated through a backstop and signalling channel rather than through large-scale purchases.

With inflation well below 2 percent, and a second wave of Covid infections hitting Sweden and the rest of Europe, the Executive Board decided to expand QE purchases to SEK 700 billion in its November 2020 meeting. It also added purchases of Tbills and extended the duration of QE to the end of 2021. While most members supported the broader asset mix and increased size and duration, Deputy Governors Martin Flodén and Anna Breman expressed formal reservations (Sveriges Riksbank (2020d)). There were particular concerns regarding the inclusion of treasury bills (viewed as ineffective), the commitment to purchases in the latter half of 2021, and about the cost effectiveness of the QE purchases in the light of the growing scale of balance sheet risk. Despite these reservations, the majority of the Executive Board approved continued expansion, citing weak inflation expectations and an uncertain recovery path.

The Covid-19 recession turned out to be sharp and deep, but quite short with labour markets stabilizing relatively quickly. Unlike a typical recession, Sweden experienced inflationary pressures from several sources, including supply interruptions due to issues with international supply chains, and inflationary spillovers from Covid-19 related fiscal expansions in many countries. Asset purchases were ultimately terminated at end of 2021, as uncertainty about the outlook had waned and it was becoming clearer that inflation was on the rise.

3.3 Response to the Rise in Inflation

As the economy recovered, the focus of monetary policy shifted to the prospects of inflation exceeding the target. From July 2021 to December 2022, inflation rose from 1.9 percent,

very close to the 2 percent target, to 10.2 percent, far above the target. Core inflation (CPIF ex-energy) was also accelerating. In response to the strong rise in inflation, the Riksbank eventually implemented steep and continued increases in the policy rate, starting from 0 to 25 basis points in April 2022 and peaking at 400 basis points in late September 2023, see Figure 5.

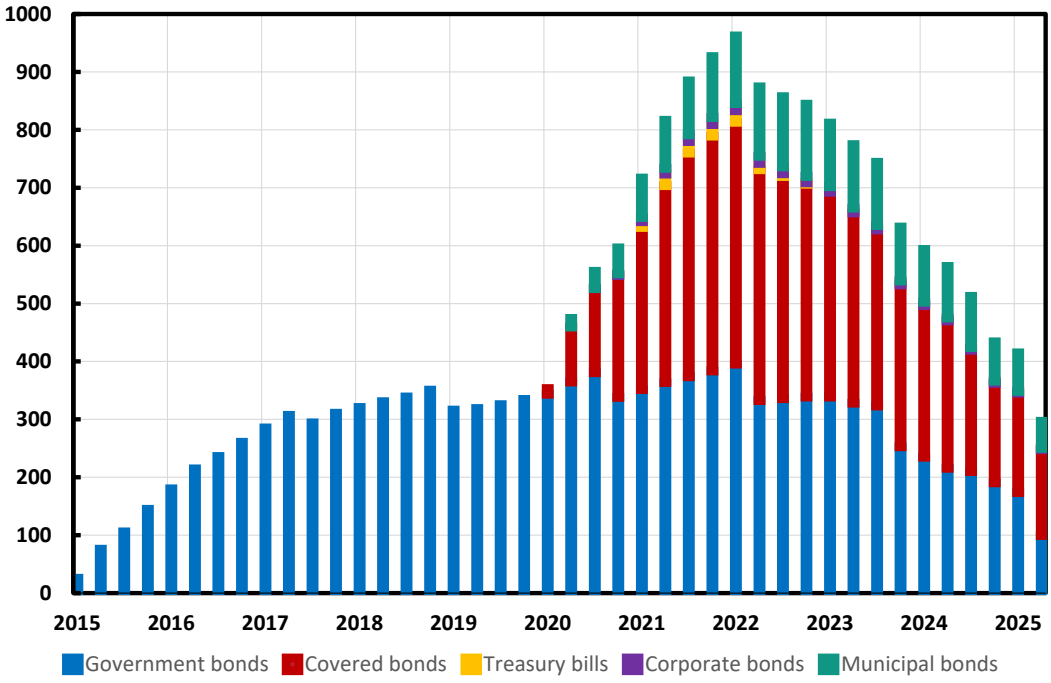
The decision to implement such steep increases in interest rate gave rise to considerable discussion also because the worries about a "wage-price spiral" in Sweden were moderated by the Swedish wage-setting mechanism. The Riksbank generally acknowledged that the Swedish wage setting mechanism was likely to ease immediate worries about inflation feeding wage demands, yet Executive Board members expressed a concern that, in a high-inflation environment, wage formation could adapt to current inflation, thus eventually risking a wage–price spiral (Sveriges Riksbank (2022a)). Tighter monetary policy was viewed as critical to counteracting this risk.

Even as the policy rates spiked, the Riksbank continued to purchase assets for reinvestment purposes, only ceasing purchases altogether in January 2023, three quarters of a year after the decision to increase the policy rate back in April 2022. At that point, the bank's monetary policy asset holdings had peaked at just under SEK 1 trillion, with a heavy skew towards covered bonds (see Figure 6). It should, though, be noted that while the rise in the Riksbank's asset holdings was steep, the overall size of the Riksbank balance sheet as a share of GDP reached only 25 percent, much smaller than in many peer jurisdictions (Figure 7).

By April 2023, the Riksbank had not only terminated its asset purchases, but had also initiated active sales of government bonds (quantitative tightening, QT), becoming one of the first major central banks to move from passive to active QT. As of June 2025, total sales of government bonds had reached approximately SEK 100 billion. This active reduction, combined with natural maturities in the bond portfolio, led to a sharp decline in the Riksbank's holdings of Swedish government bonds: from SEK 405 billion at the end of May 2022 to just SEK 100 billion June 2025. Its overall portfolio of Swedish kronor-denominated assets also fell to less than a third of its peak size. As of mid-2025, covered bonds (SEK 148 billion) and government bonds (SEK100 billion) together accounted for the majority of remaining holdings.

The idea of selling bonds was first debated by the Executive Board in early 2023. Prior to that, Deputy Governor Flodén had argued that the bonds should be held to maturity as it would by itself still lead to a meaningful reduction in the balance sheet (Figure 8), and that mark-to-market losses had already been recognised under accounting rules (Flodén (2022)). In February 2023, the Executive Board decided, unanimously, to complement rate hikes with active bond sales, citing benefits for market liquidity, foreign investment, and

Figure 6: The Riksbank's Monetary Policy Asset Holdings



Note: Billion SEK. Last observation is June 2025.

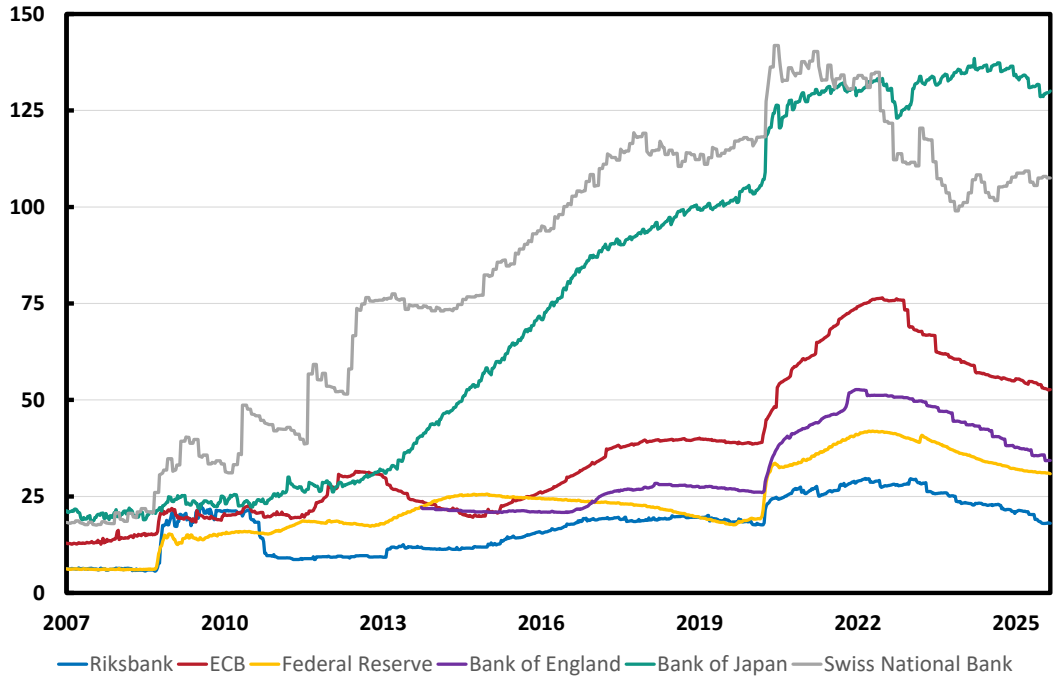
Sources: Sveriges Riksbank.

support for the krona (Sveriges Riksbank (2023a), Sveriges Riksbank (2023d)). Governor Thedéen emphasised the importance of reinforcing confidence in the inflation target and acknowledging the interlinkages between monetary, fiscal, and financial-stability policies (Thedéen (2023)).

The Riksbank began its rate-cutting cycle in May 2024, reducing the policy rate from 4 percent to 3.75 percent. According to the meeting minutes, the decision was supported by evidence of waning economic activity, a clear downward trend in Swedish inflation, and deteriorating confidence indicators in both the household and business sectors (see Sveriges Riksbank (2024a)). Some members, including Governor Thedéen, were cautious, emphasizing the risk that premature easing might reignite inflation expectations, while others worried that waiting too long risked a more severe downturn in growth. The compromise to begin with a small 25-basis-point cut reflected a shared view that the risks had shifted toward weak growth but that inflation uncertainty still warranted a gradual approach.

This cautious policy stance shaped the Riksbank's strategy throughout the remainder

Figure 7: Central Bank Balance Sheets (percent of GDP)



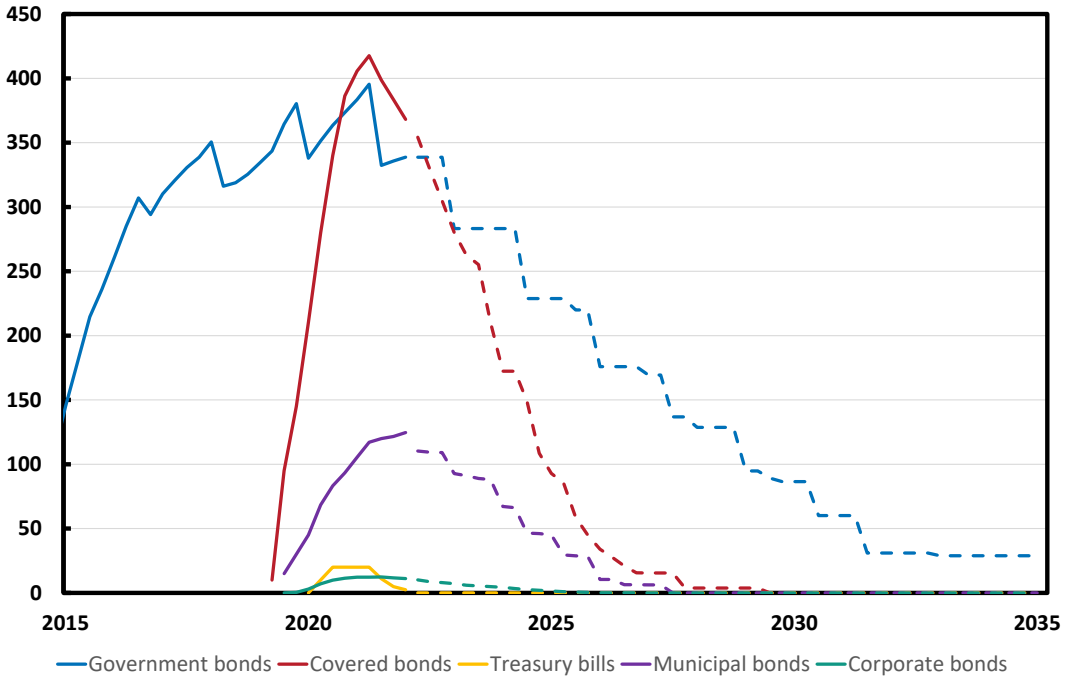
Sources: Eurostat, Japanese Cabinet Office, Statistics Sweden, Swiss State Secretariat for Economic Affairs, U.K. Office for National Statistics, US Bureau of Economic Analysis, respective central bank and Sveriges Riksbank.

of 2024. The policy rate was lowered again by 25 basis points in each of August and September, as inflation continued to ease and forward-looking indicators (e.g., consumer sentiment and private investment) remained subdued. By November, the Executive Board implemented a more decisive cut of 50 basis points, given inflation readings below 2 percent, slowing wage growth, and persistent slack in the labour market. The final cut of the year came in mid-December, bringing the rate down to 2.5 percent, as CPIF inflation dipped to 1.5 percent. Given the development of inflation, with the benefit of hindsight, one may wonder whether more decisive interest rate cuts should not have come earlier even if the GDP gains may have been small, as argued by Hassler et al (2025).

3.4 The Path of the Economy: Real GDP and Unemployment

Figure 9 illustrates the development of real GDP per capita in Sweden (in constant SEK) relative to its trend since 2010. Over the first half of the reporting period, Swedish real GDP per capita was stabilised at a level close to its trend after having been below trend

Figure 8: Monetary Policy Assets 2015-2035 (passive run-off)



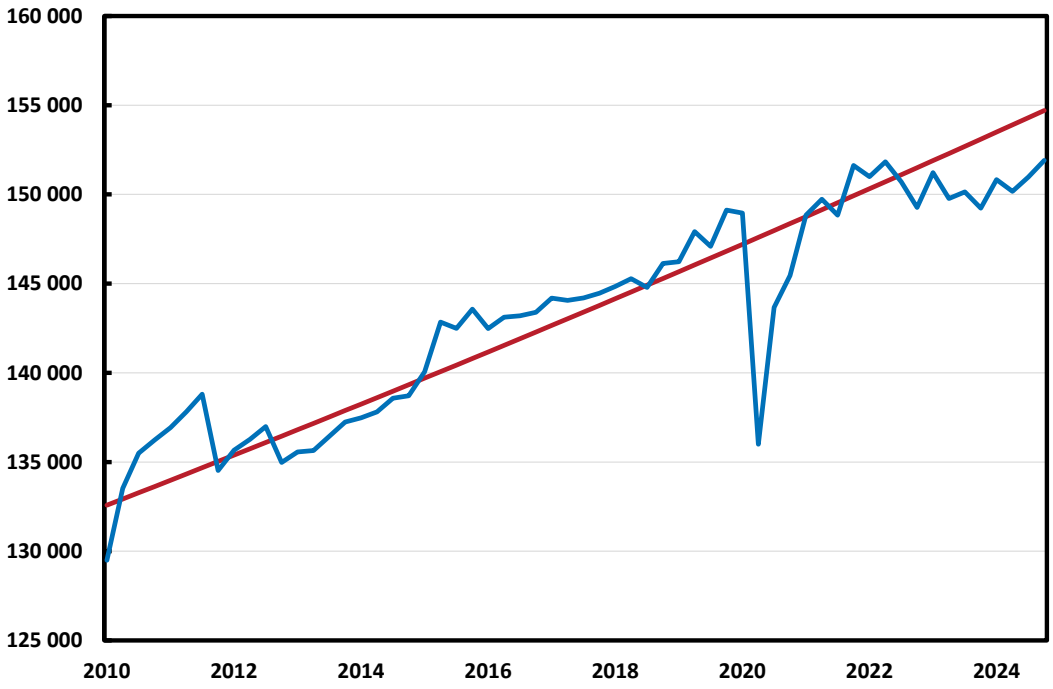
Note: In billion SEK. The figure is reproduced from Flodén (2022), and shows the projected evolution of the Riksbank's asset holdings as of December 2022, based on no further asset purchases after 2022.

Sources: Sveriges Riksbank.

prior to that during 2012-2014. It appears that the reductions in the policy rate just before the reporting period and the subsequent use of unconventional monetary policies during 2015-19 were consistent with maintaining real activity close to its trend potential.

The Covid-19 pandemic induced a sharp fall in overall activity in Sweden, which at its maximum impact (in the second quarter of 2020), was associated with a decline of real GDP of 7.9 percent relative to the trend. After that, real GDP recovered quickly and was back on its trend path by early 2021. Since the spring of 2022, however, the Swedish economy has barely grown at all. The rise in the policy rate to stem inflation likely contributed to this disappointing performance, but Sweden does not stand alone among its peers in its struggle to return GDP growth to trend. Figure 10 shows real GDP per capita corrected for differences in the cost of living of Sweden together with the corresponding series for Denmark, Great Britain, the US, and the Euro Area (normalised to 100 for each geographical unit in the first quarter of 2000). Only the US and Denmark have managed

Figure 9: Real GDP per capita in Sweden and Its Trend



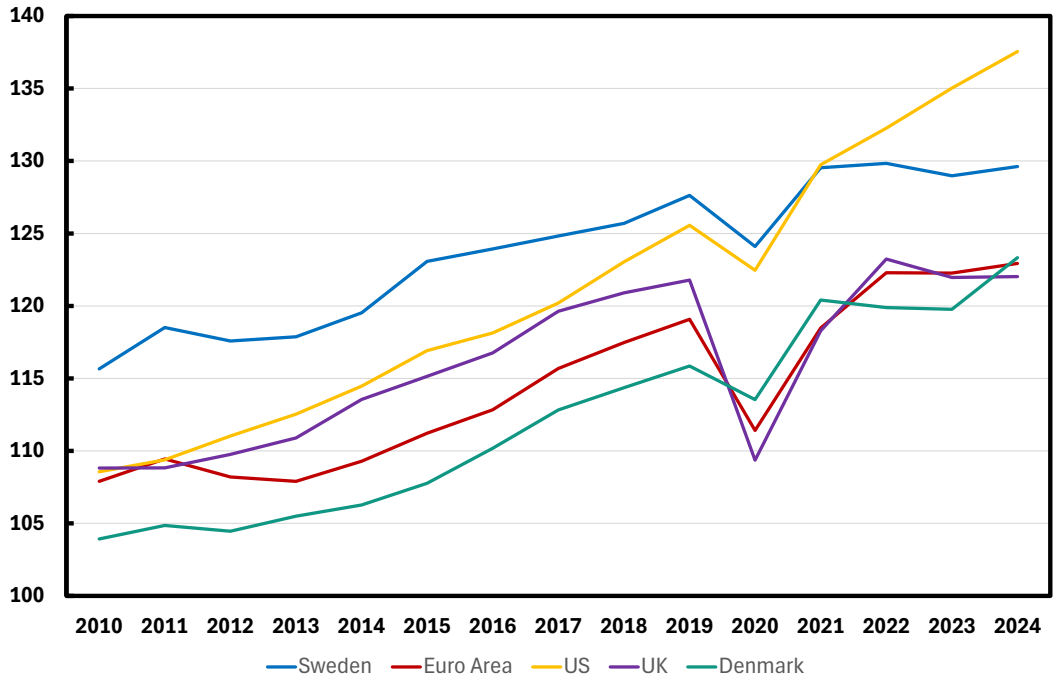
Note: The figure shows real GDP per capita in Sweden (chained 2010 SEK) and its trend. The trend is estimated as a linear trend for log real GDP over the sample 2000 quarter 1 to 2025 quarter 3.

Sources: Sttistics Sweden and own calculations.

to return to their pre-Covid-19 trend paths after 2022, while Sweden, Great Britain and the Euro Area have not. Given that Denmark operates an exchange rate peg to the Euro so that the Danish policy rate is effectively the same as in the Euro Area (and very close to the one in Sweden), Sweden's relatively weak outturn in the recent recovery does not seem to be explained by monetary policy. We do notice, however, that over the last 25 years since 2000, the growth performance of Sweden has been comparatively strong. In Sweden, growth has brought about a cumulated rise in real GDP per capita of about 30 percent, significantly above the 22-23 percent rise in Denmark, the Euro area and the UK, with only the US outperforming Sweden (and this occurring only after the pandemic).

Figure 11 shows the unemployment rate in Sweden since 2000 in comparison with other economies. Unemployment in Sweden – and all other geographical units shown – rose sharply after the GFC and reached at its maximum (in the third quarter of 2009) 9.1 percent, a 3 percentage points increase from its trough in the third quarter of 2007. It is

Figure 10: Real GDP per Capita: International Comparison



Note: The figure shows real GDP per capita in Sweden, the US, Great Britain, the Euro Area and Denmark. Real GDP per capita is measured in USD, constant purchasing power parity. The series for each country is normalised to 100 in 2000 quarter 1.

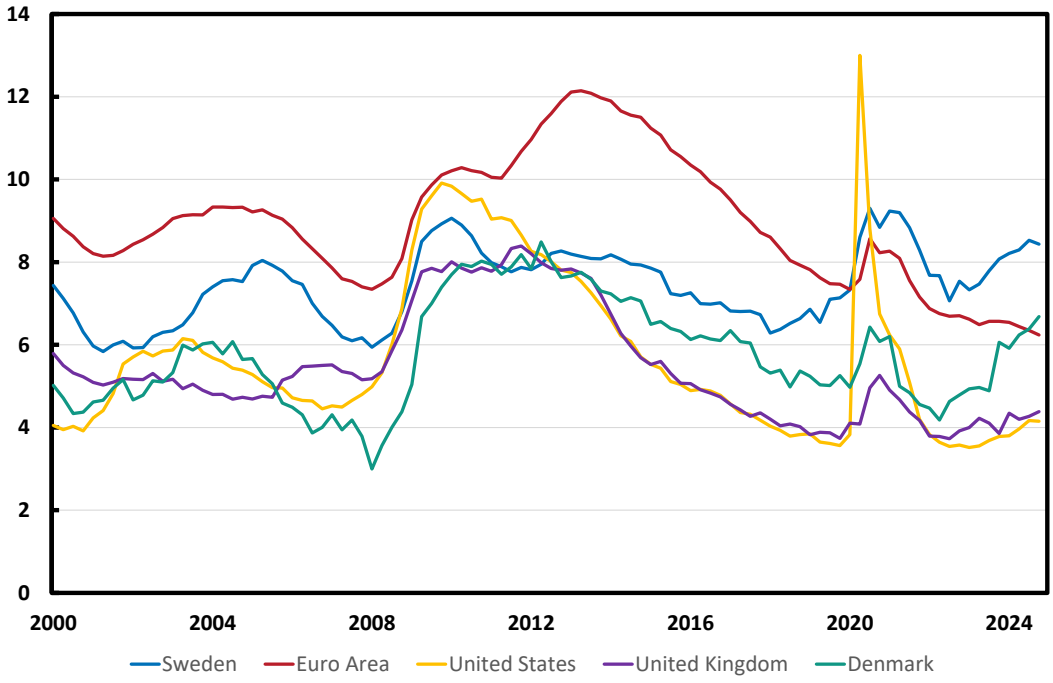
Sources: OECD and own calculations.

noticeable, though, that Sweden has not managed to return the unemployment rate to its pre-GFC level in the 18 years that have passed since.

In the first half of the reporting period, unemployment in Sweden *did* show signs of a recovery falling from 7.7 percent at the start 2015 of to 6.8 percent at the end of 2019. This recovery was interrupted in the early stages of the pandemic where it rose sharply to 9.6 percent by the first quarter of 2021. Since then, unemployment in Sweden has only recovered very gradually, and it has not returned to the pre-pandemic level.

In a comparative light, the unemployment situation has been somewhat disappointing in the second half of the reporting period. The high unemployment rate is partially explained by the Swedish labour market participation rate which is high and rising. In the third quarter of 2024, for example, the activity rate of the Swedish population between 15 and 74 years old was 75.3 percent as compared to 65.8 percent in the Euro Area and 68.1 percent in the US. However, the Swedish activity rate is comparable to Denmark (74.4 percent)

Figure 11: Unemployment Rates in Sweden and Other Economies



Note: The figure shows the unemployment rate in percent Sweden and other economies since 2000.
Sources: OECD.

while the unemployment rate is significantly lower in Denmark. The comparatively high unemployment rate in Sweden is therefore likely to derive from structural issues related to the labour market rather than from actions of the Riksbank given the relatively similar interest rate paths of Sweden, Denmark and the Euro Area.

3.5 Points of Discussion

Given this record of monetary policy actions and the related challenges faced by the Riksbank over the evaluation period, five issues merit further consideration:

- How does monetary policy affect the economy, both when the policy rate is available and when unconventional instruments are used? Understanding the transmission channels, including the effects of quantitative easing, is central to interpreting policy over the past decade. We discuss this in Section 4 and Section 5.

- Why did the Riksbank not begin raising the policy rate earlier during the inflationary

episode that started in the autumn of 2021, and what is the role of the forecast performance for explaining this? We discuss this in Section 6.

- What are the balance-sheet risks created by the use of QE, and what are the implications for the interaction between monetary and fiscal policy, including the capital injection of SEK 25 billion in September 2025? We consider this in Section 7.

- What are the implications of Sweden's status as a small open economy operating flexible inflation targeting under a floating exchange rate? Considerations with regard to the choice of Sweden's exchange rate regime are assessed in Section 8.

- What are the risks associated with capital inflows and outflows, particularly in times of financial stress, and what is the rationale for the Riksbank's sizable foreign-exchange reserves? These issues are discussed in Section 9.

Although we present these issues separately, many are closely connected, and we draw out those links in the discussion that follows. Moreover, the historical context in Section 2 bears on several of these issues, and we draw on it when relevant in the analysis that follows.

4 Conventional and Unconventional Monetary Policy Tools

As outlined in Section 3, the Riksbank has made extensive use of unconventional tools since the Global Financial Crisis (GFC), including negative nominal interest rates, quantitative easing and forward guidance. These tools were examined in the previous assessment of the Riksbank by Flug and Honohan (2022), which covered the 2015 to 2020 period. Building on that analysis, we draw on additional experience and hindsight to offer further perspective into their effectiveness and associated risks.

We start by outlining the channels through which monetary policy affects the economy under normal circumstances (i.e., when there are no constraints on the use of the policy rate), and present some evidence on the strength of monetary policy transmission in Sweden. We then explore the arguments for why and how unconventional policies, such as negative nominal interest rates and QE, are considered options when the policy rate is at the zero lower bound. After this, we examine the evidence on the effectiveness of unconventional monetary tools in the Swedish case over the assessment period.

4.1 Conventional Monetary Policy

The main way central banks attempt to influence inflation and other aims, such as general activity or employment, is by making interventions that impact on the cost of short-term funds for financial institutions. This "price of liquidity" is the cost to banks of creating credit and determines the rate of return on their safest, most liquid assets.

Before the GFC, the Riksbank, and most other central banks, operated a *scarce reserves* system in which the policy rate affected liquidity conditions through short-term interbank funding markets. Since the GFC and the deployment of QE, many central banks have shifted to an *ample reserves* system where the central bank pays interest on reserves and provides liquidity to banks. In Sweden, the Riksbank offers Riksbank Certificates, which are one week maturity deposits remunerated at the policy rate. In this system, banks thus hold interest-bearing reserve deposits directly at the central bank. The Riksbank's policy rate sets both the interest on these deposits, and on standing facilities which are overnight deposits or loans at interest rates 10 basis points above and below the policy rate, respectively.[16]

By varying the policy rate, the Riksbank attempts to influence market interest rates faced by Swedish economic entities both on their borrowing and on savings. For instance, when the policy rate rises, banks earn more on their central bank deposits, but their cost of liquidity also rises. Hence, typically they will raise their lending rates. Similarly,

[16]Banks can also obtain liquidity at the supplementary liquidity facility, but at a 75 basis points premium relative to the policy rate.

the rates offered by banks on bank customer deposits may also rise given the increase in the cost of liquidity when obtained from the Riksbank, although there is evidence that the pass-through from policy rates to deposit rates is weak in an ample reserves system (see Messer and Niepmann (2023) for evidence from the Euro area). According to the mainstream view, these indirect changes in market rates that follow policy rate changes influence the borrowing and savings decisions of households and businesses, and therefore affect aggregate demand and the inflation rate. Since spending decisions depend on *real* interest rates (i.e., nominal rates adjusted for expected inflation), the mainstream view works under the assumption that prices are "sticky." This ensures that *real* and *nominal rates* move in tandem in the short run.[17]

In this paradigm, when the Riksbank lowers the policy rate, households are encouraged to spend rather than save, while firms are more likely to undertake investment, thus boosting demand and, eventually, inducing firms to raise prices.[18] Conversely, rate hikes restrain demand and put downward pressure on inflation. Central bank credibility matters for the effectiveness of monetary policy: If firms and households doubt the policy maker's commitment to the inflation target, price adjustments may not follow as intended.

Three additional transmission channels reinforce these effects. First, as interest rates rise, lower demand reduces income, which leads to further spending cuts (the so-called "Keynesian cross"). Second, higher interest rates increase payments on variable rate and maturing mortgages, which can result in lower consumption especially among highly-indebted households. This "cash flow channel" may be particularly strong in Sweden, given the predominance of variable-rate mortgages (see, for instance, Flodén et al (2021)).[19] Finally, in small open economies like Sweden, higher interest rates can also appreciate the currency, lowering import prices and adding further downward pressure on inflation.

These mechanisms are best seen as operating over the short-to-medium term, such that eventually after prices have adjusted, the effects will peter out. In other words, the longer-term real return on assets is insensitive to the policy rate. However, in the short-to-medium run, the extent to which changes in output impact on inflation is determined by the so-called "slope of the Phillips curve," which is a key object studied by central banks and by macroeconomists more generally. The general view is that this slope was very flat prior

[17] This reflects a shift in monetary theory. Earlier approaches, such as the quantity theory of money, emphasized money supply growth. The key assumptions were that prices are flexible and the velocity of money is stable. In contrast, modern frameworks assume that prices and wages adjust slowly (are "sticky"), such that changes in *nominal* interest rates directly affect *real* interest rates in the short run.

[18] In the very short run, firms may also deplete inventories, but rebuilding these requires higher input use.

[19] Flodén et al (2021) study high quality Swedish data and document that indebted households' consumption spending declines significantly more in response to variations in the policy rate than spending of households without debt.

to the recent surge in inflation but steepened as inflationary pressures built up. This was another important consideration of the Riksbank decisions regarding the appropriate level of the policy rate.

While it is important to understand the theoretical channels through which monetary policy works, just how effective the Riksbank's policy actions are is an empirical question about the strength of the transmission mechanism.

4.1.1 Evidence on the Impact of Conventional Monetary Policy in Sweden

Evaluating the causal effects of monetary policy is not straightforward. The main challenge is that not only does the economy react to interest rates, but the interest rate set by the Riksbank also reacts to the state of the economy (known as "reverse causality"). If both interest rates and inflation rise, this may reflect either (i) a central bank tightening of monetary policy in response to inflationary pressures, or (ii) higher interest rates themselves pushing inflation up.[20]

Disentangling the channels requires following special econometric strategies to address the issues relating to reverse causality by identifying monetary policy "shocks."[21] No method is perfect, as each empirical strategy rests on specific assumptions that may affect the results. To build a more credible picture, it is therefore useful to compare results across methods. We look at three recent studies of the impact of conventional monetary policy in Sweden, each using a different way to identify exogenous monetary policy shocks, as summarized in Table 3. All studies use Swedish data over periods in which the Riksbank has operated the inflation target and exchange rates have been floating (post 1993).

Berggren, Mammos, and Strid (2024) use a statistical approach combined with minimal economics-based assumptions to measure the impact of monetary policy in Sweden. This approach essentially exploits variation in key variables over time to estimate how monetary policy decisions impact on the economy. With this knowledge at hand, one can then also consider how the actions of the Riksbank may have helped stabilise inflation and the economy at large in Sweden. The particular approach that they adopt is a so-called Bayesian vector auto-regression (VAR) estimator applied to Swedish data from 1995–2022. Such VAR models specify the joint dynamics of inflation, GDP, unemployment, the exchange rate, and foreign variables as linear processes. The identification of monetary policy shocks comes from the assumption that all variables except the exchange rate react with at least a three-month lag to monetary policy shocks. This is a standard, but not uncontroversial,

[20] Economists describe this an "endogeneity" problem, in that policy actions are not random, but systematic responses to economic shocks.

[21] A monetary policy shock is an unexpected change in the central bank's policy stance (such as the policy interest rate) that is not a systematic response to current economic conditions.

Table 3: Three empirical methods for identifying the causal effects of Swedish monetary policy.

Study / Method	**Method Description**	**Pros and Cons**
Berggren et al. (2024), Bayesian VAR with timing restrictions	Statistical model of inflation, GDP, unemployment, exchange rate, and foreign variables (1995–2022). Shocks identified by assuming most variables react with a lag while the exchange rate reacts immediately.	**Pros:** Captures rich dynamics across many variables; widely used tool. **Cons:** Relies on timing assumptions that may not be realistic; slow-reaction assumption debated.
Almerud et al. (2024), High-Frequency Identification + Proxy-SVAR of Mertens and Ravn (2013)	Uses changes in asset prices within 30 minutes of Riksbank announcements as "surprise" policy shocks. Decomposes into target (current rate) and path (forward guidance) shocks.	**Pros:** Exploits very high-frequency data, limiting reverse causality; separates rate and guidance effects. **Cons:** Assumes only monetary news drives asset prices in the window; decomposition relies on statistical choices.
Coglianese et al. (2025), Narrative quasi-experiment	Examines 2010–11 tightening, when the Riksbank raised rates well above rule-based prescriptions. Treats this as an exogenous policy shock.	**Pros:** Grounded in a clear historical episode; intuitive and transparent. **Cons:** Hinges on interpreting the episode as fully exogenous; findings may not generalise beyond that case.

restriction. The Bayesian aspect of the analysis is adopted due to the fact that the time-series that they study are short making it useful to use any information available apriori to estimate the key parameters.

This study finds that a one percentage point increase in the policy rate gives rise to a decline in Swedish inflation of around 0.5 percent which occurs with 1-1.5 years delay, a decline in aggregate Swedish real GDP of around 0.7-0.8 percent which also arises with a significant delay of around 2 years, and a rise in the unemployment rate corresponding to around 0.6 percentage points which occurs with a delay similar to that of output. These authors also find that the real exchange rate appreciates with around 2.5-3 percent following the assumed one percentage point rise in the policy rate and this change occurs almost instantaneously. Each of these responses are temporary and dissipate gradually over time

leaving the economy unaffected after around 5 years. These estimates of the impact of monetary policy on real GDP are larger than those in most other previous studies, a finding that the authors relate to increasing output effects of Riksbank monetary policy decisions over time.

Interestingly, this study also takes a detailed look at the pass-through of the policy rate to other interest rates in Sweden. They find that the pass-through of the policy rate to the interbank offered rate (the STIBOR), the 3 months mortgage rate, and to the corporate loan rate are all very high and close to one in the short run. They also find substantial pass-through to the deposit rate offered by banks, while the pass-through to longer term mortgage loans and 10 year government bond rates is smaller (around 0.4 and 0.1, respectively).

These results suggest that the policy rate is a powerful tool to regulate demand in the Swedish economy through the channels discussed above. There are potential weaknesses of this statistical analysis, though. One may question the assumption that the inflation rate and other variables apart from the exchange rate cannot respond within a 3 months period to the policy rate. One may also wonder whether it is appropriate to focus entirely on the policy rate given, as discussed further below, the use of unconventional monetary policy instruments since 2015.

An alternative approach to estimating monetary policy shocks is to study in detail asset price movements in the vicinity of monetary policy events such as the communication of the Riksbank after its Executive Board meetings. The press releases of the Riksbank, as well as other channels of communication, impact on financial markets to the extent that they contain information that is news to market participants. The surprise component of monetary policy announcements can be isolated by examining swap rates or other forward-looking asset prices, in narrow windows around these events. Following such an approach, often referred to as a High Frequency Identification (HFI), Almerud et al (2024) measure monetary policy surprises by exploiting tick-level information on asset prices in narrow windows around monetary policy announcements from January 2000 to June 2024.

One issue with the corresponding monetary policy news measure is that it may contain information about separate aspects of monetary policy, including the surprise movement in the policy rate and forward guidance. Forward guidance refers to central bank communication about *future* policy rate changes rather than surprises about *current* rate, a particularly relevant consideration during the period studied (further discussed below). A third aspect also discussed below is QE. To address this issue, Almerud et al (2024) decompose the overall surprise element into different components. This type of decomposition relies on making a number of statistical assumptions, and so the results are not unique. Nonetheless, relative to the monetary policy shock identified with the method of the pre-

vious approach discussed above, the approach in Almerud et al (2024) presents a more refined measure of monetary policy shocks.

In a second step, Almerud et al (2024) use the identified monetary policy news components in a time-series setting to estimate their impact on outcomes of interest. In this step they apply a Proxy SVAR approach that uses the different dimensions of the monetary policy news as instruments for the shocks of interest. For the conventional monetary policy shock, they find results that are generally qualitatively consistent with Berggren, Mammos, and Strid (2024), Specifically, a hike in the policy rate produces a decline in inflation and output, an appreciation of the real effective exchange rate, and an increase in unemployment. Quantitatively, this study finds an even larger impact of monetary policy on output (1.5 percent at its peak that occurs with a two year delay). The exchange rate effects are also substantially larger with the real appreciation varying between four and six percent in the first 18 months following the interest rate hike. The effects of monetary policy tightening on the price level peak after two years, similar to Berggren, Mammos, and Strid (2024).[22]

Coglianese, Olsson and Patterson (2025) take a different perspective and use what is referred to as a "natural experiment" approach exploiting the monetary policy tightening in Sweden in 2010-11 to estimate the impact of monetary policy shocks in Sweden. As discussed in Section 3, the Riksbank had decided to hike the policy rate, arguably due in large part to concerns about the housing market. This episode can therefore be viewed as a monetary policy shock because it was unrelated to inflationary pressures that should dictate monetary policy decisions in Sweden in that period under the 1999 *Riksbank Act*. This approach effectively exploits quasi-experimental variation for identification in a fashion similar to causal investigations in many natural sciences.

The authors find that, at its peak, the monetary policy tightening was associated with a one percentage point increase in the policy rate above its expected "normal level" given economic circumstances (with the peak interest rate effect occurring in mid-2011). In response to this, unemployment increased by an estimated 2 percentage points in the 2012-14 period, a very large effect relative to the two studies above. Coglianese, Olsson and Patterson (2025) also find a large impact on other macroeconomic outcomes. Real GDP is estimated to have dropped by 5 percent due to the monetary tightening, exports by 10 percent, and fixed investments by close to 15 percent. In each case, the maximal impacts occurred around 2.5 years after the monetary policy tightening and with the dampening effects persisting until well into 2015. Their estimates also indicate a significant downward

[22] Berggren, Mammos, and Strid (2024) estimate the impact on the inflation rate while Almerud et al (2024) estimate the impact on the price level. To make the two estimates comparable one needs to cumulate the inflation response in the former study.

drag on inflation with the price level declining by more than one percent around 2013 due to the monetary policy tightening before eventually recovering gradually thereafter.

An interesting finding in this paper is that the increase in the policy rate *did* have powerful effects on the Swedish housing market in terms of depressing house prices and household sector indebtedness, but that this came at significant economic cost. This study also argues that the large estimated monetary policy effects are related to significant downward rigidity of nominal wages in Sweden.

In summary, the qualitative results of these empirical studies are broadly consistent with the mainstream thinking about monetary policy transmission mechanisms discussed in the previous section. The statistical evidence reviewed here, while subject to important caveats, points to a qualitatively significant role for the Riksbank in terms of inflation outcomes. It also indicates that there are important trade-offs in terms of the impact on output, unemployment, and other real economic outcomes. Given that the Riksbank operates a flexible inflation target regime, these trade-offs are relevant to the Executive Board when considering how to best calibrate a monetary policy response. The studies each indicate that changes in the policy rate have large effects on the Swedish economy. There is some disagreement across studies about the sizes of the effects, however, indicating that a detailed analysis on the part of the Riksbank would be helpful.

4.2 Unconventional Monetary Policy

In normal times, as just discussed, the Riksbank can regulate inflationary pressures by adjusting its policy rate as it deems necessary given forecasts of inflation and other conditioning information. However, when deflationary pressures are sufficiently strong, the conventional monetary policy tool may become constrained by the "effective lower bound" (ELB).

Such a constraint can arise because of the availability of physical cash, which pays a zero nominal return. If deposit rates turn deeply negative, households and businesses may withdraw funds to hold cash, limiting how deeply negative the policy rate can go in practice. This is viewed as a binding constraint even in economies such as Sweden where cash usage is low (Armelius, Boel, Claussen, and Nessén (2018)). An ELB on the policy rate can also arise because households at some point become satiated with cash, implying that further nominal interest rate reductions become ineffective in affecting real cash balances.

When the ELB binds, conventional rate reductions are ineffective, and central banks, including the Riksbank, may therefore turn to unconventional policy tools. The key characteristic of such policies is that they place greater emphasis on channels of monetary transmission other than movements in short-term interest rates, such as long-term interest

rates, asset prices, and expectations. These tools are often used in combination to produce mutually-reinforcing effects.

4.2.1 Negative Nominal Interest Rates

Negative nominal interest rates involve charging commercial banks and other financial institutions interest on their krona-denominated claims on the Riksbank. In other words, investing in Riksbank Certificates and depositing excess reserves at the Riksbank become costly for financial institutions. This unconventional instrument aims at encouraging financial institutions to lower lending rates and increase loan issuance.

Negative interest rates are, in principle, relatively easy to implement operationally, but their effectiveness in stimulating aggregate demand depends on the pass-through from the reserve deposit rate to the borrowing costs faced by households and businesses. While one would not expect lending rates of commercial institutions to become negative, the policy may reduce the spread between borrowing and lending rates and thereby stimulate spending and inflation.

A potential issue with regards to the effectiveness of negative nominal interest rates relates to bank profitability. Abadi, Brunnermeier, and Koby (2023) argue that there exists a lower bound, which they call the "reversal rate," below which further cuts become counterproductive because they are inconsistent with the profitability of the banking sector. The reversal rate may be even be positive in circumstances where capital gains from banks' maturity transformation are small.

4.2.2 Quantitative Easing

A second type of unconventional monetary policy is QE, also referred to as large-scale asset purchases. As the name indicates, QE consist of central bank purchases of assets. Such large-scale purchases of longer-term government debt, or even risky private-sector assets such as corporate bonds, mortgage bonds, or equity, go beyond standard operations and are therefore referred to as an unconventional tool.

There are several reasons why central banks may engage in such purchases. The first is as an emergency action in situations where financial market stress calls for central bank intervention to avoid market freezes. The second is to increase the supply of liquid assets in circulation as an alternative to conventional monetary policy when policy rates are constrained by the ELB. The third, and related, reason involves an attempt to manipulate longer-term interest rates directly. In all cases, the central bank purchases less liquid or longer-duration assets in exchange for more liquid reserves (or other holdings of very liquid assets) in order to influence portfolio decisions, expectations, and term premia.

Prior to the GFC, mainstream thinking among economists was that central bank asset purchases have limited macroeconomic effects in well-functioning financial markets (i.e. in circumstances different from market freezes). This view rests on the assumption that the identity of the asset holder should not matter for pricing. The former Chair of the US Federal Reserve, Alan Greenspan, was a proponent of this view. When commenting on mortgage purchases of the Government Sponsored Enterprises (GSEs) in the US, he stated that "*Fannie's and Freddie's purchases... with their market-subsidised debt do not contribute usefully to mortgage market liquidity, to the enhancement of capital markets in the United States, or to the lowering of mortgage rates for homeowners*" (Greenspan (2005)).[23]

That said, several theoretical frameworks developed before and after the GFC provide candidates for channels through which QE can affect financial conditions, even in the absence of market dysfunction. The *portfolio balance channel*, formalized by Tobin (1969) and resurrected by Bernanke and Reinhart (2004), describes how central bank purchases of long-duration assets can lead investors to shift into riskier assets, compressing risk premia and easing financial conditions. The *signalling channel* emphasizes that QE can convey the central bank's commitment to keeping policy rates low, thereby anchoring forward rates and inflation expectations. The *market segmentation* channel builds on the idea that asset purchases can affect yields if investors have preferences over specific asset types so that substituting less-preferred assets for more-preferred assets can stimulate demand (cf. Culbertson (1957), Modigliani and Sutch (1966), and Vayanos and Vila (2021)).

QE comes with many unknowns and with several layers of risk. The central issue is the extent to which it is effective, particularly in a small open economy such as Sweden. Swedish bond yields are strongly influenced by global financial conditions, and international arbitrage limits the extent to which domestic asset purchases can compress long-term rates, see Alsterlind (2015). On the other hand, in an open economy, if domestic and foreign bonds are imperfect substitutes, QE may also impact on inflation through the exchange rate.

Evaluating the importance of these channels empirically is inherently hard for a variety of reasons. First, we simply do not know how the economy would have evolved in the absence of such purchases, although reasonable attempts can be made using statistical analysis. Secondly, much of QE was conducted for endogenous reasons, thus making empirical analysis difficult due to reverse causality issues. Nonetheless, efficacy is an important issue that we will return to below.

[23] Fieldhouse, Mertens and Ravn (2018) find evidence against this neutrality view for such GSE asset purchases even before the GFC.

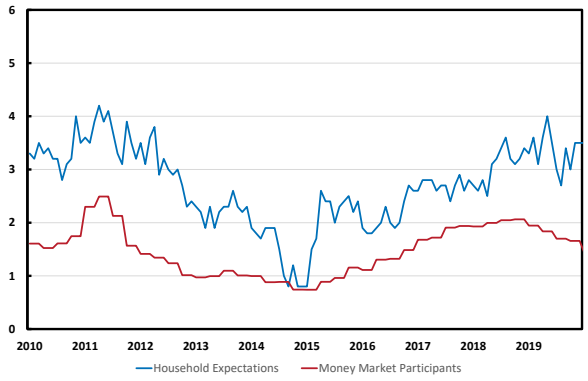
4.3 Evidence on the effectiveness of unconventional policy tools in Sweden

4.3.1 Policies implemented over the 2015 to 2019 period

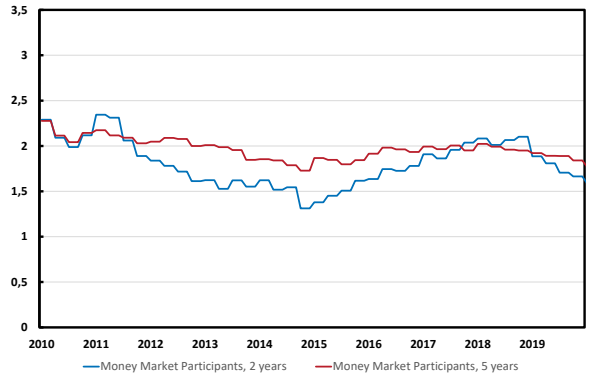
As outlined in Section 3, the main aim of introducing unconventional monetary policies was to bring inflation back to its two percent target and to stabilise longer term inflation expectations. CPI Inflation in this period increased steadily from -0.2 percent (at the annual rate) in January 2015 to above one percent from October 2016 and very close to the two percent target from April 2017 until the beginning of 2020 (apart from two months in the autumn of 2019 when the new target, the CPIF inflation rate, dipped to 1.3 percent).

Figure 12: Inflation Expectations

1 year horizon



2 and 5 year horizons



Note: Percent. Expectations at the time of measurement of different agents about CPIF inflation 1, 2, and 5 years ahead.
Sources: Origo Group, Sveriges Riksbank.

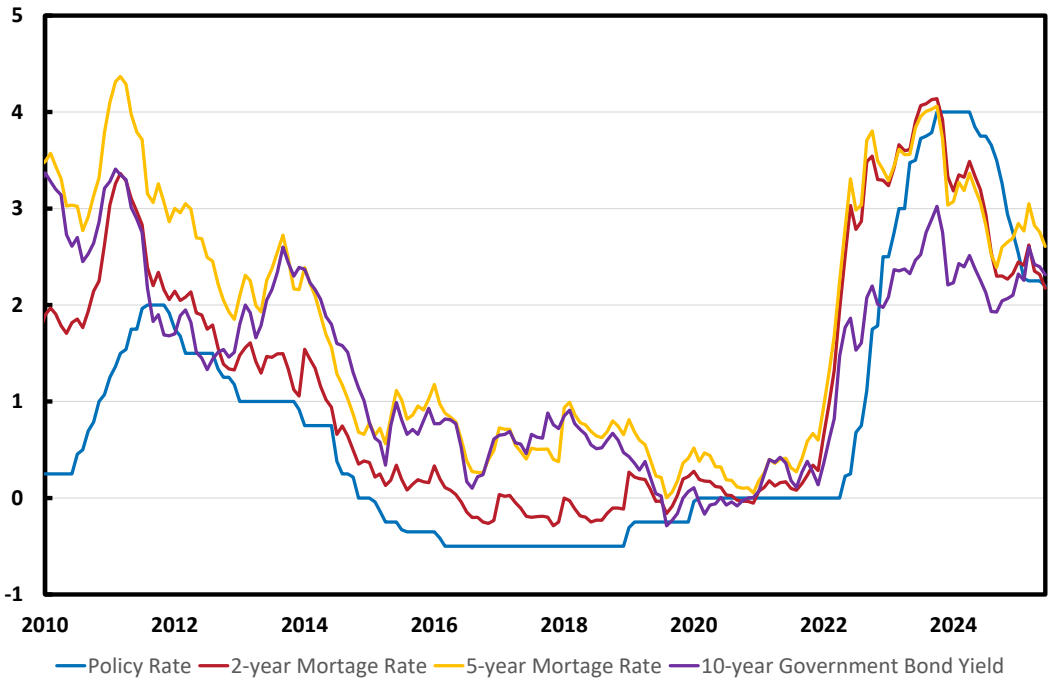
Inflation expectations also appear to have been re-anchored. Figure 12 illustrates measures of inflation expectations at different horizons, based on either the household survey conducted by the Konjunkturinstitut, or on surveys of Money Market Makers conducted by Origo on behalf of Riksbanken.

- The 1-year horizon inflation expectation measure of the Konjunkturinstitut is very volatile over time, and not firmly centered on the two percent target. Such features are not uncommon for household survey-based inflation expectations measures. This inflation expectations indicator drifts down from late 2012, but then reverses gradually as the Riksbank implements negative interest rates and QE. The Origo 1-year inflation expectations measure also displays a negative trend prior to 2015 that reverses to hover around two percent until the Covid-19 recession.

- The measures relating to longer term inflation expectations at the two or five years horizons, which are likely a better reflection of policy credibility, are much more stable. That said, they both display qualitatively the same behaviour with a negative trend from the early 2010s that is reversed with the introduction of unconventional policies. Thus, the evidence is consistent with the hypothesis that the use of the unconventional policies succeeded in re-anchoring market expectations of inflation.

The evidence from market interest rates is also consistent with pass-through of negative nominal rates to market rates, and with QE having eased downward pressures on longer term interest rates. Figure 13 illustrates the policy rate along with a variety of longer term interest rate indicators, 2-year and 5-year mortgage rates, 10-year government debt yield, and 10-year High Quality Corporate bond rates. As the Riksbank implemented negative rates and engaged in QE, each of these longer-term interest rate indicators declined and remained low until the Covid-19 recession.

Figure 13: The Policy Rate and Longer Term Interest Rates

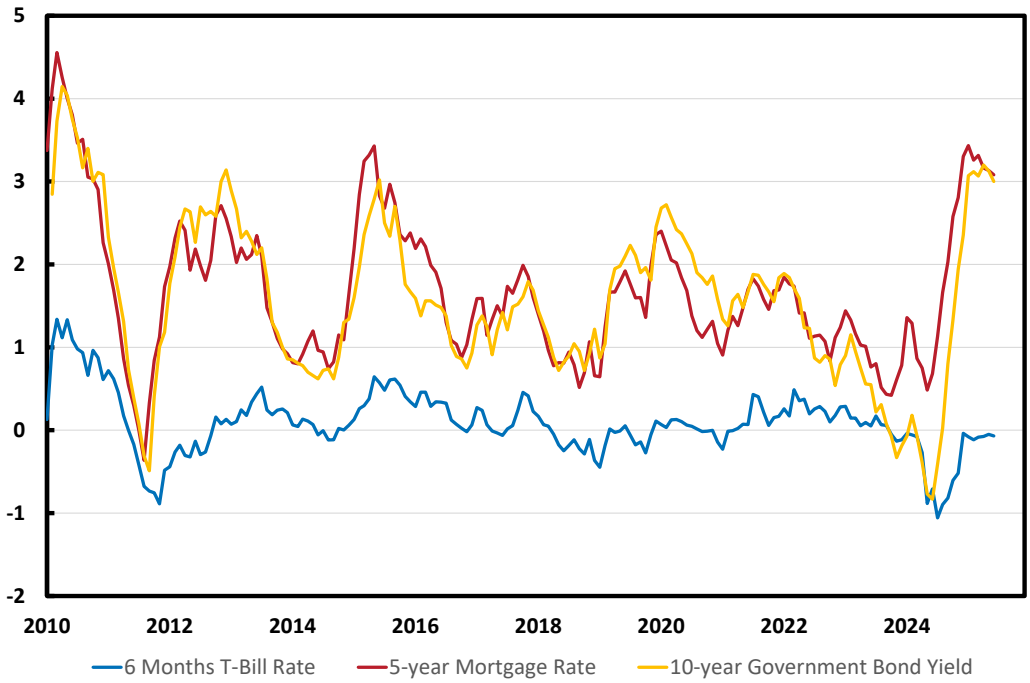


Note: Percent.
Source: Sveriges Riksbank.

Another indicator comes from the spreads between various bond yields and to the

policy rate. These spreads remained relatively constant as the unconventional policies were implemented. Although many factors such as changing risk premia can affect these spreads, relatively stable spreads are consistent with pass-through from the policy rate to government bonds of different maturities, and with pass-through to mortgage rates.

Figure 14: Interest Rate Spreads Over the Policy Rate



Note: Percentage points.
Source: Sveriges Riksbank.

More formal and rigorous assessments also find evidence of pass through, although the findings are nuanced. De Rezende (2017) examines the impact of the initial rounds of QE Sweden in combination with negative interest rates. The results in this study indicate that the combination of the two policies reduced both short-term and longer-term interest rates. Eggertsson et al (2024) also find evidence for Sweden of strong and rapid pass-through of negative nominal interest rates to yields on liquid assets such as money market rates, and government debt. However, this study also argues that the pass-through to lending rates and the associated impact on credit volumes declined as the policy rate fell below -25 basis points, a result that the authors relate to the impact of negative rates on bank equity values. This suggests that the interest rate cuts in July 2015, when the policy rate was

reduced from -0.25 percent to -0.35 percentage point, and in February 2016 (a further cut to -0.5 percent) were ineffective in stimulating inflation through standard demand channels.

The evidence of whether QE translated into the desired outcomes for the economy and inflation is more mixed. Christensen and Zhang (2024) find impacts of QE on inflation and inflation expectations in Sweden, with the desired improvements in Swedish bond prices working through portfolio re-balancing and scarcity channels. In contrast, Di Casola and Stockhammar (2021) fail to find an impact of QE on inflation, although they do find a positive effect on GDP and a negative impact on unemployment. The results from such types of studies should be taken with a pinch of salt, given that it is very difficult to identify the impacts of QE and of negative nominal rates given the endogeneity of the Riksbank's decision to use these unconventional policy tools. In this dimension, it should be recognised that the causality between the Riksbank's policy actions and inflation is hotly debated, particularly given external forces at play that were putting upward pressure on prices at the time (Andersson and Jonung (2020)).

A complementary approach is to construct a counterfactual using a structural model of the economy. Kolasa, Laséen, and Lindé (2025) use an open-economy DSGE model, calibrated to the Swedish economy, to assess the impact of negative interest rates and QE over the 2015-19 period.[24] They find that the Riksbank's unconventional policies were effective, particularly because Sweden is a small, open economy operating a floating exchange rate. The reason is that, in their model, asset purchases led to a real depreciation of the kronor, which stimulates both exports and inflation. Through simulations that emulate the Riksbank unconventional policies over the 2015-2019 period, they find that these policies may have provided a one percent boost of output and a 20 to 50 basis point increase in inflation, most of which happened in the early stages of the use of unconventional policies. These effects, though significant, are still relatively modest.

In summary, there is some degree of uncertainty regarding the power of QE as a monetary policy instrument. The evidence for Sweden does not contradict that QE has been a contributing factor in bringing inflation back towards its target, and with a stabilization of inflation expectations, but the evidence is somewhat mixed. One may also wonder about the extent to which the net benefits outweigh the potential risk to the balance sheet of the Riksbank (discussed below). Nonetheless, when the policy rate was reduced to zero, the limited coordination of actions of Swedish policy institutions (a side-product of the strict separation of responsibilities that was built into the Swedish macroeconomic frame-

[24] A DSGE (Dynamic Stochastic General Equilibrium) model is a macroeconomic model built on explicit microeconomic foundations, such that households, firms, and policy institutions interact under constraints such as budget and technology. It is "structural" in the sense that the equations are derived from optimizing behaviour and equilibrium conditions rather than from purely statistical correlations. This makes the model suitable for policy analysis and counterfactual simulations.

work in the aftermath of the 1992 crisis) gave the Riksbank little choice but to reach for unconventional monetary policy instruments.

4.3.2 Policies implemented in response to Covid: QE in 2020 to 2022

The evidence on the effectiveness of the Riksbank's 2020–2022 asset purchases is mixed. As outlined in Section 3, monetary policy interventions during the pandemic relied on QE only, with the policy rate held at 0 percent. These measures had two distinct aims:

1. To restore market functioning (spring–summer 2020); and then,
2. To ease monetary conditions in order to achieve the inflation target.

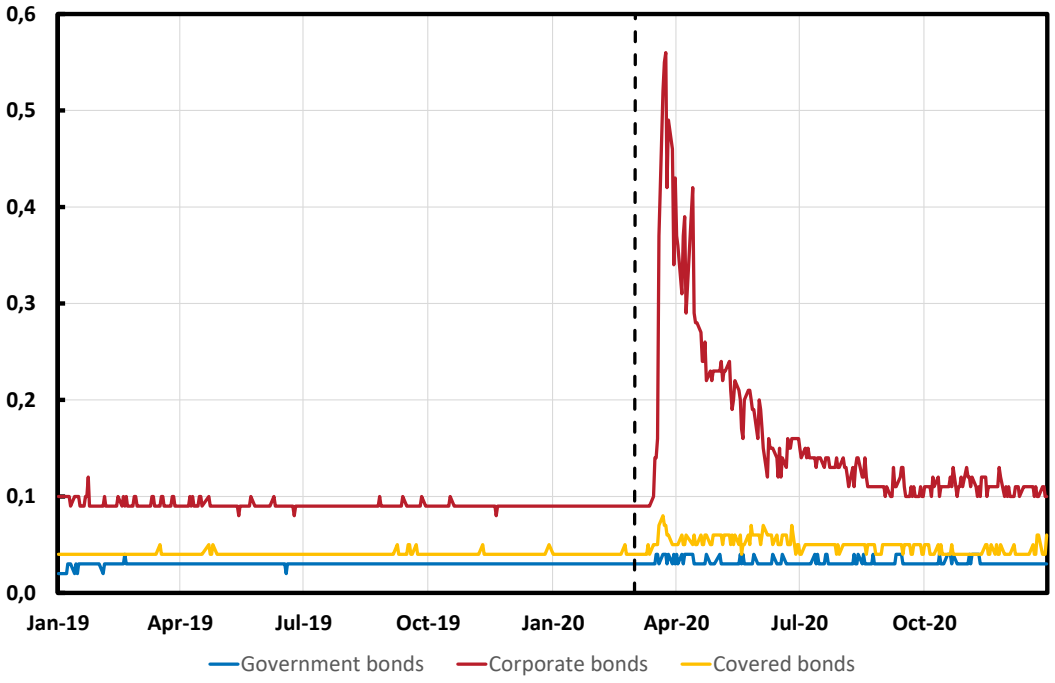
The market-functioning phase worked largely as intended. Bid–ask spreads in the Swedish covered bond and corporate bond markets widened sharply in March 2020, but normalised swiftly after the Riksbank's liquidity operations and purchase announcements (Figure 15). The Riksbank also put in place a US dollar backstop via the Federal Reserve swap line. The actual take-up of this programme was small and funded by the Riksbank's own currency reserves, but the facility likely served as a confidence-enhancing backstop at the height of uncertainty Sveriges Riksbank (2022d). Still, the implementation of the corporate bond programme illustrates a timing problem. It was announced on 1 July 2020 and launched only in mid-September at which point market stress had eased. The lesson is that operational readiness matters. Contingency planning for private-credit purchases would shorten go-live times, and communications should make explicit that facilities will be state-contingent and quickly scaled back when conditions normalise.

By contrast, the case for the monetary-policy phase of QE (mid 2020 to late 2021) is less compelling. DSGE-based assessments find that pandemic-era purchases raised real GDP by about 0.2 percent on average and CPIF inflation by about 0.25 percentage points over 2020–2023, see Akkaya et al (2023). These are much weaker effects than found for pre-pandemic QE, as discussed earlier. This can be attributed to two factors:

1. The size of the pandemic era QE purchases was a smaller, and
2. the composition of assets was weighted towards assets with weaker transmission channels (recall Figure 6).

Moreover, from a narrow fiscal perspective, the ex-post costs of this round of QE have been somewhat higher as measured by the SEK 25bn capital injection approved in September 2024, which corresponds to 0.39 percent of GDP. Clearly, in a full cost-benefit analysis, one would also account for the fiscal benefits of QE, including during the period of lower interest rates and higher economic growth.

Figure 15: Bid-Ask Spreads in Core Swedish Markets 2019 - 2020



Note: Percentage points. Reproduced from Jansson (2021). The broken vertical line marks 11 March 2020, when the WHO declared COVID-19 a pandemic. Bid-ask spread refers to listed rates, based on all available nominal government bonds, and just over 50 corporate bonds with varying maturities and with credit ratings equivalent to BBB or higher.
Source: Macrobond, Refinitiv, ASTRID (Reuters) and Sveriges Riksbank.

Another factor relates to the Riksbank's purchases of covered bonds. These purchases *did* reduce interest rate spreads in the early part of the pandemic. However, the continuation of the acquisition of these bonds in the subsequent period likely further boosted Swedish housing prices (which were already growing at a high rate in the 2020-2022 period) with financial stability implications. It would have been good had the Executive Board been clearer about how it weighed these potential costs when the asset purchase programme was initially designed in the spring of 2020.

Given the extraordinary uncertainty in the early months of the pandemic, it was reasonable for the Executive Board to err on the side of doing too much rather than too little, particularly given the risks of a significant deflationary pressure from the pandemic in a situation when policy was already at the ZLB. The Riksbank should also be commended for having included balance sheet risks in their discussions from the very start of the implementation of QE. That said, it is less easy to see how the Board assessed the costs

and benefits of their November 2020 decision to raise the amounts of assets purchased and extending the length of the QE programme. In this instance, more rigorous cost-benefit assessments might have led to a better-informed debate of the options.

A final point on the QE program is related to the composition of purchases, with multiple rounds of covered-bond buying. The Riksbank was clear that its heavy purchases of covered and municipal bonds reflected the fact that it already held a very large share of the outstanding stock of government bonds, limiting room for further purchases without impairing market functioning. As noted in Section 3, there was relatively little discussion of the potential repercussions in terms of financial stability. While balance-sheet risks were considered from the outset, we agree with other external evaluations that highlight the need to weigh potential housing-market side-effects against modest monetary-policy benefits once market functioning had been restored (Flug and Honohan (2022), Hassler, Krusell, and Vestman (2024)).

The "funding for lending" scheme launched in March 2020, intended to support bank credit to businesses, also had limited take up. It was, therefore, not an active driver of lending, and it is difficult to see if it served as as an effective a precautionary backstop. Although this kind of programme, in principle, could be effective in some circumstances, it risks treading on fiscal territory (Flug and Honohan (2022); Hassler, Krusell, and Vestman (2024)).

Overall, the Riksbank's emergency measures early on during the Covid-19 pandemic were effective at stabilizing markets and avoiding a credit crunch, but the longer-lasting phases of QE appear ex-post to have yielded more modest macroeconomic benefits, while, at the same time, incurring significant risks. A lesson for the future is that unconventional measures should be subject to more systematic cost–benefit assessment, both *ex ante* and *dynamically* as conditions evolve, so that decisions can be adapted in real time. This would also enhance the transparency and accountability of the Riksbank operations. In addition, the programme designs need to allow for flexible exit so that programmes do not linger longer than they are needed (see Section 7 on how changes in forward guidance for QE and other programmes could help).

4.3.3 Effectiveness of policies in response to the spike in inflation (2022 to 2024)

There has been much discussion as to whether the Riksbank's large and rapid rate hikes were overdone, particularly given the central role Sweden's wage-setting institutions play in shaping the inflation process (see Box 1).

Box 1: Sweden's wage setting framework and inflation

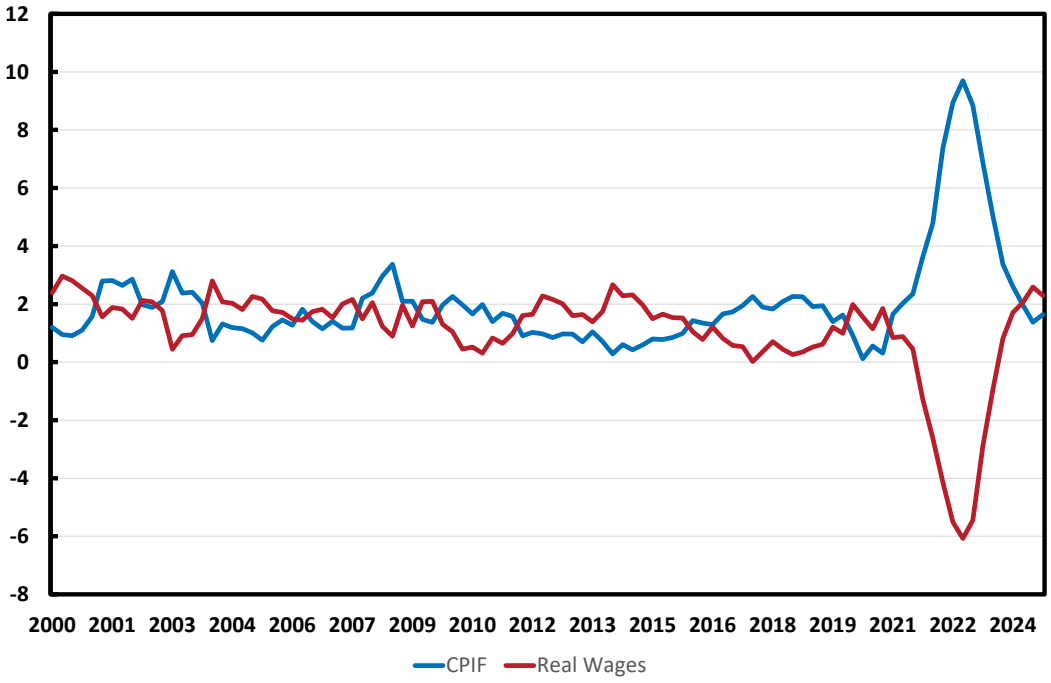
As discussed in 2.1.5, Sweden's coordinated wage bargaining dates back to the postwar "solidarity wage policy," when centralised deals between unions and employers provided the vehicle for determining economy-wide wages. That system broke down in the 1980s–90s, with growing wage drift and inflationary pressures that culminated in the early 1990s crisis. In 1997, the Industrial Agreement (*Industriavtalet*) re-established coordination on a sectoral basis. The internationally-exposed manufacturing sector typically concludes its agreements first; subsequent sectors then follow, ensuring wage growth is broadly harmonised across the economy. Today, roughly 90 percent of employees are covered by collective agreements, with the Industrial Agreement serving as the pattern-setting anchor. (Kjellberg (2019))

This mechanism has historically been viewed as restraining wage–price spirals (see Calmfors (2025)). Coordinated bargaining in Sweden has coincided with lower wage drift away from the central bargaining outcome, consistent with a flatter Phillips curve (Sveriges Riksbank (2018)). Because wages are benchmarked to productivity in tradables, aggregate outcomes hinge less on domestic labour-market tightness and more on competitiveness with foreign industries. This implies that imported cost shocks and exchange-rate dynamics matter more than domestic wage pressures in Swedish inflation formation.

As it turned out, wage increases after 2022 were relatively modest, and real wages have fallen considerably (Figure 16). The 2023 national bargaining round delivered wage increases of about 7.4 percent over two years (4.1 percent in 2023 and 3.3 percent in 2024). Averaged across the two years, this corresponds to roughly 3.7 percent annual wage growth, well below peak inflation. These wage increases were also moderate compared with several other European economies such as Germany and the Netherlands facing similar shocks (Hassler, Krusell, and Seim (2023)).

One might argue that the wage restraint should have held back the Riksbank from increasing the policy rate as much as it did. However, while the labour market partners did agree to moderate wage increases, it is also true that shorter-term inflation expectations drifted upwards in response to the inflation spike. Because of this, we consider the Riksbank's decision to implement steep interest rate increases to be an important factor

Figure 16: Real Wages and Inflation



Note: Yearly percentage changes.
Sources: Macrobond.

in the endeavour to re-anchoring expectations, and ultimately to bringing inflation down. Sweden's labour market arrangements undoubtedly dampens the risk of a wage-price spiral, yet decisive monetary tightening was probably needed to support a credible monetary policy stance. The wage restraint was likely also very helpful in reducing pressure on the Riksbank to implement a potentially even more severe policy-rate tightening. Hence, the wider Swedish macroeconomic framework demonstrated its value in this episode.

4.3.4 Balance sheet implications

The implications for the size and structure of Riksbank's balance sheet from the use of QE is a hotly-discussed issue.[25] In particular, the fact that the Riksbank implemented an ample reserve system to facilitate the financing of QE induced considerable exposure of its liabilities to increases in the policy rate, while its holdings of longer-term assets due to QE implied a potential for capital losses.

[25]For more information see https://www.riksbank.se/en-gb/markets/riksbanks-balance-sheet

Box 2: The Riksbank Balance Sheet

The Riksbank's balance sheet records its assets, liabilities, and net equity.

***Liabilities*: The most important component of liabilities today are commercial banks' krona denominated claims on the Riksbank. Such deposits, whether overnight deposits or Riksbank Certificates, reflect banks' liquidity surplus shaped by the Riksbank's monetary operations and by the financing in krona of the Riksbank's foreign exchange reserves. Currency in circulation also appears on the liability side and represents the public's demand for cash. Another liability item is foreign-currency-denominated debt issued by the National Debt Office to finance the Riksbank's FX reserves. In January 2021, the Riksbank decided to self-finance FX reserves and this item has subsequently been phased out. The Riksbank also has liabilities associated with Special Drawing Rights. Finally, its equity (accumulated profits and losses) is a liability to the Riksdag and is a financial buffer supporting the Riksbank's financial- and operational independence.**

***Assets*: The foreign-exchange and gold reserves are the largest assets on the Riksbank's balance sheet, giving the Bank the capacity to supply foreign-currency liquidity in crises and, if needed, conduct foreign-exchange interventions. Alongside these reserves, the Riksbank also holds large volumes of Swedish-kronor-denominated securities acquired during the years of quantitative easing.**

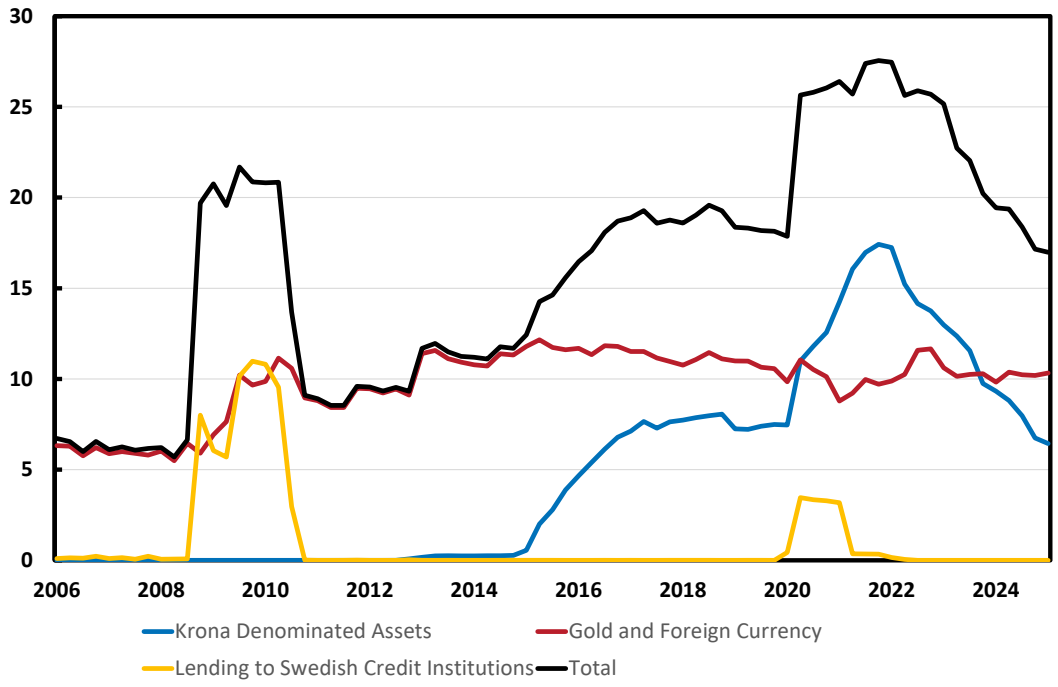
***Income*: The Riksbank earns income from supplying cash and from the returns on its financial assets. Strong income over time increases equity, but periods of losses reduce it and may create a need for capital injections according to the rules in the new *Riksbank Act*.[a]**

***Risks*: There are two main sources of balance sheet risk. First, there is a maturity mismatch between its holdings of longer term assets related to QE, and its liabilities to Swedish credit institutions which are short term in nature. This induces a risk of Riksbank losses when interest rates rise. Secondly, due to the self-financing of foreign exchange reserves, the Riksbank is exposed to foreign exchange rate risk. This risk can be addressed by hedging but this comes at a cost.**

[a] The Riksbank Act (2022:1568), which entered into force on 1 January 2023, establishes a capital target level of SEK 60 billion, expressed in 2023 prices and adjusted over time by the CPI.

Prior to the global financial crisis, the balance sheet was modestly-sized, at about 6 percent of GDP (see Figure 17). The GFC prompted a sharp, but temporary, increase in the size of the balance sheet, because of lending from the Riksbank to Swedish banks and because the Riksbank doubled its foreign exchange reserves. Assets rose from 6.2 percent of GDP in 2007 to 22 percent in 2009 before falling back to 8.5 percent in 2011. With the launch of QE, the balance sheet expanded again steadily, reaching 20 percent of GDP by mid 2018. It remained at this level until the Covid-19 recession, when renewed purchases lifted the balance sheet assets to a peak of 27.5 percent of GDP in early 2022. Since then, capital losses and reduced holdings of krona-denominated assets have lowered it to around 17 percent.

Figure 17: Riksbank Assets, percent of GDP



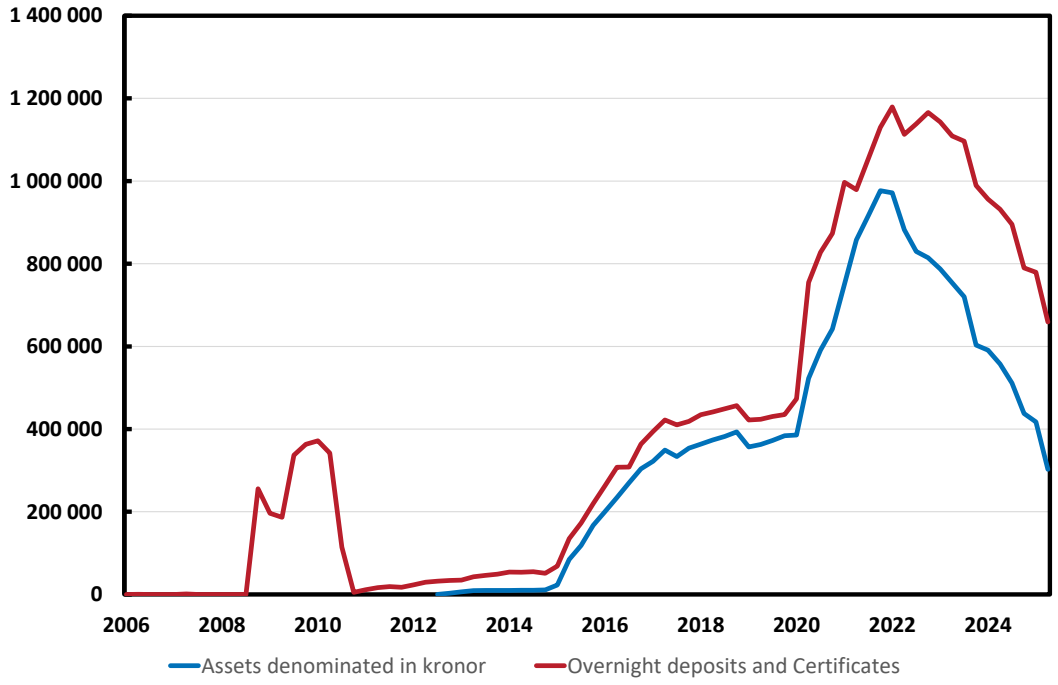
Source: Sveriges Riksbank.

This balance sheet growth was a direct consequence of policy aimed at easing financial conditions and achieving the inflation target. Still, changes in the maturity structure of its assets left the Riksbank exposed to losses, with risks crystallizing as interest rates increased. Holding bonds to maturity would have avoided immediate realization of capital losses on longer-term asset holdings, but net worth would have been eroded in either case.

It is important to note that other actions that increased the size of the balance sheet over the period did not increase duration and interest rate risk per se, including the change to an ample reserves system and the financing of the foreign exchange reserve. In the ample reserves framework, banks hold large amounts of remunerated certificates and deposits at the Riksbank, which makes the balance sheet structurally larger than before the GFC. The increase in the size of the balance sheet in and of itself is not the issue, the key vulnerability arose from QE's maturity mismatch, where long-term assets were financed with short-term liabilities.

Looking ahead, as asset holdings are reduced, choices will need to be made about both the size of the balance sheet and whether to maintain an ample reserve system or revert to a scarce reserve system. While a scarce reserve system would require the revival of an active interbank market and that banks are willing to use the Riksbank's standing lending facilities, it has the advantage of imposing greater market discipline on banks. Indications are that the Riksbank is inclined to reintroduce a scarce reserve system (Thedéen (2025)).

Figure 18: Bond Holdings and Overnight Deposits and Certificates



Note: Million SEK.

Source: Sveriges Riksbank.

As Figure 18 illustrates, the maturity mismatch was stark since long-term assets were funded by the Riksbank by the issuance of short-term, interest-bearing liabilities. When policy rates rose in 2022, the market value of long-term bonds fell, while interest expenses on deposits and certificates increased. The outcome was large capital losses that reduced the Bank's net worth and led to a SEK 25 billion recapitalization by the Swedish government in June 2024. QE exposed the Riksbank to significant interest rate risk, which materialised as large valuation losses when policy rates rose sharply in 2022–23. Under the Riksbank's accounting framework, these losses were recognised primarily through asset write-downs rather than through negative net interest income, and remittances to the government declined as a result.[26]

One might reasonably ask whether the Bank should have held the assets to maturity rather than selling them. Because the Riksbank applies mark-to-market accounting to all its securities, the large 2022 loss was mainly *unrealised*. In other words, it was a "paper" loss reflecting the fall in market value of its bond portfolio as interest rates rose, not a realised cash loss. Holding the assets to maturity would have avoided *realizing* those losses through sales, though the decline in reported equity would still have remained on the books (Sveriges Riksbank (2022d); Kjellberg and Åhl (2022)). With the benefit of hindsight, one might also ask whether the asset purchases were associated with acceptable and transparent risks to consolidated public finances. We return to this second issue in Section 7.

4.4 Thinking Ahead: a Return to Unconventional Policies?

The long period of near-zero and negative interest rates during 2015-19 may help explain why policy makers were hesitant to adjust upwards the policy rate when inflation started rising in 2021. The subsequent surge in inflation in 2021-22, and the rise in the policy rate thereafter, have now shifted attention away from concerns about the need for unconventional monetary policies towards fighting the current inflationary pressures with the conventional monetary policy tool, the policy rate. The question is, should the Riksbank dismiss the need for future use of unconventional policies?

One way of thinking about this is to consider the "neutral interest rate." This concept refers to the interest rate that, given economic circumstances, is neutral on inflation (relative to its target). When the neutral rate becomes negative, the Riksbank has to reach for unconventional policies unless it is willing to undershoot on inflation.

[26]The underlying economic losses associated with QE would have reduced cumulative remittances regardless of accounting treatment. The accounting framework affects the timing and presentation of losses: under the Riksbank's approach, losses are recognised largely up front through asset write-downs, whereas under alternative approaches they would be reflected more gradually through negative net interest income.

Unfortunately, the neutral interest rate is not directly observable, but must instead be estimated and is subject to considerable uncertainty. Economists typically use methods that make inferences from economic forces that impact on aggregate savings and investment in the economy. There are many economic forces of interest, such as demographic trends, trends in inequality, technological trends affecting productivity, supply chains, fiscal policy, etc. Moreover, the neutral rate can be affected by shocks to the economy. It is therefore, in practice, inadvisable to rely solely on point estimates for policy guidance in the short run. Yet, estimates of neutral interest rates are informative about the potential need for unconventional policies.

Many commentators believe that the neutral interest rate has shifted upwards since the Covid-19 pandemic, and, in addition, that the likelihood for upside inflation risks has increased. Underlying these arguments are issues such as geopolitical risk inducing energy price inflation, supply chain interruptions, re-militarization, de-globalization and trade fragmentation, in addition to climate change requiring investment in renewable energy sources. The Riksbank's own outlook is for a neutral interest rate in the range of 1.5 to 3 percent (see Seim (2024)). This 2024 estimate is a downward revision from a 2017 estimate of between 2.5 to 4 percent. These estimates indicate that there may be occasional episodes in which the ZLB will be binding, triggering the need for unconventional policy tools.

There is also prominent research that point towards continued declines in long-run real interest rates, which would further increase the chance that the ZLB will bind. This work (technically referring to "natural interest rates") is more pessimistic on the medium- to longer-term prospects. There is a general agreement in the literature that the natural interest rate has declined over recent decades from around 6 percent per year in the 1980's to around 2-3 percent in the late 2010's. Estimates for the US by Platzer and Peruffo (2022) indicate a continued gradual drop in the natural interest rate over the coming years to below half a percent by 2030 and thereafter a stabilization around one percent. The underlying drivers of the low longer-run real interest rates in this study are demographic trends and rising inequality, both of which spur an increased desire to save. Findings of Rachel (2025) also indicate a continued decline in the natural interest rate unless a number of upside risk factors all come together to push up the natural interest rate (such as productivity gains from AI, re-militarization, de-globalization, and a social-security driven rise in government indebtedness). This conclusion is in line with that of Obstfeld (2023) who builds on a review of a large number of studies of the natural and neutral interest rate.

Therefore, a balanced view suggests that although immediate concerns about a return to unconventional monetary policies have dissipated, one should not discount the possibility of renewed periods of (near-) zero interest rate in the medium to longer term. While the current focus is on fighting upside risks to inflation, one should not ignore risks of a return to

the ZLB. It is therefore important to invest in research and planning on how such episodes will be managed by the Riksbank, particularly in light of the mixed evidence of the strength of unconventional monetary policy tools used over the last ten years. In particular, it is important to re-assess the limits to how low negative nominal interest rates can go, the full set of costs and benefits of QE in terms of meeting the inflation target as well as risks to financial stability and consolidated public finances, and contingency planning, both within the Riksbank and across the other pillars of Sweden's macroeconomic framework.

We will discuss further issues surrounding this issue in Section 7.

5 Forward Guidance and Other Communication Tools

Monetary policy communication underpins not only the effective transmission of policy actions, but also central bank transparency and accountability. Communications are multifaceted, ranging from the explanation of policy decisions to broader discussions of how monetary policy contributes to the welfare of citizens. It is always essential for central banks to explain credibly how its policy actions will return inflation to target, thereby reinforcing commitment to its monetary policy mandate.

As noted earlier, the period before 2015 was problematic in this regard, since the Riksbank simultaneously pursued financial stability goals, and inflation persistently undershot the two percent target. From 2015 onward, however, its communications framework matured considerably. For this evaluation, the focus is on three challenges that mattered most over the 2015 to 2024 period:

1. Explaining the use and risks of unconventional tools,
2. clarifying forward guidance, and
3. communicating uncertainty.

The Riksbank has a rich and increasingly sophisticated set of communication tools centred around its policy meetings, which now occur eight times a year (Table 4).[27] Communication about monetary policy decisions happens in the morning the day after the regular meeting (usually at 9:30am) with a press release that contains short and concise motivation for the decisions. Simultaneously, at four of these, the Riksbank publishes a full *Monetary Policy Report* (MPR) with forecasts, a policy-rate path, fan charts, and scenario analysis. At the other four, it publishes shorter *Monetary Policy Updates*. With a short delay, the Riksbank holds a press conference giving further details and explanations. The minutes, including attributed votes, are normally published within five working days.

On occasion, the Riksbank may also hold extraordinary meetings outside the schedule of the eight regular meetings. Such extraordinary meetings occur in the face of significant economic events, which may trigger Riksbank intervention such as the Covid-19 pandemic. Communication following such extraordinary meetings is arranged on an ad-hoc basis.

[27] The number of scheduled meetings has changed over time: six per year between 2015 and 2019, five per year from 2020 to 2023, and eight per year beginning in 2024. The move to eight meetings puts the Riksbank more in line with other central banks, including the ECB, the Bank of England, and the Federal Reserve.

5.1 Explaining the Use and Risks of Unconventional Tools

The formal Riksbank communication documents are complemented by speeches, parliamentary hearings, online "explainers," and by research papers. Such channels became particularly important during the use of extraordinary measures such as negative interest rates, quantitative easing, and balance-sheet reductions. Speeches such as those by Deputy Governor Skingsley (Skingsley (2016)) on negative rates, Deputy Governor Jansson (Jansson (2022)) on asset purchases, and Governor Ingves (Ingves (2020)) on the role of the Riksbank in supporting market functioning, were attempts to explain tools and their risks. These speeches were helpful, yet, consistent with Flug and Honohan (2022), we think that the Bank could have done more to explain the distinction between asset purchases for market functioning and those for monetary policy stimulus, and to weigh their costs against benefits.

5.2 Clarifying Forward Guidance

Conceptually, forward guidance can take the form of qualitative or quantitative assessments of the outlook that inform decisions ("Delphic") or explicit commitments to future policy stances conditional on outcomes ("Odyssean"). While the Riksbank has consistently emphasised conditionality, forward guidance nevertheless carries risks of time inconsistency: if the economy recovers faster than expected, policymakers may face the dilemma of either tightening policy earlier than signaled or allowing inflation to overshoot. Too rigid an adherence to prior guidance can undermine stabilization, while abandoning it too quickly can damage credibility.

The Riksbank stands out among peers for speed and transparency of its Delphic guidance. Importantly, the Riksbank publishes a single path agreed by the Executive Board that is consistent with its economic forecast. Forward guidance can have the benefit of easing monetary conditions and anchoring inflation expectations without expanding the central bank's balance sheet. Almerud et al (2024) finds that forward guidance in Sweden over the 2020 to 2024 period was, indeed, effective especially in terms of inflation outcomes. They estimate that a forward-guidance "shock" (in the same vein as earlier work we discussed on monetary policy "shocks") that increases the 2-year swap rate by one percentage point leads to a gradual increase in the policy rate peaking at 0.75 percentage points above its normal level around 18 months after the announcement. They argue that forward guidance announcements are close substitutes for actual interest rate changes: A forward guidance shock that increases the 2-year swap rate reduces inflation and output, induces higher unemployment and results in an appreciation of the real exchange rate. One interpretation of this result is that the Riksbank's use of forward guidance was very credible

over this period.

In order to avoid the pitfalls of time inconsistency, the Riksbank has taken great pains to emphasise that this type of guidance has always been explicitly conditional, not Odyssean. Because conditional guidance was provided habitually for many years (interest rate paths were introduced in 2007), households and firms have likely come to expect that forecasts will change if the outlook changes. Having this framework in place in normal times reinforced the understanding that policy-rate forecasts were not promises, helping the Riksbank avoid some of the communication difficulties faced by other central banks. The Reserve Bank of Australia, for example, stated as late as September 2021 that, in its central scenario, the cash rate would remain at the lower bound until 2024, only to reverse course abruptly in May 2022 (Australian Treasury (2023)).

That said, there were aspects of communication around extraordinary tools that may have inadvertently "boxed in" the Riksbank. Asset purchase programmes launched during the Covid-19 crisis were typically announced as fixed amounts to be implemented over a set horizon, rather than as conditional on the evolving outlook. This stood in contrast to the Riksbank's forward guidance on interest rates, where conditionality was emphasised and well understood. As Flug and Honohan (2022) noted, this design reduced flexibility because, once a purchase programme had been announced, the Bank could feel obliged to complete it even if the conditions that had justified it no longer prevailed. The corporate bond purchase programme illustrates this dynamic. The programme was announced in July 2020, but it was not implemented until September because time was needed for it to be operationally ready. When it went ahead, market spreads had already narrowed. Arguably, the decision to persevere with the program despite changing market conditions was made to preserve credibility.

5.3 Communicating uncertainty

Fan charts were first introduced in the early 2000s but became a systematic feature of the MPR by the mid-2000s. As discussed in Section 5, scenario analysis was incorporated more regularly after 2015. While it is not always easy for a general audience to interpret such analyses, they were an important innovation. Recent efforts to highlight visually how uncertainty widens over time have made risks more tangible. Scenario analysis, particularly during the pandemic and in the face of the energy-price shocks, gave structure to debates about alternative outcomes.

Overall, the Riksbank's communication efforts were excellent at explaining decisions and forward guidance, and increasingly innovative in making information accessible through plain-language explanatory documents, videos, and social media. Forward guidance with

regards to QE and other similar tools should instead be rethought, to allow for more flexibility. While we agree with Hassler, Krusell, and Seim (2023) that scenario analysis could have been better integrated into communications earlier in the period, the Riksbank was nonetheless ahead of its peers and has innovated since. The main gap was in assessing and explaining quantitative easing, including its costs, benefits, and risks, and the difference between purchases for market functioning and for policy stimulus.

Table 4: Riksbank Communication Tools (2024–25)

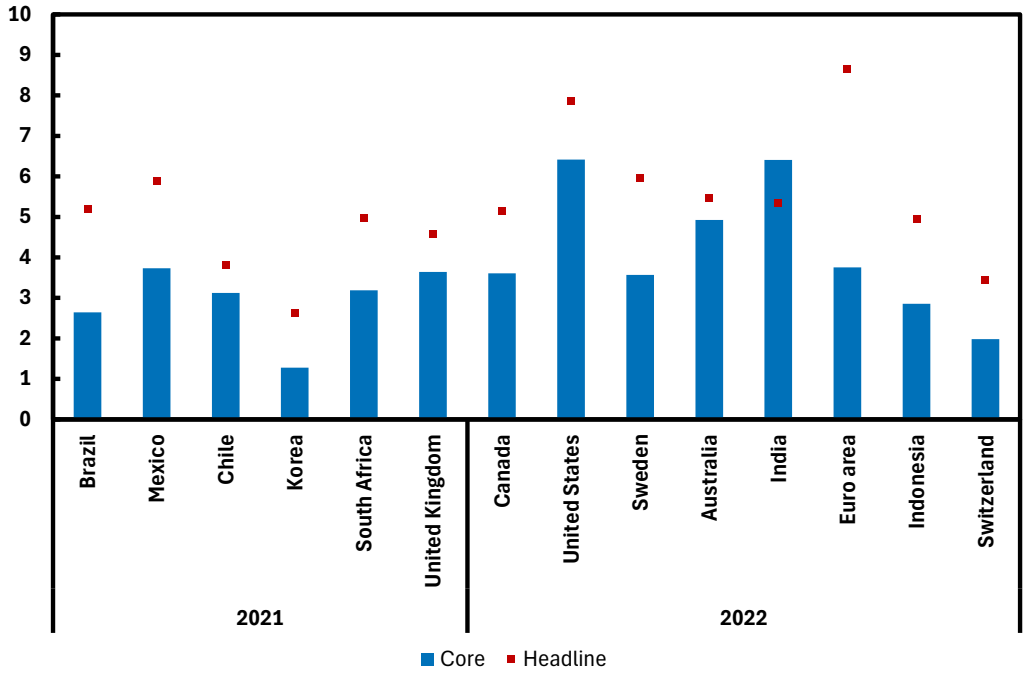
Communication Tool	**Frequency / Timing**	**Main Content**
Monetary Policy Decision Press Release	8 times/year (after each EB meeting)	Policy-rate decision, concise rationale, summary of economic conditions
Press Conferences	8 times/year (after each decision)	Governor presents decision, explains assessment, Q&A with journalists
Monetary Policy Report (MPR)	4 times/year (Mar, Jun, Sep, Dec)	Full forecasts (policy-rate path, inflation, GDP, unemployment) fan charts (discontinued March 2024), alternative scenarios, risk analyses
Monetary Policy Update	4 times/year (alternating with MPRs)	Updates on economic developments and related Board views (no new forecast)
Minutes & Voting Records	Published 5 working days after each of the 8 meetings	Detailed discussion, individual board members' arguments, and voting records
Speeches and Presentations (Executive Board members)	Continuous (90-100 per year, not all published)	Broader policy context, forward guidance, topical issues
Parliamentary Hearings (Riksdag Finance Committee)	Several times/year	Governor and Board explain decisions, face questions from MPs
Website, Infographics & Social Media	Ongoing	Plain-language summaries, explainers, videos, infographics
Research & Working Papers	Ongoing	Technical foundations of, forecasts, transmission analysis, policy evaluation

6 Forecast Performance

As Figure 5 makes clear, in the post-Covid-19 period, inflation in Sweden went far above its target. It is reasonable to ask what led to this large overshooting of inflation, and why the monetary policy response was late. It should be recognised that Sweden does not stand alone in this and that inflation exceeded its target in many countries. While this by itself is not an excuse, it does suggest that other central banks faced similar problems as the Riksbank.

As shown in Figure 19, the Riksbank, as many other central banks, only started to raise interest rates once inflation (both headline and core) was well above target. Indeed, inflation was persistently above the two percent target from August 2021, but it was not until April 2022 that the policy rate was raised, and the Riksbank, as previously discussed, continued its QE asset purchases throughout 2022.

Figure 19: Inflation at Time of Policy Rate Lift-Off



Note: Reproduced from English, Forbes, and Ubide (2024). Economies ordered by date of lift-off. Inflation rates are for the 12-month period ending in the month of the latest data release available at the time of lift-off. Core inflation for most economies is all items excluding food and energy. See English, Forbes, and Ubide (2024) more details.

Sources: World Bank Global Inflation Database, OECDStat, national sources.

6.0.1 Drivers of Inflation Forecast Errors

A critical consideration in assessing the Riksbank's decision-making during the period of rising inflation is its ability to forecast the future path inflation and other key macroeconomic variables. Even if *actual* inflation increases, a central bank may reasonably decide to hold back from immediate and forceful policy tightening if the rise in inflation is expected to be short-lived. For instance, central banks typically look through energy-price shocks when they judge their effects on inflation to be temporary. This reflects conventional wisdom that monetary policy operates with lags, such that the full effects of rate changes take time to feed through to inflation. An overly aggressive response to what later proves to be a temporary spike could, therefore, destabilise the economy. There is another risk, however, that also needs to be appreciated: a delayed or muted monetary policy response risks resulting in more persistent inflation pressures that potentially can undermine confidence in the central bank's commitment to its target.

While forecasting is inherently difficult, it is nonetheless a crucial tool for the Riksbank when it makes its policy decisions. Inflationary pressures can come from many different sources, such as variations in private-sector demand and supply, fiscal policy actions, external shocks, among others. Forecasting "shocks" is by nature impossible, but one can forecast, or at least attempt to, how the economy will evolve in the aftermath of shocks. Moreover, forecasters also form judgments about the degree of uncertainty in the economy and the likelihood that large shocks will materialise.

To calibrate an appropriate response of the policy rate, central banks need to have an informed view on how current inflationary pressures will evolve, and how its own policy actions will be transmitted through economy to return inflation back to target. Not only are shocks to the economy by nature unpredictable, but there is a second layer of uncertainty stemming from incomplete knowledge about the timing and impact of monetary policy actions on inflation and economic activity. In addition, channels of transmission may change over time, which makes the task even more difficult.

Doing a good job at forecasting, including taking appropriate account of risks and considering alternative scenarios, is clearly extremely important for informing Executive Board's decisions that support economic outcomes consistent with its mandate and, crucially, maintain its credibility. This is the reason why the Riksbank, along with many other central banks, devote significant resources a multitude of statistical methods and data sources.

In this respect, the Riksbank should be commended for facilitating continuous and timely assessment of its forecasting performance. It does so in two ways. First, it publishes the economic forecast that informs the Executive Board's policy discussions, including the

path for the policy rate consistent with the forecast. Since inflation almost always returns close to its target in central bank forecasts that are conditional on an endogenous policy rate path, including the paths of policy actions is essential to interpreting a central bank's views on the underlying pressures on inflation. Only a handful of central banks, including the Norges Bank and the Reserve Bank of New Zealand, follow similar practices, while others publish forecasts based on rate paths consistent with market expectations. Second, the Riksbank publishes on its website a full set of projections and out-turns for key variables such as GDP growth, inflation and interest rates. This level of transparency helps financial markets and other key players in the economy to better understand the decisions made by the Riksbank, and to arrive at an informed view about the likely future path of the economy.

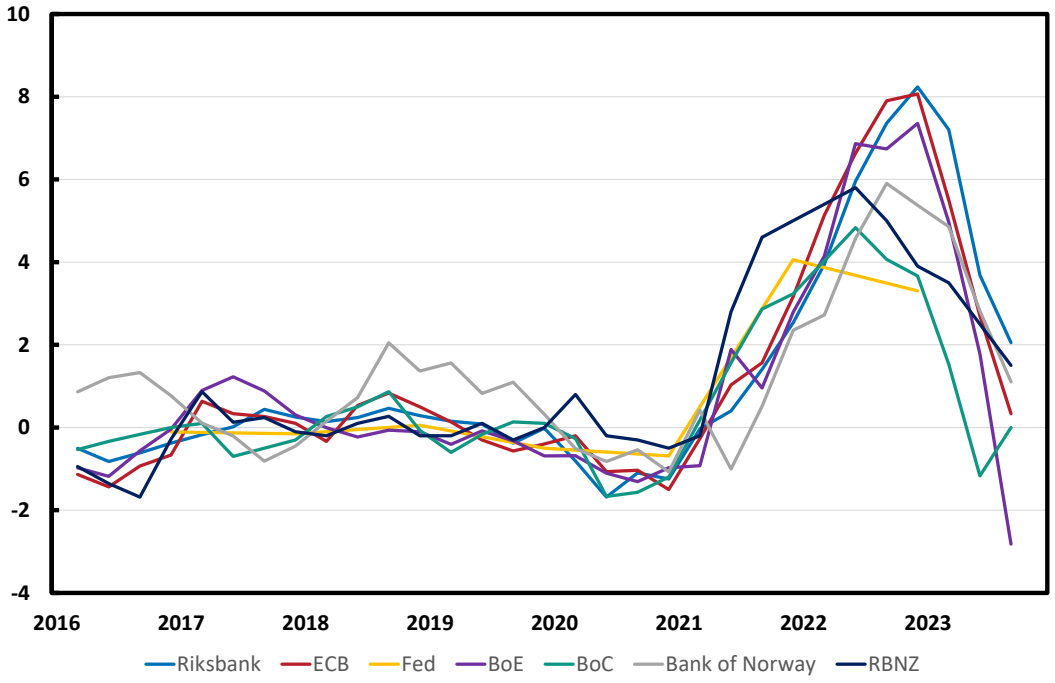
6.1 Drivers of Post-Covid Inflation

Swedish inflation was relatively stable during the first half of the assessment period (2015–2019), and the economy was not subjected to large, unexpected shocks. In such an environment, forecasting is usually more straightforward, and it is therefore not surprising that the Riksbank's forecast errors were small during this tranquil period. Conditions were similarly stable in many other countries, and the accuracy of peer central-bank forecasts was also high (Bernanke (2024), Sveriges Riksbank (2023e)). The small forecast errors during this period contributed to maintaining the Riksbank's credibility.

Following the onset of Covid, however, central bank forecast errors ballooned, particularly over the period when inflation spiked in 2022 (see Figure 20). Supply-side disruptions are widely viewed as the primary force behind the run up in inflation in Sweden and other advanced economies. The Riksbank's own analysis underscores that surging energy and food prices, together with lingering post-pandemic supply bottlenecks and a shift in consumption from services to goods, propelled CPIF inflation upwards. The effects of Russia's invasion of Ukraine in February 2022 only added to these pressures (Sveriges Riksbank (2023e), Löf and Stockhammar (2024)).

One cannot directly observe the sources of changes in inflation as they ultimately depend on the economic structure and shocks of various origin are transmitted to the economy through many different channels. However, the Riksbank has at its disposal models of the economy that are helpful for understanding these sources of changes in inflation ex-post (on top of being important for forecasting inflation and for designing monetary policy responses). In this respect, a decomposition of the sources of the increase in inflation in Sweden based on the Riksbank's MAJA model attributes most of the inflation *surprise* to external cost shocks, such as energy, productivity disruptions, and higher markups. Accord-

Figure 20: One-year Ahead Inflation Forecast Errors



Note: Percentage points. The figure is reproduced from Bernanke (2024), Figure 4. The data was kindly made available by the Bank of England.

Sources: Bernanke (2024).

ing to this model, domestic demand pressures contributed very little (Sveriges Riksbank (2023e), Sveriges Riksbank (2024b)).

Riksbank staff research also found that Swedish firms passed through external cost increases more quickly and frequently than in the past. Microdata and the Riksbank Business Survey indicate that firms adjusted prices with shorter lags than in the past with the average size of prince changes remaining broadly stable overall, suggesting a greater desire to protect margins in an uncertain environment (Klein, Strömberg, and Tysklind (2024), Ewertzh, Klein, and Tysklind (2022), Sveriges Riksbank (2022e)). This faster pass-through meant that the external cost shocks impacted Swedish inflation earlier than previously, something that economic models would have a hard time to account for ex-ante.

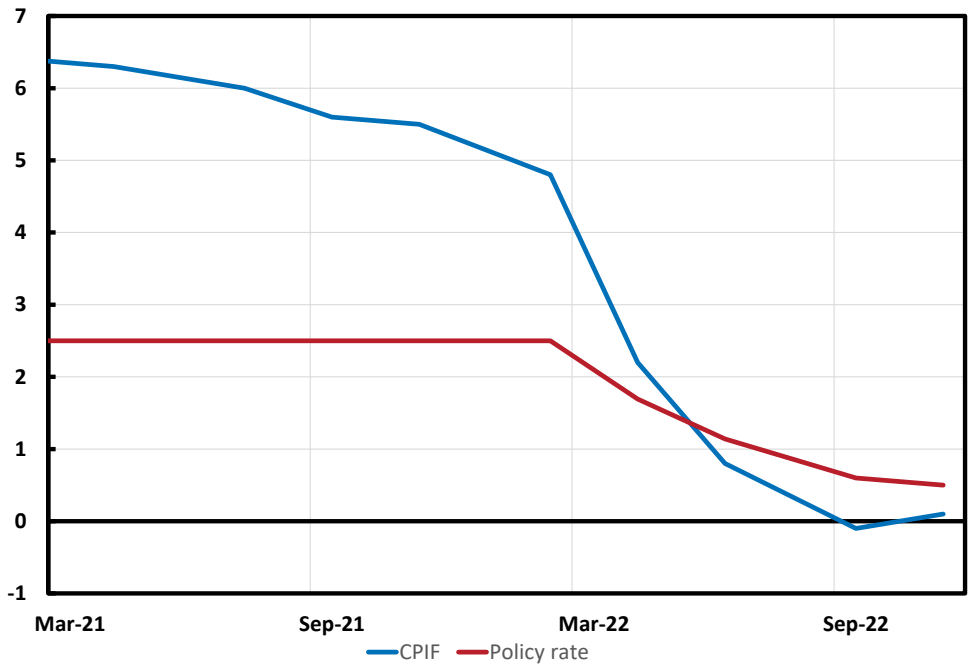
The sources of the surprise changes in inflation are not special to Sweden. International evidence reinforces this interpretation. Bernanke and Blanchard (2024) conclude that pandemic-era inflation in advanced economies was mainly driven by supply shocks,

particularly energy and goods prices, rather than wage–price spirals.

6.2 Sources of Inflation Forecast Errors in 2022

The scale of the Riksbank's forecast misses in 2021-2022 is illustrated in three figures. Figure 21 shows forecast errors for CPIF inflation alongside the policy rate path. In successive forecasts through 2021 and early 2022, inflation was expected to remain close to one percent and return smoothly to target, even as the policy rate was projected to stay at zero well into 2024. At the time of the February 9, 2022 meeting, the latest data showed CPIF inflation had reached 4.1 percent, but core (CPIFxe) inflation was only 1.7 (December 2021). Accordingly, the Executive Board described inflationary pressures as moderate, and did not see signs of a broad upturn in inflationary pressures (Sveriges Riksbank (2022b)).

Figure 21: The Riksbank's Forecast Errors, CPIF Inflation and the Policy Rate

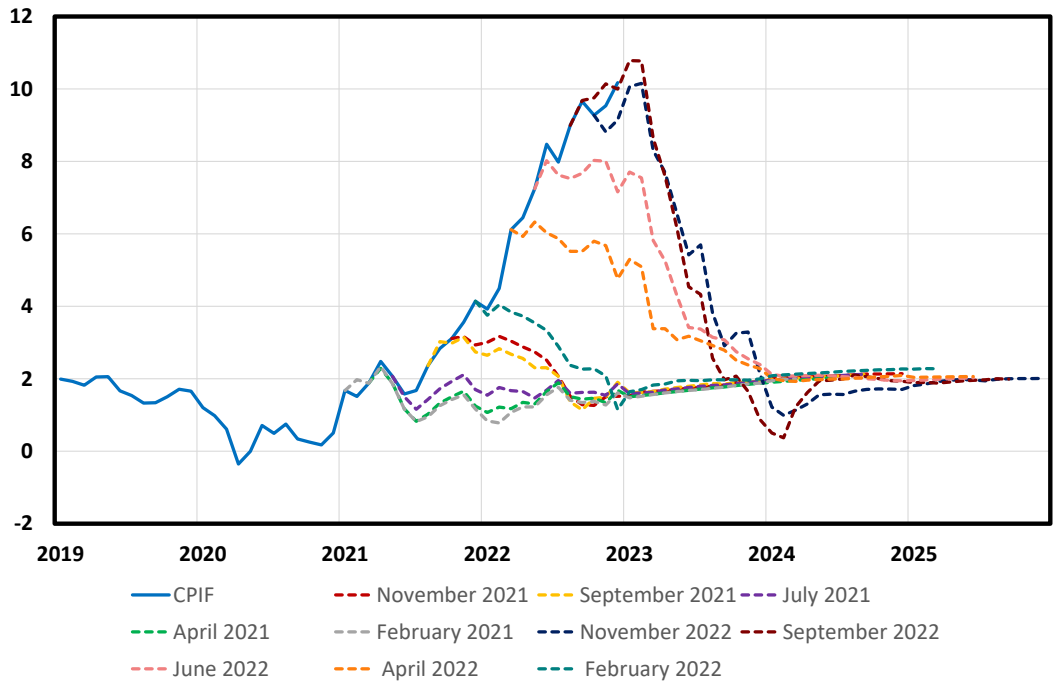


Note: Percentage points. The lines refer to forecasts for the 2022 annual average of inflation and the policy rate in the Riksbank's published forecasts in 2021 and 2022. For example, the first value in each time series refers to the forecast error in the forecast from February 2021, when CPIF inflation in 2022 was underestimated by just over six percentage points.
Source: Reproduced from Sveriges Riksbank (2023e).

By the time of the April policy meeting, however, CPIF inflation had shot above 6

percent (February 2022, which was the latest observation available). The Board raised the policy rate, and sharply revised the forecast paths for both inflation and the policy rate. This increase was largely expected by market participants given communications leading up to the decision. Still, the shift underscores how the largest surprises materialised between the February and April 2022 meetings, as energy, food and goods prices surged and global cost shocks fed rapidly through Swedish consumer prices. External reviewers later noted that the Riksbank was relatively slow to recognise how quickly international inflation pressures were spilling over into Sweden, even as peer central banks such as the Bank of England had already begun tightening policy, see Figure 19. We agree with Hassler, Krusell, and Seim (2023) that this contributed to the scale of the forecast errors, while acknowledging that these shocks were exceptionally difficult to anticipate.

Figure 22: CPIF Inflation and Riksbank Forecasts During 2021 and 2022



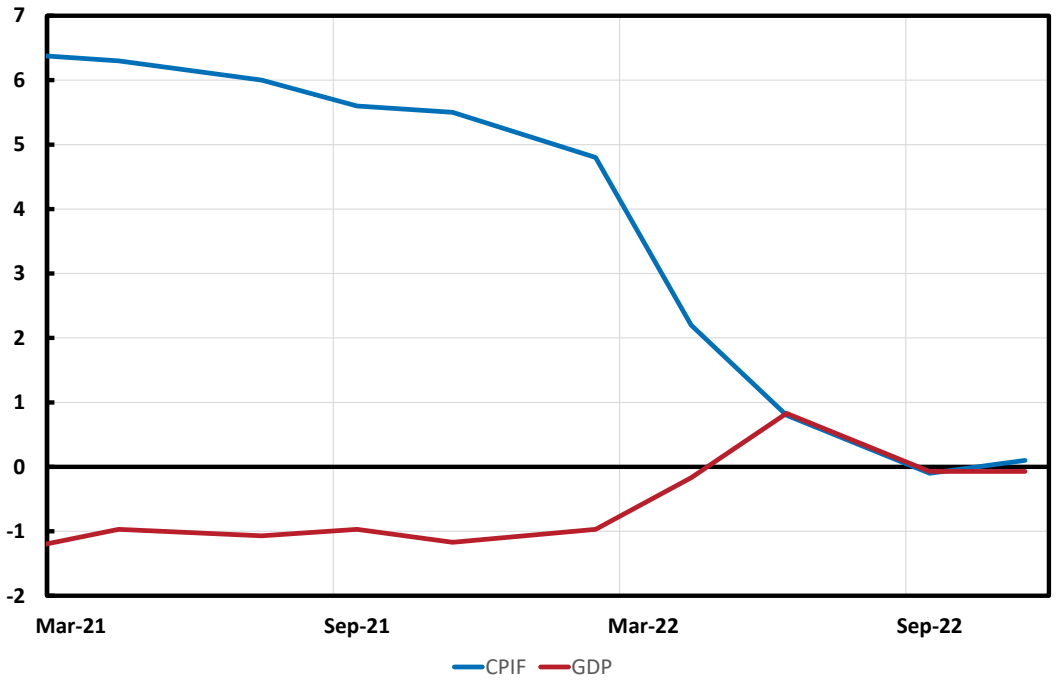
Note: Percent. The dotted lines indicate vintages of CPIF inflation forecasts.
Source: Riksbank.

During the period from early 2021 to early 2022, the Riksbank repeatedly forecast a swift return of inflation to its target, while actual inflation continued to rise (Figure 22). It was not until well into 2022 that the forecasts began to reflect persistence in the inflationary

surge.

Figure 23 compares forecast errors for GDP growth and CPIF inflation. The asymmetry is striking in that GDP growth in 2022 came in about one percentage point below forecast, reflecting modest over-optimism, while inflation overshot by a far larger margin. The Riksbank's own evaluation finds a strong negative correlation of around –0.9 between GDP and inflation forecast errors. This reinforces the view that inflation surprises were not demand-driven, but rather stemmed from global supply shocks and cost-push dynamics (Löf and Stockhammar (2024)).

Figure 23: The Riksbank's Forecast Errors, CPIF Inflation and GDP Growth



Note: The lines refer to forecasts for the 2022 annual average of inflation and growth in the Riksbank's published forecasts in 2021 and 2022. For example, the first value in each time series refers to the forecast error in the forecast from February 2021, when CPIF inflation in 2022 was underestimated by just over six percentage points while GDP growth was overestimated by just over one percentage point.

Source: Reproduced from Sveriges Riksbank (2023e).

On average in 2022, CPIF inflation came out as 7.7 percent, and the forecast error reached more than six percentage points. The fact that inflation was driven primarily by external supply shocks does not, on its own, explain why the forecast errors were so large. The main source of the forecast errors, and probably a key reason for why the Riksbank

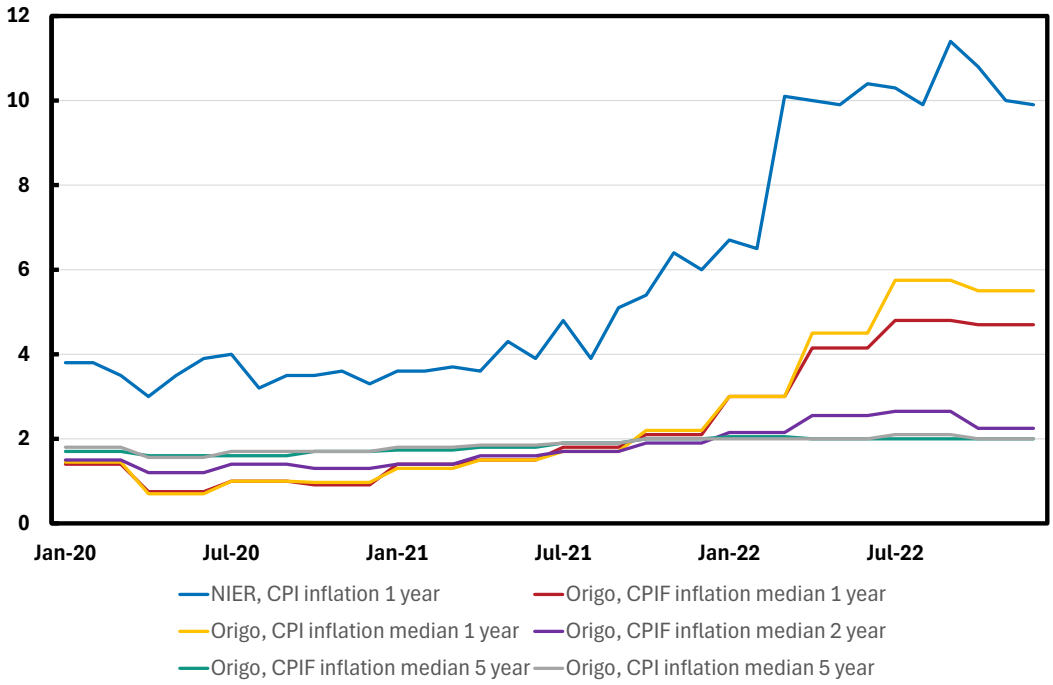
only started increasing the policy rate in April 2022, is that policy makers believed early on that the rise in inflation had modest persistence, and that the inflationary shocks were not sufficiently strong to call for a monetary policy correction. As with many other central banks, the Riksbank judged that global supply disruptions and energy price spikes would fade quickly, consistent with pre-pandemic historical experience, and therefore did not warrant a rate response.

This explains why, even as inflation was moving sharply higher, forecasts continued to show CPIF inflation close to 1 percent and returning smoothly to target. As late as February 2022, the Executive Board described inflationary pressures as "moderate," even though actual inflation had already reached 4 percent. By April, when the latest data showed CPIF above 6 percent, the Riksbank was forced into a sharp forecast revision and its first rate hike of the cycle. Hassler, Krusell, and Seim (2023) argue that this misjudgment reflected an over-reliance on the historical experience that supply shocks would dissipate quickly.

However, it is worth highlighting that the Riksbank's inflation forecasts were not out of line with survey-based measures of inflation expectations. Figure 24 illustrates a variety of such measures for either the 1 year, 2 years or 5 years horizon and for either core (CPIF) inflation or for overall inflation. These measures, which are derived from surveys of consumers or from surveys of money market players, show that inflation expectations at the 2 years or 5 years horizon were very stable until early 2022. The one exception is the one-year ahead inflation expectations measure from consumer survey data produced by the Konjunkturinstitut. This measure starts rising gradually from April 2021 and more significantly during the autumn of 2021. Given that this measure of expected inflation is not well anchored on actual CPIF inflation, it is understandable that policy makers may have put less faith in it. Overall, the Riksbank's inflation forecasts do not appear to have been firmly contradicted by survey-based measures prior to early 2022. At the beginning of 2022, however, all of these measures started moving upwards, which could have created some basis for increasing the interest rate in February 2022 rather than, as happened, in April 2022.

In the case of Covid-19, policy decisions would have been better informed had the impact of the global cost shocks on inflation been considered in greater detail. Given the extreme uncertainty, there appears to have been an element of "fighting the last war." After the extended period of undershooting the inflation target prior to the pandemic, the Riksbank seems to have placed greater weight on the downside risks to inflation than on the possibility of a sharp overshoot. The Riksbank does not stand alone in this dimension. As shown in Figure 25, forecast errors were unusually large in virtually all advanced economies during this period, highlighting both the unprecedented nature of the shocks and the limitations

Figure 24: Survey Inflation Expectations 2020-22



Note: "KI, 1 year ahead inflation" is the Consumer Surveys, Konjunkturinstitutet (KI), Inflation, All Consumers, Expected Inflation 12 Months Ahead, Excluding Extreme Values (New Method). "Origo, 1 year ahead CPIF, median" is the Origo Group, Inflationary Expectations CPIF, Money Market Players, 1 Year, Median measure. "Origo, 1 year ahead inflation, median" is the Origo Group, Inflationary Expectations, Money Market Players, 1 Year, Median measure. The other measures are the corresponding survey-based measures at the 2 years and 5 years horizons.

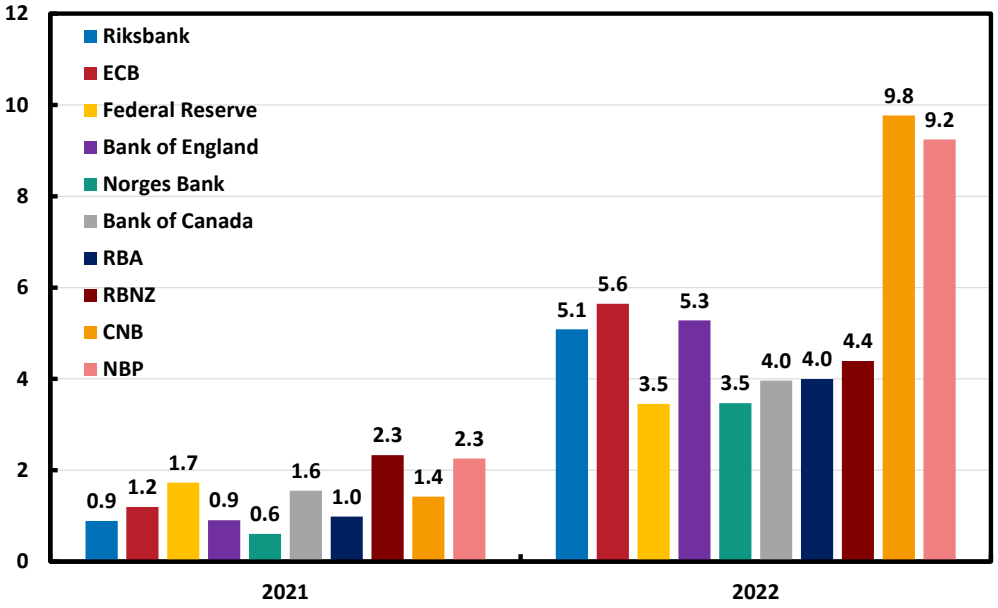
Source: The Riksbank and Origo.

of existing forecasting models. These findings echo broader post-pandemic international analyses that emphasise unanticipated supply bottlenecks and commodity price spikes as the dominant drivers of forecast error (e.g. Bernanke and Blanchard (2024), Australian Treasury (2023), and English, Forbes, and Ubide (2024)) .

6.3 Models Used in Forecasting

The large forecast errors in 2022 underscore that no model is perfect, and that forecast misses offer an opportunity to understand where tools fall short. As with many central banks, the Riksbank does not rely on a single model, but rather combines three main approaches: short-term nowcasting models, forecasting models such as its DSGE framework MAJA and a suite of reduced-form models (e.g., BVAR), and complementary scenario

Figure 25: International Comparison of RMSEs of Forecasts for Inflation in 2021 and 2022



Note: Root Mean Square Errors (RMSEs) are computed on forecasts made in 2020, 2021 and 2022 for average inflation during 2021 and 2022.

Source: Håkanson and Laséen (2024).

analysis to explore uncertainty. Each approach is augmented with judgment from staff and the Executive Board. The 2020 to 2024 period provides a particularly sharp test of these approaches.

6.3.1 Nowcasting

Other assessments of central banks have noted a widespread failure of statistical models in predicting turning points during the pandemic, particularly when these models are estimated using data for periods that are very different to current circumstances (Furman (2022)). The Riksbank's own forecast evaluation similarly acknowledged that its short-term tools were slow to reflect sharp supply shocks and the impact of economic shifts (Sveriges Riksbank (2023e)).

The Riksbank relies on short-term forecasting and nowcasting models to track near-term

developments in economic variables such as GDP, inflation, and the labour market. Such nowcasting (or short-term forecasting) models address the fact that policy makers often do not have precise data on *current* economic circumstances. This is because there are delays in the collection of data from a multitude of sources to generate precise information on key current variables such as current inflation, employment or aggregate GDP. To address this, nowcasting uses statistical analysis to produce real time measures of such variables by exploiting the fact that there may be a multitude of current (or very recent) but noisy measures of inflation, employment, etc. that can be combined to produce estimates of the underlying variables of interests. These types of models usually have an edge on traditional leading indicator models because they incorporate high-frequency, often "real-time" indicators such as retail sales, industrial production, business surveys, and financial variables.

Unfortunately, because these models rely on historical patterns, they performed badly during Covid-19 when standard indicator relationships broke down in the face of lockdowns, supply chain disruptions, and rapid shifts in consumption patterns. Accordingly, even short-term forecast errors (1 to 3 months ahead), which had been relatively modest, widened sharply in 2022 (Sveriges Riksbank (2023e)). An exception to this during Covid was the NY Fed's Weekly Economic Index (WEI), which tracked US real activity surprisingly well during the early phase of the pandemic (Lewis, Mertens, and Stock (2021). However, it was much less accurate in the years that followed.[28]

Experience elsewhere also suggests that nowcasting models can be useful, and are worth further investment. For example, the ECB has recently developed a structured nowcasting toolbox that incorporates robustness checks for Covid-19 anomalies, including special treatments of outliers and data disruptions (European Central Bank (2024)). Similarly, the Cleveland Fed's daily inflation nowcasting framework has been shown to outperform professional forecasters during the pandemic period, offering more accurate real-time signals on CPI and PCE inflation (Knotek and Zaman (2023)).

6.3.2 MAJA and other Models

The Riksbank's main forecasting tool for the medium to long term is its dynamic stochastic general equilibrium (DSGE) model, MAJA ("Modell för Allmän JämviktsAnalys"). MAJA is a two-region framework that describes the Swedish economy and its interaction with key trading partners, particularly the euro area and the United States (Corbo and Strid (2020)).

There are a number of key features that define MAJA's strengths as a forecasting tool.

[28]This observation is based on publicly available WEI data for 2021–22, during which the index diverges noticeably from quarterly GDP growth. Data and documentation are available at: https://www.dallasfed.org/research/wei.

A major strength of MAJA is that it provides a unified framework for understanding the main economic developments in Sweden, for forecasting the future path of the economy, and for normative and positive policy analyses. Therefore, it offers the Riksbank a tool that can assist in forecasting inflation, as well as the paths of general activity and the labour market. It can also help the Riksbank understanding how changes in monetary policy are likely to impact on the economy, and the extent to which such policy interventions are called for. A second major strength is that MAJA includes sophisticated modelling of the economy that is tailored to encompass key features of the Swedish economy discussed in 2.1.5. Sweden is modeled as a small open economy that is integrated with the rest of the world through trade in goods and financial assets, and the influential role of labour unions in wage setting is accounted for. It also includes detailed mechanisms through which various demand and supply factors affect inflation dynamics, including the special role of energy. As such, MAJA is one of the more consistent and sophisticated DSGE models used by central banks. In addition, the statistical underpinning of MAJA is very rigorous, which provides it with a high level of credibility for policy analysis.

MAJA, like all economic models, is not perfect. On the structural side, MAJA does not pay much attention to housing, even though it has been an important consideration in the deliberations of the Riksbank. MAJA also pays little attention to fiscal policy. The fiscal framework is an important aspect of the Swedish macroeconomic setting, and, given the size of the public sector in Sweden and the level and structure of taxation, fiscal aspects are important for macroeconomic developments, including inflation dynamics. Given changes in the fiscal framework, it is perceivable that fiscal policy will be an even more important factor in the Swedish economy. We believe that future extensions of MAJA should address these issues.

Another weakness is that MAJA is tailored to provide a rigorous framework for understanding fluctuations in the economy in the face of "small" shocks and in "normal times." The first of these aspects derives from the complexity of MAJA which forces the Riksbank to exploit certain computational techniques that are only valid in the face of small shocks to the economy. In the face of large shocks, such as Covid-19, MAJA may be less well-suited for understanding key adjustment channels. This is an issue that is hard to address, and also one that the Riksbank is well aware of. The fact that MAJA is fitted to historical data implies that it is aimed at accounting for economic circumstances that have been observed in the past. This means that MAJA is unlikely to properly account for unusual circumstances that have been rarely observed in the data.

These latter two aspects matter for the ability of MAJA, and DSGE models used by other central banks, to produce accurate forecasts in the face of large, and unusual shocks such as those that impacted on the economy during the Covid-19 pandemic and

its aftermath. The computational aspects imply that MAJA imposes a symmetric and linear response to shocks around a "steady state," which one can think of as the state of the economy that would be observed in the long run in the absence of shocks to the economy. It also implies that MAJA builds on an underlying assumption that the economy is predicted to return to this state gradually over time. Therefore, inflation forecasts produced by MAJA have a tendency of mean reversion.

Relatedly, price-setting in MAJA is modeled using a framework in which the frequency of price changes is fixed and independent of the economic environment.[29] This framework is highly tractable (in addition to being internally consistent), and useful for analyzing interest-rate policy under normal conditions (i.e., small shocks like we saw in the period 2015 to 2019 when forecast errors were small). However, when the economy is hit by big shocks, it also puts limits on the ability to understand the dynamics, especially if non-linearities become relevant, say, through underlying changes in behaviour in response to shocks.

These considerations matter for thinking about the sources of forecast errors over the inflationary period in 2021-22. For instance:

- During 2021–22 Swedish firms began adjusting prices much more frequently than before, as cost pressures from energy and imports surged. As discussed earlier, this change in behaviour contributed significantly to the speed of pass-through into consumer prices (Klein, Strömberg, and Tysklind (2024)). MAJA, however, cannot capture such a shift because it assumes a constant frequency of price changes.

- Non-linear dynamics in exchange rate pass-through (ERPT) to inflation were important given the realised inflationary impulse of the depreciation of the krona in 2022. Recent evidence suggests that ERPT in Sweden is almost three times larger in high-inflation regimes (17.4 percent) than in low-inflation regimes (6.9 percent) (Linderoth and Meuller (2024)). In MAJA, ERPT is linear.

- The role of international commodity price dynamics and productivity shocks are not full articulated in MAJA, both of which were central to the inflation surge (Löf and Stockhammar (2024)).

Finally, the DSGE literature typically builds on the assumption that inflation expectations are anchored. In the recent inflationary episode there were serious concerns about de-anchoring, concerns that are hard to capture within simple models.

[29]Specifically, MAJA follows a Calvo framework in which only a fixed proportion of firms are allowed to change prices in any given period. This is a convenient way of generating sticky prices, but does not allow the frequency of price adjustment to vary with circumstances (e.g. firms raising prices more often in a high-inflation regime).

The limitations identified here are not unique to MAJA. They reflect broader concerns about DSGE-based policy frameworks. Leeper (2003) warned that such models risk appearing more robust than they should because they do not incorporate multiple equilibria, learning, or structural uncertainty. Iversen, Laséen, Lundvall, and Söderström (2016) also found that DSGE models used at the Riksbank underperformed during structural breaks, and that judgmental overlays by policymakers sometimes dominated model outputs.

Nonetheless, a strength of MAJA is that it provides the Riksbank with a structured a consistent way of thinking about the Swedish economy which can be used for policy analysis and forecasting under normal circumstances.

Complementing MAJA, the Riksbank uses statistical tools like Bayesian VARs to provide data-driven perspectives and robustness checks. While such models are useful in normal times, and can even outperform DSGEs in stable environments, they also faltered during the recent period. In particular, it appears that judgments layered on top of the models often worsened forecast accuracy when the economy was hit by structural shocks.

6.3.3 Scenario Analysis and Judgment

The Riksbank has, to its credit, made greater use of scenario analysis than many of its peers. It reintroduced regular alternative scenarios for inflation and interest rates alongside its baseline in 2023, after a period when such exercises were used only ad hoc.[30] Still, the scenarios explored failed to consider sufficiently adverse or nonlinear alternatives. For instance, they did not examine the possibility that global supply shocks and energy disruptions would persist for several years, or that firms' price-setting behaviour would change materially (Sveriges Riksbank (2023e)).

Moreover, the process for coming to a decision is heavily weighted to discussing the base case scenario, with relatively less time spent on considering risks and alternative scenarios (which more-recently feature heavily in Riksbank communications). This echoes Bernanke's finding that central banks in general had an excessive attachment to their base-case scenario, which left them poorly prepared for tail risks (Bernanke (2024)).

6.4 Summing Up

When inflation started to rise in 2021 in the aftermath of the Covid-19 pandemic, monetary policy makers – including the Riksbank – were hesitant to tighten the policy rate. It was not before well into 2022 – when inflation had already risen sharply – that the monetary

[30]The Riksbank first began publishing alternative scenarios in 2007, made some pauses or ad hoc use of them over the following decade, and from April 2023 onwards has again included numerical paths for inflation, GDP, and the policy rate in every *Monetary Policy Report* (Breman and Seim (2025)).

policy stance was adjusted to the new economic reality. The hesitation reflected a belief that the initial rise in inflation during 2021 was temporary in nature. While this view was reflected in poor inflation forecasts, it was not strongly contradicted by survey-based measures of inflation.

In the face of the sharp rise in inflation at the end of 2021 and beginning of 2022, the Riksbank eventually decided to tighten monetary policy. With the benefit of hindsight, one may argue that the tightening should have been implemented slightly earlier - for example in February 2022 - rather than in April 2022. Nonetheless, it should also be recognised that the pandemic induced a lot of uncertainty. In this context, it is understandable that the Riksbank was hesitant to tighten policy too early, and considered the risk of derailing the economic recovery to be larger than the risk of inflation overshooting its target.

Given this experience, the Riksbank should work to sharpen its suite of forecasting tools, including its nowcasting models. More and more real time data is becoming available from many sources which could be exploited by the Riksbank. The Riksbank should be praised, though, for the fact that it has a multitude of different forecast approaches and for its use of scenario analysis. Indeed, the Riksbank is a role model for many other central banks. We encourage the Riksbank to exploit these abilities even further.

7 The Monetary-Fiscal Mix

So far, we have considered the Riksbank's performance in isolation, yet monetary and fiscal actions are tightly connected. Monetary policy choices have fiscal consequences. Actions that affect the yield curve, economic growth and inflation affect debt servicing costs, the real value of public debt, and the debt-to-GDP ratio. The inter-dependencies go the other way too. When the Swedish government runs a larger or smaller budget deficit, it can affect inflation though its influence on private-sector wealth, spending, and the value of the krona. Tax policy, regulation, and structural reforms influence potential output. Moreover, as discussed in the previous section, policy choices made by the Riksbank have implications for its balance sheet. Such balance sheet effects ultimately consolidate with the public sector budget.

These interactions create trade-offs and sometimes constraints for the Riksbank in its pursuit of inflation targeting. A stark historical example discussed in Section 2 was the post-war WWII clash between Swedish monetary and fiscal policies when the Riksbank sought to stabilise inflation, while the government prioritised low interest rates to manage borrowing costs. This is a textbook example of how a central bank may be institutionally independent in setting interest rates, yet does not have independent control over inflation. Outcomes depend on the joint design of monetary and fiscal frameworks.

7.1 Theory on Fiscal and Monetary Dominance

To clarify fiscal-monetary policy inter-dependencies, it is helpful to draw on the classic theoretical distinction made by Sargent and Wallace (1981) between *monetary dominance* and *fiscal dominance*. Under monetary dominance, the central bank independently pursues price stability, while fiscal authorities set taxes and spending consistent with long-run solvency. Under fiscal dominance, fiscal authorities dictate deficits and debt issuance, leaving monetary policy to generate the inflationary revenues needed to ensure solvency.

This framework was reformulated in terms of "*active*" and "*passive*" policies by Leeper (1991). An active fiscal authority pursues its goals unconstrained by the government budget constraint. A passive fiscal authority instead adjusts deficits to assure government sector solvency. Active monetary policy entails the central bank having a sharp focus on inflation stabilization and responding aggressively to deviations of inflation from its target. Passive monetary policy arises when the monetary authority is less focused on inflation stabilization. In simple settings with Ricardian Equivalence,[31] "well-defined" macroeconomic outcomes requires there to be one active and one passive authority: either active monetary

[31] Ricardian Equivalence refers to the case in which government debt is not considered as wealth by the private sector.

with passive fiscal (monetary dominance), or the reverse (fiscal dominance). Much thinking in contemporary macroeconomics rests on assuming monetary dominance in which case inflation – in simple settings – is insulated from fiscal deficits. In more general settings in the absence of Ricardian Equivalence (when government indebtedness impacts directly on household spending), the distinction between active and passive policies is less clear and inflation cannot be totally insulated from deficits. Nevertheless, even in such cases, a stronger inflation focus of the central bank and a stronger response of primary deficits to public sector debt, tends to stabilise inflation dynamics, see Rachel and Ravn (2025).

Importantly, monetary dominance requires not only that the central bank is active, but also that fiscal authorities commit to rules or practices that guarantee solvency. Without such fiscal practices, even an independent and active central bank cannot ensure lasting price stability, because fiscal imbalances will eventually dominate. While the central bank may initially pursue an independent inflation target, the government's intertemporal budget constraint forces eventual monetary accommodation of fiscal imbalances. In practice, such a constellation slides into fiscal dominance by default, as emphasised in Sargent and Wallace (1981).

For these reasons, the standard view today is that it is better for the central bank to focus firmly on the inflation target, while the government keeps its finances in order by following clear rules such as spending limits or debt targets. This arrangement helps anchoring private sector expectations of inflation and prevents surprise increases in government borrowing from undermining monetary policy.[32]

7.2 The Swedish Case

Reality is of course more complicated than even very sophisticated macroeconomic theories, and regimes can shift over time. That said, the contrast between monetary and fiscal dominance is still informative for the design and operation of macroeconomic policies. Indeed, as discussed in Section 2, Sweden not only faced the challenges of fiscal dominance following WWII, it also faced considerable difficulties in balancing monetary and financial stability with fiscal needs in the period leading up to the crisis in the early 1990s.

The institutional design that followed the 1992 crisis led to the adoption of a rather stark version of monetary dominance where the Riksbank pursues a 2 percent inflation target while fiscal policy adheres to a number of strict targets and constraints. Consistent with this, evidence shows that Swedish monetary policy makers have responded forcefully to deviations of inflation from its target, as (e.g. Corbo and Strid (2020).) On the fiscal side,

[32]The Swedish framework is characterised by the use of explicit targets while economic theory often goes further and considers rules for how policy instruments are adjusted when outcomes differ from targets. Leeper (2018) discusses the Swedish framework in some detail.

over the period relevant to this evaluation, the fiscal rules include a surplus target for general government net lending (Budget Act 2011:203), an expenditure ceiling that caps central government spending, and a 35 percent debt anchor introduced in 2019. These constraints provide a fiscal route for adjusting deficits when government indebtedness deviates from the target.

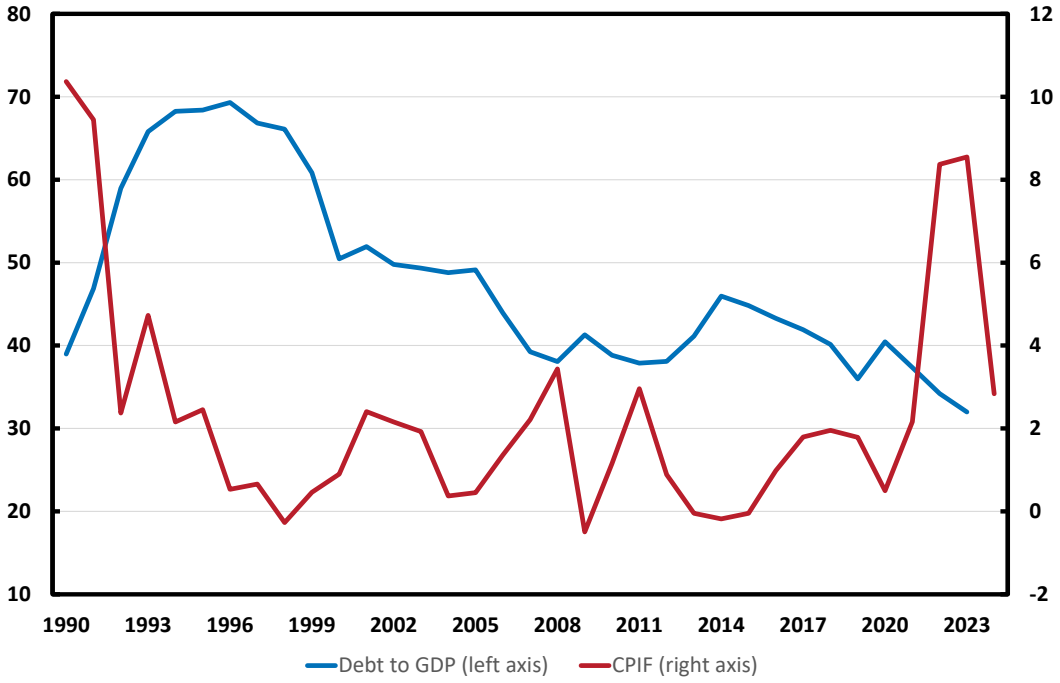
In November 2025, the Riksdag approved a reform replacing the surplus target with a general balance target to apply from 2027 onward, while leaving the expenditure ceiling and debt anchor unchanged. The flexible inflation targeting regime defined in the *Sveriges Riksbank Act* (SFS 2022:1568) also signals a less strict inflation targeting framework for the Riksbank. In combination, these developments indicate a less extreme version of monetary dominance in Sweden, but we do not think that the recent reforms signal any strong concerns about the overall Swedish policy framework unless there are further reforms of the fiscal framework allowing for large unfunded deficits.

A monetary dominance regime has two advantages. First, it typically allows the Riksbank to balance inflationary pressures with concerns about aggregate activity (or the employment situation). Exactly how this balance is achieved depends on the events driving inflation and on the state of the Swedish economy, with the ultimate decision on how to balance these left to the discretion of the Riksbank conditional on being consistent with its inflation-target mandate. Second, the fiscal framework delivers a strong fiscal position with low public sector indebtedness, yet allows for a small degree of flexibility in the face of unforeseen circumstances. The strong fiscal position makes Sweden less prone to debt-crises and less sensitive to variations in capital flows, as long as low public sector indebtedness does not get reflected in high private-sector indebtedness.

The results of introducing this policy regime in Sweden have been striking. As Figure 26 shows, Sweden's debt-to-GDP ratio fell from 69 percent in 1996 to 31 percent in 2023, while CPIF inflation converged to its two percent target apart from the temporary spike in 2022–23. Moreover, in terms of medium-term growth, Sweden has performed well (see Figure 10 and Table 5). This outturn has provided Swedish households and firms with a macroeconomic environment in which high and volatile inflation no longer interferes with their decision making. The low level of government indebtedness provides Sweden with the ability to undertake investments in its economy without unduly risking the onset of a debt-inflationary spiral, and in which there are no strong concerns about government solvency that would make the economy sensitive to capital outflows.

That said, the framework was forged in the aftermath of crisis and with inflation-fighting uppermost in mind. Since 2010, Sweden has often faced below-target inflation. With fiscal rules limiting discretionary expansion, the burden of stabilization has fallen largely on the Riksbank. Sweden's experience thus shows both the advantages and limitations of a strong

Figure 26: Public Debt and Inflation



Note: Public debt in percent of GDP, and annual CPIF inflation in percent.
Source: Sveriges Riksbank

form of monetary dominance. Strong fiscal rules and central bank independence stabilised debt and inflation, but they also constrained policy options when the ZLB became binding.

When inflation persistently undershot the two percent target and the policy rate was at the ZLB in the period leading up to 2015, Sweden chose to stay within its strict monetary-dominant framework. As discussed, the Riksbank relied on unconventional monetary policy while fiscal policy adhered to the fiscal rules. Between 2015 and 2019, the Riksbank introduced negative interest rates and launched large-scale government bond purchases. These measures helped bring inflation back to target during the first half of the evaluation period, and to forestall disinflationary forces (at the onset of Covid), but they also shifted significant interest-rate risk onto the Riksbank's balance sheet. These actions also ultimately resulted in the recapitalization of the Riksbank implemented by the Riksdag.

Thus, the decision of the Riksbank to engage in unconventional policies should be seen in the light of Swedish fiscal policy adhering to the fiscal rules. It is also important to realise that the asset purchases made by the Riksbank were made in an environ-

ment where the Swedish National Debt office did not adjust the maturity structure of its debt issuance. Thus, throughout the evaluation period, the National Debt Office issued longer-term Swedish government debt, much of which was subsequently purchased by the Riksbank.

It is useful to compare this approach with two alternative strategies that might have been adopted:

Alternative Strategy A: Joint monetary–fiscal expansion: This line of action would have entailed relaxing the fiscal framework temporarily, and combining unconventional monetary policy actions with fiscal stimulus. In theory, such coordination could have been powerful at the effective lower bound, as argued by Christiano, Eichenbaum and Rebelo (2011). It would also have avoided excessive reliance on the Riksbank, and associated interest rate risk to its balance sheet, given the burden would have been more equally shared with the fiscal authority.

That said, several considerations weighed against it. Sweden's small, open economy and floating exchange rate regime imply that a fiscal expansion could have induced an appreciation of the krona, which could have blunted the intended inflationary effect (see Kolasa, Laséen, and Lindé (2025)). As far as the 2015-19 period is concerned, an argument against a fiscal expansion is that unemployment was already on a falling trend from its post-GFC peak (Figure 11). For the post-Covid-19 period, this argument is less relevant because the unemployment rate had not returned to its pre-Covid-19 level. Still, a more active fiscal policy would have required loosening Sweden's hard-won fiscal rules that were designed precisely to avoid such departures.

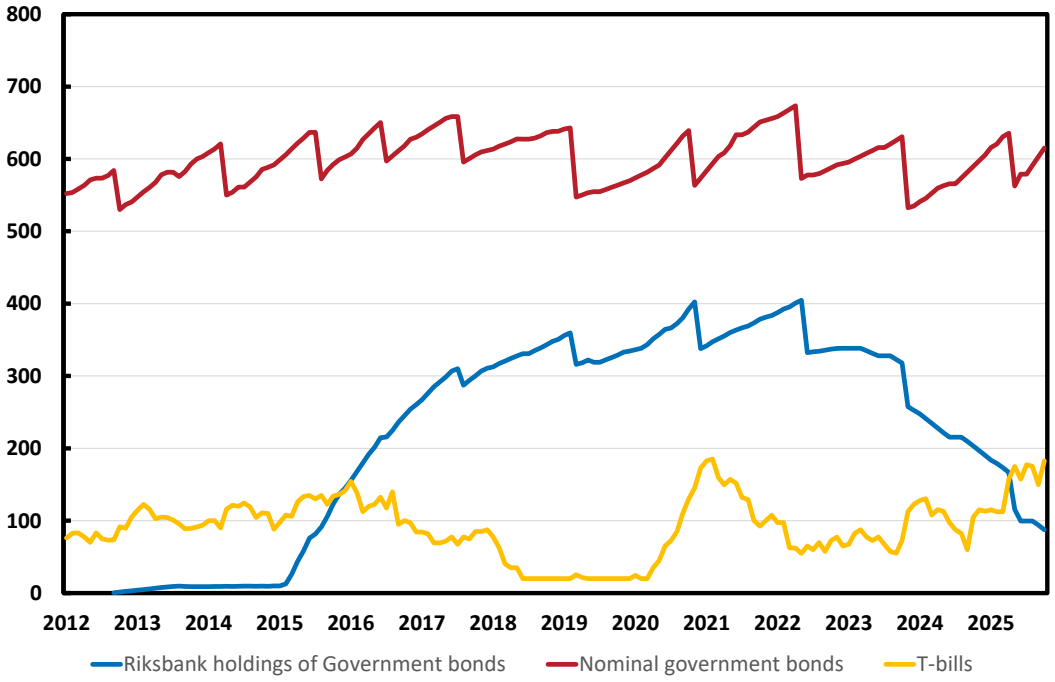
Alternative Strategy B: Unconventional monetary policy with altered debt management. This strategy would have combined QE with a shortening of the maturity profile of government debt. Since the Riksbank's asset purchases were already substituting private-sector holdings of long-term government debt with liquid short term assets, the National Debt Office could have reinforced this effect by issuing more short-term bills, rather than continuing to issue longer-term bonds. This would have shifted some interest-rate risk onto the fiscal authority, instead of concentrating it on the Riksbank's balance sheet.

In practice, the National Debt Office continued to emphasise longer-term issuance, which ran counter to the Riksbank's efforts to lower yields at that end of the yield curve and left the Riksbank exposed when interest rates rose. Figure 27 illustrates the Riksbank's holdings of kronor denominated assets and two components of kronor denominated Central Government Debt, outstanding nominal bonds and outstanding Money Market Debt, most of which are T-Bills.[33] Recall that during 2015-19, QE involved purchases of government

[33]Other components include foreign currency denominated debt and inflation-index debt.

bonds financed through growth in standing overnight deposits and Riksbank Certificates (i.e., issued securities that can be converted to reserves either by using them as collateral for credit with Riksbank or by selling them back to the Riksbank currently at a cost of 10 basis points on the nominal amount), while the asset purchases during 2020-22 involved mainly mortgage bonds and other non-Government bond kronor denominated assets. During the 2015-19 period, the Swedish National Debt Office continued issuing government bonds while reducing the share of T-Bills.

Figure 27: Gross Government Debt Components and Riksbank Swedish Currency Asset Holdings



Note: Billion SEK.
Source: Sveriges Riksbank.

Combining QE with a shortening of the government debt maturity does not require fiscal expansion, but rather a different debt-management strategy. This mixed strategy shifts part of the interest-rate risk from the balance sheet of the Riksbank to the fiscal authority. In the extreme case where a shortening of the maturity would fully have compensated for QE, it would have shifted *all* the risk. Yet it would have required explicit coordination between debt management and monetary operations, which would have been a politically-sensitive

step in a regime designed to keep fiscal and monetary roles distinct.

The two potential strategies outlined - QE as implemented, the joint monetary-fiscal intervention, and the combination of QE and a shortening of the maturity structure of government debt issuance - have also potentially different distributional effects. QE as it was implemented has a certain regressive element because the Riksbank's asset purchases effectively imply subsidies to private-sector asset holders. In contrast, a fiscal intervention, such as increased government transfers, could be designed to benefit mainly poorer households. Shortening the maturity structure of government debt, while benefiting holders of long-term government debt by improving the yields on these bonds, would have avoided a direct transfer to the asset holders and therefore potentially been less regressive.

An important argument in favour of the actual option taken (Riksbank asset purchases and unchanged government debt maturity) is that it allowed the consolidated government sector to smooth the interest rate risk associated with government debt. To realise this, imagine that the National Debt Office had switched to issuance of short term debt only. In this case, when interest rates increased in 2021-22, the Swedish government would have had to roll over much more of its debt at ever increasing interest rates. Yet, for the Swedish consolidated government to fully realise the gains that QE offered along this dimension, the Riksbank would have needed to hold their government debt holdings to maturity. Strictly speaking, this is not "monetary financing" so long as the Riksbank retains the option of selling assets back into the market.[34] That said, the closer the practice approached an indefinite "hold-to-maturity stance," the more it blurs that boundary.

As it turned out, interest rates *did* rise and the Riksbank *did* suffer losses on its QE portfolio. The latter losses arose because unrealised capital gains and losses are included in the calculation of the Riksbank's equity since assets are valued at mark-to-market prices. One may question this approach as far as Riksbank holdings of longer-term government debt are concerned, since the risk of default on the Riksbank holdings of longer-term government debt is essentially inexistent. In other words, while holding these government bonds to maturity would not have eliminated the economic cost of QE once interest rates rose, it would have avoided the recognition of large mark-to-market capital losses and instead spread the cost over time through lower net interest income. In practice, because of mark-to-market valuations of these assets, losses were large and (1) led to the Riksbank requesting a capital injection of SEK 43.7 billion but receiving a smaller injection of SEK 25 billion; and (2) led the Riksbank to gradually sell off Swedish government debt rather

[34] "Monetary financing" means central-bank funding of government deficits by creating reserves intended to be permanent and subordinated to fiscal needs, with no credible plan or operational willingness to reverse (via asset sales/runoff or equivalent sterilization) even if required to meet the inflation target

than holding to maturity.

We believe that (1) and (2) raise some concerns ex-post. First, it was not clear publicly that all parties understood and accepted that interest rate risk would unavoidably be shifted to the central bank under the chosen monetary dominance regime. This lack of clarity added to reputational costs when the Riksbank requested a capital injection. If QE were to be reintroduced in the future, it should be publicly acknowledged that it introduces such interest rate risk on the part of the Riksbank. Second, if the Riksbank were to buy longer term government assets in the future, there needs to be provisions in place so that, if it wishes, it can hold the assets to maturity. Related to the latter point, there is a need for some analysis into whether longer-term government debt held by the Riksbank should be evaluated at mark-to-market prices.

The new *Riksbank Act* states that the equity of the Riksbank should be at most SEK60bn (2023 kronor, inflation-adjusted). When the equity measure exceeds the target, the Riksbank *must* make capital transfers to the government. In contrast, when equity falls below one third of this level, the Riksbank *may* make a request for a capital injection. In principle, having some automatic limits can be useful in terms providing clarity and bolstering credibility. However, the equity measure includes unrealised capital gains and losses. In effect, including such unrealised capital gains and losses provides a strong incentive for the Riksbank not to hold to maturity, which may be questionable.

Third, if QE is applied in the future, the exit strategy should be made clear, and how this might change under different circumstances. Care should be taken to avoid monetary financing (actual or perceived) to affect "interest rate smoothing."

8 The Role of the External Economy

As we discussed in Section 2, Sweden's monetary framework of inflation targeting is combined with a floating exchange rate regime. For more than thirty years, this framework has delivered low inflation and policy flexibility, but it has also exposed the economy to currency volatility and to a longer-run depreciation of the krona. This has raised questions about whether Sweden should consider returning to an exchange rate peg or, alternatively, joining the Euro. More than two decades after the 2003 referendum on Euro membership, enough new evidence has accumulated to warrant revisiting the issue. Our aim here is not to make a definitive judgment on whether Sweden should change course, but rather to highlight areas where the framework has worked well, where it has introduced costs or vulnerabilities, and where international comparisons shed light on the trade-offs involved.

To structure the discussion, we examine four elements:

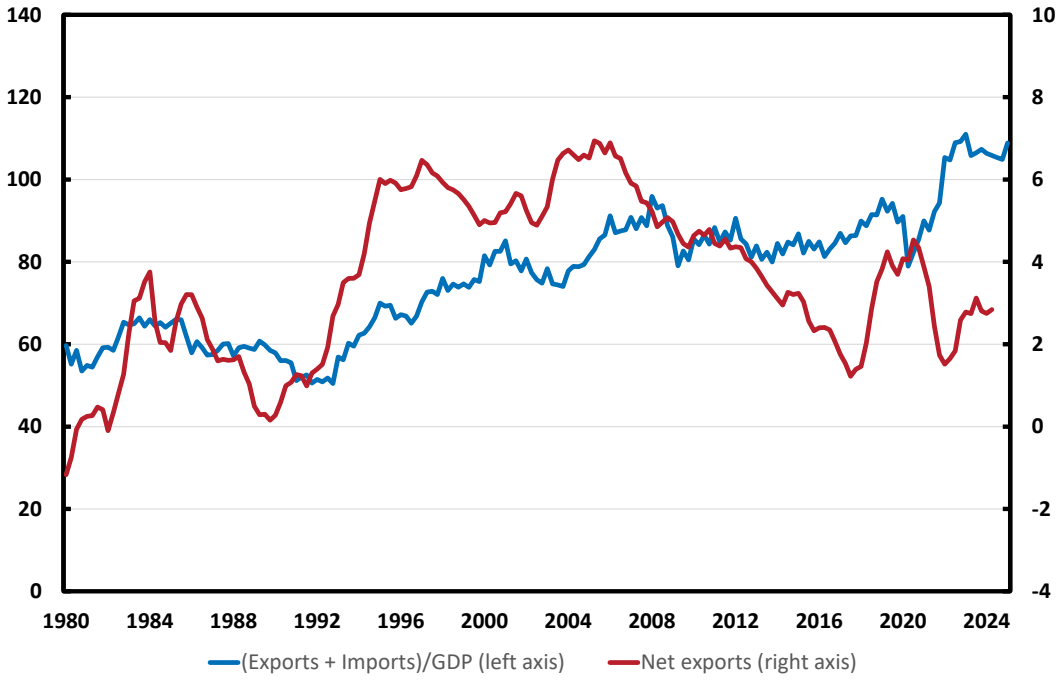
1. **Sweden's integration with the global economy** - deep trade and financial linkages that magnify the role of exchange rates.
2. **Exchange rate behaviour and its effects** - how krona movements have shaped trade, inflation, and financial stability.
3. **Conceptual frameworks** - different theoretical models of price-setting and currency denomination that clarify when flexibility is useful and when it is not.
4. **Comparative experiences and alternatives** - lessons from the Euro area and other neighbours that put Sweden's outcomes into context.

Taken together, these elements suggest that, despite the strengths of the current framework, the krona's prolonged weakness, Sweden's persistent alignment with Euro-area inflation outcomes, and the costs of sustaining large FX reserves make a compelling case for a new, systematic assessment of the regime.

8.1 Sweden's Integration with the Global Economy

Sweden is deeply integrated with the world economy. On the trade side, Swedish firms both export heavily and rely on imported inputs, while households consume a large share of foreign-produced goods and services. On the financial side, Swedish residents hold significant foreign assets and liabilities, making global financial fluctuations directly relevant.

Figure 28: Trade Openness and Net Foreign Trade Balance



Note: Percent of GDP. Net exports have been smoothed with a four quarter moving average.
Sources: Statistics Sweden.

8.1.1 Trade integration

One straightforward measure of Sweden's trade integration with the rest of the world is the ratio of (the sum of) imports and exports to GDP. Chart 28 illustrates this measure from 1980 onward. Over this period, international openness has increased substantially: from around 60 percent of GDP in 1980 to above 100 percent by 2025. The chart also shows that Sweden has run a foreign trade surplus for most of the years since the 1992 crisis, averaging 4.4 percent of GDP over 1993–2025.

Sweden is typically a net exporter of goods and a net importer of services, with services becoming increasingly important in recent decades relative to "brick and mortar" goods. In the early 1980s, goods accounted for roughly 80 to 85 percent of imports, while services made up only 15 to 20 percent. Today, services represent 35 to 40 percent of total imports. A similar shift is visible on the export side: services rose from about 15 to 20 percent of export revenues in the early 1980s to 30 to 35 percent by 2024.

International trade is not limited to final goods and services. It also encompasses com-

modities, raw materials, intermediate inputs, technology, and capital goods, which are vital inputs into Swedish production. Access to global supply chains enables Sweden to produce higher-quality goods at lower cost than would be possible under self-sufficiency. According to Eurostat, intermediate goods accounted for more than half of Sweden's imports in 2023, while final consumption goods accounted for less than a quarter. The figures on the export side are very similar.

Geography further reinforces this dependence. Europe is by far Sweden's dominant trading partner, accounting for more than 70 percent of exports and over 80 percent of imports (Chart 29). Within Europe, the EU accounts for 74 percent of exports and 82 percent of imports, making it Sweden's single most important trade block. In comparison, America accounts for about 12 percent of exports and 7 percent of imports, while Asia accounts for just over 10 percent of both exports and imports, with China by far the most significant Asian partner.

The currency denomination of trade matters for understanding exposure to exchange rate fluctuations. A study by Friberg and Wilander (2006), commissioned by the Riksbank, examined invoicing practices in 2002, just three years after the launch of the euro. It found that more than 60 percent of Swedish goods imports in many sectors were denominated in euros, while kronor invoicing exceeded 30 percent only in furniture. On the export side, euros and kronor were used in roughly equal proportions, with shares ranging between 14 and 60 percent depending on the good. More recent estimates are lacking, but given the euro's growing international role, it is likely that euro invoicing has expanded further since then. This inference is consistent with Eurostat evidence showing the euro's prominent role as an invoicing currency, even in extra-EU trade, see Eurostat (2024).[35]

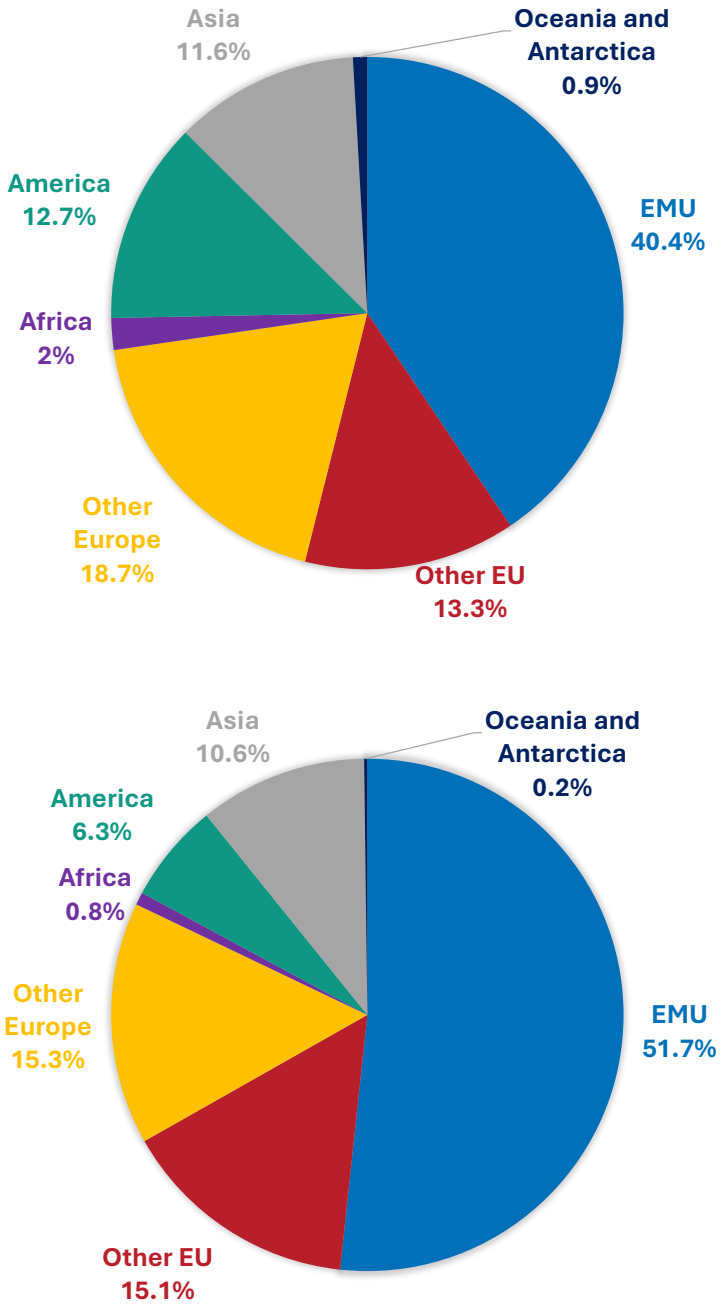
8.1.2 Asset Market Integration

Sweden is also strongly integrated with the world economy through asset markets. Chart 30 illustrates the stocks of Sweden's foreign assets and liabilities and its official international investment position (IIP) as a share of GDP. Swedish *gross* foreign asset and liability positions are very large and have grown strongly over time. In 1992, Sweden's foreign asset holdings corresponded to around 52 percent of GDP and its foreign liabilities to just short of 74 percent of GDP. By 2023, these numbers had grown to 362 percent and 324 percent, respectively.[36] The growth in the gross asset and liability positions reflects

[35]Such invoicing patterns are commonly described as a "dominant currency paradigm," with the euro as the vehicle currency. In this setting, krona depreciation against the euro still raises the krona price of imports, even if export prices are fixed in euros.

[36]These foreign asset and liability estimates are a bit larger than those calculated by Statistics Sweden, which indicate foreign assets corresponding to 324 percent of GDP and foreign liabilities to 296 percent of GDP. The sources of this differences in the estimates are unclear but both measures highlight

Figure 29: Geography of Sweden's Exports and Imports



Note: Top pie is exports, bottom pie is imports. Average over January-May 2025.

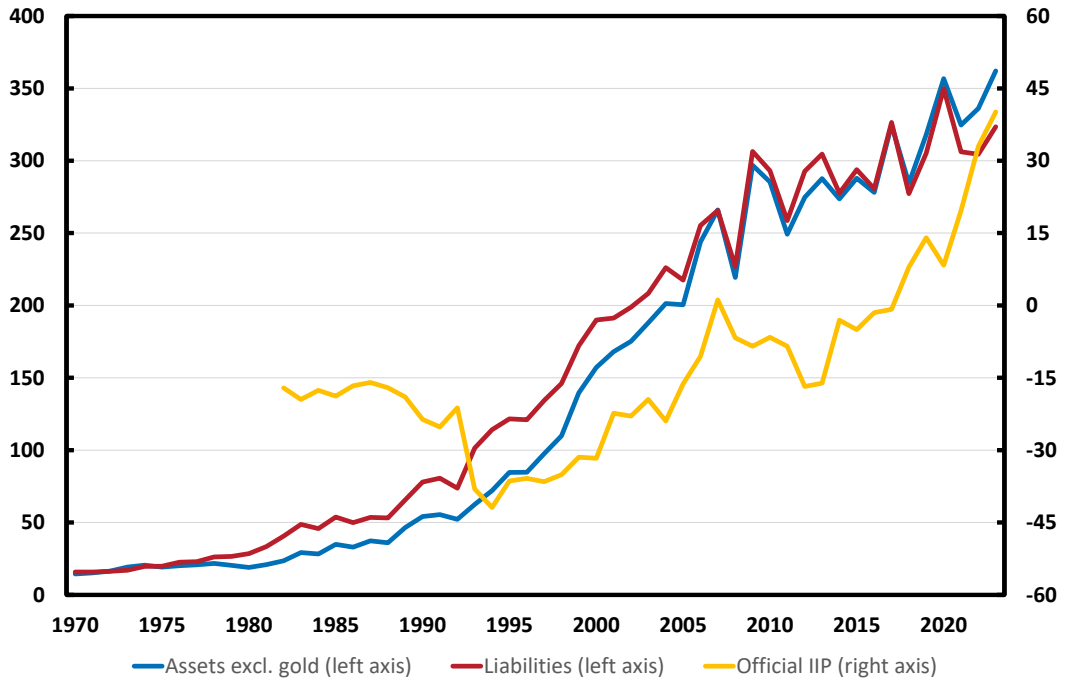
Sources: Statistics Sweden.

increasing portfolio diversification of Swedish investors, and higher demand for Swedish assets on international financial markets.

Sweden's IIP, which represents its net claims on the rest of the world, has also changed

the fact that gross positions are very large.

Figure 30: Sweden's Foreign Assets, Liabilities and the International Investment Position



Note: Percent of GDP.
Sources: Lane and Milesi-Ferretti (2018).

significantly over time. After the 1992 crisis, Sweden had a *negative* IIP position of approximately 40 percent of GDP, reflecting net indebtedness of Sweden towards the rest of the world. By 2023, Sweden held net *claims* on the rest of the world amounting to 40 percent of GDP, the result of persistent trade surpluses, and net positive capital gains on its foreign assets and liabilities. The favourable net capital gains are partly due to the fact that the composition of Sweden's foreign assets has a much larger share in equity and a smaller share in debt than the country's foreign liabilities.

8.2 Exchange Rate Behaviour and Effects

Sweden's deep integration with world markets has two key implications. First, the economy is highly exposed to fluctuations in global demand for its exports, supply of its imports, and global financial conditions. Second, movements in the krona are especially consequential because they affect both importers and exporters, the valuation of foreign assets and liabilities, and the Riksbank's capacity to deliver stable inflation around its target.

On the trade side, the ultimate effect of a krona depreciation or appreciation depends on how prices are set. If the "law of one price" (the LOP) held perfectly, when measured in the same currency, identical goods would sell for the same price across borders because market arbitrage should eliminate international price differences of identical tradable goods. The LOP relies on the absence of trade costs, that prices are flexible, or that, when prices are sticky, that prices are set in the producers' currencies. In these cases, a weaker (stronger) krona would simply translate into higher (lower) import prices to eliminate any induced price difference of the exchange rate movement.

This logic can be extended to *aggregate* price indices. In particular, when the LOP holds for all goods, national price levels expressed in the same currency should also equilibrate across markets, a property known as Purchasing Power Parity (PPP). Under this hypothesis, the *real* exchange rate (i.e., the ratio of domestic to foreign CPI expressed in the same currency) should be constant and equal to one (called "absolute" PPP). This theory rests on very strong assumptions, so it needs to be validated by the data. This is difficult however, since CPIs and other measures of price levels, are simply indices. Fortunately, *relative* PPP can be easily checked by looking at the extent to which the real exchange rate is constant over time.

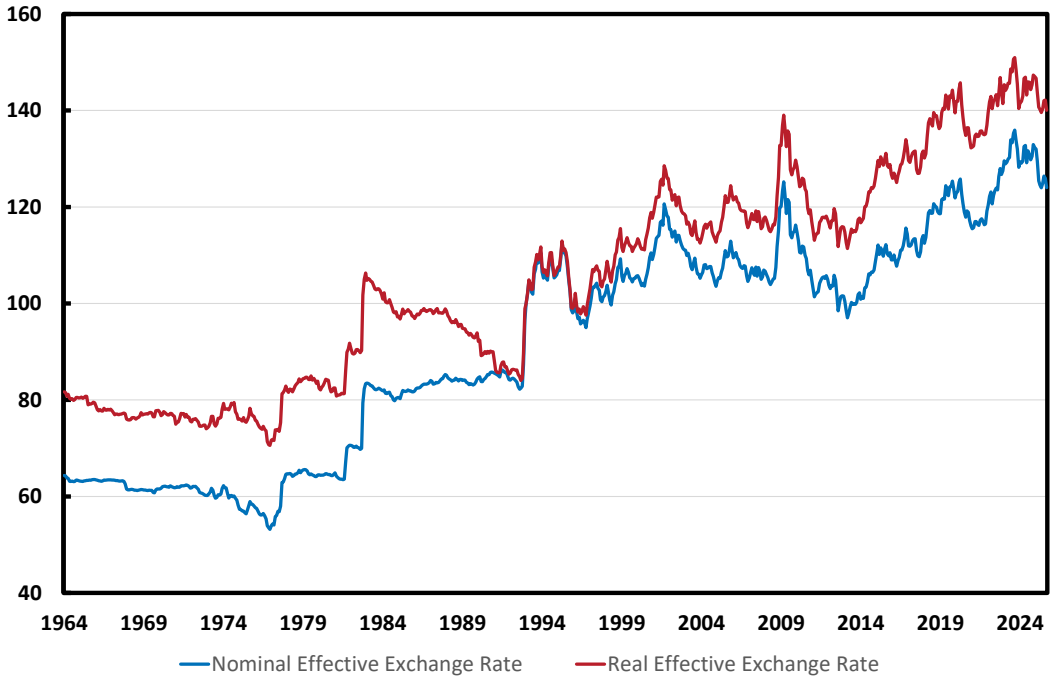
Chart 31 shows the evolution of the real exchange rate based on BIS measures of the effective Swedish real and nominal exchange rates over the period 1964-2024.[37] The evidence clearly does not support the hypothesis that the real exchange rate is constant: The nominal effective krona exchange rate has depreciated by 50 percent over these six decades, and by 25 percent since 1993 after inflation targeting and flexible exchange rates were introduced. Moreover, while the real effective exchange rate has depreciated less than the nominal effective rate over the whole period, the real effective exchange rate has depreciated 7 percentage points *more* than the nominal effective rate since 1993.

Such persistent deviations from PPP are typically attributed to many factors such as deviations from producer currency pricing, trade costs and market power leading firms to charge different prices across markets (pricing-to-market), differences in consumption baskets across countries, and the presence of non-traded goods and services.

A complementary perspective comes from the Big Mac Index. Chart 32 shows the US dollar price of a Big Mac in Sweden, Denmark, Norway and in the Euro Area. Big Macs are perishable and not directly tradable, but the product is highly homogeneous across markets as is the production process and cost differences relate mainly to wages and local rent. This chart shows that Big Mac price differences have been almost entirely eliminated over time across Danish, Swedish and Euro Area markets, while Norway appears to be persistently

[37]The measures are computed against a set of 27 currencies composed of Sweden's main trading partners, using trade weights that are adjusted every three years.

Figure 31: Nominal and Real Effective Krona Exchange Rates

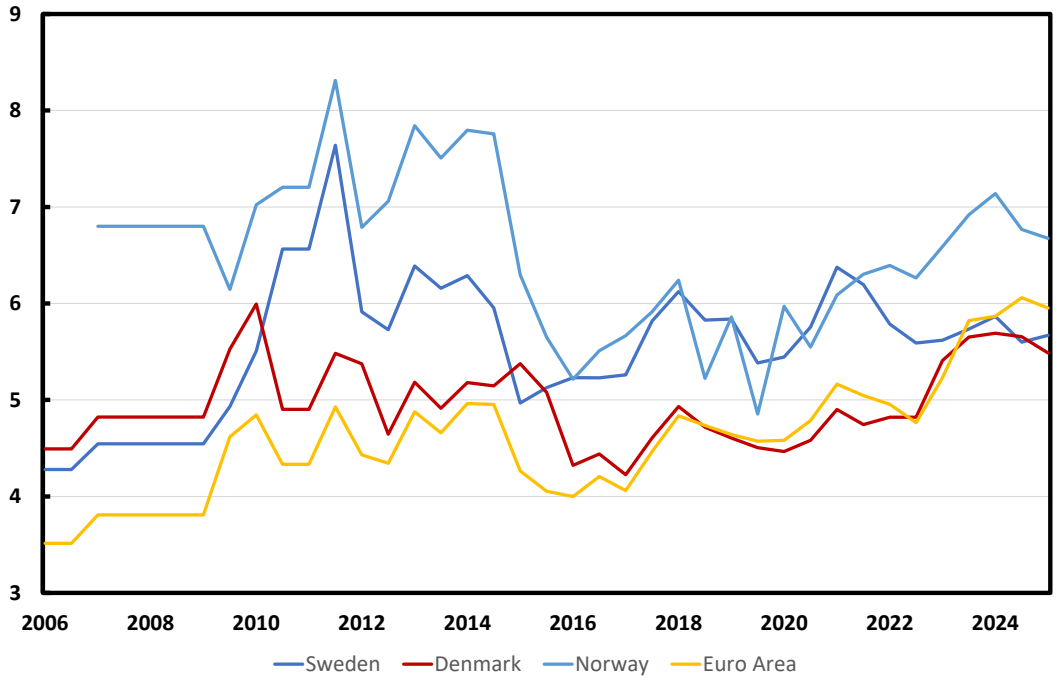


Note: Monthly data. Index January 1993 =100.
Sources: BIS

more expensive than other markets (which may be due to high costs of labour in Norway). This suggests that the krona's depreciation since 2010 may have restored parity rather than created undervaluation. Nonetheless, this evidence is only suggestive and one should not draw strong conclusions from the Big Mac index, given that Big Macs constitute a very small fraction of the consumption basket.

Exchange rate movements also affect Sweden through its balance sheet. According to Statistics Sweden estimates, only 12 percent of Sweden foreign asset claims are denominated in Swedish kronor while the corresponding number for liabilities is 57 percent (2023 data). Thus, when the krona depreciates, Swedish investors experience capital gains (when translated into krona), while foreign investors who hold Swedish krona denominated assets experience capital losses. Given the size of Sweden's gross foreign asset and liability positions, and the asymmetry between its equity-heavy assets and debt-heavy liabilities, these valuation effects are substantial and an important source of macroeconomic volatility (see

Figure 32: The Price of a Big Mac (expressed in USD)



Sources: The Economist.

Devereux and Sutherland (2010)).[38]

In markets characterised by rational investors and frictionless trade in assets, arbitrage should eliminate *expected* return differences between assets with similar risk profiles. The implication of such arbitrage is that the expected rate of depreciation of the currency is determined by nominal interest rate differentials. Thus, when the Swedish interest rate rises relative to foreign interest rates, the excess return on Swedish assets is eliminated through an expected capital loss on holding kronor. In other words, when translated into the same currency, similar assets should earn the same expected return regardless of their currency denomination. In practice, this arbitrage principle implies that the krona appreciates in the short run when Swedish interest rates rise and vice versa.

Although there is no doubt that asset market arbitrage works to eliminate expected return differences, it is also clear that there is more to exchange rates than such simple

[38]The estimates in Devereux and Sutherland (2010) relate to data for the 1980-2006 period, and given the large increase in Sweden's international investment position, it is likely that such valuation effects have become even more of a concern over time.

arbitrage pressures. For example, during the period with negative interest rates in Sweden, the interest rate differential versus the US. dollar was negative. This should have implied an immediate depreciation of the krona and, thereafter, an expected appreciation. Instead, the krona continued to lose value against the US. dollar over this period. There are many potential reasons for why uncovered interest rate parity (i.e., the arbitrage principle outlined above) may not hold at every point in time, such as the presence of risk and liquidity premia, noise traders, and pure speculation.

In sum, exchange rate variations affect inflation, induce price differentials across markets, and add risk to asset markets that can induce cross-border re-evaluation effects.

8.3 Conceptual Frameworks for Regime Choice

There are a number of theoretical frameworks to inform the thinking about the impact of the exchange rate on the economy. The first is grounded in the foundational work of Mundell (1963) and Fleming (1962). Modern treatments of their analyses, such as Svensson and van Wijnbergen (1989) or Obstfeld and Rogoff (1995), provide micro-foundations for these insights in models that assume that prices are set in the producer's own currency, with some degree of "stickiness." In these models, a depreciation of the krona would lead domestic and foreign consumers to switch expenditure towards Swedish goods and away from foreign goods (known as the "expenditure switching" effect). This is because Swedish exports would become cheaper for foreign importers, and imports into Sweden would become more expensive.

The expenditure switching effect underpins the classic case for combining a monetary rule (e.g., inflation targeting) with flexible exchange rates (Friedman (1953)). Flexibility provides an additional degree of freedom to offset sticky domestic prices, enabling monetary policy to close output gaps and address price stickiness relative to trading partners through exchange rate adjustments.

A second framework comes to the opposite conclusion. Here, it is assumed that prices are set in *local* markets (known as local currency pricing) and export and import prices are sticky in the buyer's currency (e.g.,Chari, Kehoe and McGrattan (2002) or Devereux and Engel (2003)). In this environment, a depreciation of the krona would have no expenditure switching effect. Without the central benefit of exchange rate flexibility, pegged exchange rate regimes appear more attractive.

Sweden fits into neither of these extremes. Instead, it reflects a third paradigm in which most international trade is invoiced in a small set of vehicle currencies, above all the euro. Known as "the dominant currency paradigm," expenditure switching operates mainly on imports, but not on exports. In Sweden's case, that is because imports are

invoiced in producer currencies like the euro, while export prices are often sticky in euros. As Gopinath and Itskhoki (2022) emphasise, monetary policy under this paradigm can still help close Sweden's domestic output gap, but it cannot influence rigid euro-denominated export prices. This makes inflation targeting the relevant policy anchor, with a floating exchange rate providing partial insulation through its effect on import prices.

There are, however, two drawbacks to this type of regime:

- **Non-fundamental exchange rate variation** — noise trading and speculation can drive the kronor away from fundamentals, transmitting volatility via import prices and asset returns (Basu et al (2025)). This may require occasional FX interventions.
- **Financial frictions** — constraints in international credit or property markets may amplify shocks, creating a role for macro-prudential policies.

In practice, Sweden not only combines inflation targeting with a floating exchange rate, it also takes measures to address these drawbacks: the Riksbank holds significant foreign exchange reserves and the Financial Supervisory Authority (FSA) deploys macro-prudential tools.

Figure 33 shows the Riksbank's foreign currency-denominated assets and liabilities relative to GDP. At end-2024, FX reserves equaled roughly 8.5 percent of GDP, the largest asset item on the Riksbank's balance sheet, supplemented by gold reserves of about 1.7 percent. On the liability side, foreign currency debt issued by the National Debt Office once financed reserves (starting in 2009) but was phased out by 2023 with the move to "self-financed" reserves. As discussed further in Section 9, when financed in kronor the Riksbank's foreign exchange reserve holdings expose its balance sheet to exchange rate risk. Such exchange rate induced risk can be hedged, but is not costless.

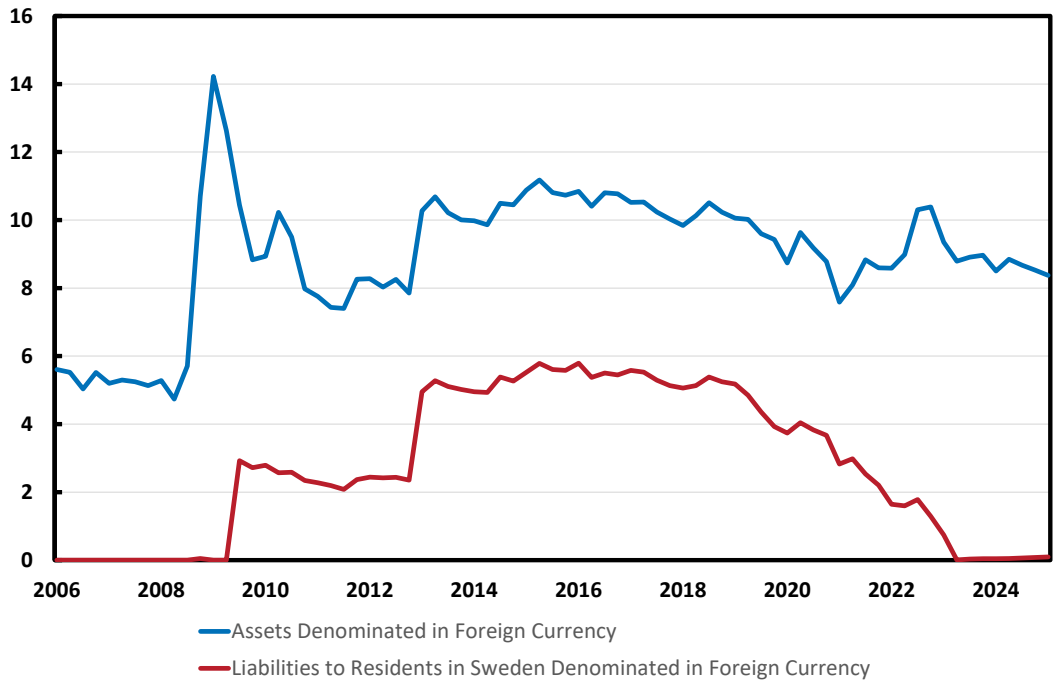
Despite the Riksbank holding such foreign exchange reserves, challenges remain. Interventions can, in principle, counter non-fundamental fluctuations, but identifying the sources of exchange rate variations is difficult.

8.4 Comparative Experiences and Alternatives

Alternative exchange rate regimes have been actively debated. It is a relevant question, particularly given the limited value to Sweden of expenditure switching under the dominant-currency paradigm, and Sweden's deep integration with euro-denominated trade in goods, services, and financial assets.

One alternative option to the current monetary regime would be to *peg the krona to the euro*. This could reduce day-to-day exchange rate risk, while still formally preserving

Figure 33: Riksbank Foreign Currency Denominated Assets and Liabilities



Note: Percent of GDP.
Sources: Sveriges Riksbank.

Sweden's monetary sovereignty, albeit with greatly limited de facto monetary autonomy. It would also retain the option to exit or revise the arrangement in the future.

A more far-reaching option would be to seek *full euro adoption*. This would further lower transaction costs in trade and finance and eliminate most currency-related frictions in cross-border investment with the euro area. Although euro adoption would not remove Sweden's exposure to USD exchange-rate movements, the costs of mitigating these risks would be shared with the broader euro area and absorbed through deeper, more liquid EUR/USD markets, making them more efficient to manage. These benefits would come at the expense of relinquishing monetary independence, leaving Sweden unable to tailor its monetary policy to domestic Swedish conditions. Moreover, while euro membership could mitigate some vulnerabilities linked to cross-border borrowing and property market exposures, it would not insulate Sweden entirely from shocks transmitted through European or global financial markets.

Sweden is not alone in facing the question of which monetary policy regime best serves

a small, highly-open economy. Its Nordic neighbours have taken divergent paths, despite sharing broadly similar economic structures. Iceland and Norway currently operate regimes that resemble Sweden's, combining floating exchange rates with inflation targeting. In contrast, Denmark has maintained a unilateral peg, first to the Deutschemark (from 1982) and then to the euro (since January 1999). Finland adopted the euro outright in 1999 after joining the European Union in 1995.

This diversity of choices of monetary policy regimes amongst similar economies could be for a number of reasons. One possibility is that the exchange rate regime itself has only limited impact on long-run outcomes (see Rangvid (2024)). Another is that sovereignty is perceived differently across countries, shaping the political economy of regime choice. A third explanation is that decisions were made against different historical and economic backdrops. For example, Sweden's choice in 1992 to abandon its peg came after repeated failures of fixed exchange rate arrangements to deliver stability. Finland's decision to join the euro occurred as it was recovering from a deep early-1990s crisis. Denmark, meanwhile, reaffirmed its commitment to a peg after a 1992 referendum opted out of euro adoption, followed by a second referendum in 2000 where a strong majority opposed entry into the single currency.

Against this backdrop, it is reasonable to ask whether Sweden should revisit its own regime choice.[39] As discussed, because Sweden is deeply integrated with the euro area, eliminating SEK/EUR exchange rate risk could yield efficiency gains in both trade in goods and in cross-border asset holdings. In fact, the European Union dominates Sweden's external trade: in 2024, the EU27 accounted for about two-thirds of Sweden's imports and close to 55 percent of its exports. The corresponding figures for the euro area were 53 percent and 41 percent, respectively. These shares have remained remarkably stable since 2000, apart from a marginal rise in EU27 imports.

Trade integration is only one dimension of the relationship. Exchange rate flexibility provides insulation from shocks only if Sweden and the euro area experience significantly asymmetric disturbances. Table 5 reports a range of structural indicators for Sweden and a number of its trading partners: mean real GDP growth, the volatility of real GDP over the business cycle and the correlation of the Swedish business cycle with other countries/regions, the volatility of real GDP growth rates and their correlation with real GDP growth rates of other countries/regions. Results are reported for the period 1995–2025 as well as a pre-Covid sub-sample ending in 2019.[40]

[39] Reflecting similar debates, Iceland in 2025 established an expert commission to examine the case for euro adoption.

[40] The analysis uses a Hodrick–Prescott (HP) filter, which is a statistical smoothing technique used to separate a time series into a long-run trend and a short-medium-run cyclical component.

Table 5: GDP Moments

	Mean Growth	**Business Cycle**		**Growth Rates**	
	Rate (percent p.a.)	Std.Dev.	Correlation	Std.Dev	Correlation
Sweden	2.12 (2.40)	1.67 (1.57)	1 (1)	1.35 (0.64)	1 (1)
Euro Area	1.48 (1.57)	1.79 (1.12)	0.79 (0.84)	1.62 (0.57)	0.76 (0.52)
EU27	1.62 (1.72)	1.79 (1.11)	0.80 (0.84)	1.54 (0.56)	0.78 (0.56)
Norway	1.88 (2.06)	1.25 (1.03)	0.46 (0.34)	1.23 (0.94)	0.39 (0.08)
Finland	1.79 (2.14)	1.82 (1.81)	0.78 (0.76)	1.39 (1.21)	0.62 (0.40)
Denmark	1.59 (1.58)	1.52 (1.27)	0.75 (0.75)	1.36 (0.88)	0.57 (0.28)
United States	2.46 (2.52)	1.31 (1.03)	0.78 (0.74)	1.19 (0.58)	0.78 (0.46)
Great Britain	1.85 (2.08)	2.62 (1.09)	0.68 (0.77)	2.68 (0.58)	0.76 (0.52)

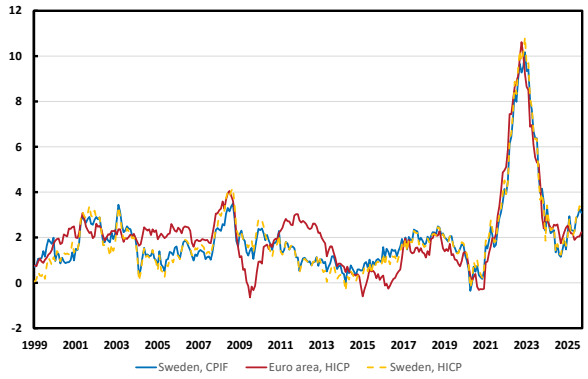
Notes: The table reports moments of GDP in constant prices. The mean growth rate is the average annual growth rate in percent. "Business Cycle" refers to Hodrick-Prescott filtered data with a smoothing parameter of 1,600. "Growth Rates" refers to first-differenced logarithms. "Std.Dev" is the standard deviation. "Correlation" is the correlation with Sweden. Numbers without parenthesis refer to quarterly data, 1995:1-2025:1. Numbers in parenthesis refer to quarterly data, 1995:1-2019:4.
Source: Fred and own calculations.

The evidence does not suggest that Sweden and the euro area experience significant asymmetric disturbances. Sweden's growth performance since 1995 has been comparatively strong, averaging about 2.1 percent annually (and 2.4 percent for the pre-Covid period), with output volatility broadly in line with that of other advanced economies, albeit on the high side when considering the business cycle component. Most importantly, the Swedish business cycle is closely synchronised with that of the Euro area, with correlations in the 0.79 to 0.84 range for the business cycle component. The co-movement of Swedish and Euro area real GDP over the business cycle is actually closer than with Norway or Finland, and only marginally lower than with Denmark. There is also a strong correlation with the US and Great Britain, but these countries do not account for much of Sweden's foreign trade relative to the Euro area. Taken together, these findings indicate that Sweden's shocks are not strongly divergent from those of the Euro area, a finding which suggests that the economic benefits of a floating exchange rate as a buffer may be correspondingly limited although the evidence should be interpreted with care.

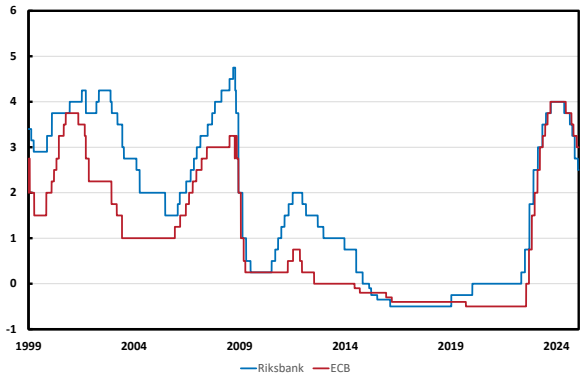
Another consideration relates to policy choices and inflation outcomes. Chart 34 shows that the Riksbank and the ECB did not always move their policy rates exactly in lockstep: Sweden raised rates earlier in 2010–2011, cut more aggressively in 2015, and returned to zero earlier in 2020, while also tightening sooner in 2022. Accordingly, inflation in Sweden

Figure 34: Sweden and the Euro Area - Inflation, Policy Rate and the Krona/Euro rate

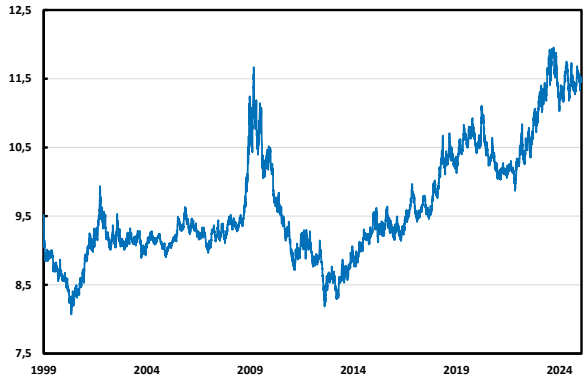
Inflation Rates



Policy Rates



The Krona/Euro Rate



Note: Panels (a) and (b) percent, panel (c) SEK/EUR nominal exchange rate. Inflation is the 12-month change in the CPIF and HICP (Sweden) and HICP (Euro area).

Sources: Sveriges Riksbank.

tracked below the euro area when the Riksbank was tighter in 2010–2013, moved above Euro area inflation when the Riksbank loosened the monetary policy stance earlier than the ECB in 2015–2018. Thereafter Swedish and Euro area inflation rates have converged. From a birds eye view, however, the overall picture is one of striking similarity between both the paths of interest rates and the inflation outcomes, especially over the most recent decade.

While interest rate and inflation trajectories have moved largely in tandem, the krona has steadily depreciated against the euro. In particular, the krona has declined in value from 9.5 kronor per euro in 2015 to about 11.5 kronor per euro at the end of 2024, a

nominal depreciation of more than 20 percent. Of course, such changes in exchange rates can quickly reverse, but they do expose Swedish households and businesses to currency risk in their transactions with the Euro area. Moreover, the evidence on significant movements in the Euro/SEK exchange rate despite very similar inflation and interest rate paths either implies a crucial role for the exchange rate in allowing Sweden to stabilise its inflation rate close to its target and ensuring itself against asymmetric shock, or, alternatively, that changes in exchange rates have occurred for non-fundamental reasons.

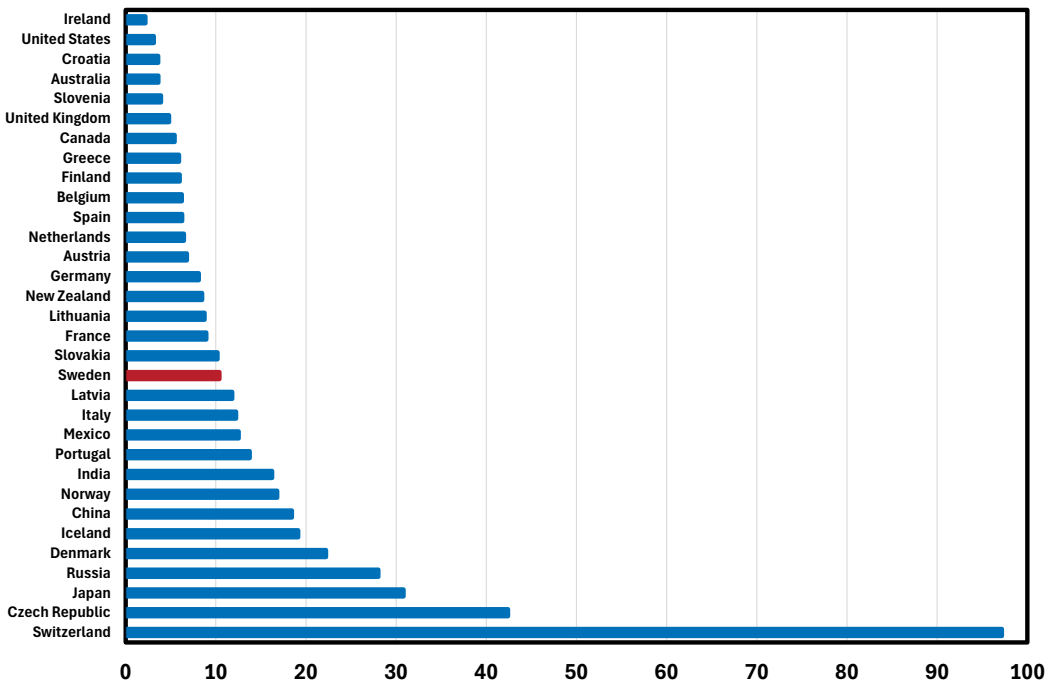
Either way, our conclusion is that policy outcomes in Sweden and the Euro area have been more alike than different, leaving the exchange rate as the main distinguishing feature. This suggests that any renewed debate on euro adoption should focus less on the implications for economic stabilization and more on broader issues such as efficiency, sovereignty, and democratic legitimacy.

9 Sweden's Foreign Exchange Reserve Management

Central banks hold foreign exchange reserves for several reasons: to provide liquidity in foreign currency during crises, to intervene in the FX market when necessary, to meet international obligations such as IMF commitments, and to generate conservative income that supports financial and operational independence. According to the IMF's *Guidelines for Foreign Exchange Reserve Management* (International Monetary Fund (2001)) the primary objectives of foreign exchange reserves management are safety and liquidity, with return a distant third.

Openness to foreign trade and the size of the financial sector typically drive reserve levels (Obstfeld, Shambaugh, and Taylor (2010)). Sweden is highly open and has a large banking system (around 300 per cent of GDP), which explains why its reserve assets are larger than many other open economies with flexible exchange rates (e.g., the UK and Australia), but below Denmark's fixed-peg regime (Figure 35).

Figure 35: International Comparison of FX Reserves



Note: FX reserves as percent of GDP, 2024 figures

Sources: IMF and Sveriges Riksbank.

9.1 Riksbank Reserve Assets

The Riksbank states that its foreign exchange reserve assets are intended to provide foreign-currency liquidity to Swedish banks in stress, to meet international obligations such as IMF commitments, and to enable FX interventions if required.[41] Given Sweden's floating exchange rate regime, the liquidity function dominates in practice.

Consistent with this approach, the IMF's 2016 *Financial Sector Assessment Program* stressed that the Riksbank's ability to supply foreign-currency liquidity was central to Sweden's financial-stability framework, recommending that it maintains adequate reserve buffers. They also recommended securing swap arrangements with other major central banks, see International Monetary Fund (2016). The Riksbank has broadly followed this approach, keeping sizable reserves. In particular, reserves (excluding gold) were expanded sharply after the global financial crisis reaching around SEK 500 billion at the end of 2024 (see Figure 36). Furthermore, the Riksbank has maintained contingent access to foreign-currency liquidity through standing and temporary swap lines.

9.2 Assets and Exposure to the Financial Sector

Swedish banks' balance sheets create large USD and EUR needs. The large gross exposures in these currencies arise not only from direct lending and funding, but also from activities such as providing services to pension funds and to other institutional investors. Table 6 sets out the currency composition of Swedish banks' foreign assets and liabilities in 2023.

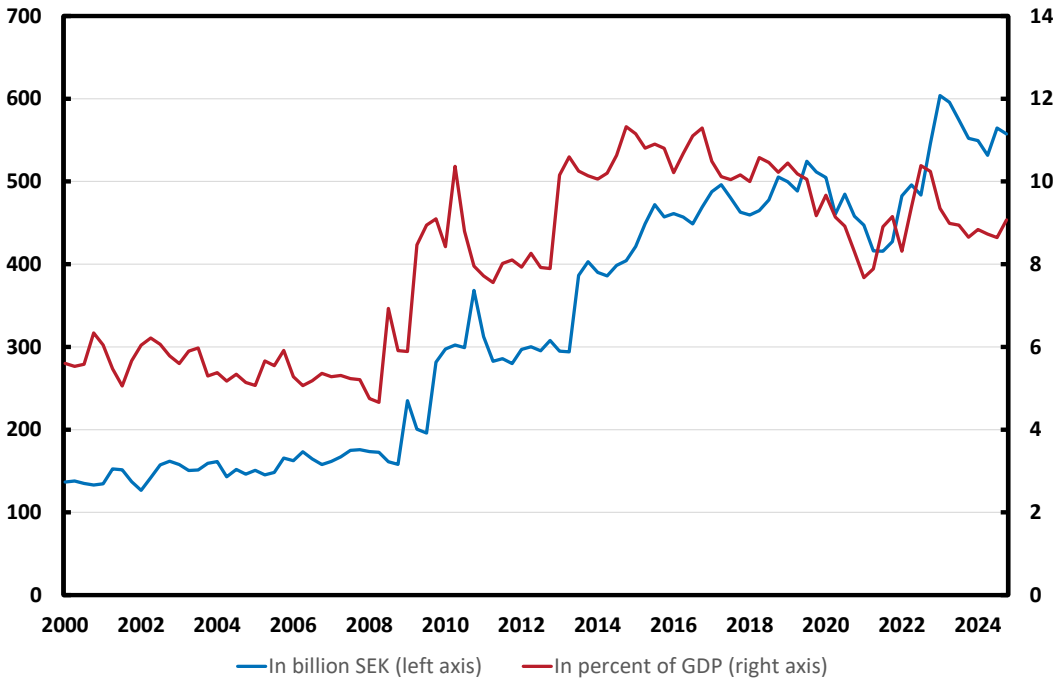
Table 6: Currency Composition of Swedish Banks' Foreign Assets and Liabilities, 2023

Currency	Assets, SEK mn (share)	Liabilities, SEK mn (share)
US Dollar	710,340 (20%)	998,546 (29%)
Euro	1,332,077 (37%)	1,078,267 (31%)
Yen	810 (0%)	2,160 (0%)
British Pound	213,157 (6%)	237,631 (7%)
Renminbi	3,881 (0%)	2,010 (0%)
SEK	553,394 (16%)	810,493 (24%)
Other currencies	744,842 (21%)	300,993 (9%)
Total	3,558,500 (100%)	3,430,100 (100%)

Source: Statistics Sweden and Riksbank.

[41] For more information, see the Riksbank website https://www.riksbank.se/en-gb/markets/the-gold-and-foreign-currency-reserve/the-foreign-currency-reserve/en

Figure 36: Riksbank Foreign Exchange Reserves 2000-2024

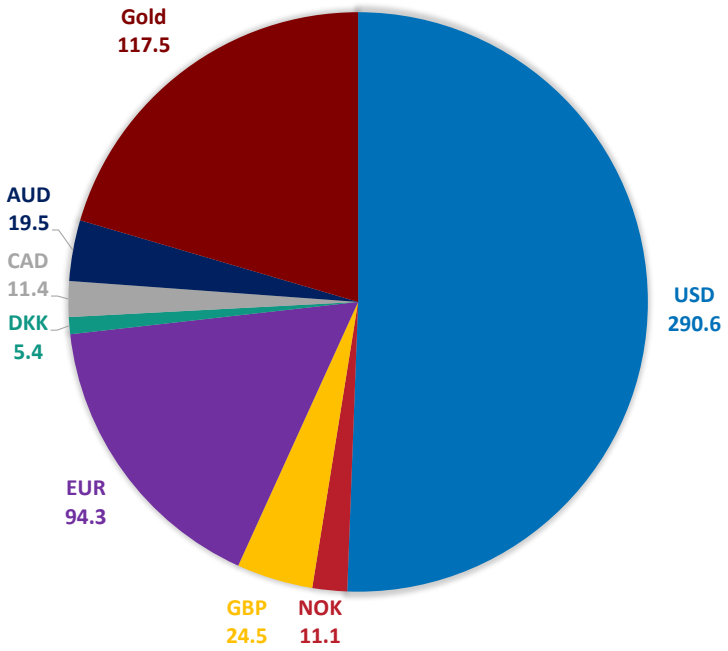


Note: Billion SEK and percent of GDP, respectively.

Sources: Statistics Sweden and Sveriges Riksbank.

The table shows a large USD funding gap, with liabilities exceeding assets, making banks reliant on FX swaps and short-term rollover. A gap exists in euro as well, but it is smaller. This explains why the Riksbank holds a larger share of USD reserves (about 63 per cent of currency reserves) than EUR reserves (about 21 per cent), despite the exposure to euro-denominated assets being larger on banks' balance sheets (Figure 37). The choice reflects a particular need to backstop USD markets in periods of stress because of the limited and conditional nature of Fed swap or repo facilities and because of the structural USD exposures of Swedish corporates and investors. In contrast, euros are somewhat easier to obtain through European channels, which justifies a lower reserve share. Smaller exposures of Swedish banks to GBP, RMB and other currencies are reflected in modest Riksbank reserve holdings of assets denominated in these currencies. Gold is retained for diversification, although its role is limited by gold price volatility.

Figure 37: Currency Composition of Riksbank Reserves by Currency and Gold



Note: 2024 figures, billion SEK

Sources: Sveriges Riksbank.

9.3 Overall Swedish Currency Exposures

Sweden's external balance sheet shows even more clearly the predominance of USD and EUR. At the aggregate level, assets and liabilities are heavily denominated in these two currencies, although liabilities are mainly in SEK (Table 7).

In the aggregate, Sweden is a net foreign creditor holding claims on the rest of the world. Sweden has very large holdings of USD and EUR assets, while liabilities are dominated by krona denominated liabilities. This asymmetry means that Sweden is net long in foreign currency, especially USD, while most funding obligations are domestic.

Even though Sweden's net position looks comfortable, liquidity needs in a crisis period depend on *gross* mismatches and rollover risk. A stark example is the 2008–09 global financial crisis. At that time, Swedish banks faced severe difficulties rolling over short-term USD funding, even though Sweden's external balance sheet was net long in foreign currency. What mattered was not the country's net asset position, but the ability of the

Table 7: Currency Denomination of All Foreign Assets and Liabilities (including banks), 2023

Currency	Assets, SEK mn (composition)	Liabilities, SEK mn (composition)
US Dollar	6,365,029 (32%)	2,407,597 (13%)
Euro	5,814,375 (29%)	4,168,399 (23%)
Yen	252,226 (1%)	29,543 (0%)
British Pound	881,031 (4%)	419,305 (2%)
Renminbi	164,836 (1%)	12,068 (0%)
SEK	2,356,804 (12%)	10,275,932 (57%)
Other currencies	3,915,859 (20%)	713,528 (4%)
Total	19,750,161 (100%)	18,026,372 (100%)

Source: Statistics Sweden and Riksbank.

Riksbank to quickly mobilise liquid USD securities for the purpose of on-lending to banks.

The Riksbank ended up meeting demand for USD funding through a combination of its own reserves and a discretionary swap line with the Federal Reserve. The swap line ultimately provided the Riksbank with up to USD 30 billion, complementing the Riksbank's own FX reserve stock, but it was temporary and subject to US policy approval. The Riksbank's conclusion since then has been that sovereign reserves remain essential as a first line of defense, because there is no guarantee that extraordinary facilities will always be available in the future when needed.

9.4 Financing and Risk Management

Until 2021 the Riksbank financed a significant share of its foreign exchange reserves through loans in foreign currency from the National Debt Office. These arrangements, introduced after the global financial crisis, allowed foreign exchange reserves to be expanded rapidly without requiring large krona sales. In 2021 the Executive Board decided that future reserves would be financed on the Riksbank's own balance sheet, and the transition was implemented during 2022.

The new funding model increased the Riksbank's direct exposure to exchange-rate fluctuations. When reserves are financed in krona, an appreciation of the krona reduces the domestic-currency value of foreign assets, while SEK-denominated liabilities remain unchanged. The result is that the Riksbank's equity has become more sensitive to exchange-rate movements, see Kjellberg and Vestin (2019) and Sveriges Riksbank (2023f).

The institutional issues surrounding reserve financing had already been considered in

a government inquiry in 2007, which identified the open foreign-currency position as a major source of risk and stressed the need for adequate equity buffers, see SOU (2007). Subsequent commentary by Kjellberg and Vestin (2019) confirmed the continuing relevance of these findings.

The balance sheet risk induced by the decision of the Riksbank to self-finance its foreign exchange reserves led to a decision in 2023 to introduce hedging as part of the reserves management framework, using forwards and swaps. The objective was to reduce the volatility of the net equity of the Riksbank while retaining the underlying reserve assets in liquid, usable form, see Sveriges Riksbank (2023f). Particular care was taken to implement the new risk management strategy in a gradual fashion and to communicate that the strategy was solely for risk management, and not foreign exchange intervention.

9.5 Assessment

Given Sweden's exposure to exchange rate risk, we agree that it is sensible for the Riksbank to hold FX reserves. The geopolitical backdrop, including related uncertainty surrounding the future availability of swap facilities, has made the case for FX reserves stronger.

It should, however, also be recognised that once the Riksbank holds sufficient FX reserves to credibly signal its ability to provide foreign-currency liquidity and to mitigate destabilising capital flows in periods of crisis, it can influence incentives within the financial system. Swedish banks may come to expect that foreign-currency liquidity will always be provided by the central bank, which could weaken market discipline and can encourage over-reliance on short-term foreign currency denominated funding. That said, sound prudential liquidity regulation and clear communication from the Riksbank that reserves are meant to safeguard systemic stability and not to insure individual institutions, mitigate risks associated with moral hazard.

A second issue relates to the financing of the FX reserves. The transition to self-financing in 2022 and the introduction of hedging in 2023 have materially changed the risk profile of the Riksbank's balance sheet. While the move has reduced the dependence of the Riksbank on the National Debt Office, it has also introduced its balance sheet exposure to exchange-rate fluctuations. This raises additional questions about how balance-sheet risks are shared between the Bank and the state.

Prior to the current self-financing scheme, the Riksbank's foreign exchange reserves were financed through the National Debt Office issuing foreign currency denominated debt and then making the proceeds available to the Riksbank. In a strict accounting sense, this system would appear to be neutral with respect currency risk because the National Debt Office, would simultaneously hold a foreign currency denominated liability and a

corresponding foreign currency claim on the Riksbank, and vice versa for the Riksbank.

Nonetheless, this accounting neutrality does not imply that exchange-rate risk was absent from the public sector as a whole. Interest and principal on foreign currency denominated debt ultimately need to be serviced out of krona-denominated fiscal revenues, implying an exposure of the state to exchange-rate movements. Moreover, unless the currency and maturity composition of the foreign exchange reserves perfectly matched that of the National Debt Office's debt issuance, additional risk would arise from these mismatches. That said, under the previous arrangement, exchange-rate risk was ultimately borne by the state but absorbed implicitly through the consolidated public sector balance sheet, rather than appearing directly on the Riksbank's own balance sheet.

It is not clear that there is a strong argument for shifting the currency risk to the Riksbank's balance sheet. Added to this, the National Debt Office has substantial expertise related to debt issuance and management which would seem natural to exploit. From a cost perspective, financing reserves via short-term swap markets (typical under self-financing) may also differ from foreign currency debt issuance even in normal times, reflecting rollover risk and exposure to movements in swap spreads. Moreover, the Riksbank would very likely need to rely on the government to raise financing for the reserves in times of severe financial stress. In conclusion, there would appear to be good reasons for examining in some detail the financing of the foreign exchange reserves.

Reserves of a size commensurate with Sweden's openness and the scale of its banking system are clearly warranted. What is less clear is how the appropriate level is determined and updated in practice. The current approach appears to be weighted toward qualitative judgment rather than a comprehensive empirical framework, including regular modelling of foreign exchange liquidity needs in case of financial stress. While the Riksbank has published an investment policy for the gold and FX reserves (see Sveriges Riksbank (2025)), relatively little information is available publicly on its formal approach to calibrating reserve adequacy, composition, and risk appetite. These design questions, along with issues related to institutional responsibility and transparency, are considered in the concluding recommendations.

10 Recommendations and Concluding Remarks

The Riksbank is a central player in Sweden's macroeconomic framework. It is an independent institution under the authority of the Swedish Parliament and is responsible for ensuring low and stable inflation in Sweden. It has a deservedly-high reputation for its conduct of monetary policy, and it commands considerable respect internationally.

Over the 2015-24 period, the Riksbank navigated numerous significant challenges to monetary stability with considerable skill and a clear focus on its mandate. At the beginning of the evaluation period, the Riksbank was faced with inflation below its target and falling inflation expectations, while the policy rate had already been lowered to zero. In response, the Riksbank turned to unconventional monetary policy tools, including setting negative nominal interest rates, conducting QE for monetary policy purposes, and using forward guidance. Subsequently, inflation returned to near its target and inflation expectations recovered.

Just as the policy rate returned to zero and QE was terminated in 2019, the world economy faced the challenges of the Covid-19 pandemic in early 2020. The Riksbank responded to the early uncertainties of the pandemic in a decisive and competent fashion, and its actions contributed to Sweden avoiding worst-case outcomes. As the uncertainties of the pandemic dissipated, the Riksbank was faced with rising inflation. The inflationary pressures, which started in the second part of 2021, derived from a combination of supply channels initially considered to be temporary in nature. As many other central banks, the Riksbank initially hesitated to tighten monetary policy. When the Riksbank eventually changed course, it managed to halt the rise in inflation at the end of 2022 through steep increases in the policy rate. The subsequent return of inflation towards its two percent target allowed the Riksbank to start a policy rate-cutting period from May 2024.

Through its actions over the evaluation period, the Riksbank has contributed to maintaining monetary stability. Sweden's macroeconomic framework remains one of the strongest among advanced economies. Still, the last ten years have tested monetary policy to its limits. The unconventional measures used in the early part of the period were untested, and their full effects still need to be understood. Moreover, during the 2010s, inflation persistently undershot the target, reflecting policy trade-offs and judgment errors that the Bank itself has acknowledged. Later, from 2021 onward, inflation sharply overshot the two-percent target, and the unprecedented global supply shocks tested both the Riksbank's forecasting capacity and its willingness to act decisively.

These experiences highlight the need to strengthen the analytical, institutional, and communication frameworks that underpin monetary policy. A common theme of our evaluation is that, while Sweden's macroeconomic framework has delivered strong results, there

is a need to review how effectively it supports information sharing, clear communication, and well-grounded discussions of the most appropriate policy responses. We also see merit in conducting a fulsome analysis of Sweden's external monetary framework. The recommendations that follow focus on how these reforms can be implemented in practice, and on the further policy and analytical enhancements needed to keep Sweden's monetary and financial framework both credible and resilient.

10.1 Strengthen the Framework for Monetary-Policy Tools

The new *Riksbank Act* has introduced stronger governance for extraordinary monetary measures and requires formal justification of such actions. This goes some way toward addressing the lack of an ex-ante cost-benefit framework and the absence of clear exit principles noted in our analysis. To make these reforms fully effective, further steps are advisable.

- **Develop and publish a structured framework for defining and assessing the net benefits of unconventional tools.** This would involve a systematic assessment of how effective these tools are in meeting inflation-targeting objectives, and how these benefits are weighed against financial-stability and balance-sheet risks. The framework would be grounded in explicit assumptions, supported by empirical estimates, and explored through alternative scenarios that make potential policy trade-offs transparent. It would clearly differentiate between asset purchases for market functioning purposes and for monetary stimulus reasons, a distinction that was not always clear in the early phase of the pandemic (see Section 3.2). Clarifying intent would inform programme design and help prevent misconceptions about monetary financing. Moreover, ex-ante and dynamic cost–benefit assessments would help guide both the initiation of and exit from unconventional measures. This framework should be applied first to the Riksbank's use of QE and other unconventional policy tools (e.g., negative nominal interest rates) over the reporting period, with results published. Moreover, the results should be used to guide contingency planning around possible future use of QE relative to other options.

- **Set predefined principles for exit strategies.** The drawn-out reinvestment phase and subsequent asset sales highlight the need for forward planning. Exit strategies need to specify triggers, contingencies, and communication protocols, balancing policy objectives and balance sheet implications, and other risks. (Sections 4.3.3 and 4.3.4).

- **Strengthen communication and cost–benefit framing of unconventional policy actions.** Forward guidance on the policy rate was generally well understood,

but QE and similar tools were often communicated as fixed programmes. Future communication should make the scale and duration of such measures explicitly conditional on the evolving outlook (Section 5). In addition, while the Riksbank was relatively transparent about its unconventional policy decisions, the Executive Board could have articulated more clearly, especially early on, how expected macroeconomic benefits were weighed against financial-stability risks and potential capital losses. Providing timely explanations of these trade-offs would strengthen transparency and public understanding under the new *Riksbank Act's* accountability provisions (Section 5).

10.2 Increase information sharing between fiscal and monetary authorities, particularly during periods of stress

Sweden's disciplined fiscal framework has delivered credibility and low government indebtedness to its fiscal policy regime. Nonetheless, it must be recognised that this strictness imposes potential risks to the Riksbank balance sheet when asset purchases are required to achieve the inflation target in periods of a binding ZLB. If these risks crystallise, as they did recently over the reporting period, the strictness of the fiscal framework may unintentionally undermine the Riksbank's credibility and even the support for its financial and operational independence over the longer term.

There are signs in Sweden of a more active use of fiscal policy in the future. The Government's proposed amendment to the *Budget Act*, to replace the net-lending surplus target of 0.33 percent of GDP with a balanced-budget target measured over the economic cycle, would potentially allow for a fiscal stimulus in downturns (if enacted). Allowing military investments to be debt-financed, also potentially introduces a source of unfunded policies. These developments will have macroeconomic consequences, and also facilitate a different monetary-fiscal policy mix.

In this regard, we recommend:

- **Enhanced communications between monetary and fiscal authorities, particularly in the case of deep downturns.** The goal of these communications would ***not*** be to take joint decisions, as mandates and responsibilities should be respected. Instead, the goal is to inform discussions about what kind of policy actions and overall strategies might yield the greatest net benefits at the lowest risk.

- **Consider the alignment of debt-management strategy with unconventional monetary operations.** During QE, the National Debt Office continued issuing long-term bonds even as the Riksbank purchased them (Figure 27). The Government and

National Debt Office, in consultation with the Riksbank, should coordinate issuance maturities during active QE to align consolidated risk management.

- **Review implementation of the Riksbank's equity framework.** The *Act's* equity metric includes unrealised valuation changes on government bonds. It should be evaluated whether mark-to-market pricing of Riksbank holdings of government bonds in the measure of equity used in the new *Riksbank Act* is appropriate or not.

10.3 Enhance Forecasting, Modelling, and Risk Assessment

The 2021-2022 period was associated with large inflation forecast errors on part of the Riksbank. Forecasting is inherently difficult in uncertain times, yet it is important to use the lessons learned from this episode to invest in improving the Riksbank's analytical capacity. This would further enhance both its policy calibration and its communication.

- **Further improvements in MAJA.** MAJA should model the housing sector and fiscal policy more fully. The Riksbank should also investigate how to adapt the model to incorporate more flexibility in how prices in Sweden respond to shocks. While it is not tractable to introduce fully non-linear dynamics into a large-scale model such as MAJA, the Riksbank should consider the use tailor made, smaller-scale models to assess the implications of important non-nonlinearities and to explore risks to the outlook or alternative scenarios. (Section 6.3.2)

- **Expand the use of high-frequency and real-time data.** Integrating nowcasting models based on administrative and transaction data, as in recent ECB and Federal Reserve initiatives, is required to improve near-term forecasting when traditional indicators fail. Sweden has a wealth of high quality data that can be exploited in this dimension. (Section 6.3.1)

- **Institutionalise scenario analysis in decision processes.** Each *Monetary Policy Report* should include at least two alternative scenarios with explicit policy implications. This will embed risk management more firmly in Executive Board deliberations and make uncertainty communications more credible (Section 6.3.3).

- **Formalise the participation of the Head of Research in monetary policy deliberations, but without voting rights.** While the Head of Research and staff from the Research Division already participate in preparatory meetings and analytical work leading up to monetary policy decisions, their role is not formalised at the level of the Executive Board's deliberations. Doing so would better leverage the expertise of the Research Department by bringing in relevant findings from the

broader academic and policy literature, and by providing an informed challenge to potential group-think. Since the Head of Research is not responsible for producing the baseline forecast, this role can also help introduce fresh perspectives at the decision-making stage.

10.4 Strengthen Framework for Financial Stability

The *Riksbank Act* clarifies the hierarchy of objectives—placing price stability first, with real economic stability and financial stability as secondary objectives—but responsibilities for financial stability are dispersed across several institutions, including the Financial Supervisory Authority and the National Debt Office (Sections 2.1.1, 2.1.2, and 2.1.4). Over the evaluation period, cooperation among these authorities has been regular, including information sharing, joint analytical work, and structured forums such as the Financial Stability Council and its preparatory group. However, this coordination has been largely consultative and often occurred in parallel to, rather than ahead of, policy actions, particularly during periods of acute stress. With responsibilities for macroprudential tools and crisis measures fragmented across institutions, this raises the risk of gaps in risk identification and suboptimal responses when financial stability risks materialise. These risks are particularly salient for the Riksbank, given its dual role in pursuing price stability and acting as the lender of last resort.

There are a number of steps that should be considered to strengthen the financial stability framework:

- **Support swift action by the Riksbank in times of crises, while respecting the new consultation rules.** Consistent with the new *Riksbank Act's* consult-unless-immediate clause, a memorandum of understanding between the Riksbank, the Financial Supervisory Authority and the National Debt Office should be drawn up to define in advance what constitutes "immediate action" and how consultation occurs under stress. This will improve cohesive inter-agency preparedness, credibility, and speed of execution of the new framework.

- **Reduce fragmentation and establish stronger coordination mechanisms for macro-prudential policies.** Sweden needs to ensure that borrower-based measures, liquidity and capital tools, and non-bank oversight are not managed in silos. Decisions with regards to these measures should continue to be delegated to independent institution(s), so that they remain unfettered by short-term political considerations, but at the same time, subject to clear accountability and transparency. Coordination can be achieved under different institutional arrangements (i.e., concentrated or

disperse authorities), but strong coordination mechanisms are advisable. The United Kingdom's Financial Policy Committee is one example of how clear statutory roles and collaborative decision-making can coexist. Sweden could adapt this model to its own structure, preserving separate authorities while coordinating through a formal financial-stability committee or equivalent body.

- **Publish regular joint risk assessments.** A semi-annual analytical report by the Riksbank and FSA on systemic vulnerabilities –including cross-border and non-bank channels, would enhance shared situational awareness without altering legal responsibilities.

10.5 Reassess Sweden's External Policy Framework

As discussed in Section 8 and 9, Sweden's external monetary framework faces a number of challenges. While the floating exchange rate has likely provided valuable flexibility, the exchange rate has not stabilised even though Sweden and the Euro Area are increasingly aligned in monetary policy choices and inflation outcomes. Given the floating exchange rate regime and the exposure of financial institutions to exchange rate risk, the Riksbank holds foreign exchange reserves. The foreign reserves framework must balance the need for adequate foreign-currency buffers against balance-sheet and moral-hazard risks. Together, these issues call for a forward-looking assessment of Sweden's external monetary architecture, and for a review of Riksbank's foreign exchange reserve policies and financing.

- **Undertake a systematic review of the exchange-rate regime.** Given Sweden's close business-cycle alignment with the euro area and the krona's prolonged weakness, the Government should commission an updated formal assessment to inform it of the regime's implications for Sweden's economic welfare. This study should compare the stabilization benefits of a float with the potential efficiency and integration gains of alternative arrangements. The review should also examine how technological innovations, such as the ECB's prospective digital euro, US dollar-backed stablecoins, and private tokenised payment systems, could affect the krona's role as a medium of exchange and settlement asset, and related monetary policy and balance sheet issues.[42] Our aim is not to advocate a change, but to ensure that decisions regarding the exchange-rate regime are grounded in up-to-date and comprehensive evidence.

- **Develop, formalise, and publish a quantitative framework for reserve adequacy.** While the Riksbank already employs an internal methodology for assessing

[42] See the discussion in Nessén, Sellin and Sommar (2018) of related issues in the context of an e-krona.

reserve adequacy, including stress testing, only parts of this framework are currently public. The Riksbank should formalise and publish a comprehensive methodology linking the size of its foreign exchange reserves to external exposures and crisis-liquidity needs, drawing on international benchmarks such as IMF guidance and cross-country experience. Regular stress testing and disclosure of hedge ratios would improve transparency, while reducing perceptions of open-ended central-bank support.

- **Clarify institutional responsibilities for reserve financing and hedging.** Following the 2022-2023 shift to self-financing, the Riksbank and the National Debt Office need to jointly assess whether current arrangements are cost effective and optimally share and manage risk, and remain consistent with the principles of financial independence set out in the 2007 government inquiry. In this context, there should also be an evaluation of which financing system would be most robust in crisis times.
- **Commission an independent external review of the reserve framework.** A periodic study can benchmark Sweden's reserve policies against peer practices, evaluate the appropriate level under the new funding model, and assess how balance-sheet and moral-hazard risks are managed within the broader financial-stability framework.

Summary

The recommendations in this report are intended to build on the Riksbank's considerable strengths, and to help it meet the next generation of policy challenges. They address both the institutional reforms already under way, and the practical steps needed to improve co-ordination, analytical capacity, and communication across Sweden's macro-financial framework. Implementing them will further reinforce the credibility and resilience of Sweden's monetary and financial system in an environment of continuing global uncertainty.

The review also concludes that it would be appropriate to step back and take a fresh look at Sweden's external monetary framework. This is not a step to be taken lightly, but it is merited by the experience of persistent krona weakness, deep economic integration with the euro area, and the evolving demands placed on the Riksbank's foreign-exchange reserves. A careful, evidence-based examination of these issues would help ensure that Sweden's overall policy architecture remains well suited to the next phase of global and regional change.

Finally, it merits highlighting that a strength of the Swedish system is that the Riksbank is an independent institution that is subject to periodic external evaluations. We found the process to be mature, open, and genuinely engaged. This reflects a culture within the Riksdag Finance Committee and the Riksbank that values continuous improvement and constructive feedback. That willingness to learn and adapt is one of the reasons the Riksbank performs so effectively and commands such respect internationally.

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A Annex 1: Terms of reference for evaluation of Swedish monetary policy 2015–2024

Summary of the assignment

One or two evaluators shall examine the implementation of Swedish monetary policy and the outcome of monetary policy during the period 2015–2024. Among other things, the evaluators will:

- analyse whether monetary policy during the period has been well-balanced with a view to achieving the objective of price stability over time;
- analyse the effects of the conducted monetary policy on real economic and financial developments in Sweden, in particular the effects of the Riksbank's purchases of securities;
- examine and analyse the Riksbank's forecasts and analyses of different scenarios, and evaluate the Riksbank's ability to predict changes in inflationary pressure;
- examine and analyse the Riksbank's communication regarding monetary policy decisions during the period;
- analyse and compare Swedish monetary policy and its effects on the Swedish economy with the monetary policy of other relevant central banks;
- analyse the possibilities of and need for conducting a different monetary policy in Sweden, given international economic and geopolitical developments during the evaluation period;
- analyse the significance of the exchange rate for the implementation of monetary policy and the Riksbank's communication regarding the development of the exchange rate;
- analyse the effects of the transition to self-financed foreign currency reserves.

The evaluation shall be presented in the form of a written report to the Swedish Parliament's Committee on Finance by December 2025 at the latest.

The assignment of evaluating the Riksbank's monetary policy in 2015–2024

Background

Since the Riksbank was granted independent status in the late 1990s, the Swedish Parliament's (Riksdag) Committee on Finance has conducted an annual evaluation of Sweden's monetary policy. Since 2023, as a basis for its annual evaluation, the Committee has commissioned an evaluation report from researchers with a focus on the past year's monetary policy, through the Center for Monetary Policy and Financial Stability (CeMoF) at Stockholm University (see 2022/23:RFR5). In addition to the annual evaluation, the Committee on Finance has also commissioned four external and independent evaluations of the Riksbank and monetary policy in a slightly more long-term perspective since the mid-00s, see appendix.

The last few years have been characterised by some exceptional events in the world around us, which have had a major impact on monetary policy and the Riksbank's activities. These particularly include the pandemic that broke out in 2020, and Russia's full-scale invasion of Ukraine in 2022. A few years earlier, at the start of 2015, the Riksbank lowered the policy rate below zero per cent and started to purchase government bonds in order to conduct a more expansionary monetary policy. During the period 2015–2017, in addition to further lowering the policy rate below zero per cent, the Riksbank decided to purchase government bonds for just under SEK 300 billion. In 2020, measures to mitigate the economic effects of restrictions and closures as a result of the pandemic led to further expansionary monetary policy, internationally and in Sweden. As part of its crisis management measures, the Riksbank adopted a programme for the purchase of securities. The programme, which expired in December 2021, came to include not just the purchase of government and municipal bonds but also private securities, such as covered bonds, corporate bonds and commercial paper. At the end of 2021, the Riksbank's holdings of securities amounted to almost SEK 1,000 billion. The Riksbank's balance sheet therefore expanded significantly as a result of the extensive securities purchases in the period 2015–2021.

The Riksbank's balance sheet has furthermore been affected by decisions on foreign currency reserves. In January 2021, the Executive Board decided to replace the loans from the Swedish National Debt Office which financed part of the foreign currency reserves with self-financing deposits in Swedish kronor from banks. The Riksbank thus bought USD 14.5 billion and EUR 5.5 billion and sold the corresponding amounts in SEK. The self-financed foreign currency reserves involved higher currency risks for the Riksbank. In 2023, the Executive Board therefore decided to hedge one-quarter of the foreign currency reserves, after a continued weakening of the exchange rate of the krona.

After many years of low inflation, consumer prices rose rapidly, starting in 2021, and

by the end of 2022 inflation reached its highest level in over 30 years. Sweden's monetary policy then took a change of direction and was tightened. The period of extremely low interest rates, that started with the financial crisis in 2008, came to an abrupt end. The rising interest rates and the Riksbank's substantial holdings of interest-bearing securities meant that the bank showed a largely negative result in 2022.

Forecasts are difficult to make in times of major fluctuations, but in as late as February 2022, the Riksbank heavily underestimated inflationary pressure in the economy in its forecasts. At the same time there were – at any rate internationally, such as in the USA and the UK – signs of a more prolonged period of high inflation. Market expectations also indicated that the policy rate would be raised considerably faster than the Riksbank's forecast for the repo-rate path. For the Riksbank, the last few years have also been characterised by organizational and institutional changes. A new Sveriges Riksbank Act came into force in 2023, including clarifications of the Riksbank's tasks and instruments.

The objective of monetary policy

The overriding objective of monetary policy is to maintain permanently low and stable inflation (the price stability target). More precisely, the Riksbank has specified that the target is to hold annual inflation according to the consumer price index with a fixed interest rate (CPIF) at 2 per cent. Without neglecting the price stability target, the Riksbank shall contribute to a balanced development of output and employment. Thus the Riksbank shall take into account developments of the real economy, in addition to its impact on the inflation rate. This provision enables a flexible inflation target policy, which means that, at the same time as it tries to achieve the inflation target, the Riksbank also takes into consideration the development of the real economy; for example, the Riksbank can adapt the horizon within which the price stability objective is to be reached if necessary. The fact that the Riksbank was to take into consideration the real economy was first established in law with the new Sveriges Riksbank Act in 2023, but had previously been included in the Riksbank's monetary policy strategy.

The chosen evaluation period

The evaluation period this time is 2015–2024. This period has been chosen so that the evaluation can analyse the expansionary monetary policy during the first part of the period, the shift in monetary policy when inflation started to rise in the middle of the period, and the effects of the tightening measures during the latter part of the period. In 2015, the Riksbank introduced a negative policy rate. It is therefore a natural starting year for the evaluation, even though this involves an overlap with the evaluation period of the latest external evaluation by Honohan and Flug (2023/22:RFR4).

The assignment

The purpose of the evaluation is to examine the implementation and outcome of Swedish monetary policy during the period 2015–2024. A further purpose is to analyse what lessons can be learnt from the – from a historical perspective – unique expansionary monetary policy during the first part of the evaluation period, with an inflation that had long been below target and the shift to a tightening of monetary policy during the second part of the period when inflation rapidly rose above target. In periods with major shifts in monetary policy, the Riksbank's external communication becomes very important, both for the guidance it provides to market actors, and more generally to build credibility for its monetary policy.

The evaluators shall therefore:

- analyse whether monetary policy during the period has been well-balanced with a view to achieving the objective of price stability over time;
- analyse the effects of the conducted monetary policy on real economic and financial developments in Sweden, in particular the effects of the Riksbank's purchases of securities;
- examine and analyse the Riksbank's forecasts and analyses of different scenarios, and evaluate the Riksbank's ability to predict changes in inflationary pressure;
- examine and analyse the Riksbank's communication regarding monetary policy decisions during the period.

The monetary policy that was conducted in Sweden followed an international pattern at the time, where monetary policy was first moved in an expansionary direction in order to increase inflationary pressure in the economy, then became even more expansionary in connection with the pandemic and finally was tightened in order to deal with the heavy rise in inflation. In view of the fact that many central banks dealt with similar problems during the same period, the evaluators shall:

- analyse and compare Swedish monetary policy and its effects on the Swedish economy with the monetary policy of other relevant central banks;
- analyse the possibilities of and needs for conducting a different monetary policy in Sweden, with regard to the international economic and geopolitical developments during the evaluation period.

In the public debate, and at times in the Riksbank's communication, the significance of the exchange rate of the Swedish krona for inflation has been discussed. The Swedish krona has depreciated over a long period, even if there have been large fluctuations over longer periods. The evaluators shall therefore:

- analyse the significance of the exchange rate for the implementation of monetary policy and the Riksbank's communication on the development of the exchange rate;
- analyse the effects of the transition to self-financed foreign currency reserves.

The evaluators are also free to analyse other issues, in addition to the points listed above, if they consider them essential to developments during the period. A general purpose of the evaluation is to evaluate the Riksbank's fulfilment of its objectives and the efficiency of Sweden's monetary policy, as well as to gain new knowledge of the design of monetary policy and its effects. The findings of the evaluation are to be disseminated to a broader public.

Presentation of the assignment

The evaluation will be presented in the form of a written report to the Swedish Parliament's Committee on Finance by December 2025 at the latest. The evaluation will thereafter be published in report form for general dissemination, one version in Swedish and one in English.

Previous evaluations

Since the mid-00s, the Committee on Finance has initiated four external and independent evaluations of the Riksbank and monetary policy, approximately once every five years. These have been carried out by internationally renowned researchers and former central bank governors.

The first evaluation was carried out by Professors Francesco Giavazzi and Frederic Miskin. This evaluation dealt with the period 1995–2005 and analysed, inter alia, monetary policy during the period and the formulation of the inflation target (2006/07:RFR1).

The second evaluation was carried out by Professors Charles Goodhart and Jean-Charles Rochet for the period 2005–2010 and analysed, inter alia, the Riksbank's actions during the financial crisis and responsibility for financial stability (2010/11:RFR5).

The third evaluation was conducted by Professors Marvin Goodfriend and Mervyn King, who evaluated the Riksbank's monetary policy following the acute financial crisis during the period 2010–2015 (2015/16:RFR6).

The most recent evaluation was carried out by Patrick Honohan, former Governor of the Central Bank of Ireland and a member of the European Central Bank's Governing Council,

and Karnit Flug, Professor at Hebrew University and former Governor of the Bank of Israel. Their evaluation concerned the Riksbank's monetary policy during the period 2015–2020 (2021/22:RFR4).

B Annex 2: List of Persons Interviewed

Riksbank, Executive Board Members

- Erik Thedéen, Governor, November 29, 2024, February 6, 2025, December 1, 2025.
- Anna Breman, First Deputy Governor, November 29, 2024, March 10, 2025.
- Aino Bunge, Deputy Governor, February 13, 2025.
- Per Jansson, Deputy Governor, February 18, 2025.
- Anna Seim, Deputy Governor, February 18, 2025.

Riksbank, Former Executive Board Members

- Stefan Ingves, Governor (2006-2022), February 13, 2025.
- Martin Flodén, Deputy Governor until 2024, March 10, 2025.
- Cecilia Skingsley, Deputy Governor until 2024, February 25, 2025.

Riksbank, Staff

- Monetary Policy Department (7 team members), March 11, 2025.
- Communications (2 team members), March 11, 2025.
- Markets (3 team members), February 21, 2025.
- QE Team (2 team members), May 8, 2025.
- Financial stability Department (2 team members), October 27, 2025.

Other Government Agencies

- Karolina Ekholm, Director General, Swedish National Debt Office, March 10, 2025.
- Göran Hjelm, Head, Fiscal Policy Council, March 10, 2025.
- Lars Heikensten, Chair of the Fiscal Policy Council, November 28, 2024.
- Malin Alpen, Acting Director General, FSA (Finansinspektionen), October 13, 2025.

- Albin Kainelainen, Director General, National Institute of Economic Research, October 13, 2025.

Markets

- Kristin Magnusson Bernard, CEO of AP1, May 26, 2025.

Other

- Torbjörn Hållö, Chief Economist, LO - Swedish Trade Union Confederation, March 10, 2025.
- S-O Daunfeldt, Chief Economist, Svenskt Näringsliv - Confederation of Swedish Enterprise, March 11, 2025.

Official Sector

- Johan Almenberg, State Secretary, Ministry of Finance, May 13, 2025.
- Max Elger, former Minister for Financial Markets, June 6, 2025.
- Edward Riedel, Chair of the Finance Committee, November 28, 2024.

Academia

- Roine Vestman, Professor of Economics, Stockholm University, November 29, 2024.
- Per Krusell, Professor of Economics, IIES, Stockholm University, December 1, 2025.