

A Report on 'Currency Matters'
for the Iceland Ministry of Finance and
Economic Affairs

EXECUTIVE SUMMARY

May 13, 2026

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The Advantages, the Challenges and the Caveats associated with adopting the euro

Background for the August 2026 Referendum

Introduction

This committee was charged with preparing materials relevant for the referendum on resuming negotiations to join the European Union, scheduled for August 2026. The specific issue discussed in the Report relates to currency matters, that is, issues regarding the narrower question of whether to adopt the euro.

Economies experience shocks – these can be internally generated or come from abroad; they can originate from demand fluctuations or supply issues, or from financial markets. An important assessment for policy making is how these shocks propagate through the economy to affect macroeconomic outcomes of inflation, activity, and employment. The choice of a currency regime affects the transmission mechanisms through multiple channels and the degrees of freedom of policy-makers to respond, all of which can have far-reaching implications for measures of financial and economic performance.

A key research question for the choice of currency regime is whether the currency response to a shock amplifies or dampens the transmission of the shock to the economy, leaving domestic policies, mainly fiscal and monetary, with more or less 'work to do' to stabilise the economy. For example, does the exchange rate tend to stabilise the economy, by absorbing external shocks and supporting monetary transmission? Or, is the currency itself a source of shocks via a time-varying risk premium or through variability in international capital flows and financial conditions? Over a longer horizon, the choice of currency regime also could affect economic and financial outcomes, notably through altering a country's competitiveness. Does it for example help resolve wage growth and productivity differentials vis-à-vis other economies or does it weaken the adjustment processes?

The Chapters of the Report, of which this is the Executive Summary, analyse these and other issues specific to the question of whether to adopt the euro. Adopting the euro constrains monetary policy, so considering the nature of shocks and trends, and what role independent monetary policy plays now for Iceland's businesses, households, and government is important. Iceland's experience with the krona is often compared to the experience of other Nordics which among them have a full representation of regimes, from floating to pegged to using the euro itself; as well as to other comparable economies.

We start by providing some key characteristics about Iceland's economy and institutions relative to other comparable economies.

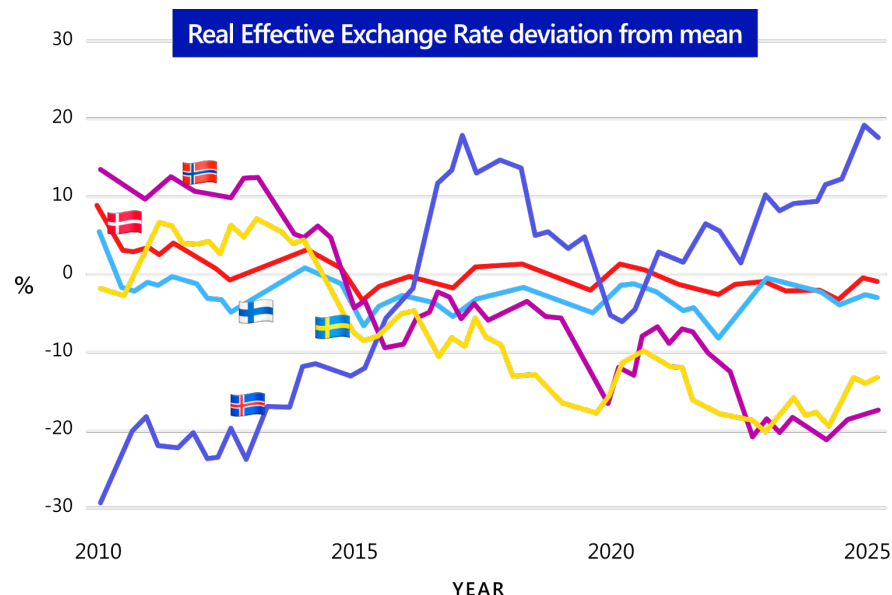
Iceland's economic volatility and key competitiveness trends are noteworthy

A Nordic comparison of Iceland with Denmark, Finland, Norway, and Sweden, as well as considering other relevant comparator economies, establishes that Iceland stands out in terms of macroeconomic volatility and key competitiveness measures.

That said, when considering measures of currency and macroeconomic volatility, it is important to keep in mind the historical backdrop of various shocks particularly pertinent for Iceland, which fostered changes in the remit and tool-kit of the Central Bank.

Iceland's central bank institutional design has been strengthened. Iceland's financial crisis and banking collapse engendered important changes to both monetary and macroprudential policies. On the former, institutional independence was solidified, and the remit and operations were changed from strict inflation targeting with a freely floating currency to an inflation-targeting 'plus' regime characterised by use of both interest rate and currency intervention policies. On the latter, along with close institutional relationships with the European Economic Area and participation with the European Supervisory Authority, Iceland also established medium-term goals and quantitative metrics to improve macro-financial stability. These have improved the transmission of monetary policy and tended to reduce currency volatility, particularly vis-a-vis the euro.

Exchange rates and capital flows are more volatile. Even so, by almost all exchange rate measures and over various time periods, the krona's volatility is significantly greater than for the other Nordic currencies, even as the krona appreciated whereas the other Nordic currencies depreciated in real terms. Although currency volatility has come down since



2009, it is still relatively higher in Iceland, despite rules limiting currency mismatches or open foreign exchange positions, and despite occasional central bank interventions aimed at preventing excessive overshooting or undershooting of the exchange rate. Volatility measures are greater for the

nominal bilateral ISK/USD than for ISK/euro – an important observation about international financial spillovers. High frequency variation in nominal and real trade-weighted exchange rate indexes matter for economic performance, as do infrequent, but large currency movements.

With regard to both gross and net capital flows, Iceland's, as a share of GDP have, over the last 25 years, typically been three to four times more volatile than those of other countries. Even outside periods of crisis, this pattern holds for most disaggregated inflows and outflows, including foreign direct investment, bank flows, and portfolio debt and equity.

While measured volatility after the GFC might have been high on account of cross-border payments to settle claims and wind-down liabilities of failed banks, some of the other economies in the larger sample also had crises. Moreover, Iceland deployed capital controls for 8 years until 2017, which presumably reduced measured volatility.

Currency adjustments generally have not absorbed all shocks. Both output growth and inflation have shown more cyclical variation in Iceland than in the other Nordics, both before and after the Global Financial Crisis. The textbook view is that flexible exchange rates adjust to absorb shocks and insulate the domestic economy. Iceland's experience does not cleanly fit this pattern: output and inflation volatility remain the highest in the Nordic group post-2009, and the krona's movements have, at times, appeared to amplify rather than dampen domestic fluctuations.

Iceland's business cycle is moderately synchronised with both the Nordic group and the euro area as a whole, with output correlations around 0.7 in the post-2009 period, suggesting that many real-economy shocks are to some extent shared. The krona, however, moves largely independently of the other Nordic floating currencies. The research on the sources of currency variation focuses on spillover from the US and euro area, as well as Iceland-specific financial and risk-premium shocks.

On this dimension, business cycle synchronisation is not a binding obstacle to euro adoption. Understanding the source of Iceland's substantially larger amplitude of fluctuations is important to gauge the cost of the loss of independent monetary policy. At the same time, exchange rate volatility against the euro would itself remove a source of macroeconomic noise that has historically passed through to inflation and output.

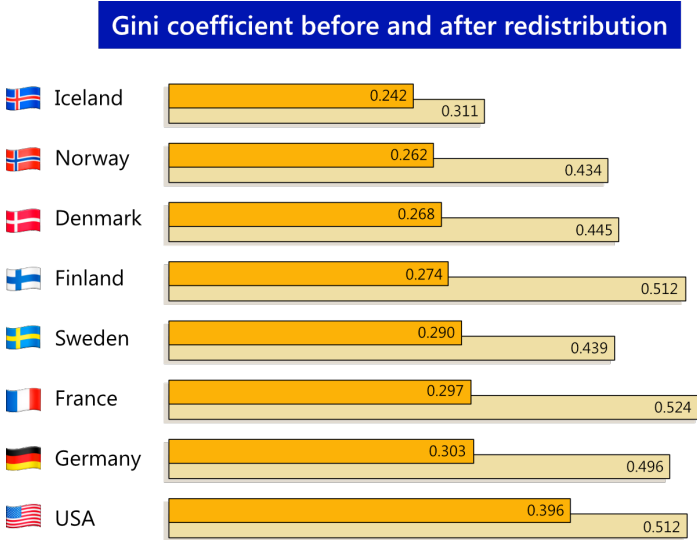
Large shocks have been partially offset by large currency adjustments. Episodic (that is, infrequent) large shocks have, to some degree, been absorbed by large currency adjustments, but not without cost to the economy. For example, the most pronounced exchange rate depreciation and capital flow fluctuations coincided with crisis times, most notably the 2006-2008 pre-crisis turbulence, followed by the Global Financial Crisis, and their very costly resolutions; and at the onset of the COVID-19 pandemic.

The currency adjustments in 2008-09 facilitated the necessary macroeconomic adjustments, including making imports more expensive and reducing household and business purchasing power. The depreciation helped restore, at least for a time, international competitiveness which was important for the subsequent recovery of the economy.

During the tourism boom of 2012-2018, the 40% real appreciation along with large scale currency interventions complemented monetary policy transmission to moderate inflation.

However, empirical analysis prepared for this Report suggests that depreciation episodes tend to be followed by a rise in CPI inflation on impact and a persistent decline in real wages, reflecting rapid import price pass-through in Iceland’s small, import-dependent economy.

Today, Iceland's labour market is strong and income inequality is low. Iceland's labour market has high employment and high unit labour costs. Its participation and employment rates are among the highest in the OECD. Union density is also exceptionally high and collective bargaining plays a central role in wage determination. At the same time,



employment protection rules are relatively flexible, allowing firms to adjust employment and working hours more easily than in most European countries. Migration adds to the high labour market flexibility.

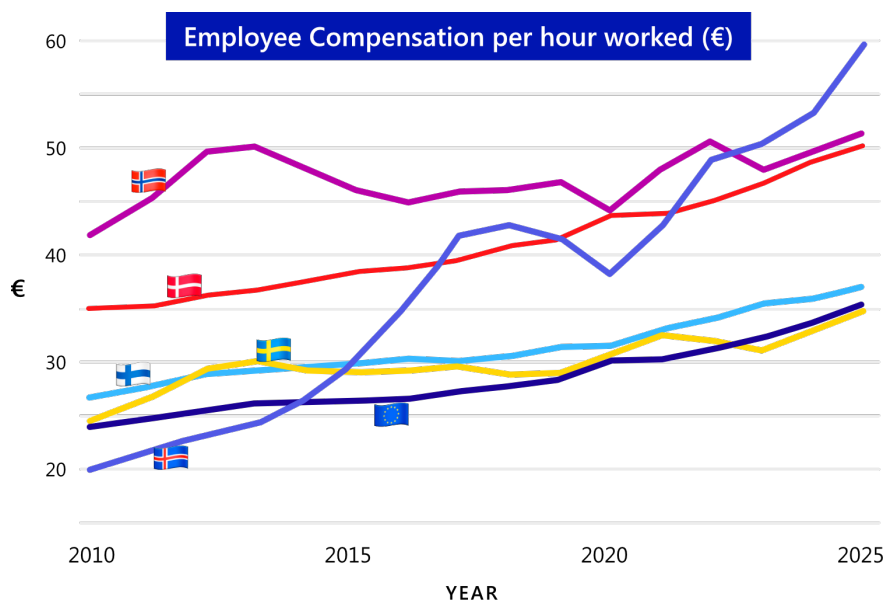
Income inequality as measured by the Gini coefficient is low, including before redistribution, indicating

that the overall level of inequality does not primarily reflect a more redistributive tax and welfare system in Iceland compared to some other countries.

However, international competitiveness has deteriorated. Growth in unit labour costs has been considerably higher than in the other Nordic countries since 2010 as nominal wage inflation has been much higher than productivity growth. Over the ten-year period 2016-2025, the average growth in unit labour costs in Iceland was 5.6%, nearly double Norway and Sweden, and more than three times Denmark and Finland.

Measured in euro, compensation of employees per hour in Iceland in 2025 (total economy) was 70% above the level in the euro area. In contrast, compensation per hour in Denmark and Norway was 43-46% higher than in the euro area, while Finland and Sweden were closer to the euro level.

While inflation also has been higher in Iceland, the difference in wage growth has been larger than the difference in inflation, implying that Icelandic workers have experienced a substantial real wage increase. Over the last 10 years, real wages in Iceland have increased by, on average 2.4% per year, compared to 0.6-0.8% per year in Denmark, Norway and Finland. The result has been a consistent loss of International competitiveness.



Iceland's productivity growth since 2009 is broadly in line with the EU-27 average, but the gains are heavily concentrated in the knowledge-intensive services rather than in the traditional export sectors that dominate the export base. The case for euro adoption therefore rests not on Iceland having achieved full structural convergence with the

euro area, but on the judgement that the exchange rate provides only limited value for stabilising the sectors most exposed to external shocks.

Some implications of adopting the euro

As discussed above, Iceland's domestic and external macroeconomic measures exhibit considerable variability, whereas labour markets show desirable equity and flexibility, but unsustainable international competitiveness trends. What might be some implications of adopting the euro?

Trade costs would be lower and would help diversify trade. Adopting the euro would lower transactions costs and reduce exchange rate uncertainty for the bulk of Iceland's foreign trade, given that 77% of goods exports go to the EEA countries. Iceland's export base is concentrated in aluminium, marine products, and tourism, with aluminium and marine products together accounting for around 65-70% of merchandise exports and tourism reaching 40% of total goods and services exports at the pre-pandemic peak in 2018.

The case for trade gains is real, although Iceland's existing EEA integration means that the *marginal* gains are likely to be more modest than for recent joiners to the euro area that did not have market access. Tourism revenues will also remain partly priced in non-euro currencies, with a non-trivial share of arrivals coming from outside the euro area. Even so, the elimination of currency risk on intra-euro area trade and the reduction in transactions costs would benefit exporting firms, particularly SMEs that cannot easily hedge.

Adopting the euro could support international competitiveness in services and diversification into other export categories. Empirical estimates from other studies suggest trade gains of 5-30% over a decade for comparable late adopters.

The research prepared for this Report finds that real export volumes in aluminium and seafood respond little to a krona depreciation, since both face supply and capacity constraints through contracts and quotas. A depreciation does, however, raise ISK-denominated revenues and profitability in these sectors, supporting incomes, dividends, and tax revenues even when export volumes themselves do not adjust.

Evidence of reduced currency conversion costs comes from examples of countries recently adopting the euro. For Croatia, which already maintained a de facto peg to the euro prior to adoption, annual savings for the non-financial sector were estimated at 0.19% of GDP. Estimates for Bulgaria and Lithuania before their euro adoption were around 0.6% of GDP. For Iceland, where the bid-ask spread on the ISK is very high (and there is not much formal foreign exchange trading) savings of 0.25% of GDP appear realistic.

Financing, both public and private, would be less costly. High frequency exchange rate volatility with episodic larger changes contribute to risk premia on both domestic interest rates and foreign currency trading.

After joining the euro, the costs of external financing likely would fall (with lower interest rates and higher equity and other asset prices). While estimated effects vary across time periods and methodologies, countries that adopted the euro experienced reductions in their cost of capital between 25 and 100 basis points, with sovereign interest rates converging toward euro area levels eventually. Iceland's fiscal position would benefit through lower borrowing costs, including through enhanced presence on international bond markets for public debt.

Countries that remain outside the euro area continue to incur an exchange-rate risk premium, the magnitude of which depends on macroeconomic volatility, monetary policy credibility, and the depth of their domestic financial markets.

Business access to finance would improve with enhanced financial stability. Iceland exhibits a relatively well developed domestic financial system, with generally good access for households and firms to financial services at fair terms. Nevertheless, joining the European Union and the euro area could yield some persistent gains. Benefits would arise from better access to the large, broader, and more liquid euro area financial markets, with no exchange rate risks.

Membership also could foster greater competition and enhance Iceland's financial sector. Less costly intermediation and a broader set of available risk management tools could materially expand borrowing, lending, and investment opportunities and improve risk-return trade-offs for households, firms, investors, and the sovereign. It would ease achieving fiduciary objectives (e.g., by lowering premiums for insurance and pension benefits).

Financial stability would be strengthened, as risks can be diversified more easily and the public financial safety net expands. Together, a lower and more stable cost of capital combined with a more efficient financial system and a better allocation of resources could translate over time into enhanced productivity and higher income levels, implying welfare gains.

If Iceland were to join the EU, it would continue to need to comply with all EU macro-prudential and related regulations. But, it would be a full partner in discussions on future changes to those rules.

International capital flow spillovers would be less important. The volatility and procyclicality in capital flows likely would be significantly lower if Iceland adopted the euro. Participation in a diversified currency union would reduce the impact of idiosyncratic foreign shocks and capital inflows/outflows and lower associated changes in financial conditions, primarily as the exchange rate would be less volatile. Together, these effects would ease cyclical macroeconomic management.

However, in adopting the euro, the exchange rate could no longer respond to various shocks. The effects of exchange rate changes on the domestic economy depend on their underlying causes. Exchange rate movements driven by domestic demand shocks in the Icelandic economy may have stabilising effects on the labour market, while exchange rate movements driven by other factors, such as financial or external shocks, may themselves be sources of shocks and imbalances for the domestic economy.

Research prepared for this Report that uses daily financial market data indicates that external and financial shocks tend to dominate Iceland's currency variation. The evidence also indicates that exchange rate adjustments tend to be associated with short-term inflationary pressures, which can become embedded via broad-based indexation, while the gains for longer-term competitiveness are less clear on average.

International reserves could be reallocated to higher returns. Euro adoption could free up foreign exchange reserves. To limit disruptive exchange rate movements, Iceland currently holds reserves of approximately USD 7 billion, equivalent to about 20% of GDP. Relative to the average euro area member, this is about 10 percentage points of GDP higher. If these resources were invested using more long-term objectives (e.g., through a Sovereign Wealth Fund) and generate returns 1 to 2 percentage points higher, or used to pay back sovereign debt, the resulting savings could amount to roughly 10 to 20 basis points of GDP annually.

The wage-productivity gap would adjust differently. Persistent high nominal wage growth in Iceland, much higher than productivity growth, may pose challenges irrespective of monetary regime, but the mechanisms and possible adjustment would differ.

On the one hand, if the euro were adopted, lower policy rates (if also associated with lower credit and risk premia as well), would ease financial conditions, which would initially stimulate demand, likely leading to higher output and higher inflation, unless there was an offsetting fiscal response. A persistent wage-productivity gap gradually erodes international competitiveness, and absent a depreciation, would potentially lead to current-account deficits and weaker investment in the traded sector.

On the other hand, under the current krona regime, high wage growth, inflation, and economic volatility yield high domestic interest rates which hamper growth in the interest-sensitive sectors and hurt indebted households and firms. Although the negative consequences of high wage growth can lead to a higher cost level, competitiveness can be

restored for a time through exchange rate depreciation. If high wage growth continues, recurrent depreciations would result in persistent risk premia on the krona and high domestic financing costs.

Inflation-depreciation-inflation cycles involve considerable costs. However, the experience of several euro countries, as the euro was being introduced, suggests that misalignments can last for some time. When in a monetary union, required adjustment through 'internal devaluation' would be borne by different sectors as compared to the 'external depreciation' with the krona.

Immigration's contribution to labour market flexibility could change. Exchange rate movements may also affect migration incentives by influencing relative wages and labour demand. With euro adoption, the less volatile and less episodic currency environment could lead to stronger employment responses to economic shocks, potentially increasing outward migration during downturns and inward migration during booms. However, a common currency may also deepen trade and labour integration and make Iceland more attractive for both foreign and domestic workers.

How independent is monetary policy in practice?

Adopting the euro would constrain monetary policy independence, although not all roles for the central bank. An important question is how independent is Iceland's monetary policy today in practice.

The CBI retains formal institutional independence over its policy rate. But the domestic rate co-moves strongly with ECB policy. Part of the policy rate co-movement reflects common shocks to which both central banks have responded, notably the post-pandemic global inflation surge. Similar patterns are found for other advanced economies under floating exchange rates, so this observation should not be interpreted as evidence that the CBI mechanically reacts to ECB decision.

Considering the environment of shocks and economic response, several different empirical approaches used in this Report point to common conclusion: monetary policy in Iceland is effective, but is meaningfully constrained by foreign monetary and global financial conditions, which also increase the complexity of its tool-kit that includes currency intervention. The research finds that foreign economic and financial risk shocks dominate the type of shocks the percolate through Iceland's currency, presenting particular challenges to Iceland's Central Bank to stabilise the economy.

In particular, the research prepared for this Report assesses the conditions under which the floating krona acts as a shock absorber. The textbook case for a flexible exchange rate is that, following an adverse external shock, a depreciation supports the domestic economy by making exports relatively cheaper, thus dampening the contraction in output. The evidence for Iceland only partly supports this view. The research finds that if the shock is a global financial risk shock, the ISK does depreciate, but is followed by higher inflation and weaker output thus worsening the output-inflation trade-off facing the central bank.

A floating krona can dampen demand shocks, but amplifies currency shocks. Simulations using the Central Bank of Iceland's semi-structural general equilibrium model suggest that the floating krona can dampen foreign and domestic demand shocks. However, shocks originating in currency risk premia can amplify volatility. In such cases, monetary policy may need to tighten sharply to contain inflation following a risk-off depreciation and then reverse course as demand weakens. This pattern of increases and decreases in the policy, currency, and market interest rates can increase macroeconomic uncertainty and complicate consumption, investment, and international trade decisions. Under a euro regime, currency risk-premium shocks would be less pronounced.

Monetary transmission is effective, but is challenged by foreign spillovers. A structural VAR analysis prepared for this Report confirms that the CBI operates an effective monetary transmission mechanism: a contractionary monetary policy shock leads to an appreciation of the króna and a gradual decline in inflation. This is the main empirical argument for retaining an independent currency.

At the same time, various structural VARs identify how foreign monetary and global financial shocks transmit to Iceland: An ECB tightening raises the domestic policy rate, depreciates the krona, and constricts output, while a global risk shock generates a similar pattern of depreciation, inflation, and weaker output. The forecast error variance decomposition attributes a sizeable share of real exchange rate variation to these foreign shocks, consistent with the exchange rate transmitting more external shocks than it absorbs.

The structural VAR of the Central Bank of Iceland provides additional insights into the role for the currency to moderate or accentuate spillovers from foreign shocks and monetary policy. Like the new analysis, a spillover associated with tighter foreign monetary policy elicits a similarly-sized tightening of Iceland's monetary policy. Even so, the ISK depreciates, CPI inflation rises, and the central bank needs to tighten further: the krona amplifies the shock and worsens the output-inflation trade-off. The observation that similarly sized monetary policy decisions at home and abroad is nevertheless associated with ISK depreciation is consistent with findings that financial sentiment, capital flows, and risk premia play key roles in currency fluctuations.

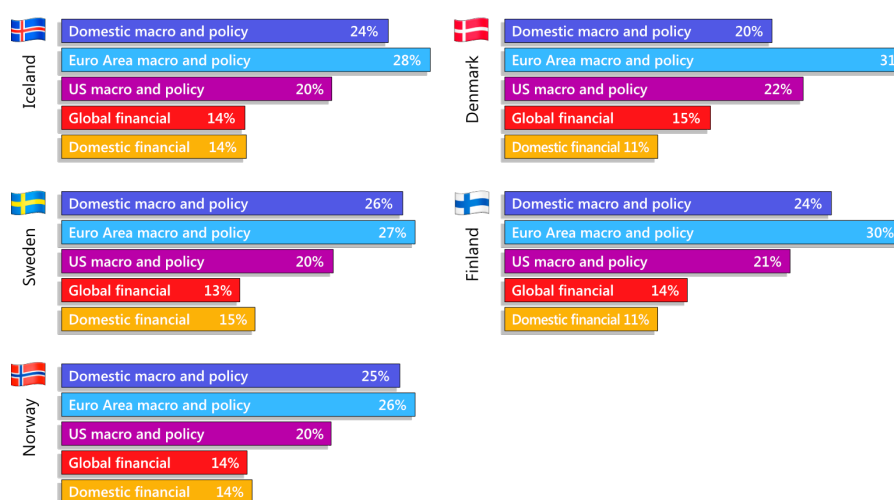
Overall, the evidence suggests that Iceland retains an operational monetary policy tool-kit. While actions are constrained by external monetary conditions and global financial shocks, the Central Bank of Iceland can deploy its mixed tool-kit of policy rate and currency interventions to respond, albeit with the latter reflected in higher risk premia and costs of foreign exchange transactions. If Iceland adopts the euro, and indeed has no independent monetary policy, other policies, such as fiscal and structural would need to be more responsive in the face of shocks.

To what extent is the currency itself a source of shocks?

In small open economies, exchange rate movements can reflect domestic macroeconomic conditions, shifts in financial risk sentiment, or spillovers from macroeconomic developments and policy responses in larger economies. Earlier analysis in this Report, using both a semi-structural model and an SVAR framework, suggests that exchange rate movements both reflect underlying shocks but also sometimes amplify their macroeconomic effects. To examine this further, additional empirical exercises were undertaken to focus specifically on the krona as a source of shocks.

Financial market and external factors account for most of the króna variation. New research presented in the Report uses daily financial market data to account for the sources of currency variation. For Iceland, as well as for all the Nordics, spillovers from euro area macro and monetary conditions account for the largest share of bilateral currency variation, nearly 30% for each country. Spillovers from US macro and monetary conditions account for about 20% of the currency variation.

Accounting for Sources of Currency Variation



Measures of financial risk sentiment, (one that measures domestic risk sentiment, one that measures global risk sentiment) account for a somewhat smaller share of bilateral currency variation – about 28%. But, for Denmark and Finland, these financial risk sentiment measures account for a smaller share of currency variation, about 25%.

Assessing the two sources of risk sentiment separately, the floating Nordics have a higher share of currency variation accounted for by the domestic risk sentiment factor, whereas for Denmark and Finland, countries that use or peg to the euro, the domestic risk sentiment factor accounts for a lower share of currency variation: 11% for Denmark and Finland, versus 14% for Iceland, consistent with constellation of disciplined structural and fiscal policies associated with using or pegging to the euro.

For Iceland, and considering the time series properties of the ISK/USD, periods of stronger global risk appetite tend to coincide with ISK/USD appreciation, consistent with the view that the ISK is a 'high-beta' currency – with diversification value, but also boutique status. On the other hand, there is also a negative domestic risk sentiment factor, possibly as low liquidity in currency trading markets and the threat of central bank intervention raises risk premia uniquely for Iceland, and different from global risk sentiment.

The source of currency shocks matters for inflation and monetary policy. The source of the exchange rate shock affects the pass-through to import prices, consumer price inflation and what is the appropriate monetary response. Currency appreciations driven by supply shocks, tighter monetary policy, or declines in currency risk premia are associated with both lower import price inflation and CPI inflation – the appreciation signal to inform central bank policy-making is clear.

By contrast, when the currency appreciates on account of a positive domestic demand shock, CPI inflation can increase even if import price inflation decelerates, as firms take advantage of robust demand conditions to increase their prices. This is the case for all the Nordics. In this situation, monetary policy faces mixed signals – to loosen on account of the appreciation or to tighten given strong demand.

In Iceland's case, the pass-through to raise CPI inflation is higher in the short run compared to the other Nordics, but long-run pass-through is similar. Thus, Iceland's central bank has to 'work harder' to offset the short-run increase in inflation so as to dampen inflation over the longer-term.

This analysis also finds that decomposing the sources of exchange rate variation suggests that roughly one-third of movements in Iceland's effective exchange rate can be attributed to supply shocks, changes in risk premia, and global shocks; these dominate the domestic demand shocks which are the easiest ones for an independent central bank to address. Comparing Iceland with the other Nordics, the variation from supply shocks and currency risk premia are larger, implying a relatively greater challenge for the Central Bank of Iceland to stabilise the economy.

Considerations and Caveats for Adopting the Euro

If the euro is adopted, a key issue is how well other institutions and adjustment mechanisms, such as fiscal policy; labour market flexibility and bargaining; and financial and other forms of risk-sharing can compensate for the loss of monetary policy autonomy.

Fiscal policy and discipline would be more important. Without an independent monetary policy, other stabilising mechanisms must play a more important role. Iceland has relatively high automatic stabilisers by international comparison, but as noted by the OECD, government spending has tended to be pro-cyclical – indeed so in more than two-thirds of the years since the 2000s.

The new fiscal stability rule, implemented in 2025, limits real spending growth to a maximum of 2% per year, except if matched by new revenue-raising measures. The Fiscal Council was tasked with assessing whether fiscal policy complies with the rules. The OECD notes that the Fiscal Council is relatively weak in an international comparison. Given that current public debt levels exceed those of most other Nordic countries (albeit declining as a share of GDP over time) preserving fiscal space and reducing government borrowing costs would be prudent.

Fiscal policy needs to be more effective if the euro is adopted, but euro adoption would also reduce sovereign borrowing costs. All told, while there may be improved funding possibilities as part of the euro area, at the same time there are old challenges to be addressed.

Institutional inflation indexation would need to evolve. Inflation indexation has been part of Iceland's policy landscape for quite some time. Even after some institutional changes, it remains broad-based, ranging from pensions, to public levies, to rents, as well as some consumer categories. Inflation indexation tends to embed inflationary episodes and require more robust monetary policy response.

Specific features of mortgage and business contracts could affect monetary policy transmission. A lesser role for inflation indexation may increase the effectiveness of monetary policy on the interest rates facing households and firms, but longer tenure contracts, such as for mortgages, would decrease the responsiveness to monetary policy.

Issues such as potential changes in market structure, including increased or reduced foreign bank presence, and the gains for institutional investors (pension funds) from reduced exchange rate risks, as well as other beneficial and adverse effects on the domestic financial services industry need to be considered.

Regulatory, financial stability, and macroprudential considerations matter. If Iceland were to join the EU, it would need to comply with all EU macroprudential and related regulations, while also taking part fully in discussions on future changes to those rules. If it also adopted the euro, supervisory responsibilities would shift; for example, the Single Supervisory Mechanism would oversee some large Icelandic banks. Crisis management arrangements, resolution mechanisms, lender-of-last resort functions, and other parts of the financial safety net also would change. Determining how best to adapt the institutional framework in Iceland and how to assign responsibilities would require careful assessment.

Adopting the euro would enhance financial stability in several ways, but might also make Iceland more vulnerable to boom-bust cycles, as seen in the real estate markets of Spain and Ireland. Macroprudential policies could help limit financial imbalances and improve resilience, a strategy already in focus at the Central Bank of Iceland. The ESRB and national authorities collaboratively monitor risks and assess tools to best mitigate vulnerabilities, particularly in the banking sector.

However, especially when risks stem from capital flows within the euro area, further assessments would be needed to determine which macroprudential tools would remain feasible and appropriate and how vulnerabilities could be best contained.

Wage setting norms need to be evaluated. Compared with the other Nordic countries, Iceland does not have an export-oriented binding wage norm for the rest of the economy. In countries such as Norway and Sweden, such norms have played an important role in maintaining international competitiveness. In Iceland, actual wage growth consistently ends up 2-3 percent above the cost estimates for the collective agreements on account of

multiple bargaining rounds, additional wage increases at the firm level, and indexation clauses and adjustments linked to productivity or inflation developments.

In countries like Iceland with centralised or coordinated wage setting, the monetary regime can influence wage-setting behaviour. The literature has identified opposing effects which make the overall outcome ambiguous. Some research argues that national inflation targeting may have a disciplining effect on wage setting, because excessive wage increases will be met with interest hikes and employment losses. Other research suggests that the reduced disciplining effect in a monetary union may encourage coordination among wage setters, leading to more wage restraint.

Empirical evidence on the labour-market effects of euro adoption is mixed. A study of 20 OECD countries over the period 1982-2003 finds higher real wages in countries with inflation targeting than for members of the EMU.

Given the wage-productivity gap, a reform of the wage setting process seems to be required irrespective of monetary regime. The consequences of a failure to reform and the possibility of ensuring a reform may nevertheless differ across regimes. If high nominal wage growth persisted despite having adopted the euro, the long run implications may be more difficult because the 'external' devaluation of the external currency must be replaced by 'internal devaluation', that is an adjustment of wage growth to match productivity growth appropriate for international competitiveness. Because the consequences of continued high wage growth are likely to be more serious with euro adoption, the motivation to make the necessary changes could be stronger, increasing the likelihood of success.

The transition: This analysis did not address the practical steps required when adopting the euro. Questions include the precise form and speed of the transition to the new regime, which would have important implications for asset prices and steps necessary to prepare domestic financial institutions and markets. And, economic and financial stability risks (e.g., exchange rate speculation) could emerge during the transition, which would need to be carefully managed.

Two very important considerations: First, if Iceland were to join the euro it would be the first case of a country joining with such a high average per capita GDP. This makes consideration of the entry exchange rate ISK to euro a key variable. Second, given the demographics of Iceland relative to most countries in the euro area, the long run neutral real interest rate could differ, with implications for the appropriate trajectory of monetary policy.

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CHAPTER - 1

May 13, 2026

Chapter 1 – Macroeconomic Developments and Monetary Policy Transmissions in Iceland

Hilde C. Bjørnland¹²

1 Introduction

The choice of exchange rate regime is one of the most consequential economic policy decisions a country can make. For Iceland, the question is whether to retain the floating Icelandic krona (hereafter ISK), with an independent monetary policy and the exchange rate as a potential adjustment tool, or to adopt the euro, gaining access to a large, stable currency area but giving up the ability to tailor monetary conditions to domestic circumstances. This choice involves fundamental trade-offs: exchange rate flexibility can in principle dampen asymmetric shocks, but for a small, financially open economy it may also introduce volatility that complicates price stability and discourages investment. At the same time, the benefits of a common currency, i.e., lower transaction costs, reduced risk premia, deeper trade integration, must be weighed against the loss of policy instruments that may be needed when domestic conditions diverge from those of the currency area. This chapter examines these trade-offs from a macroeconomic perspective, focusing on the exchange rate's role in Iceland's adjustment to shocks and the effectiveness of independent monetary policy. In particular, we address three questions central to the euro adoption debate, drawing on both theoretical and empirical analysis of macroeconomic developments:

1. Using its Nordic peers as a benchmark, how well does Iceland's economy align with the euro area in terms of business cycle synchronisation, macroeconomic volatility, and productivity?
2. Given Iceland's narrow trade structure, how does a depreciation of the ISK affect prices, wages, and external competitiveness, and does it deliver a sustained expansion in export volumes?
3. How effective is domestic monetary policy in stabilising the Icelandic economy, and does the floating exchange rate act as a shock absorber or as a transmitter of external disturbances?

Addressing these questions requires examining the exchange rate from two distinct but complementary angles: its role in trade and external adjustment, and its role in monetary

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² Research assistance from Helene O. Kalstad and Trine Mossing Welo is greatly appreciated.

policy transmission. The euro adoption question provides an organising framework throughout: if the exchange rate does not consistently deliver stabilisation value, the case for retaining an independent currency is weaker than the standard argument implies.

A comparative Nordic perspective provides a useful benchmark. Denmark, Finland, Norway, and Sweden share many institutional and structural characteristics with Iceland, yet differ in exchange-rate regimes, exposure to external shocks, and monetary policy frameworks. Denmark operates a long-standing fixed exchange-rate regime vis-a-vis the euro, under which monetary policy is explicitly subordinated to maintaining the peg.³ Finland is a member of the euro area and has no independent national exchange rate. Norway and Sweden maintain independent monetary policies under inflation-targeting regimes with floating exchange rates, similar in principle to Iceland, but exchange-rate fluctuations in both countries have historically been more moderate. Iceland thus stands out within the Nordic group as the smallest and most financially exposed economy with a freely floating currency, where exchange-rate movements have been particularly large and persistent. Comparing Iceland to these economies helps distinguish features that are common to small open economies from those that are specific to Iceland's structure and size.

The analysis proceeds in four steps. Section 2 documents stylized facts on the macroeconomic development, including the fluctuations and volatility of exchange-rates, output, inflation, policy rates, and in Iceland relative to its Nordic peers. This will establish the empirical backdrop against which the subsequent analysis is interpreted. Section 3 examines Iceland's productivity performance, both at the aggregate level and across sectors, with attention to the implications for the sustainability of a fixed exchange rate. Section 4 turns to Iceland's trade structure and openness, and uses local projections to estimate the dynamic effects of exchange-rate movements on prices, wages, and export performance. Section 4 employs a structural VAR framework to disentangle the exchange rate's role as a channel of monetary transmission from its role as an independent source of macroeconomic disturbances. Section 5 concludes and provides some final remarks on potential euro adoption.

Taken together, the findings of this chapter suggest that Iceland's business cycles are moderately synchronised within the Nordics and with the euro area, with output growth correlations around 0.7 in the post-2009 period. Macroeconomic fluctuations in Iceland are nonetheless substantially larger than in the other Nordics. These larger and at times asymmetric fluctuations mean that the loss of independent monetary policy would not be costless. Depreciation episodes are associated with higher consumer prices and a persistent

³ Under the ERM II arrangement, the Danish krone is pegged to the euro within a narrow fluctuation band, leaving little scope for independent monetary policy.

compression of real wages, with no evidence of sustained gains in export volumes. The Central Bank of Iceland operates a functioning and effective monetary transmission mechanism, but the policy rate also moves closely with euro-area rates, and the floating exchange rate appears to transmit external shocks more than it absorbs them. At the same time, exchange rate volatility is largely self-contained: while the ISK fluctuates substantially, its own shocks contribute little to the variation in output or inflation.

That said, we note that the exchange rate has at times played an important stabilising role, most strikingly during the 2008 crisis when the ISK depreciation supported a relatively quick external adjustment, though that episode was also accompanied by an IMF programme, capital controls, and bank restructuring. For routine fluctuations, however, there is a cost of exchange rate volatility. Iceland already has comparatively strong macroprudential and fiscal frameworks in place; complementary reforms, in particular to wage-setting institutions would help ensure a successful transition to the euro.

Complementary chapters in this report examine the labour market institutions, wage dynamics, and alternative adjustment mechanisms (Chapter 2), financial dimensions of currency choice, including capital flows, cost of capital, and financial sector development (Chapter 3), and the sources of currency variation and shock-dependent passthrough to inflation (Chapter 4).

2 Macroeconomic fluctuations

A key criterion in the Optimal Currency Area (OCA) literature is whether a country's business cycle is sufficiently synchronised with that of the currency area it considers joining, and whether macroeconomic fluctuations are of a similar magnitude. If shocks are largely common and cycles move together, the cost of giving up independent monetary policy is smaller. If, on the other hand, the economy is subject to larger or more frequent asymmetric shocks, the loss of the exchange rate as an adjustment tool becomes more costly. This section examines these questions for Iceland, using the other Nordic countries as a benchmark. We begin by sketching the post-crisis evolution of Iceland's monetary policy framework, since the relevant counterfactual to euro adoption is not the regime as it stood before 2008 but the substantially reformed framework that has been in place since. We then document the behaviour of output, inflation, policy rates and exchange rates across the Nordics, and assess how Iceland's economy has adjusted to the two major crises of the past two decades

Iceland's monetary policy framework

Iceland's monetary policy framework has evolved considerably over the past quarter century. After decades of managed exchange-rate arrangements with periodic devaluations, Iceland

moved to a floating exchange rate and adopted formal inflation targeting in March 2001, with an inflation target of 2.5%. The CBI was granted de jure independence by the same act. The pre-crisis framework was, however, undermined in the run-up to 2008 by large carry-trade inflows that contributed to currency overvaluation and a credit and housing boom that the policy rate alone could not contain (Honohan and Orphanides, 2018). The 2008 banking collapse exposed these weaknesses and prompted a comprehensive overhaul of monetary, macroprudential, and supervisory institutions in the years that followed. Since the post-crisis benchmark is the relevant one for assessing the euro adoption question, we briefly summarise the main reforms before turning to the empirical comparisons (for comprehensive reviews, see Honohan and Orphanides, 2018; Pétursson, 2019).

Iceland's monetary policy framework was substantially reformed after the 2008 financial crisis. A Monetary Policy Committee (MPC) was established in 2009 with both internal and external members, and monetary policy communication was overhauled through publication of MPC minutes and regular parliamentary appearances. The inflation-targeting framework was also strengthened, evolving into what the Central Bank of Iceland (CBI) refers to as "Inflation Targeting Plus" (IT-plus), which combines a flexible inflation target with active sterilised foreign exchange interventions to reduce excessive currency volatility and to lean against destabilising capital flow cycles. The CBI views FX intervention not as a deviation from inflation targeting but as a complementary instrument for a small, financially open economy where capital flows can otherwise dominate the exchange rate (Pétursson, 2019). In 2020, the CBI and the Financial Supervisory Authority were merged under the new Central Bank Act, integrating monetary policy, macroprudential policy, and microprudential supervision under a single mandate.⁴

A Nordic Comparison: Cycles and Volatility

This subsection documents the key macroeconomic features of Iceland relative to the other Nordic economies. In particular, Figures 1-3 display output growth, inflation and the policy rate across the Nordic countries, while Table 1 provides a systematic comparison of macroeconomic volatility for these variables, both over the full sample and in the post-2009 sub-period. Figures 4 and 5 then show, respectively, the nominal effective exchange rate (NEER) and the real effective exchange rate (REER), the latter as deviations from the mean. Exchange rate volatility is reported separately in Table 2, which gives standard deviations of monthly changes in NEER and REER over three sub-periods, and in Figure 6, which presents

⁴ A complementary strengthening of the macroprudential and supervisory framework was developed alongside the monetary reforms, including the introduction of capital buffers, borrower-based measures, and restrictions on FX exposures; see Chapter 3 for more details.

the corresponding standard deviations for monthly changes in bilateral exchange rates against the euro.

Starting with Figure 1, we see that Iceland’s GDP (Year-on-Year) growth rates are moderately synchronised with the other Nordics: the major turning points, the 2008–09 financial crisis, the COVID-19 pandemic, and the post-pandemic recovery, are clearly shared. The correlation of Iceland’s year-on-year GDP growth with the individual Nordic countries are 0.51 (Sweden), 0.53 (Denmark), 0.58 (Norway) and 0.62 (Finland) over the full sample, rising to 0.6–0.65 in the post-2009 period. The correlation with the euro area as a whole (EA-19) is slightly higher: 0.65 over the full sample and 0.71 in the post-2009 period, the latter broadly in line with the 0.70 output-gap correlation reported in Chapter 2, where the comparison is shown graphically.⁵ The relative higher correlation with Norway, than, say with Sweden, likely reflects shared exposure to global commodity cycles as well as close trade links, in particular with seafood, see Section 4. Sweden’s more diversified, manufacturing-oriented economy tracks the EU core more closely, making its cycle less aligned with the commodity and tourism-driven fluctuations that characterize Iceland.

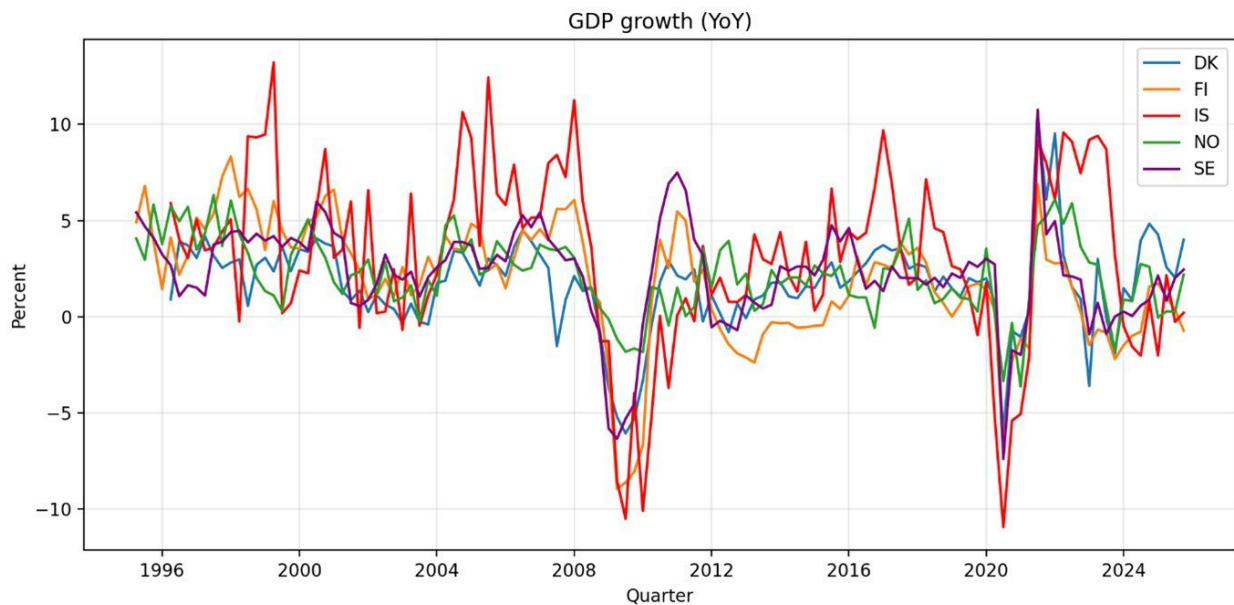


Figure 1: Year-on-Year growth rates, GDP: Denmark, Finland, Iceland, Norway, and Sweden. Source: IMF, International Financial Statistics (real GDP, quarterly).

Two features stand out. First, the amplitude of Iceland’s fluctuations is substantially larger: the standard deviation of GDP growth is roughly twice that of Denmark and Norway (Table 1). This is not surprising. Iceland’s small size and narrow, commodity-based production structure imply that macroeconomic variability is likely to be larger than in larger and more

⁵ The difference between GDP growth and output gap correlations reflects the use of output gaps rather than year-on-year growth rates, which filter out some of the high-frequency noise.

diversified economies, irrespective of the exchange rate regime. Second, Iceland has experienced pronounced idiosyncratic episodes, notably the boom-bust cycle of 2004–08 and the tourism-driven expansion of 2015–18, without close counterparts in the other Nordics. Still, business cycle synchronisation does not appear to be a binding obstacle to euro adoption, and may potentially rise further over time through the deeper trade and financial integration that euro membership itself encourages (Frankel and Rose, 1998). Nevertheless, Iceland’s larger and at times asymmetric fluctuations mean that the loss of independent monetary policy would not be costless.

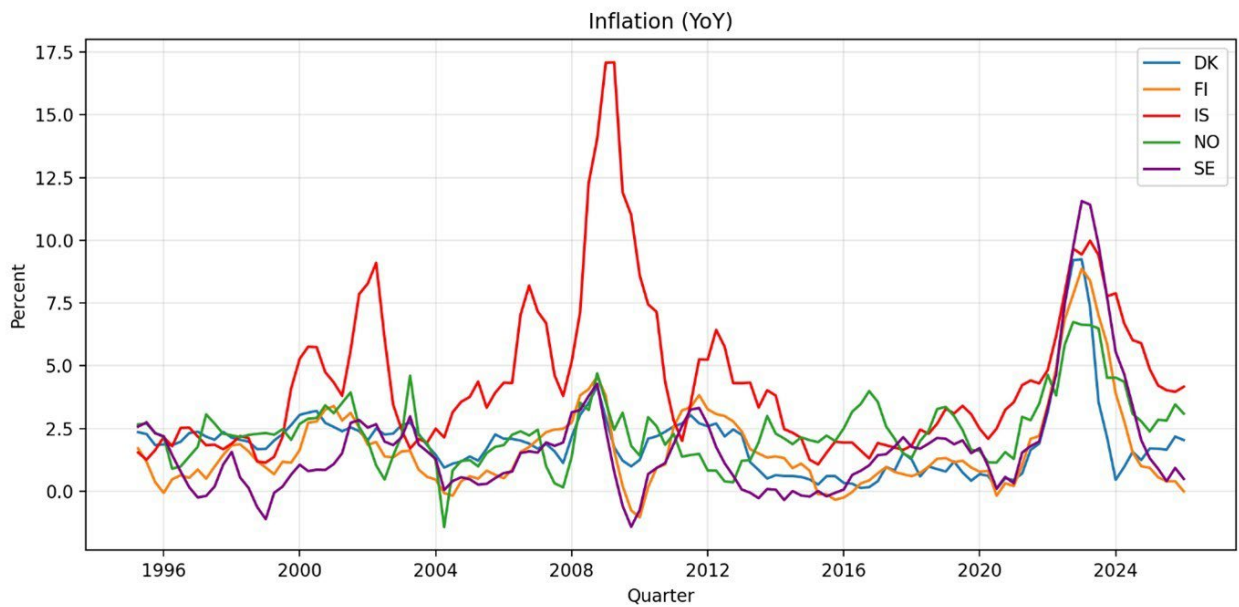


Figure 2: Year-on-Year inflation rates: Denmark, Finland, Iceland, Norway, and Sweden

Source: IMF, International Financial Statistics (national CPI, quarterly).

Figure 2 presents year-on-year inflation rates.⁶ Inflation in Iceland exhibits pronounced fluctuations, with sharp spikes during the global financial crisis and in the post-pandemic period. In contrast, inflation dynamics in the other Nordic economies appear slightly more stable and subdued. Table 1 confirms that inflation volatility in Iceland is substantially higher than in the comparison economies. As can also be seen from Figure 2, Iceland’s average inflation rate is markedly higher, around 4.5% in the post-2009 period, compared with approximately 2% in Denmark, Finland, and Sweden and 2.7% in Norway. This combination of high volatility and a high level of inflation is not coincidental: frequent large shocks make it harder for monetary policy to anchor expectations around the target. While the 2008–09

⁶ Throughout the chapter, inflation refers to the year-on-year change in the national consumer price index (CPI), drawn from the IMF International Financial Statistics. National CPIs in the Nordic countries generally include owner-occupied housing costs (notably in Iceland and Norway), whereas the harmonised HICP excludes them. The qualitative cross-country comparison is robust to this choice.

inflation surge was closely tied to the sharp depreciation of the ISK, the post-pandemic episode reflected a more complex mix of factors, with the initial exchange-rate pass-through giving way to domestic drivers including rapid house price increases, strong demand, and substantial wage growth.⁷ Even so, exchange-rate movements most likely continue to play an important role in shaping inflation dynamics in Iceland under the inflation-targeting regime. More recently, inflation has been moving lower from the post-pandemic peak, although it remains above the CBI's target. The relative stability of the ISK against the euro since 2021 has helped contain imported price pressures.

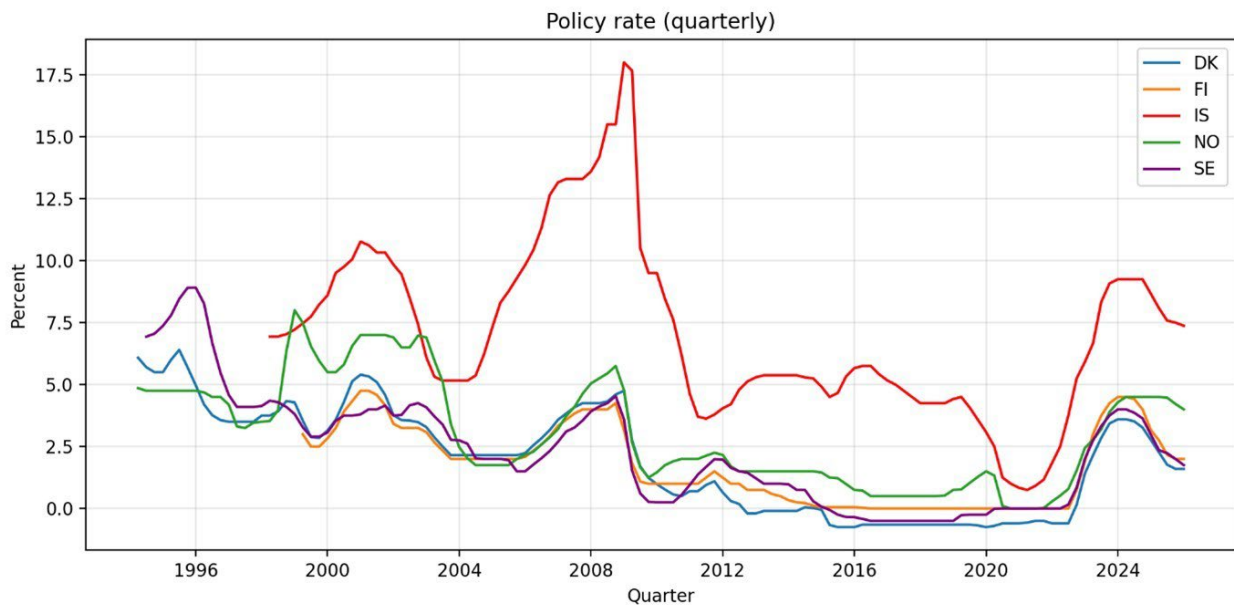


Figure 3: Policy rate: Denmark, Finland, Iceland, Norway, and Sweden

Sources: Danmarks Nationalbank (DK, certificates of deposit, end-of-month); European Central Bank via BIS (FI, deposit and main refinancing operations); Central Bank of Iceland (IS, key policy rate); Statistics Norway (NO, key policy rate); Sveriges Riksbank (SE, policy rate).

Figure 3 shows policy rates. Iceland's policy rate follows a wider range and exhibits more frequent and sizeable adjustments than in the other Nordic economies. Table 1 confirms that policy rate volatility in Iceland is persistently higher than the other Nordic countries, although it declines in the post-2009 period. This partly reflects the fact that the Central Bank of Iceland faces more volatile shocks to respond to, including large exchange-rate movements, terms-of-trade disturbances, and volatile capital flows.⁸ Nonetheless, the

⁷ Edwards and Cabezas (2022) document that exchange-rate pass-through in Iceland declined following the strengthening of the inflation-targeting framework and the gain in monetary policy credibility after 2009.

⁸ More generally, theory suggests that higher and more volatile trend inflation calls for a more aggressive optimal monetary policy response (Ascari and Sbordone, 2014).

resulting policy rate volatility may have consequences for expectations and monetary transmission: in inflation-targeting regimes, the effectiveness of the policy rate depends not only on its current level but also on expectations about its future path. Elevated policy rate volatility can raise interest-rate risk premia and complicate transmission through the yield curve, particularly in a small and financially open economy. Under euro adoption, this dimension of policy rate volatility would be eliminated, though at the cost of giving up an independent monetary instrument.

Table 1: Standard deviations across countries

Variable	Countries				
	Denmark	Finland	Iceland	Norway	Sweden
Panel A: 1994Q1–2025Q4					
GDP (yoy)	2.41	3.16	4.62	1.96	2.57
Inflation (yoy)	1.48	1.76	3.11	1.33	2.20
Policy rate (monthly avg)	2.11	1.57	3.54	2.13	2.27
Panel B: 2009Q1–2025Q4					
GDP (yoy)	2.84	3.03	4.86	1.98	2.90
Inflation (yoy)	1.91	2.15	3.03	1.45	2.76
Policy rate (monthly avg)	1.32	1.30	2.79	1.32	1.30

Notes: The table reports standard deviations of key macroeconomic and exchange rate variables for Denmark, Finland, Iceland, Norway, and Sweden. Panel A uses the full sample while Panel B restricts the sample to start in 2009. GDP and inflation are year-on-year growth rates from quarterly data; the policy rate is a quarterly average of monthly policy rates.

We turn next to the exchange rate. Starting with the nominal effective exchange rate (NEER) in Figure 4, Iceland stands out for the magnitude of nominal exchange-rate movements, particularly during the global financial crisis, when the collapse of the currency was unprecedented among the Nordic economies. Although nominal volatility declines after the crisis, it remains elevated relative to the other Nordic countries.

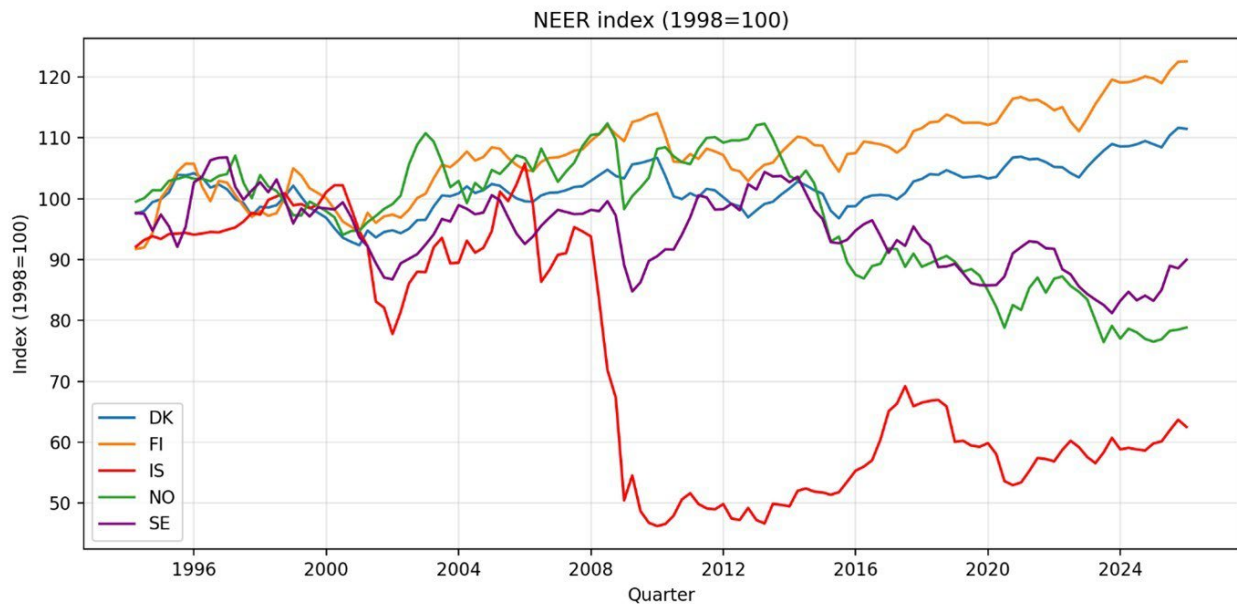


Figure 4: Nominal effective exchange rate (NEER), Weighted Index (1998=100): Denmark, Finland, Iceland, Norway, and Sweden (Increase = appreciation)

Source: IMF Effective Exchange Rates dataset.

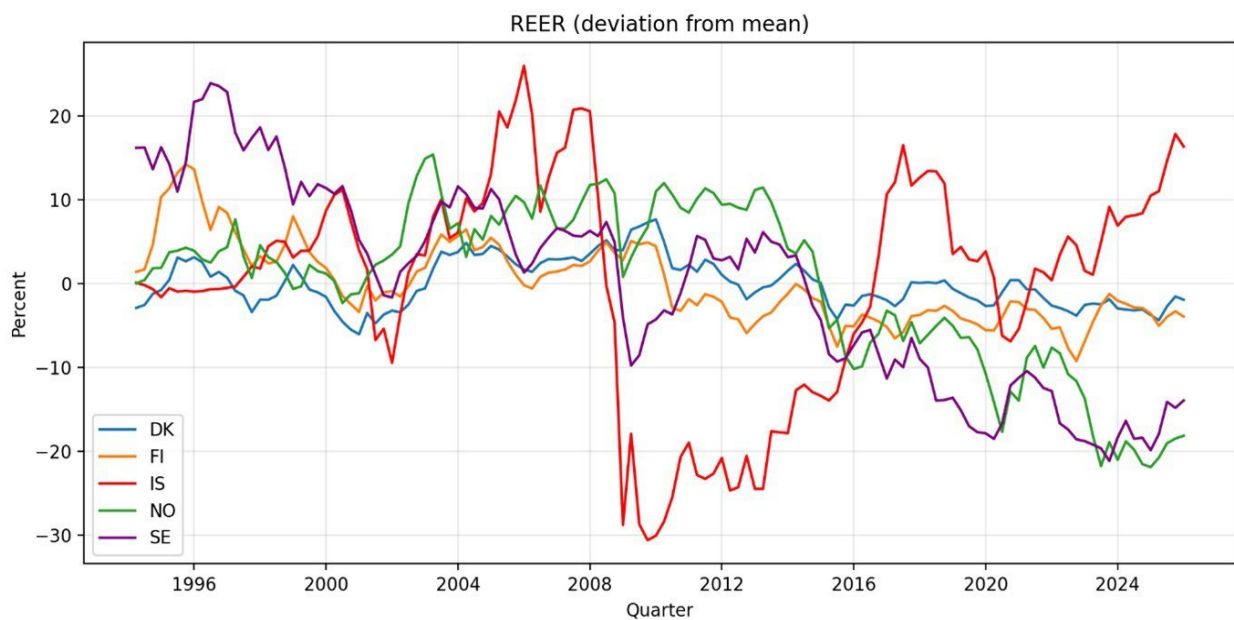


Figure 5: Real effective exchange rate (REER), deviation from mean. Denmark, Finland, Iceland, Norway, and Sweden (Increase = real appreciation).

Source: IMF Effective Exchange Rates dataset, Nominal index, adjusted by relative consumer prices.

Figure 5 reports the real effective exchange rate (REER) as deviations from its mean.⁹ The figure reveals large and persistent real exchange-rate movements for Iceland, with pronounced depreciations during crisis episodes and sustained appreciations during periods of strong economic activity. Real exchange-rate movements closely track nominal dynamics, pointing to limited short- to medium-run price adjustment, an observation we return to in Section 4. Compared with the two other countries with floating exchange rates, Norway and Sweden, real exchange-rate fluctuations in Iceland are substantially larger in amplitude. The key distinction is that Iceland’s REER movements are characterised by large, abrupt swings around crisis episodes, whereas the Norwegian and Swedish depreciations have been more gradual and unidirectional, likely reflecting structural factors such as terms-of-trade developments and relative productivity trends.¹⁰

Table 2: Exchange rate volatility: standard deviations of monthly changes (%)

Variable	Denmark	Finland	Iceland	Norway	Sweden
Panel A: 1993–2025					
Δ NEER	0.71	0.97	2.39	1.48	1.38
Δ REER	0.73	0.97	2.30	1.48	1.41
Panel B: 1993–2007					
Δ NEER	0.74	1.13	1.89	1.22	1.39
Δ REER	0.76	1.11	1.89	1.27	1.41
Panel C: 2009–2025					
Δ NEER	0.67	0.77	2.07	1.62	1.34
Δ REER	0.69	0.79	2.03	1.60	1.36

Notes: Standard deviations of monthly log differences ($\times 100$), expressed in percent. NEER and REER are the IMF nominal and real effective exchange rate indices; Panel A covers the full sample, Panel B is the pre-crisis period, and Panel C is the post-crisis period.

⁹ The REER is constructed by the IMF using national CPIs as deflators. We retain the IMF series for cross-country comparability.

¹⁰ See for instance Bjørnland et al. (2024) for an analysis of the drivers of the real exchange rate in Norway.

Table 2 provides a formal comparison of exchange rate volatility across the Nordics, reporting standard deviations of monthly changes in nominal and real effective rates over three sub-periods. Iceland’s krona is the most volatile in every panel, while Denmark’s peg keeps NEER and REER volatility low. Real and nominal effective rates display very similar volatility for all five countries, consistent with limited short-run price adjustment. Although Iceland’s exchange rate volatility has fallen post-2009, while Norway’s has risen, the ISK remains the most volatile Nordic currency by a clear margin.

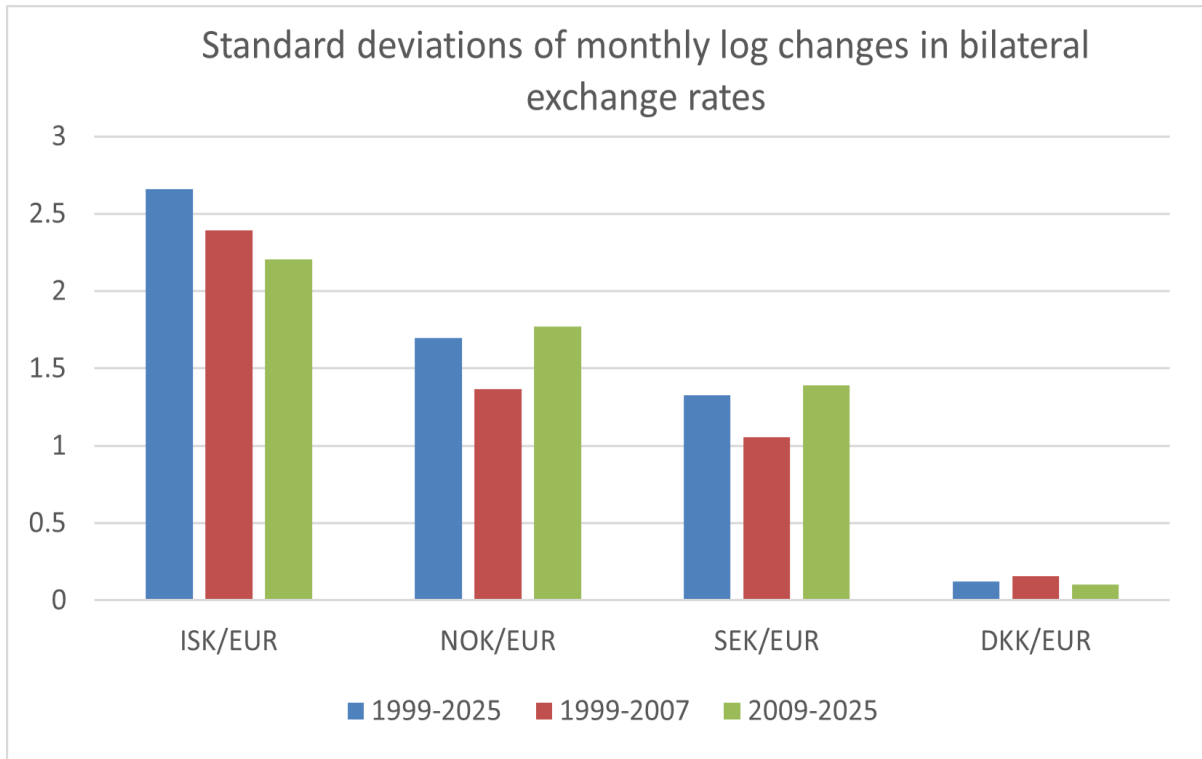


Figure 6: Standard deviations of monthly log changes in bilateral exchange rates against the euro (%). Three sub-periods: 1999–2025 (full sample), 1999–2007 (pre-crisis), and 2009–2025 (post-crisis). Source: FRED (Federal Reserve Bank of St. Louis), OECD Main Economic Indicators. Monthly averages of daily rates.

Figure 6 confirms the same pattern using bilateral rates against the euro: the ISK/EUR rate is by far the most volatile of the Nordic floats, while the DKK/EUR is essentially flat under the peg. We note, however, that the ISK has been more stable against the euro since the COVID-19 pandemic, with the monthly variation over the past few years somewhat lower than that of the Norwegian krone. This recent stability is consistent with subdued imported inflation pressures in recent years. Interestingly, while Iceland’s real economy is moderately synchronised with the other Nordics, the ISK moves largely independently of the other currencies. The correlation of monthly ISK/EUR changes is only slightly positive against NOK/EUR (around 0.2) and essentially zero against SEK/EUR, well below the 0.47 correlation between NOK/EUR and SEK/EUR themselves. This combination suggests that the larger

amplitude of Iceland’s macroeconomic fluctuations may partly reflect the exchange rate amplifying common shocks rather than fundamentally different shocks hitting Iceland.

Finally, to investigate the co-movement between the exchange rate and the domestic business cycle more directly, Figure 7 plots the year-on-year change in the NEER alongside the output gap. Exchange-rate movements and the cyclical position of the economy tend to move together around the major crisis episodes, while in calmer periods the relationship is looser. The ISK began falling sharply already in early 2008, as markets reassessed Iceland’s financial vulnerabilities, well before real activity contracted. Some studies argue that this depreciation facilitated a relatively quick recovery by restoring external competitiveness (e.g., International Monetary Fund, 2012; Benediktsdóttir et al., 2017), though disentangling the exchange rate from capital controls, IMF support, and bank restructuring remains difficult. The introduction of comprehensive capital controls in late 2008, supported by the IMF, was itself motivated by the judgement that further depreciation would be harmful, suggesting the move was at or beyond what authorities considered consistent with orderly adjustment. Cross-country evidence is supportive: Olafsson and Pétursson (2011) find that greater exchange rate flexibility and inflation targeting coincided with smaller and shorter GFC contractions, while pegged non-EMU countries were hit particularly hard.

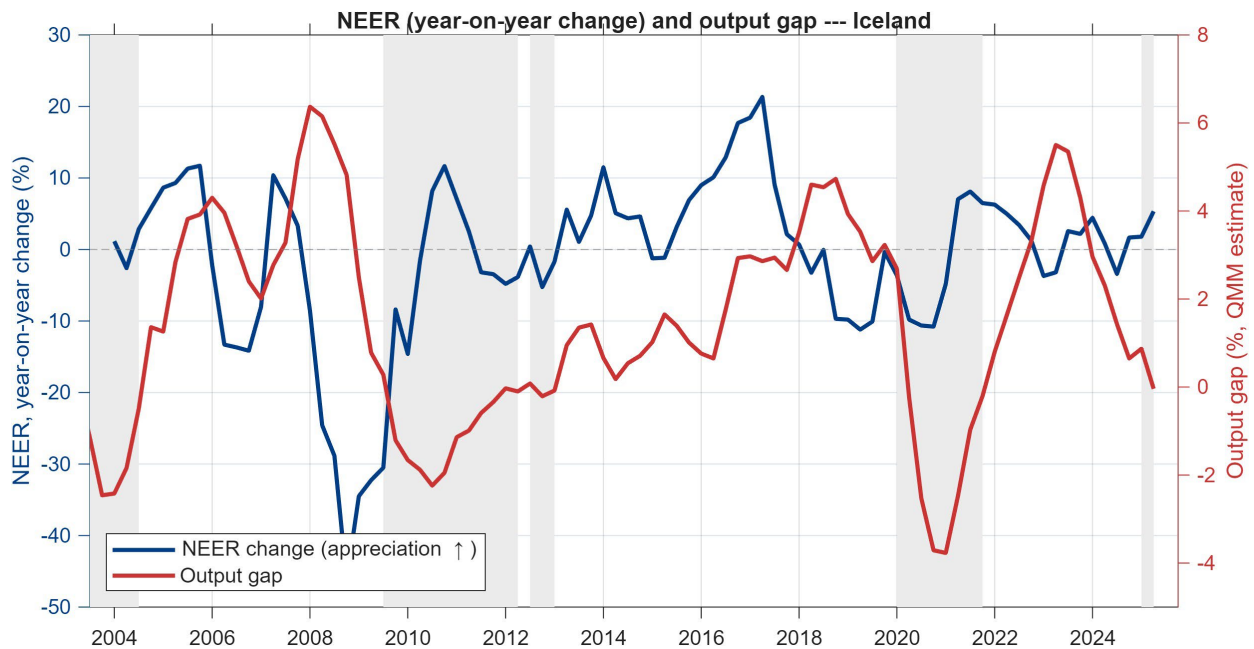


Figure 7: Year-on-year change in the nominal effective exchange rate (NEER, Y-o-Y, left axis, increase = appreciation), and output gap (QMM estimate, right axis) for Iceland. Grey shading indicates periods of negative output gap, see right scale. Source QMM; Central Bank of Iceland

Looking beyond the GFC, the post-2012 period offers a complementary illustration: sustained ISK appreciation coincided with robust output growth driven by the tourism boom, though the appreciation partly reflected tourism-driven capital and current-account

inflows, pointing to common drivers rather than the ISK acting as an independent stabiliser. During COVID-19, by contrast, the exchange rate and output moved contemporaneously, consistent with the sudden nature of the pandemic shock. Sections 4 and 5 return to the absorber-versus-transmitter question with formal analysis using local projections and structural VARs.

Adjustment to economic shocks and crisis

The previous figures document cycles and volatility in aggregate macro series, but do not reveal how adjustment occurs within the economy. Iceland's labour market is relatively small, with total employment of around 223,000 in 2024, but its sectoral composition matters for understanding how shocks propagate. The public sector (public administration, education, and health) accounts for roughly 30% of total employment, while wholesale and retail trade, transport, accommodation and food services (NACE G–I) represent about 25%. This latter sector, which includes tourism-related activities, has grown substantially over the past two decades and is particularly exposed to exchange-rate movements. Manufacturing accounts for about 10% of employment, construction roughly 8.5%, and the financial sector, which was at the centre of the 2008 crisis, has contracted to only 2.5%. Agriculture, forestry and fishing, while small in employment share (3%), remain important for export earnings.

To understand the real-side transmission of large shocks, Figures 8 and 9 examine sectoral employment dynamics during Iceland's two major recent crises: the global financial crisis and the COVID-19 pandemic. These episodes provide a useful contrast between what turned out to trigger a domestic financial collapse accompanied by a sharp currency depreciation and a globally synchronised shock with different sectoral implications.

Figure 8 shows cumulative employment changes across sectors following the global financial crisis, normalised to 2008Q2. The contraction was deep, broad-based, and highly persistent: total employment fell by nearly 12% from peak to trough (2008Q1–2010Q2), and it took 31 quarters, almost eight years, before employment returned to its pre-crisis level in 2015Q4.¹¹ Construction, wholesale and retail trade, financial activities, and professional services experienced substantial and long-lasting employment losses, reflecting the collapse of the domestic financial system and the sharp contraction in credit and demand. The financial sector alone shed roughly a third of its workforce, a contraction that has never been reversed. In contrast, agriculture, forestry and fishing displayed notable resilience, with employment remaining broadly stable and even rising modestly over time. This sectoral asymmetry suggests that tradable, export-based activities, particularly fisheries, served as an

¹¹ The protracted recovery should be interpreted with care, since the pre-crisis employment level was itself inflated by a credit-fuelled boom and substantial inward migration, much of which was reversed in the years that followed. A return to the 2008Q2 peak therefore represents a high benchmark.

important stabilising anchor during the crisis, likely supported by the sharp currency depreciation. It should be noted, however, that the normalised chart overstates the macroeconomic significance of this resilience: fisheries employment is small in absolute terms, accounting for only about 3% of total employment. The stabilising effect on aggregate employment was therefore modest, even though the sector’s contribution to export earnings was substantial.

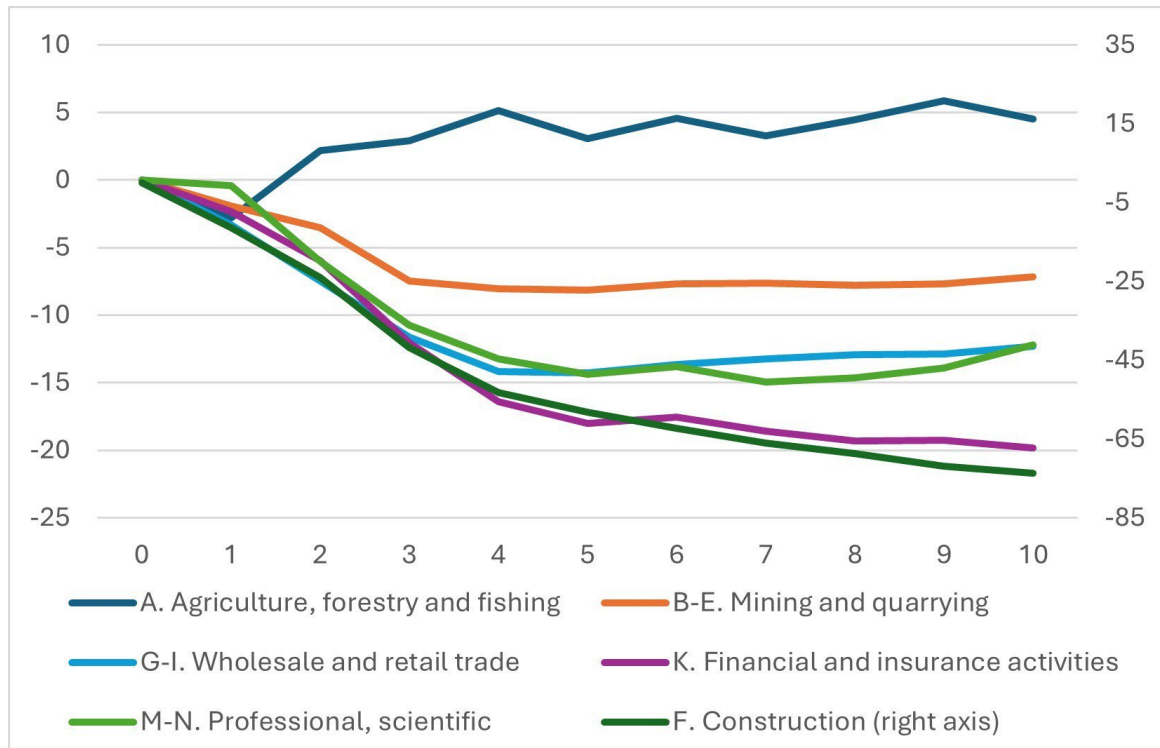


Figure 8: Financial crisis: Cumulative percentage change in employment, 2008Q2 = 0.
 Source: Author’s calculations based on Statistics Iceland data.

Figure 9 presents the corresponding employment developments during the COVID-19 pandemic, normalised to 2020Q1. The contrast with the financial crisis is striking. The peak-to-trough employment decline was roughly half as large (about 6%, reached within three quarters), and recovery was swift: employment returned to its pre-pandemic level within seven quarters (by 2021Q4). Agriculture and fishing again displayed notable stability. The contraction was largely confined to service-related and contact-intensive activities, particularly the tourism-exposed trade, transport, and accommodation sector, while construction and other sectors recovered relatively quickly. Unlike the financial crisis, there was no prolonged and systemic collapse across large parts of the economy. Notably, the aggregate COVID-19 contraction in Iceland was not markedly deeper than in other Nordic economies, consistent with the fact that this was a globally synchronised shock rather than a domestically driven crisis. The composition of the shock was, however, very different: services exports contracted by roughly 60% in 2020 and total exports by more than 30%, several times larger than the export contractions in Denmark, Finland, Sweden, and Norway,

reflecting Iceland’s high tourism exposure. The exchange rate response was also more muted than in 2008, with a depreciation of roughly 10% compared with the 50% collapse in 2008–09.

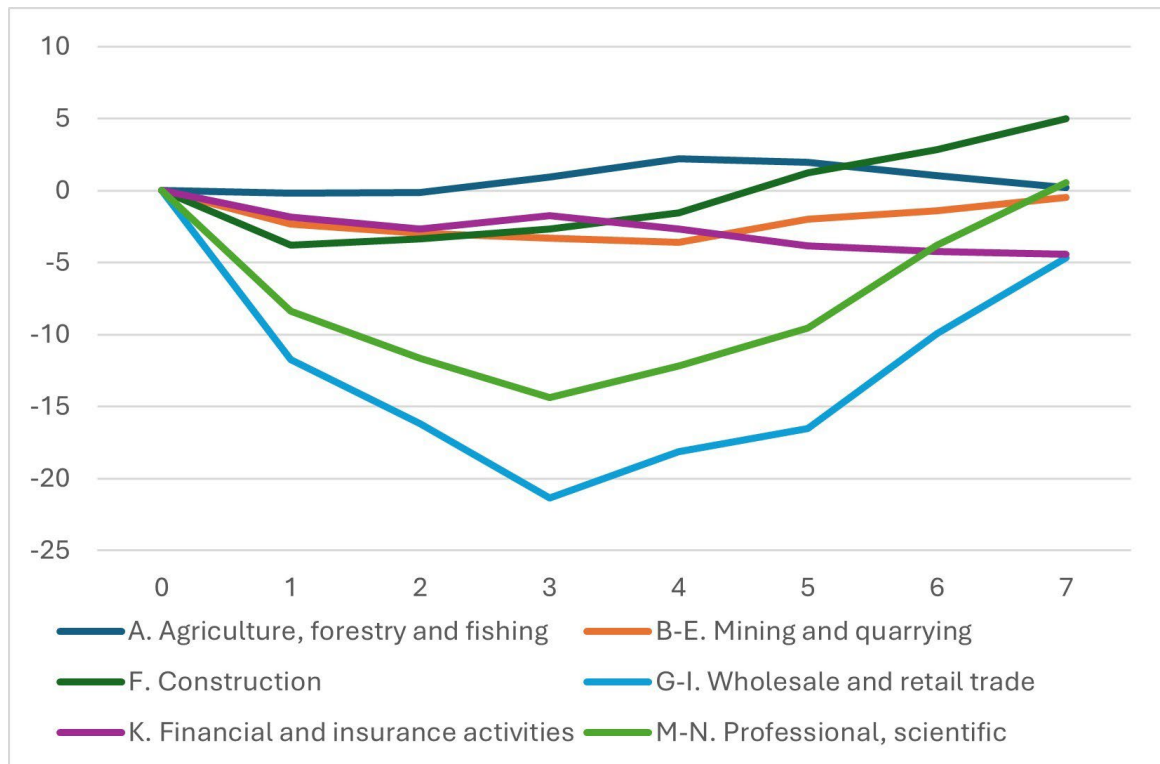


Figure 9: COVID-19: Cumulative percentage change in employment, 2020Q1 = 0.
 Source: Author’s calculations based on Statistics Iceland data.

The comparison between the two crises underscores a key point: the exchange rate’s role in macroeconomic adjustment depends fundamentally on the nature of the shock. During the 2008 crisis, a domestically amplified financial collapse, the depreciation was dramatic and may have supported the export sector, but it also imposed severe costs through balance sheet effects and inflation. During COVID, a global shock that affected most countries equally negative, the exchange rate played a more limited role, and the recovery was driven primarily by the lifting of public health restrictions and fiscal support. Whether the floating currency on balance facilitates or complicates adjustment thus cannot be assessed from any single episode.

3 Productivity and Structural Performance

Productivity performance is relevant to the euro adoption debate through several distinct but related channels. The most direct concerns the entry exchange rate. When a country fixes its nominal exchange rate upon joining a currency union, the real exchange rate at entry is effectively locked in. If domestic productivity growth lags behind that of trading partners, unit

labour costs will rise relative to competitors within the union, eroding competitiveness without the option of nominal exchange rate adjustment. Conversely, strong productivity growth in tradeable sectors can sustain competitiveness even in the absence of a flexible exchange rate, and can support continued real wage growth without generating inflationary pressure. From this perspective, a country's productivity trajectory is a key determinant of whether the entry exchange rate is likely to prove sustainable (De Grauwe, 2018).

A second channel runs through the Balassa–Samuelson mechanism (Balassa, 1964; Samuelson, 1964). In small open economies with rapid productivity growth in the tradeable sector relative to non-tradeables, wages tend to equalise across sectors, pushing up prices in non-tradeables and generating a trend real appreciation of the exchange rate. For a country contemplating euro adoption, this implies that the equilibrium real exchange rate may be appreciating over time, which matters for the choice of entry rate and for the ongoing assessment of competitiveness within the union. Iceland's experience illustrates this dynamic: periods of rapid productivity and income growth have historically been accompanied by real appreciation, tightening the constraint on external adjustment. A third channel concerns the endogeneity of optimum currency area criteria. Frankel and Rose (1998) argued that currency union membership itself tends to stimulate trade and, through trade, productivity convergence, so that a country need not satisfy all OCA criteria *ex ante* in order to benefit from joining. Deeper integration into European product and factor markets following euro adoption could accelerate productivity growth in Iceland through increased competitive pressure, technology diffusion, and access to a larger pool of high-quality intermediate inputs (Halpern et al., 2015). The euro would in this sense not merely be assessed against Iceland's current productivity performance, but against the productivity trajectory that membership itself might enable. Whether these dynamic effects would materialise for Iceland is difficult to assess *ex ante*, but the argument suggests that static comparisons of OCA criteria may understate the potential benefits of membership.

A further consideration specific to Iceland is that it would be the first country to enter the euro area with GDP per capita and wage levels above the euro area average since the founding of the Union in 1999. Previous accessions, Greece, the Baltic states, Slovakia, Cyprus, Malta, Slovenia, and Croatia, all involved countries converging *upward* toward euro area income levels, with the ERM-II period typically associated with rising real wages and a real appreciation of the entry rate. For Iceland the dynamics would be different: starting from income and wage levels above the average, there is no natural catch-up channel to absorb a misaligned entry rate. Integration-driven productivity gains of the kind described above remain possible, but the convergence-driven catch-up that has supported earlier accessions is unlikely to play the same role for Iceland. This makes the choice of entry exchange rate especially consequential.

Empirical assessments of Iceland's productivity performance are relatively sparse compared with the broader Nordic literature, reflecting in part the difficulty of constructing long, consistent time series for a small economy subject to large structural breaks, most notably the 2008 banking collapse. The most comprehensive account of Iceland's macroeconomic trajectory around that episode is provided by Benediktsdóttir et al. (2017), who document the sharp contraction in output and employment following the banking collapse and trace the subsequent recovery.¹² Their analysis highlights the role of the large nominal depreciation in facilitating external adjustment, but also the persistent real costs, in terms of compressed real wages and elevated inflation, that the depreciation imposed. These dynamics are directly relevant to the productivity question: the post-crisis period was characterised by significant and lasting sectoral reallocation. As was documented in Section 2, the financial sector cut roughly a third of its workforce after 2008, a contraction that has not been reversed, while employment in trade, transport, accommodation, and tourism-related services grew by almost 30% between 2008 and 2024. The Icelandic economy thus shifted from a structure centred on finance and construction toward one with a larger weight on tourism and services. Whether this reallocation has generated lasting productivity gains depends in part on the productivity characteristics of the expanding sectors, a question to which we return below.

IMF assessments of Iceland have periodically highlighted the gap between Iceland's productivity levels and those of the most advanced euro area economies, while noting that Iceland's income per capita compares favourably with its Nordic peers (see, e.g., International Monetary Fund, 2023). The 2023 Article IV consultation notes ongoing structural strengths, including a highly educated labour force, a flexible labour market, and strong institutions, alongside vulnerabilities associated with the small size of the economy, dependence on a narrow export base, and exposure to terms-of-trade shocks. These structural features bear directly on the sustainability of productivity-led convergence within a currency union. The OECD Economic Survey of Iceland (2023) provides additional evidence on sectoral productivity differentials, highlighting the divergence between knowledge-intensive services, where Iceland performs comparably with the Nordic average, and more traditional sectors, where productivity gaps relative to the euro area frontier remain. The survey notes that investment in research and development remains below the OECD average and that the diffusion of productivity-enhancing technologies across sectors is uneven, concentrated in information and communication and financial services.

¹² See also Einarsson et al. (2015) on the imbalances that built up prior to the crisis and Einarsson et al. (2016) on spillovers from the global financial cycle to the Icelandic financial cycle.

Productivity in Iceland: Empirical Evidence

Below we empirically assess Iceland's recent productivity performance. We first compare aggregate labour productivity growth across the Nordic countries and the EU-27, before examining sectoral patterns within Iceland to identify where productivity gains have been concentrated and where structural weaknesses remain. A caveat is in order, however: international productivity comparisons are complicated by differences in measurement methods, deflation procedures, and national accounts conventions, which can be particularly important for small economies with volatile terms of trade. Moreover, as emphasised already by Baumol (1967), sectors with lower scope for productivity growth, such as tourism and personal services, which have grown in importance in Iceland, tend to experience higher relative price increases, which can complicate the interpretation of real output and productivity measures. Nevertheless, a comparison of broad trends across the Nordic economies remains informative and provides useful context for the euro adoption debate.

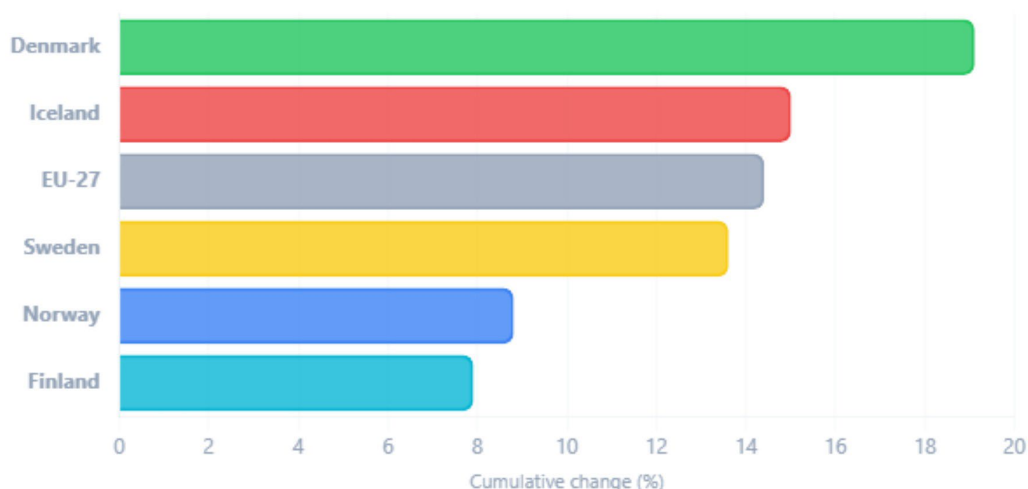


Figure 10: Cumulative labour productivity growth, Nordic countries and EU-27, 2009–2024 (%) Source: Authors' calculations based on Eurostat and Statistics Iceland data.

Figure 10 places Iceland's aggregate productivity performance in a Nordic and European context, reporting cumulative labour productivity growth since 2009 for the Nordic countries and the EU-27. Iceland's overall performance, a cumulative growth of approximately 15%, is broadly in line with the EU-27 average and competitive with Sweden (around 14%), though below Denmark (approximately 19%). Norway and Finland trail the group over this period at around 9% and 8% respectively.¹³

¹³ The Norwegian figure refers to total economy productivity, including the petroleum sector, consistent with the Eurostat source used for all countries. Productivity growth on the Norwegian mainland (excluding oil and shipping) has likely been somewhat higher in recent years, as petroleum sector productivity has weakened with maturing fields and rising extraction costs.

Figure 11 reports cumulative labour productivity growth by sector since 2009. The pattern reveals substantial heterogeneity across sectors. Information and communication stands out with by far the strongest performance, accumulating productivity gains of close to 80 percentage points over the period, a pace broadly consistent with global trends in knowledge-intensive services. Finance and insurance also records strong gains (around 40 percentage points), while agriculture, manufacturing, trade and transport, and construction cluster in the 15–30 percentage point range. Professional services and arts and recreation show little or no productivity improvement over the same horizon.¹⁴

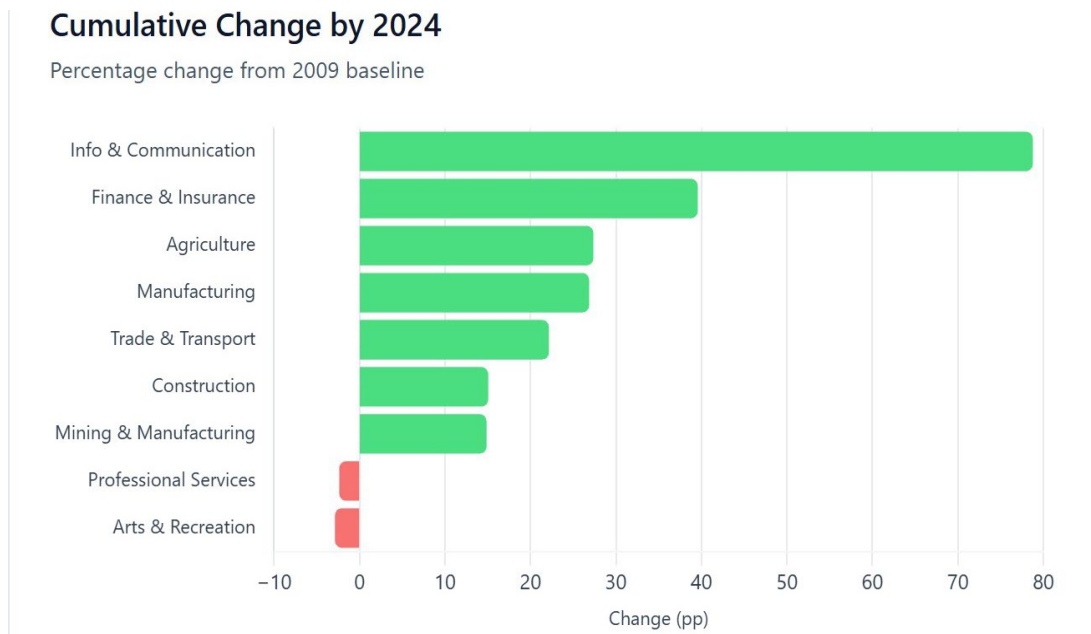


Figure 11: Cumulative labour productivity growth by sector, Iceland, 2009–2024.
 Source: Authors’ calculations based on Statistics Iceland data.

The two figures suggest that Iceland’s aggregate productivity record since the financial crisis is in line with other European countries, but that the gains are heavily concentrated in knowledge-intensive services rather than in the tradeable goods sectors that dominate the export base. The export-oriented sectors most relevant for the euro adoption debate, marine products and aluminium, fall in the middle of the sectoral distribution, with moderate but not exceptional productivity growth. It is worth noting, however, that productivity levels in marine products and aluminium are high in absolute terms, so moderate growth from an already elevated base does not necessarily indicate weak performance. These sectors have also been particularly exposed to large external shocks during this period, including the COVID-19 pandemic, which produced a markedly sharper

¹⁴ Public administration is excluded from Figure 11 and from this discussion. Measured productivity for this sector is widely recognised to be problematic because output is largely valued at input cost, so the corresponding numbers are not informative about underlying productivity dynamics.

contraction in Iceland's external trade than in the other Nordics.¹⁵ This pattern underscores a broader structural challenge: the sectors that could benefit most from improved euro-area market access and reduced exchange rate uncertainty are precisely those where productivity dynamics are more favourable, while the traditional export sectors remain exposed to external shocks that neither monetary policy nor productivity growth can easily offset. Exchange rate volatility may itself work to dampen productivity growth by discouraging long-term investment and making it harder for firms, particularly SMEs that can not hedge, to plan and compete in international markets.

4 International Trade

This section asks whether the ISK absorbs or transmits shocks. We approach the question from two angles. Here we use local projections to trace the response of trade flows and activity to exchange-rate movements, while Section 5 embeds the exchange rate in a structural VAR to identify the shocks driving it and quantify their contribution to macroeconomic fluctuations. Together, the two approaches speak to whether exchange-rate flexibility has cushioned Iceland from external shocks or amplified domestic ones.

Trade, openness and optimal currency areas

The central question in Optimum Currency Area (OCA) theory is whether a flexible exchange rate serves as a useful shock absorber for a small open economy, or whether it instead amplifies external disturbances. Trade openness is one of the central criteria. Following Mundell (1961), McKinnon (1963) argued that the more open an economy, the less useful the nominal exchange rate is as an adjustment instrument: depreciations pass through rapidly into import prices, eroding any temporary competitiveness gain, while a large share of domestic income depends directly on foreign markets, making exchange rate volatility a persistent source of uncertainty. For small open economies, the costs of maintaining an independent currency, such as transaction costs, hedging expenses, and risk premia in interest rates and investment decisions, can be substantial relative to the limited stabilisation benefits the exchange rate provides. This is the trade-theoretic case for currency union: a common currency eliminates intra-area exchange rate volatility, reduces trade costs, and promotes deeper market integration.

The empirical literature broadly supports this view. Rose (2000), using a gravity model on 186 countries over 1970–1990, estimated that common currency membership more than tripled bilateral trade. Since his sample consisted mainly of small developing economies, subsequent work debated applicability to advanced economies (Persson, 2001; Baldwin,

¹⁵ The pandemic export contraction noted in Section 2 likely also weighs on measured productivity dynamics in trade-exposed sectors.

2006). Baldwin et al. (2008) placed the euro's trade effect at around 2% for the first wave of adopters; more recent estimates using extended datasets find effects of 4–6% under gravity models and up to 30% under synthetic control approaches, with larger gains for later adopters and previously less-integrated country pairs (Gunnella et al., 2021). Iceland is a potential late adopter, but differs from recent joiners such as Croatia, Bulgaria, and the Baltic states in already being deeply integrated with the EU through EEA membership. The marginal trade gains from euro adoption may therefore be smaller than late-adopter estimates suggest, though eliminating currency risk would still reduce transaction costs and could support further integration over time. In an Iceland-specific gravity exercise, Breedon and Pétursson (2006) estimate a trade impact of up to 30% from EMU membership.

The openness criterion works both ways, however. The same export concentration that amplifies the potential gains from currency stability also raises the cost of forgoing exchange rate adjustment: a severe asymmetric shock, such as a prolonged collapse in aluminium prices, a sustained disruption to tourism, or a deterioration in fish stocks, would leave the exchange rate unavailable as a buffer.¹⁶ The net assessment therefore depends on the relative frequency of such shocks and on the availability of alternative adjustment mechanisms, including wage flexibility, labour mobility, and fiscal space, taken up elsewhere in the report. Against this backdrop, a highly open economy with concentrated, volatile export sectors and a history of exchange rate instability could gain substantially from euro adoption, provided that alternative adjustment mechanisms are sufficiently robust (see also Chapter 3).

Iceland's Export Structure

Table 3 and Figure 12 document trade openness across the Nordic countries in 2024. All five economies are highly open by international standards, with trade-to-GDP ratios broadly comparable to the EU average of around 93%. Denmark stands out at 132%, reflecting its specialisation in pharmaceuticals, shipping, and agri-food, followed by Sweden at 106%, while Finland, Iceland, and Norway cluster in the 81–86% range. Iceland's export share has fluctuated noticeably over 2000–2024, partly reflecting two exceptional episodes: the post-2008 contraction (which mechanically raised the export-to-GDP ratio) and the near-complete collapse of inbound tourism during COVID-19, from which Iceland recovered strongly by 2022–2024. The export base has also diversified substantially: twenty years ago marine products accounted for roughly two-thirds of merchandise exports, but the expansion of aluminium smelting and the rapid growth of tourism have broadened the base considerably. Iceland is

¹⁶ Aluminium production in Iceland is highly inelastic in the short run, owing to long-term energy contracts and the substantial costs of halting and restarting smelters. Only a sustained decline in aluminium prices would translate into a sizeable macroeconomic effect.

now substantially less dependent on any single sector than it was in the early 2000s, though the profile remains concentrated by the standards of larger economies.

Table 3: Degree of openness

Variable	Denmark	Finland	Iceland	Norway	Sweden
Export (% of GDP)	71	42	43	48	54
Trade (% of GDP)	132	83	86	81	106

Notes: Export of goods and services and trade (export plus import) as percentage of GDP 2024.
Source: World Bank WDI

Two sectors dominate goods exports. Aluminium is the largest single component, accounting for 33% of merchandise export value in 2024, supported by abundant renewable energy from geothermal and hydroelectric sources (Statistics Iceland, 2025b). Marine products, primarily frozen and fresh fish fillets, fish meal, and other seafood, contributed a further 36% of goods exports, with cod the single most valuable species (Statistics Iceland, 2025b,a). Together, aluminium and seafood account for around 70% of merchandise export value, a concentration that is not unusual among small advanced economies dependent on natural-resource exports. Smaller contributions come from ferro-silicon alloys, pharmaceuticals, and specialised fishing equipment.

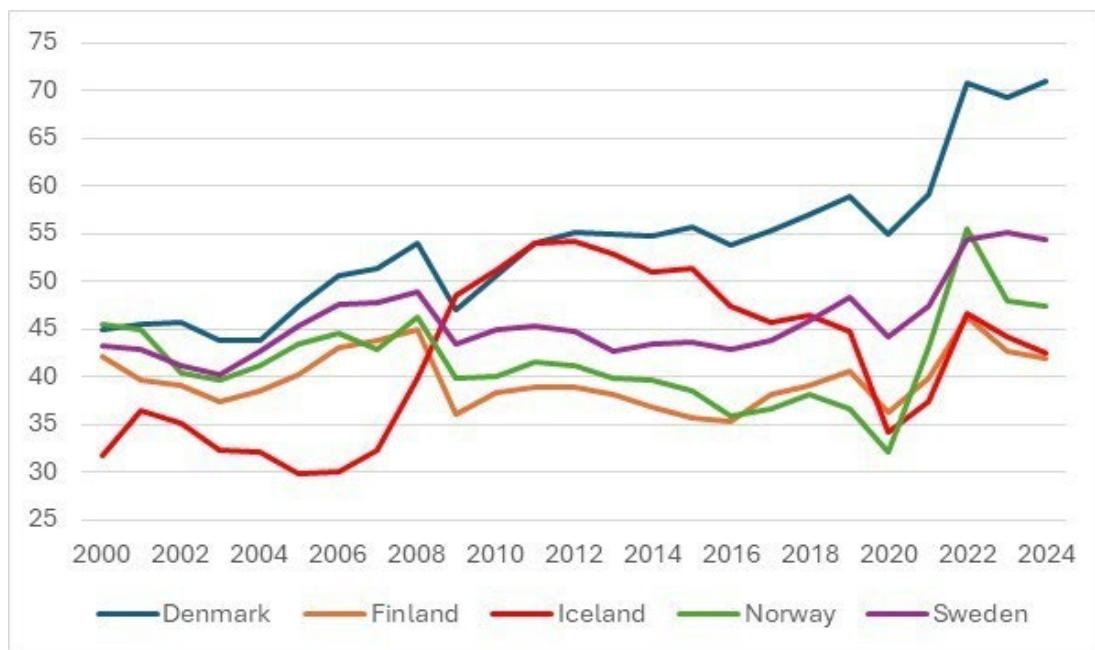


Figure 12: Export of goods and services (% of GDP) in the Nordics, 2000–2024

Source: World Bank WDI

Services exports are of comparable magnitude. Tourism is the single most important services export, accounting for around 32% of total goods and services exports in 2024–25 and reaching 40% at the pre-pandemic peak in 2018. Travel services alone made up almost 50% of total service exports (Statistics Iceland, 2025c), with more than 2 million tourist arrivals in 2024 (U.S. Department of State, 2025). Software, IT, and IP licensing remain modest but growing.

Iceland's goods exports are directed overwhelmingly towards European markets: 77% went to EEA countries in 2024, with the Netherlands, the United States, and the United Kingdom the three largest single-country destinations (Statistics Iceland, 2025b). The prominence of the Netherlands largely reflects Rotterdam's role as a transit hub for aluminium shipments rather than final demand, so the EEA share somewhat overstates final-demand exposure. For services, the United States was the largest destination in 2024, followed by the United Kingdom and Germany (Statistics Iceland, 2025c).

The concentration of the export base and dependence on imported inputs mean that exchange rate volatility affects firms through several channels, though exposure varies across sectors. Aluminium smelters are partially insulated: output prices and long-term energy contracts with Landsvirkjun are predominantly USD-denominated, so ISK exposure arises mainly through domestic labour costs and local procurement. Fisheries face a more direct currency mismatch, processing costs in ISK, revenues in euros and pounds, as do tourism operators. Both the OECD and the IMF have highlighted the shallow ISK foreign exchange market as a key friction, raising the cost of managing currency risk (OECD, 2023; International Monetary Fund, 2024). More broadly, exchange rate uncertainty raises the effective cost of trade and may discourage investment in export-oriented activities (Tenreyro, 2007).

Exchange rate pass-through

A key question for the euro adoption debate is whether exchange rate movements actually help Iceland adjust to shocks. For a small, import-dependent economy, rapid pass-through to consumer prices may erode the competitiveness gain from a flexible nominal rate. The net effect, and the horizon over which it operates, is ultimately an empirical question. We begin with the 2008 crisis, the strongest case for the exchange rate as a stabiliser, before turning to systematic evidence from the post-crisis period.

The 2008 crisis and the role of the exchange rate

The financial crisis of 2008–09 provides the most visible example of the exchange rate acting as a stabiliser for Iceland. The ISK depreciated by approximately 50%, and Iceland's current account swung from a deficit of roughly 25% of GDP in 2008 to near balance by 2010, a

faster adjustment than in euro area periphery countries that relied on internal devaluation (Benediktsdóttir et al., 2017). International evidence supports the view that flexible exchange rates can speed adjustment to large shocks, though the nature of the underlying shock matters for the degree of pass-through (Forbes et al., 2020).

The 2008 depreciation was not costless: inflation surged to approximately 18%, FXdenominated mortgage holders suffered severe balance sheet damage, and real wages fell sharply. The recovery was also supported by an IMF programme, bank restructuring, and capital controls that remained until 2017, making it difficult to isolate the exchange rate’s contribution. As noted in Section 2, the capital controls were themselves introduced to prevent further depreciation, suggesting that the observed move was at or beyond what the authorities considered consistent with orderly adjustment.

Local projection evidence for the post-crisis period

To assess the role of exchange rate movements during normal times, we use local projections (Jordà, 2005) to estimate the dynamic response of prices, wages, and exports to exchange rate innovations. The specification conditions on a rich set of controls, the policy rate, output gap, terms of trade, the VIX, and lagged inflation, so the estimated $\hat{\beta}_h$ traces the dynamic response of the outcome to a NEER innovation, holding these factors fixed. We do not impose external identifying restrictions, so the estimates are best read as conditional dynamic responses rather than fully structural causal effects. For each horizon $h = 0, 1, \dots, 12$ quarters,

$$y_{t+h} = \alpha_h + \beta_h \Delta e_t + \gamma_h Z_{t-1} + \varepsilon_{t+h} \quad (1)$$

where Δe_t is the quarterly change in the NEER (a positive value denotes depreciation) and Z_{t-1} is the vector of lagged controls. The sample covers 2010Q1–2024Q4, and shaded bands represent 68% confidence intervals. Full details are provided in Appendix A.

Figure 13 presents the main price and wage results. A one percent NEER depreciation is associated with an increase in year-on-year CPI inflation of approximately 0.07 percentage points on impact (panel a), with the effect remaining positive for about a year before fading. The pass-through is rapid and economically meaningful, consistent with Iceland’s high import content. Real wages (panel b) decline significantly and persistently, reaching a cumulative fall of roughly 0.3% after two years, consistent with import price pass-through outpacing nominal wage adjustment. The bilateral ISK/EUR rate yields very similar pass-

through estimates (see Appendix C), confirming that the euro area dominates Iceland’s effective exchange rate.¹⁷

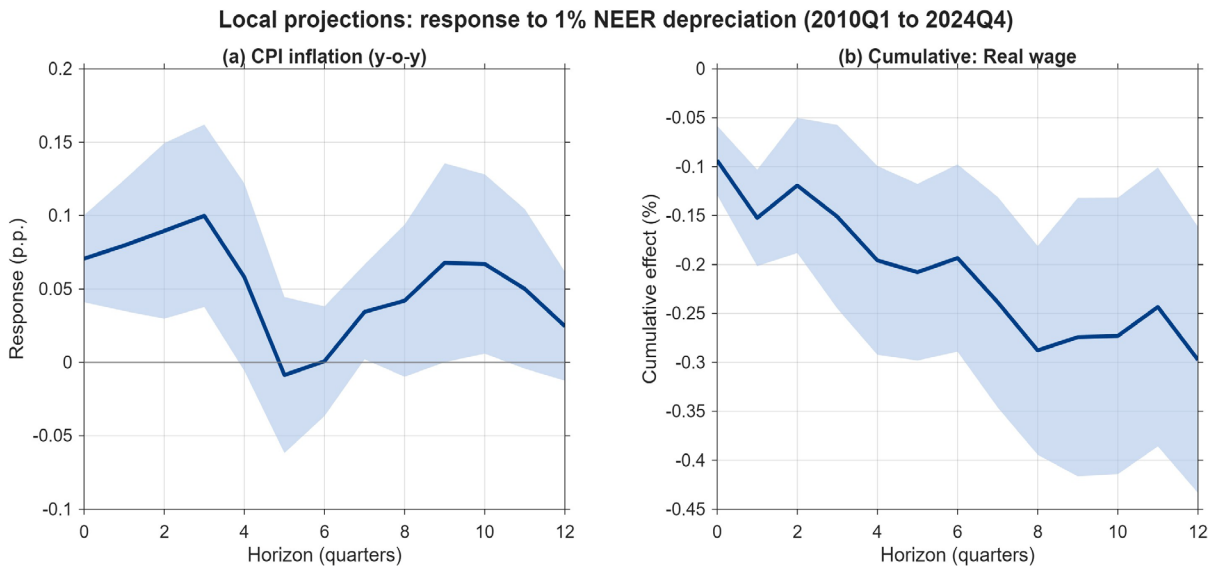


Figure 13: Local projections: response to a 1% NEER depreciation (2010Q1–2024Q4). Panel (a) shows the horizon-specific coefficient for year-on-year CPI inflation; panel (b) shows the cumulative real wage response. Shaded areas represent 68% confidence intervals based on Newey–West standard errors.

Figure 14 examines export responses in volume and value for aluminium and fish. Aluminium volumes (panel a) decline initially before turning positive at longer horizons, while fish volumes (panel c) are volatile and show no sustained positive response. These patterns are consistent with aluminium output being capacity-constrained and fish catches depending on quotas rather than price signals.¹⁸ Nominal export values for both fish (panel d) and aluminium (panel b) rise in the short run, reflecting the valuation effect of a weaker ISK on ISK-denominated revenues, though the effect is short-lived.

¹⁷ Unreported local projections also indicate a small post-depreciation decline in total employment, driven by retail, tourism, and transport, while manufacturing employment is largely unaffected. We do not present these results in detail because reverse causality is particularly severe in the tourism-related sector — negative shocks to tourism (volcanic eruptions, the collapse of WOW air, the grounding of the Boeing 737 MAX) simultaneously depress foreign-currency inflows and tourism employment — making a causal interpretation difficult. The descriptive sectoral evidence in Section 2 already documents the broad employment patterns during the 2008 and COVID episodes.

¹⁸ Iceland-specific evidence on pricing-to-market is broadly consistent with this pattern. Box 2 in Central Bank of Iceland Monetary Bulletin 2015/4 reports that imports are predominantly priced in producer currency, consistent with high pass-through to import prices, while exports are better approximated by local currency pricing, consistent with muted foreign-currency price responses and limited expenditure-switching effects on export volumes.

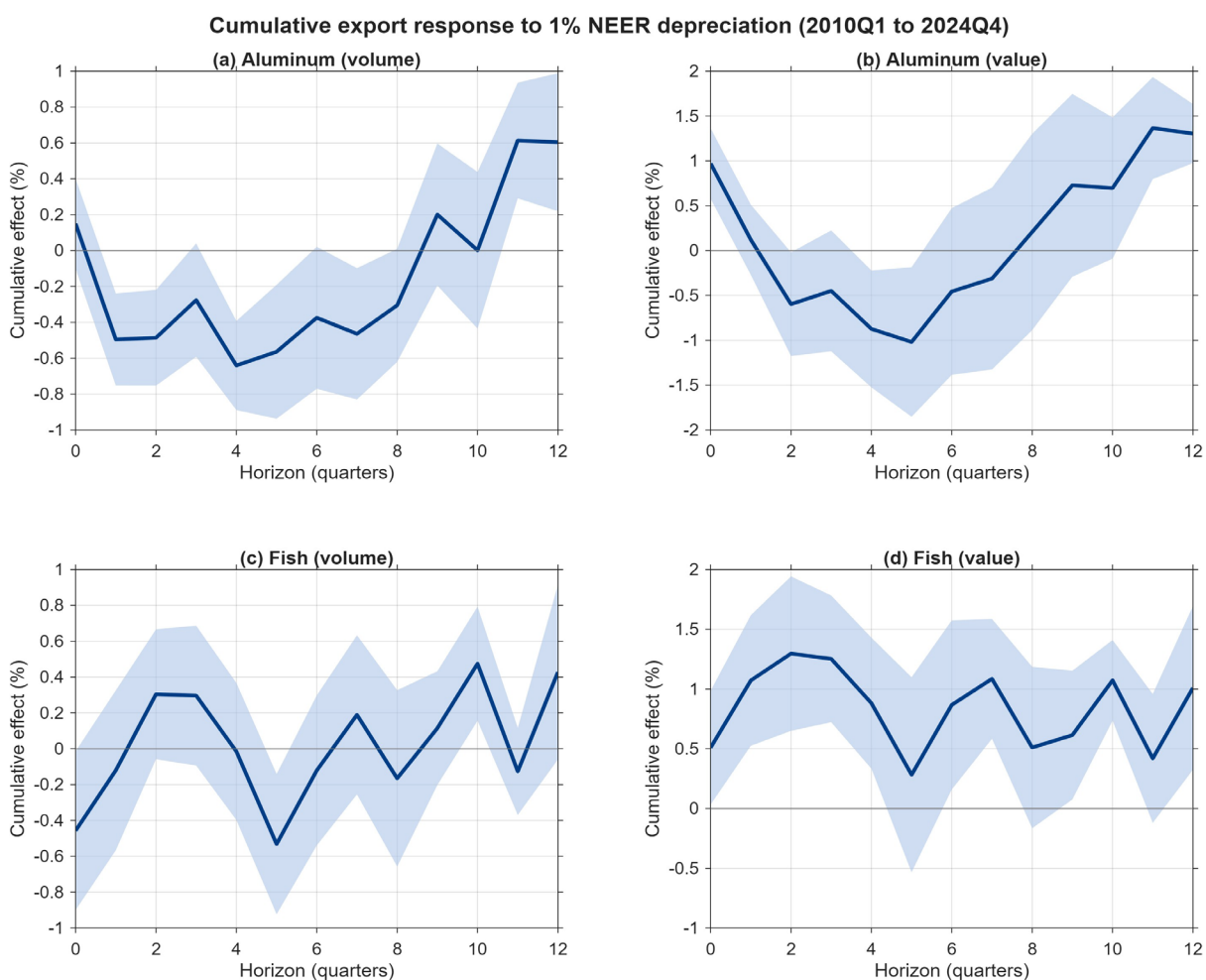


Figure 14: Cumulative export response to a 1% NEER depreciation: volume and value (2010Q1– 2024Q4). Shaded areas represent 68% confidence intervals.

Taken together, rapid pass-through to consumer prices combined with capacity- and quota constrained export volumes leaves little room for the textbook expenditure-switching channel, consistent with broader evidence on small import-dependent economies (Caselli and Roitman, 2019; De Grauwe, 2018). These patterns should not be given a strictly causal interpretation given the endogeneity of exchange rate movements, but they suggest that during normal times the ISK delivers limited stabilisation through the trade channel.

5 Monetary policy and exchange rate interactions

The evidence in the preceding sections motivates a closer empirical look at monetary policy transmission in Iceland. Section 2 documented that the ISK is volatile by Nordic standards and that episodes of large depreciation have historically coincided with inflation spikes and real wage compression. Section 4 suggested that Iceland’s export structure tends to work against the standard expenditure-switching mechanism, since aluminium and seafood volumes are largely shaped by global commodity markets and supply-side constraints, while

tourism is influenced more by foreign demand and capacity factors than by the exchange rate. Consistent with this, the local projection estimates point to rapid pass-through of depreciations into consumer prices, alongside a more muted response of real export volumes. International evidence also suggests that Iceland stands out among advanced economies for relatively high pass-through, partly reflecting the prominence of monetary policy shocks in driving krona movements (Forbes et al., 2020).

These observations motivate an empirical distinction between two conceptually different roles of the exchange rate: as a transmission channel through which monetary policy shocks affect inflation and activity, and as a source of independent financial or external shocks that simultaneously influence inflation, output, and policy decisions. Disentangling these roles is essential for assessing both the effectiveness of monetary policy and the cost of relinquishing the exchange rate under euro adoption.

Empirical framework

To examine monetary policy transmission and the role of external shocks in Iceland, we estimate a Structural Vector Autoregression (SVAR). The baseline (model A) includes five endogenous variables and is estimated over 2009Q1–2024Q4 (excluding the financial crisis years):

$$y_t = [i_t^*, x_t, \pi_t, i_t, \Delta q_t]' \quad (2)$$

Where i_t^* is the foreign policy rate (ECB), x_t is a measure of domestic real activity, π_t is consumer price inflation, i_t is the CBI policy rate, and Δq_t is the change in the real exchange rate (an increase denotes ISK appreciation against the euro).

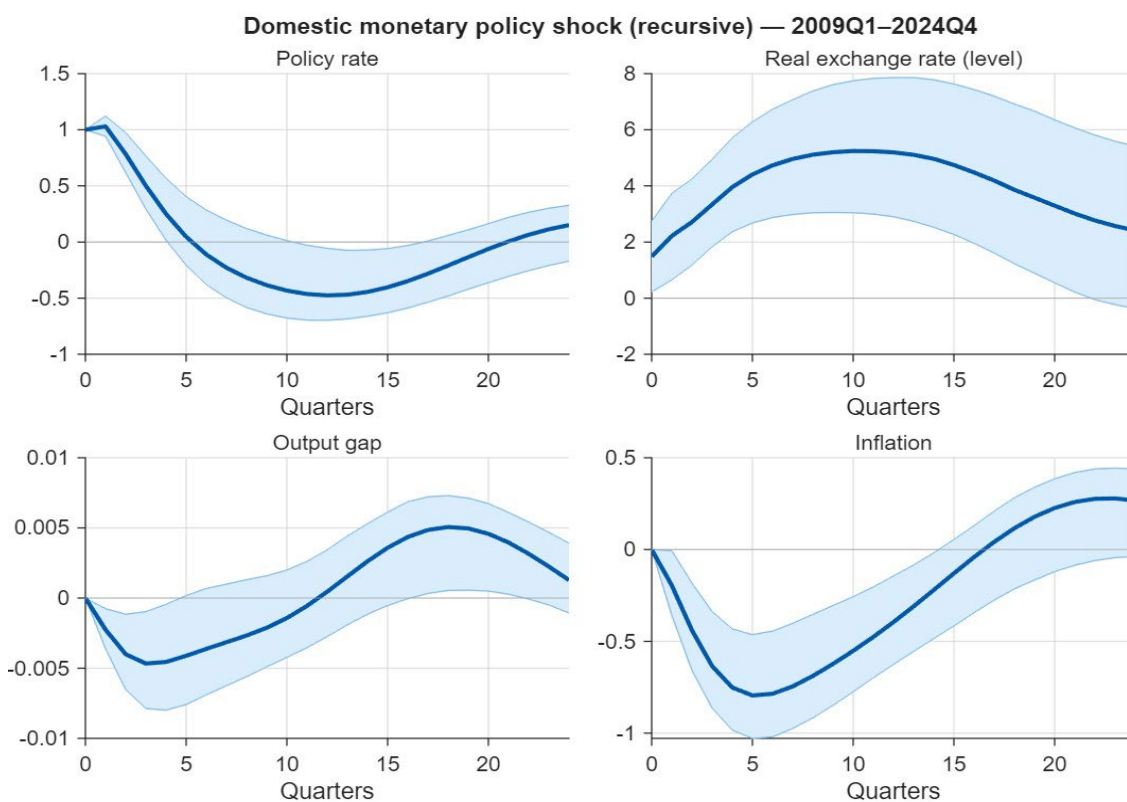
To ensure that the results are not driven by a particular identifying assumption, we use three complementary schemes. The *recursive* benchmark orders the foreign rate first and treats it as exogenous; activity and inflation are slow-moving and do not respond contemporaneously to monetary policy, while the exchange rate can respond on impact to interest-rate changes but not vice versa. This is comparable to one of the schemes in Pétursson (2023).¹⁹ The *long-run* scheme follows Bjørnland (2009) and the Dornbusch (1976) overshooting framework: monetary policy shocks are restricted to have no permanent effect on the real exchange rate, allowing the policy rate and exchange rate to respond simultaneously in the short run. The *sign-restriction* scheme replaces the zero between the

¹⁹ Pétursson (2023) estimates a SVAR for Iceland using multiple complementary identification approaches, with broadly consistent results. Chapter 4 summarises these results alongside related findings from the CBI’s QMM. The present analysis updates the SVAR to 2025 and employs three complementary identification schemes (recursive, long-run, and sign restrictions).

policy rate and exchange rate with sign conditions, requiring a contractionary monetary shock to raise the policy rate and appreciate the exchange rate on impact.

Given the importance of international financial conditions, we also estimate model B, in which the VIX (in levels) is added as an endogenous variable ordered first, while the ECB rate is moved to the exogenous block. This allows global risk conditions to drive exchange rates, capital flows, and domestic financial conditions contemporaneously. Impulse responses trace the dynamic effects of domestic and external shocks, while forecast error variance

Domestic monetary policy shock.



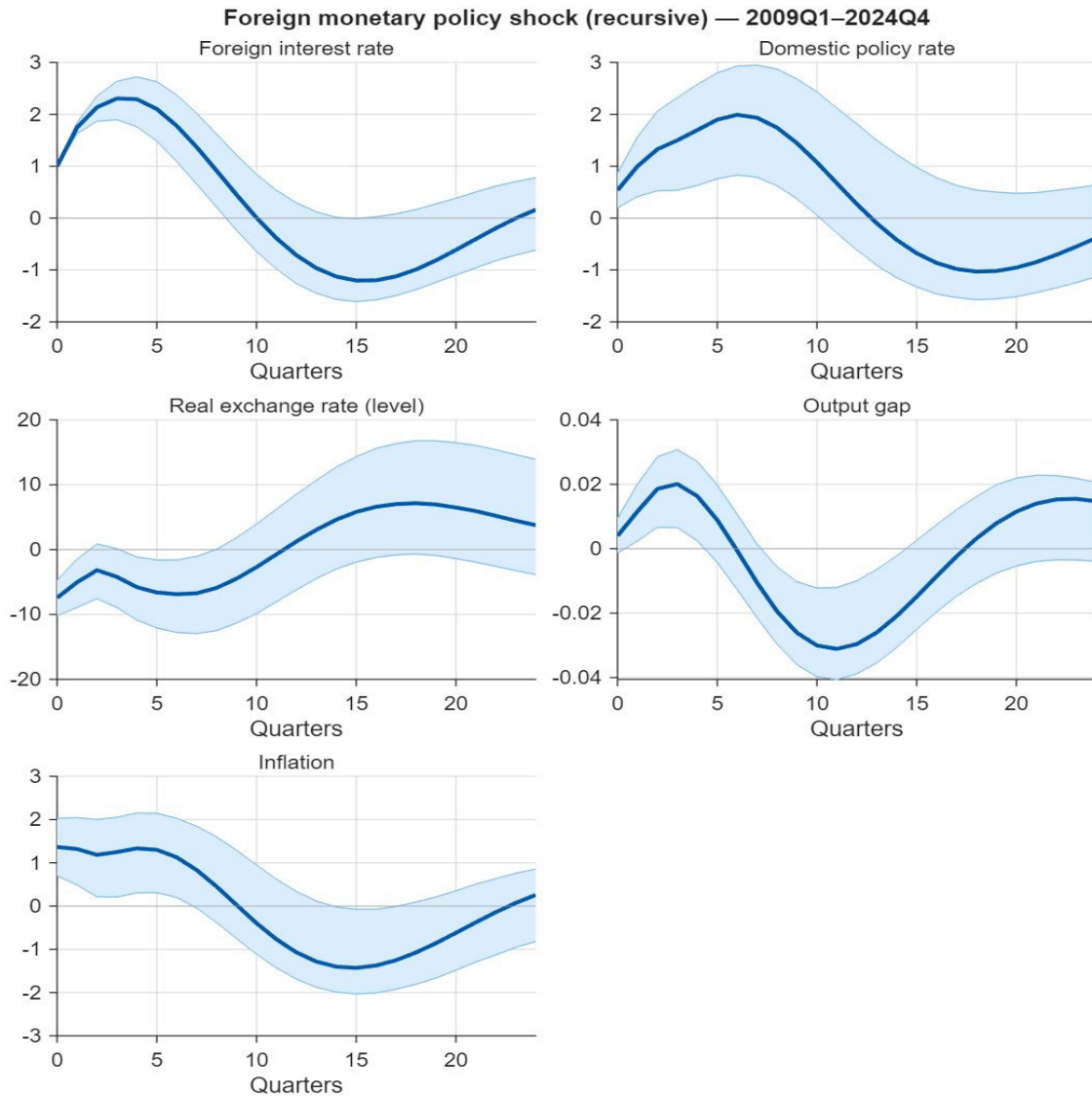
(a) Recursive restrictions

Figure 15: Domestic monetary policy shock — Iceland 100 bp increase in policy rate. Posterior median and 68% credible bands.

Figure 15 reports impulse responses to a contractionary domestic monetary policy shock (a 100 bp increase in the policy rate) under recursive identification. The shock leads to a clear appreciation of the real exchange rate on impact, followed by a gradual decline in inflation. Real activity also contracts temporarily, although the output gap response is more muted and less precisely estimated. These responses are consistent with standard open-economy predictions and broadly in line with the SVAR findings of Pétursson (2023),

confirming that domestic monetary policy has a meaningful and independent effect on inflation dynamics in Iceland. Figure 22 in Appendix D displays the responses under long-run restrictions (panel a) and sign restrictions (panel b). Both alternative schemes produce exchange rate and inflation responses that are broadly in line with the recursive case, confirming that the exchange rate channel is central to monetary transmission in Iceland.

Foreign monetary policy shock (ECB).



(a) Iceland – Recursive restrictions

Figure 16: ECB monetary policy shock (100 bp) Posterior median and 68% credible bands.

Figure 16 reports the impulse responses to a tightening of ECB monetary policy identified using Cholesky restrictions. The results with long run and sign restriction are reported in Appendix D. A tightening of foreign monetary policy generates noticeable spillovers to the

Icelandic economy. The foreign interest rate rises by approximately 1 percentage point on impact and remains elevated for about 2-3 years. The domestic policy rate co-moves, rising by roughly 0.5–0.7 percentage points and remaining elevated for several quarters. This co-movement is sizeable, but it should be borne in mind that the estimation period spans episodes, in particular the post-pandemic global inflation surge, when central banks across most advanced economies tightened more or less in unison in response to common shocks.

Kim and Roubini (2000) report qualitatively similar co-movements in response to US monetary policy shocks for the other G7 countries, suggesting that some policy co-movement is a general feature of advanced economies under floating exchange rates rather than something specific to Iceland. The pattern reported here is also broadly consistent with Pétursson (2023), and can reflect several mechanisms operating jointly: the CBI may be reacting to the inflationary effects of an ISK depreciation, to rising imported price pressures (to which the ECB is itself responding), and to financial spillovers from higher global interest rates. The result is therefore best read as documenting that domestic and foreign monetary conditions have moved closely together over this sample, rather than as direct evidence that the CBI mechanically reacts to ECB decisions. We also note that the real exchange rate depreciates on impact, consistent with a narrowing interest rate differential as the CBI adjusts more slowly than the ECB. The depreciation feeds through to inflation, which rises in the short run, and the response is persistent rather than mean-reverting over the medium-run horizon. The output gap contracts, with a peak decline after 5–8 quarters.

External-instrument robustness. As a complementary check, we draw on preliminary results from a related paper, (Bjørnland and Kalstad, 2026). The paper identifies the ECB monetary policy shock using high-frequency OIS surprises around ECB Governing Council meetings as an external instrument (EA-MPD, Altavilla et al., 2019) in a proxy-SVAR estimated on monthly data for some small open economies, including Iceland.²⁰ The system includes the ECB rate, Icelandic unemployment, inflation, the CBI policy rate, and the log change in the real ISK/EUR rate, with the GSCPI as an exogenous control and six lags.²¹

Figure 17 graph the results. The proxy-SVAR confirms the main channels identified in the main SVAR analysis. In response to a contractionary ECB monetary policy shock, the CBI policy rate rises significantly and persistently, peaking after about a year before gradually

²⁰ The data for Iceland runs from 2009M01 to 2024M12. High-frequency instrument identification is infeasible at quarterly frequency for Iceland due to the short sample. Monthly frequency is the standard resolution in the ECB-spillover literature (e.g., Habib and Stracca, 2015).

²¹ The first-stage F statistic is 4.81, below the conventional Stock–Yogo threshold of 10, so the proxy-SVAR estimates should be read as corroborative of the SVAR-based results rather than as a stand-alone identification. Magnitudes in particular are sensitive to the weak first stage and tend to be larger than in the recursive baseline.

returning towards baseline. The real ISK/EUR exchange rate depreciates sharply on impact, on the order of 25–30%, and the depreciation persists with little tendency to revert over the medium term, in line with the persistent exchange rate response in the recursive baseline. Inflation rises and peaks within the first year before gradually fading. This pattern is consistent with the exchange rate pass-through channel, whereby a depreciation raises the domestic price of imported goods. The unemployment response is negative on impact, a pattern often associated with the information-effect puzzle in the high-frequency identification literature (Jarociński and Karadi, 2020), but the bands cross zero shortly thereafter and the response is statistically insignificant over the remainder of the horizon.

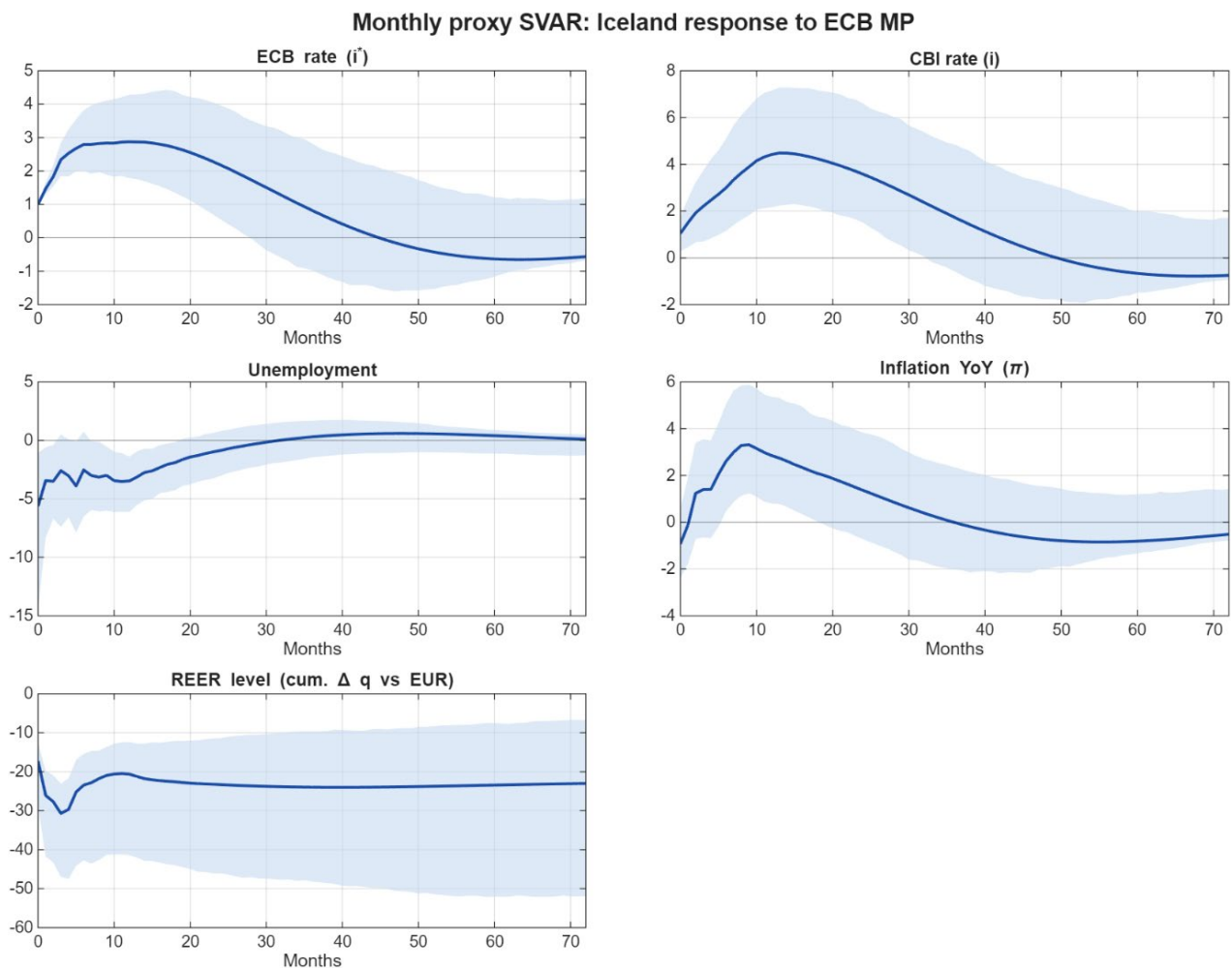


Figure 17: Monthly proxy-SVAR: Iceland response to an ECB monetary policy shock identified by EA-MPD OIS-6M surprises around Governing Council meetings. Sample 2009M01–2024M12. Normalisation: ECB rate rises by 1 pp on impact. First-stage $F = 4.81$. Shaded areas are 68% wild-bootstrap confidence bands. Source: Bjørnland and Kalstad (2026).

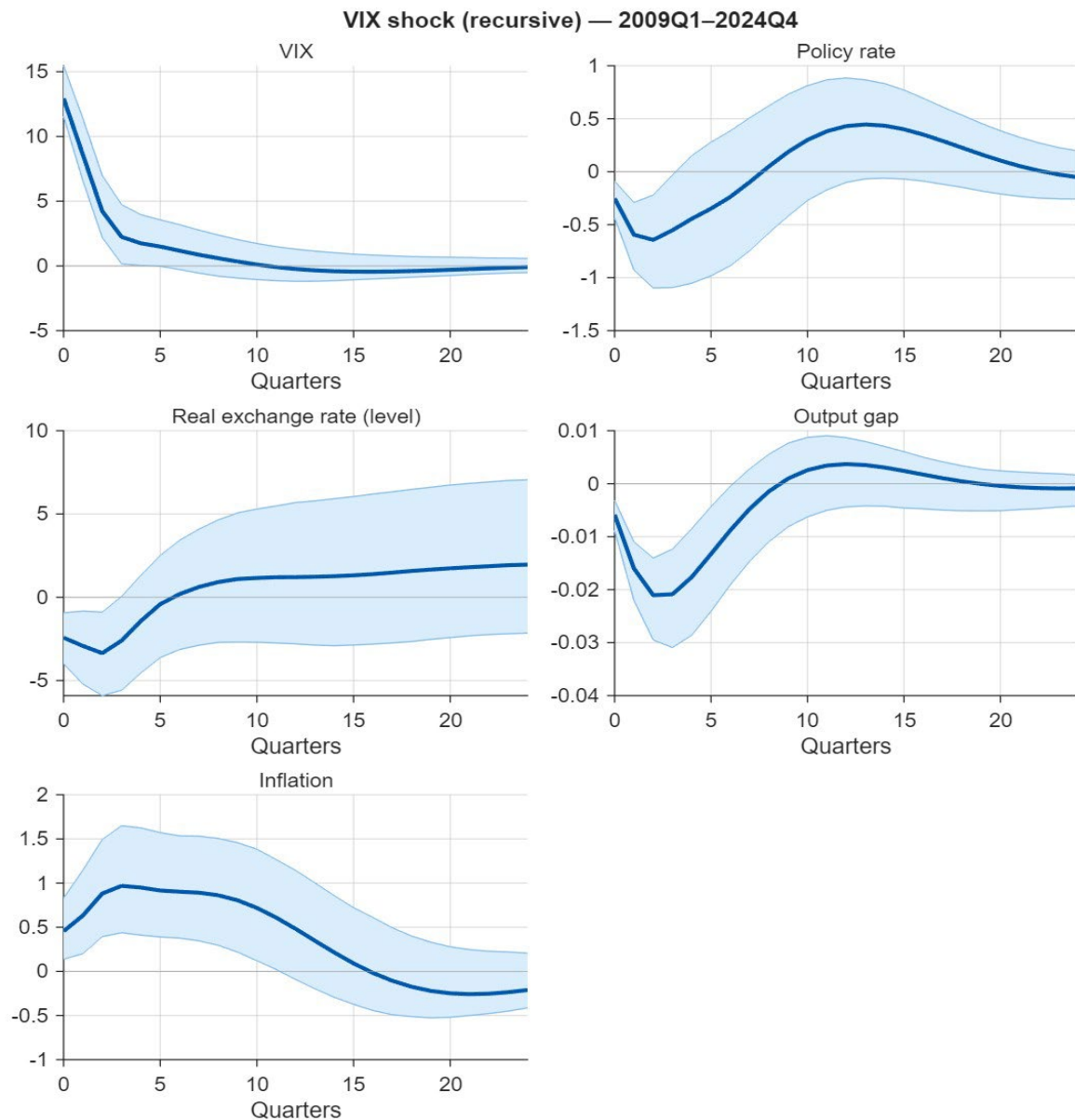
Taken together, the directions of the CBI co-movement, ISK depreciation, and inflation responses provide an independent confirmation of the SVAR-based finding that ECB monetary conditions transmit meaningfully to the Icelandic economy through the exchange rate and policy rate channels, even if the magnitudes differ.

These dynamics illustrate a tension for Icelandic monetary policy. Periods of tighter euro-area policy in the sample are associated with tighter domestic conditions, even when these may not be fully aligned with Iceland's own cyclical position. The close co-movement of domestic and foreign rates is documented across both the main and proxy-SVAR specifications, and is consistent with the broader view that the practical scope for an independent monetary stance is somewhat narrower than the institutional framework alone would suggest. This co-movement should not, however, be read as evidence that the CBI systematically targets the ECB rate. The CBI explicitly targets domestic inflation, other major foreign rates, notably US rates, plausibly play a comparable role, and a sizeable interest rate differential vis-à-vis the ECB has been maintained throughout the sample. The picture is therefore one of meaningful but constrained autonomy: domestic monetary conditions are shaped jointly by CBI decisions and by global financial and monetary spillovers, with the ECB rate exerting noticeable influence.

Global financial uncertainty shock (VIX).

Figure 18 reports the impulse responses to a VIX shock identified using long-run restrictions. The results are robust to the alternative identification schemes reported in Appendix D. A spike in global financial uncertainty leads to a sharp rise in the VIX that persists for about 10 quarters. The real exchange rate depreciates on impact and the output gap contracts within the first few quarters. The depreciation feeds through to inflation, which rises gradually and peaks after about 8 quarters. The domestic policy rate shows little initial response, suggesting that the CBI does not immediately tighten in the face of the VIX shock.

This combination of responses, a weaker ISK alongside higher inflation and temporarily lower output, runs counter to the classical shock-absorber argument for flexible exchange rates. Taken at face value, the floating ISK appears to amplify adverse global shocks by adding an inflationary depreciation on top of a contractionary real effect. Some caution is warranted, however. The estimation sample includes the COVID-19 episode, during which the spike in the VIX coincided with a uniquely Iceland-specific tourism collapse, so part of what is identified as a "global financial shock" may capture domestic real disturbances correlated with the global risk environment. The CBI would in either case face a simultaneous inflation–output trade-off: tightening to contain the inflation pass-through would deepen the output contraction, while easing to support activity would accommodate the inflationary impulse. The decomposition of shocks and the attribution of exchange rate movements to specific structural disturbances also depend on the identifying assumptions of the SVAR. Subject to these caveats, the qualitative pattern is more consistent with the floating ISK acting as a shock *transmitter* than as a shock absorber in episodes of global risk-off sentiment.



(a) Iceland — Recursive restrictions

Figure 18: Global financial uncertainty shock (one s.d. increase in VIX) Posterior median and 68% credible bands.

Taken together, the impulse responses highlight the substantial role of external shocks in shaping macroeconomic fluctuations in Iceland. While domestic monetary policy remains an effective tool for influencing inflation, foreign monetary policy and global financial conditions exert a meaningful influence on the exchange rate and on domestic outcomes, underscoring the importance of external factors in the transmission of monetary policy in a small open economy.

Contribution of domestic and foreign shocks

To assess the relative importance of different shocks, we complement the impulse responses with forecast error variance decompositions (FEVDs). Figure 19 reports results for the baseline model A (ECB) and Figure 20 for Model B (VIX).

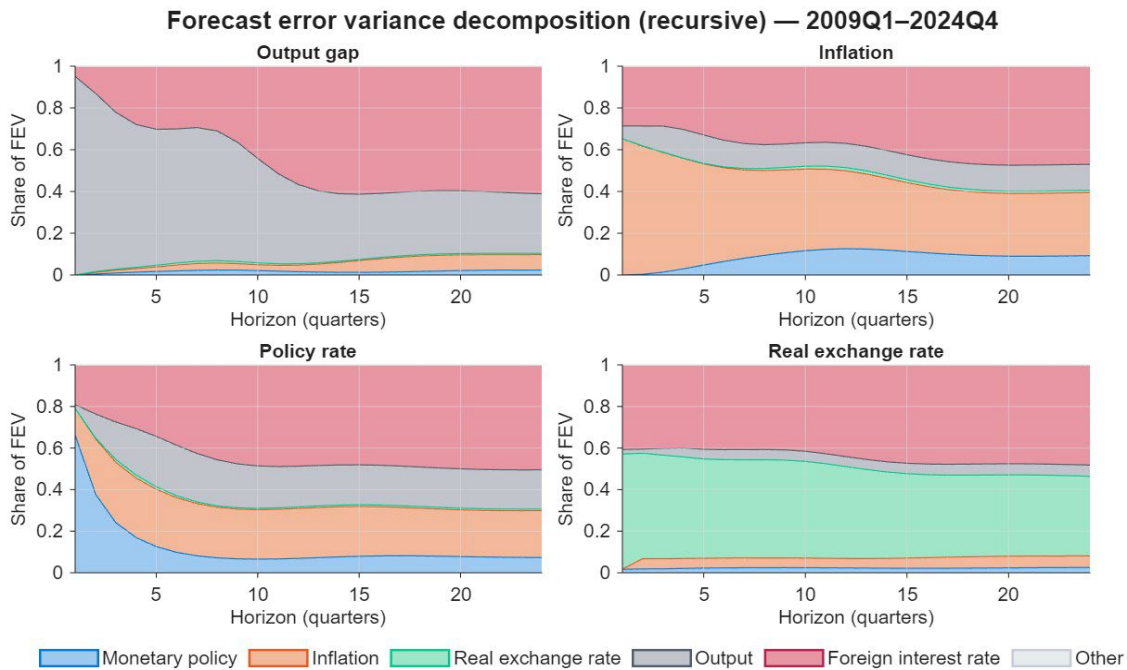


Figure 19: Forecast error variance decomposition, Model A — $p = 2$. Stacked area shares Model with recursive restrictions.

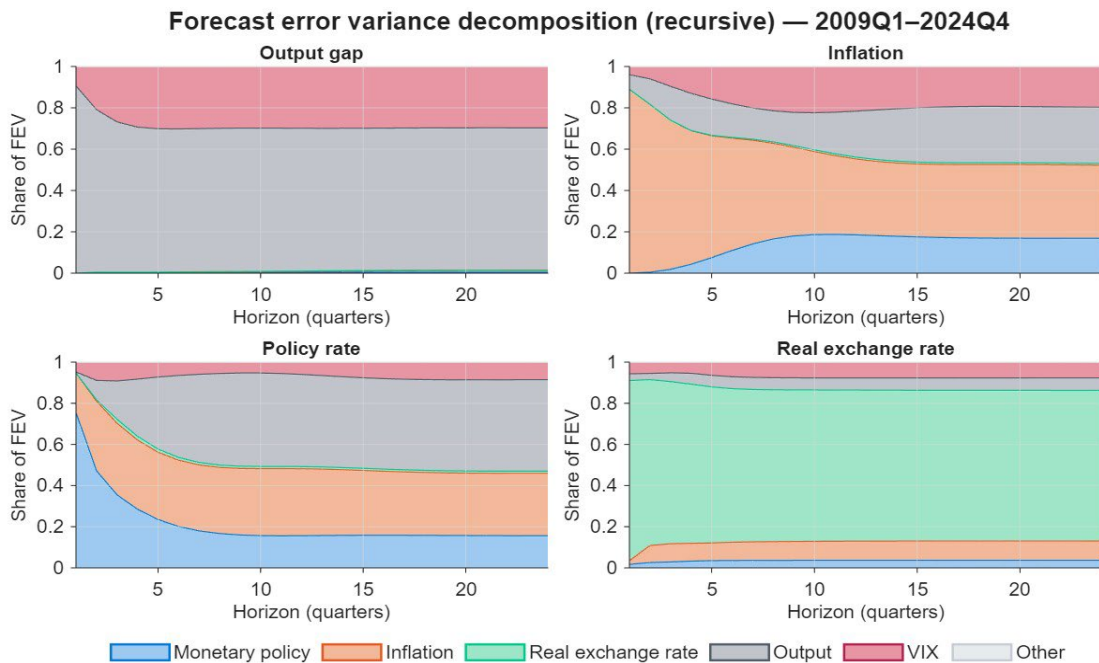


Figure 20: Forecast error variance decomposition, Model B (VIX) — $p = 2$ Stacked area shares. Model with recursive restrictions.

In Model A, the ECB rate accounts for about 40% of real exchange rate variance at medium horizons, indicating that ISK fluctuations are partly driven by euro area monetary conditions.²²

The domestic monetary policy shock explains around 60% of policy rate variance initially, declining at longer horizons as output and inflation shocks gain importance, reflecting the CBI's systematic response to domestic conditions. When global financial conditions are proxied by the VIX (Model B), the picture is broadly consistent: the VIX explains about 10% of real exchange rate variance, smaller than the ECB rate's 40% share, unsurprisingly given the euro area's dominance in Iceland's trade, and around 20% of output gap and policy rate variance at longer horizons.

A further finding is that exchange rate shocks, while accounting for a large share of the ISK's own variance, explain very little of the variation in output, inflation, or the policy rate. Exchange rate volatility thus appears largely self-contained: the ISK fluctuates substantially, but these fluctuations are not a major independent driver of business cycle dynamics, nor do they elicit a strong systematic policy response.

A note on the role of fiscal policy as a stabilisation tool

A central question for any prospective euro area member is whether fiscal policy can substitute for monetary policy as a stabilisation tool. In the OCA literature, countercyclical fiscal policy is the primary adjustment mechanism available to countries that have given up their own currency (De Grauwe, 2018). For Iceland, this raises two distinct concerns.

First, fiscal policy in Iceland has historically shown procyclical tendencies on the expenditure side. Both the IMF and the OECD have documented that government spending has tended to expand during booms and contract during downturns, amplifying rather than dampening the business cycle (OECD, 2023; International Monetary Fund, 2024). Some of this pattern reflects context-specific factors, including the aftermath of the financial crisis and periods of rapid population growth. The picture is more nuanced on the revenue side: Iceland's tax system has a relatively high revenue elasticity by OECD standards (OECD, 2015), so revenues respond strongly to the cycle and provide an automatic stabilisation channel. The fiscal

²² Central Bank of Iceland (2017) reports a variance decomposition suggesting that real shocks (demand, supply) have become relatively more important drivers of ISK fluctuations in the post-GFC period, with a smaller role for nominal shocks. Our framework is complementary: by explicitly separating foreign monetary policy and global financial uncertainty from domestic shocks, we find that external drivers account for a substantial share of ISK variation. Whether ISK responses to foreign monetary or financial conditions are best classified as "real" or "nominal" is a question of identification and labelling; the substantive finding that the ISK transmits a meaningful share of external shocks is robust.

framework adopted in 2015 improved the budget process, but the overall balance rule created incentives to use stronger-than-expected revenues to finance new spending or tax cuts rather than building buffers (International Monetary Fund, 2024). Iceland has recently adopted a net expenditure growth rule that has been activated in 2025, that is designed to reduce procyclicality on the expenditure side. Whether these reforms, together with the strong automatic stabilisers on the revenue side, will be sufficient to deliver the countercyclical discipline needed under euro membership remains to be seen.

Second, the ECB's monetary policy may itself be distorted by fiscal conditions in the euro area. As argued by Walentin (2026) for the case of Sweden, fiscal policy considerations can affect ECB policy in ways that are problematic for small, fiscally prudent economies. Several large euro area countries carry public debt well above the Stability and Growth Pact threshold, limiting their ability to pursue countercyclical fiscal policy during downturns. The ECB may therefore need to compensate with more expansionary monetary policy than would otherwise be warranted, a stance that would be too loose for a low-debt economy like Iceland. Conversely, in periods of overheating or supply-driven inflation, the ECB's willingness to raise rates may be constrained by the strain that higher interest costs impose on the public finances of highly indebted members. For Iceland, which has maintained comparatively low public debt, this implies inheriting a monetary policy systematically tilted toward the fiscal conditions of larger, more indebted members.

Beyond these two concerns, fiscal policy as a stabilisation tool faces inherent practical limitations. Discretionary fiscal action involves recognition, decision, and implementation lags that can blunt its countercyclical effectiveness, and political-economy frictions often make it harder to tighten in booms than to loosen in downturns. Automatic stabilisers, i.e., progressive taxation and welfare spending, work continuously and provide some smoothing, but their strength depends on the size of the welfare state and the structure of the tax system. The euro area experience with fiscal stabilisation is mixed: several smaller and fiscally disciplined members, including Ireland in the post-2012 recovery and the Baltic states (Blanchard et al., 2013), have demonstrated that effective fiscal adjustment is possible within the union, while larger members with high debt have found it more difficult. Iceland's starting position is favourable in some respects: comparatively low public debt, a well-developed welfare state, and recent reforms to the fiscal framework, including the net expenditure growth rule that was activated in 2025. The challenge is to move from a historically procyclical pattern to a credibly countercyclical stance, and to combine fiscal action with the macroprudential tools already in place. This is feasible but not automatic, and would benefit from continuing strengthening the role of independent fiscal institutions.

Taken together, these considerations indicate that euro adoption would require Iceland to rely more heavily on fiscal policy for stabilisation while simultaneously adopting an ECB monetary policy that may be shaped by the whole euro area.

6 Summary and implications for euro adoption

This chapter has examined Iceland's macroeconomic environment and the role of the exchange rate in monetary policy transmission, with a focus on the euro adoption debate. We address three questions: how well Iceland aligns with the Nordic and the euro area in cyclical synchronisation and macroeconomic volatility; whether depreciations improve competitiveness or whether pass-through erodes the gains; and how effective is the domestic monetary policy in practice.

Iceland stands out among its Nordic peers for relatively large and persistent exchange-rate fluctuations and higher output, inflation, and interest rate volatility. Business cycles are nevertheless moderately synchronised with the other Nordics, suggesting that the larger amplitude of Iceland's fluctuations partly reflects the exchange rate amplifying common shocks rather than Iceland facing fundamentally different ones. Cross-currency evidence is consistent with this: monthly ISK/EUR changes are essentially uncorrelated with SEK/EUR and only weakly correlated with NOK/EUR, well below the NOK–SEK co-movement, indicating that the ISK moves largely independently of its Nordic peers despite close real-economy ties. The sectoral evidence shows that the costs of large shocks fall mainly on domestically oriented and trade-exposed services (retail, construction, tourism, transport), while the capital-intensive goods export sectors remain largely insulated. Iceland's trade is concentrated in aluminium, fish, and tourism, and predominantly oriented toward European partners, satisfying key preconditions of the optimal currency area literature. Aggregate productivity since the financial crisis compares well with the Nordic and EU averages, although the gains are concentrated in knowledge-intensive services rather than in the traditional export sectors.

The local projection estimates, read as conditional dynamic responses, indicate that during normal times a depreciation is followed by rapid pass-through to consumer prices and compressed real wages, with no evidence of sustained gains in export volumes. The supply-constrained nature of Iceland's main export sectors, with aluminium capacity-determined and fish catches quota-regulated, limits the scope for expenditure switching. A depreciation does, however, raise ISK-denominated revenues for these sectors, generating an income channel that supports profits, dividends, and tax revenues even when volumes do not adjust. Exchange rate volatility also imposes direct costs through currency mismatches and investment uncertainty, with SMEs disproportionately affected.

The 2008 financial crisis illustrates how the exchange rate can also smooth the transition. The roughly 50% depreciation of the ISK delivered a rapid external adjustment that compared favourably with the prolonged internal devaluation in euro area periphery countries. The episode imposed substantial costs of its own, including a surge in inflation and compressed real wages, and was accompanied by an IMF programme, bank restructuring, and capital controls; but it demonstrates that the exchange rate can provide adjustment value during severe asymmetric shocks.

The SVAR analysis confirms that the Central Bank of Iceland operates a functioning monetary transmission mechanism: a contractionary policy shock leads to exchange rate appreciation and a persistent decline in inflation. The CBI retains formal institutional independence and meaningful scope for an autonomous stance, reflected in a sizeable interest rate differential vis-à-vis the ECB. At the same time, the domestic policy rate co-moves strongly with ECB policy, and the ECB rate accounts for approximately 40% of real exchange rate variance, indicating that the practical scope for independence is narrower than the institutional framework alone implies. These findings are corroborated by an external-instrument robustness exercise on monthly data using high-frequency ECB monetary policy surprises. Furthermore, VIX shocks generate a simultaneous depreciation, higher inflation, and weaker output, a pattern that runs counter to the simple shock-absorber argument, although part of it likely reflects the COVID-19 episode, when global risk-off coincided with a uniquely Iceland-specific tourism collapse. Subject to that caveat, the evidence is more consistent with the floating ISK transmitting global financial shocks at least as much as it absorbs them. Notably, own ISK shocks explain very little of the variation in output, inflation, or the policy rate, suggesting that ISK volatility, while substantial, is largely self-contained, so eliminating it would remove exchange-rate noise without sacrificing a powerful stabilisation channel.

On the benefit side, 77% of goods exports go to EEA countries, so a common currency would reduce transaction costs at the core of Iceland's goods trade, with cross-country estimates pointing to trade gains of 5–30% over a decade for comparable late adopters (Gunnella et al., 2021). Euro adoption would not, however, eliminate all currency risk: the aluminium sector operates largely in US dollars, and a non-trivial share of tourism revenues is priced in non-euro currencies, leaving residual exposure to USD/EUR and GBP/EUR movements. Euro adoption would also require Iceland to rely more heavily on fiscal policy for stabilisation. Iceland's macroprudential framework is comparatively strong and the fiscal framework has been progressively strengthened, but fiscal policy has historically been procyclical, and the ECB's own monetary policy may be affected by the fiscal conditions of highly indebted euro area members. Addressing the procyclicality of domestic fiscal policy is therefore a prerequisite for the stabilisation role expected of a euro area member, and the adoption of the net expenditure rule in 2025 is a step in the right direction.

These findings are reinforced by the complementary chapters. Chapter 3 shows that Iceland's capital flows are far more volatile than for euro area members, estimates that euro adoption could reduce the risk premium, and documents that freed-up foreign exchange reserves relative to GDP. Chapter 4 documents that financial sentiment is a particularly large driver of ISK variation and that pass-through depends on the source of the shock. Chapter 2 identifies wage-setting reform as a prerequisite for euro adoption, given that nominal wage growth far exceeds the euro area and the fragmented bargaining system lacks a manufacturing wage norm.

On balance, the stabilisation value of the floating ISK appears more limited than the standard argument implies. The CBI has an effective monetary policy instrument, and 2008 shows that the exchange rate can facilitate adjustment during severe crises, but during normal times the costs of ISK volatility may exceed its absorbing effects. Whether the benefits of euro adoption can be realised will depend on complementary reforms, in particular to wage-setting institutions.

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Appendix A Technical details: local projections

This appendix provides additional technical details on the local projection (LP) estimates reported in Section 4

Data and sample

All data are obtained from the Central Bank of Iceland, Statistics Iceland, and the IMF. The estimation sample is 2010Q1–2024Q4 ($T = 60$ quarterly observations). The sample begins in 2010 to exclude the financial crisis period and the initial phase of capital controls, and to allow for lagged values in the regression specification.

Variables and transformations

The exchange rate shock Δe_t is defined as the negative of the quarterly log difference of the NEER, multiplied by 100, so that a positive value corresponds to a 1% depreciation.

Outcome variables are:

CPI inflation (year-on-year): $\ln(P_t/P_{t-4}) \times 100$

Real wage (nominal wage index / CPI): cumulative quarterly log change $\times 100$

Export volumes and values (aluminium, fish): cumulative quarterly log change $\times 100$

Specification

For each horizon $h = 0, 1, \dots, 12$, the regression is:

$$y_{t+h} = \alpha_h + \beta_h \Delta e_t + \gamma_h Z_{t-1} + \delta_h y_{t-1} + \phi_h \Delta e_{t-1} + \varepsilon_{t+h} \quad (3)$$

where Z_{t-1} is a vector of lagged control variables:

CBI policy rate (level, %), QMM output gap (level, %), Terms of trade (quarterly log change $\times 100$), VIX index (quarterly log change $\times 100$), CPI inflation (quarterly log change $\times 100$)

When the dependent variable coincides with a control variable (e.g. CPI inflation or the output gap), the corresponding control is excluded to avoid collinearity with the own lags.

For cumulative outcomes (wages, exports), y_{t+h} is replaced by $\sum_{s=0}^h \Delta \ln Y_{t+s} \times 100$, so that $\hat{\beta}_h$ traces the cumulative percentage response.

Inference

Standard errors are computed using Newey–West heteroskedasticity and autocorrelation consistent (HAC) estimators with a Bartlett kernel and bandwidth $h + 1$, following Jordà (2005).

Confidence intervals are constructed as $\hat{\beta}_h \pm 1 \times \text{s.e.}(\hat{\beta}_h)$, corresponding to 68% bands.

Appendix B Technical details: SVAR specification

This appendix provides additional technical details on the Structural Vector Autoregression (SVAR) model estimated in Section 5.

Data and sample

The model is estimated on quarterly data over the period 2009Q1–2024Q4 ($T = 64$ observations).

All variables are obtained from the Central Bank of Iceland, Statistics Iceland, and the ECB. The output gap is taken from the Central Bank’s Quarterly Macroeconomic Model (QMM). CPI inflation is measured as quarterly log differences. The real exchange rate is computed from the nominal effective exchange rate (NEER) deflated by relative consumer prices. The VIX index is sourced from CBOE and averaged to quarterly frequency.

Model specification

The reduced-form VAR is:

$$y_t = c + A_1 y_{t-1} + \dots + A_p y_{t-p} + B w_t + u_t \quad (4)$$

where y_t is the vector of endogenous variables and w_t contains exogenous controls. In Model A, w_t includes a global supply-chain pressure index (GSCPI). In Model B, w_t additionally includes the ECB policy rate i_t . Finally, $u_t \sim N(0, \Sigma)$. The baseline specification uses $p = 2$ lags, selected by the Schwarz (BIC) and Hannan-Quinn (HQ) information criteria.

Model A (foreign interest rate): $y_t = [i_t^*, x_t, \pi_t, i_t, \Delta q_t]'$, where i_t^* is the ECB policy rate, x_t is the QMM output gap, π_t is CPI inflation, i_t is the CBI policy rate, and Δq_t is the change in the real exchange rate (positive = appreciation).

Model B (VIX): $y_t = [\text{VIX}_t, x_t, \pi_t, i_t, \Delta q_t]'$, replacing the foreign interest rate with the VIX index in level and ordered first as a global driver. The ECB policy rate i_t is moved from y_t to the exogenous regressor vector w_t .

Identification

Three identification strategies are employed:

1. **Recursive (Cholesky):** The ordering $[i_t^*, x_t, \pi_t, i_t, \Delta q_t]$ implies that the foreign rate is predetermined, output and inflation do not respond contemporaneously to domestic monetary policy, and the exchange rate responds immediately to all shocks. The structural shocks are recovered via the Cholesky decomposition $\Sigma = PP'$.
2. **Long-run restrictions:** Following Bjørnland (2009) and motivated by Dornbusch (1976), the monetary policy shock is identified by imposing that it has no permanent effect on the real exchange rate. This allows simultaneous interaction between the policy rate and exchange rate in the short run while imposing long-run neutrality.
3. **Sign restrictions:** We impose sign restrictions so that a contractionary monetary policy shock is identified by requiring the policy rate to increase and the exchange rate to appreciate on impact. No restrictions are placed on the responses of output and inflation. The median response from the accepted draws is reported, together with 68% credible bands.

Long-run restriction: implementation

The long-run restriction follows Bjørnland (2009). The cumulative long-run multiplier matrix is $C(1) = (I - A_1 - \dots - A_p)^{-1}$. The structural impact matrix A_0^{-1} is parameterised as $A_0^{-1} = PQ$, where P is the Cholesky factor of the reduced-form covariance matrix Σ and Q is an orthogonal rotation matrix. The restriction that the monetary policy shock has no permanent effect on the real exchange rate is imposed by requiring the relevant element of $C(1)A_0^{-1}$ to equal zero. This pins down one column of Q while leaving the remaining shocks unrestricted.

Sign restrictions: implementation

The sign-restriction is implemented as follows:

$$\frac{\partial i_t}{\partial \varepsilon_t^{\text{mp}}} > 0, \quad \frac{\partial \Delta q_t}{\partial \varepsilon_t^{\text{mp}}} > 0 \quad (5)$$

where $\Delta q_t > 0$ denotes an appreciation. A contractionary monetary policy shock must therefore raise the policy rate and appreciate the currency on impact; responses of output and inflation are left unrestricted.

Operationally, for each posterior draw of (B, Σ) we first solve for an impact matrix S_0 satisfying $\Sigma = S_0 S_0'$ together with the retained recursive zeros, and then post-multiply by a random Givens rotation in the $(i, \Delta q)$ block with angle $\theta \sim U(-\pi, \pi)$. A rotation is accepted only if the column corresponding to the monetary policy shock satisfies the sign conditions, with the impact response of Δq_t above a small numerical tolerance (Rubio-Ramírez et al., 2010). We use 2,500 posterior (B, Σ) draws and keep up to 30 accepted rotations per draw; bands are 16th and 84th percentiles of the resulting IRF distribution.

Inference

Impulse response functions are computed over a 24-quarter horizon. Forecast error variance decompositions (FEVDs) are reported for horizons 1–24 quarters. For all three schemes, posterior inference uses direct Monte Carlo from the conjugate Normal-Inverse-Wishart posterior. We take 10,000 draws for the recursive and long-run schemes, and 2,500 draws (with up to 30 accepted rotations each) for the sign-restriction scheme. Bands are 68% credible intervals (16th and 84th percentiles).

Appendix C Local projections — robustness

Figure 21 compares the CPI inflation (year-on-year) response using two alternative exchange rate measures: the trade-weighted NEER (left panel) and the bilateral ISK/EUR rate (right panel). The specification is identical in both cases, with only the shock variable changed. The two measures yield very similar pass-through estimates in terms of both magnitude and dynamics, confirming that the euro area dominates Iceland’s effective exchange rate and that the main-text results are robust to the choice of exchange rate measure.

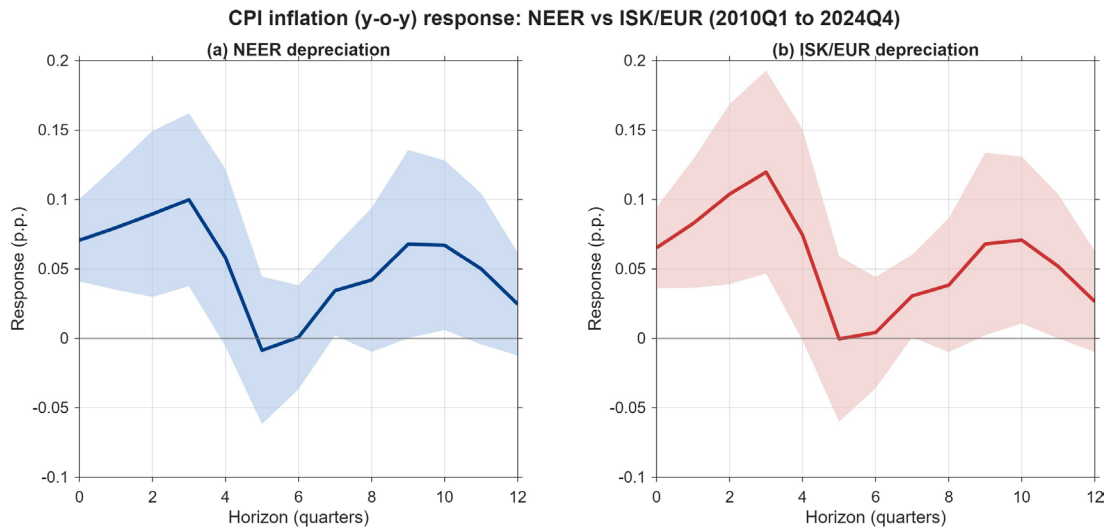
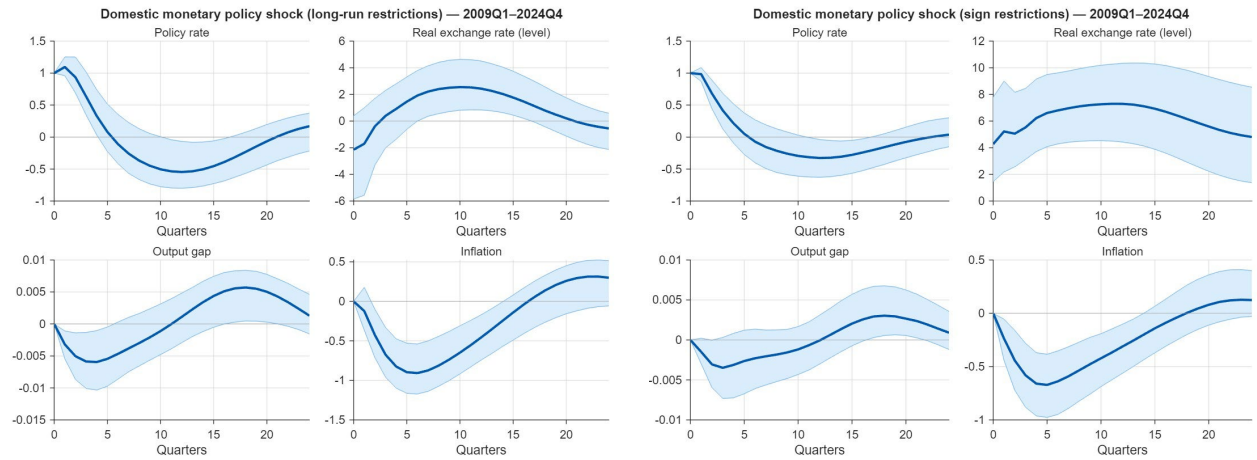


Figure 21: CPI inflation (y-o-y) response: NEER depreciation (left) vs ISK/EUR depreciation (right). The two measures yield very similar pass-through estimates. Shaded areas represent 68% confidence intervals based on Newey–West standard errors.

Appendix D SVAR — robustness

The main text reports impulse responses and forecast error variance decompositions (FEVDs) identified using recursive restrictions. This appendix presents the corresponding results under two alternative identification schemes—long run restrictions and sign restrictions, so as to assess the robustness of the main findings. The qualitative conclusions are robust across all three schemes.

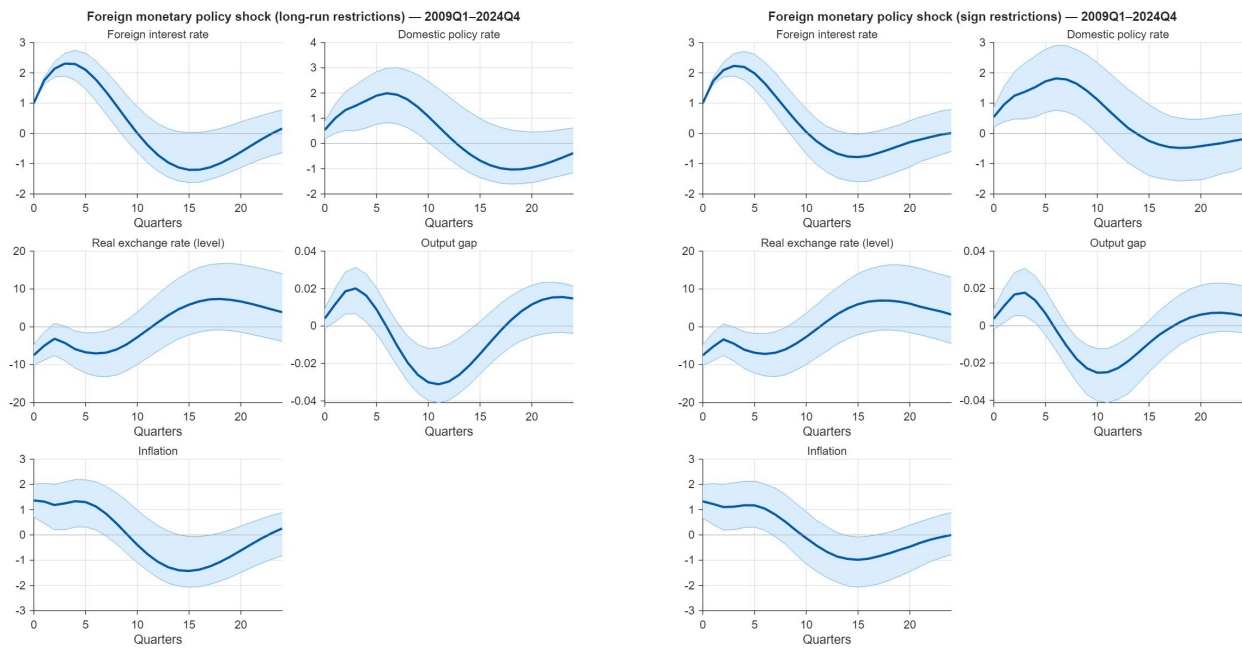
Impulse responses: alternative identification - Domestic monetary policy shock



(a) LR neutral

(b) Sign restr.

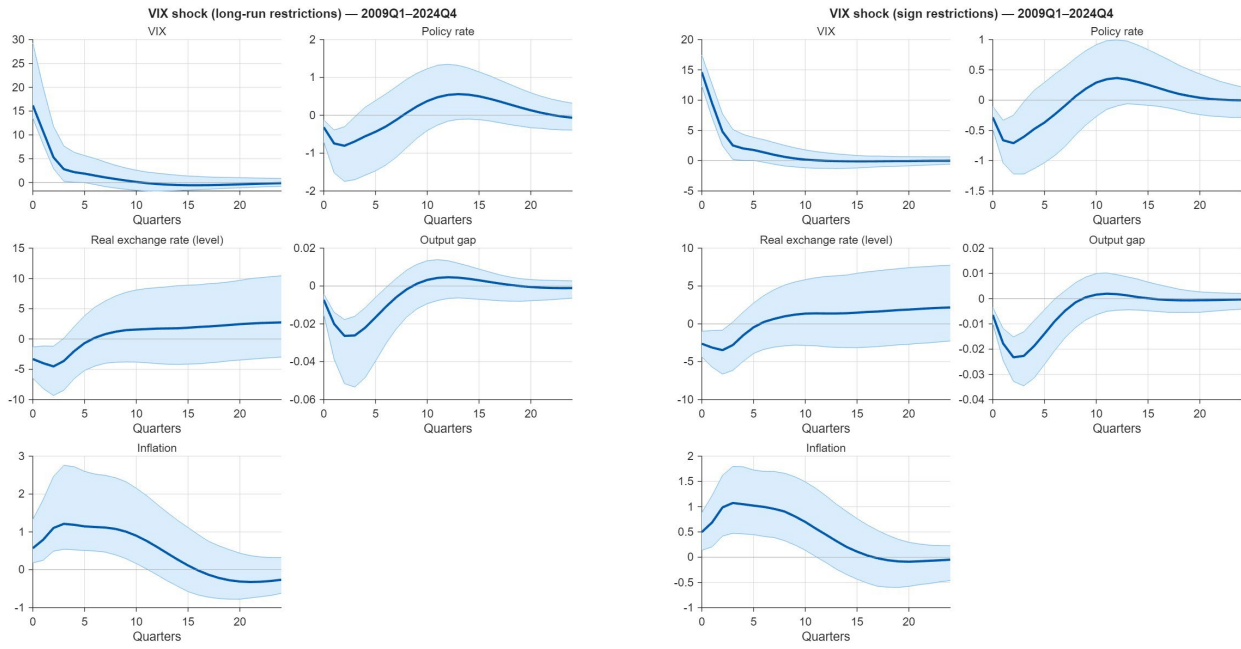
Figure 22: Domestic monetary policy shock — Iceland. 100 bp increase in policy rate. Posterior median and 68% credible bands.



(a) LR neutral

(b) Sign restrictions

Figure 23: ECB monetary policy shock (100 bp) — alternative identification schemes. Posterior median and 68% credible bands.



(a) LR neutral

(b) Sign restrictions

Figure 24: Global financial uncertainty shock (VIX, Model B) — alternative identification schemes. Posterior median and 68% credible bands.

Variance decompositions: alternative identification

The key findings from the main text are robust across identification schemes. For the impulse responses, the ECB spillover pattern—domestic rate co-movement, exchange rate depreciation, and inflation pass-through—is qualitatively identical under all three schemes. The VIX shock similarly produces a depreciation, higher inflation, and weaker output regardless of identification. For the FEVDs, the foreign interest rate (Model A) continues to account for a large share of real exchange rate variance under both alternatives, while the VIX (Model B) plays a more limited role. Across all three identification strategies, own exchange rate shocks and foreign monetary conditions remain the dominant drivers of ISK fluctuations, while domestic monetary policy explains a declining share of policy rate variance at longer horizons.

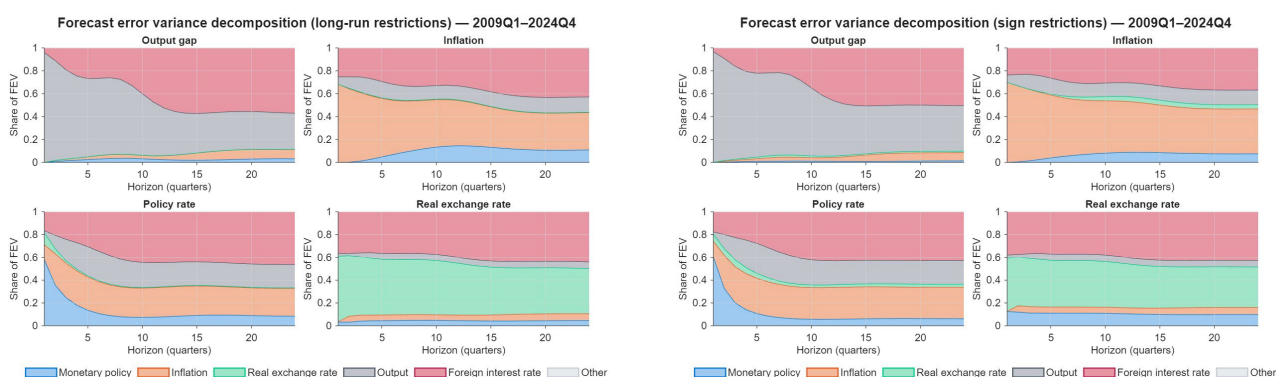


Figure 25: FEVD, Model A (foreign interest rate) Left: Long run restrictions. Right: sign restrictions. Sample: 2009Q1–2024Q4.

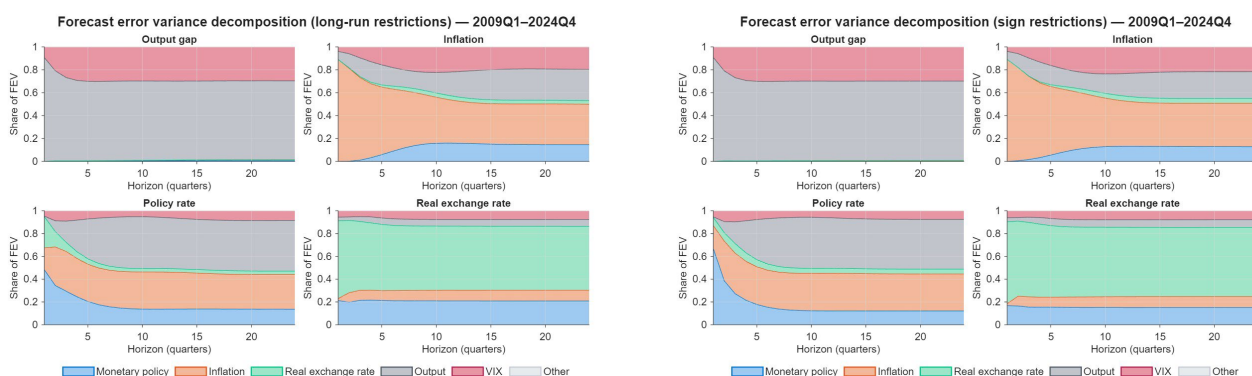


Figure 26: FEVD, Model B (VIX) Left: Long run restrictions. Right: sign restrictions. Sample: 2009Q1–2024Q4.

A Report on 'Currency Matters'
for the Iceland Ministry of Finance and
Economic Affairs

CHAPTER - 2

May 13, 2026

Chapter 2 – Labour market considerations

Steinar Holden¹

The objective of this report is to discuss the advantages and disadvantages of the current exchange rate regime with an independent currency, the ISK, compared with adopting the euro. This chapter takes the labour market perspective, focusing on key characteristics of the Icelandic labour market and the interaction between labour market characteristics and the monetary regime. It also includes a brief discussion of fiscal policy and other tools for macroeconomic stabilisation and alternative adjustment mechanisms in the event of structural imbalances.

Exchange rate regime and the labour market – Overview

For the labour market, the main consequences of the exchange rate regime come via two channels, the exchange rate and the interest rate.

With an independent currency (ISK), fluctuations in the exchange rate lead to changes in the prices of foreign goods and services relative to Icelandic goods and services.² Adopting the euro would eliminate exchange rate fluctuations vis-à-vis euro area countries, although exchange rate movements relative to other currencies would remain. The euro has been considerably more stable than the ISK, reflecting the larger and more diversified euro area and greater monetary stability. Historically, euro adoption would also have implied a much more stable nominal effective exchange rate for Iceland (cf. Figure 1)³

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² If prices are set in the producer's currency, a depreciation of the ISK will increase the price of foreign goods for Icelandic buyers and decrease the price of Icelandic goods for foreign buyers, leading to lower imports and higher exports (expenditure switching). Empirical evidence for Iceland (CBI, 2015) suggests that pricing of imports is predominantly determined by producer currency pricing, while most export pricing is better approximated by local currency pricing and for some exports there is producer currency pricing. This is consistent with the "dominant currency paradigm" (Gopinath and Itskhoki, 2022), where prices are set in the currency of the larger country. In this case a depreciation of ISK will make foreign imports more expensive for Icelandic buyers, but it will not affect the price of Icelandic exports for foreign buyers. Rigid prices in euro will dampen the effect of a depreciation on exports, even if exports will become more profitable for Icelandic producers.

³ In principle, an independent ISK could involve more stability in the effective exchange rate in periods with large fluctuations of the euro relative to the US dollar or other important currencies for Iceland, but historically this has not been the case.

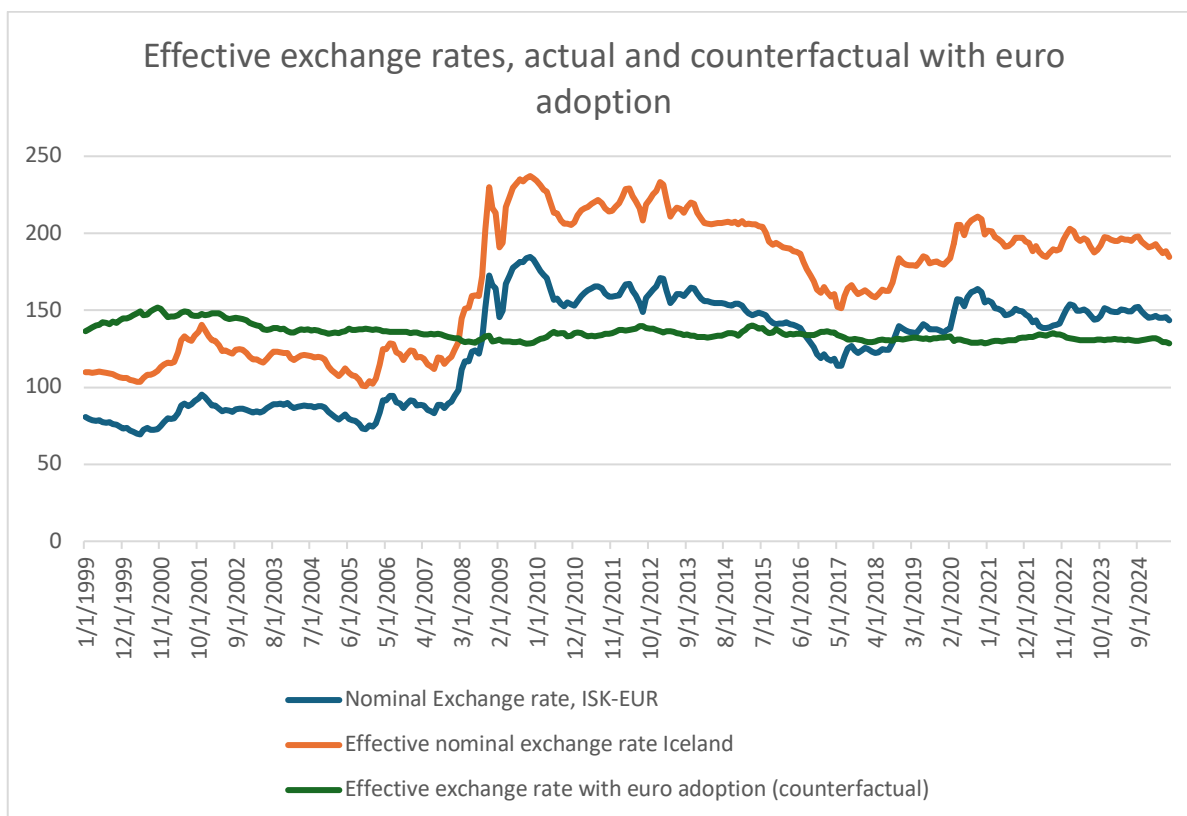


Figure 1 Exchange rates The counterfactual effective exchange rate with euro adoption is a mechanical calculation which holds everything else constant. However, as it only depends on the trading partners' bilateral exchange rates toward the euro and the trade weights, it is fairly robust to other factors that would have changed if Iceland had adopted the euro in 1999.

Source: Ministry of Finance and Economic Affairs

Figure 2 shows the nominal effective exchange rate and the output gap since 1999. Depreciations have, on several occasions, coincided with economic downturns (2000–01; 2007–09; 2018–20), while appreciations of the ISK have at times coincided with economic upswings and widening output gaps (2004–05; 2014–17; 2020–22). As a depreciation will typically have an expansionary effect on the economy (Fukui et al. 2025; Bouscasse, 2022), this suggests that exchange rate movements on several occasions have contributed to macroeconomic stabilisation. Chapter 1 and 4 provide a further analysis and discussion of the sources and effects of exchange rate changes.

However, even if exchange rate movements may dampen fluctuations in the aggregate economy, they may still entail volatility in prices and costs, which can be costly for other parts of the economy, cf evidence in chapters 1 and 4. Hassan et al. (2023) argue that, for a small economy, stabilising the bilateral exchange rate vis-à-vis a larger economy can increase both domestic capital accumulation and domestic real wages.

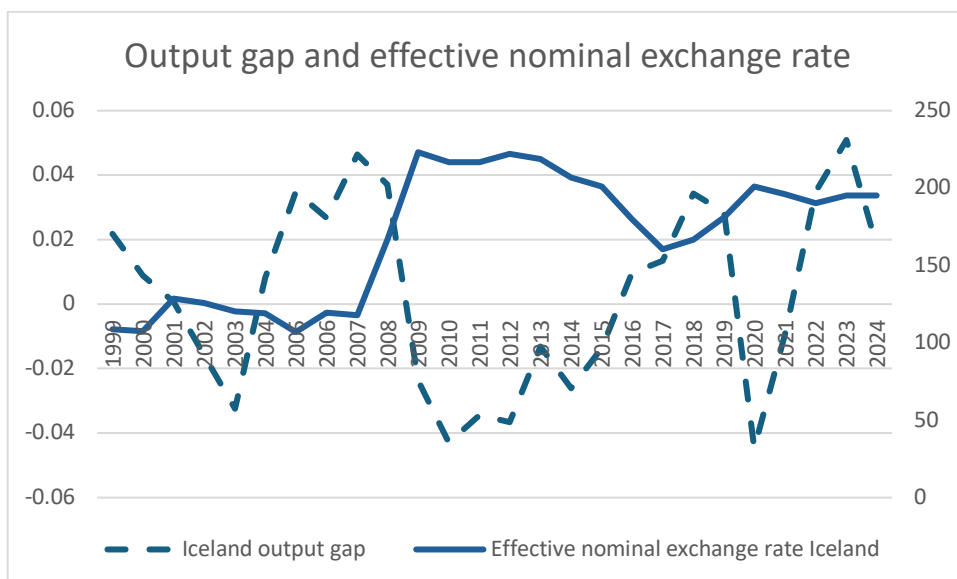


Figure 2 Output gap and exchange rate Source: Ministry of Finance and Economic Affairs

The other key feature of an independent currency is monetary policy autonomy. Under the current regime, the Central Bank of Iceland (CBI) sets the policy rate with the aim of keeping inflation low and stable, close to 2.5%. When fluctuations in inflation are driven by demand, this will typically also contribute to stabilising output and employment, as interest rates are raised in booms and lowered in recessions.

Under euro adoption, interest rates would be set by the European Central Bank (ECB), which targets price stability in the whole euro area. The implications of this difference depend on how the euro area policy rate would have affected the Icelandic economy. This, in turn, depends on the extent to which Iceland is exposed to the same shocks as the euro area, and whether structural differences between Iceland and the euro area warrant a different interest rate.

A comparison of the evolution of output gaps in Iceland and the euro area over the past 30 years in Figure 3 shows a considerable correlation in business cycles in some periods, notably the downturn in 2002–03, the upswing in 2004–07, the 2008–09 financial crisis, the upswing from 2014–18, and the COVID-19 pandemic. Over the period 1995–2024, the correlation coefficient between the output gaps of Iceland and the euro area was 0.70. However, cyclical positions have diverged at times, particularly in the late 1990s. Moreover, Iceland’s output gap has been considerably more volatile than that of the euro area, as illustrated by the strong upswings in 2015–18 and 2022–23. Figure S1 in the appendix indicates a weak tendency for the ISK to be strong or to appreciate when the output gap is higher in Iceland than in the euro area.

Iceland's output gap has been more volatile than the Eurozone's
% of potential GDP, yearly average

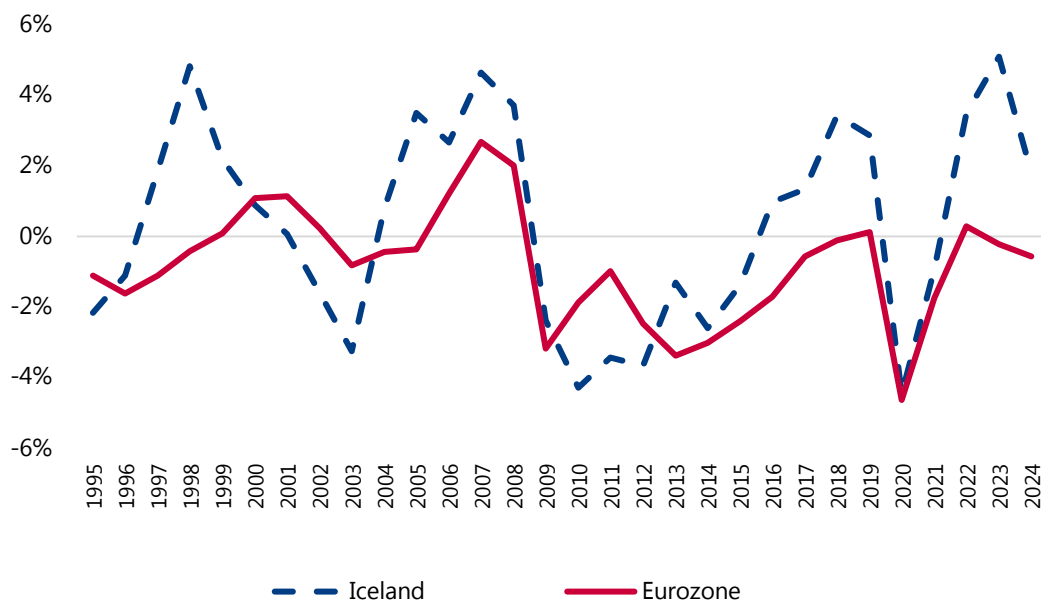


Figure 3 Output gaps Source: Central Bank of Iceland, IMF

Figure 4 shows short-term interest rates and output gaps for Iceland and the euro area. As expected, given the correlation of output gaps, the upswings in Iceland in 2003–07 and 2021–23 coincided with increases in interest rates in the euro area, while the downturns in 2009–10 and 2020 coincided with interest rate reductions in the euro area. However, the euro area interest rate remained below zero during the strong boom in Iceland in 2016–19. Short-term interest rates have also been considerably higher in Iceland than in the euro area over the past 20 years, with the differential varying substantially over time. Periods with large interest rate differentials have typically coincided with stronger booms or upswings in Iceland than in the euro area (2005–08; 2015–19; 2022–24).

Overall, the euro area interest rate would likely have dampened fluctuations in the Icelandic economy arising from large common shocks, such as the financial crisis and the pandemic. However, it would not have captured Iceland-specific shocks or the greater amplitude of Iceland's business cycle.

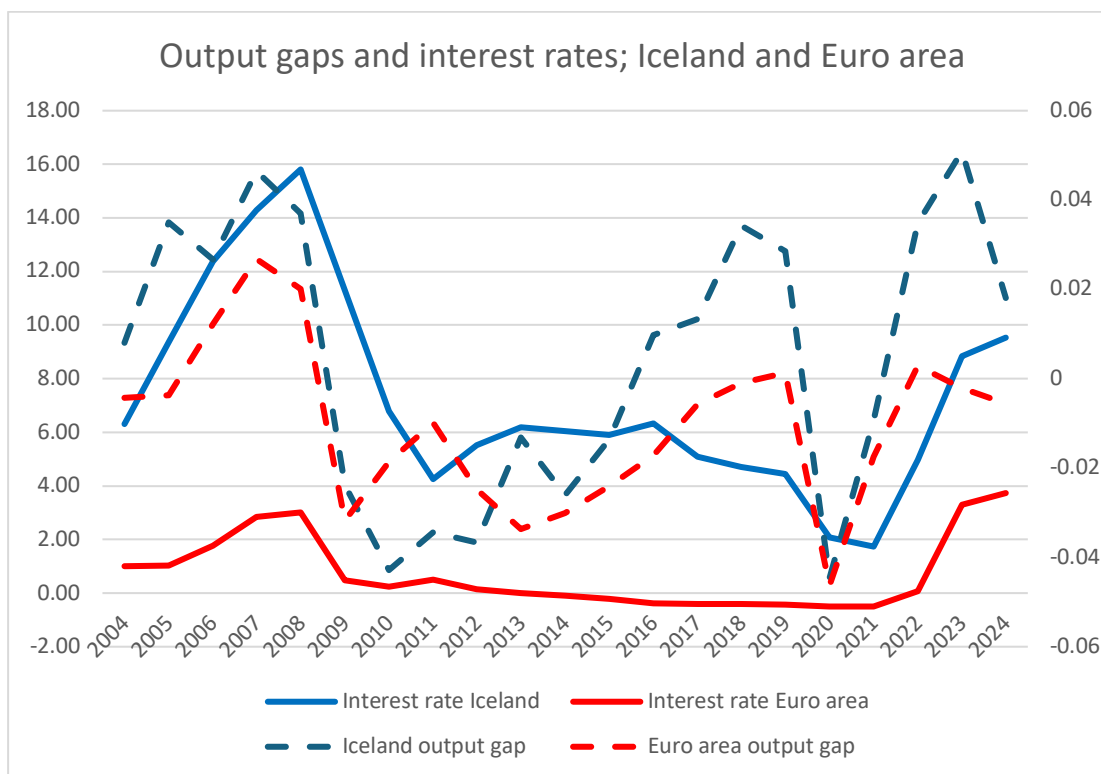


Figure 4 Output gaps and interest rates Source: Ministry of Finance and Economic Affairs

Optimum currency areas

Entry into a monetary union is traditionally analysed based on the literature on optimum currency areas (OCA), originating with Mundell (1961), McKinnon (1963) and Kenen (1969). This literature identifies a set of criteria that determine possible disadvantages for a country from sharing a currency with other countries. The underlying criterion is the degree of business cycle synchronization – if shocks are symmetric, the same monetary policy may work well and countries can use the same currency. However, if shocks are asymmetric, other adjustment mechanisms may be important, like labour mobility across borders, flexibility of wages and prices, the availability of fiscal instruments to cushion asymmetric shocks, and the openness and diversification of the economy. If shocks are asymmetric, yet labour mobility is limited, wage adjustment is slow, and fiscal tools weak, the loss of the exchange rate and independent interest rate as stabilising tools may be costly. This chapter considers Iceland's position along some of these dimensions, with a focus on labour market flexibility, wage-setting institutions, migration, and the scope for fiscal stabilisation.

The labour market

The Icelandic labour market is characterised by high participation, extensive unionisation, and flexible employment arrangements. The employment rate is the highest in Europe, and weekly working hours are above the EU average, cf. Figure 5⁴. Union density is very high, at around 90%, making it the highest in the OECD, and it has increased over time in contrast to international trends. High unionisation is supported by the existence of priority clauses in some collective agreements, whereby union members are given priority for jobs within each sector (Olafsdottir and Olafsson, 2014).

Compared with other OECD countries, employment protection is relatively lenient, and firms have considerable flexibility in adjusting employment levels and working hours (Sila, 2017). Labour market regulation is largely determined by the social partners through collective bargaining (Olafsdottir and Olafsson, 2014).

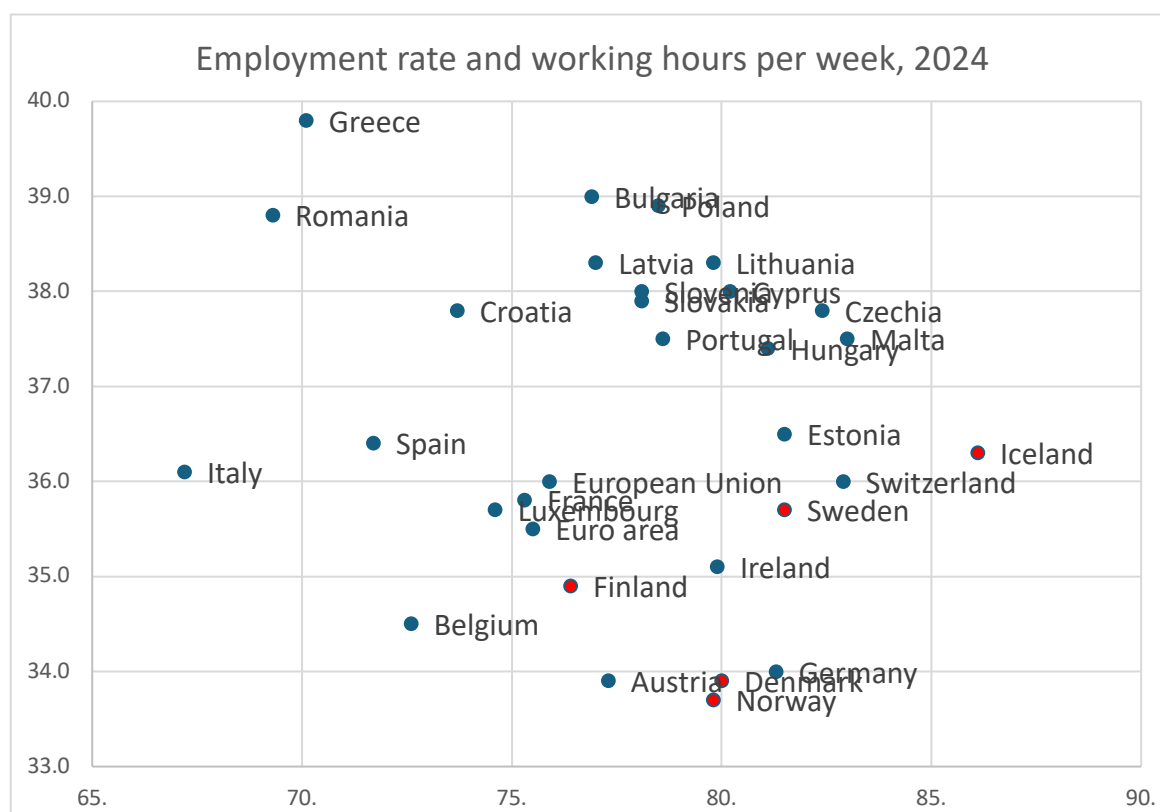


Figure 5 Employment rate and working hours Employment rate 20-64 years in 4th quarter; Average actual weekly hours worked in the main job of persons 20-64 years, who worked in this job during the reference week. Source: Eurostat

⁴ According to OECD, annual working hours in Iceland is clearly below the European average, but OECD notes that differences in sources make the data unsuitable for comparison across countries.

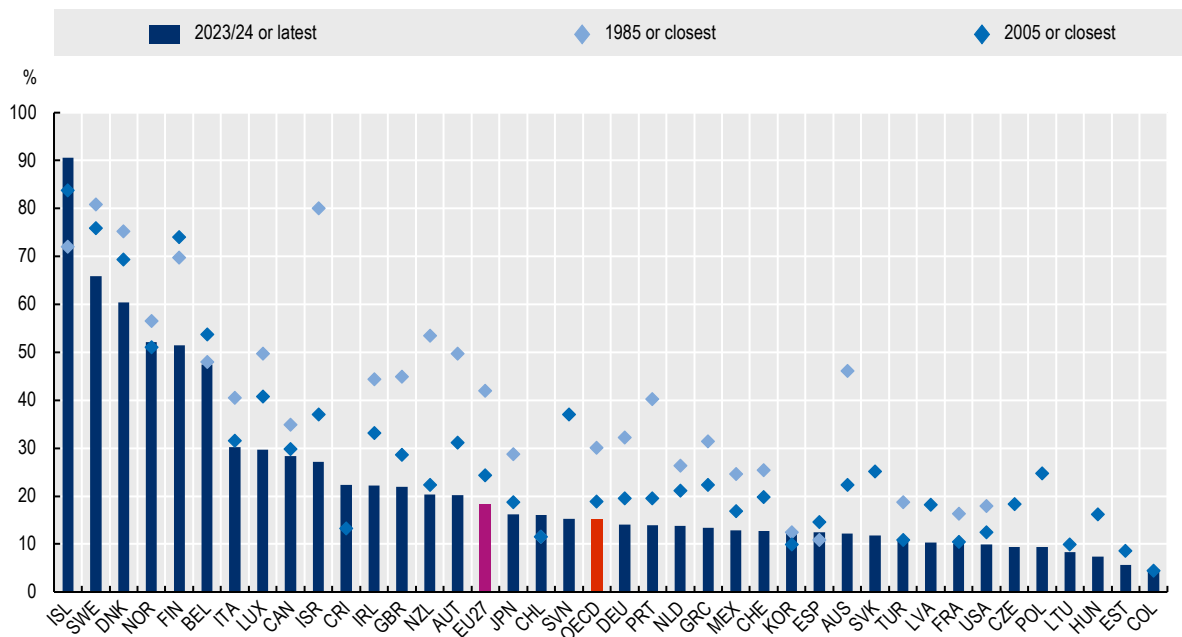


Figure 6 Union density, percentage of employees. Source: OECD

Figures 7 and 8 show employment and unemployment rates over time. While the employment rate always has been high relative to other countries, and unemployment fairly low, there have also been considerable fluctuations associated with macroeconomic volatility, with marked increases in unemployment during the financial crisis of 2008–09 and the 2020–21 pandemic.

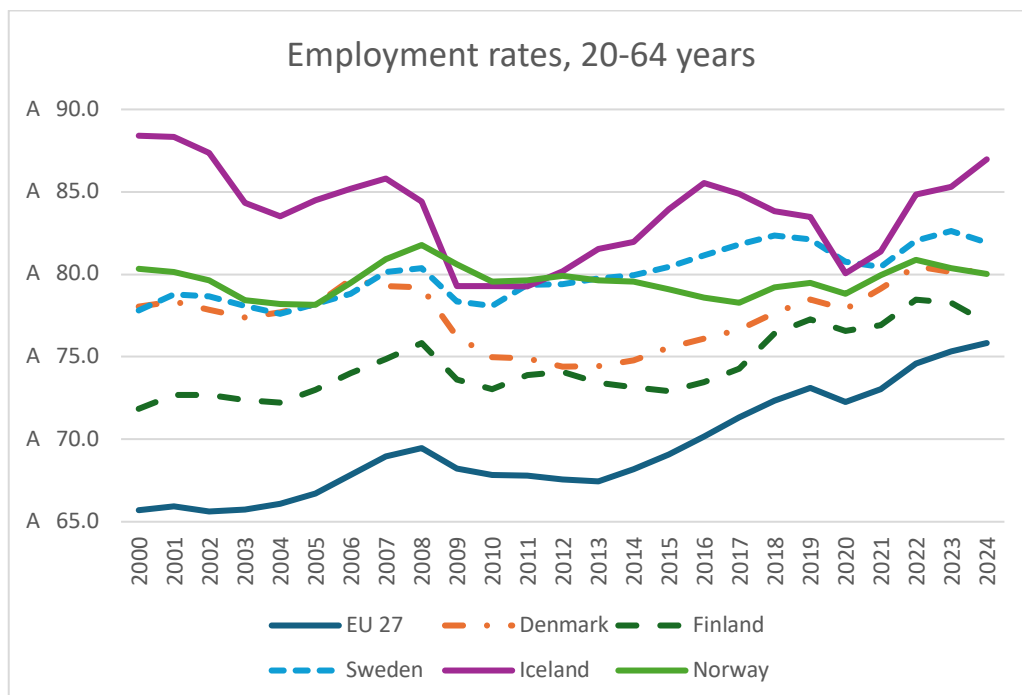


Figure 7 Employment rates Source: OECD

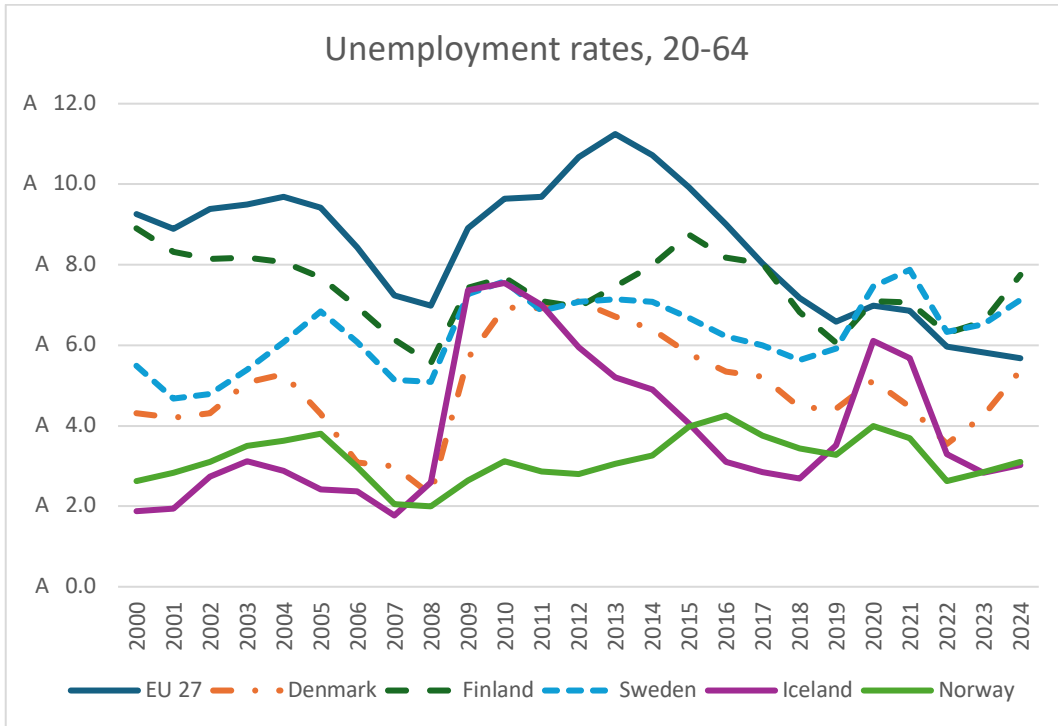


Figure 8 Unemployment rates Source: OECD

The volatile, yet generally strong, labour market outcomes are reflected in the aggregate economy. Iceland experienced high growth in the 1970s and again in the period 1995–2008. Over the past 15 years, GDP per capita has fluctuated around the average of the upper half of OECD countries (see Figure 9). Overall, the Icelandic economy has performed well, despite this volatility.

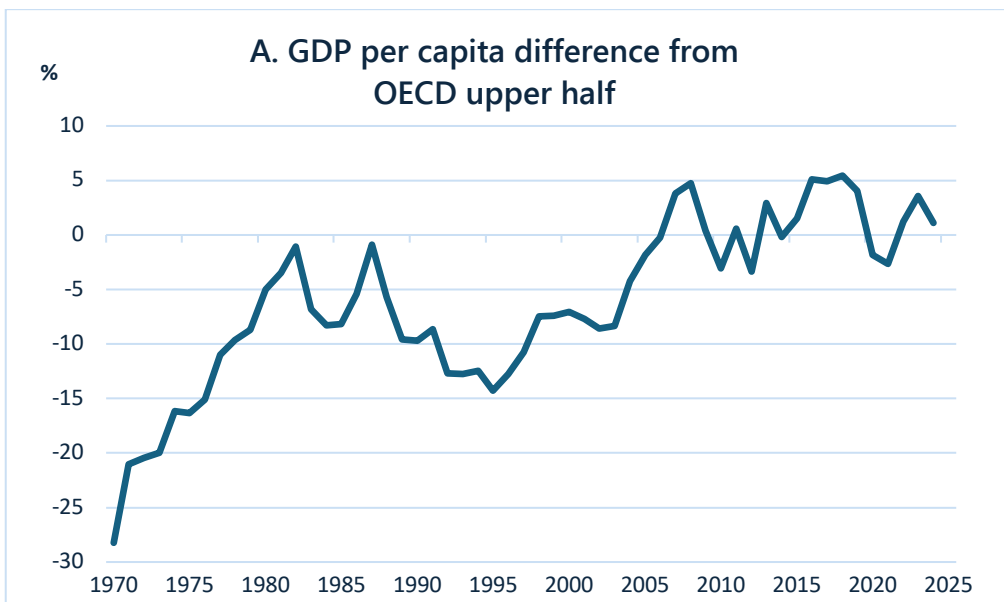


Figure 9 GDP per capita difference Source: OECD Economic Surveys: Iceland 2025

Compared with other OECD countries, income inequality in Iceland is low (cf. Figure 10, which shows the Gini coefficient before and after redistribution). Inequality is also low before redistribution, indicating that the overall level of inequality does not primarily reflect a more redistributive tax and welfare system in Iceland than in other OECD countries.

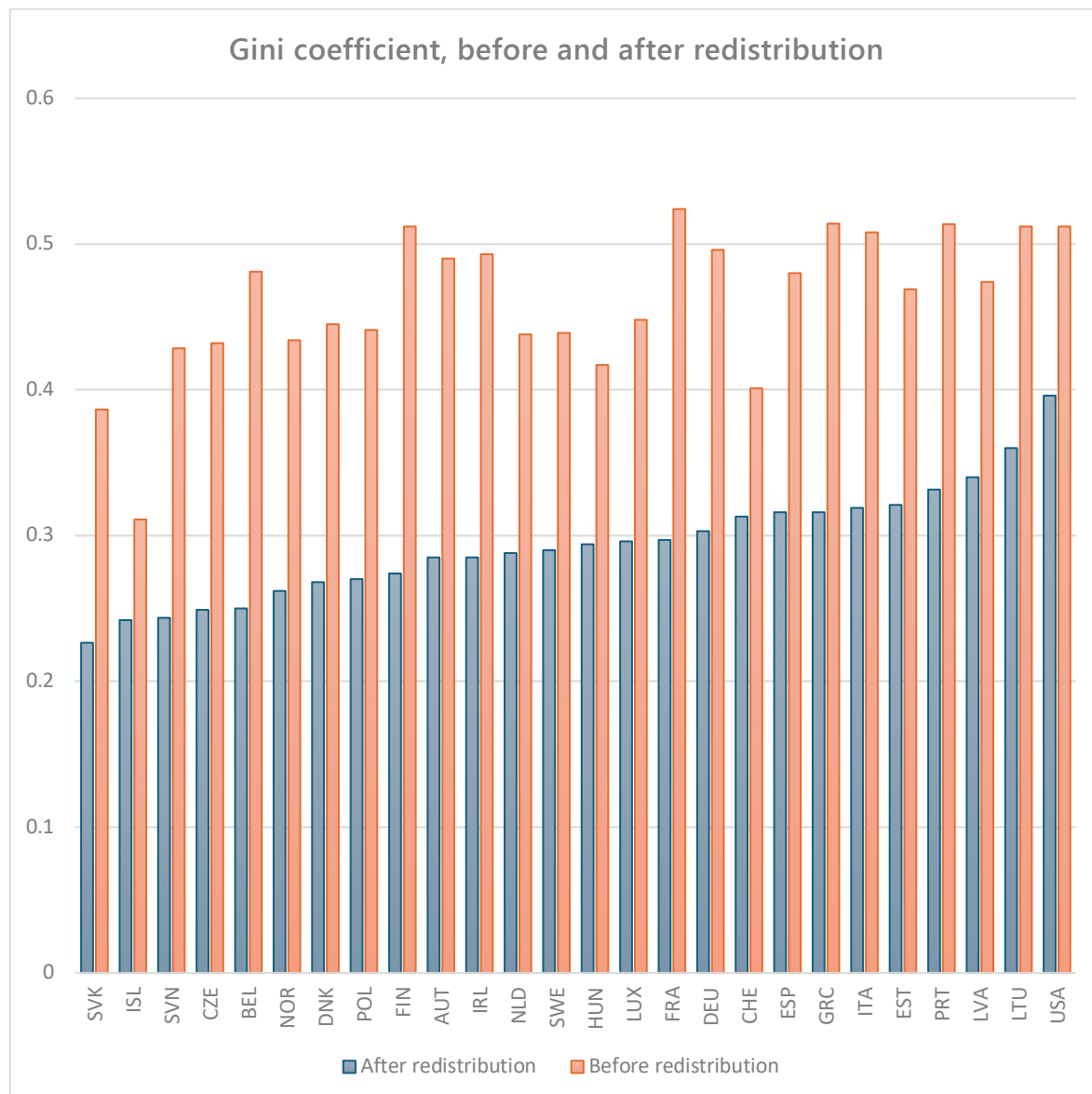


Figure 10 Gini coefficient Source: OECD Economic Surveys: Iceland 2025

Labour market institutions

The employee side of the labour market is dominated by a few federations, each consisting of many unions. The largest is ASÍ, the Icelandic Confederation of Labour, with 44 member unions and around 147,000 members. The other main federations are BSRB (Federation of State and Municipal Employees; 19 member unions and 25,000 members), BHM (Association of Academics; 24 member unions and 18,000 members), and the Icelandic Teachers' Union (7 member unions and 12,000 members). On the employer side, SA, the Confederation of Icelandic Enterprise, is the largest, covering more than 2,000 companies and around 70% of employees in the private sector. Other major employers include the Government represented by the Ministry of Finance, the City of Reykjavík, and the Association of Icelandic Municipalities (SA, 2025).

Wages are set through collective agreements, with negotiations taking place at various levels, ranging from national, regional, or cross-sectoral to plant, firm, or occupation.

The presence of large federations on both sides of the labour market makes nationwide wage negotiations possible. However, these negotiations are based on a fragmented system of smaller member unions, as bargaining rights reside with the individual unions (Olafsdottir and Olafsson, 2014). While unions may delegate bargaining authority to their federation or share it with other unions, such mandates can be withdrawn at any time. Moreover, agreements must be approved by each union through a vote (Olafsdottir and Olafsson, 2014). Individual unions are typically small, with membership defined by both occupation and geographical location.

Employees may be covered by several agreements simultaneously, and there is no strict hierarchy among bargaining levels (OECD, 2017). In general, the favourability principle applies, implying that the most favourable terms for employees prevail. Wage setting in Iceland is thus characterised by both strong elements of centralisation and fragmentation (Andersen et al., 2014).

According to OECD (2018), Iceland is characterised as having a predominantly centralised and weakly coordinated collective bargaining system. This implies that "sector-level agreements play a strong role, extensions are relatively widely used, derogations from higher-level agreements are possible but usually limited or not often used, and wage coordination is largely absent." Denmark, Norway, and Sweden are classified as decentralised and coordinated, while Finland is classified as predominantly centralised and coordinated.

In Iceland, the degree of coordination in wage setting varies with economic conditions (Olafsdottir and Olafsson, 2014). During periods of weak economic performance, when unions expect low wage growth, they often delegate bargaining authority to their federation. In times of crisis, trade unions and employers' organisations have cooperated with the government to promote macroeconomic stability. In 1990, the parties agreed on a social pact on inflation, which led to a period of wage restraint and lower inflation (Sila, 2017). A stability pact also played an important role in managing the consequences of the 2008–09 financial crisis. The agreement between unions, employers, and the government emphasised protecting the purchasing power of the lowest-paid workers, in contrast to the significant decline in real wages for the average worker (Sila, 2017). In contrast, in more favourable economic conditions, when expectations of wage growth are higher, unions typically prefer to negotiate independently (Olafsdottir and Olafsson 2014).

A comparison with wage setting in the other Nordic countries is instructive, as it highlights several important differences that contribute to stronger wage pressure in Iceland. Labour market federations at the national level are broadly similar to their Nordic counterparts, although there is some cross-country variation. However, national-level federations in Iceland appear to have less influence over actual wage formation. As noted above, it is the individual unions that are parties to collective agreements, with the right to negotiate, vote, and strike (Andersen et al., 2014). Unions are often organised by geography and occupation, and occupational organisation may strengthen their bargaining position, as labour demand is typically less elastic within specific occupations. As unions are generally small, they may have weaker incentives to take the overall macroeconomic situation into account. In particular, during economic upswings, individual unions may deviate from central recommendations and negotiate higher wage increases.

In Iceland, employees are entitled to annual wage negotiations with their employers, and in the private sector this often results in additional wage drift, leading to higher overall wage growth than implied by central agreements. By contrast, in Norway expected wage drift is taken into account in the central bargaining, providing more control at the central level of total wage growth (see further discussion below).

The mediation system may also play a role. In Sweden, the mediation authority has a dual mandate: to mediate disputes and to support a well-functioning labour market, including adherence to the wage norm set by the manufacturing sector. In Denmark, Finland, and Norway, mediation typically supports the manufacturing wage norm, as proposals are generally aligned with it. In Iceland, the mediator typically builds on existing agreements, but in the absence of a clear national guideline, as in the other

Nordic countries, this coordinating role is weaker. However, the state mediator may put forward formal proposals that are subject to a vote among union members.

An important feature of the Icelandic labour market is the automatic extension of collective agreements, whereby wages and other working conditions agreed by the social partners constitute minimum standards for all workers in the relevant occupation within the area covered by the agreement, regardless of sex, nationality, or type of employment (Sila, 2017). This feature may also contribute to strong wage pressure in Iceland.

Another notable feature of wage setting in Iceland is tripartite agreements, where the government contributes to facilitate agreement between labour unions and employers (Olafsdottir and Olafsson, 2014). In the negotiations of the 2024 four-year wage agreement, the government committed to increased social spending for families with children, low-income households, and renters (OECD, 2025). In the short run, such measures may facilitate bargaining and reduce the risk of costly conflicts and adverse outcomes. However, as noted by the OECD, they may also lead to higher structural expenditure and fiscal lock-in effects.

In collective bargaining, unions place emphasis on raising wages for the lowest-paid groups. Agreements typically include targeted increases for low-wage workers, or flat-rate additions (in ISK), which imply higher percentage increases at the lower end of the wage distribution. Over the past decade, the wage distribution has become more compressed (see Figure 11). From the employer perspective, relatively large increases at the lower end may contribute to additional wage drift, as other groups seek compensation for differences in education, responsibility, and experience.

Wage distribution has become more compressed
Wages as a percentage of median wages - regular earnings

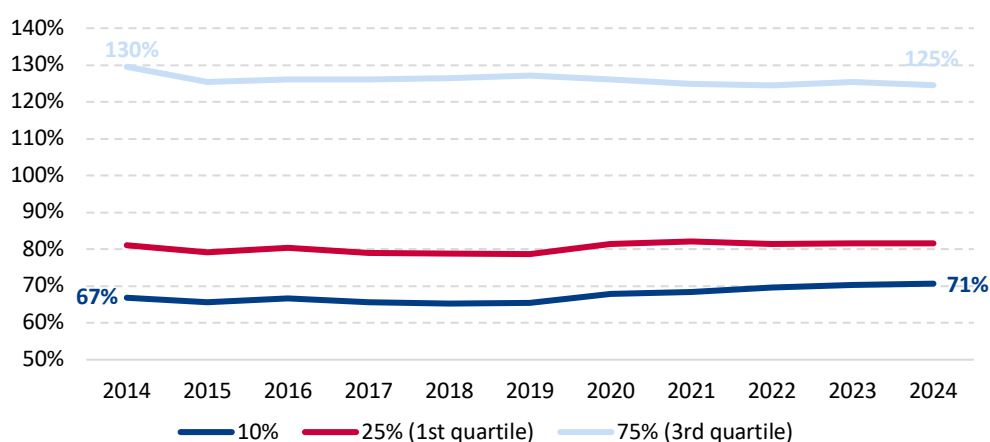


Figure 11 Wage distribution Source: Statistic Iceland

Wage growth and labour costs

Nominal wages in Iceland have consistently grown at a much faster pace than in the other Nordic countries (cf. Figure 12). From 2019 to 2025, nominal wages in Iceland increased by about 50%, compared with 18–30% in the other Nordic countries.

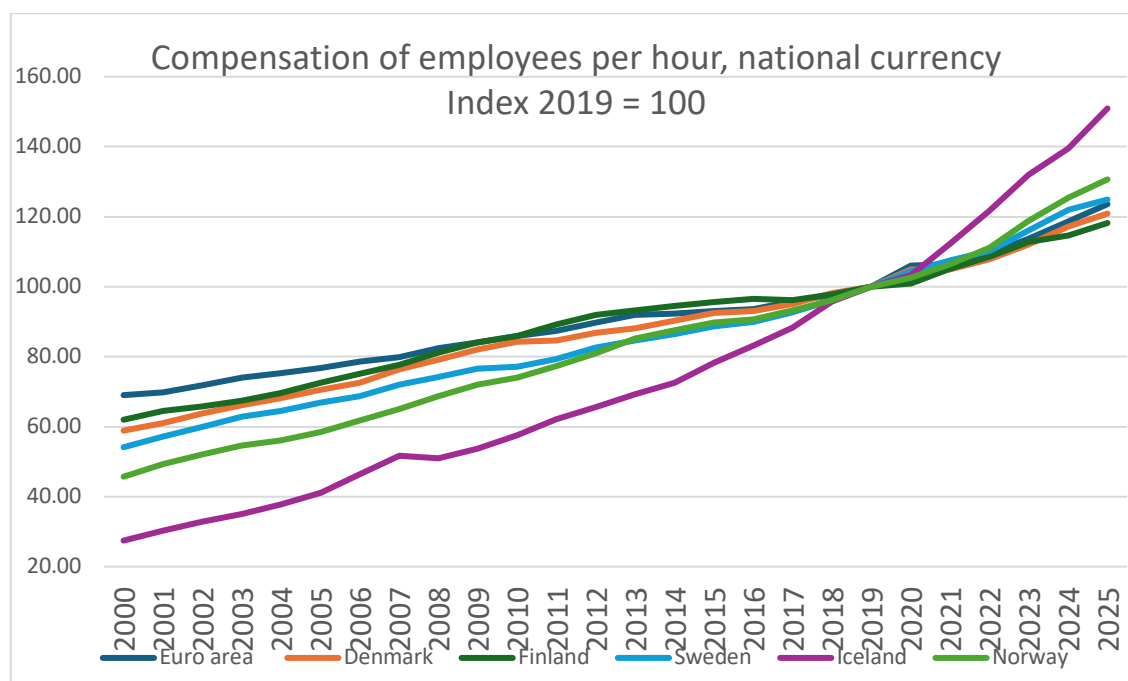


Figure 12 Compensation of employees per hour worked, total economy.

Source: Eurostat

The high wage growth in Iceland has been accompanied by a relatively high rate of inflation, as measured by the consumer price index (Figure 13).⁵ Over the period 2016–2025, the average annual CPI-inflation was 4.3%, compared with around 3% in Norway and Sweden and about 2% in Denmark and Finland. While Iceland has a slightly higher inflation target—2.5%, compared with 2% in the other Nordic countries (and, for Denmark, implicitly through the fixed exchange rate to the euro), the difference in inflation rates is greater.

⁵ For Iceland, inflation measured by HICP is noticeably lower, cf Table 1. The difference reflects high price growth in the housing component of the CPI measure used in Iceland (IMF, 2025), whereas housing costs in the HICP enter through actual rents and minor repairs, which are less affected by growth in housing prices (ECB, 2016). In 2024, Statistics Iceland changed the calculation from using a direct measure of housing prices to the rental equivalence method.

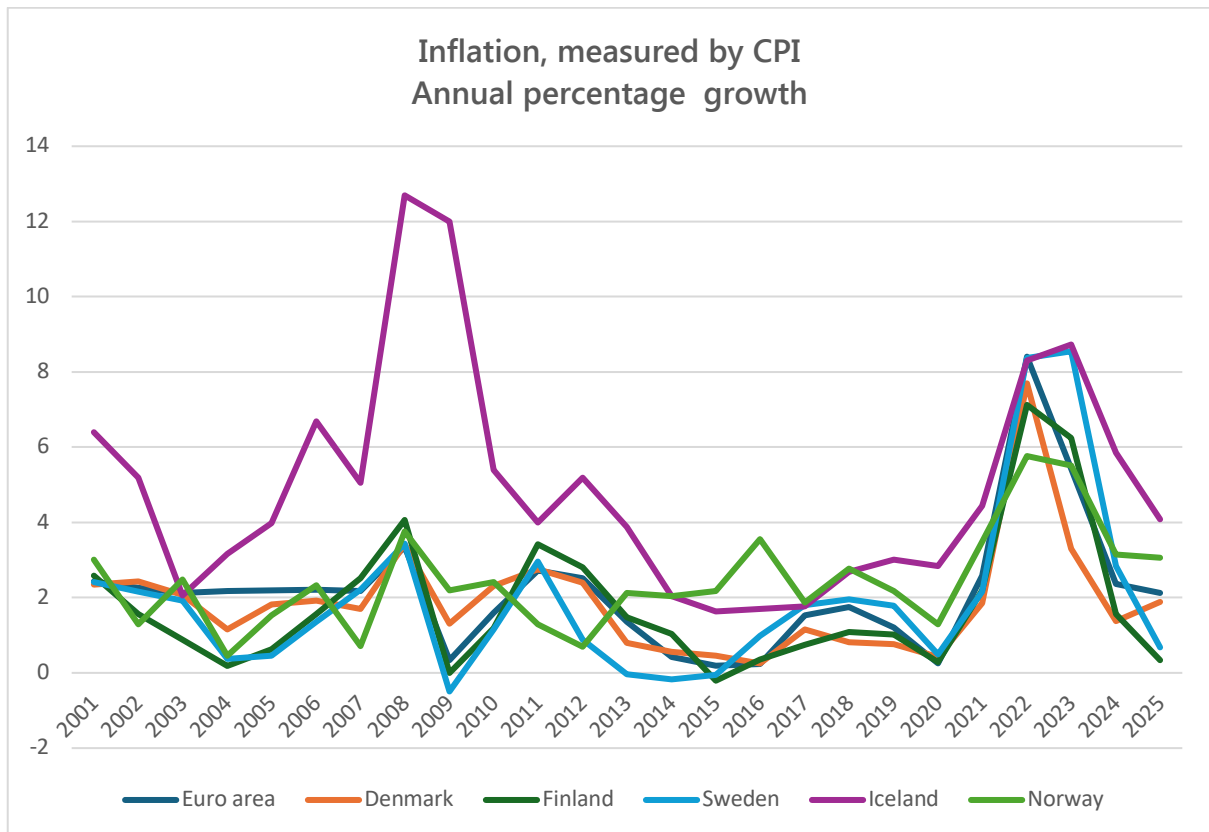


Figure 13 Consumer price index, national methodology. Source: OECD

The difference in wage growth has exceeded the difference in inflation, and real wages in Iceland have grown strongly since the turn of the century, apart from a sharp decline during the financial crisis (cf. Figure 14). The inflation surge in 2022–23 led to a reduction in real wages in the other Nordic countries, but not in Iceland. Real wages in Iceland increased by about 8% from 2019 to 2025, compared with increases of 3–5% in Denmark and Norway, and broadly unchanged levels in Finland, Sweden, and the euro area.

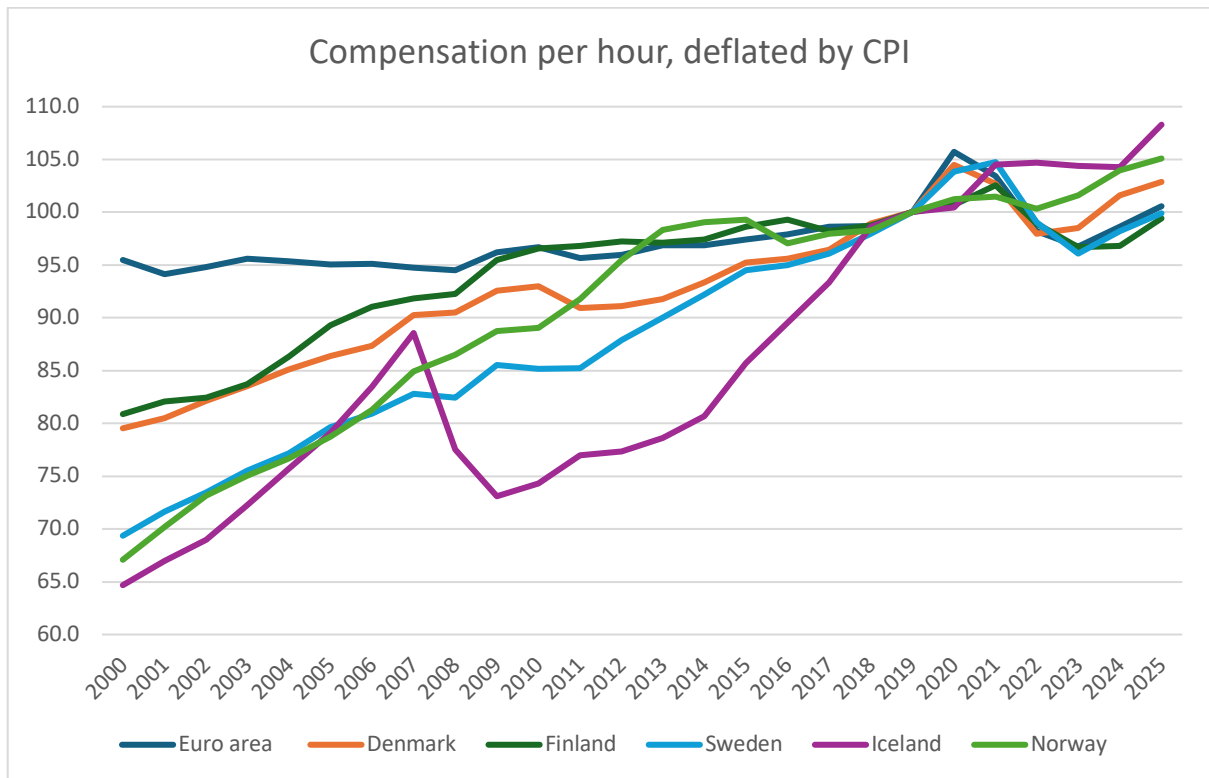


Figure 14 Compensation of employees per hour worked, deflated by national CPI, whole economy. Index 2019 = 100. Source: Eurostat and OECD

The strong increase in real wages since 2010 can partly be explained by the sharp wage decline during the financial crisis, which led to a significant reduction in the wage share in the business sector, to 43% in 2010 (cf. Figure 15). The solid wage growth in subsequent years contributed to a recovery in the wage share to 54% in 2018. After 2018, the wage share has declined somewhat, despite continued growth in real wages.

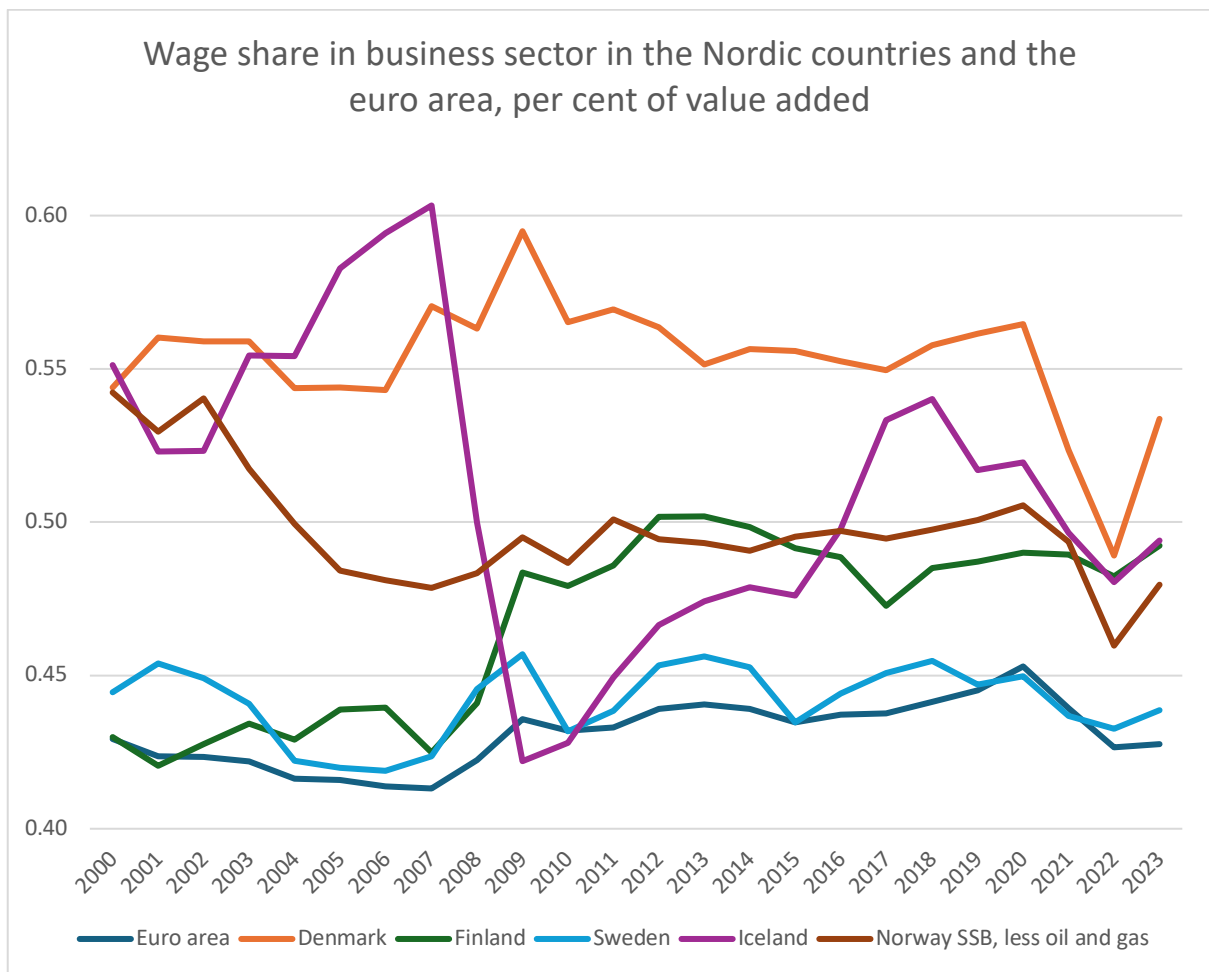


Figure 15 Wage share in business sector Source: Eurostat and Statistics Norway

The high nominal wage growth in Iceland is not matched by correspondingly higher productivity growth, implying a much higher growth in unit labour costs than the other Nordic countries, cf. Figure S4 in the Supplementary. Over the ten-year period 2016–2025, average growth in unit labour costs in Iceland was 5.6%, about twice as high as in Norway, Sweden, and the euro area, and more than three times higher than in Denmark and Finland.

The high growth in unit labour costs has led to a substantial increase in unit labour costs measured in euros (cf. Figure 16). This indicates a significant deterioration in cost competitiveness, even if cross-country comparisons of productivity growth may be affected by structural differences and measurement issues.

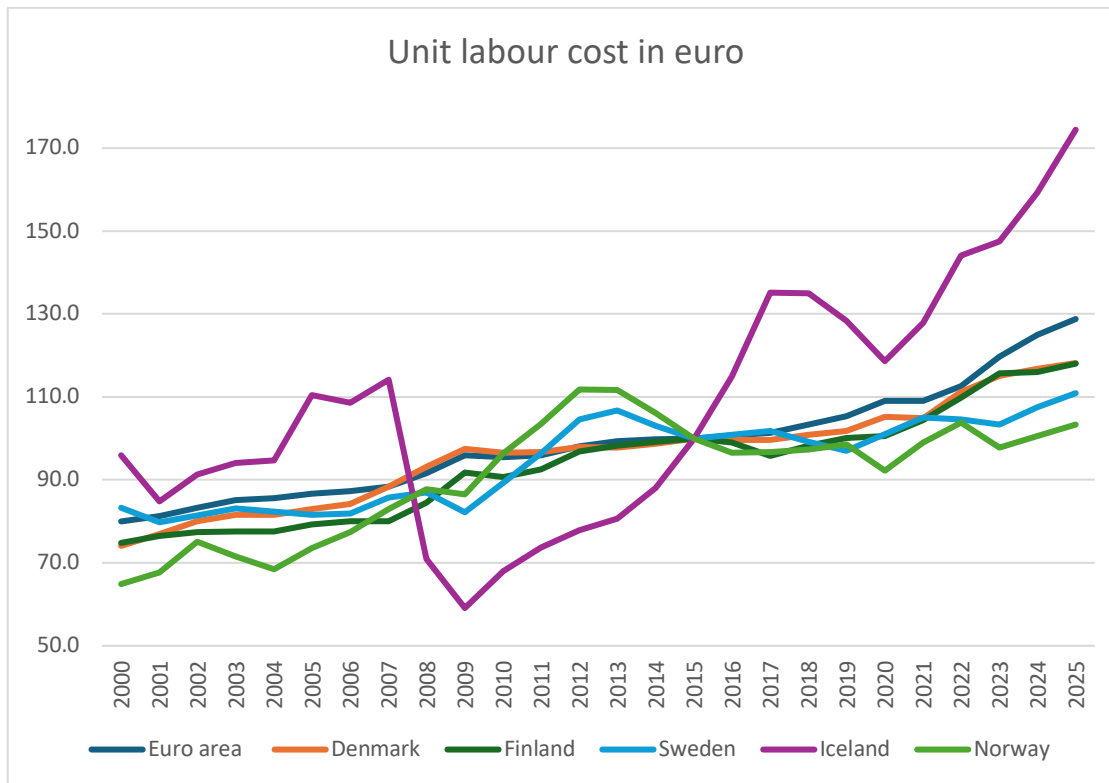


Figure 16 Nominal unit labour cost based on hours worked in euro.

Index 2015 = 100. Whole economy. Source: Eurostat

Compensation of employees per hour in Iceland, measured in euros, has increased substantially over time, also indicating a deterioration of cost competitiveness (Figure 17). In 2025, compensation of employees per hour was almost 70% higher than in the euro area. By comparison, compensation per hour in Denmark and Norway was about 43–46% higher than in the euro area, while compensation per hour in Finland and Sweden were closer to the euro area level. In the manufacturing sector, compensation of employees per hour in Iceland, measured in euros, was 63% higher than in the euro area in 2025 (cf. Supplementary Figure S5).

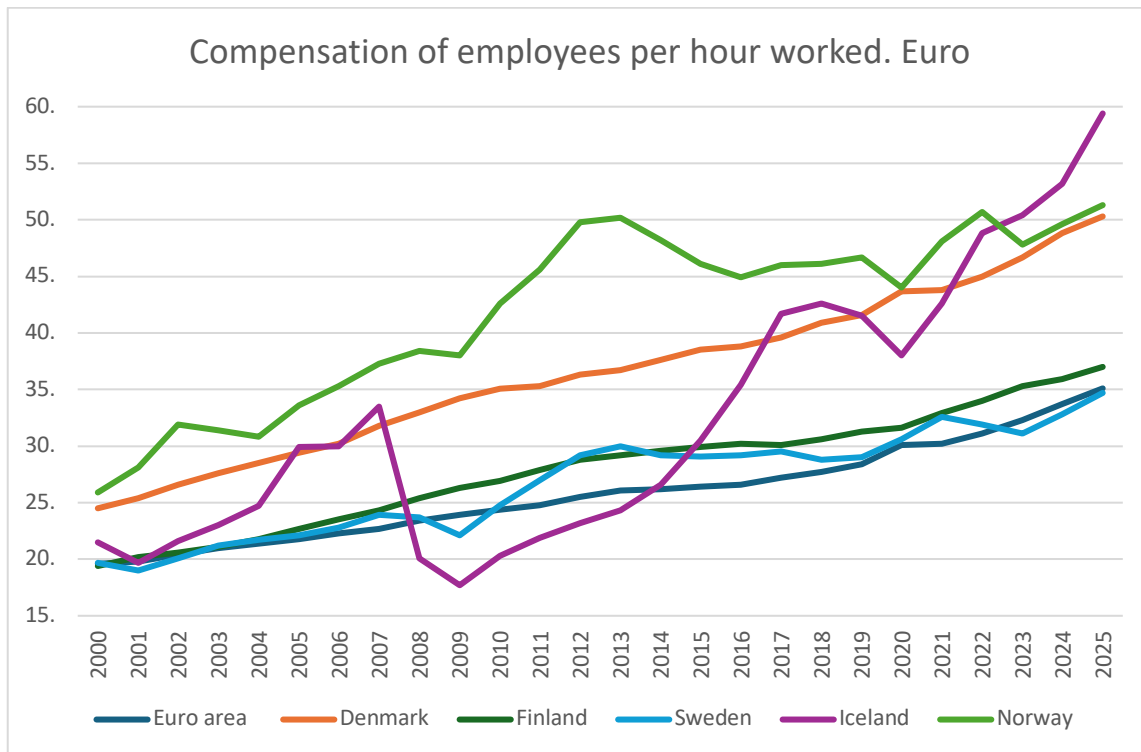


Figure 17 Compensation of employees per hour worked, total economy.

Source: Eurostat

	Nominal wages	Real wages (CPI)	Inflation CPI	Inflation HICP	Productivity	Unit labour cost	Wage cost euro	Unit labour cost euro
Euro area	2.9	0.4	2.6	2.6	0.4	2.6	2.9	2.6
Denmark	2.7	0.8	2.0	2.0	1.0	1.7	2.7	1.7
Finland	2.2	0.1	2.1	2.0	0.5	1.7	2.2	1.7
Sweden	3.5	0.6	3.0	2.9	0.7	2.8	1.8	1.1
Iceland	6.8	2.4	4.3	2.9	1.1	5.6	7.2	6.0
Norway	3.8	0.6	3.3	3.4	0.7	3.1	1.2	0.4

Table 1 Average annual percentage growth 2016-2025. Wages = compensation of employees per hour, total economy. National CPI. All-item HICP inflation. Source: Eurostat, OECD

Table 1 summarizes average annual growth rates over the period 2016-2025 for key variables for the Nordic countries as well as the euro area.

The deterioration in cost competitiveness is likely to have a negative impact on the external balance. The current account has been in deficit for the past few years, following a sustained surplus in the period 2013–2022 (cf. Figure 18). However, a significant share of the deficit is due to large investments in data centres, that are owned by foreign entities and fully funded abroad with limited impact on domestic activities. Furthermore, OECD (2025) notes that foreign trade is becoming more diversified and that net foreign assets remain substantial, at 44% of GDP (CBI, 2026).

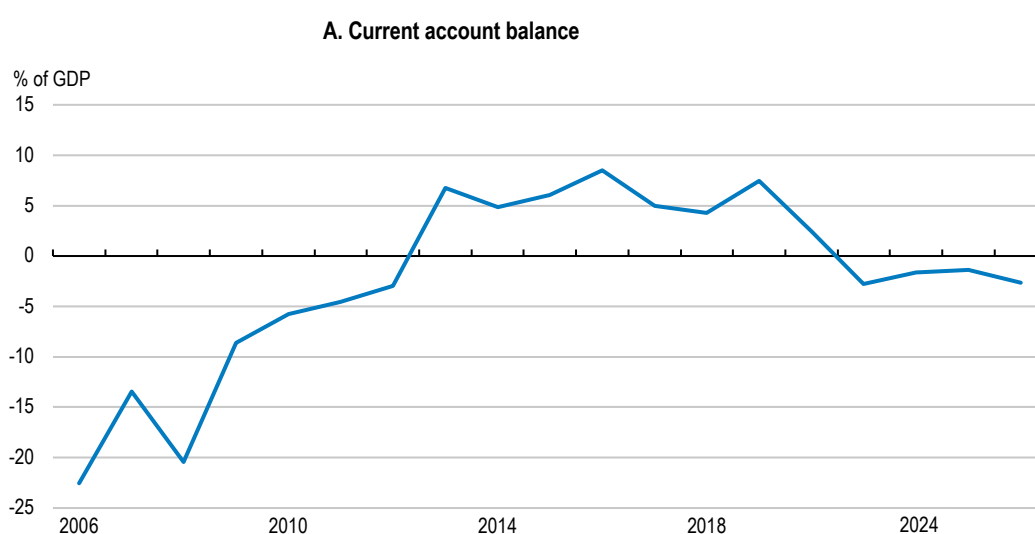


Figure 18 Current account balance Source: OECD Economic Survey 2025

High nominal wage growth

What explains the much higher growth in nominal wages in Iceland than in the other Nordic countries? Historically, high nominal wage growth in Iceland has been associated with a high-inflation environment and a depreciating currency. However, inflation has come down relative to earlier periods, even if it has been considerably above target in recent years, and the effective nominal exchange rate in April 2026 is about 15 percent stronger than it was 15 years ago, after the large depreciation in 2008 in connection with the financial crisis.

One contributing factor is the sharp reduction in real wages following the depreciation of the ISK in 2008. The resulting decline in the wage share created scope for a period of strong subsequent real wage growth. Relatively high economic growth and a tight labour market over much of the period have also contributed to higher wage growth.

However, elevated wage growth may also reflect features of Iceland's wage-setting institutions.

In the other Nordic countries, wage setting has, since the 1990s, focused on maintaining international competitiveness. This is typically achieved through pattern bargaining at the industry level, where agreements in the manufacturing sector are concluded first and set a norm for wage growth in the rest of the economy (Calmfors, 2025).

This framework has contributed to stable or improved international competitiveness since the turn of the century.

Figure 19 illustrates the strong influence of the manufacturing wage norm in Norway and Sweden. Over the period 2014–2025, actual wage growth exceeded the wage norm by only 0.24 percentage points in Norway and 0.28 percentage points in Sweden, on average. The strong role of the wage norm reflects a broad consensus among labour market parties in both countries.

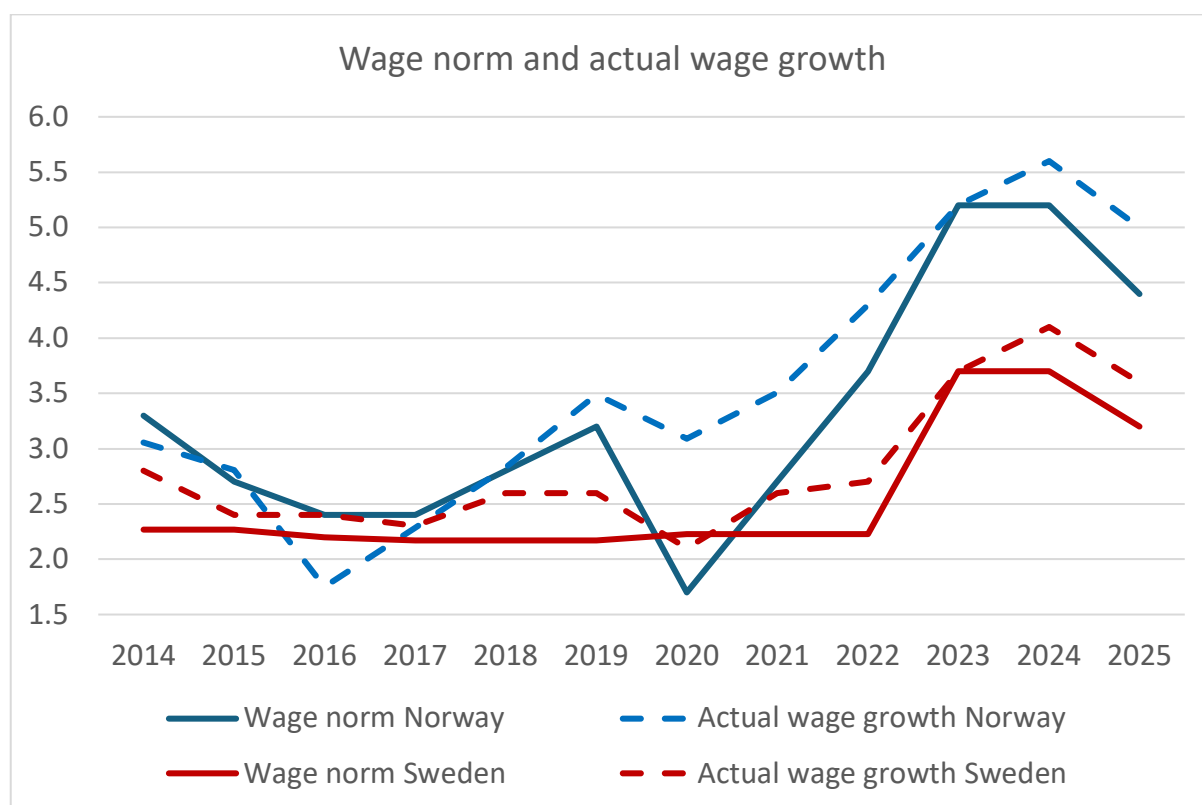


Figure 19 Wage norm and actual wage growth Source: Swedish National Mediation Office. The Norwegian Technical Calculation Committee for Wage Settlements.

In Iceland, there is no corresponding agreement or explicit wage norm. However, wage negotiations also take place among the peak organisations. The parties to the Stability and Welfare Agreement 2024–2028 expressed an ambition to promote lower inflation,

lower policy rates, and greater economic stability, which may be compared to the objectives underlying wage norms in Norway and Sweden. Nevertheless, central agreements in Iceland do not have the same norm-setting function.

Figure 20 shows that actual wage growth in Iceland has consistently exceeded the cost estimates prepared by the employers' organisation SA following collective agreements by 2–3 percentage points. Over the period 2014–2024, annual wage growth, as measured by the total wage index, was on average 2.3 percentage points higher than these cost estimates (cf. Table 2).

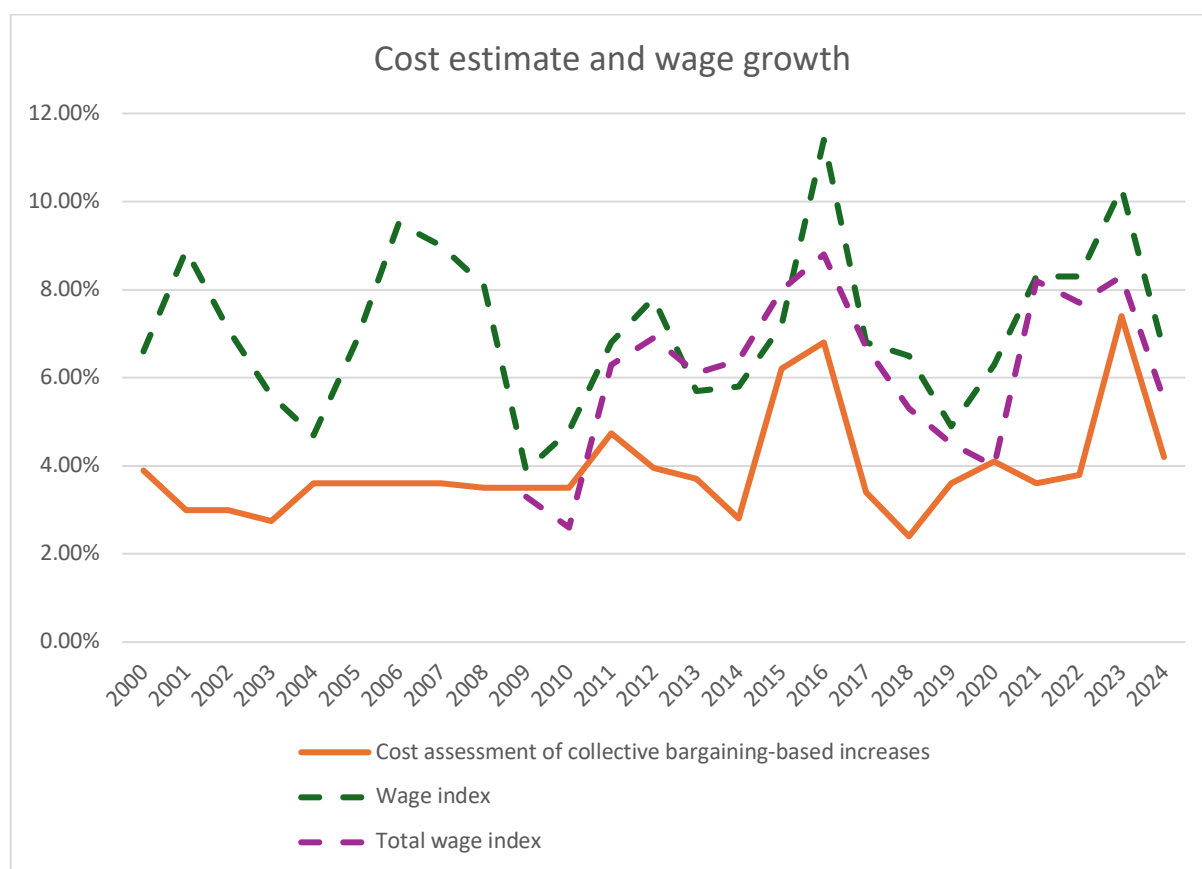


Figure 20 Cost estimate and wage growth Source: SA.

The cost estimates are produced by SA using microdata from Statistics Iceland, where all individuals are mapped into the relevant wage tables, allowing wage increases to be calculated at the individual level. The total wage index measures the growth in average hourly earnings across all employees, corresponding to the actual wage growth reported for Norway and Sweden.

	Iceland	Norway	Sweden
Cost estimate/wage norm	4,4	3,2	2,5
Total wage index/actual wage growth	6,7	3,4	2,8
Wage index	7,5		

Table 2 Wage norm and actual wage growth Average annual percentage growth 2014-2024 Source: SA, Swedish National Mediation Office. The Norwegian Technical Calculation Committee for Wage Settlements.

Why is actual wage growth in Iceland so much higher than the cost estimates? There are several reasons for this discrepancy. Collective agreements typically consist of multiple components, some of which are contingent on productivity growth, inflation, or developments in the wage index. For example, the Stability and Welfare Agreement 2024–2028 included a percentage wage increase with a minimum flat amount, corresponding to annual wage growth of 3.5%. In addition, it contained a pay scale adjustment that could take effect each April in 2025–2027 if the wage index from Statistics Iceland exceeded a reference level. There was also a productivity clause, providing higher wage growth if annual productivity growth exceeded 2%. Furthermore, revision clauses linked to inflation could trigger additional wage increases if annual inflation exceeded a threshold at specified dates (4.95% in August 2025 and 4.7% August 2026). These additional components are uncertain and, to our knowledge, are not included in the cost estimates. Nor do the estimates capture wage increases related to tenure or seniority.

Another explanation for high wage growth is the large number of unions and bargaining rounds across different groups of workers. Late negotiations often result in additional wage increases relative to earlier agreements. Wage increases arising from workplace agreements or individual negotiations may further add to overall wage growth. Such additional increases raise the general wage index, which in turn may trigger pay scale adjustments in earlier agreements.

The excess of actual wage growth over cost estimates thus reflects both the fragmented organisational structure and prevailing bargaining practices. Over time, unions have secured nominal wage growth well above inflation, and if some unions were to achieve lower increases, their relative wages would fall behind those of other groups.

Olafsdottir (2022) points to a potential underlying issue related to a lack of trust among bargaining parties. Referring to a survey conducted by the State Mediator among participants in the 2019 bargaining round, she notes that only 37% of respondents agreed that trust prevailed at the bargaining table, while a similar share (35%) disagreed. Moreover, 31% reported that they had not perceived any willingness to cooperate from their counterparts. Although four out of five respondents could imagine serving on a bargaining committee again, only 32% would want to negotiate with the same counterparts (Olafsdottir, 2022).

Wage setting at industry level

The fragmented negotiation structure is reflected in substantially greater cross-industry dispersion in wage growth in Iceland than in the other Nordic countries (cf. Table 3). High dispersion in industry-level wage growth leads to significant fluctuations in relative wages across industries, which may, in turn, give rise to stronger wage demands in lagging industries. This high dispersion reflects the combination of strong nominal wage growth and relatively low within-country correlation of industry wage growth in Iceland.

The high dispersion in annual wage growth in Iceland has not resulted in greater long-term differences in average wage growth across industries than in Denmark and Finland, as industries that lag in one year are often able to partially catch up in subsequent years. Sweden differs from the other Nordic countries in exhibiting relatively high cross-industry dispersion and low pairwise correlation, although dispersion in wage growth over time remains lower than in Iceland. The higher dispersion in annual industry-level wage growth in Sweden may reflect that the wage norm applies to increases in industry-level agreements and does not include wage drift, in contrast to Denmark, Finland, and Norway, where the wage norm typically applies to total wage increases (Calmfors, 2025).

	Average wage growth 2010-2024 (total economy)	Average cross-industry wage growth dispersion (Stdev) 2010-2023	Average within-country pairwise wage growth correlation 2010-2023	Difference between highest and lowest average wage growth by industry 2010-2023
Denmark	2.42	2.20	0.363	2.7
Finland	2.10	1.69	0.386	2.6
Iceland	6.58	4.54	0.221	2.5
Norway	3.77	1.49	0.659	2.0
Sweden	3.17	3.39	0.128	1.5

Table 3 Comparison of annual wage growth across 15 industries Compensation of employees per hour worked, national currency. Source: Eurostat

Sighvatsson (2022) argues that exchange rate instability can lead to mismatches across different groups in the economy. For example, the sharp depreciation in 2008 generated substantial profits in certain export industries, which in turn contributed to large wage increases in collective agreements despite significant slack and relatively high unemployment.

Figure 21 shows the nominal effective exchange rate and private sector wages relative to public sector wages. Private sector wages increased relative to public sector wages during the pre-crisis boom, before falling sharply during the 2008–09 crisis. Private sector wages subsequently recovered, with higher growth than in the public sector until 2014. During the appreciation of the ISK from 2014 to 2017, public sector wages grew faster than private sector wages, while the depreciation from 2017 to 2020 was associated with stronger wage growth in the private sector. After 2020, relative wages have shown considerable volatility, although the overall pattern combines an appreciating ISK with stronger wage growth in the public sector.

The tendency for private sector wages to increase relative to public sector wages during periods of depreciation may reflect higher profitability in export-oriented industries and increased import costs, which raise wage pressures in the private sector. More disaggregated comparisons do not display any clear and stable correlations between relative wages and the nominal exchange rate (Supplementary Figures S8 and S9).

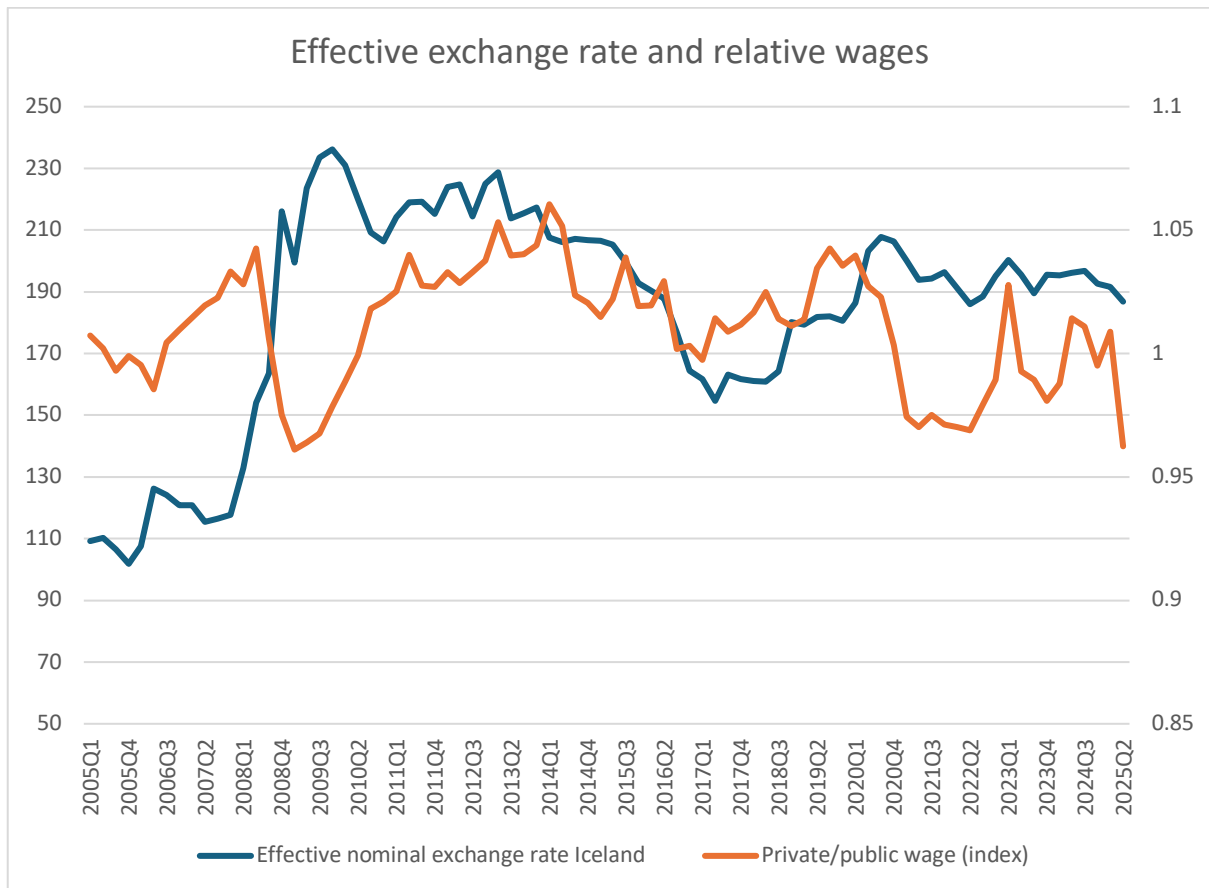


Figure 21 Exchange rate and relative wages Source: Ministry of Finance and Economic Affairs

Effects of adopting the euro

Adopting the euro would have important implications for the Icelandic economy and labour market. Exchange rate fluctuations vis-à-vis the euro would be eliminated, and past experience suggests that this would likely also result in greater stability in the nominal effective exchange rate. This would provide more stable costs and prices relative to trading partners and competitors. It would also reduce sectoral instability arising from exchange rate movements with differing effects across sectors, which can contribute to increased dispersion in industry-level wage growth.

However, euro adoption would largely remove the possibility of exchange rate adjustments dampening the effects of shocks to the Icelandic economy, as well as the use of the exchange rate as an adjustment mechanism in the presence of structural imbalances. In addition, interest rates would be set by the European Central Bank, without scope for adjustment to Iceland-specific conditions.

In periods of large domestic shocks or imbalances, the reduced scope for stabilisation through interest rates and the exchange rate may result in greater macroeconomic volatility, with significant implications for the labour market. This may increase the importance of other policy tools for stabilisation, as well as alternative adjustment mechanisms in the event of structural imbalances. In this section, we briefly discuss the most relevant alternatives and their implications.

Fiscal policy

The most obvious alternative tool for macroeconomic stabilisation is fiscal policy. Kristjánsson (2024) finds that Iceland has relatively strong automatic stabilisers by international comparison, consistent with earlier comparisons by OECD (2015). However, OECD (2023) shows that government spending has tended to be pro-cyclical, being pro-cyclical in more than two-thirds of the years since the 2000s. Spending became more neutral around 2015, following the adoption of a new fiscal framework, but according to the OECD it was again pro-cyclical during the post-COVID-19 recovery.

OECD (2025) notes that the current fiscal rule contributes to a pro-cyclical fiscal stance, but also that the new rules proposed by the government are expected to help dampen pro-cyclical spending and preserve fiscal space. The new rule was implemented in 2025 under the name “the stability rule”. The rule will limit real growth in underlying expenditures of the central government to a maximum of 2.0% per year, except if matched by new revenue-raising measures. If there are measures that reduce revenues, they must be offset by correspondingly lower expenditure growth. The aim is to preserve policy flexibility while maintaining long-term fiscal sustainability.

Public debt as a share of GDP has declined over time in Iceland, and IMF (2025) assesses the overall risk of debt distress as low. However, the IMF also notes that current debt levels exceed those of most other Nordic countries, despite Iceland’s economy being more exposed to shocks.

The OECD points out that the position of the Fiscal Council is relatively weak in an international comparison, due to its small size and limited remit. It suggests that the Council’s role could be strengthened through additional resources and improved collaboration with other independent institutions. In the implementation of the stability rule in 2025, the Fiscal Council was given the task of assessing whether fiscal policy and fiscal plans comply with the fiscal rules, thus strengthening the role of the Council.

The neutral real interest rate and macroprudential policy

At the time of writing, the monetary policy rate in Iceland is 7.5%, as compared to about 2% in the euro area. The high interest rate in Iceland reflects that inflation and inflation expectations are considerably above target, in contrast to the situation in the euro area. However, there may also be more structural differences between Iceland and the euro area. Over the last ten years, short and long run nominal interest rates have on average been above 5% in Iceland, and around 0.7 – 1.4% in the euro area, cf Table S1 in the appendix. From a capital market perspective, the interest rate differential can be interpreted as expected depreciation and a risk premium. However, also domestic factors are important, as they affect the policy rate chosen by the CBI.

IMF (2025b) estimates the short-term neutral real interest rate in Iceland at around 2.7%, based on three semi-structural models. The IMF expects the neutral real rate to gradually fall to around 2.5% over the medium term, in line with potential growth. IMF writes that higher productivity growth, strong population growth, and increased infrastructure investment may raise the neutral rate, while trade policy uncertainty and geoeconomic fragmentation may reduce it. The CBI estimates the real neutral rate to currently be around 2¼%. In contrast, in the euro area the neutral (or natural) real rate is estimated at around 0–0.25% (Beyer and Marques, 2025) and between –0.5% and 0.5% (ECB, 2025). Although there is considerable uncertainty in estimates of the neutral real interest rate, the difference appears too large to be explained by methodological and measurement issues alone. A higher neutral rate in Iceland may reflect stronger expected potential growth, consistent with a robust economy and relatively high population growth driven by migration.

Within a monetary union there may be considerable variation over time in monetary pass-through depending on the proportion of fixed vs variable rates and other factors, cf. eg. Kerola et al (2024). In Iceland, the widespread use of CPI-indexed residential mortgages is relevant, as it reduces the responsiveness of mortgage rates to changes in the policy rate (Honohan and Orphanides, 2018). IMF (2025b) notes that the high share of CPI-indexed loans cushions the impact of higher nominal interest rates on borrowers. As shown in Figure 22, the sharp increase in short-term interest rates from 2021 to 2024 had a large effect on variable non-indexed rates, but a much smaller effect on variable indexed rates. This mitigated the increase in the average interest rate on new mortgage loans. If Iceland adopts the euro and this implies a lower nominal interest rates and less cyclical adjustment, it becomes more important that changes in policy rates are effectively transmitted to the borrowing costs faced by households and firms.

Interest paid on new mortgage loans did not increase with higher interest rates

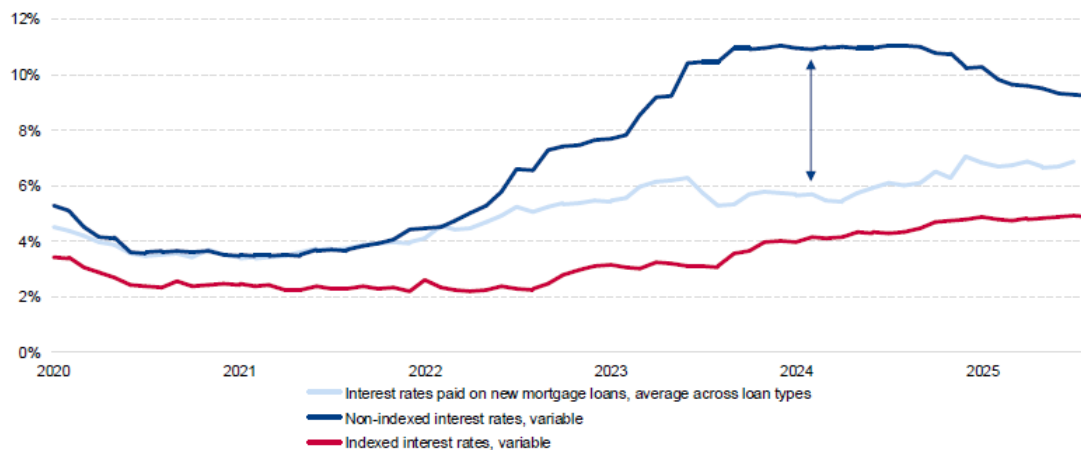


Figure 22 Interest payments Source: Ministry of Finance and Economic Affairs

With lower nominal interest rates, less tailored to Iceland’s cyclical conditions, well-functioning macroprudential policies become more important. Based on a meta-analysis of empirical research, Biljanovska et al. (2024) find strong evidence supporting the effectiveness of such policies in containing credit growth and residential real estate prices. They also show that macroprudential measures can strengthen the resilience of economies to external and domestic financial shocks, reducing the risk of output declines and volatility over the medium term. However, while short-term adverse effects on economic activity appear limited, the marginal benefits diminish, and excessive tightening can be costly. Durante et al. (2025) argue that borrower-based measures—such as loan-to-value (LTV), debt service-to-income (DSTI), and debt-to-income (DTI) limits—are key tools in a banking union. IMF (2025) writes that overall capital requirements on Icelandic banks are relatively high compared to other European countries, and that borrower-based measures have contributed to contain household credit risk.

Overall, well-designed macroprudential policies can play an important role in reducing risks related to mortgages and housing, but their contribution to broader macroeconomic stabilisation is likely to be more limited.

Wage adjustment

Without a domestic central bank, there may be greater volatility in the aggregate economy. This may increase the importance of labour market flexibility. As noted above, Iceland has relatively lenient labour market regulation, giving firms considerable scope to adjust employment levels, both in terms of the number of employees and hours worked, in response to shocks.

Wage setting in Iceland also has clear elements of centralisation, which may facilitate adjustment in the face of large negative shocks. Barth et al. (2023) show that countries with coordinated wage-setting systems did not experience negative employment effects during a period of increased import penetration from China, in contrast to countries with uncoordinated systems. Olafsdottir and Olafsson (2014) note that wage coordination in Iceland has tended to be stronger in recessions than in booms, as illustrated by the Stability Pact during the 2008–09 financial crisis.

If wage costs become too high and there is no exchange rate available for adjustment, nominal wage flexibility becomes more important. Olafsdottir (2020) documents extensive nominal wage cuts during the 2008–09 financial crisis. Using payroll data covering around 40% of the labour market, she finds that 80% of employees experienced a decline in nominal hourly wages between 2008 and 2010. The average nominal wage change was a reduction of 6%, with a median decline of 8%. These cuts occurred alongside inflation of 18% over the same period, implying that fewer than 3% of employees experienced an increase in real wages.

These developments contrasted with prior expectations. Zoega and Karlsson (2006), based on a survey of CEOs and CFOs in Icelandic firms, found that more than 90% reported that they would not cut wages in a downturn. The substantial nominal wage flexibility observed during the crisis reflects the severity of the downturn. Downward flexibility may have been facilitated by the fairly weak employment protection in Iceland, consistent with Holden and Wulfsberg (2008) findings across OECD-countries that downward nominal wage rigidity is associated with stricter employment protection legislation.

Wage setting and monetary regime

In countries such as Iceland, with centralised or coordinated wage setting, the monetary regime may influence wage-setting behaviour in ways that affect not only short-run stabilisation, but also long-run equilibrium outcomes. These effects arise through strategic interaction between wage setters and monetary policy. With centralised or coordinated wage setting, wage setters influence aggregate outcomes and thereby also the monetary policy response. The nature of this response, in turn, affects wage-setting behaviour and, through this channel, equilibrium unemployment.

The literature identifies opposing mechanisms, making the overall effect ambiguous. One strand (Bratsiotis and Martin, 1999; Soskice and Iversen, 2000; Lippi, 2003) argues that a strict monetary regime may reduce wage pressure, as wage setters moderate wage demands to avoid a contractionary monetary response. The intuition is that a

stricter regime increases the employment costs of higher wages, thereby inducing more wage restraint. Lower wage pressure allows for higher employment without generating excessive inflation, implying lower equilibrium unemployment and higher output.

Another strand (Cubitt, 1992; Cukierman and Lippi, 1999) argues that a more accommodating central bank may instead induce wage restraint and lower equilibrium unemployment if unions are sufficiently averse to inflation. In a third approach, Holden (2005) emphasises that the monetary regime may affect wage setters' incentives to coordinate. Given strong empirical evidence that coordination in wage setting is associated with lower unemployment (Calmfors et al., 2001; OECD, 2018), stronger incentives to coordinate may also reduce equilibrium unemployment.

Soskice and Iversen (2000) and Cukierman and Lippi (2001) compare inflation targeting with monetary union and find that the disciplining effect on wage setting is likely to be weaker in a monetary union than under a strict national monetary regime, since wage setters in a single country have a negligible influence on union-wide monetary policy. In their framework, weaker discipline leads to higher equilibrium unemployment. By contrast, Holden (2005) argues that this reasoning can be reversed: precisely because a monetary union provides less discipline, incentives for voluntary coordination of wage setting at the national level may be stronger, potentially resulting in lower equilibrium unemployment.

Seim and Zetterberg (2013) provide empirical evidence based on a panel of 20 OECD countries over the period 1982–2003. They find that real wages are higher in economies with inflation targeting, with stronger effects in countries with a higher degree of coordination or centralisation in wage setting. This is consistent with the argument in Holden (2005) that incentives for coordination may be stronger within a monetary union.

Empirical evidence on labour market effects of euro adoption

One source of evidence on the effects of euro adoption is comparisons between EU countries that have adopted the euro and those that have not. Yotsov (2025) analyses labour market outcomes over the period 2000–2023 for eleven Central and Eastern European countries that joined the EU between 2004 and 2013. Six of these countries adopted the euro during the sample period ("euro adopters", with year of adoption in parentheses): Slovenia (2007), Slovakia (2009), Estonia (2011), Latvia (2014), Lithuania (2015), and Croatia (2023). The three Baltic states had pegged their currencies to the euro well before adoption. Four of the non-adopting countries as of 2023—Poland, Hungary, the Czech Republic and Romania—have maintained independent currencies and monetary policies throughout the period, while Bulgaria have pegged to the euro by use of a currency

board. While all countries were formally committed to adopting the euro upon meeting the criteria, the timing reflected both technical readiness and political decisions. Yotsov notes that Hungary and Poland delayed adoption for political reasons, whereas the Baltic states and Slovakia moved relatively quickly after EU accession.

Yotsov finds that euro adopters, including the Baltic states, experienced a larger increase in unemployment following the 2008–09 financial crisis, although these differences diminished over time, returning to roughly their initial levels by the end of the sample period. The rise in unemployment among euro adopters also reflected relatively tight fiscal policies.

Using a difference-in-differences approach with country fixed effects, Yotsov estimates that euro adoption had a significant positive effect on real wages, while the effects on employment and unemployment were small and statistically insignificant. The point estimates also suggest a positive effect on labour productivity, although this is not statistically significant. The positive effect on real wages remains after controlling for overall growth and inflation, and is interpreted as consistent with evidence that wage restraint prior to EMU membership was followed by faster wage growth after adoption.

It should be noted that the Central and Eastern European countries included in this analysis differ structurally from Iceland—being transition economies with lower income levels and different labour market institutions—which may limit the direct applicability of the findings to Iceland.

Macro implications of high nominal wage growth

One important challenge if Iceland were to adopt the euro is the high rate of nominal wage growth, which has historically been substantially higher than in the euro area (cf. Figure 12). This difference has been much larger than the corresponding difference in productivity growth (cf. Figure 16), leading to a significant deterioration in cost competitiveness.

The deterioration in cost competitiveness do not appear to have caused major macroeconomic problems so far, although the current account has weakened somewhat. Nor would continued high wage growth necessarily pose a problem in the short run after euro adoption, even if it is not matched by growth in productivity. In the short run, higher wage growth would lead to higher inflation and thus lower real interest rates, which, combined with strong growth in wage income, would stimulate economic activity. This mechanism is referred to as the “Walters critique”, named after the British economist Alan Walters.

However, nominal wage growth in Iceland that exceeds productivity growth relative to foreign competitors would over time lead to a gradual loss of competitiveness and make investment in the traded sector less attractive. Weaker competitiveness would adversely affect the Icelandic economy and could result in structural imbalances, including a substantial current account deficit.

The experience of the first decade of EMU provides relevant examples. Several countries with a history of higher inflation and higher nominal interest rates—notably Greece, Ireland, and Spain—experienced a sharp decline in real interest rates upon entering the monetary union (European Commission, 2008). This reduction stimulated domestic demand, leading to high wage and price growth and a deterioration in international competitiveness. The combination of strong domestic demand and weaker competitiveness resulted in substantial current account deficits and rising private debt, leaving these economies highly vulnerable when the financial crisis hit in 2008–09.

In a study of euro area countries with large current account deficits prior to the crisis (Greece, Ireland, Portugal, and Spain) and the three Baltic states, Kang and Shambaugh (2014) show that adjustment in most cases involved a substantial recession, with improvements in unit labour costs largely driven by falling employment and current account adjustment driven by import compression.

It is also relevant to compare this with Iceland's experience after the 2008–09 financial crisis. Benediktsdottir et al. (2017) find that the recovery was faster and stronger in Iceland, likely facilitated by a sharp depreciation, which improved competitiveness and generated sufficient inflation to prevent the zero lower bound from constraining monetary policy. Steinsson (2017) and Honohan and Orphanides (2018) similarly conclude that the 2008 depreciation helped restore competitiveness and supported the subsequent recovery in employment. Steinsson highlights two main benefits of the depreciation: it allowed real wages to adjust through inflation “without a bloodshed” and induced substantial expenditure switching towards Icelandic goods.

The risk of excessively high nominal wage growth would be amplified by the reduction in interest rates following euro adoption. Recent assessments by the OECD (2025) and IMF (2025) support the restrictive monetary policy in Iceland. Lower interest rates would stimulate demand in the short run, likely leading to a tighter labour market and contributing to continued high wage growth.

To reduce the risk of similar imbalances under euro adoption, changes in labour market institutions and wage-setting practices would likely be necessary to ensure that nominal

wage growth is aligned with productivity growth. In addition, lower real interest rates would increase the importance of appropriate macroprudential policies to contain demand and limit excessive debt accumulation.

Continued high nominal wage growth would also have adverse implications under the current inflation-targeting regime. High wage growth raises production costs and inflation, prompting the central bank to maintain higher nominal and real interest rates. This may lead to higher unemployment and sectoral imbalances, with reduced activity in interest rate-sensitive sectors such as construction. Moreover, high interest rates may contribute to an appreciation of the exchange rate, further weakening cost competitiveness.

A reform of the wage setting

Regardless of the monetary regime, reforms or changes that ensure wage growth remains broadly aligned with productivity growth and the monetary framework appear crucial for sustaining economic stability and employment in the Icelandic economy.

However, both the consequences of inaction and the prospects for achieving reform may differ across regimes.

Consider first the consequences of no reform, assuming that wage growth continues to exceed productivity growth. As noted above, under euro adoption, high nominal wage growth would not trigger a monetary policy response. The result could be a stimulatory effect from strong growth in wages, prices, and incomes, combined with low real interest rates. Over time, competitiveness would deteriorate, and there is a risk that this process could persist for too long, leading to highly adverse outcomes, as illustrated by the prolonged weak economic performance of several euro area countries following the financial and euro crisis. While Iceland's more centralised wage setting and relatively weak employment protection may facilitate nominal wage adjustment, an internal devaluation from a high cost level could still be a costly and protracted process.

Under an inflation-targeting regime, the adverse effects of excessive wage growth would be more immediate and visible, through higher interest rates and negative effects on interest rate-sensitive sectors, as well as on indebted households and firms. Although the negative consequences of high wage growth would accumulate over time, they are likely to be less severe than under euro adoption. While high wage growth can lead to a higher cost level, competitiveness may eventually be restored through exchange rate depreciation.

Regarding the likelihood of reform, the situation may be reversed. Precisely because the consequences of sustained high wage growth are likely to be more severe under euro adoption, the incentives to implement necessary reforms may be stronger, potentially increasing the probability of success. However, for external observers with limited insight into the underlying institutional and political dynamics, it is difficult to assess the likelihood of a successful reform process.

In the other Nordic countries, wage-setting systems were reformed in the 1990s, representing a deliberate shift away from the devaluation policies of the 1970s and 1980s (Andersen et al., 2014). In these countries, a pattern bargaining model, with a norm-setting role for the manufacturing sector, has functioned well from a macroeconomic perspective. Implementing a similar model in Iceland would require significant changes to wage-setting institutions (Holden, 2016; Sila, 2017). Broad agreement among labour market parties appears necessary for a successful reform, but institutional changes that strengthen coordination mechanisms would likely also be required. A more detailed discussion of the specific reforms needed lies beyond the scope of this report.

Migration

Immigration to Iceland has increased significantly following the opening of the labour market to European Economic Area (EEA) countries in the mid-1990s. Iceland has been an attractive destination due to strong employment prospects and relatively high wages. Compared with other OECD countries, the employment rate for foreign-born workers is high in Iceland, although somewhat below that of native-born workers (OECD, 2025). Foreign workers have filled important roles in sectors such as manufacturing, tourism, fisheries, and construction. Immigration may also bring demographic benefits by increasing the share of the population in prime working-age groups. The OECD (2025) refers to cross-country evidence suggesting that immigration is likely to have a positive effect on GDP per capita, particularly in the long run. However, challenges remain regarding the integration of immigrants, and overqualification rates among foreign-born workers are higher than in most other OECD countries (see Figure 23).

Overqualification rates 2021

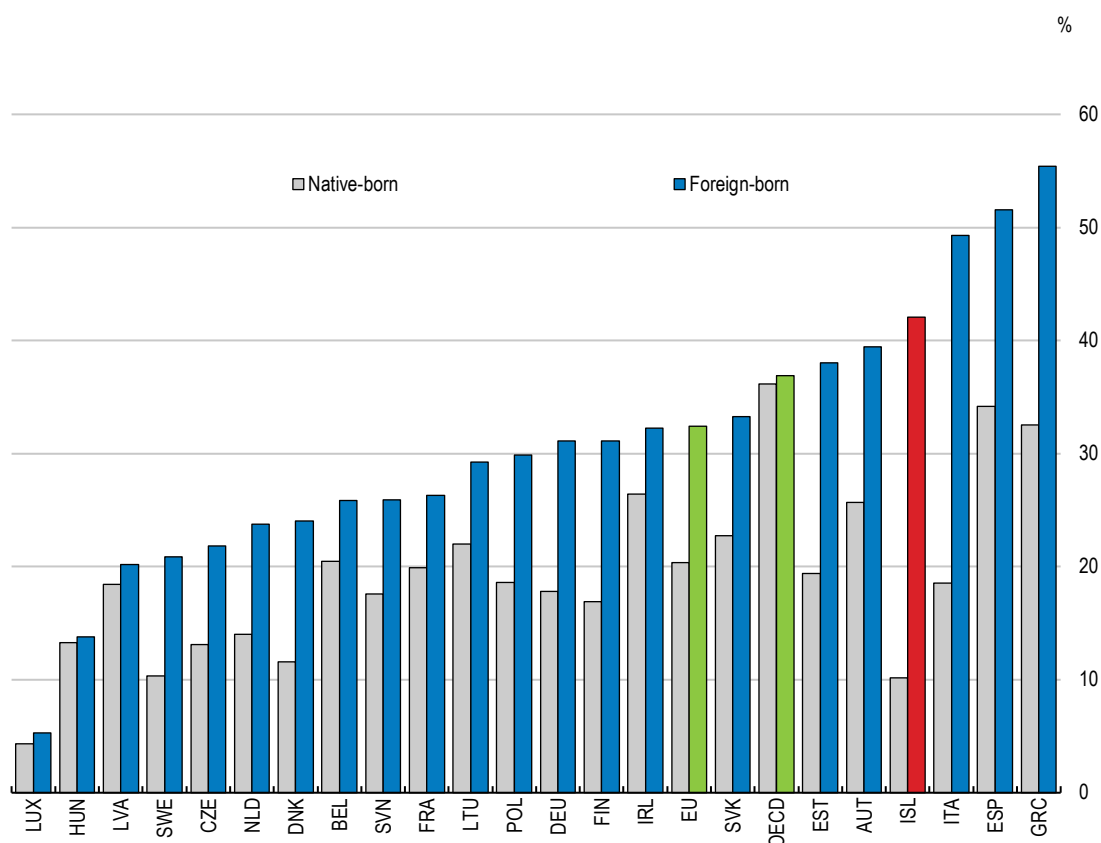


Figure 23 Overqualification rates The over-qualification rate is the share of the highly educated (ISCED Levels 5-8), who work in a job that is ISCO-classified as low- or medium-skilled (levels 4-9). Source: Koutsogeorgopoulou (2023)

There is considerable cyclical variation in migration flows to Iceland among foreign citizens, with high net migration during periods of strong real GDP growth (cf. Figure 24). Cyclical variation in migration has historically also been significant for Icelandic citizens, although it has been less pronounced in the past decade (Figure 25). The cyclical variation in migration contributes to labour market flexibility and is likely to reduce fluctuations in unemployment and employment rates.

High immigration increases demand for housing, but immigrant workers also constitute an important source of labour for the construction sector. As a result, the overall effect on house prices and housing costs is not clear-cut (OECD, 2025).

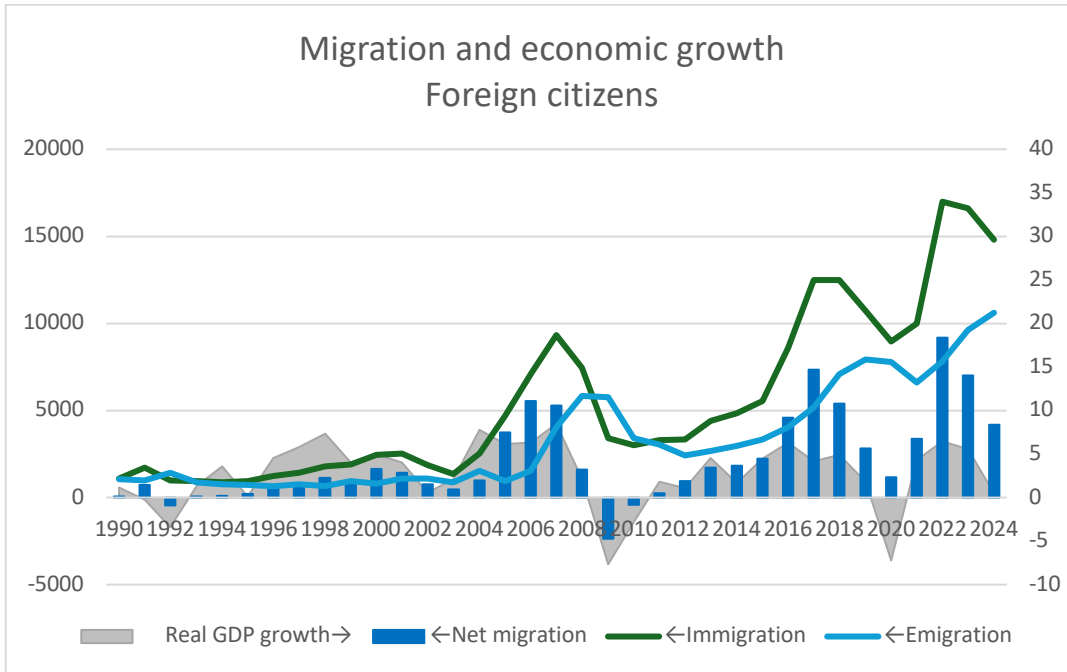


Figure 24 Migration and economic growth. Foreign citizens Source: Own calculations from Statistics Iceland and OECD

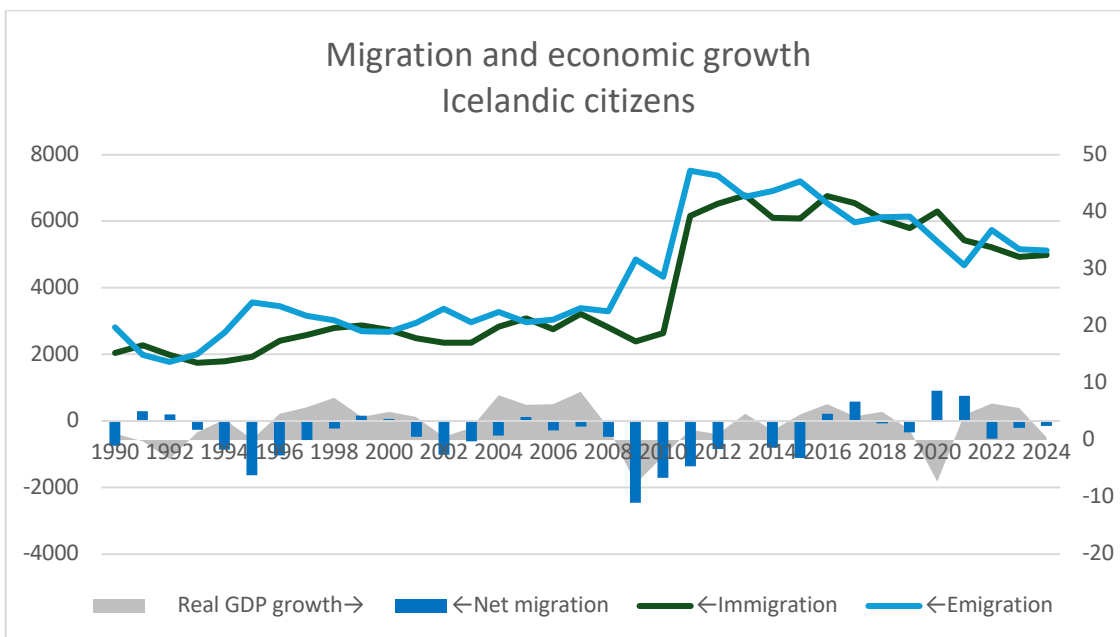


Figure 25 Migration and economic growth. Icelandic citizens. Source: Own calculations from Statistics Iceland and OECD

A possible adoption of the euro would affect migration patterns through several channels. With the euro, exchange rate volatility would be reduced, which is likely to have opposing effects on migration. Following a positive shock to the Icelandic economy, the exchange rate would typically appreciate under an independent currency.

This would raise wages in Iceland relative to other countries when measured in a common currency, potentially increasing its attractiveness for labour migration. However, an appreciation would also raise costs for Icelandic producers, which could dampen labour demand.

In a downturn, the opposite effects may arise. A negative shock could lead to a depreciation, reducing wages in Iceland relative to other countries and making the labour market less attractive for foreign workers. At the same time, the depreciation could mitigate the downturn for Icelandic firms, thereby limiting the decline in labour demand. Overall, exchange rate movements driven by domestic demand and supply shocks are likely to dampen labour market imbalances, as positive shocks tend to increase labour supply while reducing labour demand, and vice versa. By contrast, exchange rate fluctuations driven by financial or capital market shocks may increase macroeconomic uncertainty and dampen migration flows.

Afonso et al. (2025), in a study of migration flows in the European Union, find that migration responds more strongly to differences in earnings than to differences in unemployment. However, cultural proximity and “friends and relatives” are more important, indicating that labour mobility has a limited role as an adjustment mechanism for cyclical fluctuations. While language and geography may constrain migration to Iceland, the small size of the population implies that even modest changes in migration incentives within Europe could have a substantial impact.

Adopting the euro would remove the national interest rate and exchange rate as tools for stabilisation and adjustment. In early work on EMU, Decressin and Fatas (1995) show that low labour mobility in Europe meant that region-specific employment shocks were primarily absorbed through changes in participation rates, whereas in the United States adjustment occurred mainly through migration. Arpaia et al. (2016) find that labour mobility in the EU increased after the introduction of the euro and estimate that migration absorbs around one-quarter of an asymmetric shock within one year.

Basso et al. (2018), using data for EU countries over the period 2007–2016, show that migration of foreign-born individuals is strongly cyclical, while migration of natives is less sensitive to labour market conditions. Basso et al. argue that higher mobility among foreign-born workers reduces cyclical variation in employment rates. In regions with fewer immigrants, natives are less insulated from employment fluctuations and are more likely to migrate. Basso et al. also find that migrants in the EU and the United States have similar population-to-employment elasticities, while migration responses to employment shocks are lower for individuals born in euro area countries than for those born in U.S. states.

Latvia and Lithuania experienced substantial population declines during the contraction following the 2008–09 financial crisis, although this also reflected fiscal tightening and longer-term emigration trends following the collapse of the Soviet Union.

While there is limited empirical evidence on migration flows specific to Iceland, the findings in Basso et al. (2018) are consistent with the stronger cyclical variation in migration among foreign citizens than among Icelandic nationals noted above. This suggests that the growing share of foreign-born workers in Iceland may help reduce cyclical fluctuations in employment rates, thereby mitigating some of the effects of losing independent monetary policy. In the event of a large negative shock, lower employment would likely reduce inward migration and increase outward migration among foreign-born workers, while the response among natives would be more limited.

To the extent that euro adoption leads to deeper integration and trade, and thereby higher labour productivity, it could also result in higher net migration and reduced emigration among native workers.

Concluding remarks

The choice of exchange rate regime has important implications for the Icelandic labour market.

An independent currency provides an adjustment mechanism through exchange rate movements and allows monetary policy to respond to domestic economic conditions. Over the past 30 years, business cycles in Iceland and the euro area have been fairly correlated. However, cyclical positions have at times diverged, and volatility has generally been higher in Iceland. The depreciation of the ISK associated with the 2008–09 crisis contributed to restoring competitiveness and supporting the subsequent recovery in employment.

An independent currency also allows the Central Bank of Iceland to set a different, and typically higher, nominal interest rate than in the euro area, reflecting differences in cyclical conditions. The analysis in Chapter 2 shows that the Central Bank of Iceland possesses an effective stabilisation instrument, even if a substantial share of the monetary conditions is imported from the euro area.

However, an independent currency also entails greater volatility in exchange rates and interest rates. Exchange rate fluctuations may impose costs and uncertainty on firms and industries, and may have asymmetric effects across sectors, contributing to economic instability.

Overall, monetary policy in Iceland has likely contributed to stabilisation of the economy via the interest rate set by the CBI, while the effects of exchange rate are less clear, cf analysis in Chapters 1 and 4. Under euro adoption, there would be no scope for independent monetary policy to stabilise the domestic economy, potentially leading to stronger cyclical fluctuations. At the same time, exchange rate volatility vis-à-vis the euro area would be eliminated, and volatility against other trading partners would likely also be reduced, contributing to less macroeconomic volatility. Reduced exchange rate volatility could support trade and foreign direct investment, with positive effects on growth and productivity.

Adopting the euro would remove key adjustment mechanisms via the exchange rate and the interest rate. In such a regime, greater reliance would be placed on wage flexibility, labour market institutions, and fiscal policy to maintain competitiveness and macroeconomic stability. Improvement of the framework for wage setting (see below), a sound fiscal framework and effective macroprudential policies would therefore be important.

Evidence from EU countries indicates that migration of foreign-born individuals is strongly cyclical, while migration of natives is less responsive to labour market conditions. In Iceland, migration of foreign citizens also exhibits stronger cyclical variation. This suggests that the increasing share of foreign-born workers may reduce fluctuations in employment rates, thereby mitigating some of the effects of losing independent monetary policy.

A noteworthy difference between Iceland and the euro area is the large interest rate differential. While the current difference reflects much higher inflation in Iceland, it may also indicate a higher neutral real interest rate. IMF (2025) expects the neutral real interest rate in Iceland to gradually decline to 2.5% over the medium term, while estimates for the euro area are close to zero or slightly positive. The difference may be caused by higher expected potential growth in Iceland, consistent with a robust economy and population growth driven by migration. Euro adoption would imply a substantial reduction in nominal interest rates, with a clear short-term expansionary effect. This could boost growth initially, but it may also increase the risk of subsequent volatility, increasing the need for appropriate fiscal and macroprudential policies.

A key concern if Iceland were to adopt the euro would be the high nominal wage growth, which is substantially higher than in the euro area. This likely reflects both strong labour market conditions and institutional features of the wage-setting. Under euro adoption, wage growth exceeding productivity growth would lead to rising production

costs and a deterioration in competitiveness. In the short run, lower interest rates and higher wage growth could stimulate the economy, but over time the result would be significant imbalances. Without the possibility of restoring competitiveness through exchange rate depreciation, adjustment might require a prolonged and costly process involving restrictive policies and nominal wage adjustment, similar to the experiences of some euro area countries discussed above.

To mitigate these risks, euro adoption would likely require reforms to labour market institutions and wage-setting practices to ensure that wage growth is aligned with productivity growth.

Continued high nominal wage growth would also involve adverse implications under the current inflation-targeting regime, as it increases production costs and inflation, leading to higher nominal and real interest rates.

Ensuring that wage growth remains broadly aligned with productivity growth is therefore crucial for maintaining economic stability and employment, regardless of the monetary regime.

The consequences of failing to reform wage setting differ across regimes. In the short run, the effects of high wage growth may be more benign within a monetary union. However, if such growth persists, the long-term adjustment costs are likely to be substantially greater under euro adoption.

Euro adoption would involve a commitment to a new regime, which may strengthen the incentives for reform, to avoid or mitigate the risk of increasing structural imbalance. However, it is difficult to assess the probability of success, in particular for external observers. This suggests that a reform of wage setting should be a precondition for euro adoption.

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Supplementary charts and tables

Output gap, the exchange rate and short-term interest rates

Figure S1 adds the exchange rate to the figure with the output gaps. There is a weak tendency that the ISK is strong or appreciating in periods when the output gap is greater in Iceland than in the euro area (2005-07; 2017-19; 2021-2022), while the ISK is weak/depreciating when the output gap is falling/lower in Iceland (2000-2001; 2009-2012). Figure S2 shows a clear tendency that the effective exchange rate has been weak in periods with low employment and vice versa, consistent with Figure 2 above.

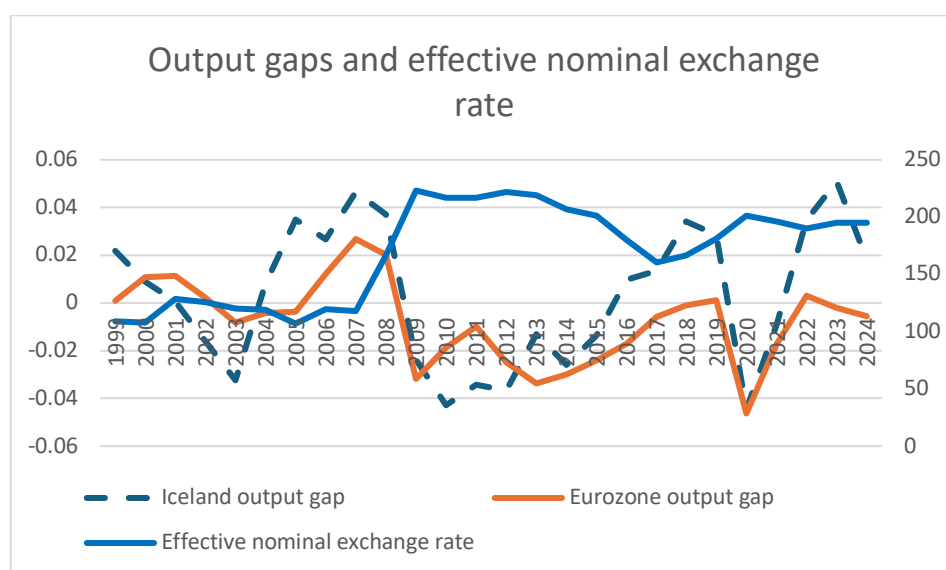


Figure S1 Output gaps and exchange rate Source: Ministry of Finance and Ec. Affairs

Figure S2 shows the employment rate and the effective exchange rate.

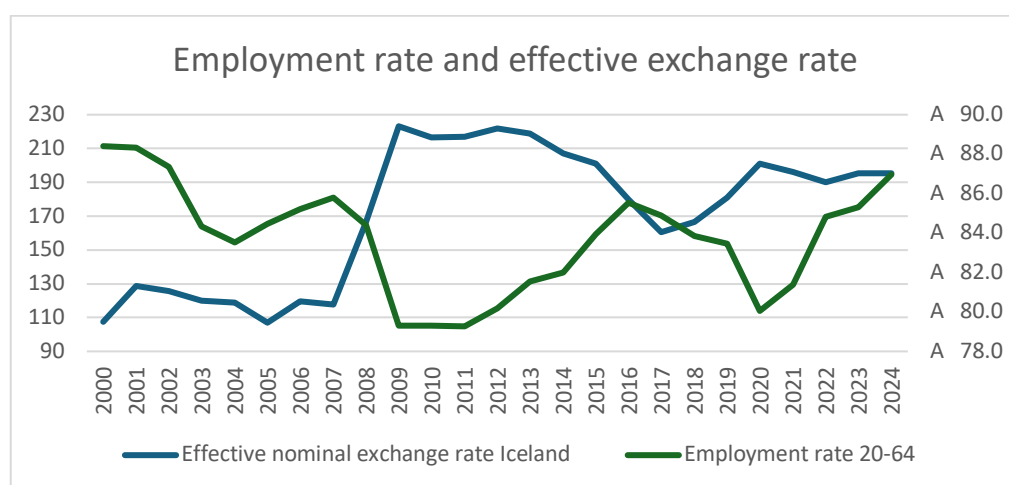
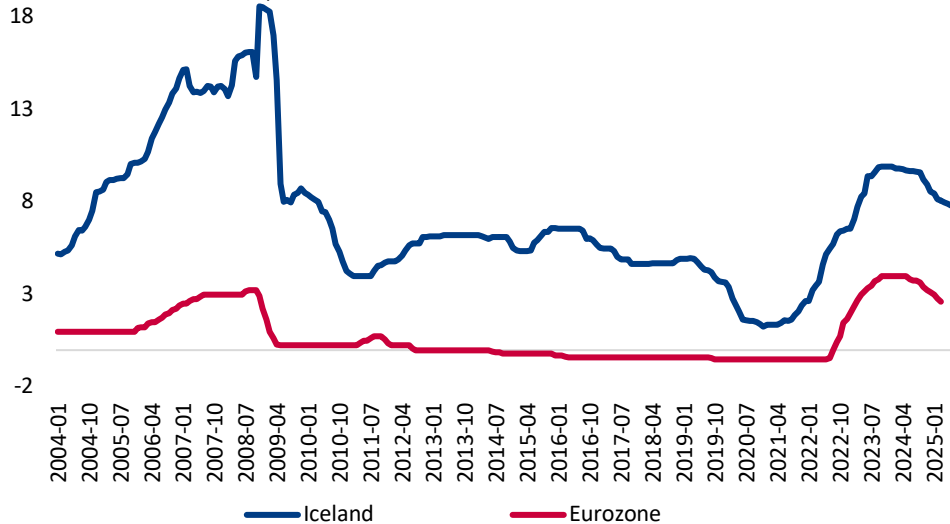


Figure S2 Employment rate and exchange rate Source: Ministry of Finance and Economic Affairs and OECD

Short-term interest rates have historically always been higher in Iceland than in the Eurozone

Three-month interest rates, %



Source: Central Bank of Iceland, LSEG

Figure S3 Short-term interest rates

Wage comparisons

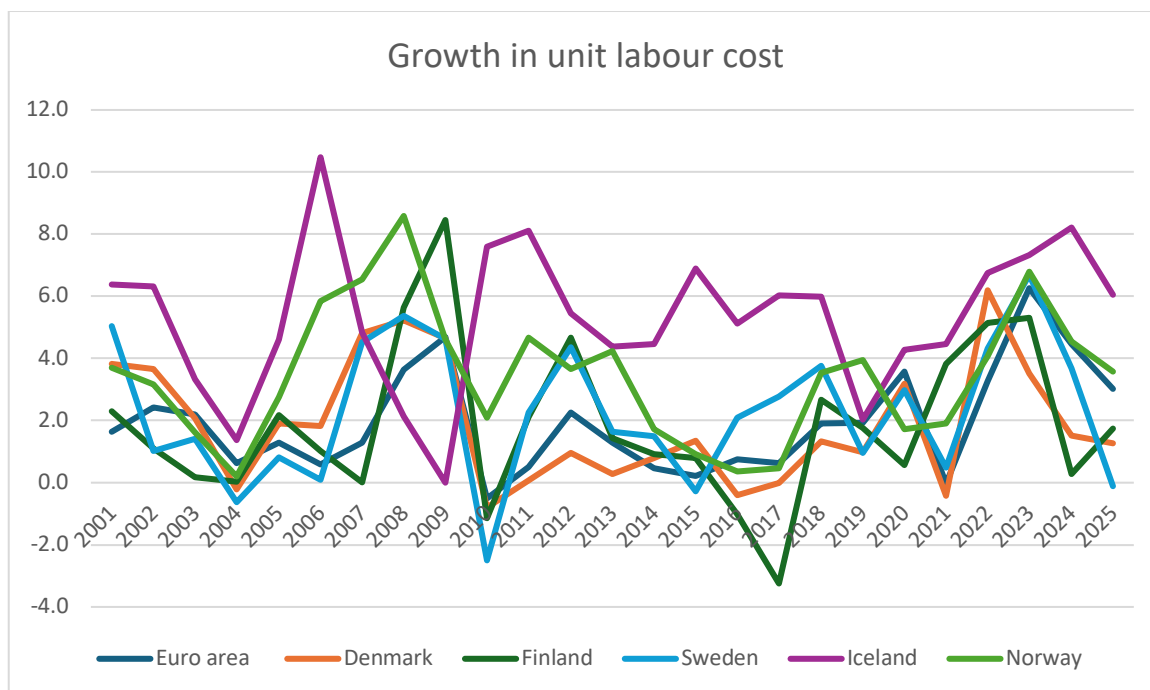


Figure S4 Nominal unit labour cost based on hours worked. Total economy.

Source: Eurostat

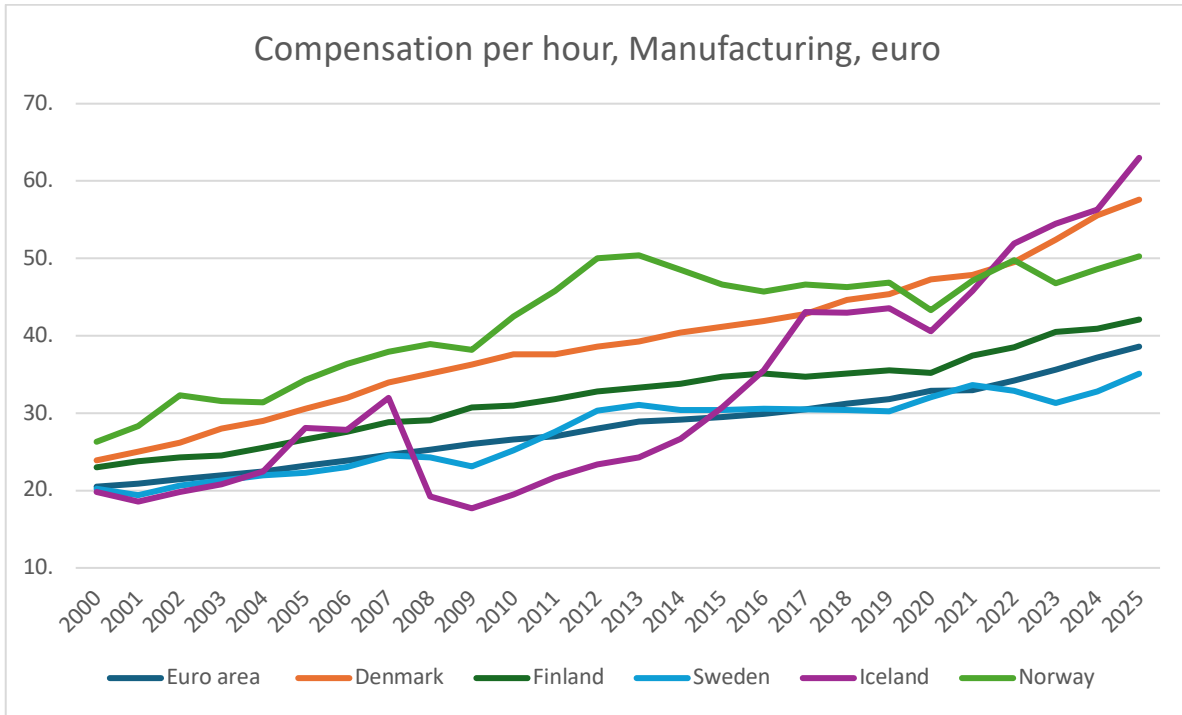


Figure S5 Compensation of employees per hour worked. Manufacturing.
Source: Eurostat

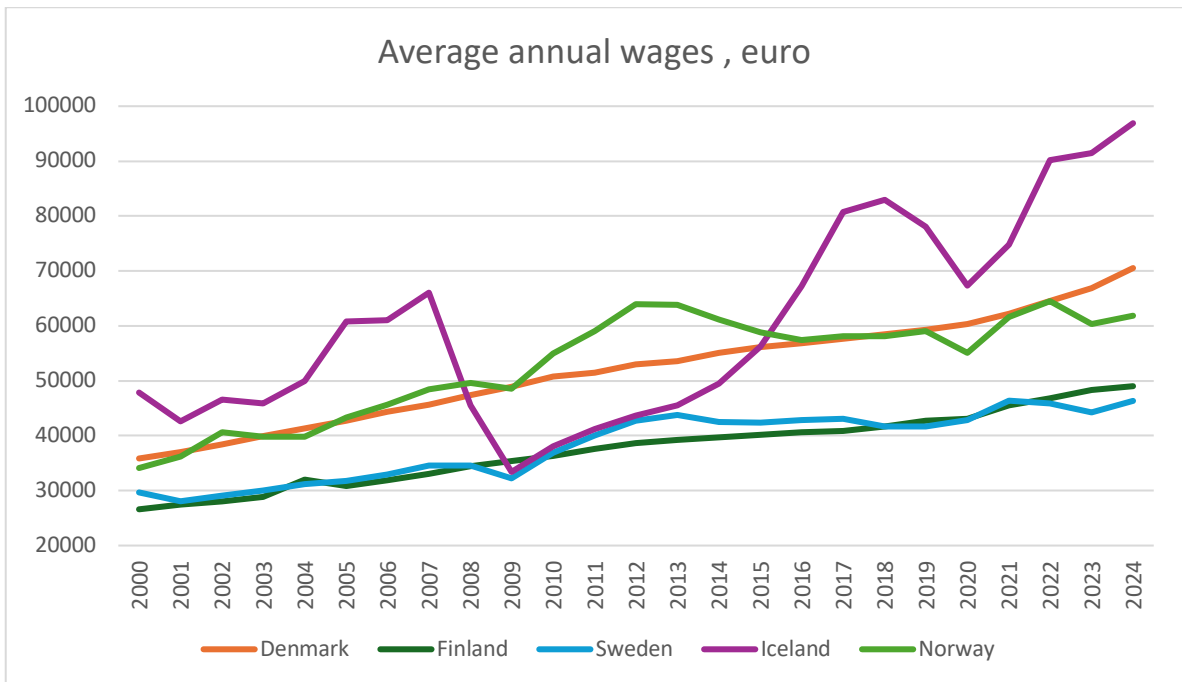


Figure S6 Average annual wages per full-time equivalent in euro. Source: OECD

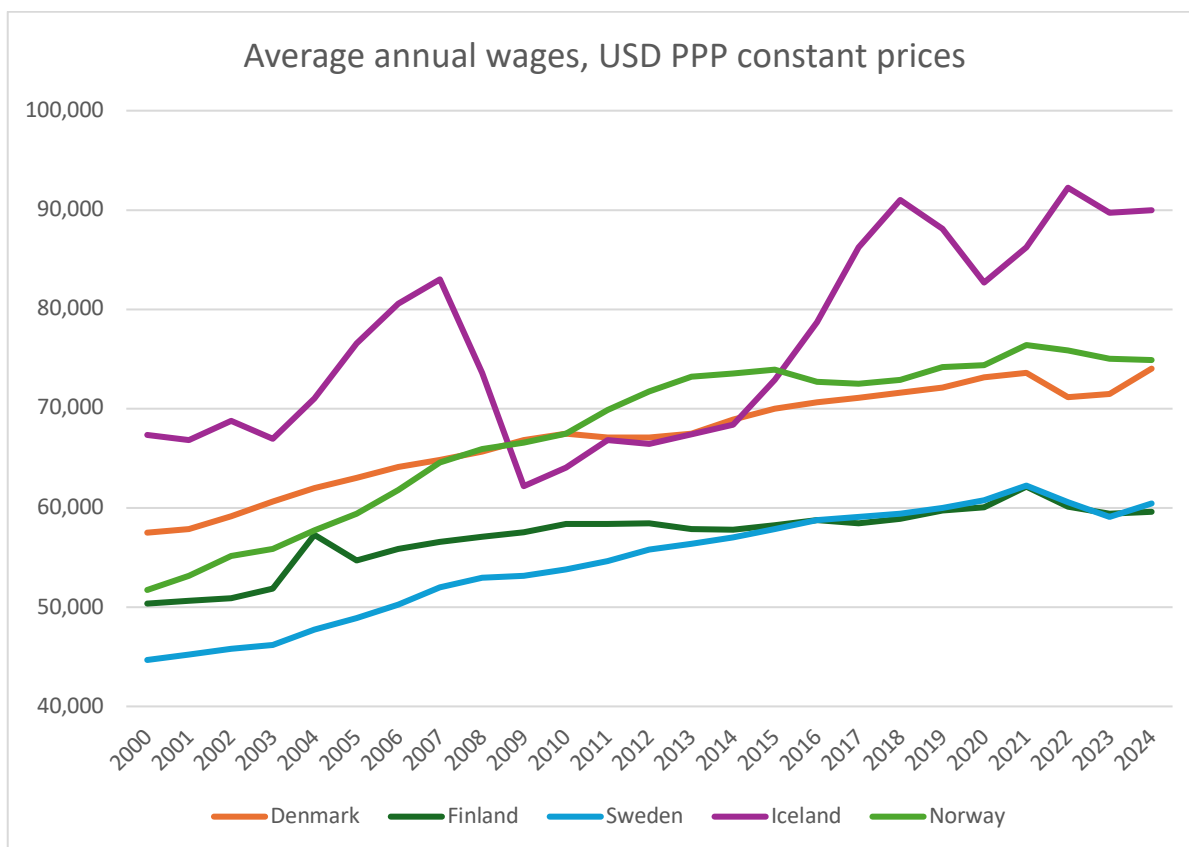


Figure S7 Average annual wages per full-time equivalent, converted in USD PPPs using 2021 USD PPPs for private consumption. Deflated by a price deflator for private final consumption expenditures in 2021 prices. Source: OECD

Wage index and total wage index

In Iceland, wage growth is usually measured by the wage index, which shows wage growth for ongoing employment relationship, ie. adjusting for structural changes in employment. In other countries, wage growth is typically measured by the growth in average wages, which includes the effects of entry to and exit from the labour market. In Iceland, the growth in average wages is referred to as the growth in the total wage index. Growth in average wages gives a better measure of the increase in wage costs for employers.

As newcomers to the labour market typically are younger and receive lower wages than workers who leave the labour market for retirement or other reasons, the increase in the wage index is usually greater than the increase in the total wage index. Over the period 2014-2024, the average annual growth in the wage index was 0.8 percentage points higher than the growth in the total wage index. Thus, comparing with the wage index, as is done in Iceland, implies comparing with a higher number.

Wages at industry level

More disaggregated comparisons do not display any clear and stable correlations between relative wages and the nominal exchange rate (Figures S8 and S9). There is a tendency of high relative wages in Agriculture and fishing when the ISK is weak (high NEER in 2002 and 2010-13) and low relative wages when then ISK is strong (2006 and 2017-19), but the relationship is not tight. Likewise, there is a tendency of low relative wages in construction when the ISK is weak (2002-03 and 2009-2013) and high relative wages when the ISK is strong (2005-07 and 2015-17), but again the relationship is not tight.

Relative wages and the nominal exchange rate

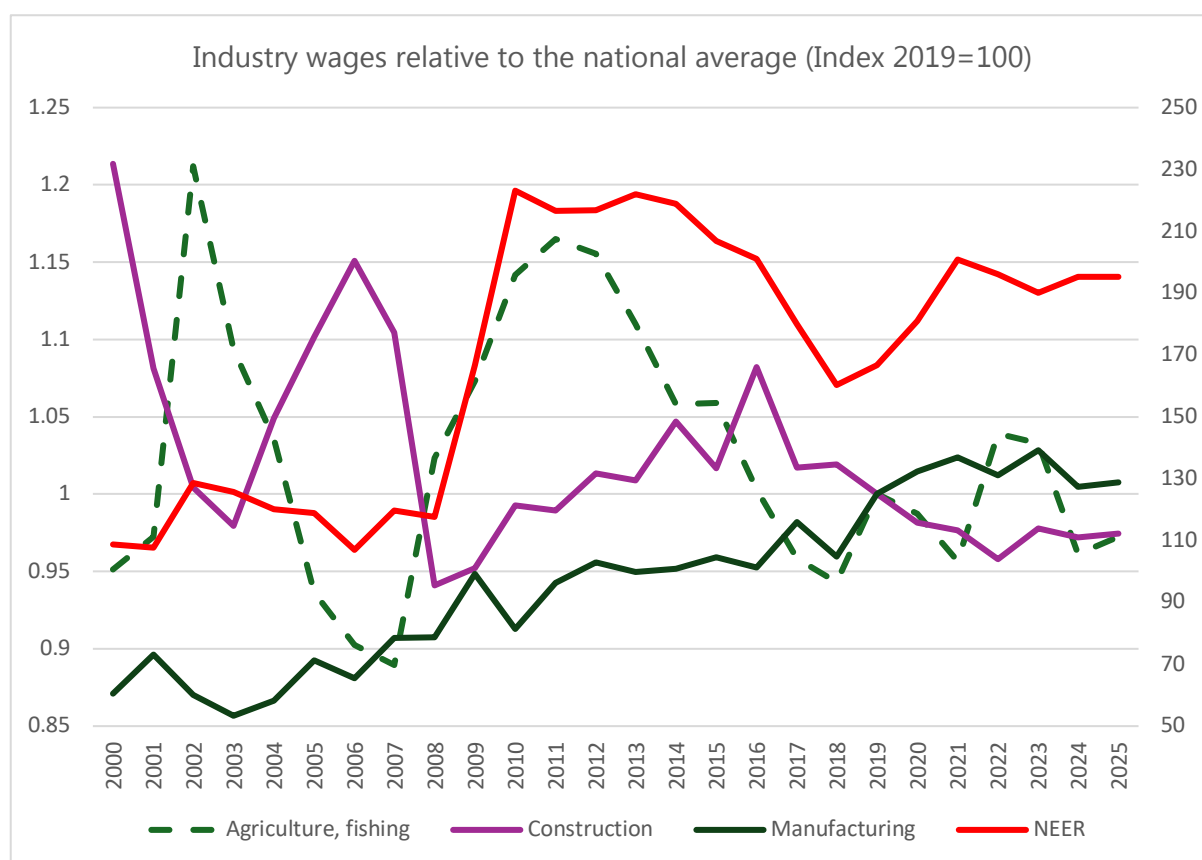


Figure S8 Compensation of employees per hour worked, relative to the national average. Source: Eurostat

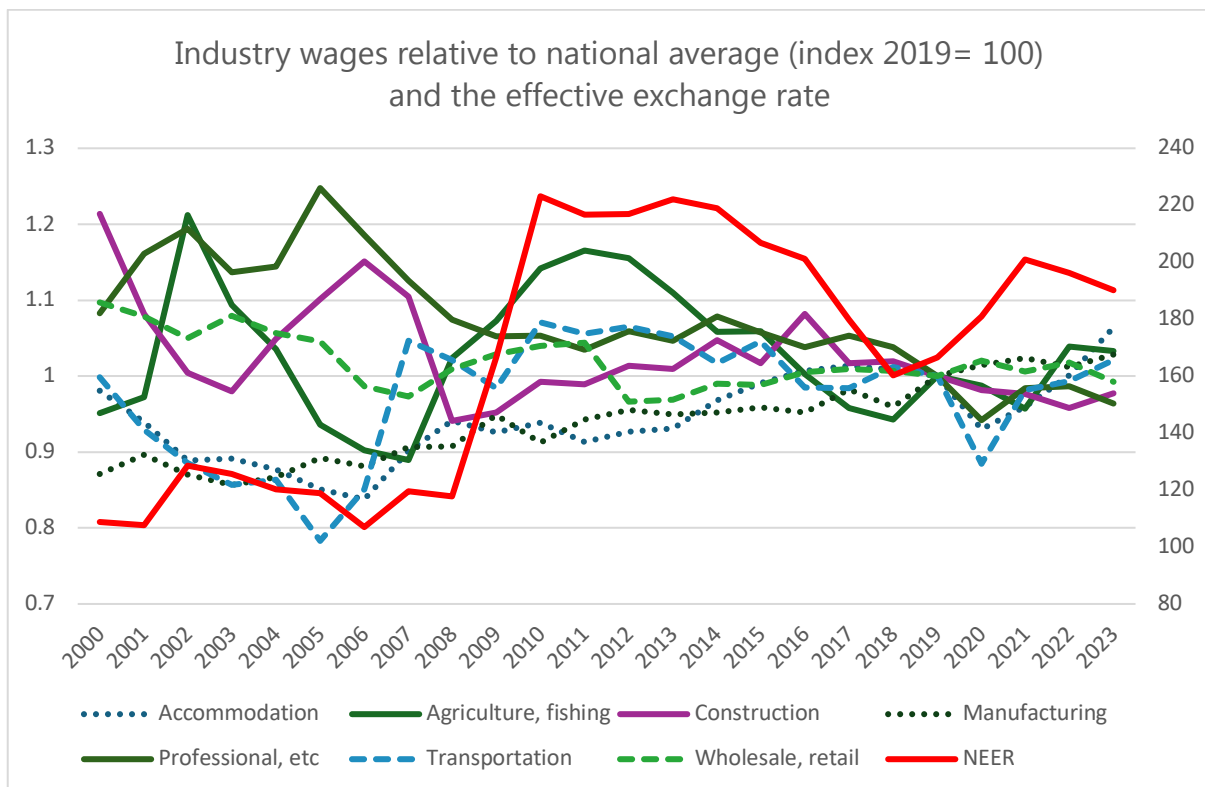


Figure S9 Compensation of employees per hour worked, relative to the national average. Source: Eurostat

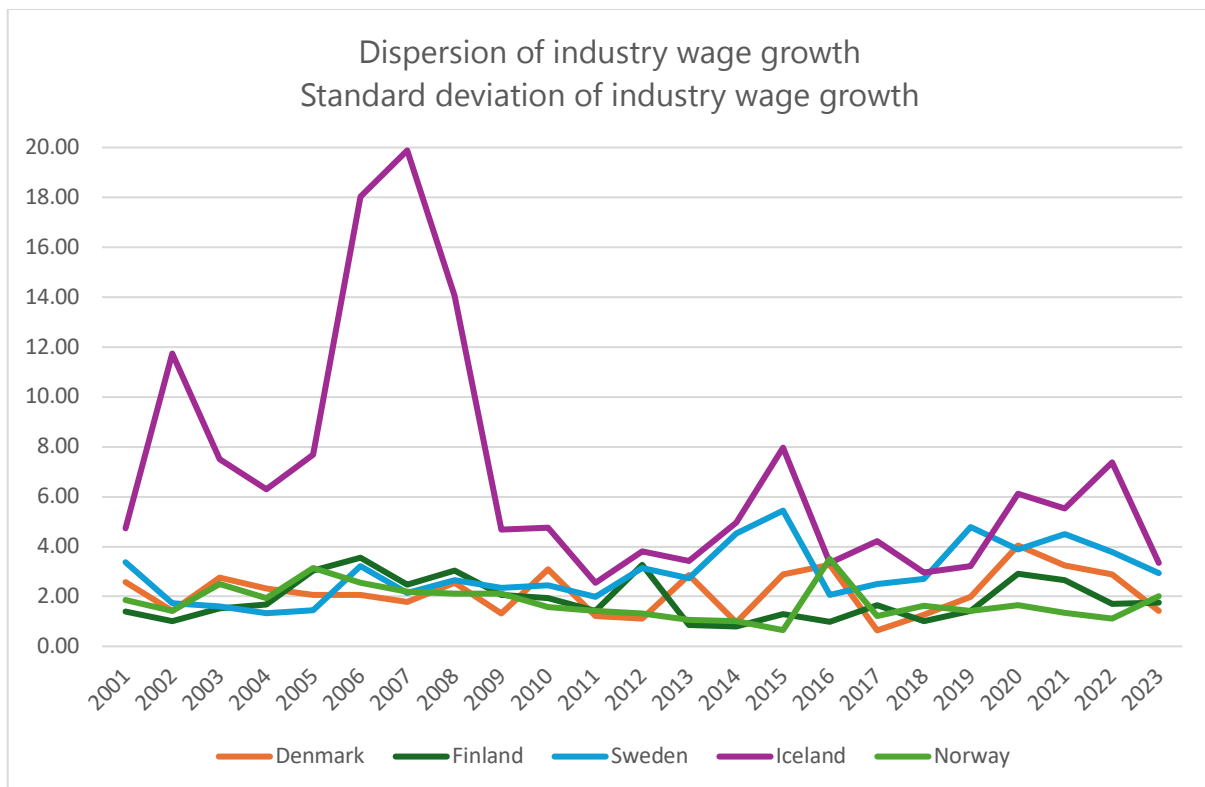


Figure S10 Cross-industry dispersion of industry wage growth is higher in Iceland. 15 NACE industries. Source: Eurostat

Interest rate comparisons

Table S1 Average annual interest rates, 2016-2025

	short term interest rate	long-term interest rate	short term real rate	long term real rate
Euro area	0.73	1.42	-1.86	-1.17
Denmark	0.82	0.94	-1.13	-1.01
Finland	0.73	1.19	-1.37	-0.91
Sweden	0.90	1.08	-2.06	-1.88
Iceland	5.57	5.35	1.23	1.01
Norway	2.12	2.24	-1.14	-1.02

Long term interest rate on government bonds. Real rate = nominal rate – cpi inflation.
Source: OECD Economic Outlook

A Report on 'Currency Matters'
for the Iceland Ministry of Finance and
Economic Affairs

CHAPTER - 3

May 13, 2026

Chapter 3 – Capital flows, financial conditions and currency choice

Stijn Claessens¹

Introduction

The choice of what currency to use (“currency regime” or “regime”) has many financial aspects and channels through which it affects economic and financial stability, resilience, and fairness. The main question in this chapter can be framed as to how the currency regime choice affects local financial conditions—broadly defined—over the short- and longer-term in ways that materially influence welfare, defined here as the preferred combination of economic growth with stability, resilience, and fairness. Key financial aspects for Iceland are reviewed and analyzed mostly with reference to other countries.

Currency choice and Iceland’s current situation

Alternative currency regime: full euro adoption What exact currency regime is chosen (e.g., pegging to a specific currency vs adopting a currency board vs fully joining a currency (and economic union) and how it is implemented (process and speed of transition, accompanying other changes and reforms) matter greatly for the financial (and other) implications. The specific currency regime comparison made here (and elsewhere in the report) is one of (eventually) a full euro adoption, after the required prior EU membership.

Current situation, exchange rate, and capital flows volatility Conversely, the comparison is to the current regime. This is a floating exchange rate with monetary policy based on (flexible) inflation targeting, with prudential foreign exchange limits, but no capital controls (at the moment, but having the option to use them). Microprudential regulation and supervision are already fully EU-determined, and rules governing resolution are mostly as well. The forms and intensities of microprudential and other financial market oversight are similar to those in many EU countries and are subject to peer reviews by European Supervisory Authorities (ESAs) and, at times, benchmarked through FSAPs. There is, however, considerable scope for locally determined macroprudential policies.

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As reviewed in the other chapters (notably Chapter - 1), the current regime comes with a relatively high exchange rate volatility (in nominal, real, and bilateral (vis-à-vis major currencies, the dollar and euro) and effective terms). Volatility was considerable not just during crisis periods but also during the period of capital controls. The regime has improved much in recent years (see Pétursson 2019 for more details), and in recent years volatility has come down. But is still elevated compared to other advanced economies, including the Nordics, even with the occasional foreign exchange interventions and limits on currency mismatches and open foreign exchange positions for financial institutions.² While the regime can be further enhanced (see e.g., IMF, 2024), given Iceland's small economy and high commodity exposures, and the related structurally shallow foreign exchange market and less developed derivatives markets, volatility is likely to remain relatively high.³

While a floating regime requires, at least in principle, little or no reserves, like many other small open economies (SOEs), the ISK has experienced some over- and under-shooting ("excess" volatility). (Chapters - 1 and 4 document, besides ISK's volatility compared to the exchange rates of other Nordic countries, the large roles of international factors and the at times destabilizing properties of the ISK). The CBI has accordingly determined, supported by various IMF Article IV consultations, a need for substantial foreign exchange reserves for intervention and precautionary purposes.⁴ The current level is about \$7 billion (equivalent to about 20 percent of GDP and 5 months of prospective goods and services imports; the most recent IMF Article IV (2025) states that this meets its reserve adequacy criteria to prevent disruptive movements in the exchange rate). This and other related aspects are part of the regime comparison (i.e., they are not questioned here).

Related to Iceland's high exchange rate volatility, capital flow movements during Iceland's crisis periods (its own crisis and the global financial crisis (GFC), as well as the COVID period) were large (see Chart 1, Panels A and B with respectively simple and weighted averages; for this and all subsequent analyses of capital flows, the period is 1999-2025, using quarterly data as a share of GDP). Even outside such periods, Iceland's capital flows are volatile compared to many other advanced countries (for details see Annex 1). The high

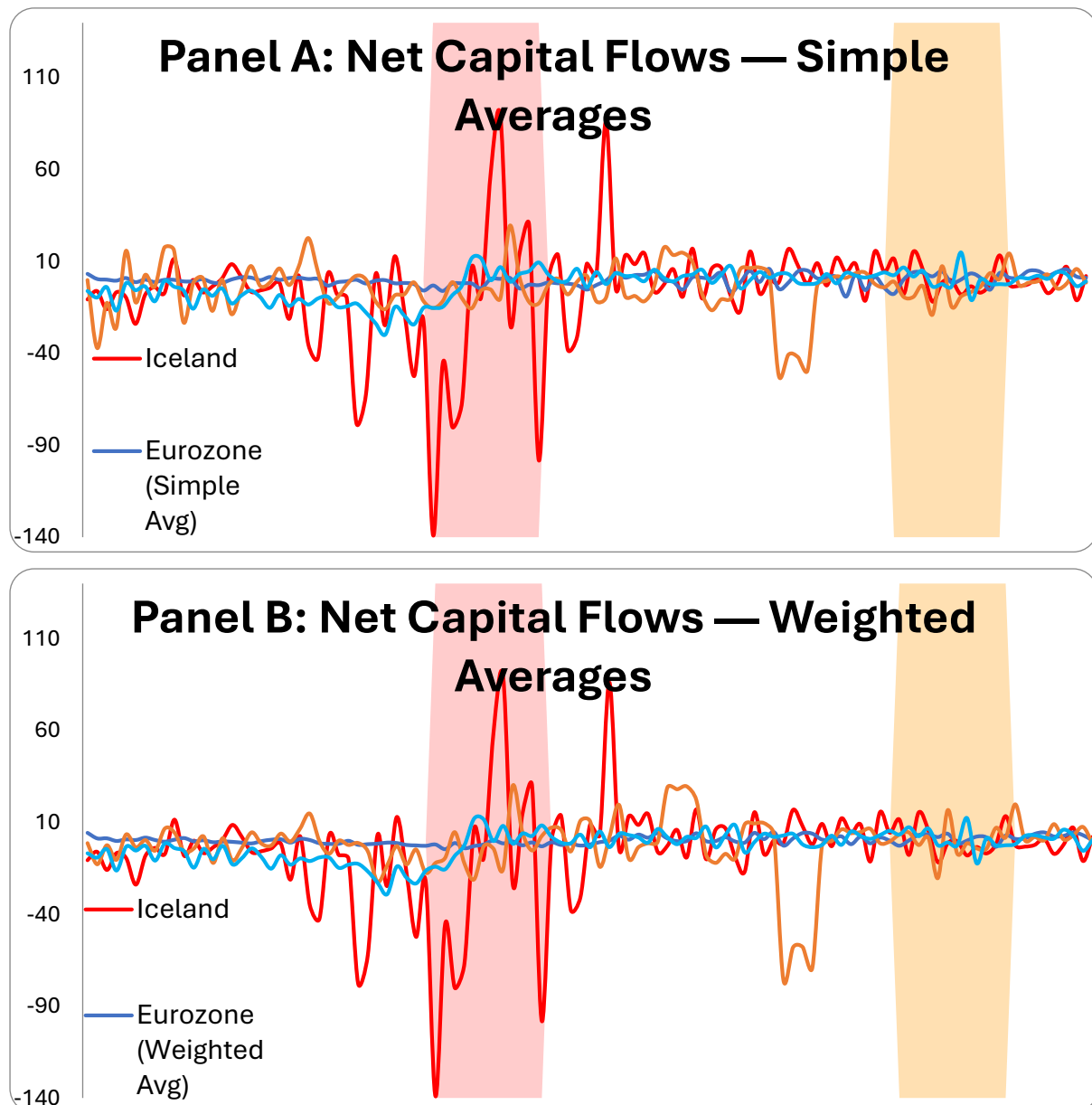
² Besides these limits, the private sector presumably aims to avoid or mitigate the effects of a volatile ISK (e.g., there is likely a greater use of natural hedging, some foreign activities may not be undertaken, buffers are larger).

³ The formal foreign exchange market has high conversion costs (bid-ask spreads are some 18 bp) and low liquidity (formal turnover was only €2.3 billion in 2025). Improvements in hedging markets will likely not eliminate the need for exposure limits (most floating regimes have some limits).

⁴ IMF (2024) notes that Iceland's shallow foreign exchange market can make intervention necessary when the economy is faced with large non-fundamental shocks that trigger capital outflows.

volatility applies to both aggregate gross and net (in minus out) flows (Table 1, column 1, there measured as the standard deviation of capital flows relative to GDP). Most types of disaggregated in- and outflows (FDI, bank, and portfolio debt and equity) are also volatile.⁵

Chart 1: Variation of Net Capital Flows (% of GDP) for Iceland and various groups of countries Panels A and B (simple and weighted averages)



Notes: Capital flows, as a percent of GDP, are volatile for Iceland, especially in the GFC, but also during other times and in comparison to other countries (for groupings, see Annex 1), using simple (panel A) and GDP- weighted averages (panel B).

⁵ These subcategories are most often used in analyses. One can use other differentiations (e.g., by source and destination, e.g., Broner et al 2020), but generally, they show similar volatilities.

Table 1: Volatility of capital flows (scaled by GDP), for aggregate flow and various types.

Full Period (1999–2024)

Indicator	Iceland	Eurozone Weighted Avg	Eurozone Simple Avg	SOE Weighted Avg	SOE Simple Avg	Baltics Weighted Avg	Baltics Simple Avg
Net Capital Flows	28.628	2.161***	3.066***	16.193***	13.198***	8.079***	8.161***
Net Direct Investment	18.040	2.272***	3.581***	23.259**	18.873	2.900***	3.247***
Net Portfolio Investment	31.115	3.826***	5.602***	21.353***	17.470***	4.746***	5.042***
Net Portfolio Investment - Debt S	30.546	3.579***	5.838***	11.436***	15.111***	4.522***	4.741***
Net Portfolio Investment - Equity	10.737	2.196***	4.023***	16.231***	22.511***	1.466***	1.764***
Net Other Investment	31.838	3.646***	5.660***	18.930***	13.976***	8.698***	8.843***

Crisis-Excluded (excl. 2008–2010 GFC, 2020–2022 COVID)

Indicator	Iceland	Eurozone Weighted Avg	Eurozone Simple Avg	SOE Weighted Avg	SOE Simple Avg	Baltics Weighted Avg	Baltics Simple Avg
Net Capital Flows	19.763	2.003***	2.931***	17.466	14.049***	7.889***	7.965***
Net Direct Investment	14.556	2.263***	3.659***	19.341**	16.203	2.553***	2.888***
Net Portfolio Investment	33.027	3.337***	4.791***	18.318***	15.968***	4.700***	4.998***
Net Portfolio Investment - Debt S	30.546	3.579***	5.838***	11.436***	15.111***	4.522***	4.741***
Net Portfolio Investment - Equity	8.275	1.949***	3.857***	14.549***	21.981***	1.523***	1.853***
Net Other Investment	32.520	3.663***	4.976***	16.491***	12.656***	8.704***	8.984***

Notes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$ (two-sided F-test for variance equality) Red = Iceland MORE volatile; Green = Iceland LESS volatile. Volatility (STD) of several types of capital flows is mostly higher for Iceland than for other comparator groups, especially in the GFC, but also during other times (when excluding GFC and Covid), and comparing simple and (GDP) weighted averages, except compared to very small open economies (VSOEs: Malta, Mauritius, Seychelles, the Bahamas, Aruba, and Brunei) for some types.

Financial system Iceland's financial system is advanced (see Annex 2 for charts with comparative figures).⁶ Its financial depth (total financial assets, combining banks and capital markets, all relative to GDP) was very large just before its 2008 crisis, close to 10 times GDP, but has since fallen sharply and is now comparable to countries at similarly high levels of income and institutional development. Other measures (e.g., from the IMF and World Economic Forum) also rank Iceland high on financial development. Access to banking services (as proxied by bank density and access to accounts) is particularly good, which reflects in part its population being largely in one metropolitan area, boosting, in a relative sense, physical access. Capital markets are well developed. Pension funds dominate the institutional investor space, in part because participation is mandatory. Since pension funds also provide some insurance services, insurance appears less developed for Iceland's level of income and institutional development. And there are relatively fewer new bond and syndicated loan issuances.

Indicators for Iceland's banking system show generally favorable conditions. Bank margins and gross profitability (return on assets) are high relative to other countries, but, reflecting high capitalization, returns on equity are more comparable. Operating costs relative to income are low today, much improved from the years around the crisis, then reflecting prior weak bank management and subsequent costly restructuring.⁷ Any remaining inefficiency, including due to the naturally more limited economies of scale, imposes costs on consumers, households and corporations, and the government's own financing.

Financial stability indicators have varied with Iceland's crises and subsequent reforms. Specifically, banks displayed extremely high leverage before the crisis and the GFC, but are much less leveraged today. Capital adequacy has improved, and non-performing loans (NPLs) are low. Still, on the banks' liability side, some specific features remain. Iceland's banks rely heavily on local funding, including market funding from its pension funds. Foreign funding, which declined post-crisis, has not fully recovered, in part because it is discouraged, but maybe also because foreigners are still somewhat reluctant to invest in

⁶ Data in Annex 2 are from the FinStats Database, World Bank (1980–2024), used for FSAPs.

⁷ The crisis in Iceland was followed by significant bank restructuring and settlement of claims that lasted until 2015, as well as use of capital controls. Relatedly, measures proxying financial systems' efficiency did then score Iceland relatively low. For example, Svirydzenka (2016), comparing financial institutions worldwide, placed Iceland in 2013 number 20th in terms of depth and 17th on access, but only 97th on efficiency (see also Sahay et al. 2015). Ratings on financial markets' depth and access (29th and 32nd respectively) were lower but again put Iceland's financial markets' efficiency the worst of the three (40th). Since then, the financial system has much improved. For updates until 2020 and 2022 respectively see [IMF data.imf.org/en/datasets/IMF.MCM:FDI](https://data.imf.org/en/datasets/IMF.MCM:FDI) and World Bank www.worldbank.org/en/publication/gfdr/data/global-financial-development-database

Iceland. While making for less volatility, it means less financial integration and possibly subdued competition. Sovereign debt outstanding as a share of GDP, which varied over time reflecting Iceland's crisis episodes, is today below the euro area average, and the sovereign rating has improved accordingly (from Baa3 to A1 today).

Euro adoption If the euro were adopted, the steps along the path towards euro adoption would likely be largely similar to those for the two recent members, Croatia and Bulgaria. Nevertheless, there will be many specific steps and adjustment challenges, also given Iceland's high level of economic development. After adoption, monetary policy will be conducted for the euro area as a whole, as today, and operationally it will be supported by various tools (e.g., ECB lending and deposit facilities). Transmission will inevitably vary among member states (inter alia, depending on financial and economic structures), but backed up by instruments like the Transmission Protection Instrument (TPI). The new state would mean full and (largely) unrestricted access to all services offered by the euro area's financial institutions and markets and no intra-euro area controls or other limits on capital movements (apart from microprudential measures, e.g., those constraining banks' internal movement of capital or liquidity, or imposing limits on household real estate borrowings). Finally, being part of a large reserve currency union with no (or very limited) use for exchange rate intervention would mean a limited need for foreign exchange reserves.

Euro membership cannot be contemplated unless Iceland is a European Union (EU) member (if the option is chosen to peg to the euro, Iceland need not join the EU first). Being a member of the EEA, Icelandic legislation already complies with EU financial and other regulations. And resolution of weak and failed banks needs to proceed according to EU rule books (the Banking Recovery and Resolution Directive, BRRD) and using a specific institutional framework (e.g., review by the Single Resolution Board, SRB). Still, there can be some implications for regulation and supervision.

In terms of a financial safety net, all banks will have access to ECB's liquidity facilities, the lender of last resort (LoLR, which, although operated by CBI, needs to satisfy ECB rules). Membership in the Banking Union (BU) implies that large Icelandic banks will come under common supervision (single supervisory mechanism, SSM). And it means adapting to how the BU evolves (e.g., membership in European deposit insurance if it materializes). It also means that (new) rules and possibly more common oversight related to the (ongoing) development of a Saving and Investment Union (SIU) will apply to Iceland's capital markets and other forms of (public) financing. While there will remain scope for locally determined macroprudential policies (e.g., to deal with financial

booms), some conditions and ex-ante review (e.g., by the European Systemic Risk Board, ESRB) will be present.

Financial benefits and costs of regime choice: conceptual and quantification

The benefits and costs associated with a specific currency regime choice and related tradeoffs cover various financial (and economic) dimensions. The financial ones analyzed here are organized by the degree of independence from financial conditions (cyclical), volatility of capital flows (both cyclical and structural), and financial sector development (structural), recognizing that these dimensions are related and overlap in many respects. The section first briefly reviews the literature for each (much has been written on most). It then presents empirical analyses that help shed light on the implications of a different regime for Iceland. Much of the material uses cross-country analyses, allowing for some inference, including by regimes, but analyses in other chapters are also important to consider. It also reviews some experiences when countries switched regimes (e.g., from float, peg, or managed float to the euro). Other relevant analyses with lessons, including from Iceland itself (e.g., when it had a more managed float), include Buitier (2000), Edwards (2018), Honohan and Orphanides (2018), Central Bank of Iceland (2012), and others covered in other chapters. Also, Denmark is a relevant country case (e.g., Eichengreen, 2023).⁸

Monetary independence and the global financial cycle

Currency regimes influence, besides monetary policy independence, how international monetary and financial conditions are transmitted to local conditions for the sovereign, financial institutions, households, and corporate sector. Financial conditions typically analyzed include, besides local short interest rates, long-term interest rates, credit and other external financing—in terms of their cost, ease of access and other conditions—and the relative levels of and changes in equity, bond, house and other key asset prices.

The recent literature has made clear, reflecting the high financial globalization today, that no currency regime can fully assure cyclical monetary and financial independence.⁹ The

⁸ He relates Denmark's long success with its peg to the DM and then the euro to several conditions, including ample foreign reserves, sound and stable fiscal and financial policies, and flexible labor markets.

⁹ In basic models, the presumption is that a floating exchange rate provides the most monetary independence. It would then also have the most control over local financial conditions. Conversely, a fixed exchange rate (or being in currency zone like the euro) would mean giving up the most independence over local financial conditions. This means, again in the basic model, that a fixed exchange rate regime comes with some costs as local financial conditions respond to the monetary

analysis of Hélène Rey (2013), furthered by Miranda-Agrippino and Rey (2020) and confirmed by extensive literature since then (e.g., see IMF, 2017, Miranda-Agrippino and Rey, 2022, and CGFS, 2021 for reviews), has shown that the role of international factors—the shorthand is Global Financial Cycle (GFCy)—is strong and rising (see BIS, 2025). This is not just for short-term policy rates, but also for other financial conditions. And it afflicts most currency regimes. Although the firmer an exchange rate is pegged or fixed to another major currency, the lower its monetary independence (e.g., Obstfeld, 2020; Ha, Liu and Rogers, 2025), even a flexible exchange rate does not assure full independence, as local financial conditions still reflect international conditions. The latter possibly gives rise to a dilemma, rather than a trilemma, in that monetary policy is never fully independent.

While the current regime does retain traction on domestic monetary conditions, evidence specific to Iceland (chapters A and D) confirms that it does not provide full independence, as expected for a small, open, financially integrated economy. Indeed, analyses show that local interest rates have a large international component—they typically relate about 0.8-to-1 to euro interest rates.¹⁰ Furthermore, a floating exchange rate is not always an absorbing factor but can at times rather amplify (large) shocks as it can become procyclical.¹¹ Here, evidence also suggests that at times, rather than insulating Iceland from global shocks, the exchange rate has amplified them.

Exchange rate regimes and the global financial cycle, financial conditions, and capital flows volatility

We next review the general and Iceland-specific evidence on the degree of independence of other local financial conditions and the behavior of capital flows.

policy of the core, and thus more to the shocks of the whole currency zone, and less to country-specific economic and financial shocks and developments, and possibly more or less to global shocks. See Mundell (1961) and McKinnon (1963) for the basic models on optimum currency areas.

¹⁰ There is also a significant exchange rate premium, albeit time-varying, in longer-term local interest rates. Estimate vary as to how large this premium is. In CBI's current macroeconomic model, the sovereign 5-year CDS spread is used as a proxy, which most recently was 60 basis points. This, however, may capture more than the currency risk premium.

¹¹ See e.g. Cesa-Bianchi, Ferrero and Li (2025) which confirms the typical transmission of a US monetary policy shock to countries with a flexible exchange rate ("In response to a contractionary monetary policy in the US, the nominal exchange rate of a typical small open economy that adopts a flexible exchange rate regime depreciates while credit spreads increase. The tightening of global financial conditions and global demand leads to a fall in real GDP and exports, in spite of the exchange rate depreciation. The central bank in the small open economy moderately tightens monetary policy on impact, while inflation remains stable. Thus, flexible exchange rates do not fully insulate the country from a monetary policy shock that originates in the US.").

Financial conditions The GFCy literature has studied how international factors affect local financial conditions other than the short-term interest rate. Most papers limit their effort to quantifying the importance of the GFCy to long-term interest rates and equity prices, but Aldasoro et al. (2023), Cerutti and Claessens (2024), and some other papers also analyze the behavior of credit and house and other asset prices. Studies using a wide range of measures and empirical tools find large international components in local financial conditions, but only limited differences by the degree of exchange rate flexibility.¹²

Besides movements in the policy interest rate, other asset prices and credit in Iceland relate to those in the euro zone, in part as Iceland is closely economically and financially integrated with it (the two business cycles are closely correlated, although Iceland's is more volatile, see further chapters A and B). Einarsson et al. (2015, 2016) already found significant evidence of global financial spillovers in Iceland over a long data span across various exchange rate regimes, both in terms of the financial cycle and financial crisis incidence. Today, credit, house and other asset prices are closely related within the euro area, as they should since it is an economically and financially integrated area. With correlations of intra-euro area financial conditions somewhat higher than those currently between Iceland and the euro area, euro adoption would make Iceland's financial conditions less related to its own economic cycle. This, like forsaking monetary policy independence, means euro adoption reduces some policy freedoms.

Capital flow movements and volatility The behavior of capital flows is influenced by local factors as well as by international factors, notably the GFCy. Differentiating the two sets, often called pull and push factors, is not easy and much remains unexplained. Some papers, therefore, simply try to document the relevance of international components in capital flows. This work has found varying importance of the GFCy for capital flows.¹³ But

¹² Cerutti and Claessens (2024) use a simple methodology applied to 2000-2024 data for 76 economies (including Iceland) to estimate the influence of the GFCy. They also differentiate patterns by groupings (e.g., fixed or floating exchange rate, capital account openness). They find that each respective series' common factor and conventional US GFCy-drivers together typically explain about 30 percent of the variation in domestic credit, up to 40 percent in stock market returns, and about 60 percent in house prices, and more than 75 percent in interest rates and government bond spreads. Importantly, they find largely no statistically significant differences by exchange rate regime or capital account openness on how much international factors influence local financial conditions. Other studies generally confirm this. For example, Obstfeld, Ostry, and Qureshi (2018) find no difference in how the exchange rate regime affects the transmission of global financial shocks (changes to the VIX) to domestic financial conditions (credit, house prices, and banking sector leverage) for advanced economies (which includes in their exercise Iceland) but do find some evidence that the regime matters for EMEs, with fixed regimes more sensitive.

¹³ For example, Cerutti, Claessens and Rose (2019) differ from Rey (2013) in that they find the explanatory factors of the GFCy in (specific type of) capital flows to be generally only some 25%,

few studies have found statistically significant differences by exchange rate regime of the impact of the GFCy (e.g. Cerutti, Claessens, and Rose, 2010, find none). Related literature has taken a longer-term perspective by analyzing the concordance of countries' capital flow boom and bust cycles with the GFCy. This evidence also suggests that exchange rate regimes alone are not crucial to how much international factors drive capital flow cycles.¹⁴

If Iceland were to join the euro area, capital flows can nevertheless be expected to be both less volatile and less impactful for several reasons. One is that all euro-related flows would become internal to the area, with imbalances automatically accommodated (inter alia through the ECB's Target 2). Second, aggregate capital flows, the then-relevant concept, benefit from the zone's diversity, making them less volatile and easier to predict.

One way to assess these effects is to compare capital flows for Iceland to those of current euro area members, including those that joined the area recently. As shown in Chart 1 and Table 1 (above), Iceland's aggregate net and gross capital flows over the period 1999-2025 were, not surprisingly, more volatile compared to those for the whole euro area.¹⁵ While Iceland had large capital out- and inflows for most types before and during recent crisis periods, more so than most euro area countries, even outside of crisis periods, volatilities are generally higher for Iceland (see Table 1). Iceland's capital flows are also more volatile relative to the average of the euro area's individual members, suggesting individual countries benefit from being in the euro. And Iceland's capital flows are more volatile relative to the three Baltics, comparable to Iceland in economic size as well as openness to trade before they joined the euro, and again a finding not specific to crisis periods.

In general, the statistical comparisons show that the standard deviation of aggregate capital flows relative to GDP is about 3 to 4 times higher for Iceland than for the euro

whereas Rey argues for a greater importance. The impact of the GFCy on capital flows does vary across countries, over time and by type of capital flows (e.g., CGFS, 2021, Avdjiev et al. 2020).

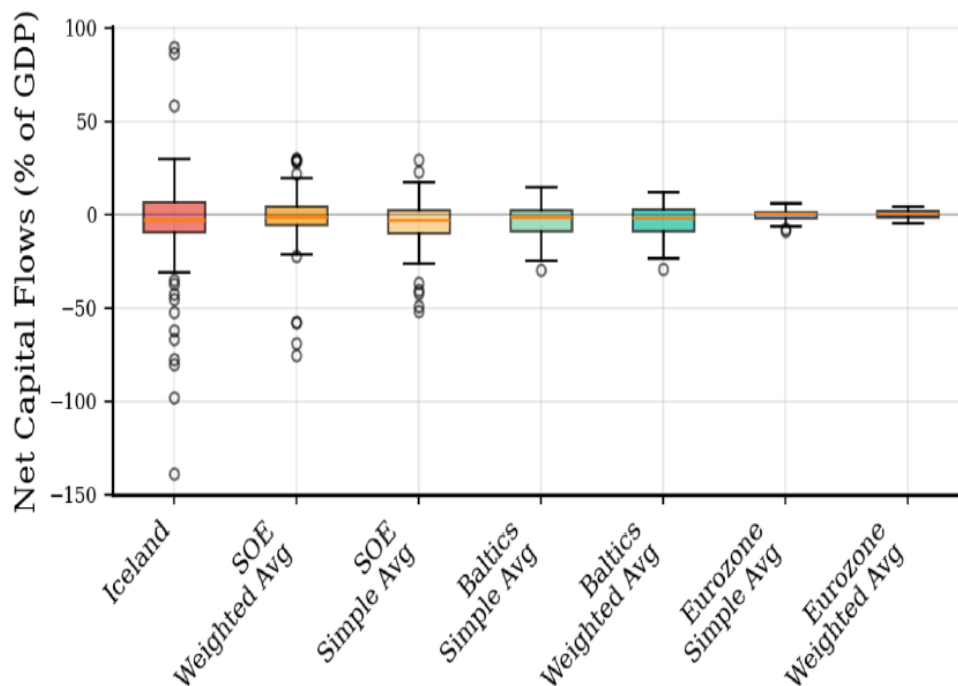
¹⁴ For example, Scheubel, Stracca and Tille (2025) confirm that various GFCy indicators affect the likelihood of episodes of large capital in- and outflows, especially when driven by non-resident investors, but they do not regimes to affect the likelihood of such booms and busts (except that a peg increases the frequency of flights, which are defined as large outflows by residents). They also find for countries with a more open capital account lower risks of sudden stops, surges and flights.

¹⁵ Here and further in this chapter the comparison groups for capital flows are: the whole euro area (i.e., sum of its members); the simple average of each euro area member country; the simple average of the Baltics before adopting the euro (Estonia (2011), Latvia (2014), and Lithuania (2015)); and the simple average of other very small countries similar to Iceland (VSOEs: Malta, Mauritius, Seychelles, the Bahamas, Aruba, and Brunei). For some other analysis, we review recent euro-entry countries before their entry (Slovenia (2007), Cyprus and Malta (2008), Slovakia (2009), Estonia (2011), Latvia (2014), and Lithuania (2015), Croatia (2023), and Bulgaria (2026)).

area, its members, and the Baltics, not just for aggregate, but for all types of disaggregated capital flows (Chart 2). One could argue that the crises in Iceland had a long aftermath involving large cross-border payments to settle claims and wind down liabilities of failed banks, making for higher measured volatility. While this would argue for excluding more years (e.g., up to 2015) than done now (2008-2010, 2020-2022), some of the other economies had crises too. Yet, differently, Iceland had capital controls up to 2017, presumably lowering the volatility of its capital flows. Overall, the analyses thus suggest a significant reduction in the volatility of capital flows for Iceland when joining the euro.

Chart 2: Variation of Net Capital Flows (% of GDP) for Iceland and various groups of countries

Net Capital Flows Distribution - Full Period (Ordered by Volatility)



Notes: Breaking down capital flows by types shows that for 14 types, the volatilities of capital flows are generally higher for Iceland (the box plots show the interquartile range (IQR), the horizontal lines indicate the medians, and the whiskers extend to values within 1.5*IQR volatility for the 14 types).

Table 2: Ability to predict capital flows for Iceland and various other country groups*Full Period (1999–2024)*

Indicator	Iceland (RMSE)	Eurozone Weighted Avg (RMSE)	Eurozone Simple Avg (RMSE)	SOE Weighted Avg (RMSE)	SOE Simple Avg (RMSE)	Baltics Weighted Avg (RMSE)	Baltics Simple Avg (RMSE)
Net Capital Flows	7.6062	1.4136	3.3261	4.2269	5.7515	4.0488	2.9783
Net Direct Investment	15.3345	0.9944	1.7763	13.9277	10.7573	3.4794	4.4922
Net Portfolio Investment	15.1295	2.5755	3.7931	19.8089	19.3209	3.2854	4.0658
Net Portfolio Investment - Debt S	13.2269	1.1879	2.4474	10.2338	12.3576	3.2279	4.0871
Net Portfolio Investment - Equity	7.3378	1.6779	3.0910	12.6874	14.3312	1.1356	1.5017
Net Other Investment	4.9541	3.0560	4.2722	16.4266	13.4315	9.1809	10.1262

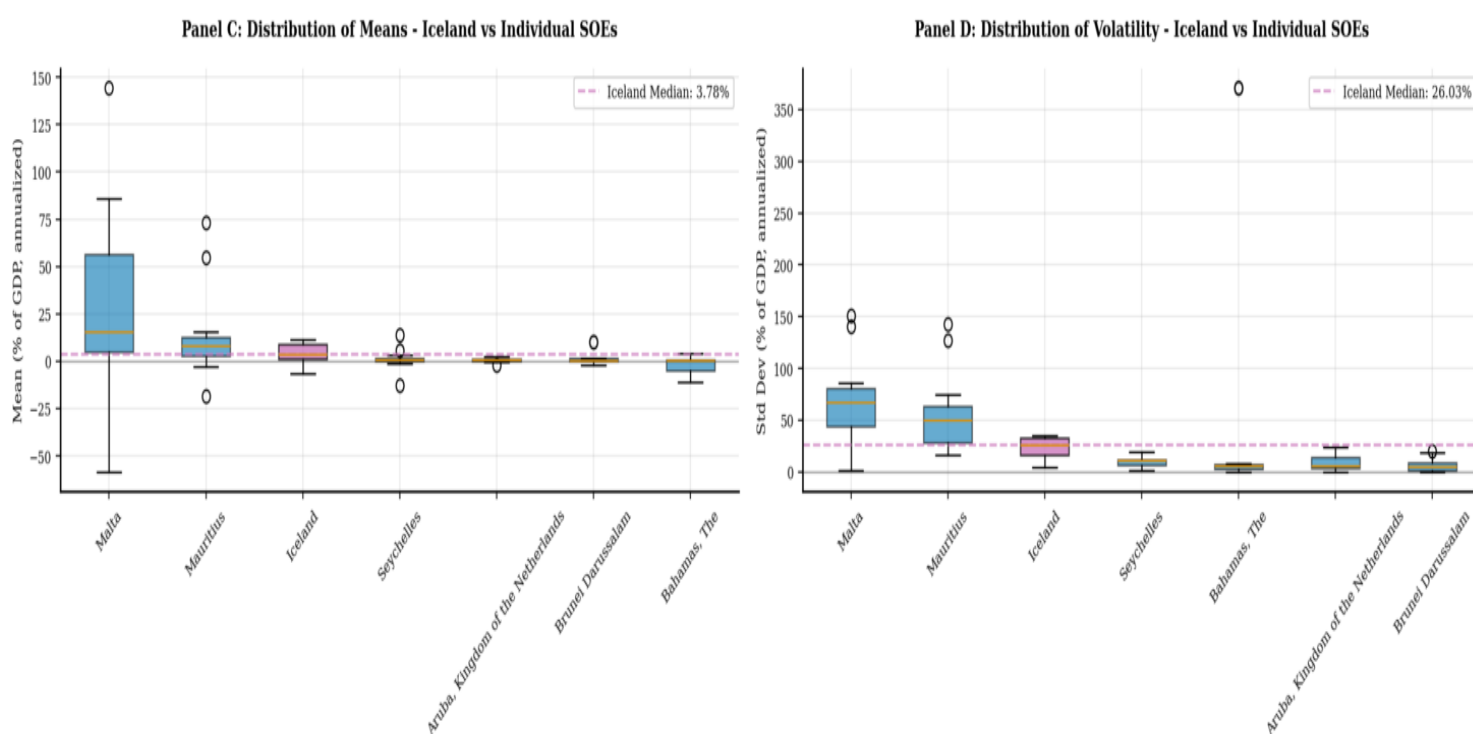
Crisis-Excluded (excl. 2008–2010 GFC, 2020–2022 COVID)

Indicator	Iceland (RMSE)	Eurozone Weighted Avg (RMSE)	Eurozone Simple Avg (RMSE)	SOE Weighted Avg (RMSE)	SOE Simple Avg (RMSE)	Baltics Weighted Avg (RMSE)	Baltics Simple Avg (RMSE)
Net Capital Flows	7.6518	1.4480	3.8926	4.3229	5.4074	4.0401	2.9904
Net Direct Investment	15.5524	0.9199	1.8910	14.6249	10.5654	3.4514	4.3116
Net Portfolio Investment	15.5842	2.4951	3.6537	20.5911	20.4042	3.4715	4.2206
Net Portfolio Investment - Debt S	13.2269	1.1879	2.4474	10.2338	12.3576	3.2279	4.0871
Net Portfolio Investment - Equity	6.8740	1.6137	2.9479	14.7990	18.4020	1.1827	1.6351
Net Other Investment	4.6909	2.9695	4.2925	12.9041	10.5930	7.9745	8.6208

Notes: The ability to predict changes in capital flows ahead is generally much worse for Iceland than for other country groupings (higher RMSE). While excluding the crises improves model fit and reduces prediction errors for most flow types, the relative ordering of Iceland remains the same.

Capital flows’ predictability and impacts. Besides being less volatile, capital flows are also much more predictable for the other groups than for Iceland (Table 2). The small size and high openness of Iceland’s economy explain some of its high capital flow volatility. Even then, for just one-third of the comparisons to some *very small open economies* (VSOEs) by type of capital flows, the volatility is statistically significantly lower for Iceland (see Table 1). Indeed, Iceland sits on the high side of individual VSOEs, number 3 out of 7 (Chart 3).¹⁶

Chart 3: Means (panel C) and standard deviations (panel D) of individual types of capital flows (% of GDP) for Iceland and individual very small open economies (VSOEs).

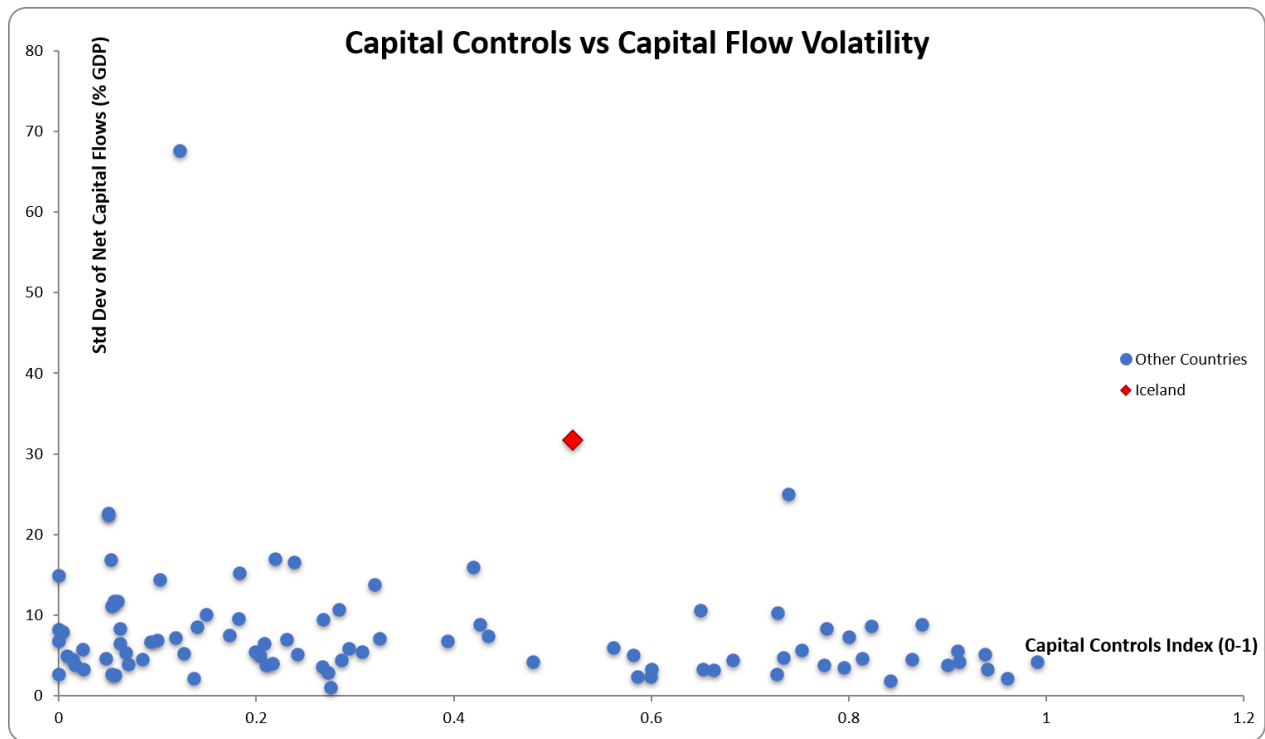


Notes: Rather than comparing Iceland to VSOEs as an aggregate, this chart compares Iceland's values to each VSOE separately, with the general findings still applying to all types.

Scatter plots depicted in Chart 4 and analysis reproduced in Table 3 suggest that capital controls and exchange rate regime factors alone explain little of the high volatility in Iceland’s capital flows, and it remains an outlier (of course, this does not consider factors other than the capital control or exchange rate regimes). Overall, but reflecting only in part its openness to trade and small size, the volatility of Iceland’s capital flows is relatively high, consistent with its exchange rate posing macroeconomic management challenges.

¹⁶ This may also explain the limited macroeconomic gains found by Breedon, Pétursson and Rose (2012) for small, rich open economies, like Iceland, from having a floating exchange rate regime.

Chart 4: Variation of Capital Flows (% of GDP) by Degree of Capital Controls (higher is more controls)



Notes: capital flow volatility does not have a close or significant relationship with capital controls, and in any case, Iceland remains an outlier with high volatility.

Being part of a large currency area might not only lower capital flow volatility but would also reduce the impact of any Iceland-specific idiosyncratic foreign shock (e.g., a large one-off, FDI in- or outflows) on the exchange rate and local financial conditions. Shocks would be buffered through the diversification and risk-sharing in the large euro area financial markets. The euro area economy being much larger than Iceland's (e.g., its GDP is only 0.2% of the euro area's) and the market for exchanging euros being much bigger will eliminate any exchange rate impact (and related over- or undershooting) of Iceland-specific shocks. Lastly, management and hedging of any residual exchange rate risk will be much easier compared to using Iceland's shallow foreign exchange and derivatives markets.

Table 3: Capital flows volatility by exchange rate regime

Data period 1999-2019; Limited by exchange regime classification.

Full Period (1999–2019)

Indicator	Iceland	Hard Peg (W)	Hard Peg (S)	Crawling/Tight (W)	Crawling/Tight (S)	Managed Float (W)	Managed Float (S)	Free Float (W)	Free Float (S)	Freely Falling (W)	Freely Falling (S)	Dual Market (W)	Dual Market (S)
Net Capital Flows	31.70	1.662***	2.542***	1.907***	2.819***	1.824***	2.461***	1.343***	1.316***	7.186***	6.929***	10.145***	12.423***
Net Direct Investment	19.69	1.524***	3.536***	1.238***	3.011***	2.159***	1.326***	0.947***	1.462***	1.611***	2.385***	1.961***	3.062***
Net Portfolio Investment	34.09	2.371***	5.598***	1.406***	2.339***	3.518***	2.007***	1.787***	2.049***	3.092***	2.973***	5.829***	5.705***
Net Other Investment	35.47	2.302***	6.562***	1.746***	2.215***	2.742***	2.603***	1.545***	2.022***	5.869***	5.385***	11.972***	12.408***

Crisis-Excluded Period (excl. 2008-2010, 2020-2022)

Indicator	Iceland	Hard Peg (W)	Hard Peg (S)	Crawling/Tight (W)	Crawling/Tight (S)	Managed Float (W)	Managed Float (S)	Free Float (W)	Free Float (S)	Freely Falling (W)	Freely Falling (S)	Dual Market (W)	Dual Market (S)
Net Capital Flows	20.89	1.581***	2.346***	1.936***	2.817***	1.456***	2.107***	1.321***	1.334***	6.904***	7.144***	10.145***	12.423***
Net Direct Investment	14.74	1.595***	3.692***	1.305***	2.839***	2.306***	1.294***	0.990***	1.545***	1.554***	2.109***	1.961***	3.062***
Net Portfolio Investment	34.65	2.451***	5.741***	1.428***	2.488***	3.502***	2.016***	1.779***	1.882***	3.132***	3.026***	5.829***	5.705***
Net Other Investment	34.41	2.400***	6.240***	1.789***	2.230***	2.793***	2.630***	1.463***	1.838***	5.368***	5.545***	11.972***	12.408***

Notes: Standard deviations. Stars indicate F-test significance. *** p<0.01, ** p<0.05, * p<0.10. Red = Iceland more volatile than regime group.

Interpretation; capital flow volatility does not vary in particular or expected ways by exchange rate regime (and Iceland compares poorly to all others). Regime classification is from Ilzetzki, Reinhart, and Rogoff (2019), Hard Peg, Crawling/Tight, Managed Float, Free Float, Freely Falling, and Dual Market, and only up to 2019. Capital flow volatilities are weighted (W) or simple (S) averages.

Collectively, analyses suggest less volatility. One could expect significantly less volatility in capital flows and a generally much reduced impact of any remaining shocks if Iceland were to join the euro. In turn, this would translate into less volatile local financial conditions. There are tradeoffs, of course, since being part of the euro area will no longer allow for an independent monetary policy and exchange rate adjustments to help the economy to absorb idiosyncratic shocks, either exogenous (e.g., a sharp drop in exports when commodity prices, e.g., fish, aluminum, decline) that are not fully shared with the euro area through other factors movements, or endogenous (e.g., due to poor policy or structural factors, e.g., a loss of competitiveness related to high real wages, a domestically generated financial boom that turns into a bust (as happened in 2008), or an unsustainable fiscal expansion. For these and other related trade-offs, see further analyses in chapters 1 and 4.

Financial development

Over a longer horizon, there could be gains in terms of financial system performance from being in a large currency zone.

Less exchange rate risks and larger markets Direct gains can come from moving transactions to within the same currency zone, which would ease the sector's risk management (banks and other financial institutions) and, relatedly, make for fewer and less binding exchange rate risk-related rules. Banks would have full and easy access to a larger, broader, and more stable pool of funds and, likewise, could invest in more assets without having to worry about exchange rate risks or having to incur a premium (if they previously hedged exchange rate risks). Institutional and other investors would likewise be able to invest in a larger set of financial assets and borrow from a wider set of sources with less risk, meaning higher returns or lower costs. The relatively easier risk management can allow institutions to somewhat lower their capital and liquidity buffers.¹⁷ And the government would as well have access to a much broader pool of investors and no longer incur a foreign exchange premium, lowering its costs.¹⁸

¹⁷ It is hard to separate what private sector behavior results from adjusting to the presence (or lack thereof) of exchange rate risk and what additionally results from binding microprudential rules on foreign exchange related exposures and risks (presumably, the rules are mainly motivated by market failures, not just by good private sector risk management). Considering the differences between institutions in various currency regimes is a way to try to capture the overall effects.

¹⁸ There is no formal analysis of the gains from having both no exchange rate risk and a large market for issuance, but the average costs of issuing in local currency since the crisis in Iceland has exceeded that of issuing in euro by some 3 percentage points of which perhaps 2 percentage points can be attributed to the expected depreciation of the ISK, leaving 1 percentage points for the exchange rate

Enhanced oversight Joining the BU would also mean that some banks would be directly supervised by the SSM (in principle, the three largest credit institutions, those larger than €30 billion, and any other ones deemed significant), and, if necessary, resolved under BRRD rules directly by the SRB or with its oversight (depending again, among others, on the bank's size). While Iceland already benefits from being part of the European System of Financial Supervision (ESFS), an even wider pool of expertise and a robust institutional setup could further enhance supervision. Also, a larger financial safety net—greater availability of liquidity assistance (with still a decentralized lender of last resort) and resolution funds—will add to (perceived) financial strength and may free up some (liquidity and capital) buffers now held by institutions for very adverse eventualities. Importantly, it could be a signal to investors as to the robustness of the regulatory, supervisory, safety net, and resolution regimes.

Competition gains EU entry and euro adoption could ease some regulatory burdens and make it easier for Iceland's financial intermediaries to operate in the wider European markets. While Iceland is already largely open to foreign competition, EU and euro entry could further ease entry and enhance its financial system's competitiveness. (This easier entry also applies to FDI in the real sector, which could represent a synergy. Over time, this could lead households and corporations to have access to a broader set of financial services at lower costs, which would translate into higher growth. All of this would come with some reduced regulatory flexibility and national autonomy. And some coordination and duplication costs may arise (e.g., in supervision). Being in the euro zone would make macroprudential policies more important (as noted, macroprudential policies can still be nationally determined, but subject to ESRB approval for some).¹⁹

Comparisons are difficult Many of these dimensions are hard to measure, and how they may vary, if at all, by currency regime (rather than legal or regulatory regimes) is even more difficult to assess than for financial conditions and capital flows. Financial development is driven by many factors, of which the regime is likely only a minor one (it has, to our knowledge, not been studied formally). Nevertheless, Iceland's financial system can be compared with that of eurozone countries and a group of small countries

premium and the "costs" of a small domestic market. At the same time, there are some "costs" when a sovereign borrows in a currency (the euro) over which it has no direct control, notably when stresses arise (De Grauwe and Ji, 2022). Box 1 analyses this in some more detail.

¹⁹ In case of extreme crises, contingencies such as restrictions on capital movements are as well still available within the euro area, as shown by the experiences of Cyprus and Greece.

after they joined the euro.²⁰ As these comparisons come with many caveats (e.g., it is not just the exchange rate regimes that differ), no causal inferences should be implied.

In Annex 2, financial systems are compared along, besides depth, three key dimensions—access, efficiency, and stability—with banking, capital markets, and non-banks considered separately (whenever available data allow). It shows that Iceland’s financial system is in many dimensions similar to that of the averages for the euro zone and small countries, but with some better and worse dimensions. Its banking system is deep and provides relatively more credit and better access for households than most of the comparators. Banks’ funding structure relies relatively less on deposits than the two comparison groups do. The main area where Iceland’s banking system scores less favorably is competition. A combination of high profitability and a relatively concentrated system could reflect fewer threats of entry, maybe as economies of scale only allow for a few banks, or because not all rules are on an international level playing field. Any competitiveness improvements due to joining the EU could then provide for long-term gains.

The financial system is stable today, but this reflects significant changes over time, as seen in some related indicators. While Icelandic banks’ overall liquidity position was worse than that of others before and immediately after their crises, much has improved since. Also, banks’ leverage and capital adequacy, which worsened during the crisis, are now much higher, and banks’ NPLs are lower than those of the other country groups. Iceland’s capital markets, which have had their difficulties as well, notably in new issuance, are now somewhat less developed than those of the euro area, but still above those of the small countries. Pension fund assets are relatively large, and life insurance and mutual fund assets mostly small. Overall, there could be gains as Iceland’s non-bank segment is less diverse and its investor base more concentrated compared to many eurozone countries.

More financial integration’s possible benefits Cross-border, Iceland’s post-crisis landscape can be typified as one of selective reintegration, outward in equities, but inward remaining constrained. Foreign portfolio investment in Iceland peaked just before the 2008 crisis but has since stayed low, with domestic equities held by foreigners below

²⁰ For euro-area, simple (unweighted) arithmetic averages were used with an expanding sample (when a country adopts the euro, its data is included in the average from that date forward). The small and medium-sized countries are those that ended up adopting the euro after its creation: Slovenia (2007), Cyprus (2008), Malta (2008), Slovakia (2009, but less data), Latvia (2014), Lithuania (2015), and Croatia (2023), with data again after adoption and then averaged.

the two comparators over the past decade, perhaps due to persistent foreign investor caution. At the same time, foreign equities held by residents (mostly those pension funds held in US dollar equities) have been increasing. This means a large currency mismatch, as liabilities to pension beneficiaries are in local currency. This currently adds downward pressure on the exchange rate to boost the current account but will reverse as demographic trends call for more payouts and as foreign assets are sold, leading to an ISK appreciation. Being part of the EU and the eurozone could reduce some of these consequences.

Other gains, costs and considerations

There would likely be other gains from euro and EU entry: a lower cost of capital; lower costs for exchanging currency; and some freed-up foreign exchange reserves. At the same time, mortgage markets and pension systems may deserve some attention.

Cost of Capital As noted, the cost of capital could be lower by joining a currency union through removing, or at least reducing, the premium for exchange rate risk, as well as from an enhanced monetary policy credibility (and from other mechanisms, such as better liquidity support in cases of financial stress and other greater institutional safeguards). Box 1 analyzes such possible effects by reviewing a sample of comparable countries, with gains both measured when actually experienced (i.e., when having joined the euro) and estimated (i.e., when analyzing the gains from joining, even when not doing so (yet)). From these experiences and analyses, the gain appears to be a cost of capital at least some 25 basis points lower. While this may appear small, it accumulates over time. And larger gains have been found for some countries (e.g., Lithuania and Croatia).²¹

²¹ See also Lagarde (2025), on the various benefits when Croatia adopted the euro in 2023, and Georgieva (2025), speaking when Bulgaria joined the euro.

Box 1: Cost of financing under different currency regimes

Analyzing countries that have adopted the euro and those that have not (yet) provides some insights into how exchange rate regime choices can affect borrowing (and lending) costs and, in turn, influence policy trade-offs. For those countries that adopted the euro, evidence suggests a substantial decline in borrowing costs due to less exchange rate risk and a boost to investor confidence. Conversely, countries (still) outside the euro area (not all can easily enter the euro) experience persistent exchange rate risk premiums (i.e., interest differentials not just reflect expected currency depreciation, but also some compensation for risk), with magnitudes depending on respective countries' macroeconomic volatility, monetary policy credibility, and depth of financial markets. This exchange rate risk premium can spill over (e.g., Kunovac and Pavić (2017) found euro area members to have, on average, 10% lower CDS premiums). At the same time, being in a currency union can impose some costs, notably at times of sovereign stress (explaining that the CDS gains outside crisis periods were larger, almost 35%). Table 1 tabulates these, and the box summarizes the commonality in the pricing of exchange and other risks.

For early euro adopters, a sustained lower cost of capital often followed, with estimated declines between 25 and 100 basis points, and over the longer-run interest rates (nearly) fully converged to those of others in the euro area. Estimates do vary by time periods and methodologies used, but all find the reduction to reflect to some degree the diminished currency risk and uncertainty about monetary stability. And benefits were more pronounced for economies with less credible fiscal frameworks.

Conversely, countries that remain outside the euro area continue to exhibit often moderate but measurable risk premiums, often in the range of 20 to 50 basis points, with the size influenced by the credibility of central bank actions and investor expectations regarding inflation control. This is consistent with the decomposition of Iceland's currency movements in Chapter - 4. While estimates are sensitive to inflation volatility, institutional strength, and perceptions of political risk, exchange rate risk contributes about half of the premium in these studies. Poland's experience shows that the premium can periodically spike, in its case to above 50 basis points during episodes of political or macroeconomic instability. Countries like Denmark have managed to limit their premiums by combining a narrow exchange rate band with euro area-linked monetary policy. Norway, Sweden, and the Czech Republic have opted for inflation targeting, with more monetary flexibility and a floating exchange rate to absorb external shocks, particularly important for Norway given its commodity exposure. This, combined with prudent fiscal and macroprudential policies, helped manage vulnerabilities and kept their exchange rate premiums low.

The adoption of the euro by Greece, Italy, Portugal, and Spain initially led to a sharp decline in bond yields as market expected fiscal convergence and less inflation risk. But during the euro sovereign debt crisis, investors priced in the possibility of redenomination during periods of fiscal stress. The magnitude of the redenomination premium varied by legal frameworks and political instability, as these affected the perceived likelihood and costs of a euro exit. For example, Italy's spreads surged during 2011 and 2012, driven by redenomination risk and fiscal concerns. While it is hard to separate redenomination risks from fiscal fundamentals, studies suggest that half of the risk premium then reflected concerns over a possible euro exit rather than domestic fiscal fundamentals. Even in years since, sovereign spreads have at times reflected some redenomination risks (e.g., Borri, 2019). More recently, spreads in the euro zone appear to mostly reflect markets' assessments of fiscal and growth differences, in part due to the European Central Bank's interventions to contain market stress (e.g., Kiss and Alipanah, 2024). Overall, though, events show that euro membership does not eliminate all sources of currency-related premiums.

Box Table 1: Cost of Financing and Exchange Rate Regime

(various studies, see Annex 3 for references)

Country	Exchange Rate Premium	Comments, including on Methodology
Countries that adopted the euro		
Croatia	Sovereign, corporate, and housing rates fell quickly by 50 -100 bp	Croatia already had a peg with the DM and then the euro. But analysis by its Central Bank still showed effects of entry, notably through a better credit rating
Italy	Sharp decline in yields	Driven by improved market confidence following euro adoption and related reforms, including to fiscal policy
Lithuania (study 1)	170 bp average reduction (2015–19); 120 bp lower on 10-year bonds	Euro adoption effects included a credit rating upgrade and reduced exchange rate risk. Estimated using synthetic control and DSGE models, interest savings increased over time.
Lithuania (study 2)	80 bp baseline reduction; annual savings of €334M	Driven by the elimination of exchange rate risk and improved credit ratings post-euro adoption. Based on interest rate differentials and sovereign spread compression
Countries that could adopt the Euro, but have not (yet)		
Czech Republic	Market yields persistently below the neutral curve in the local currency post-2009	Driven by low real rates, accommodative policy, and bond demand from unconventional measures. Gap from neutral helps reduce the impact of exchange rate risk premia and growth expectations using term structure models
Denmark	Exchange rate within a very narrow target zone. Stable funding, resilient under stress	Low premiums reflect reliance on robust market-based funding and central bank liquidity support. Stress tests confirm strong buffers and contingency tools; bond rollover clauses help mitigate shocks (e.g., to mortgage credit markets)
Hungary	20–30 bp identified via policy shocks; explains about 50% of short-term FX variance	Exchange rate premium driven by monetary policy uncertainty and investor response to surprises. Based on structural VAR estimates of FX premium shocks and their impact on the exchange rate
Poland	20–30 bp average annually; peaks >50 basis points	Driven by inflation risk, interest rate volatility, and less perceived policy credibility. Premium spikes during episodes of heightened macro instability, based on GARCH-in-Mean and SDF model estimates
Sweden	Negligible risk premium	Due to credible exchange rate policy and sterilized interventions. Interest differentials mainly reflect expected depreciation; even during devaluation risk episodes, premia remained modest and did not dominate rate movements.

<i>Countries outside the EU</i>		
Albania	High euro exposure historically, but declining	Driven by partial euroization of deposits and lending. External shocks expose vulnerabilities in euro liabilities, and central bank liquidity support preserved stability
Norway	Modestly higher borrowing costs: the krone functions as a shock absorber	Flexible exchange rate and independent monetary policy pay off. Currency depreciation cushions spillovers from the euro zone; domestic vulnerabilities are managed through macroprudential policies and strong fiscal frameworks
<i>Countries that adopted the Euro and experienced a period of sovereign stress or crisis</i>		
Greece	1,000 bp in the 2012 crisis peak	Driven by redenomination and legal risk priced into foreign-law bonds amid euro exit fears. FX premium surged as investors demanded compensation for currency and legal uncertainty within the euro area during sovereign stress
Italy	Spreads elevated at times; surged during the 2011–12 crisis	Redenomination risk during political and fiscal stress episodes led yields to surge, with about half of the increases attributed to euro exit fears despite stable public finances. The market remained sensitive, but ECB interventions restored stability.
Portugal	500 bp during the crisis	Redenomination risk was priced into foreign-law bonds relative to local-law instruments. Investor concern centered on repayment in devalued currency under euro breakup scenarios; effects notably though less severe than in Greece
Spain	88 bp in January 2012 (5-year CDS)	Redenomination risk inferred from USD vs. EUR CDS pricing. Premium reflects market stress and latent currency concerns, a gauge of perceived euro exit risk

Iceland-specific evidence largely confirms such sizes of the exchange risk premium. Some, now likely outdated, analysis comes from the CBI in its currency-option report from 2012. Using a 2-country DSGE model (1 small country and 1 large country), analysis then suggested a small decline in risk premium (10bp) without further financial integration with the larger counterparty, but rising to 50bp in the (more realistic) case of greater financial integration between the two countries. This suggests that even up to 50 basis points could be reasonable to assume for a lower premium when joining the EU and adopting the euro.²²

²² In the (English) summary of the CBI currency-option report from 2012, this is captured as follows (page 32): " ...the findings suggest that, other things being equal, the risk premia can be expected to decline with participation in a larger currency area. The greater the level of financial integration with the currency area, the larger the decline would be. The ensuing decline in domestic real interest rates

Of course, there are costs. Joining the currency union increases the exposures to real, financial, and fiscal shocks within the area. Not being able to depreciate the exchange rate also reduces flexibility to deal with excessively large public (and private debts) and thus introduces redenomination risks.²³ Currently, spreads in the euro zone reflect mostly assessments of fiscal and growth differences. But crises have revealed that even within a currency union, sovereign risk premiums can reemerge when fiscal sustainability risks rise, and market confidence in the irreversibility of euro membership is shaken. These costs (reviewed too in Box 1) have shown up for a few countries through redenomination premiums, which were as high as several percentage points. Each country must weigh these costs and related trade-offs based on its own macroeconomic and institutional structures and political capacity to absorb common shocks and meet policy constraints.

Exchange conversion costs. IMF (2024) shows that the bid-ask spread of the ISK is 10 times higher than that for the euro but also notes that, relatively, there is much less trading in the ISK. Box 2 analyzes the scope for saved exchange rate conversion costs from joining the euro. It reviews other countries' experiences, including those before they adopted the euro. The comparison confirms that the ISK spread is high (at 17.8 basis points, it is slightly lower than reported in the IMF paper, as it covers a different period, but close to the current bid-ask spread of some 20 basis points). Given the extremely low formal trading, only €2.3 billion in 2025, the implied explicit conversion costs as a share of GDP are very small for Iceland. But the low formal trading reflects that, according to CBI estimates, some 85% of trades are internal to banks (mostly retail users pay the bid-ask spread). Since the banks get compensated for doing this internal conversion through other business that they have with corporations, there is still an implicit cost. When using Breedon et al. (2023) estimated effective spread of 11 basis points and the combined formal and implied 2025 trading, the total conversion costs are some 13 basis points of GDP.

would mean reduced funding costs for domestic households and businesses, which would increase the domestic capital stock and raise per capita GDP permanently. Exactly how much the risk premium could fall — and therefore how much the domestic interest rate level could fall and the production level could rise — is highly uncertain, but it can be assumed that the findings reported in the chapter may underestimate the potential impact, as the general equilibrium model used does not take into account the possible effect of currency union membership on other risk premia, such as liquidity premia associated with small and relatively undeveloped domestic foreign exchange and financial markets.”

²³ Faced with too large debts, a large exchange rate depreciation can be a (necessary) choice to restore sustainability (in part by imposing costs on foreign creditors). Of course, it comes with some loss of reputation and possibly higher interest rates for some time.

Box 2: The costs of currency conversion (see Annex 1 for data sources)

The cost of conversion for a currency is difficult to calculate and even harder to attribute to economic agents in a specific jurisdiction. For many economies, trading in their currency happens largely offshore (in financial centers like NY and London), making it hard to identify parties involved. Trading may be between third parties that use the currency as a vehicle, as the US dollar is often for trade and financial transactions, or a proxy for other currencies, implying that related costs are not directly incurred by agents in the economy issuing the currency. Trading volumes may be low, yet spreads high, because conversions are bilateral or internalized by (local) banks and other institutions. For these and many other reasons, costs can be hard to calculate and compare across jurisdictions.

The table below provides historical bid-ask spreads for a number of countries before they adopted the euro and for some other countries. Iceland's historical spread, 0.178%, was similar to that of Croatia and Slovakia before entering the euro and of other SOEs, but above that of many other, larger countries. To compare, the current euro spread (converting to/from the dollar and for large interbank transactions) is typically just a basis point (0.01%) or slightly more. Turnover is low for the ISK, much less than in other countries, also as a share of GDP, meaning trading is not taking place, but rather internalized by banks. The explicit costs are therefore low for Iceland. But for other countries with less internalization, like Bulgaria and Lithuania, conversion costs were some 0.6% of GDP before they considered the euro. This suggests that actual costs for Iceland could be higher, maybe about 0.5% of GDP. For Croatia, which had already pegged its currency to the euro, the annual savings for the non-financial sector due to the disappearance of conversion costs were still estimated at EUR 160 million, or 0.19% of its GDP (Vujčić, 2024, 2025). Savings of this magnitude appear accordingly realistic for Iceland.

Country	Historical Avg. Bid-Ask Spread (%) (before euro, if adopted)	FX Volatility (until the year of the spread measure)	Daily Spot Turnover (EUR billions) for country (end-year of spread)	Historical estimated FX Cost (% GDP) for the country	Eurozone Member as of 2026
Brazil	0.098%	17.91%	13	0.17%	No
Bulgaria	0.062%	0.47%	2	0.58%	Yes
Croatia	0.179%	N/A	NA	0.19%	Yes
Cyprus	0.219%	0.91%	NA	NA	Yes
Czech Republic	0.138%	6.55%	4	0.83%	No
Denmark	0.035%	0.23%	32	1.14%	No
Finland	0.104%	N/A	4	0.79%	Yes
Iceland	0.178%	18.42%	0.004	0.01%	No
Latvia	0.150%	4.09%	2	2.69%	Yes
Lithuania	0.100%	3.89%	1	0.60%	Yes
Malta	0.370%	2.67%	NA	NA	Yes
Mexico	0.070%	16.49%	25	0.45%	No
New Zealand	0.095%	11.87%	9	1.64%	No
Norway	0.073%	6.97%	16	0.77%	No
Slovenia	0.090%	2.53%	NA	NA	Yes
Slovakia	0.145%	4.73%	2	1.29%	Yes

When adopting the euro, there would still be some conversion costs for trade and financial transactions not yet invoiced in euros (already some 32% of trade). And these shares would likely rise when Iceland enters the euro zone. For trade and financial transactions not in euros in the new regime, formal conversion costs will be much lower than today, as the wholesale spread for exchanging euros against other major currencies is only a few basis points. And for residual risk management, euro exchange rate hedging markets are much more developed than ISK's. Another economic loss avoided is that firms currently keep more currency abroad to avoid conversion, presumably with a low remuneration. As such, it is reasonable to assume the true economic cost avoided by joining the euro is closer to that of comparable countries, perhaps at least some 10 basis points of GDP.

Foreign exchange reserves (FXR). In addition to lower conversion costs would be savings from holding less foreign exchange reserves (FXR). Being subject to large shocks, (V)SOEs (very small open economies) typically have to hold more FXRs for exchange rate credibility and occasionally intervention to avoid the adverse impact of capital flows volatility. CBI has set a minimum target of 120% of the adequate FXR target suggested by the IMF. At 20% of GDP, Iceland's FXRs are indeed relatively high.²⁴ FXRs of euro area economies are typically below standard reserve adequacy metrics (it is free floating and is a global reserve currency): collectively, euro area countries currently hold about €1.4 trillion, or just 8.5% of the euro area's GDP (€16.8 trillion). When excluding gold (some €890 billion) and SDRs (some €190 billion), the euro system's liquid reserves are even lower (about €334 billion or just 2% of its GDP). Joining the euro area could thus bring down the level of official FXR required significantly. A conservative estimate would be that euro adoption "frees up" some 10 percentage points of GDP of official FXR. These funds could be transferred to a Sovereign Wealth Fund (SWF), and, since investments need not be as liquid, earn a somewhat higher return than current assets. Alternatively, they could pay down some government debt. Additionally, because of less exchange rate risks, the private sector would be less required and incentivized on its own accord to hold large amounts of foreign assets abroad, which tend to yield relatively little.

The saved costs of carry (i.e., additional income earned or debt servicing saved) would be the difference between the return on short-term safe and liquid instruments and a class of longer-term, somewhat riskier instruments, or the current long-term debt costs versus the return on liquid safe assets (all expressed in local currency). These costs of carry may

²⁴ CBI adopted in April 2025 a policy to increase its FXR through regular purchases (until November 2025, €12 million per week, and then €6 million as its reserves corresponded to "over 120%" (CBI's press release). Purchases stopped on December 5 when its reserves reached \$7.8 billion.

be 1 to 2 percentage points, which translates to some 10-20 basis points of GDP for a conservative 10 percentage points of GDP lower official FXR reserves.²⁵ Not materially enough to determine a currency choice, but a gain nevertheless.²⁶ Additionally, one can add some fraction of the safe foreign exchange assets now held by the private sector.²⁷

Iceland's mortgages and pension funds. For many countries, influence on the residential property market is often the strongest monetary policy transmission channel, especially when mortgages have floating interest rates. About 30% of Icelandic residential mortgages are CPI index-linked, with a fixed rate for 3 or 5 years, potentially reducing overall monetary policy impact. But many euro area and other countries have long-term fixed-rate mortgages too and within the euro zone, some mortgage markets have indexing features similar to those in Iceland. Yet transmission appears to be adequate in these economies. Evidence for Iceland confirms this (Box 3 Monetary Bulletin, 2022/4; see also Pétursson, 2023). Joining the EU and adopting the euro could increase competition in the market for long-term (regular or index-linked) bonds and overcome some of these frictions. Direct intervention in this market to enhance monetary policy transmission may thus not be necessary and, anyhow, not easy to implement. Euro adoption will allow for much lower open currency exposures (e.g., pension funds today have large dollar exposures, which, in terms of purchasing power terms are risky) and provide a larger market for investments and funding, which should ease pension fund management. Nevertheless, there could be some other reasons to monitor and possibly intervene in this market.²⁸

²⁵ The Debt Management Office calculates the net performance of FX reserves (after financing costs of the actual mix of foreign and domestic sources) over the period 2016-2024 at some 76 million ISK). Due to exchange rate and interest rate changes, the annual ISK costs varied considerably, from a high of 150 million in 2016 to a gain of 97.4 million in 2020, with much of the costs due to the higher costs of domestic financing vs of foreign financing (145 million vs 40 million over the period).

²⁶ One way to assess the overall gain between the two regimes is the 10% of GDP saved in foreign exchange reserves times the present value of the net (carry) costs of financing it, which for a low gain of 1 percentage point would at a real interest rate of 2 percent amount to some 5% of GDP.

²⁷ It would be some fraction of the assets currently held abroad in euros, as these no longer have exchange rate risk. It also relates to the gains of having easier access to the larger euro markets.

²⁸ The activities of the pension funds could need attention from competition, macroprudential or other perspectives. As pension funds today have sizable roles in the mortgage market, both directly and through their acquisition of mortgage-backed bonds from other lenders, they influence, besides monetary policy transmission, the pricing and availability of mortgage finance, with related competition and efficiency effects. And macroprudential instruments (such as restrictions on high loan-to-value mortgages) need to continue to include pension funds to be effective.

Conclusions

Analyses presented suggest that the volatility and procyclicality in local financial conditions and capital flows will likely be lower for Iceland when joining the euro. Being part of the currency union and benefiting from its much larger financial markets will ease diversification and thereby reduce financial risks. It will reduce the impacts of Iceland-specific, idiosyncratic capital flow and other global shocks, notably as the exchange rate will move little and is unlikely to be procyclical. One can expect a lower cost of finance since the exchange rate risk premiums in equities and fixed income assets will be less than currently. There are also some clear gains in reduced currency conversion costs and less need for foreign exchange reserves and other precautionary assets. While some benefits may be relatively small, they cumulate over time and many ease economic management.

In terms of financial development and access to financing, which is generally good in Iceland, one could expect some gains, largely due to easier access to a wider set of borrowing, lending, and investment opportunities and more competition. It can lower the costs of financing somewhat, as borrowers and investors effectively have broader sets of funding and investment choices (making it easier to meet their goals or fiduciary responsibilities) and can more easily manage risk, improving risk-return trade-offs. This can lead to social gains, e.g., somewhat lower premiums for pension beneficiaries in the future. Membership in the EU and the euro zone can also enhance the financial system's efficiency. This, in turn, helps institutions, households, firms and the sovereign. Higher volumes, lower costs, and new forms of external financing and investments, and a more efficient allocation of resources combined with a lower cost of capital, boost overall economic performance and productivity can translate over time into higher income levels.

At the same time, there are some costs to entering the euro. Obviously, monetary policy can no longer adjust to Iceland-specific shocks, and financial conditions will be even more geared towards those of the euro zone as a whole. There will be less control over regulation and less discretion in supervision. Longer-term is the notably greater demand on fiscal sustainability to avoid the (perceived) risks of sovereign redenomination adversely affecting financial conditions. Importantly, only key financial aspects related to currency choice and related tradeoffs are analyzed here, notably not those real economy and labor market issues to be considered (Chapters A and B). Analysis neither addressed any of the steps nor the various tradeoffs on the path to joining the euro in the future.

Annex 1: Explanatory Notes to Tables and Figures on Capital Flows (prepared by Nicolo Pastrone) and for Conversion Costs (Box 2).

Research Framework

Objective	Analyze capital flow volatility across monetary regimes to assess implications for Iceland's currency arrangement, including potential Euro adoption.
Key Research Questions	<ol style="list-style-type: none"> 1. How does capital flow volatility vary across different monetary regimes? 2. What are the determinants of capital flow volatility in small open economies? 3. How do external shocks affect capital flow patterns differently across countries? 4. What policy implications emerge for currency union decisions?

Time Periods

Full Period	1999Q1 - 2025Q1 (105 quarterly observations)
Crisis-Excluded	Excludes 2008-2010 (GFC) and 2020-2022 (COVID-19) — 81 observations
Capital Controls (CS5)	1999-2017 (Fernandez et al. database coverage)
Exchange Rate Regimes (CS5)	1999-2019 (Ilzetzki-Reinhart-Rogoff classification)

Indicators Analyzed (% of Nominal GDP)

#	Indicator	Description
1.	Net Capital Flows	Financial Account balance excl. reserves — total net flows
2.	Net Direct Investment	FDI net acquisition of assets less net incurrence of liabilities
3.	Net Portfolio Investment	Portfolio investment net (debt + equity combined)
3a.	Debt Securities	Portfolio investment — debt securities component
3b.	Equity & Investment Fund Shares	Portfolio investment — equity component
4.	Net Other Investment	Other investment net (loans, deposits, trade credit, etc.)

Normalization: Quarterly BOP flow (USD) x 4 / Annual Nominal GDP (USD) x 100 = % of GDP

Comparator Groups

Eurozone	19 Euro-area member states (weighted and simple averages) <i>Countries: Austria, Belgium, Cyprus, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Portugal, Slovakia, Slovenia, Spain</i>
Small Open Economies (SOE)	6 comparable small open economies (weighted and simple averages) <i>Countries: Aruba, Bahamas, Brunei Darussalam, Malta, Mauritius, Seychelles</i>
Baltics	3 Baltic states — before/after Euro adoption (weighted and simple averages) <i>Countries: Estonia (joined Euro 2011), Latvia (2014), Lithuania (2015)</i>

Exchange Rate Regime Classification (Ilzetki-Reinhart-Rogoff)

Hard Peg	No separate legal tender, currency board, or pre-announced peg
Crawling/Tight	Crawling peg, crawling band, or de facto peg with narrow band
Managed Float	Managed floating with no pre-determined path for exchange rate
Free Float	Independently floating exchange rate
Freely Falling	Freely falling (annual inflation > 40%)
Dual Market	Dual exchange rate with parallel market premium

Statistical Methods

Volatility Measure	Standard deviation of quarterly capital flows (% of GDP)
F-test	Two-sided F-test for equality of variances (Iceland vs. comparator group)
Significance Levels	*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$
AR(4) Model	Autoregressive model of order 4 for impulse response and persistence analysis
RMSE	Root Mean Square Error from 4-step-ahead AR(4) forecasts
Half-Life	Quarters for impulse response to decay to 50% (from AR(4) coefficients)
AIC / BIC	Akaike / Bayesian Information Criteria for model selection
Weighted Average	GDP-weighted mean across countries in a comparator group
Simple Average	Unweighted arithmetic mean across countries in a comparator group

Data Sources

IMF Balance of Payments (BOP)	Quarterly capital flow data via SDMX API (BOP6 methodology)
IMF World Economic Outlook (WEO)	Annual nominal GDP for normalization to % of GDP
Fernandez et al. (2016)	Capital control measures index (1999-2017), used in Chart 4
Ilzetki, Reinhart & Rogoff (2019)	Exchange rate regime classification (1999-2019), used in Table 3
Bloomberg / Reuters	Bid-ask spreads for conversion cost analysis (Box Table 2)
BIS Triennial Survey	Foreign exchange turnover data (Box Table 2)

Detailed Methodologies and Summaries

Case Study	Focus	Methodology	Key Finding
Case Study 1: Iceland vs. Eurozone (1999-2025)	Cross-sectional volatility comparison — Iceland's independent monetary policy vs. Eurozone stability	F-tests for variance equality across 6 indicators, weighted and simple group averages	Iceland shows significantly higher capital flow volatility across most indicators

Related outputs: Table 1 (Volatility), Chart 1 (Time Series)

Case Study 2: Euro Adoption Impact — Baltic Countries	Temporal comparison of capital flow volatility before and after Euro adoption	Before/after analysis for Estonia (2011), Latvia (2014), Lithuania (2015)	Mixed evidence for volatility reduction; country-specific patterns emerge
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Related outputs: Table 1 (Volatility), Chart 1 (Time Series)

Case Study 3: Iceland & Small Open Economies (1999-2025)	Size-adjusted comparison — Iceland vs. 6 comparable small open economies	Multi-group volatility comparison with F-tests across 14 capital flow indicators	Iceland patterns vary significantly across different comparator groups
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Related outputs: Chart 3 (VSOEs — mean and std dev comparison)

Case Study 4: Comprehensive Statistical Analysis (1999-2025)	Advanced time series modeling of capital flow dynamics across groups	F-tests, AR(4) models, impulse response half-life, RMSE prediction	Systematic volatility differences with varying persistence patterns
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Related outputs: Table 2 (RMSE / AR(4) results)

Case Study 5: Capital Controls & Exchange Rate Regimes	External data integration — financial openness and regime effects on volatility	Capital controls correlation (1999-2017) and regime-based F-tests (1999-2019)	Complex relationships between capital controls, exchange rate regimes, and volatility
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Related outputs: Chart 4 (Capital Controls Scatter), Table 3 (Regime Volatility)

Color Coding Legend (Tables 1 and 3)

Red cells	Iceland is significantly MORE volatile than the comparator group
Green cells	Iceland is significantly LESS volatile than the comparator group
Blue cells	Iceland's own standard deviation (reference column)

Significance stars: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$ (two-sided F-test)

Data Sources for Conversion Costs (Box 2)

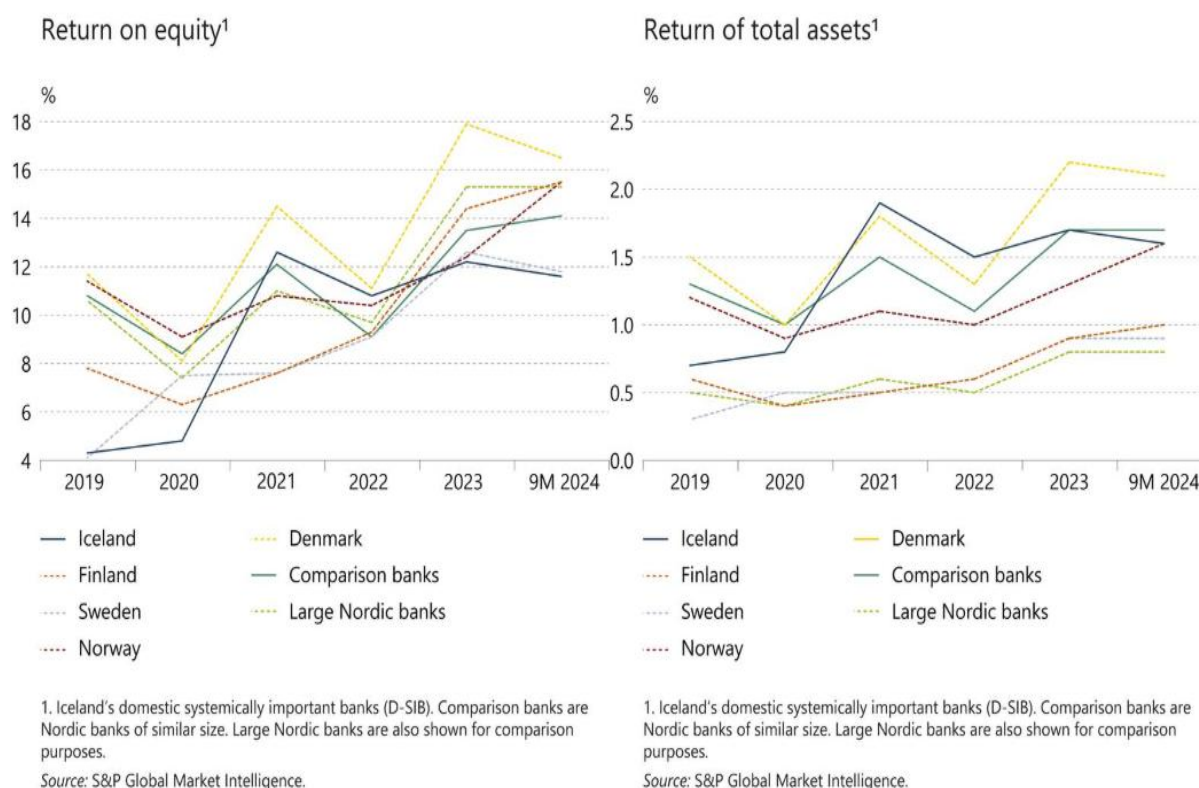
- Bloomberg
- Reuters
- BIS Triennial Central Bank Survey of Foreign Exchange and OTC Derivatives Markets
- BIS Working Papers No 366: Currency Momentum Strategies (Menkhoff, Sarno, Schmeling & Schrimpf), Table A1
- DB EM Currency Handbook, Financial Markets Investing
- Republic of Lithuania: Staff Report for the 2003 Article IV Consultation (IMF Staff Country Reports, Issue 295)
- Case Studies in Monetary Policy Implementation at Different Stages of Market Development

Data sources for conversion costs (Box 2): Bloomberg; Reuters; BIS Triennial Central Bank Survey of foreign exchange and over-the-counter (OTC) derivatives markets; BIS Working Papers No 366 Currency Momentum Strategies by Lukas Menkhoff, Lucio Sarno, Maik Schmeling and Andreas Schrimpf, Table A1; DB EM Currency Handbook, Financial Markets Investing; Republic of Lithuania: Staff Report for the 2003 Article IV Consultation—Supplementary Information on Financial Sector Developments in: IMF Staff Country Reports, Issue 295 (2003); Case Studies in Monetary Policy Implementation at Different Stages of Market Development.

Annex 2: Iceland’s financial system performance, efficiency, and financial stability: Comparative Charts²⁹

Data source: FinStats Database, World Bank (1980–2024), except for the first chart.

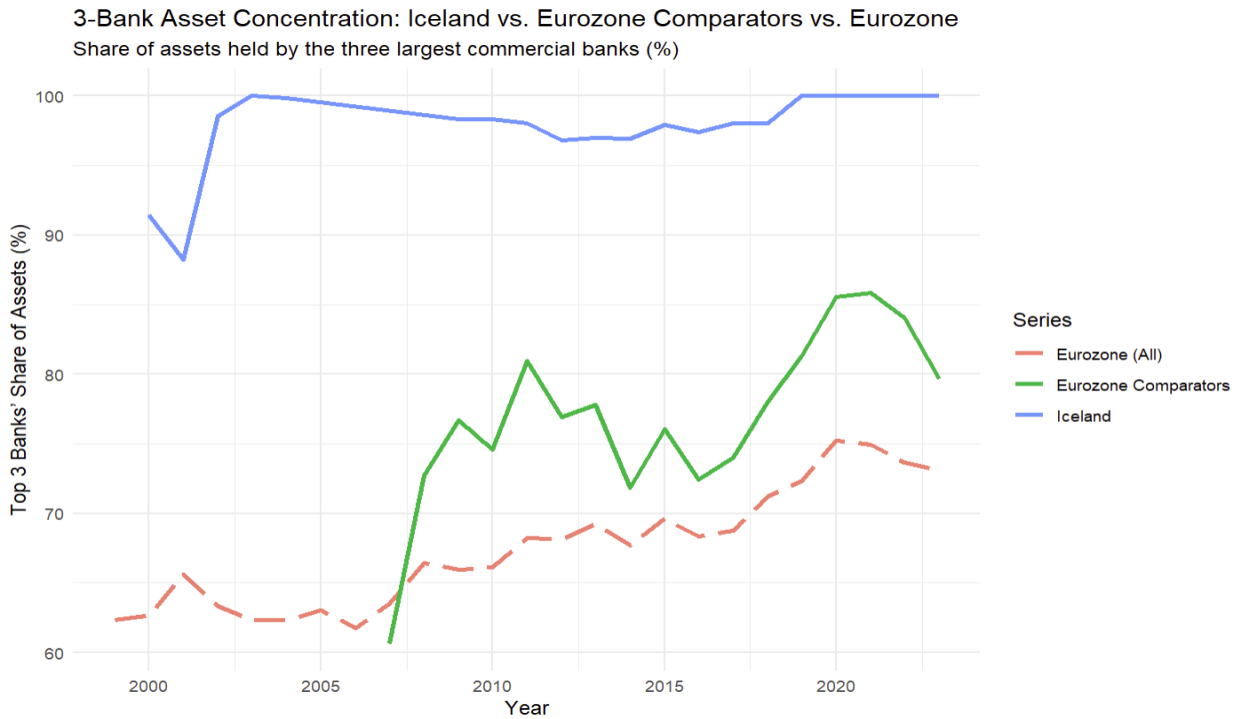
Methodology: Comparison of Iceland to EU countries that adopted the euro after 2002: Slovenia (2007), Cyprus (2008), Malta (2008), Slovakia (2009, but has less data), Latvia (2014), Lithuania (2015), and Croatia (2023). These countries are somewhat similar in size and economic structure to Iceland. The comparator group is the average for these countries after they adopted the euro. And the average of all Eurozone countries is also added.



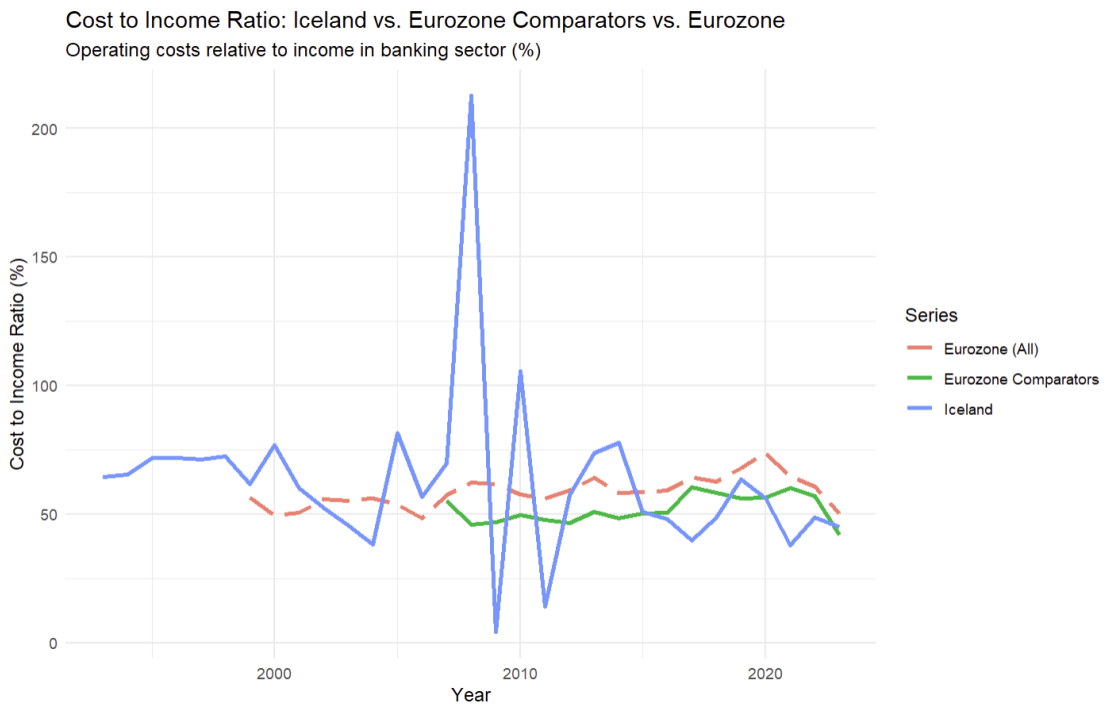
What follows are the summary charts on key aspects, with some explanatory notes.

Notes: For Iceland, profitability data do not come from the FinStats database but from the Central Bank of Iceland and S&P. Return on equity and return on assets data show that the Icelandic banking system compares favorably to many of the comparators, singling out the Nordics, with above-average returns on assets and similar to many countries’ average returns on equity. But this higher profitability could reflect more limited competition in Iceland.

²⁹ Prepared by Alex Þór Júlíusson and Una Margrét L. Reynisdóttir when at the Ministry of Finance.

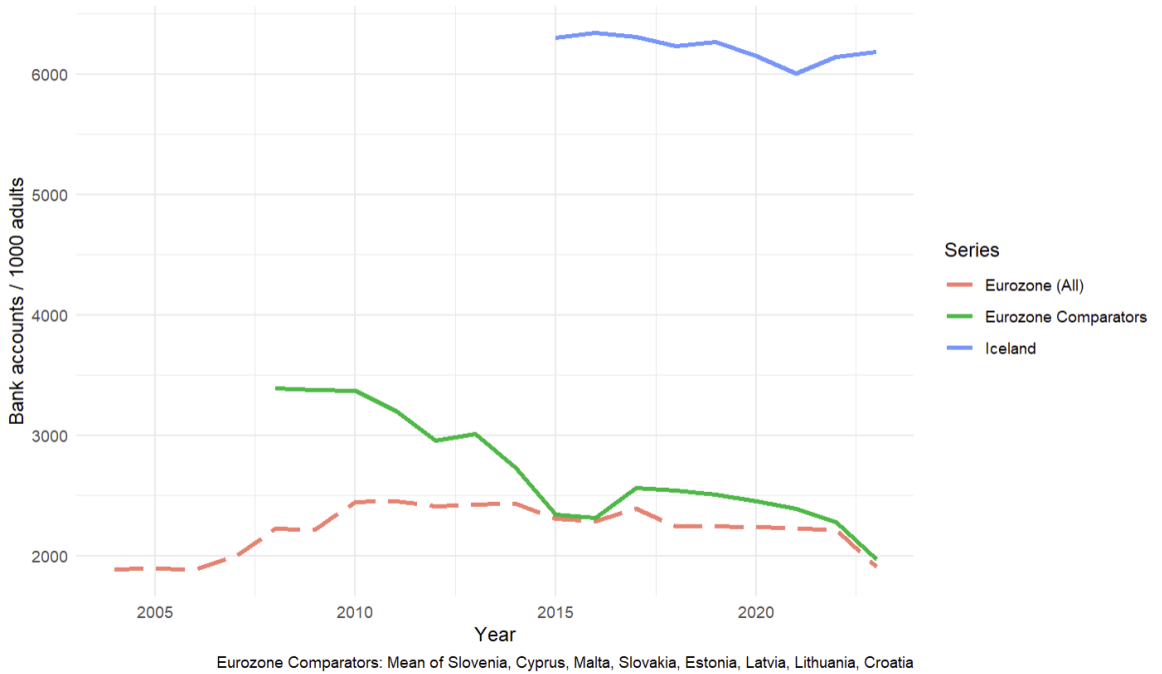


Notes: But the good profitability performance may reflect a less competitive environment, with relatively fewer banks present (a high concentration).

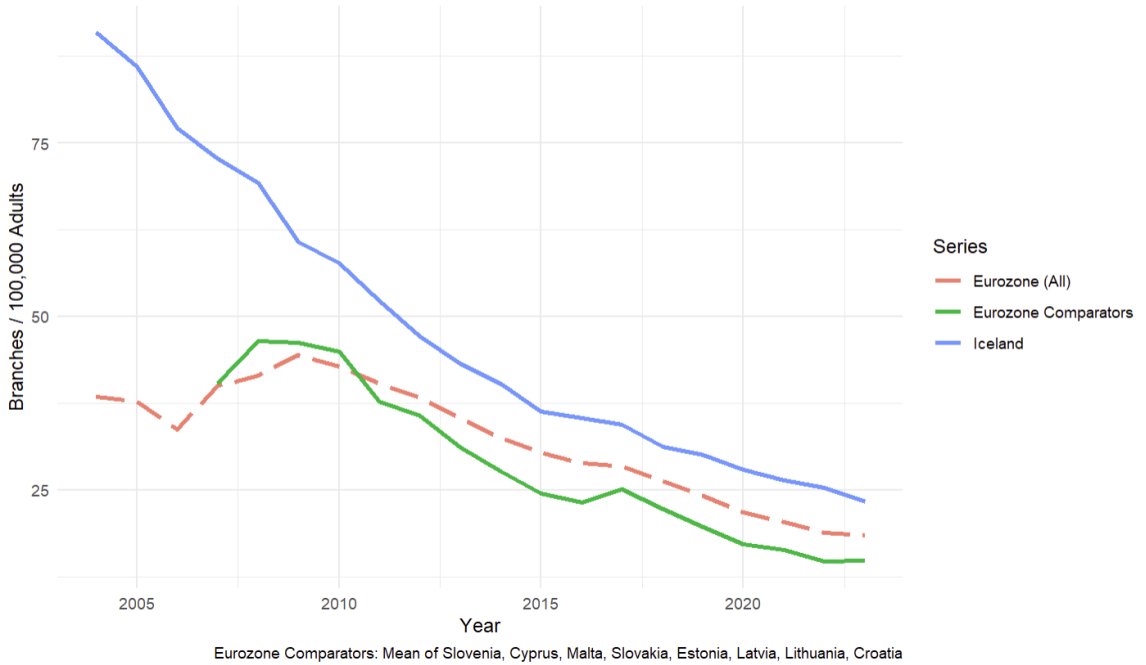


Notes: The somewhat limited competition is supported by at times worse cost-to-income data, suggesting less pressure to maintain costs. Note the data are heavily influenced by the financial crises when income, the denominator, dropped sharply.

Bank Accounts per 1000 Adults: Iceland vs. Eurozone Comparators vs. Eurozone
 Number of depositors with commercial banks per 1000 adults.

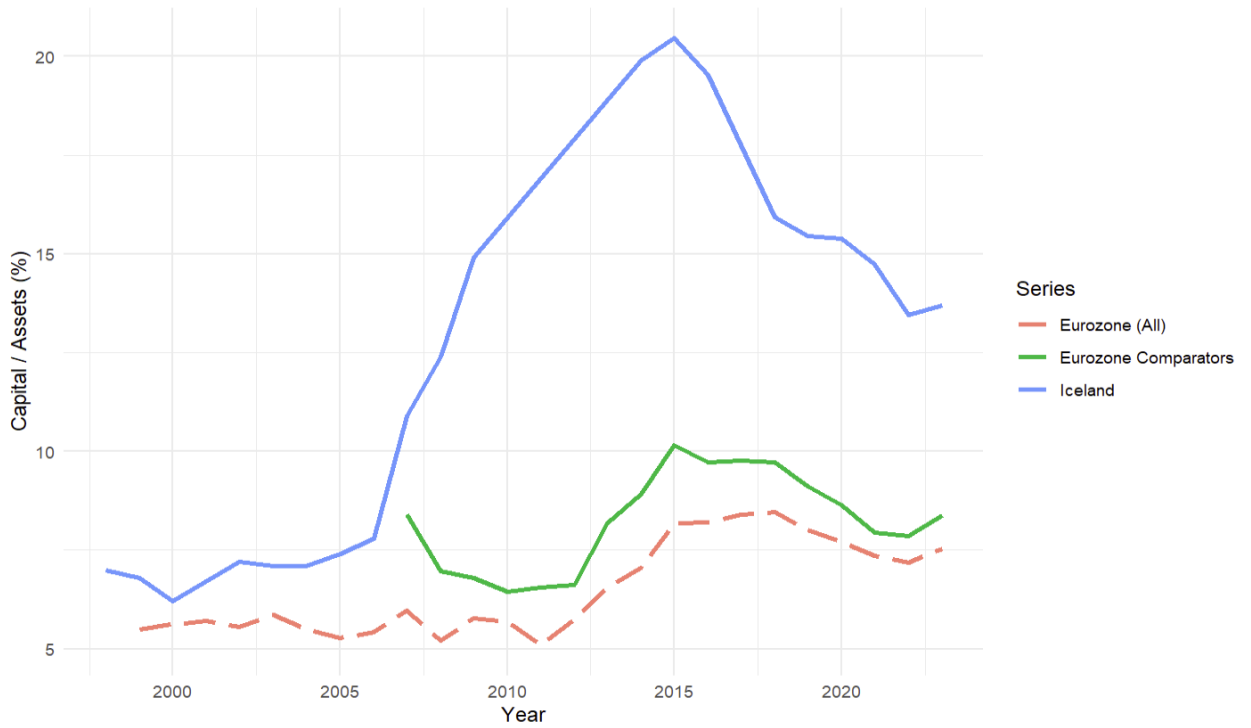


Commercial Bank Branches: Iceland vs. Eurozone Comparators vs. Eurozone
 Number of branches per 100,000 adults

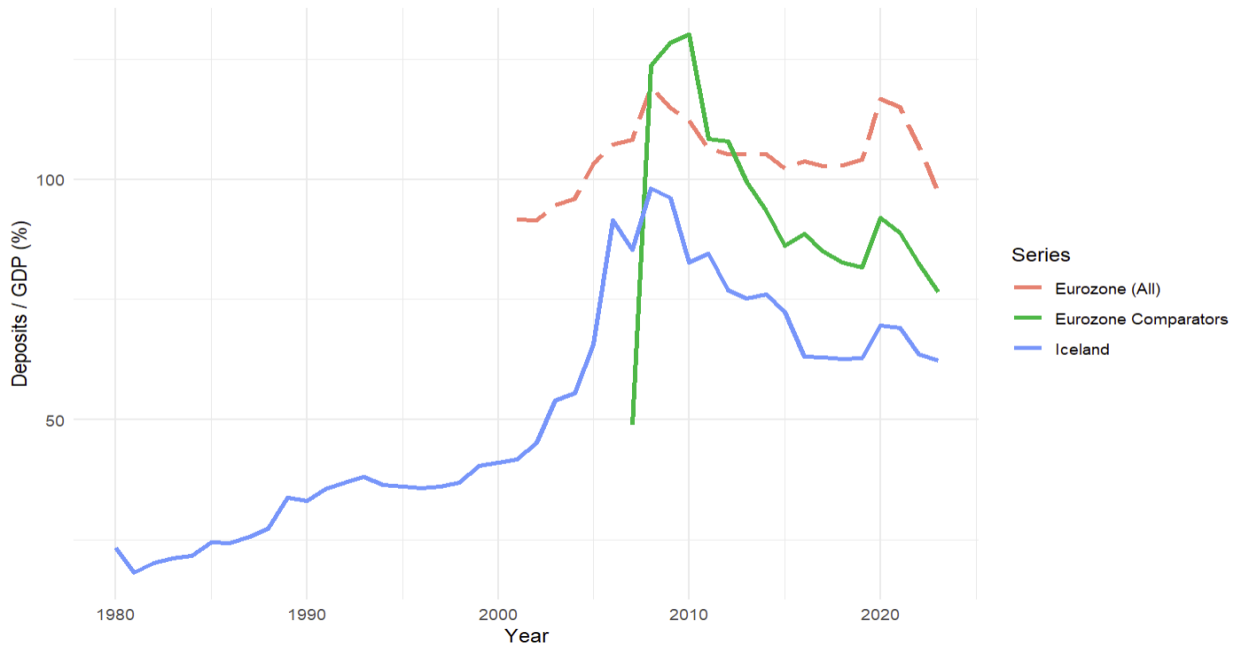


Notes: Access to financial services is good as shown by the high bank accounts per person and the easy access to branches (which reflect the population density and relative size).

Bank Capital to Assets: Iceland vs. Eurozone Comparators vs. Eurozone
Capital as a % of total bank assets

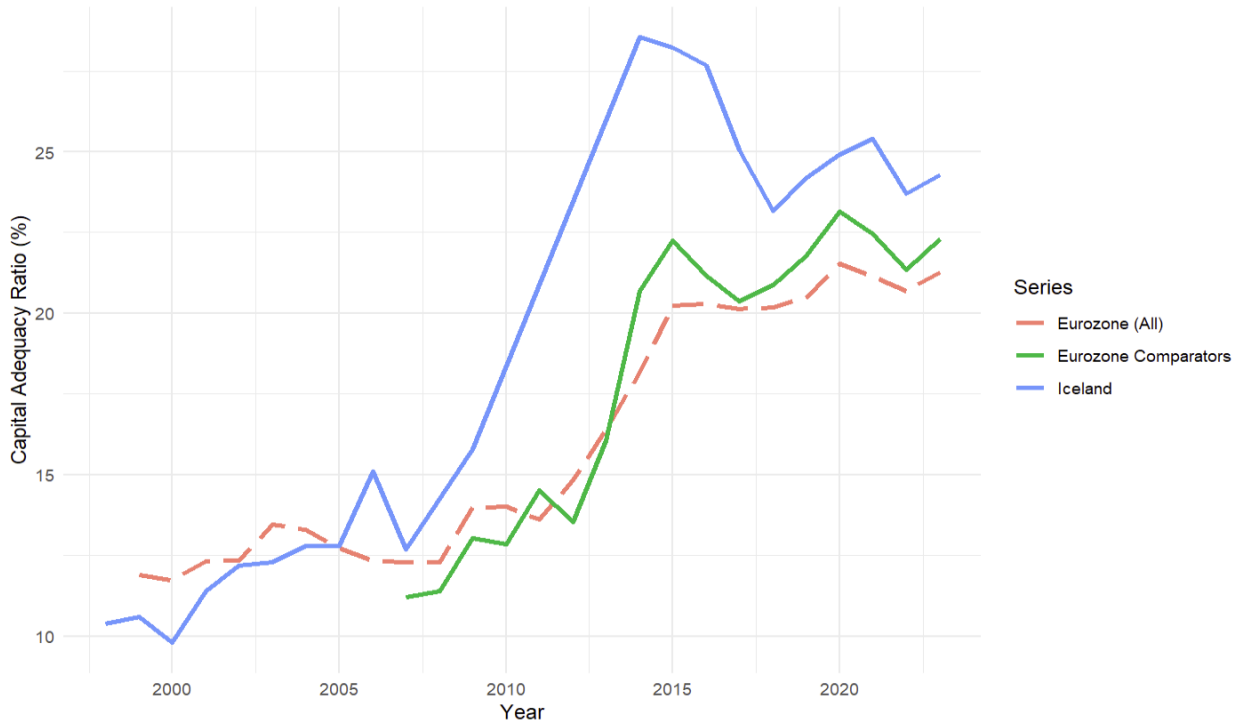


Bank Deposits to GDP: Iceland vs. Eurozone Comparators vs. Eurozone
Total bank deposits relative to GDP

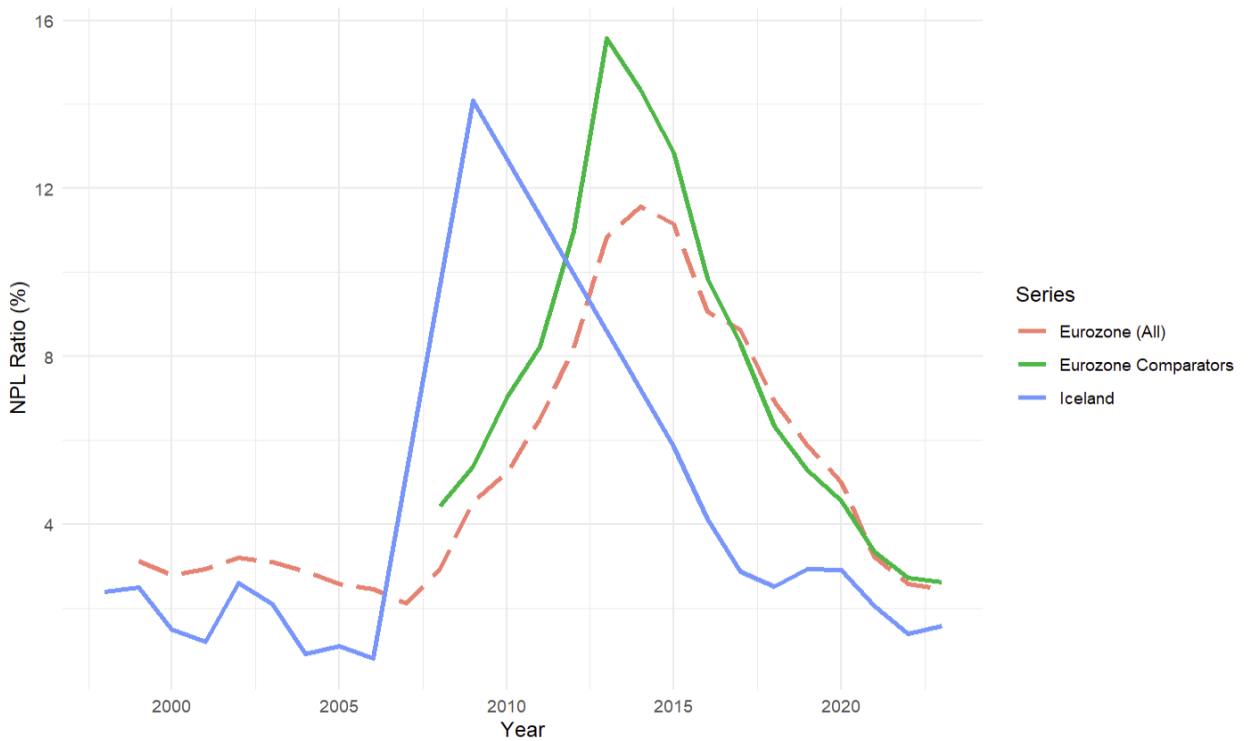


Notes: The Icelandic banking system today is less leveraged than the other banking system but was before its financial crisis more leverage. It also has still a smaller deposit base today. Not shown is sovereign debt held by banks, which was a big driver of the variations in balance sheet over time, but public debt has now declined below the euro averages.

Capital Adequacy Ratio: Iceland vs. Eurozone Comparators vs. Eurozone
Regulatory capital as a % of risk-weighted assets

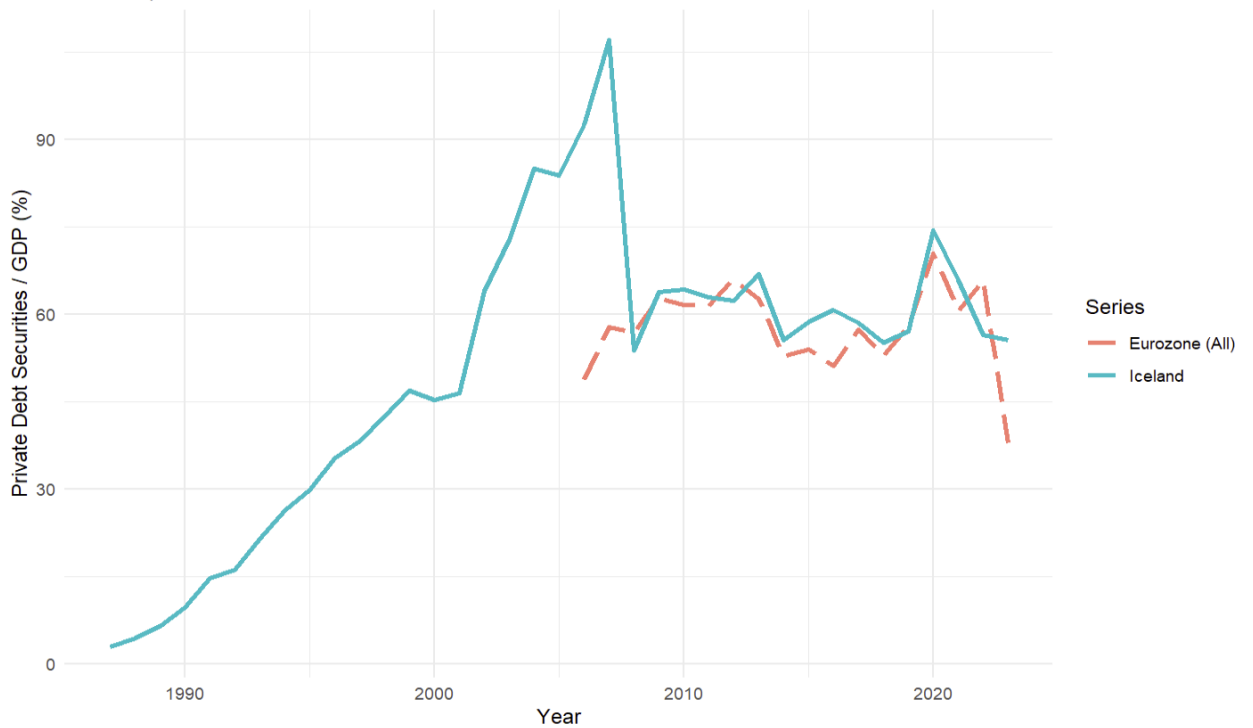


Non-Performing Loans: Iceland vs. Eurozone Comparators vs. Eurozone
NPLs as a % of total gross loans

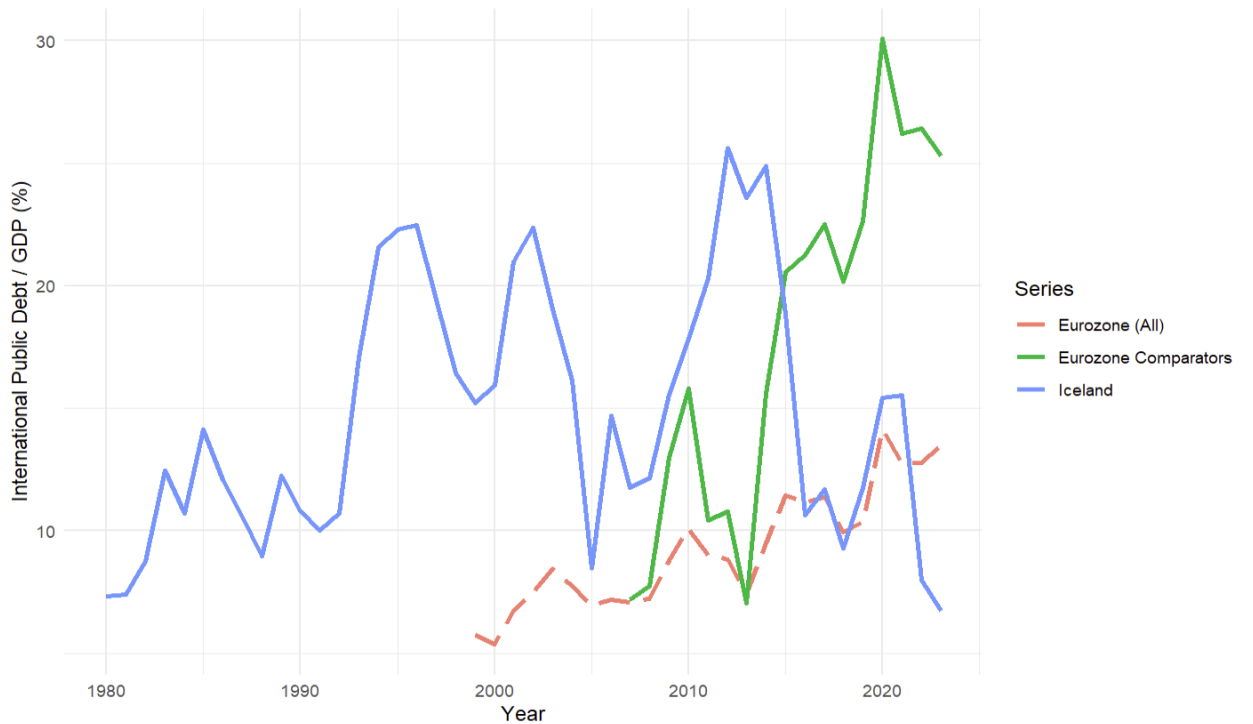


Notes: Capital adequacy, using risk weighted assets, has improved much in Iceland post its financial crisis and is now above comparators, while its NPLs are now below comparators.

Domestic Private Debt Securities Outstanding: Iceland vs. Eurozone Comparators vs. Eurozone
Value of private sector bonds as % of GDP

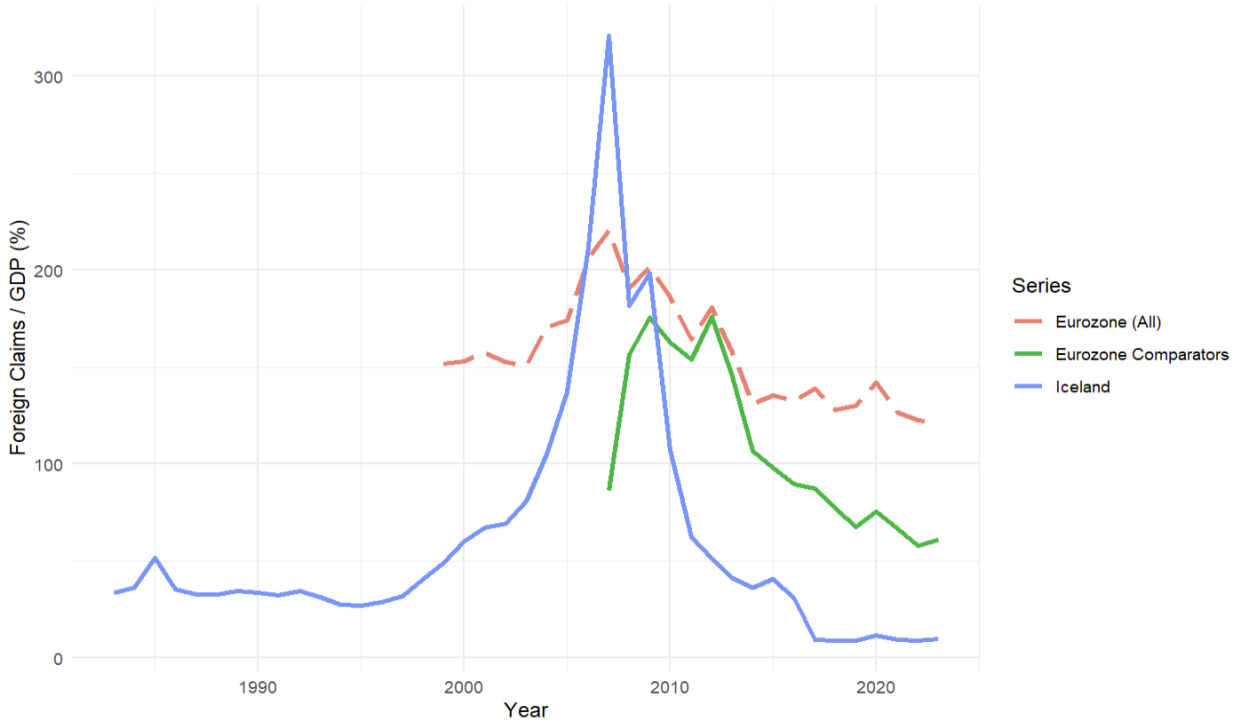


International Public Debt Securities: Iceland vs. Eurozone Comparators vs. Eurozone
Outstanding international public bonds (% of GDP)

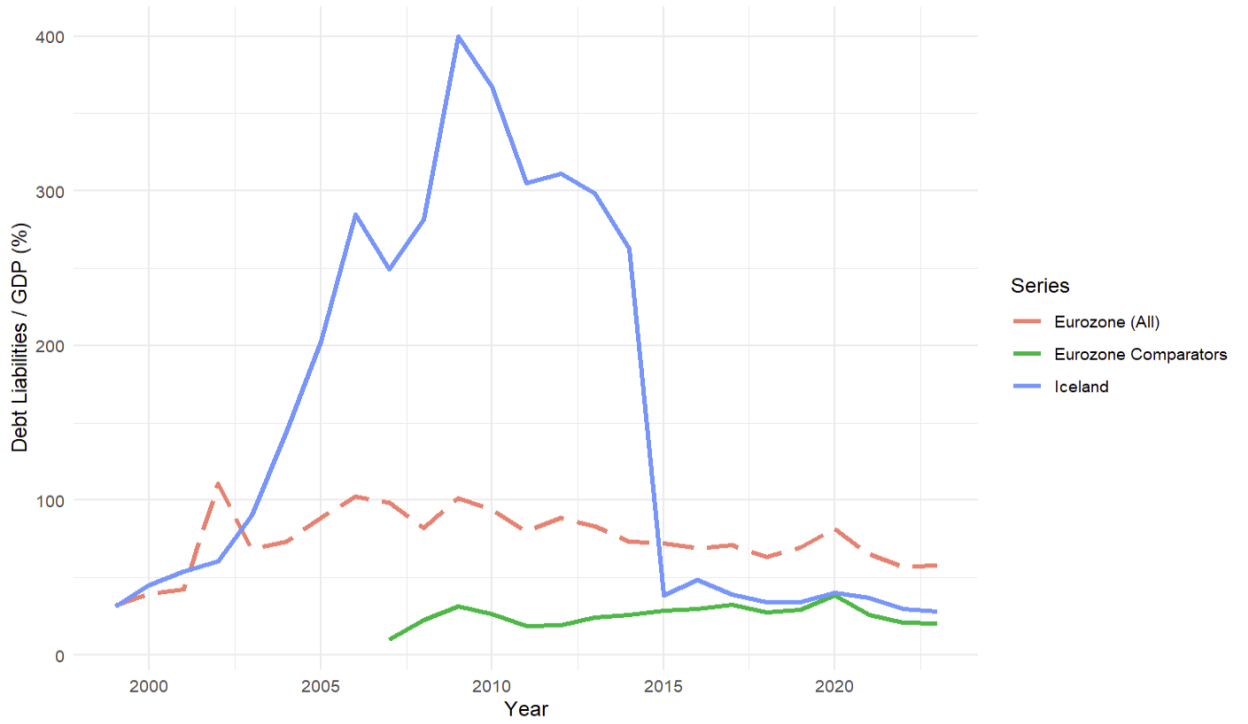


Notes: Capital markets have had some difficulties, reflecting financial crises, with domestic private bond markets now roughly at the euro area average, whereas international public bonds are far below the comparator and somewhat below the euro area average.

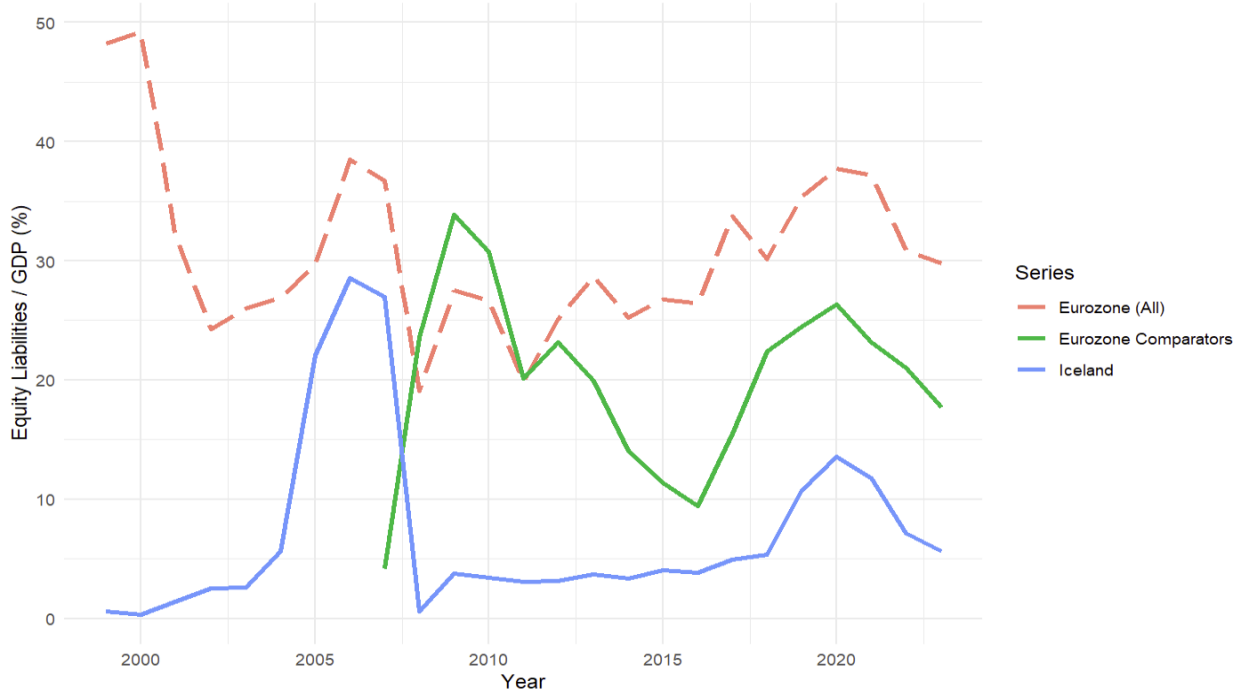
Foreign Bank Claims (% of GDP): Iceland vs. Eurozone Comparators vs. Eurozone
 Consolidated foreign claims of BIS-reporting banks on the domestic economy



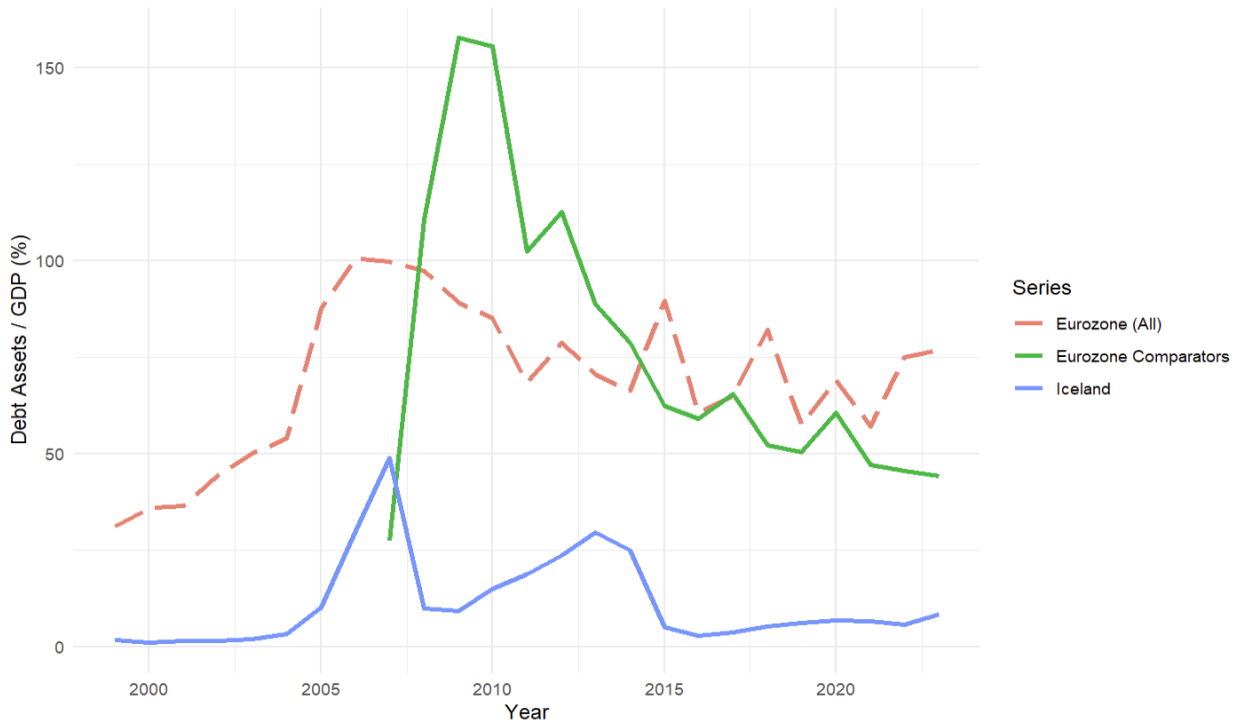
Portfolio Debt Liabilities: Iceland vs. Eurozone Comparators vs. Eurozone
 Domestic debt held by non-residents (% of GDP)



Equity Portfolio Liabilities: Iceland vs. Eurozone Comparators vs. Eurozone Domestic equities and fund shares held by foreigners (% of GDP)

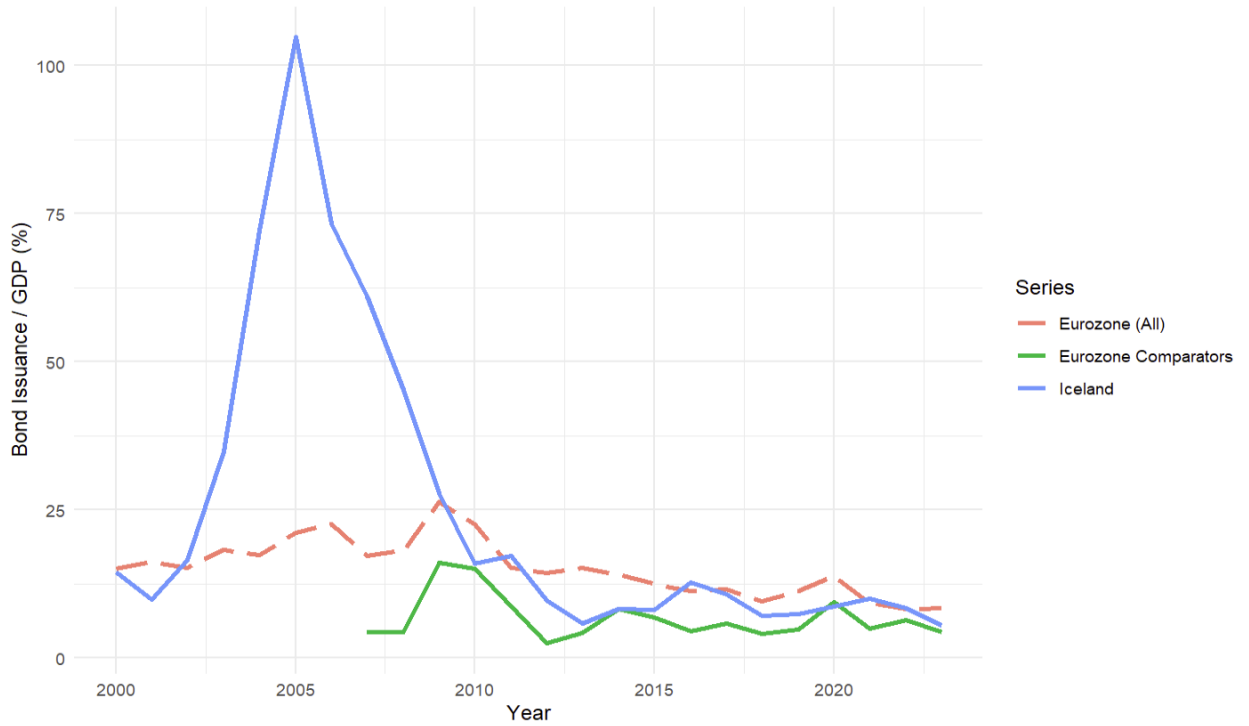


Portfolio Debt Assets: Iceland vs. Eurozone Comparators vs. Eurozone Foreign debt securities held by residents (% of GDP)



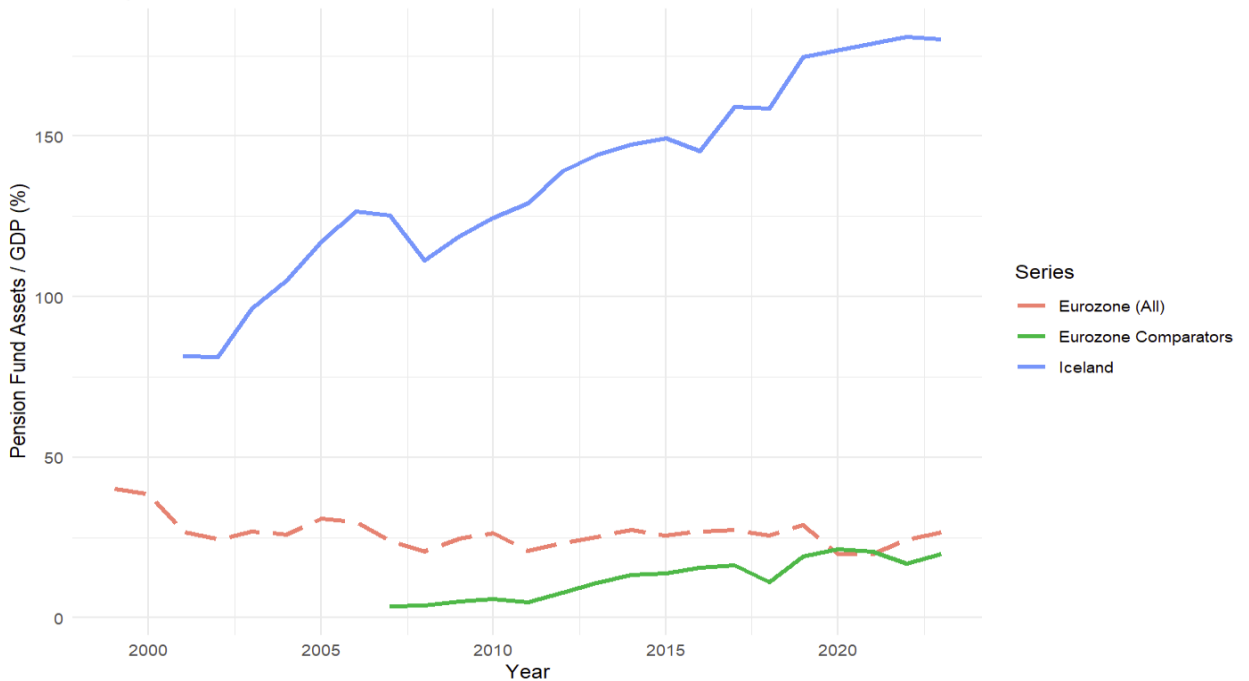
Notes: Foreign claims, covering bank, debt, and equity liabilities, have largely declined post financial crises, a reflection of some reluctance of foreigners to invest in Iceland, and are now less than comparators. Outward portfolio debt investments are structurally relatively low. This makes for less volatility, but also less financial integration.

Total Bond Issuance: Iceland vs. Eurozone Comparators vs. Eurozone
Annual volume of new bond issuance (% of GDP)



Notes: After the financial crisis, there have been less new bond and syndicated loan issuances, but much less so for Iceland relative to comparators.

Pension Fund Assets: Iceland vs. Eurozone Comparators vs. Eurozone
Total pension fund assets as % of GDP



Notes: Related to demographics, mandatory participation, high older age labor participation, and some insurance provision, pension funds dominate the institutional investors space, while insurance assets (not shown) are relatively less than in others.

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A Report on 'Currency Matters'
for the Iceland Ministry of Finance and
Economic Affairs

CHAPTER - 4

May 13, 2026

Chapter 4 – Assessing the sources and implications of currency shocks

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Introduction

Economies experience shocks: These can be internally generated or come from abroad; they can originate from demand fluctuations or supply issues; shocks also can come from financial markets. An important area for research is how these shocks propagate through the economy and how domestic policy responds. Given the focus of this Report on 'currency matters', the questions span

(1) Whether the currency response to the shock dampens or amplifies the effect of the shock on the domestic economy.

(2) Whether the currency itself is the source of the shock, for example coming from changing risk attitudes in international financial markets.

Adopting the euro or retaining the Icelandic krona has two dimensions. The first is the currency choice, but the second is the role of the Central Bank. Retaining the Icelandic krona also retains the Central Bank to react to currency moves as they propagate through the economy. To the extent that the krona amplifies any shocks and/or is the source of shocks, the independent central bank may find it more challenging to stabilize the economy. Adopting the euro implies also adopting the European Central Bank's policy rate and both will affect the source and propagation of shocks to the Iceland economy.

This chapter focuses on the currency itself, and using a common method to compare Iceland with the other Nordic economies, evaluates:

(1) What factors – domestic, external, financial -- are most prominent in Iceland's currency variation, and does this differ from other Nordic economies with different currency regimes?

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(2) Given a specific currency move, does the source of that shock – domestic demand, supply, monetary policy, or global supply, or the currency risk premium -- matter for the magnitude of pass-through to inflation. Does the source of currency variation differ from other Nordic economies? Does Iceland's pass-through differ from other Nordic economies?

On the first question, the previous chapters noted that depending on the source of the shock, the Icelandic krona had either a stabilizing or amplifying effect on the domestic economy, to either complement domestic monetary policy or worsen the inflation-output trade-off facing the central bank. Therefore determining the relative importance of factors associated with the currency variation in the data, and comparing Iceland to the other Nordic economies, may give guidance as whether adopting the euro might stabilize the economy to a greater degree than the actions of an independent Central Bank of Iceland.

On the second question, a key propagation mechanism of the currency variation to the domestic economy is how it passes through to change import prices to then affect domestic inflationary pressures. Understanding how pass-through varies depending on the source of the shock, and comparing Iceland with other Nordic economies, may give guidance on whether adopting the euro would change pass-through in a way more beneficial to economic stabilization relative the actions of the independent the Central Bank of Iceland.

Summary of Methods and Findings

Three different empirical approaches are deployed to consider these questions.

- The *semi-structural model* of Iceland's economy (so-called QMM). This is one of the models in the CBI's tool kit and offers benchmark findings for Iceland. (Danielsson, A. et al, 2019)
- A *financial market structural VAR of currency variation*. This new empirical method uses daily financial market data to evaluate the sources of currency variation considering domestic macro and monetary policy factors, foreign macro and monetary policy factors, and domestic and global financial risk sentiment factors.
- A *macro structural VAR on currency variation and pass-through*. Quarterly macro data evaluates how the source of the currency shock affects economic performance. The specific shocks are domestic demand and supply, monetary policy, currency risk premium, global transitory versus permanent supply shock.

Since joining the euro affects currency variation and constrains independent monetary policy, it is important to evaluate what roles an independent currency and independent monetary policy have played in stabilizing the economy. Iceland's experience with the krona is often compared to the experience of other Nordic economies which among them have a full representation of currency regimes, from floating to pegged to using the euro itself.

The latter two models are run for all the Nordic economies so as to compare Iceland along the dimensions of the sources of currency variation, the implications for economic performance, and potential challenges for central bank policy.

- The semi-structural model finds that krona variation dampens Iceland's demand shocks but not currency risk premium shocks.
- The financial market data and macro data SVAR models of currency variance find that financial market factors and domestic supply shocks are particularly important for variation in the Icelandic krona; these factors are less important as a source of variation in the Danish krona DKK/USD or for Finland which uses the euro. Monetary policy is challenged to respond to external financial market factors or domestic supply shocks as these tend to be trade-off inducing.
- The macro SVAR model of pass-through finds that monetary policy in Iceland has to respond more robustly, as compared to the two other floating-currency Nordic economies, to counter the exchange rate's effect on GDP in the case of a domestic demand shock and to counter the effect of the currency adjustment on inflation in the case of the nominal shocks, such as to the currency risk premium or a global oil price shock.

The following sections address these methods and findings in more detail.

Semi Structural Model of Iceland

The *semi-structural model* of Iceland's economy (so-called QMM). (Danielsson, A. et al, 2019) This is a one of the models in the CBI's tool kit. Specific exercises from this benchmark model for Iceland serves as a comparison for the two new methods.

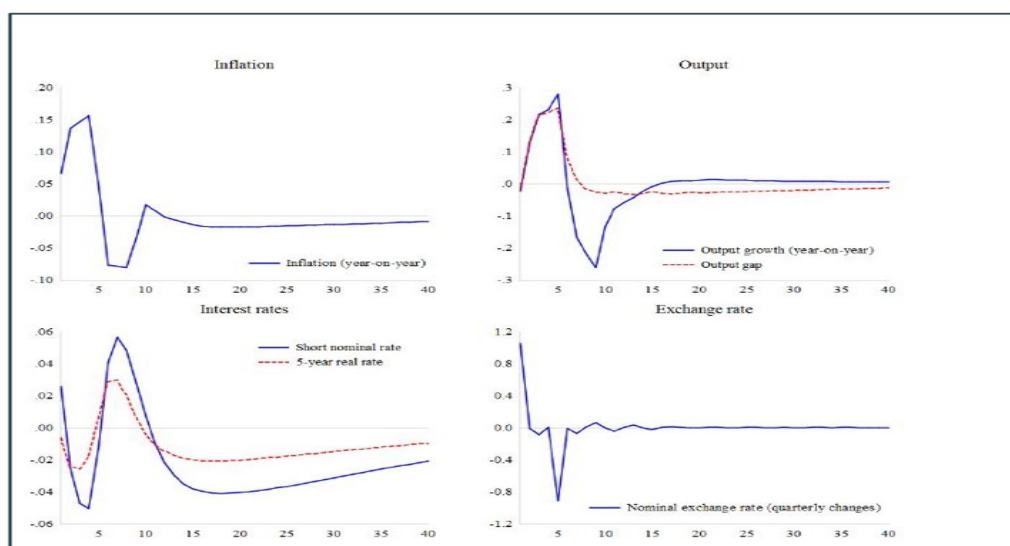
The semi-structural general equilibrium model concludes that krona dynamics dampen foreign and domestic demand shocks. For a domestic demand shock, monetary policy and the currency work together to offset the consequences of this shock for inflation. That is, a positive domestic demand shock tends to increase inflation, but also tends to appreciate the currency. As monetary policy tightens in response to inflation, the currency and monetary policy work together to bring inflation down. These results are

consistent with the findings in Chapter 1 using a SVAR. That said, the forecast error variance decomposition finds that domestic demand shocks play a relatively small role in inflation developments.

In the QMM model if the shock originates in the currency market through a rise in the risk premium that depreciates the krona, monetary policy amplifies the shock as it first tightens to temper the inflationary consequences of the depreciation, but then it eases policy as inflation is estimated to moderate and activity in the economy deteriorates. (Chart 1) The estimated high pass-through coefficient on the currency shock and forward-looking nature of the QMM model are important ingredients for this amplification outcome. This amplification result is consistent with the findings from Chapter 1 from a global VIX shock.

Important questions remain: How important are the various types of shocks – for example, domestic demand or currency risk premia -- for currency dynamics? Does pass-through vary depending on the source of the shock to the currency? Does Iceland’s currency variation differ in its sources or implications from other Nordic economies, particularly Denmark, pegged to, or Finland, using the euro? These are investigated in the two new analyses, which suggest that pass-through may be slower and smaller for Iceland and that currency risk premia associated with capital flows might be particularly important for Iceland. These together suggest that the Iceland’s central bank faces particular challenges to stabilize the domestic economy in the face of these sources of currency variation.

Chart 1 Impulse Response Functions, QMM model, currency risk premium shock



Note: From Figure 12.3. An exchange rate shock (deviations from baseline) in Danielsson, A. et al, 2019

The financial market model of currency variation

As discussed in Chapter 3, international capital flows are an important factor underlying Iceland's currency variation. High currency volatility is mirrored in capital flow volatility, which is high by all metrics, and is not just associated with crisis periods. Therefore a focus on the relationship between financial markets and currency variation makes sense.

Capital flow and currency variation can come from economic fundamentals, such as domestic macro environment and policy decisions, or from financial sentiment factors (expressed via currency risk premia) or financial spillovers from foreign fundamentals and risk sentiment. An inflation-targeting central bank may need to respond to this currency variation, whether originating domestically or not, to lean against factors that could propagate domestic inflation. In the Icelandic case, where the central bank operating procedure is inflation-targeting-plus (with the plus being a focus on the currency variation itself), understanding the relative roles for these various domestic and spillover macro fundamentals and financial sentiment factors for currency variation is particularly relevant.

New analysis prepared for this Report builds on research by Brandt et al (2026) and Brandt and Burr (2024). This method uses daily financial market data from 2009 to 2025 to estimate sign-restricted SVARs for Nordic bilateral exchange rates. The observed bilateral currency variation against the USD is decomposed into three blocks (8 variables): 1) domestic macro fundamentals and monetary policy; 2) US and EA, for each area, macro fundamentals and monetary policy; and 3) financial sentiment associated with domestic and global financial markets.

The unique contribution of this research is that the macro and policy environments are measured using financial market data rather than macro data. In addition, the financial market measures of financial sentiment allow a consideration of how currency variation may be affected by global financial risk sentiment as well as by financial risk sentiment towards domestic financial assets.

This model of currency variation should not be interpreted as factors that 'drive' currency variation. Rather it is an accounting for the contributions to the observed exchange rate movement. Nevertheless, to the extent that external macroeconomic, policy, and financial spillovers dominate currency variation, the central bank faces greater challenges to buffer the effect on the domestic economy.

A Nordic comparison is facilitated by using the same accounting decomposition, the same US and EA variables, the same global financial sentiment variable, but different

domestic macro and policy variables, domestic financial sentiment measure, and bilateral exchange rate against the USD.

SVAR data and sign restrictions

For each country, the baseline information set includes the domestic 10-year government yield and domestic equity index; euro-area OIS rates and euro-area equity index (EUROSTOXX price index); US equity index (S&P 500 index); and the bilateral exchange rate versus the USD (with an additional assessment of the ISK/EUR). Financial sentiments are proxied by (i) a global sentiment factor measured by the OFR Financial Stress Index (FSI), and (ii) a country-specific sentiment factor constructed as a residual from the country spread (government 10-year yield less policy rate) orthogonalized with respect to the OFR FSI.

All data are daily 2009 to 2025. Reported are (a) absolute contribution shares to compare across countries the relative importance of the blocks of factors, and (b) time-series historical decompositions to describe time-series dynamics.

The preferred model specification has sign restrictions that consider global vs country-specific financial risk sentiments and is agnostic about whether financial risk sentiment necessarily appreciates or depreciates the domestic currency.² Arias et al (2018) as discussed in more detail in Brandt et al (2026) are the foundation for the sign restrictions and shock identification. A key empirical observation among asset prices is the co-movements of bond yields, stock prices, monetary policy, and the exchange rate. The sign restrictions in the 8-factor benchmark model have the following rationale.

- Tighter domestic monetary policy should increase the domestic government bond yield, reduce equity prices, and appreciate the domestic currency against the USD. These are the sign restrictions in column 1.
- A more robust domestic macroenvironment should raise equity prices, and appreciate the currency against the USD; the sign restrictions in column 2. There is no restriction on the relationship between domestic macro and the domestic government bond yield since that depends on the inflation outcomes, among other things.

² The Appendix examines the sign restrictions of the tighter proposition that capital flows associated with a 'risk-on' global environment should appreciate the domestic currency versus the USD, whereas a global environment of 'safe-haven/risk-off' should depreciate the currency vs the USD. These tighter restrictions assume that 'risk-on' shifts capital from the US market and USD into other markets and currencies, whereas 'risk-off' or 'safe-haven' does the opposite.

- Tighter monetary policy in the Euro area should raise the EU 10-year government yields and reduce equity valuations, which is assumed to be associated with an appreciation of the domestic currency against the USD, as the euro appreciates relative to the USD. Column 3.
- A more robust euro area macro environment should raise equity prices, which would be associated with an appreciation of the domestic currency against the USD, as the euro appreciates relative to the USD. Column 4.
- Tighter US monetary policy should reduce US equity prices and appreciate the USD, hence the negative sign on the domestic currency versus the USD. Column 5.
- A more robust US macroenvironment should raise equity prices, but no sign constraint has been imposed on the domestic currency to USD. Column 6.
- If global financial sentiments are risk-off, then capital would, on balance flow out of equities in general, and be associated with an appreciation of the dollar (safe haven) and therefore a depreciation of the domestic currency versus the USD. Column 7.
- If global financial markets sour on the domestic financial market, domestic equities should fall, and controlling for the global financial factor, funds should rotate into domestic government bonds³; and through this channel the domestic currency could appreciate. This combination of falling domestic equities and an appreciating currency reflects a bond-market inflow channel: foreign investors rotating into domestic bonds bid up the currency while pressuring equities. This distinguishes Column 8 from both the domestic macro shock (Column 2: equities up, currency appreciate) and global risk sentiment (Column 7: equities down, currency depreciate).

³ This rotation may also be associated with actions the domestic monetary authority takes to lean against outflows to avoid a depreciation-inflation-monetary policy amplifying feedback loop as discussed in the QMM model.

Table 1 Sign restrictions for the benchmark 8-factor SVAR identification of Sweden & Norway & Iceland (Domestic currency / USD)⁴

	Domestic monetary policy	Domestic macro	EA monetary policy	EA macro	US monetary policy	US macro	Global risk (OFR)	Domestic risk (residual)
	1	2	3	4	5	6	7	8
Domestic GOV 10-year	+							
Domestic Equity	-	+					-	-
EA 10-year			+					
EA Equity			-	+			-	
Global financial risk (OFR)							+	
Country financial risk (residuals)								+
US Equity					-	+	-	
Domestic FX/USD	+	+	+	+	-		-	+

Summary findings – 2009 to 2025 averaged

Spillovers from euro area macro and monetary policy conditions and from financial sentiment factors dominate currency variation accounting for nearly 30% each. For ISK/USD, domestic macro and policy conditions are relatively less important and the domestic financial risk sentiment factor relatively more important in the accounting decomposition of the ISK/USD currency variance. For ISK/euro, the global financial sentiment share falls, indicative of the relative importance of USD in capital flows and ISK variability.

The first assessment using this financial market empirical approach to decomposition of currency variation is to average over the whole time period, to add the macro and policy blocks together (given the endogeneity of these two factors over a long time period),

⁴ Somewhat different restrictions are appropriate for Denmark and Finland, as shown in Appendix II.

and to focus on the relative size of the global versus the domestic financial sentiment factor. The calculation where the decompositions sum to 1 abstracts from the variation in the currency itself, summarizes the relative importance of factors across blocks, and provides a compact cross-country assessment of the contributions. Table 2.

For Iceland, the euro area spillovers account for about 28 percent of the variation in ISK/USD, closest to the shares for Denmark and Finland, which are most closely aligned to the euro area macroeconomics through trade and aligning to the ECB policy (directly for Finland and indirectly for Denmark through the peg). (Blue highlight in Table 2)

US macroeconomic and Federal Reserve spillovers account for a lower share of currency variation for all the economies. The somewhat higher share for Denmark may be due to unique trade-in-pharmaceutical-product relationship with the US. (Green highlight in Table 2)

The sum of global and domestic financial sentiment factors also account for about 28% of the ISK/USD variation, similar to that for the Sweden and Norway, which also have floating exchange rates and a bit higher than the sum of financial sentiment shares for Denmark and Finland.⁵

Assessing the two types of financial sentiment separately, the floating Nordic economies have a higher share of currency variation accounted for by the domestic financial risk sentiment factor whereas Denmark and Finland have lower shares of currency variation coming from the domestic financial sentiment factor. (Grey in Table 2): Finland (10.8%) and Denmark (11.2%) versus 13.9% for Iceland.

This leaves the contribution to currency variation from domestic macroeconomic and policy developments to be the lowest share. In some sense, this should not be a surprise, given that these are all small open economies. But, it serves to emphasize that it is external sources of currency variation – equally macro and financial -- that dominate the challenges facing these central banks. Offsetting or leaning against external sources of currency variation, if the currency variation is inconsistent with domestic economic

⁵ It is interesting that the other two floaters, Sweden and Norway, have a higher weighting on domestic financial sentiment than Iceland. Further analysis on those countries' domestic financial market depth and variability would be useful.

performance, would require much more aggressive policy than would be the case if the domestic sources of currency variation dominated.

The final observation from Table 2 is the exercise of a hypothetical peg of the ISK to the euro. Using the same method, but changing the numeraire for the ISK to the euro notably reduces the share of currency variation from the global-sentiment factor (from 13.8% to 9.0% yellow highlights) while also increasing the shares on the macro and policy sources of variation, including in particular the domestic macroeconomic and policy environment. This latter observation, along with Denmark’s results suggests that adopting the euro likely would reduce the role for financial sentiment in currency variation. This result is also consistent with the observation that currency variation of the bilateral ISK/USD is greater than that of the ISK/euro.

Table 2: Factor decomposition of variation in bilateral exchange rates against the USD (also shown is ISK/euro), using daily financial market data (% add to 100) averaged over the time period 2009 to 2025

Variables Block (absolute share)	Iceland (ISK/USD)	Sweden (SEK/USD)	Norway (NOK/USD)	Denmark (DKK/USD)	Finland (EUR/USD)	Iceland (ISK/EUR)
Domestic macro and monetary policy	24.4%	25.5%	25.3%	20.0%	24.4%	26.6%
EA macro and ECB policy	27.6%	26.4%	26.4%	31.0 %	29.7%	29.3%
US macro and Fed policy	20.3%	20.4%	20.2%	22.4%	21.4%	21.9%
Global financial sentiment (OFR)	13.8%	13.3%	13.9%	15.4%	13.7%	9.00%
Domestic financial sentiment (residual)	13.9%	14.5%	14.3%	11.2%	10.8%	13.3%

Note: 8-factor SVAR with global sentiment (OFR) and domestic/country sentiment (residual). Shares are absolute-value contribution shares using daily data and are reported in percent; each column sums to 100. This table is designed for cross-country comparison of relative importance across blocks. ‘Global sentiment’ refers to the OFR-based global financial sentiment factor; ‘Domestic sentiment’ refers to the residual (country sentiment) for sentiment regarding domestic equity assets. Shares are absolute-value shares; they measure relative importance regardless of sign.

Summary Findings: Time series analysis

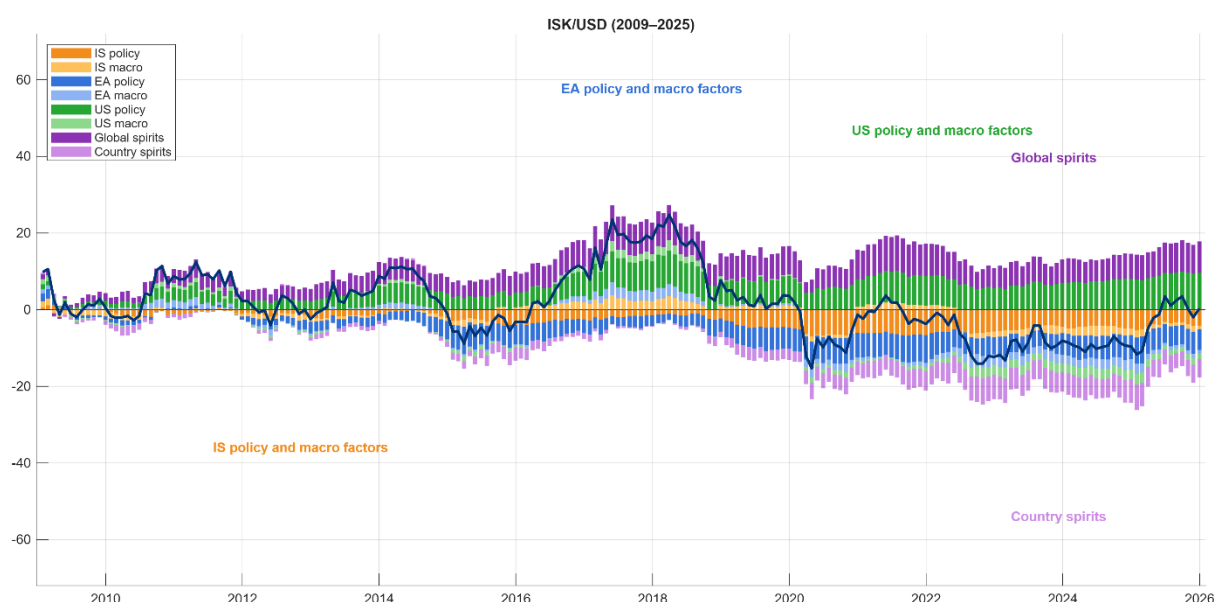
The aggregated presentation in Table 2, by design, masks the variation in the currency over time; does it also mask information about the sources of currency variation? A time series analysis offers an assessment of both currency variation as well as of sources of currency variation. Unlike in the Table, which aggregated-over-time the macro and monetary policy factors (given their endogeneity), in the time series, these remain separate in the presentation.

Inspection of this time series by sources reveals that although the currencies appreciate and depreciate against the USD quite a bit over the 2009 to 2025 time period, the sources of variation are quite stable.

For the Icelandic krona

Consider Chart 2 which presents the time series decomposition of ISK/USD over time. First, note that the US role in currency variation is two-sided: positive macro developments in the US contribute to ISK/USD appreciation, but tighter monetary policy weighs on the ISK/USD. In the case of euro area and ECB policy, both factors contribute to depreciation of the ISK/USD.

Chart 2 Structural decomposition of Iceland (ISK/USD) exchange rate movements (2009–2025)



Note: The solid line shows the realised ISK/USD exchange rate. The stacked bars show the contribution of each identified shock block in the 8-factor SVAR: Iceland macro and policy factors, EA macro and policy factors, US macro and policy factors, global spirits (OFR), and country spirits (residual). At each date, the contributions sum to the total exchange rate movement.

Consistent with the above whole-sample decomposition, the time series decomposition shows that the global financial risk sentiment (spirits) tends to amplify the currency variation: Periods of stronger global risk appetite tend to coincide and amplify krona appreciation, but also tend to amplify krona depreciation when global risk appetite fades. This reflects the krona's high elasticity to variability of capital flows (so-called 'high-beta') as a financial asset.

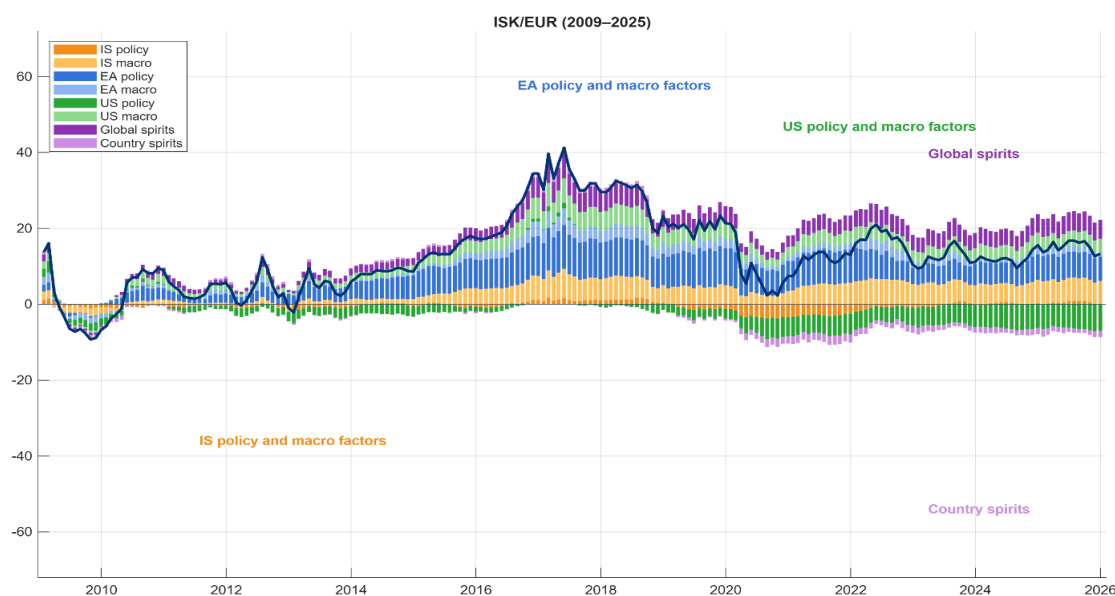
The time series for the ISK/USD shows a pronounced upswing around 2017–2018, followed by a sustained negative phase after 2020, with the domestic-financial spirits factor appearing relatively negatively persistent consistent with a sustained Iceland-specific risk-premium. The post-2022 window looks more event-driven, which fits a strong-USD and rapid-tightening global financial regime with sharper positioning and liquidity effects typical for a small currency. (IMF, 2024)

The domestic financial sentiment factor tends to be a negative contribution to the variation in the ISK/USD. This domestic risk premium may be due to low liquidity and high variability of the krona in foreign currency markets or potentially associated with a threat of central bank intervention. Chapter 3 and IMF (2024) corroborate this assessment that a domestic financial risk premium can be expressed either, or both, as higher domestic interest rates and depreciation pressure on the ISK/USD.

In the aggregate accounting decomposition, when the variation in the ISK was evaluated against the euro, the global financial sentiment factor shrank. Chart 3 shows this time series decomposition. Against the Euro, the composition of external influence changes. Relative to ISK/USD, the ISK/EUR decomposition over the whole period (as in Table 2) assigns positive greater weight to the EA factors and less to the US macro-and-policy blocks, and a smaller role to the OFR global sentiment factor.

Given that the USD and Euro are two major currencies that float against each other, these results are not a surprise. However, the observation that the EA macro and policy factors are both one-sided in the contribution to either the ISK/USD or ISK/Euro implies that real and financial flows from the euro area are complementary instead of in opposition. This is particularly visible in the 2016–2018 appreciation phase, where the euro area block provides a substantial and persistent positive contribution.

Chart 3 Structural decomposition of Iceland (ISK/EUR) exchange rate movements (2009–2025)



Note: The solid line shows the realised ISK / EUR exchange rate. The stacked bars show the contribution of each identified shock block in the 8-factor SVAR: Iceland macro and policy factors, EA macro and policy factors, US macro and policy factors, global spirits (OFR), and country spirits (residual). At each date, the contributions sum to the total exchange rate movement.

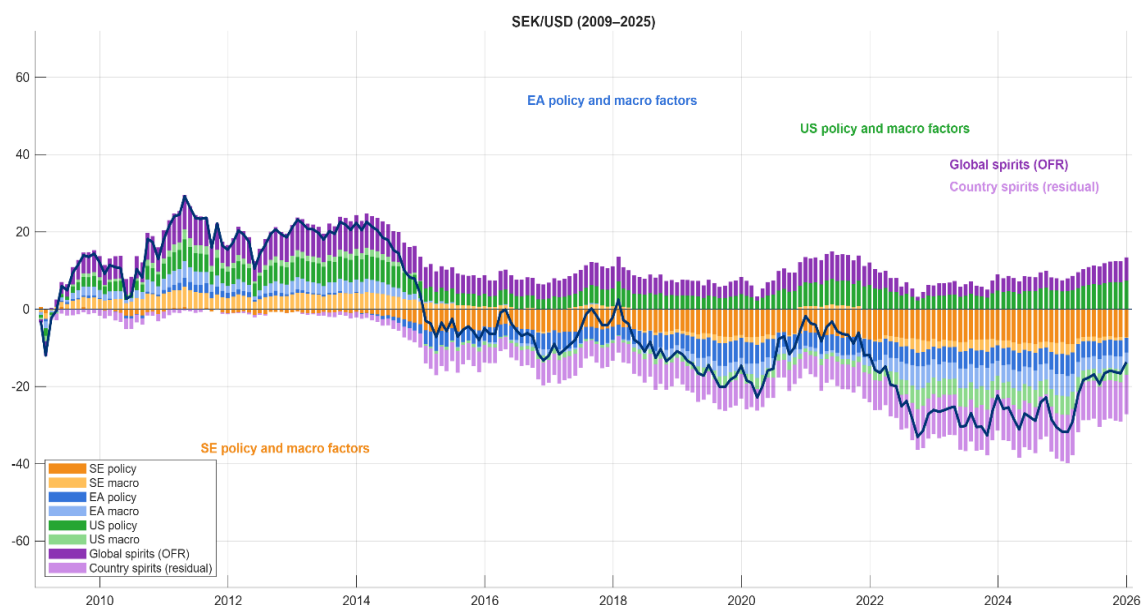
In the chart of ISK/EUR it may seem that the domestic financial sentiment share is becoming less important with the change in numeraire, which would appear to be inconsistent with the whole-sample contributions in Table 2. This can be explained first by noting that the total variation of the ISK/EUR is smaller; this is masked in the Table where contributions sum to 1 regardless of the variation in the underlying currency. Second, domestic financial sentiment is less persistently negative contributor in the ISK/EUR decomposition, which is not accounted for in the Table 2 construction. Overall, these observations lend credence to the notion that capital flows in USD are a unique source of variation in the ISK/USD and are less prevalent in the case of the ISK/Euro.

For Sweden (and Norway)

In the full-sample decomposition, the EA macro-policy block is persistently important and accounts for a large share of medium-run movements, consistent with Norway and Sweden’s close European trade and financial linkages. For both of these economies, a clear turning point occurs around 2014–2015, after which the cumulative exchange-rate move becomes negative and remains so for long stretches, with EA and US macro-policy blocks providing much of the sustained drag. For both countries, financial spirits (global OFR and especially the domestic-financial sentiment factors) are present throughout and

become increasingly higher share, particularly post-2022. See the Appendix II for the Norway chart.

Chart 4 Structural decomposition of Sweden (SEK/USD) exchange rate movements (2009–2025)



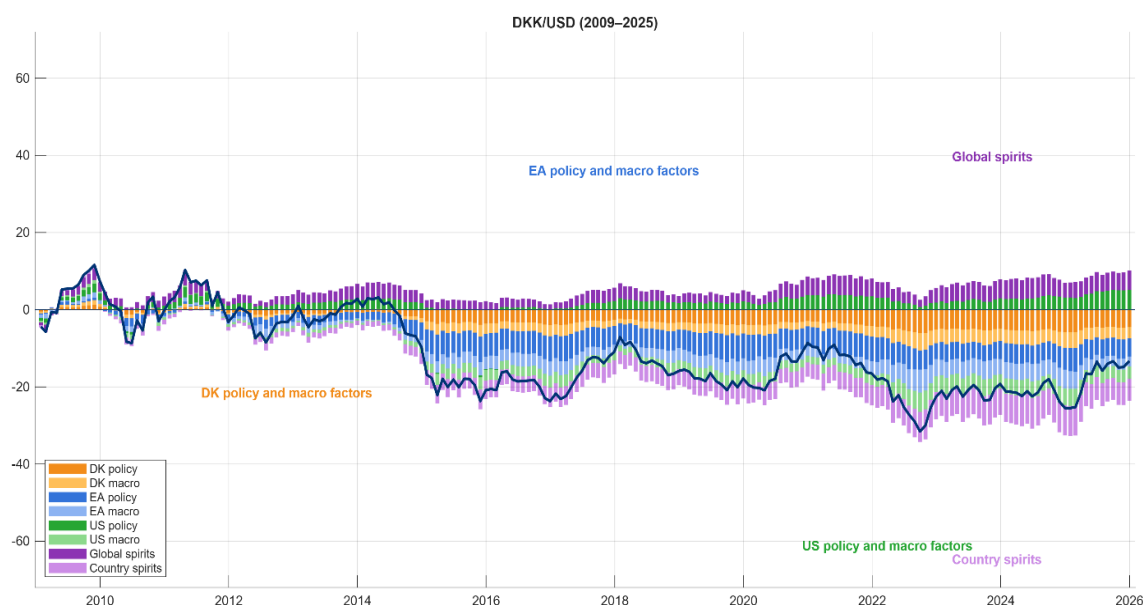
Note: The solid line shows the realised SEK/USD exchange rate. The stacked bars show the contribution of each identified shock block in the 8-factor SVAR: Sweden macro and policy factors, EA macro and policy factors, US macro and policy factors, global spirits (OFR), and country spirits (residual). At each date, the contributions sum to the total exchange rate movement.

For Denmark (and Finland)

Over the full sample, the EA macro-policy block is the dominant and most persistent driver of DKK/USD and of course the EUR/USD itself for Finland. The US macro-policy block provides an additional layer, becoming more salient around major global episodes (notably the post-2020 and post-2022 tightening regimes), but it typically remains secondary to EA factors.

The domestic block is comparatively smaller and steadier throughout (relative to the other Nordic economies), in line with limited independent monetary-policy transmission into the exchange rate under the peg (Denmark) or for Finland (using the euro). For both countries, there is still a role for financial sentiment, but compared to the other Nordic economies, the domestic financial factor is relatively less important consistent with the lower risks that come from using or pegging to the euro. See Appendix II for the Finland chart.

Chart 5 Structural decomposition of Denmark (DKK/USD) exchange rate movements (2009–2025)



Note: The solid line shows the realised DKK/USD exchange rate. The stacked bars show the contribution of each identified shock block in the 8-factor SVAR: Denmark macro and policy factors, EA macro and policy factors, US macro and policy factors, global spirits (OFR), and country spirits (residual). At each date, the contributions sum to the total exchange rate movement.

Conclusions for monetary policy from the financial market model of currency variation

For all the Nordic economies, spillovers from euro area macro and monetary policy conditions and from financial sentiment factors dominate currency variation accounting for nearly 30% each.

The floating-rate Nordic economies, including Iceland, have a higher share of currency variation accounted for by domestic financial sentiments, which is a measure of domestic-oriented risk premium on the currency. Denmark and Finland have lower shares of currency variation coming from that factor, reflecting their use of the peg or the euro and the credibility associated with the constellation of policies that support those currency regimes.

External sources of currency variation – particularly through financial channels -- challenge monetary policy decision-making. Offsetting or leaning against external sources of currency variation can raise inconsistencies with the monetary policy appropriate for the domestic economy, and at least requires more aggressive policy than would be the case if the macroeconomic fundamentals of the domestic economy were the main source of currency variation.

Comparing ISK/USD with ISK/euro currency denomination reduces the share of the domestic financial sentiment factor, lending credence to the notion that capital flows in USD are a unique source of risk premium and currency variation in the ISK/USD but not in the ISK/Euro. This supports the argument that adopting the euro likely would reduce the role for financial sentiment.

Macro model of currency variation and shock-dependent pass-through

New analysis prepared for this Report evaluates how the *source* of the shock that moves the currency might affect the magnitude of pass-through to import price and consumer price inflation, to which monetary policy may need to respond. Why is the source of the shock that affects the currency a relevant question? Why would exchange rate pass-through be affected by the source of the shock to the currency?

A brief discussion of pass-through

Let's start with the simple algebra of pass-through. Suppose the currency appreciates, in algebraic terms, this should reduce the price of imports in domestic currency (as less domestic currency is needed to pay for the foreign-currency-invoiced imports), which then feeds through to moderate CPI inflation. On the other hand if the currency depreciates, in algebraic terms, the price of imports in domestic currency should increase (as more domestic currency is needed to pay for the foreign-currency-invoiced imports), which would tend to push up on CPI inflation.

The direction of the currency move, and changes in import price inflation as prelude to changes in domestic prices can provide signals for a monetary policy authority to consider a response.

Estimating the size and time variation of exchange rate pass-through is not a new issue for any small open economy, and has been investigated in previous studies for Iceland. In this Report Chapter 1 finds clear evidence that the krona plays a key role in the dynamics of Iceland inflation. In the semi-structural model QMM, discussed previously, the estimated pass-through of a 1% depreciation of the trade-weighted exchange rate to CPI inflation is 0.16, which the authors note is smaller than some other estimations. There are three rationales for this smaller effect: anchored expectations, assumed forward-looking behavior, and prompt monetary policy reaction by an inflation-targeting central bank. Various authors' empirical analysis find that these are key ingredients to moderate currency pass-through to CPI inflation. (Carrière-Swallow et al., 2016 and Schmidt et al., 2021).

For Iceland, Edwards and Cabezas (2021) prepared a paper as part of a project at the Central Bank of Iceland to understand Iceland's pass-through behavior, finding that pass-through increases with the tradability of goods but in aggregate declined around the time Iceland reformed its "flexible inflation targeting" regime, which has tended to support central bank credibility.

However, IMF (2024) presents evidence that questions whether inflation expectations for Iceland are fully anchored, and notes a risk premium in foreign currency transactions, which has been confirmed by the analysis in the previous section. Petursson (2024) shows that inflation expectations have generally been above the 2.5% inflation target, but does not investigate the source of this. All told, pass-through remains of empirical interest for inflation and monetary policy.

But why should the source of the shock to the currency affect pass-through and therefore matter for monetary policy? Forbes, et al (2018) present the rationale in simple terms. Following theory beyond the algebra: If the currency appreciates on account of a positive global supply shock or a fall in the currency risk premium, the appreciation should be reflected in lower import prices (stage 1 pass-through) which should lower CPI inflation (stage 2 pass-through), which would allow for looser monetary policy. This is consistent with a financial conditions perspective whereby the appreciation of the currency tightens overall financial conditions, to which it might be appropriate to loosen domestic monetary policy.

If the appreciation comes from tighter monetary policy, import price inflation should fall as should consumer price inflation, since presumably, that was the objective of the tighter monetary policy stance.

In contrast, if the currency appreciates on account of a positive domestic demand shock there are two opposing forces for import prices and inflation. On the one hand the appreciation shock alone should still reduce import prices (stage 1 pass-through). But, since the appreciation was associated with a positive demand shock which raises GDP, import prices and inflation could increase: the demand effect could dominate the pass-through of the appreciation to import prices or to CPI Inflation. In this case, monetary policy that targets CPI inflation would need to tighten, despite the appreciation of the currency. These dynamics could play out for a global demand shock as well, depending on the incidence. The problem with this kind of shock is that it creates potential conflict of the signals that monetary authorities use to evaluate pass-through to CPI inflation

Previous work investigates some of these alternatives in the Iceland empirical context. Petursson (2023) first notes that a risk premium shock that appreciates the krona is associated with higher output and inflation, which requires tightening monetary policy, opposite to the supposition in Forbes, et al (2018). Further investigation finds that the story is one of pro-cyclical capital inflows which appreciate the currency but also support domestic demand and inflation – so it's not just a financial sentiment shock, it is a financial credit shock. Þórarinnsson (2022) also investigates how the source of the shock could matter for pass-through and monetary policy for Iceland. Importantly, he starts by noting that trade prices are invoiced in foreign currency – this is a key assumption for pass-through estimation.

In sum, it is an empirical question as to which types of shocks appear most relevant for the various Nordic economies, as well as the magnitude (and sign) of the two stages of pass-through. Forbes, et al (2020) assesses Iceland, Sweden, and Norway in the context of a broader sample of countries (28 in all both emerging and advanced economies). Iceland stands out of the whole sample as having higher than average pass-through, which is driven domestic demand shocks, and which yields higher inflation even when the currency appreciates.

The research undertaken here to compare all the Nordic economies so as to consider pass-through for Denmark and Finland as well as the floating Nordic economies. It takes the Forbes, et al (2018) framework as a starting point, which lends itself to this comparison by using the same SVAR restrictions, but different domestic variables and trade-weighted exchange rates. The strategy is a sign-restricted structural VAR where the focus is on how different sources of shocks (domestic demand, supply, monetary policy, currency risk premium, global supply, global demand) affect GDP, inflation, and import prices to pass-through to domestic inflation.

Overview of SVAR data and sign restrictions

The sign-restricted structural VAR is implemented using quarterly data for the time period 2000 to 2024 for real GDP, CPI, Central Bank policy rate, the trade-weighted exchange rate index, import price index, and foreign export price index. For the specific series, and caveats for Denmark and Finland, which peg to or use the euro, see the Appendix I materials. All variables are quarterly log differences, except the interest rate, which is in differences. All variables are stationary.

The SVAR is estimated with two lags of the endogenous variables. The sign-restrictions shown in the Table 4 below are imposed for two periods (contemporaneous and the quarter thereafter) for each shock. This allows subsequent transmission channels to be

important for the intermediate and longer run effects of the shocks. None of the domestic shocks should affect foreign export prices in the short or long run (small open economy assumption). Minimal short-run and long-run zero restrictions tie down long-run neutrality.

For the first two quarters of the shock:

- A domestic supply shock should push GDP growth in the same direction but inflation in the opposite. (column 1)
- A positive (negative) domestic demand shock should move GDP in the same direction, along with inflation as well, which should elicit tighter (looser) monetary policy to react, appreciating (depreciating) the exchange rate, but with no sign restriction on import prices, as per the literature review above. (column 2)
- A tighter (looser) monetary policy shock should decrease (increase) GDP growth and inflation, yield a higher (lower) shadow bank rate and depreciate (appreciate) the currency, but with no sign restriction on import prices. (column 3)
- A currency appreciation (depreciation) has no sign restriction on GDP growth, but is assumed to pass-through to decrease (increase) inflation and decrease shadow bank rate (via a looser/tighter) monetary policy reaction. As noted, this sign restriction holds for only the first 2 quarters. (column 4)
- A transitory global shock has no sign restrictions. (column 5).
- A permanent global shock has no sign restrictions (column 6).

Table 4. Sign Restrictions for Iceland, Sweden, and Norway⁶

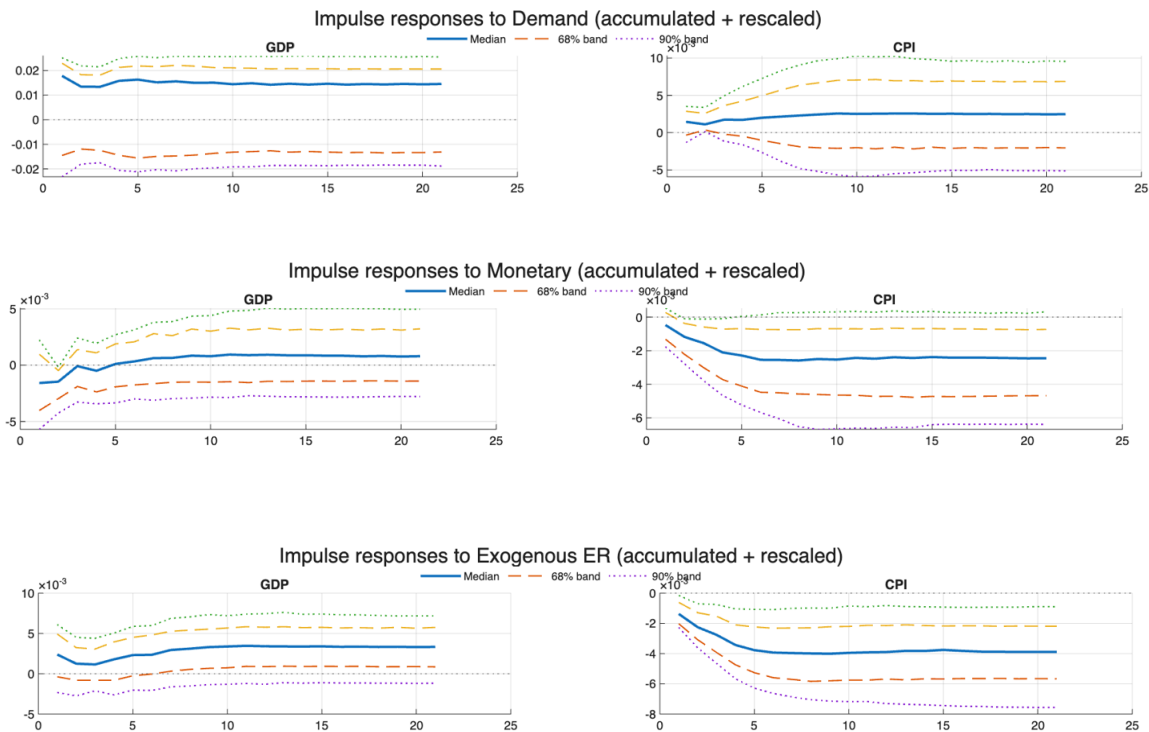
Short-Run restriction (On impact)	Domestic Supply	Domestic Demand	Domestic Monetary Policy	Exchange rate Risk premium or capital flows	Persistent Global Supply (e.g TFP)	Transitory Global Supply (eg oil)
	1	2	3	4	5	6
GDP Growth Rate	+	+	–			
Inflation Rate	–	+	–	–		
Shadow Bank Rate		+	+	–		
Policy Rate		+	+	+		
Import Price Inflation						
Foreign Export Price	0	0	0	0		

Estimating impulse response functions for the shocks to the currency

To estimate short-run and long-run pass-through requires a first step of estimating impulse response functions for each of the shocks. To make the IRFs comparable and to focus on the currency channel, each of the shocks is calibrated such that the shock generates a 1% appreciation of the trade-weighted exchange rate within four quarters of the initial shock. Chart 6 shows Iceland’s IRFs for CPI and GDP, key variables for central bank decision making, given three of the shocks –domestic demand, monetary policy, exogenous currency move (from a risk premium or capital flow).

⁶ Denmark and Finland, with the euro peg and euro regime, have some different strategies to implement this shock-dependent methodology. The short-run effect of a demand-oriented shock is similar to that of Sweden and Norway. However, in the long-run, since there is not an independent monetary policy, the pass-through of the positive demand shock to domestic inflation could be positive too. A different policy actor other than the monetary authority would be responsible to keep inflation at bay

Chart 6 Impulse response functions for Iceland GDP and CPI for a calibrated 1% appreciation shock from domestic demand, monetary policy, and exogenous exchange rate



These impulse response functions for Iceland reveal that a 1% appreciation shock that comes from positive domestic demand shock boosts GDP and CPI, indicating that the demand effect dominates the currency effect. If the 1% appreciation is generated by tighter monetary policy, GDP initially falls, but then rebounds while CPI stays lower, due to the persistent appreciation of the currency that is associated with this shock. If the 1% appreciation is generated by some exogenous shock to the currency (risk premium or capital flows), GDP increases even as CPI moderates by more than in the case if monetary tightening is the source of the shock. In sum, sometimes an appreciation moderates inflation and sometimes it doesn't. This will show up in pass-through paths.⁷

A domestic demand shock that appreciates the ERI by 1% has a larger effect on Iceland's GDP than for either the Sweden or Norway, but the effect on CPI is more mixed. A transitory global supply shock has relatively larger effects on Iceland's GDP yet less effect on Iceland's CPI. A monetary policy shock that appreciates the ERI has smaller effects on GDP and on CPI for Iceland than for either Sweden or Norway. An exogenous risk premium

⁷ Complete charts of the IRFs for all Iceland variables and the other Nordic economies are in the Appendix I materials.

shock to the currency that appreciates the ERI by 1% affects GDP and CPI in Iceland relatively less than the same size shock in Sweden or Norway.

Taken together, ERI appreciation from a domestic demand shock appears particularly relevant for Iceland’s GDP dynamics, whereas ERI appreciation associated with nominal shocks seem to dampen CPI by less in Iceland than in the other two floaters. The implication is that in the case of a domestic demand shock or nominal shocks, the central bank in Iceland will have to work harder to moderate inflationary effects of these shocks, despite the appreciation of the currency.

Table 5

IRFs for a standardized 1% appreciation of the ERI coming from the respective shock							
Variable	Shocks	ICELAND		SWEDEN		NORWAY	
		Initial Value	End of Horizon	Initial Value	End of Horizon	Initial Value	End of Horizon
GDP	Demand Shock	0.0134	0.0145	0.0071	0.0055	0.0051	0.0033
	Monetary Policy	-0.0015	0.0008	-0.0057	-0.0042	-0.0027	-0.0041
	XR Risk Premium	0.0013	0.0033	-0.0022	0.0029	0.0021	0.0048
	Transitory Global	0.0020	0.0032	0.0013	-0.0046	0.0013	0.0017
CPI	Demand Shock	0.0011	0.0025	0.0009	0.0023	0.0016	0.0018
	Monetary Policy	-0.0012	-0.0025	-0.0022	-0.0049	-0.0020	-0.0012
	XR Risk Premium	-0.0023	-0.0039	-0.0062	-0.0090	-0.0055	-0.0068
	Transitory Global	-0.0004	0.0019	0.0066	0.0131	0.0030	0.0052

Estimating shock-dependent pass-through to import prices and CPI inflation

Taking the IRFs on the effect of selected sources of a 1% appreciation shock on import price inflation and CPI inflation allows to calculate shock-dependent pass-through paths, which are shown for Iceland in the Appendix I, with the summary of the short-horizon and long-horizon values for stage 1 and stage 2 pass-through shown in Table 6.

Table 6 Pass-through implications of a 1% standardized appreciation of the currency generated by the following types of shocks (see Appendix I materials for additional shocks)

Country Horizon	Passthrough to Import Prices					Passthrough to Consumer Prices				
	Domestic Supply	Domestic Demand	Monetary Policy	Exogenous ER	Transitory Global (e.g. oil)	Domestic Supply	Domestic Demand	Monetary Policy	Exogenous ER	Transitory Global (e.g. oil)
Iceland										
1	-0.326	-0.100	-0.140	-0.296	-0.028	-0.129	0.143	-0.090	-0.292	-0.043
21	-0.619	-0.345	-0.502	-0.528	-0.402	-0.245	0.110	-0.213	-0.318	-0.172
Sweden										
1	-0.551	0.439	-1.496	-2.458	-0.345	-0.057	0.002	-0.288	-0.749	0.132
21	-0.495	0.881	-1.353	-1.130	-0.530	-0.161	0.175	-0.336	-0.644	0.042
Norway										
1	-0.511	-0.366	-1.087	-1.045	-0.129	-0.140	0.012	-0.412	0.080	0.137
21	-0.584	-0.313	-1.065	-1.048	-0.375	-0.132	0.108	-0.126	-0.454	0.124
Denmark										
1	-0.726	1.283	-1.629	-2.131	-1.076	0.392	-0.022	-0.517	-1.220	0.068
21	-0.669	1.940	-1.569	-1.203	-0.968	0.274	0.444	-0.541	-0.726	0.058
Finland										
1	-0.449	0.669	-1.035	-1.089	-0.491	0.018	0.015	-0.179	-0.520	0.062
21	-0.492	1.232	-0.676	-0.900	-0.388	0.031	0.239	-0.253	-0.422	0.035

For all of the Nordic economies, a currency appreciation from a positive domestic supply shock passes through to reduce import price inflation, but only passes through to reduce consumer price inflation for the floating-regime Nordic economies. For Denmark and Finland, which peg and use the euro, respectively, consumer price inflation rises. Since the appreciation that is generating the shock is 1% for all countries, this suggests that the independent monetary policy authorities in the floating rate countries allow the pass-through of the shock.

For Iceland, the estimated pass-through of the exogenous currency shock is an order of magnitude smaller in both the short and long run and the second-stage pass-through to consumer prices also is notably lower in both the short and long horizon. Given that the shock for all the countries is the same 1% appreciation (of their respective ERIs), these results could be consistent with the currency shock appreciation being associated with capital inflows (and therefore an economic expansion), as in the findings of Petursson (2023).

For all of the Nordic economies, an appreciation coming from tighter monetary policy is consistent with the theory—pass-through to import price and consumer price inflation is dampened. However, as in the case of the currency shock, Iceland’s pass-through to reduce import price inflation is much smaller and there is very little pass-through of this monetary-policy induced appreciation to lower consumer price inflation. It would appear that a monetary-policy induced appreciation is being offset in the data by other factors, perhaps a rise in foreign prices into Iceland as emphasized by Þórarinnsson (2022) or that the monetary policy that induces appreciation does little to dampen demand and inflation. The elasticity of the currency to monetary policy could be large relative to the

domestic economy's response to that policy, which is consistent with the results in the previous section of the dominance of financial sentiment factors in the accounting for currency variation in Iceland.

For all of the Nordic economies, an appreciation associated with a beneficial transitory global shock (such as to the oil price) passes through to reduce import prices. For most of the Nordic economies, second-stage pass-through is estimated to be positive, suggesting that there is an important contribution of second round effects of the transitory global shock, such as stronger demand coming from the positive global supply shock, that is not offset by tighter monetary policy. For Iceland, the expected second-stage pass-through of the transitory global shock to reduce consumer price inflation is observed, suggesting either less of a demand response or more of a monetary policy response.

Now consider the positive domestic demand shock. If this is the source of the currency appreciation, pass-through does not match the simple arithmetic, since for some countries, import price inflation increases. This could be as foreign producers take advantage of the strong domestic demand and raise their prices too. For second stage pass-through on the other hand for almost all of the Nordic economies, the demand shock increases consumer price inflation regardless of whether there is any reduction in import price inflation.

In short, consumer price inflation rises despite the currency appreciation as the domestic demand effect on firm's pricing power outweighs the appreciation effect. The problem is that this constellation gives conflicting signals to the central bank, as an appreciation would usually signal tighter financial conditions with a tendency to loosen monetary policy, whereas rising consumer price inflation would signal a need for tighter monetary policy.

For Iceland, first stage and second stage pass-through deviate in magnitude, but not sign, from the general Nordic experience. For Iceland, the appreciation has the expected negative effect on import price inflation. However, the second stage pass-through to consumer prices is both positive and higher than other Nordic economies in the short run, but relatively lower than the other Nordic economies in the longer term, suggesting an initial speedy pass-through of the demand effect on consumer prices but then a tighter monetary policy response after to temper long-run pass-through. A monetary policy strategy consistent with these temporal pass-through paths suggests a later but larger monetary policy reaction. This is somewhat similar to that observed in the QMM

model where monetary policy had to balance the demand and inflation signals which had different lags in responsiveness.

For Iceland compared to the other Nordic economies, if the 1% appreciation of the currency comes from a tighter monetary policy shock or a currency shock, pass-through to reduce import price or CPI inflation is smaller (particularly in the short-run). The Icelandic monetary authority will get 'less help' from a currency appreciation and therefore will have to 'work harder' to lean against inflation.

Looking at Iceland alone, across the various shocks that come from an appreciation, pass-through to import prices is greatest for supply shocks, followed closely by exogenous changes in the currency. These results are consistent with Þórarinnsson (2022).

Decomposition of sources of currency variation in the macro model

The same data that generate the estimates of shock-dependent pass-through can also be used to evaluate the relative importance in the data of the sources of exchange rate variation, as shown in Table 7. This macroeconomic data analysis can be compared and contrasted with the currency variance decomposition from the financial market data analysis in the previous section.

Table 7 Summary table for sources of variation in exchange rate index

Country	Horizon	Domestic Supply	Domestic Demand	Monetary policy	Exogenous currency	Transitory Global Supply (e.g. oil)	Persistent Global Supply (e.g. TFP)
Iceland	h=1	0.33	0.09	0.11	0.08	0.19	0.20
	h=20	0.26	0.12	0.13	0.14	0.17	0.18
Sweden	h=1	0.22	0.32	0.10	0.03	0.18	0.15
	h=20	0.21	0.28	0.12	0.06	0.17	0.15
Norway	h=1	0.15	0.32	0.11	0.02	0.20	0.20
	h=20	0.16	0.27	0.12	0.06	0.20	0.19
Denmark	h=1	0.21	0.17	0.16	0.03	0.21	0.21
	h=20	0.21	0.16	0.17	0.05	0.20	0.21
Finland	h=1	0.21	0.21	0.16	0.02	0.20	0.20
	h=20	0.20	0.19	0.16	0.06	0.19	0.19

Compared to the other Nordic economies, the variation in Iceland's exchange rate index comes relatively more from supply shocks (about one-third domestic supply and 20% global supply) and substantially relatively less from domestic demand shocks (about 10% compared to about 30% for the other floaters and about 20% for Denmark and

Finland). Domestic supply shocks are somewhat smaller for the other Nordic currencies (including the pegger Denmark and euro user Finland) with the global supply shock about the same 20%.

The finding that the domestic demand shock is relatively less a source of currency variation for Iceland corroborates Þórarinnsson (2022). This suggests that having an independent currency so as to absorb domestic shocks could be less valuable for Iceland than for the other two floaters.

Monetary policy shocks are not a large source of currency variation for the floaters, Iceland, Sweden, and Norway (only about 10%). This is consistent with the relatively smaller role for the monetary policy authority in the smaller open economy facing spillovers from international sources being a more important driver of the floating currency than the domestic monetary policy shock. Of course for Denmark and Finland, the peg and euro users, the ECB monetary policy shocks account for a notably larger share of the currency variation.

Iceland's exogenous currency shocks (either from sentiment or risk premia or from capital flows) are more a source of currency variation than for the other Nordic economies (8-14% depending on the horizon). These types of exogenous currency shocks are notably smaller for Denmark and Finland -- 3-5% and 2-6% respectively at short and long horizons. This is a cross-check on the findings in previous sections on the importance of exogenous currency movements for Iceland's currency dynamics. What bears further consideration is what is the underpinning of the exogenous currency shock – a change in global financial sentiment, domestic financial sentiment or change in the capital inflows.⁸

Monetary policy implications of shock-dependent pass-through

Considering monetary policy issues, the QMM analysis reported in this Chapter and SVAR analysis reported in Chapter 1 noted that monetary policy could offset domestic demand shocks, but tended to amplify global monetary policy spillovers. The results from these new SVARs conclude similarly but from the standpoint of the currency itself.

These results indicate that variation in the currency is coming particularly from domestic supply shocks and exogenous movements in the currency through financial sentiments and capital flows. This is consistent with analysis in Chapter 1 and previous sections of

⁸ Petursson (2024) determines that currency changes from risk premia and capital flows do not percolate through the economy in the same way.

this chapter that monetary policy independence, as enabling management of inflation, is imperfect and that currency variation itself, particularly the ISK/USD presents challenges to stabilizing the Icelandic economy.

For Iceland, first stage and second stage pass-through deviate in magnitude, but not sign, from the general Nordic experience. For Iceland, the appreciation has the expected negative effect on import price inflation. However, the second stage pass-through to consumer prices is both positive and higher than other Nordic economies in the short run, but relatively lower than the other Nordic economies in the longer term, suggesting an initial speedy pass-through of the demand effect on consumer prices but then a tighter monetary policy response after to temper long-run pass-through. A monetary policy strategy consistent with these temporal pass-through paths suggests a later but larger monetary policy reaction. This is somewhat similar to that observed in the QMM model where monetary policy had to balance the demand and inflation signals which had different lags in response.

Looking at Iceland alone, across the various shocks that come from an appreciation, pass-through to import prices is greatest for supply shocks, followed closely by exogenous changes in the currency. These results are consistent with Þórarinsson (2022). The problem with this kind of shock is that it creates potential conflict of the signals that monetary authorities use to evaluate pass-through to CPI inflation. Monetary policy is challenged most by the types of shocks most prevalent in the Icelandic economy.

The finding that the domestic demand shock is relatively less a source of currency variation for Iceland corroborates Þórarinsson (2022). This suggests that having an independent currency so as to absorb domestic shocks would be less valuable for Iceland than for the other two floaters.

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Appendix I: Material for the research on shock-dependent pass-through

This material prepared with the excellent research assistance of Mayukh Dutta.

Data sources:

Quarterly 2000q1 to 2024q4

	Iceland		Sweden		Norway		Denmark		Finland	
Variable	Description	Source	Description	Source	Description	Source	Description	Source	Description	Source
GDP	Real GDP, seasonally adjusted	Statistics Iceland	Real GDP, seasonally adjusted	FRED	Real GDP (2023 prices), seasonally adjusted	Statistics Norway	Real GDP, 2020 prices, seasonally adjusted	Statistics Denmark	Real GDP (ref. year 2015), seasonally adjusted	Statistics Finland
CPI	Consumer Price Index at constant taxes (1980=100)	Statistics Iceland	Consumer Price Index at constant taxes (1980=100)	Statistics Sweden	Consumer Price Index adjusted for tax changes (2025=100)	Statistics Norway	Net Price Index (2025=100)	Statistics Denmark	Consumer Price Index at constant taxes (2025=100)	Statistics Finland
Policy Rate	Key Interest Rate (Policy Rate)	Central Bank of Iceland	Interest Rate adjusted for unconventional monetary policy (see note)	Rafael B De Rezende	Policy Rate	Norges Bank	EA shadow short rate adjusted for unconventional monetary policy	Leo Krippner, LJK Macro Finance Analysis	ECB policy rate adjusted for unconventional monetary policy (see notes)	Leo Krippner, LJK Macro Finance Analysis
Exchange rate	Exchange Rate Index	Central Bank of Iceland	Nominal effective Exchange Rate Index	Riksbank	Nominal effective Krone Exchange Rate Index (1990=100)	Norges Bank	Nominal effective Krone Rate Index (1980=100)	Danmarks Nationalbank	Euro Nominal Exchange Rate Index	ECB Data Portal
Import Prices	Import Price Index (1997=100)	Statistics Iceland	Import Price Index (2020=100)	Statistics Sweden	Import Price Index (2000=100)	Statistics Norway	Import Price Index (2021=100)	Statistics Denmark	Import Price Index (2015=100)	Statistics Finland
Foreign Export Price	Trade weighted Export Prices of trading partners in foreign currency	Eurostat, ECB, ONS, FRED, Danmarks Statistik, Statistics Norway, NBS China, own calculation	Trade weighted Export Prices of trading partners in foreign currency	Eurostat, ECB, Insee, ONS, FRED, Danmarks Statistik, Statistics Norway, Statistisches Bundesamt, NBS China, Own calculation	Trade weighted Export Prices of trading partners in foreign currency	Eurostat, ECB, ONS, FRED, Danmarks Statistik, Statistics Sweden, NBS China, Own calculation	Trade weighted Export Prices of trading partners in foreign currency	Eurostat, ECB, ONS, FRED, Danmarks Statistik, Statistics Norway, NBS China, own calculation	Trade weighted Export Prices of trading partners in foreign currency	Eurostat, ECB, ONS, FRED, Danmarks Statistik, Statistics Norway, NBS China, own calculation

Comments on SVAR Sign restrictions for Denmark and Finland

Shocks domestic to Denmark are unlikely to influence the exchange rate, which is pegged to the euro. Rather, the structural shocks relevant for Danish Krone movements should largely originate from, and be transmitted through, the Euro Area. Consequently, the more “local” shocks identified in this model should be interpreted primarily as *Euro Area macroeconomic shocks*, rather than purely Danish shocks. Importantly, this reinterpretation does not alter the structural nature of the shocks identified, but rather the geographical scale of the macroeconomic block generating them, thereby preserving comparability with the floating exchange rate economies.

Finland is a member of the Euro Area and therefore does not operate an independent monetary policy or exchange rate regime. Consequently, macroeconomic shocks relevant for Finland largely originate from, and are transmitted through, the broader the Euro Area. The structural shocks identified in this model are therefore interpreted primarily as *Euro Area macroeconomic shocks*. From a practical standpoint, purely domestic shocks in Finland are unlikely to move exchange rates, since it is determined at the Euro Area level. This reinterpretation preserves comparability with the floating

exchange rate regimes, since the underlying economic mechanisms behind the shocks remain identical.

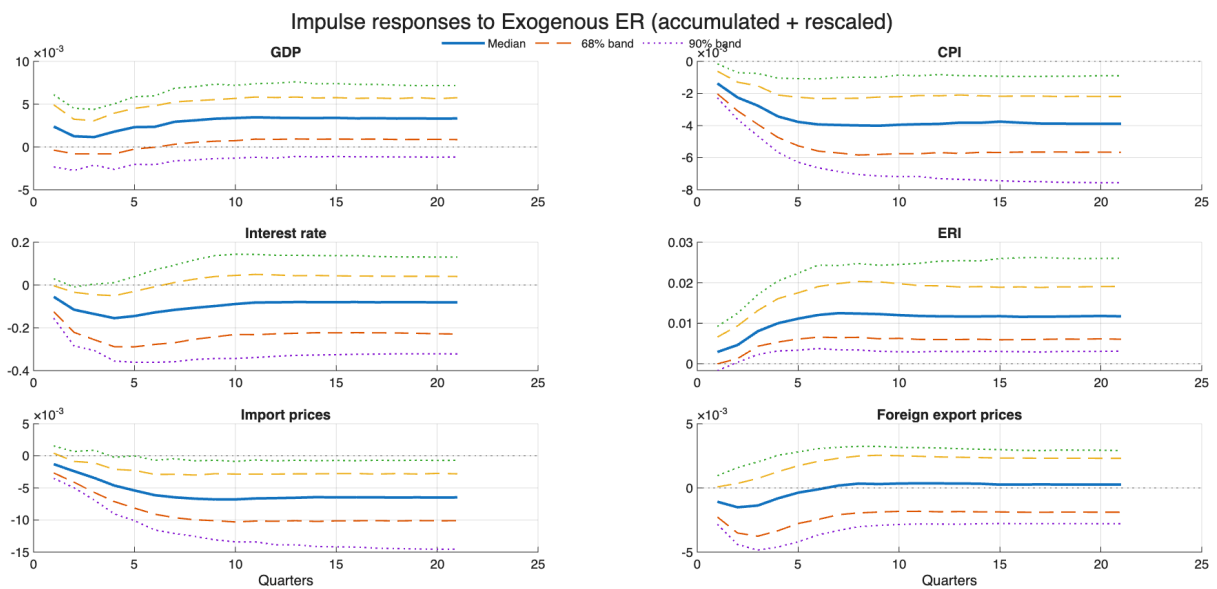
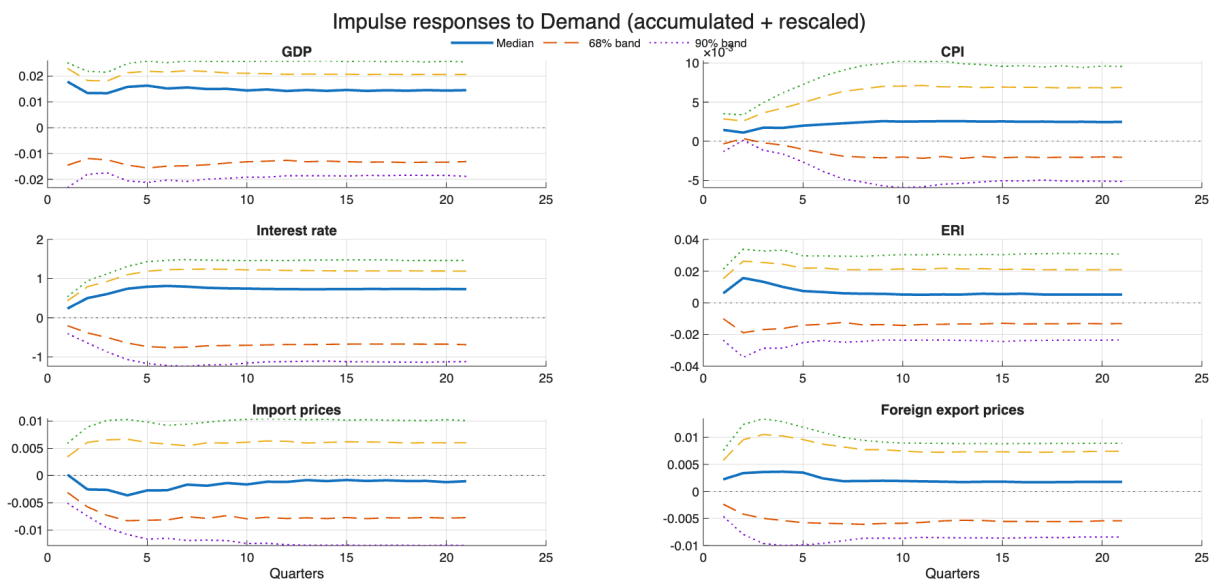
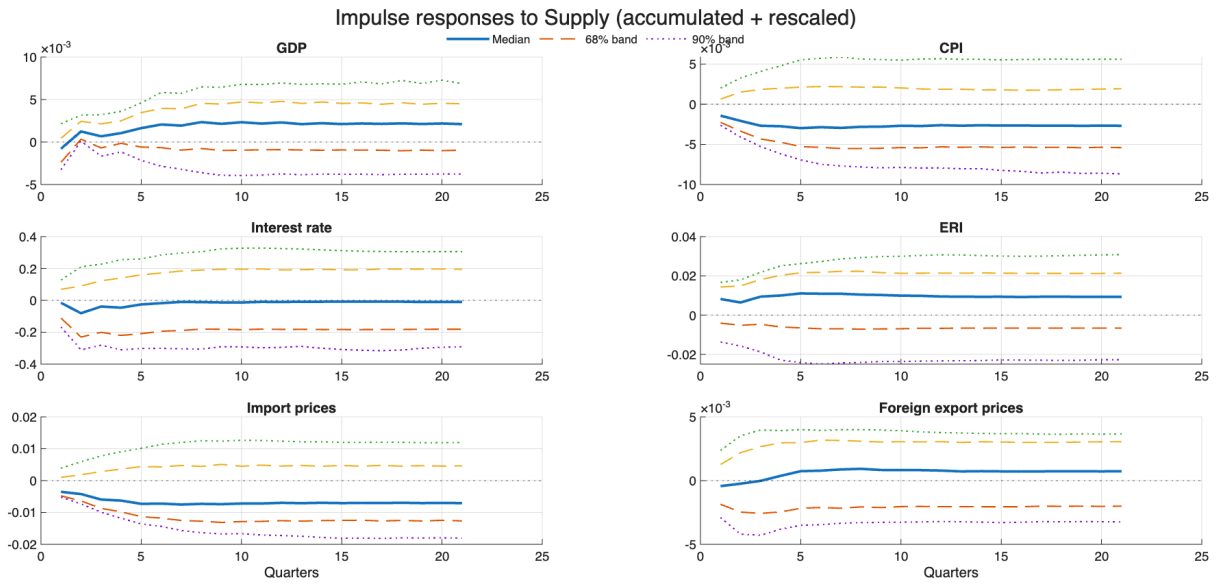
For both Denmark and Finland, to distinguish Euro Area disturbances from broader global shocks, the model imposes identifying restrictions using a foreign export price index constructed by weighing over trading partners *outside the Euro Area*. While this approach is standard in small open economy SVAR frameworks, it works as an approximation in the Euro Area context. Therefore, EA shocks, by construction, are those that move Euro Area variables without contemporaneously moving world export prices.

Sign Restrictions Denmark and Finland

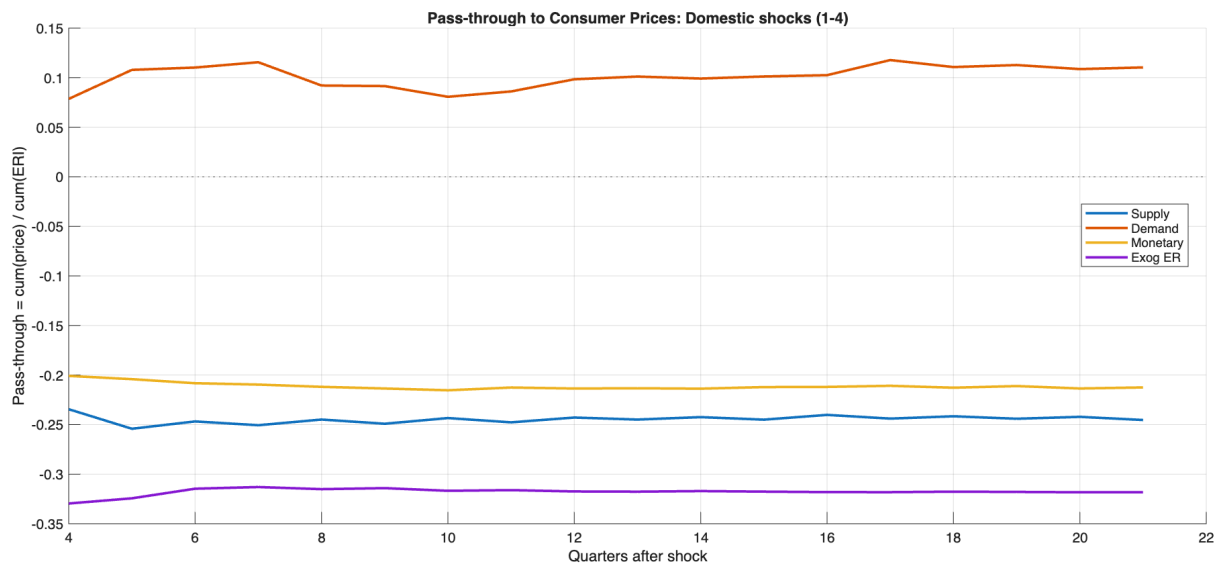
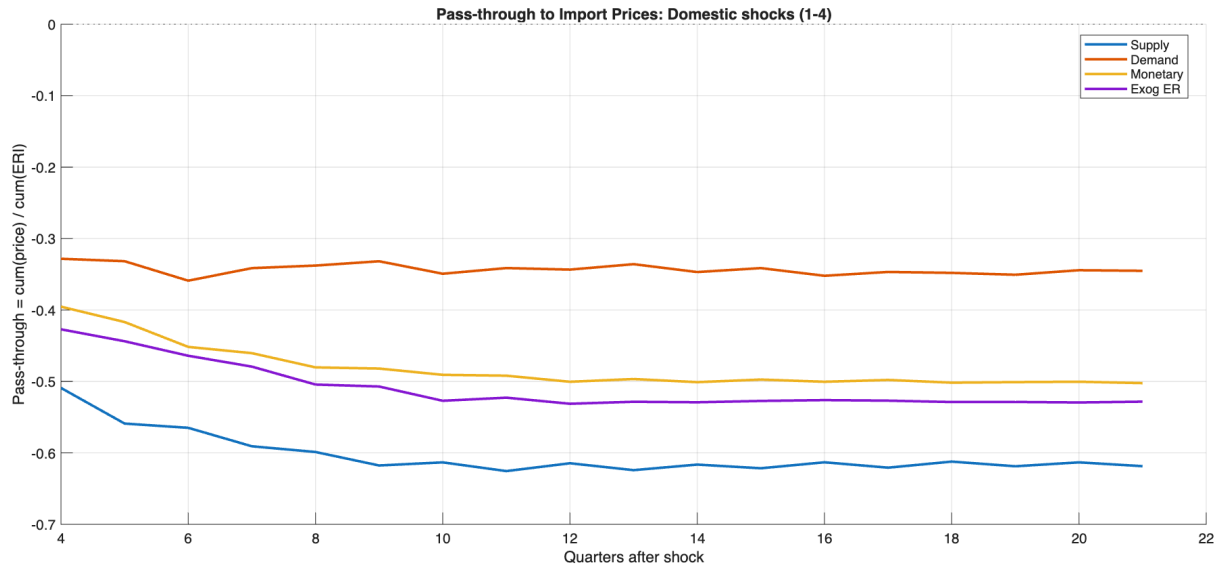
Short-Run restriction (On impact)	EA Supply Shock	EA Demand Shock	ECB monetary policy	Risk Premium shock	Persisten t Global Shock	Transitor y Global Shock
GDP Growth Rate	+	+	—			
Inflation Rate	—	+	—	—		
Shadow Rate		+	+	—		
ERI Rate		+	+	+		
Import Price Inflation						
Foreign Export Price	0	0	0	0		
Long-Run restriction	EA Supply Shock	EA Demand Shock	ECB monetary policy	Risk Premium shock	Persisten t Global Shock	Transitor y Global Shock
GDP Growth Rate		0	0	0		0
Inflation Rate						
Shadow Rate						
ERI Rate						
Import Price Inflation						
Foreign Export Price	0	0	0	0		

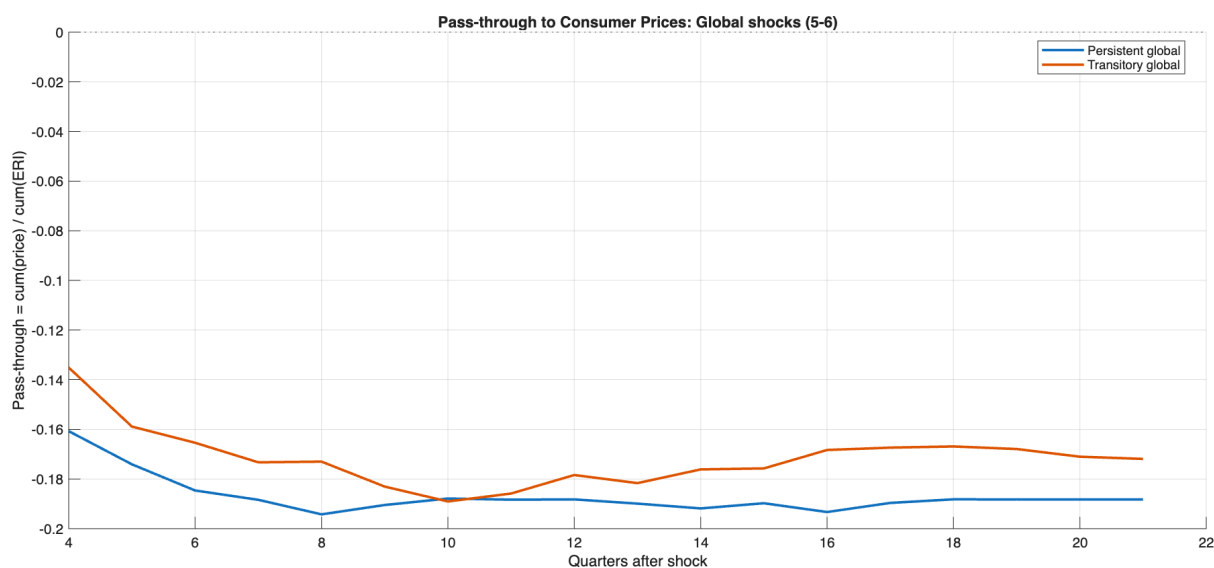
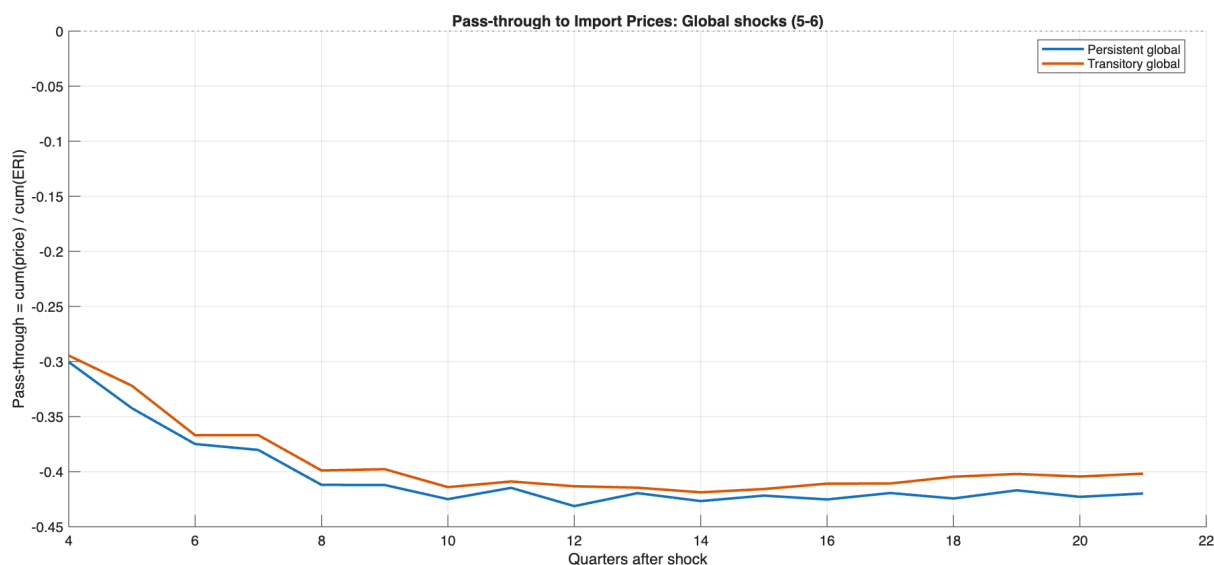
IRFs and pass-through paths for Iceland

These charts show several of the IRFs for Iceland (all IRFs for all shocks and for other Nordic economies on request).



These impulse response functions can then be used to calculate shock dependent exchange rate pass-through paths. These shown for Iceland.





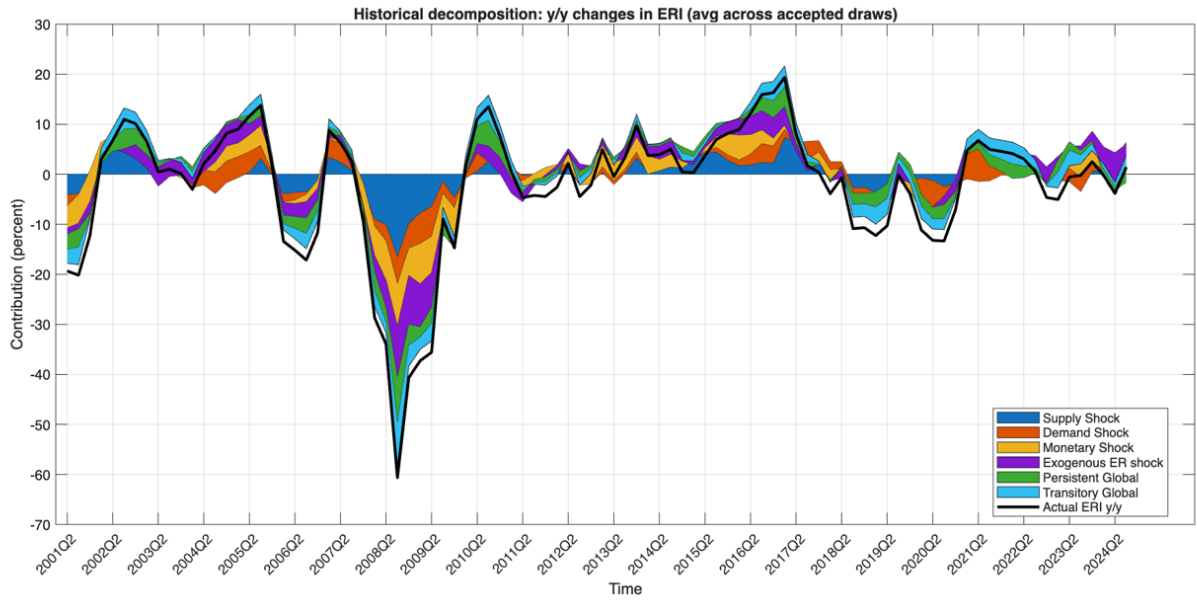
Full set of pass-through estimates for shocks normalized to a 1% appreciation for all Nordic economies

Country	Passthrough to Import Prices						Passthrough to Consumer Prices						
	Horizon	Domestic Supply	Domestic Demand	Monetary Policy	Risk premium	Persistent Global (e.g. TFP)	Transitory Global (e.g. oil)	Domestic Supply	Domestic Demand	Monetary Policy	Risk premium	Persistent Global (e.g. TFP)	Transitory Global (e.g. oil)
Iceland													
	1	-0.326	-0.100	-0.140	-0.296	-0.070	-0.028	-0.129	0.143	-0.090	-0.292	-0.059	-0.043
	21	-0.619	-0.345	-0.502	-0.528	-0.420	-0.402	-0.245	0.110	-0.213	-0.318	-0.188	-0.172
Sweden													
	1	-0.551	0.439	-1.496	-2.458	-0.409	-0.345	-0.057	0.002	-0.288	-0.749	0.115	0.132
	21	-0.495	0.881	-1.353	-1.130	-0.563	-0.530	-0.161	0.175	-0.336	-0.644	-0.029	0.042
Norway													
	1	-0.511	-0.366	-1.087	-1.045	-0.212	-0.129	-0.140	0.012	-0.412	0.080	0.182	0.137
	21	-0.584	-0.313	-1.065	-1.048	-0.251	-0.375	-0.132	0.108	-0.126	-0.454	0.151	0.124
Denmark													
	1	-0.726	1.283	-1.629	-2.131	-1.105	-1.076	0.392	-0.022	-0.517	-1.220	0.058	0.068
	21	-0.669	1.940	-1.569	-1.203	-1.340	-0.968	0.274	0.444	-0.541	-0.726	0.012	0.058
Finland													
	1	-0.449	0.669	-1.035	-1.089	-0.493	-0.491	0.018	0.015	-0.179	-0.520	0.049	0.062
	21	-0.492	1.232	-0.676	-0.900	-0.472	-0.388	0.031	0.239	-0.253	-0.422	-0.001	0.035

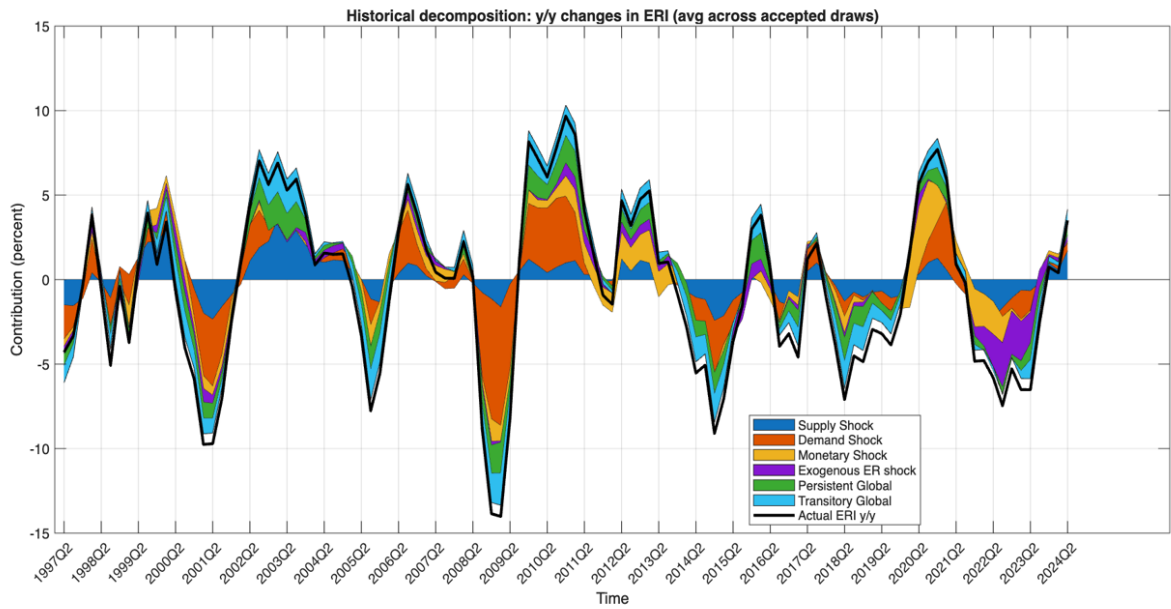
Forecast Error Decompositions for all shocks and all Nordic economies: Table and Charts

		Horizon	Supply	Demand	Monetary	Risk Premium	Persistent Global	Transitory Global
		ICELAND	GDP	h=1	0.03	0.52	0.08	0.14
h=20	0.10			0.37	0.12	0.14	0.14	0.13
CPI	h=1		0.30	0.07	0.09	0.32	0.12	0.11
	h=20		0.25	0.08	0.14	0.27	0.14	0.13
Shadow BR	h=1		0.10	0.22	0.23	0.11	0.16	0.17
	h=20		0.15	0.22	0.13	0.13	0.19	0.18
ERI	h=1		0.33	0.09	0.11	0.08	0.20	0.19
	h=20		0.26	0.12	0.13	0.14	0.18	0.17
Import Prices	h=1		0.44	0.06	0.11	0.16	0.12	0.11
	h=20		0.29	0.09	0.16	0.18	0.15	0.14
Foreign Export Prices	h=1	0.08	0.10	0.09	0.11	0.31	0.32	
	h=20	0.09	0.10	0.08	0.11	0.30	0.32	
SWEDEN	GDP	h=1	0.01	0.29	0.13	0.21	0.20	0.16
		h=20	0.06	0.25	0.13	0.21	0.19	0.16
	CPI	h=1	0.16	0.03	0.13	0.31	0.18	0.18
		h=20	0.19	0.09	0.14	0.26	0.16	0.17
	Shadow BR	h=1	0.16	0.18	0.20	0.13	0.16	0.16
		h=20	0.14	0.23	0.14	0.17	0.16	0.16
	ERI	h=1	0.22	0.32	0.10	0.03	0.15	0.18
		h=20	0.21	0.28	0.12	0.06	0.15	0.17
	Import Prices	h=1	0.14	0.11	0.22	0.25	0.14	0.14
		h=20	0.15	0.14	0.22	0.22	0.14	0.14
Foreign Export Prices	h=1	0.24	0.20	0.13	0.15	0.14	0.15	
	h=20	0.19	0.23	0.14	0.16	0.14	0.14	
NORWAY	GDP	h=1	0.02	0.30	0.21	0.18	0.14	0.14
		h=20	0.07	0.25	0.21	0.17	0.15	0.15
	CPI	h=1	0.24	0.03	0.14	0.29	0.15	0.15
		h=20	0.21	0.07	0.14	0.25	0.17	0.16
	Shadow BR	h=1	0.17	0.27	0.23	0.07	0.13	0.13
		h=20	0.15	0.26	0.18	0.08	0.16	0.16
	ERI	h=1	0.15	0.32	0.11	0.02	0.20	0.20
		h=20	0.16	0.27	0.12	0.06	0.19	0.20
	Import Prices	h=1	0.17	0.16	0.23	0.18	0.13	0.13
		h=20	0.17	0.14	0.21	0.17	0.16	0.16
Foreign Export Prices	h=1	0.08	0.10	0.10	0.12	0.31	0.30	
	h=20	0.08	0.13	0.09	0.10	0.30	0.29	
DENMARK	GDP	h=1	0.02	0.22	0.13	0.31	0.17	0.15
		h=20	0.06	0.19	0.14	0.29	0.16	0.14
	CPI	h=1	0.36	0.03	0.11	0.18	0.16	0.16
		h=20	0.25	0.10	0.14	0.19	0.16	0.16
	Shadow BR	h=1	0.20	0.15	0.18	0.00	0.24	0.23
		h=20	0.19	0.17	0.16	0.05	0.22	0.21
	ERI	h=1	0.21	0.17	0.16	0.03	0.22	0.21
		h=20	0.21	0.16	0.17	0.05	0.21	0.20
	Import Prices	h=1	0.13	0.11	0.20	0.19	0.20	0.18
		h=20	0.12	0.16	0.18	0.18	0.18	0.17
Foreign Export Prices	h=1	0.12	0.15	0.19	0.19	0.16	0.18	
	h=20	0.14	0.21	0.18	0.19	0.14	0.14	
FINLAND	GDP	h=1	0.02	0.25	0.21	0.27	0.15	0.11
		h=20	0.06	0.23	0.19	0.24	0.15	0.12
	CPI	h=1	0.33	0.03	0.10	0.18	0.17	0.17
		h=20	0.25	0.10	0.14	0.20	0.16	0.16
	Shadow BR	h=1	0.16	0.20	0.14	0.00	0.24	0.25
		h=20	0.16	0.20	0.14	0.05	0.22	0.23
	ERI	h=1	0.21	0.21	0.16	0.02	0.20	0.20
		h=20	0.20	0.19	0.16	0.06	0.19	0.19
	Import Prices	h=1	0.14	0.13	0.18	0.17	0.19	0.19
		h=20	0.14	0.17	0.17	0.19	0.16	0.16
Foreign Export Prices	h=1	0.13	0.12	0.18	0.28	0.15	0.14	
	h=20	0.14	0.17	0.18	0.23	0.14	0.13	

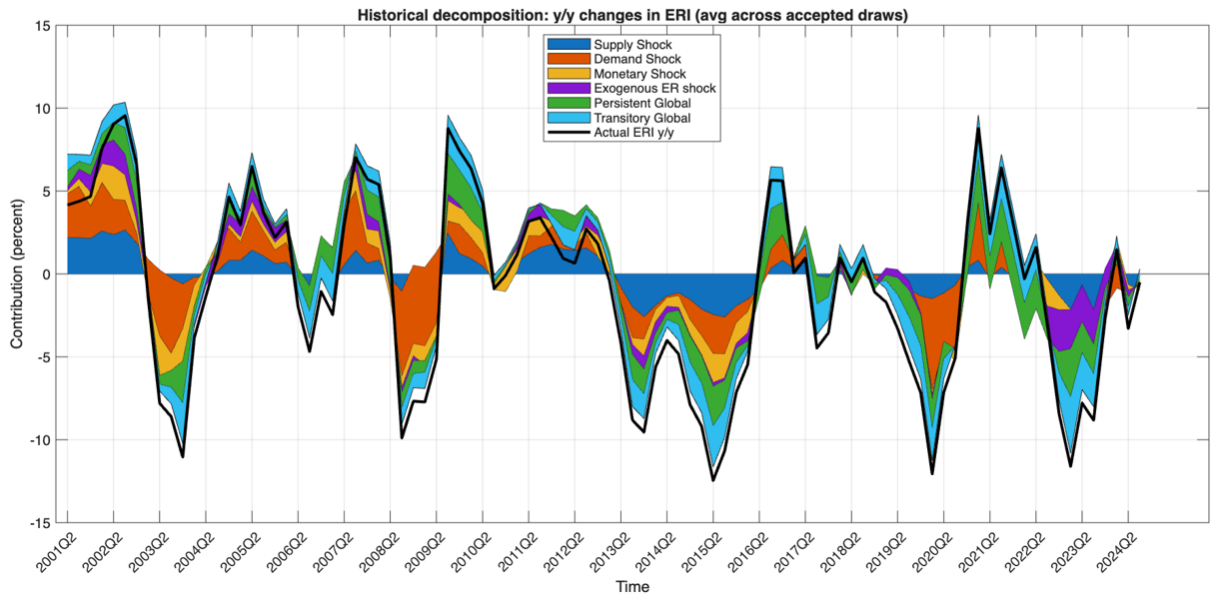
Historical Decomposition: Iceland



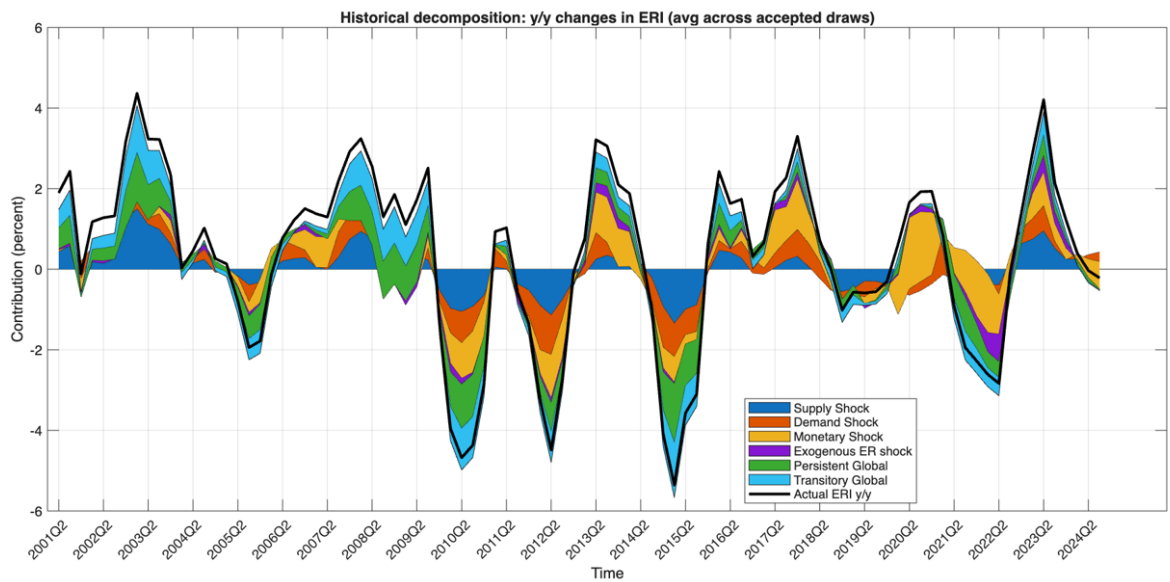
Historical Decomposition: Sweden |



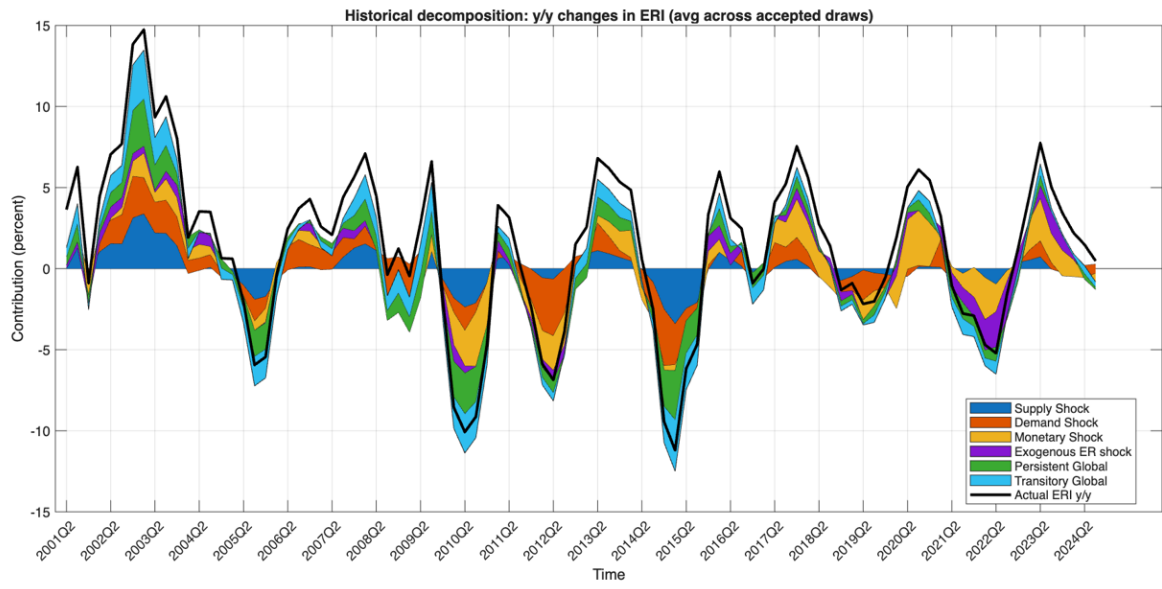
Historical Decomposition: Norway |



Historical Decomposition: Denmark |



Historical Decomposition: Finland



Appendix II: Material for the research on sources of currency variation using financial market data

This research was prepared with the excellent research assistance by Yongi Xue, The Productivity Institute, University of Manchester.

Appendix A: Sign restrictions for the benchmark model (8-factor)

Appendix A reports the sign restrictions used to identify the benchmark 8-factor SVAR. For transparency, we present the identification scheme in four separate tables, reflecting differences in exchange-rate definitions and institutional setups across countries.

Table A1 reports the benchmark sign restrictions for the floating-rate cases with USD as the reference currency, covering Sweden (SEK/USD), Norway (NOK/USD), and Iceland (ISK/USD). These three cases share the same block structure (domestic, EA, US, and the global/country spirits split) and therefore can be presented within a common template.

Table A2 reports the benchmark restrictions for Denmark (DKK/USD). Given the euro peg, the domestic block is interpreted under a constrained exchange-rate regime, and we impose a slightly more cautious set of FX-sign restrictions accordingly.

Table A3 reports the benchmark restrictions for Finland (EUR/USD). As Finland is in the euro area, the exchange rate is EUR/USD and "Finland domestic conditions" are captured through a sovereign-spread/financial-conditions block rather than an independent currency channel.

Table A4 reports the benchmark restrictions for Iceland (ISK/EUR). Using the euro as the reference currency changes the mapping of EA and US conditions into the bilateral rate, so the FX-sign restrictions are adjusted to match the ISK/EUR definition.

Table A1. Sign restrictions for the benchmark 8-factor SVAR identification of Sweden & Norway & Iceland (Domestic currency / USD)

Note: '+' and '-' denote positive and negative sign restrictions, respectively; blank cells indicate no sign restriction.

Table A1 Sign restrictions for the benchmark 8-factor SVAR identification of Sweden & Norway & Iceland (Domestic currency/USD)

Variable	Domestic policy	Domestic macro	EA policy	EA macro	US policy	US macro	Global spirits (OFR)	Domestic spirits (residual)
Domestic government bond yield (10Y)	+							
Domestic equity	-	+					-	-
EA OIS (10Y)			+					
EA equity			-	+			-	
Global spirits (OFR)							+	
Country spirits (residuals)								+
US equity					-	+	-	
Domestic / USD	+	+	+	+	-		-	+

Note: '+' and '-' denote positive and negative sign restrictions, respectively; blank cells indicate no sign restriction.

Table A2. Sign restrictions for the benchmark 8-factor SVAR identification of Denmark (DKK/USD)

Variable	Domestic policy	Domestic macro	EA policy	EA macro	US policy	US macro	Global spirits (OFR)	Domestic spirits (residual)
Domestic government bond yield (10Y)	+							
Domestic equity	-	+					-	-
EA OIS (10Y)			+					
EA equity			-	+			-	
Global spirits (OFR)							+	
Country spirits (residuals)								+
US equity					-	+	-	
DKK / USD			+	+	-		-	

Table A3 Sign restrictions for the benchmark 8-factor SVAR identification of Finland (EUR/USD)

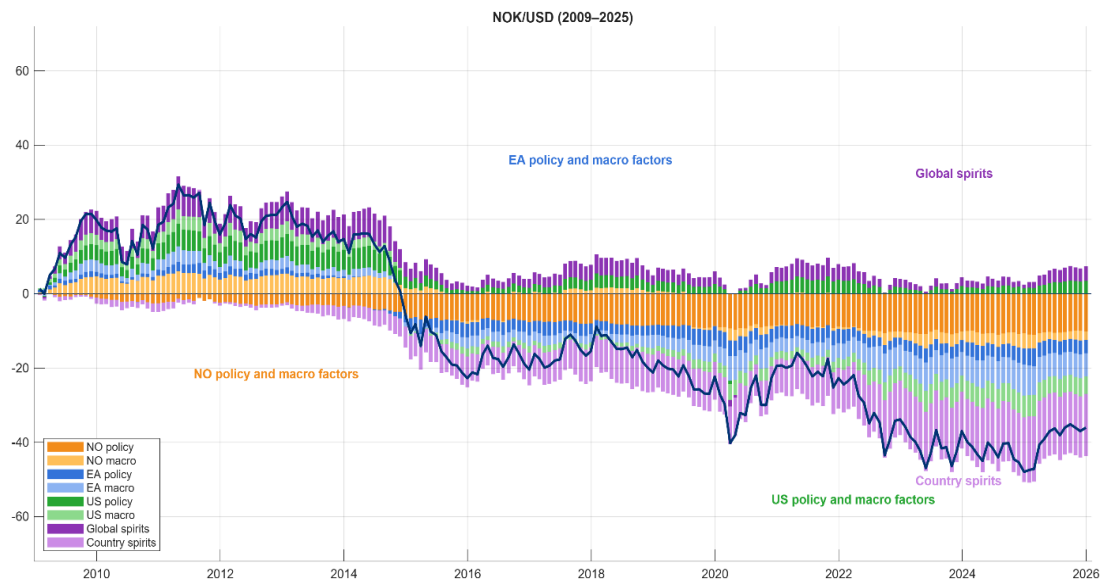
Variable	Domestic policy	Domestic macro	EA policy	EA macro	US policy	US macro	Global spirits (OFR)	Domestic spirits (residual)
Domestic government bond yield (10Y)	+	-						
Domestic equity	-	+					-	-
EA OIS (10Y)			+					
EA equity			-	+			-	
Global spirits (OFR)							+	
Country spirits (residuals)								+
US equity					-	+	-	
EUR / USD	-		+	+	-		-	

Table A4 Sign restrictions for the benchmark 8-factor SVAR identification of Iceland (ISK/EUR)

Variable	Domestic policy	Domestic macro	EA policy	EA macro	US policy	US macro	Global spirits (OFR)	Domestic spirits (residual)
Domestic government bond yield (10Y)	+							
Domestic equity	-	+					-	-
EA OIS (10Y)			+					
EA equity			-	+			-	
Global spirits (OFR)							+	
Country spirits (residuals)								+
US equity					-	+	-	
ISK / EUR	+	+	-	-	+			+

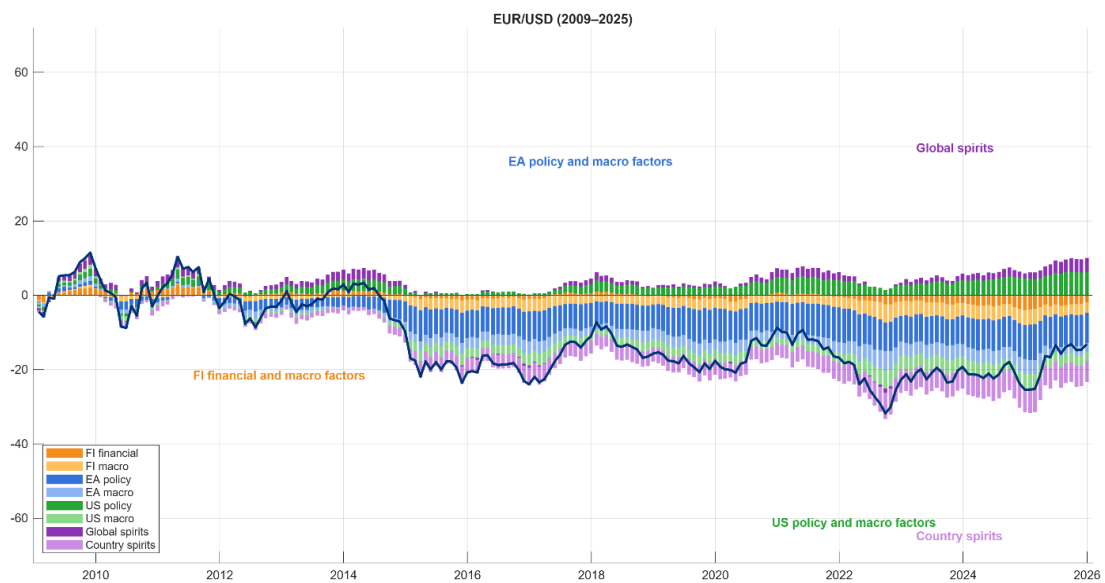
Additional charts for the benchmark 8 variable SVAR for Nordic economies not reported in the main text (Norway, Finland)

Figure Structural decomposition of Norway (NOK/USD) exchange rate movements (2009–2025)



Note: The solid line shows the realised NOK/USD exchange rate. The stacked bars show the contribution of each identified shock block in the 8-factor SVAR: Norway macro and policy factors, EA macro and policy factors, US macro and policy factors, global spirits (OFR), and country spirits (residual). At each date, the contributions sum to the total exchange rate movement.

Figure. Structural decomposition of Finland (EUR/USD) exchange rate movements (2009–2025)



Note: The solid line shows the realised EUR/USD exchange rate. The stacked bars show the contribution of each identified shock block in the 8-factor SVAR: Finland macro and policy factors, EA macro and policy factors, US macro and policy factors, global spirits (OFR), and country spirits (residual). At each date, the contributions sum to the total exchange rate movement

Appendix B. First pass decompositions charts (7-factor) and sign restrictions

Appendix B reports a parsimonious “first-pass” 7-factor specification used as a robustness check against the benchmark 8-factor model. The aim is to verify that the key conclusions on the relative importance of the non-financial blocks (domestic, EA, and US macro/policy) are not driven by the benchmark’s split of financial spirits into global spirits (OFR) and country spirits (residual). In the first-pass model, financial conditions are instead captured by a single financial factor (the OFR stress index), providing a simpler alternative identification.

We present six full-sample historical decomposition charts (Figures B1–B6) to illustrate the time-series behaviour of each currency under this 7-factor setup, alongside four sign-restriction tables (Tables B1–B4) documenting the corresponding identification schemes. Overall, this appendix is intended to show that differences across specifications primarily affect the partitioning of the financial block, while the macro/policy ranking remains broadly stable.

The following table shows the comparable absolute share of the currency variation associated with macro fundamentals versus the global financial sentiment proxy.

Block (absolute share)	Sweden (SEK/USD)	Norway (NOK/USD)	Finland (EUR/USD)	Denmark (DKK/USD)	Iceland (ISK/USD)	Iceland (ISK/EUR)
Domestic macro and policy	27.74%	28.86%	27.91%	27.58%	22.65%	30.33%
EA macro and policy	28.55%	28.04%	31.03%	31.39%	33.52%	33.38%
US macro and policy	27.45%	26.16%	25.08%	27.60%	28.38%	26.04%
Global risk	16.26%	16.96%	15.98%	13.43%	15.45%	10.25%

Note: 7-factor SVAR incorporating domestic macro and policy shocks, euro area macro and policy shocks, US macro and policy shocks, and a global risk factor. Shares are absolute-value contribution shares and are reported in percent; each column sums to 100. This table is designed for cross-country comparison of relative importance across blocks. 'Global risk' refers to the common global risk factor capturing international financial market conditions from the OFR index. Shares are absolute-value shares; they measure relative importance regardless of sign.

Comparing the results of the 8-factor and the 7-factor decompositions yield broadly consistent results, lending confidence to the robustness of the decomposition. In both specifications, EA macro and policy shocks emerge as the dominant driver for most currency pairs, reflecting the strong trade and financial integration of the Nordic economies with the euro area. US macro and policy shocks contribute roughly 20–28% across currencies, consistent with the global role of US monetary policy. Domestic macro and policy shocks account for approximately 22–30% of exchange rate variation, with Iceland (ISK/USD) being a notable exception where EA factors dominate more strongly.

The global risk factor contributes between 10–17% across currencies, with ISK/EUR exhibiting the smallest share, likely reflecting that the EUR/USD leg already absorbs much of the global risk variation. The transition from the 8-factor to the 7-factor model redistributes the domestic financial sentiment residual across the remaining blocks, with US macro and policy absorbing the largest share of the reallocation in most cases. The broad stability of rankings and relative magnitudes across the two specifications suggests that the core findings are not sensitive to the inclusion of the country-specific residual factor. Further, the comparison of these models that use financial market data suggests that a key source of currency variation comes from capital flows from the US, not from EA.

Figure B1. Structural decomposition of Sweden (SEK/USD) exchange rate movements (2009–2025) with 7-factor model

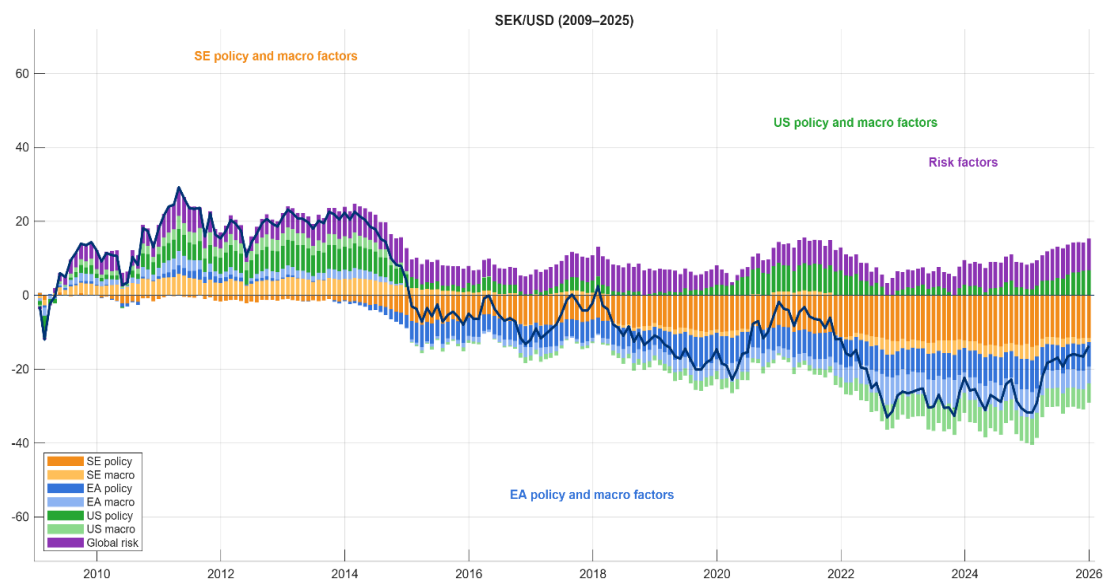


Figure B2. Structural decomposition of Norway (NOK/USD) exchange rate movements (2009–2025) with 7-factor model

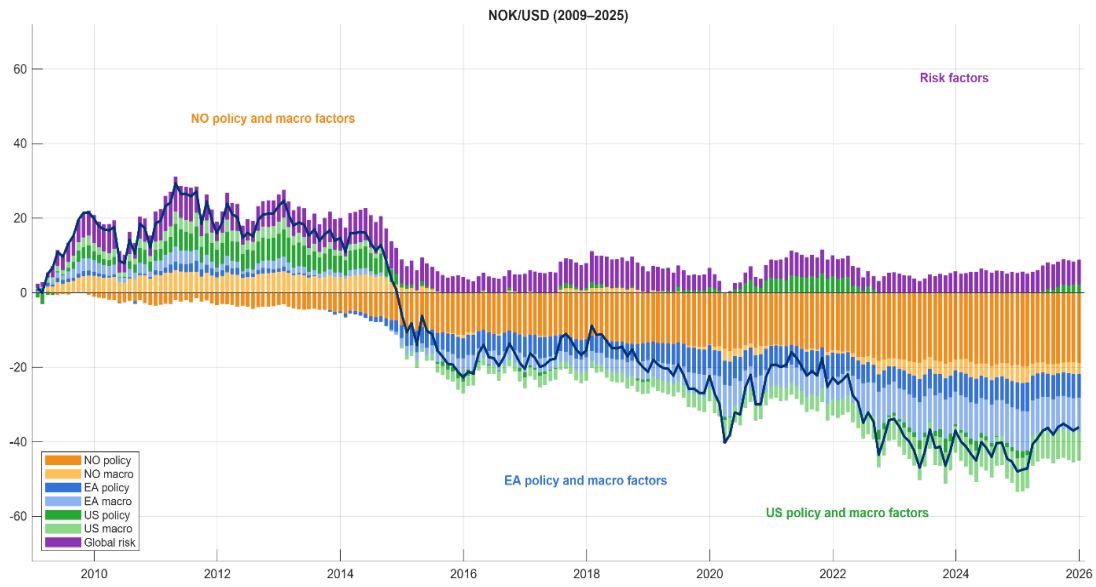


Figure B3. Structural decomposition of Denmark (DKK/USD) exchange rate movements (2009–2025) with 7-factor model

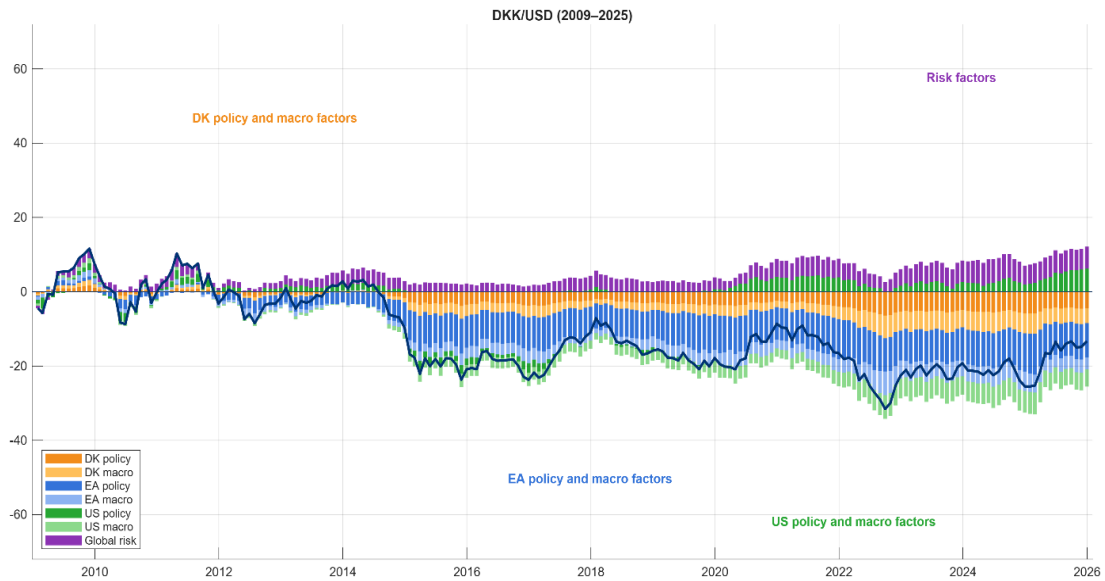


Figure B4. Structural decomposition of Finland (EUR/USD) exchange rate movements (2009–2025) with 7-factor model

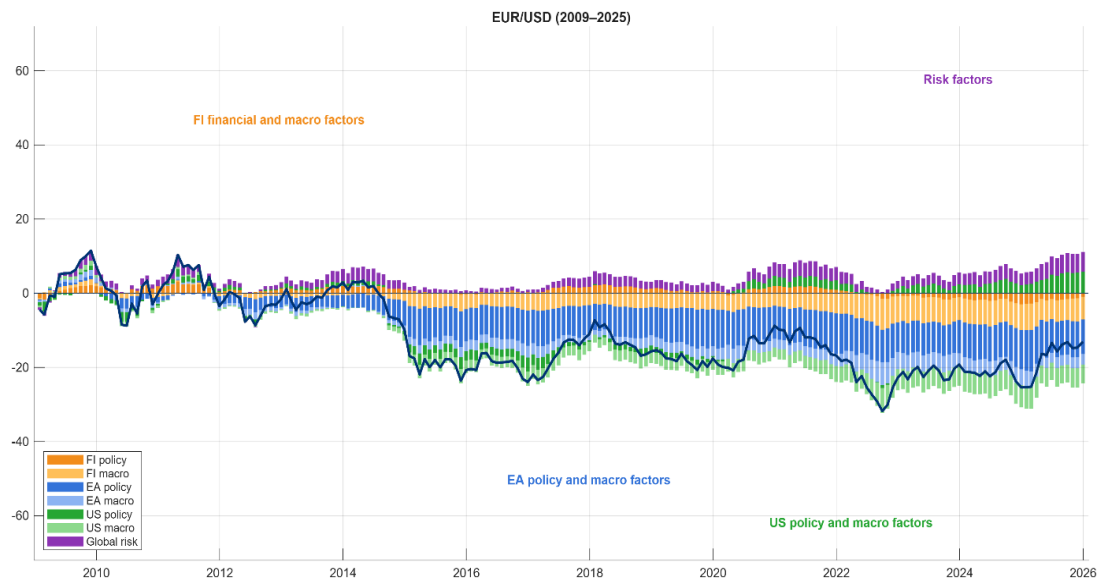


Figure B5. Structural decomposition of Iceland (ISK/USD) exchange rate movements (2009–2025) with 7-factor model

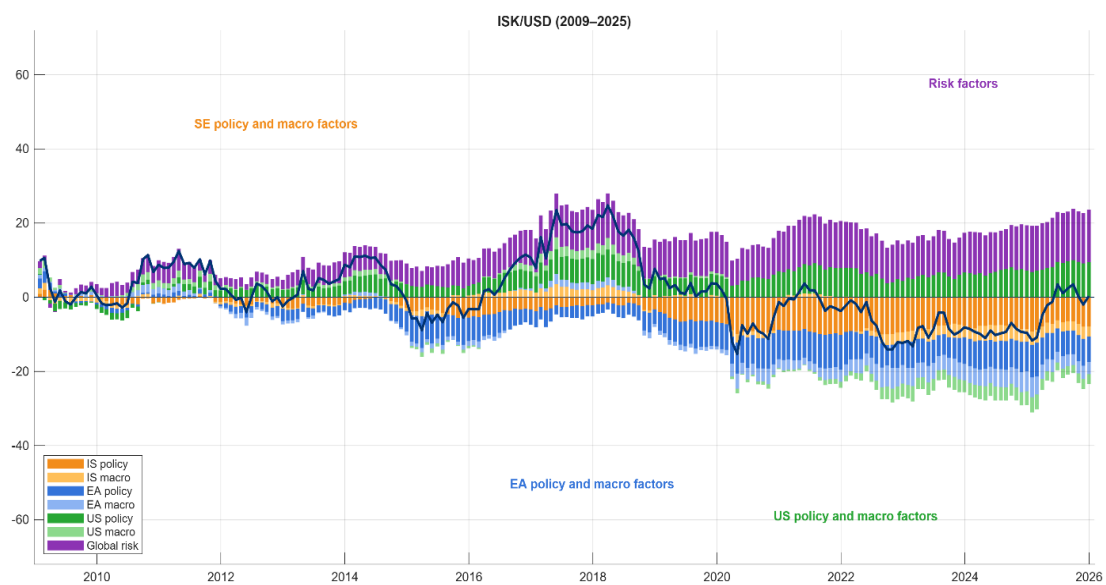


Figure B6. Structural decomposition of Iceland (ISK/EUR) exchange rate movements (2009–2025) with 7-factor model

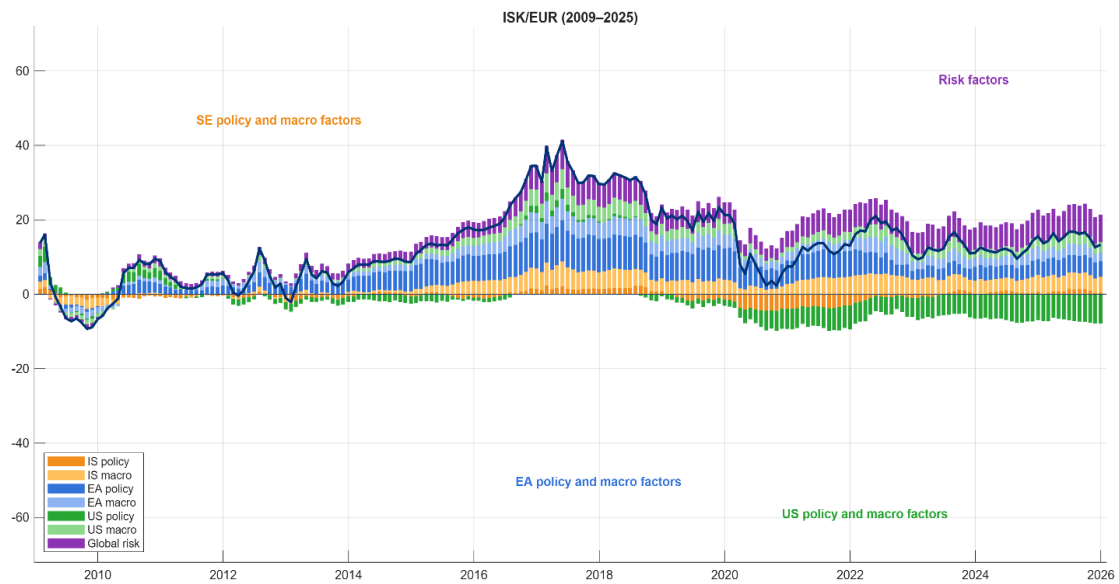


Table B1 Sign restrictions for the first-pass 7-factor SVAR identification of Sweden & Norway & Iceland (Domestic currency/USD)

Variable	Domestic policy	Domestic macro	EA policy	EA macro	US policy	US macro	Global risk
Domestic government bond yield (10Y)	+						
Domestic equity	-	+					-
EA OIS (10Y)			+				
EA equity			-	+			-
US long-term yields					-		+
US equity prices					-	+	-
DOMESTIC / USD	+	+	+	+	-		-

Table B2. Sign restrictions for the first-pass 7-factor SVAR identification of Denmark (DKK/USD)

Variable	Domestic policy	Domestic macro	EA policy	EA macro	US policy	US macro	Global risk
Domestic government bond yield (10Y)	+						
Domestic equity	-	+					-
EA OIS (10Y)			+				
EA equity			-	+			-
US long-term yields					-		
US equity prices					-	+	-
DKK / USD			+	+	-		-

Table B3 Sign restrictions for the first-pass 7-factor SVAR identification of Finland (EUR/USD)

Variable	Domestic policy	Domestic macro	EA policy	EA macro	US policy	US macro	Global risk
Domestic government bond yield (10Y)	+	-					
Domestic equity	-	+					-
EA OIS (10Y)			+				
EA equity			-	+			-
US long-term yields					-		
US equity prices					-	+	-
EUR / USD	-		+	+	-		-

Table B4. Sign restrictions for the first-pass 7-factor SVAR identification of Iceland (ISK/EUR)

Variable	Domestic policy	Domestic macro	EA policy	EA macro	US policy	US macro	Global risk
Domestic government bond yield (10Y)	+						
Domestic equity	-	+					-
EA OIS (10Y)			+				
EA equity			-	+			-
US long-term yields					-		+
US equity prices					-	+	-
ISK/ EUR	+	+	-	-	+		

Appendix C. Robustness check charts (safe-haven vs sell-off identification) and sign restrictions

Appendix C reports robustness results based more closely on Brandt et al (2021) which disentangles global and country-specific financial shocks by imposing opposite yield responses (if there is a global ‘flight-to-safety’, yields fall; if there is a country ‘sell-off’: domestic yields rise). This specification provides a tighter restriction and interpretation to the benchmark approach, where financial spirits are split into global spirits (proxied by OFR data) and country spirits (orthogonalized residual) in a more agnostic way.

Across countries, these alternative financial-spirits identifications primarily affect how the financial block is partitioned between global and domestic components. The macro/policy shares and the cross-country ranking of non-financial drivers remain broadly stable. Since our assessment of how financial spirits contribute to the environment underpinning the currency variation is more agnostic than the specific risk, this alternative approach supports using the benchmark OFR/residual split for the main presentation, with Brandt-style decomposition of financial spirits used as a robustness comparison.

The full-sample historical decompositions under the safe-haven/sell-off identification (Figures C1–C6) and the corresponding sign-restriction tables (Tables C1–C4) show that the main movements continue to be accounted for by domestic/EA/US blocks, while differences are concentrated in the interpretation and allocation of the financial components.

Figure C1. Structural decomposition of Iceland (*ISK/USD*) exchange rate movements (2009–2025) with financial-spirits sign-restricted 8-factor model

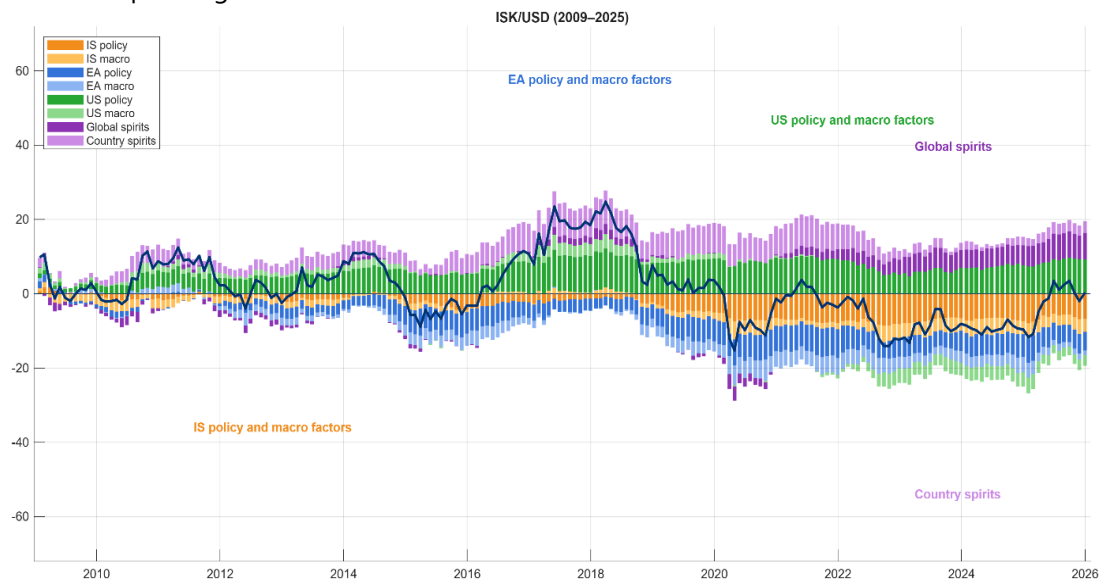


Figure C2. Structural decomposition of Iceland (*ISK/EUR*) exchange rate movements (2009–2025) with financial-spirits sign-restricted 8-factor model

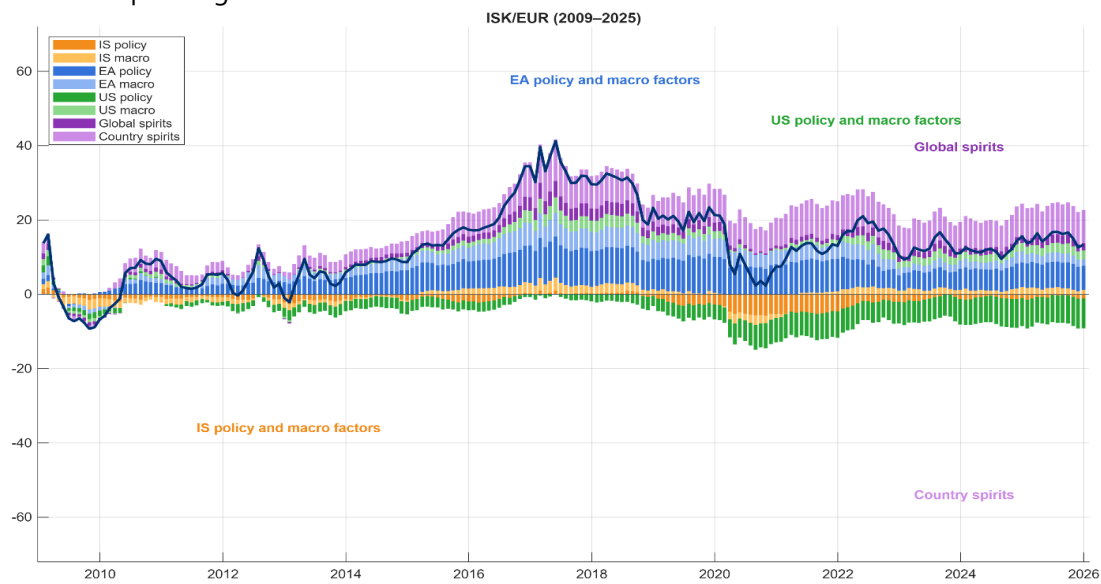


Figure C1. Structural decomposition of Sweden (*SEK/USD*) exchange rate movements (2009–2025) with financial-spirits sign-restricted 8-factor model

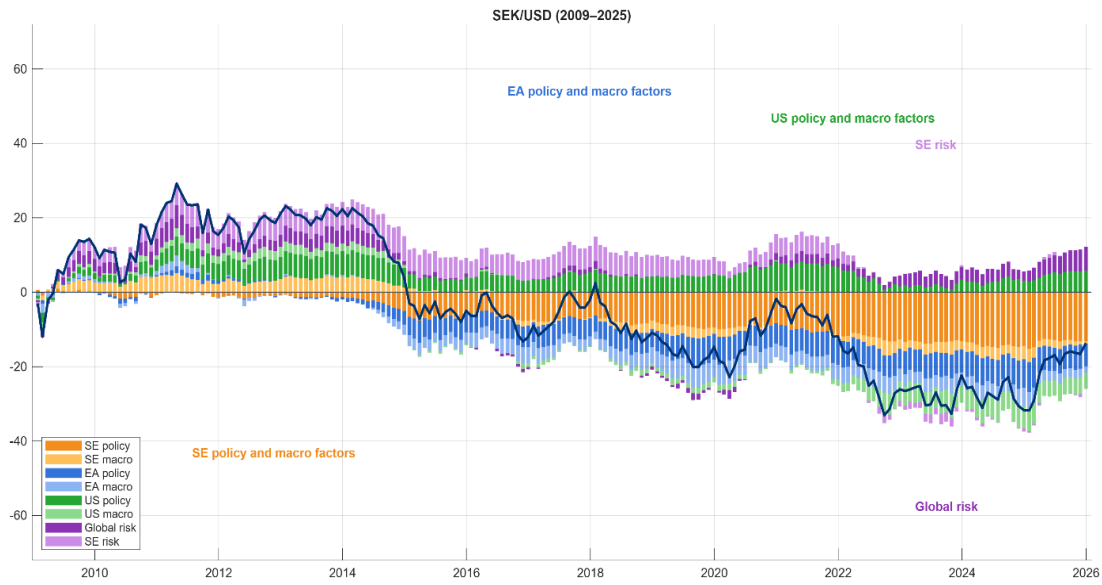


Figure C2. Structural decomposition of Norway (NOK/USD) exchange rate movements (2009–2025) with financial-spirits sign-restricted 8-factor model

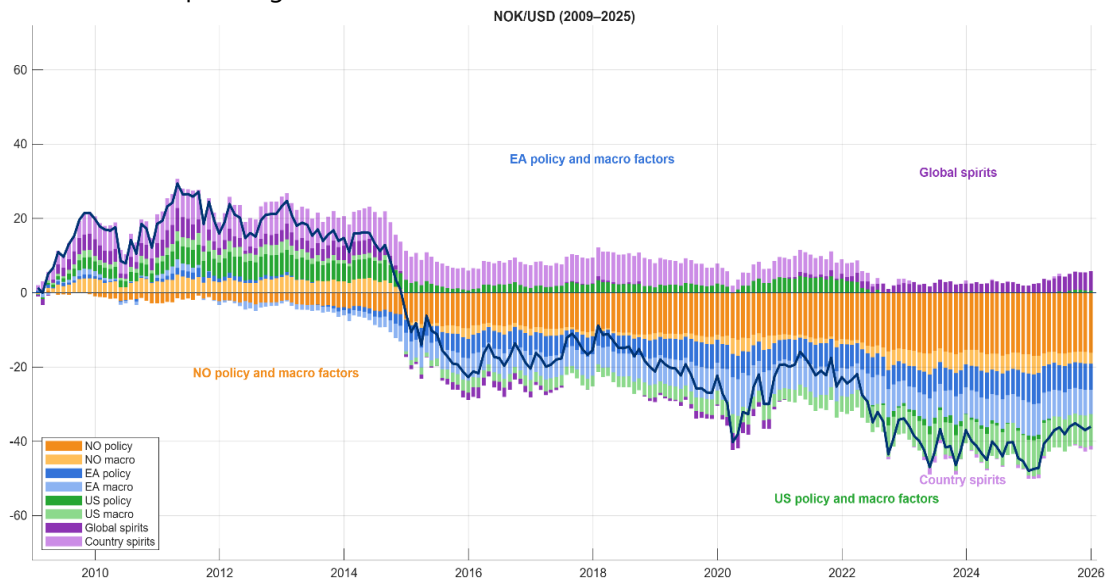


Figure C3. Structural decomposition of Denmark (DKK/USD) exchange rate movements (2009–2025) with financial-spirits sign-restricted 8-factor model

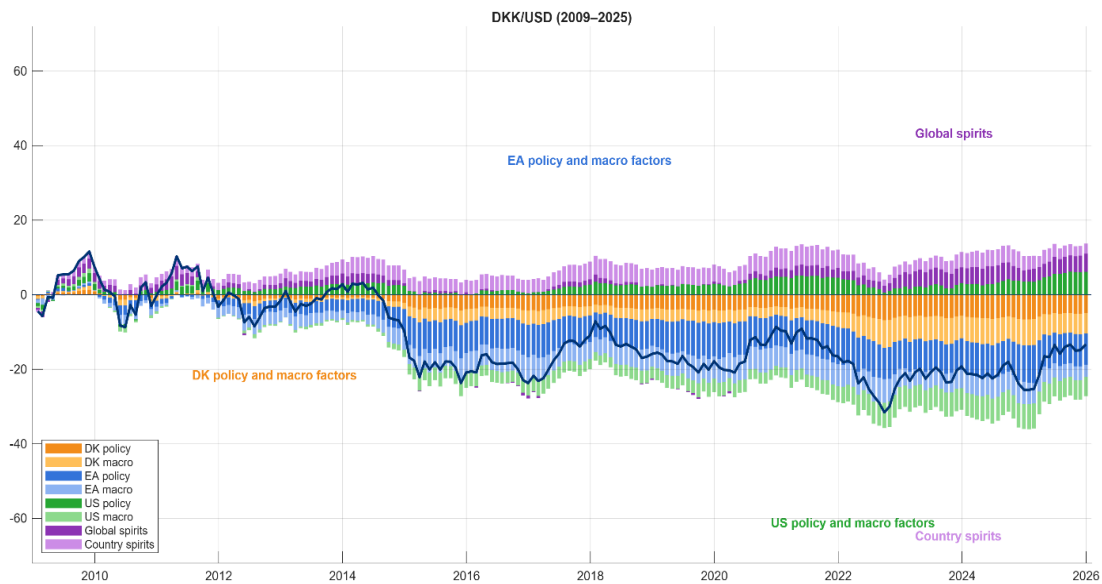


Figure C4. Structural decomposition of Finland (EUR/USD) exchange rate movements (2009–2025) with financial-spirits sign-restricted 8-factor model

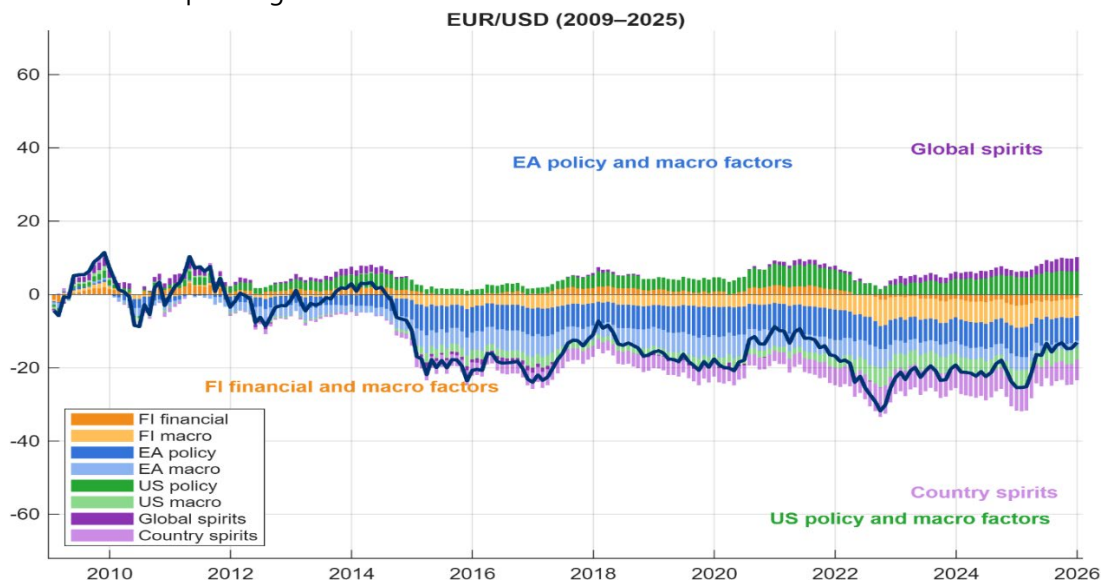


Table C1. Sign restrictions for the spirits-sign-restricted 8-factor SVAR identification of Sweden & Norway & Iceland (Domestic currency / USD)

Variable	Domestic policy	Domestic macro	EA policy	EA macro	US policy	US macro	Global spirits (OFR)	Domestic spirits (residual)
Domestic government bond yield (10Y)	+	+					-	+
Domestic equity	-	+					-	-
EA OIS (10Y)			+	+			-	
EA equity			-	+			-	
Global spirits (OFR)							+	
Country spirits (residuals)								+
US equity					-	+	-	
Domestic / USD	+	+	+	+	-		-	-

Table C2. Sign restrictions for the tighter restrictions model 8-factor SVAR of identification of Denmark (DKK/USD)

Variable	Domestic policy	Domestic macro	EA policy	EA macro	US policy	US macro	Global spirits (OFR)	Domestic spirits (residual)
Domestic government bond yield (10Y)	+	+					-	+
Domestic equity	-	+					-	-
EA OIS (10Y)			+	+			-	
EA equity			-	+			-	
Global spirits (OFR)							+	
Country spirits (residuals)								+
US equity					-	+	-	
DKK / USD			+	+	-		-	-

Table C3. Sign restrictions for the tighter restrictions model 8-factor SVAR of Finland (EUR/USD)

Variable	Domestic policy	Domestic macro	EA policy	EA macro	US policy	US macro	Global spirits (OFR)	Domestic spirits (residual)
Domestic government bond yield (10Y)	+	-						+
Domestic equity	-	+					-	-
EA OIS (10Y)			+	+			-	
EA equity			-	+			-	
Global spirits (OFR)							+	
Country spirits (residuals)								+
US equity					-	+	-	
EUR / USD	-		+	+	-		-	

Table C4. Sign restrictions for the tighter restrictions model 8-factor SVAR of identification of Iceland (ISK / EUR)

Variable	Domestic policy	Domestic macro	EA policy	EA macro	US policy	US macro	Global spirits (OFR)	Domestic spirits (residual)
Domestic government bond yield (10Y)	+	+					-	+
Domestic equity	-	+					-	-
EA OIS (10Y)			+	+			-	
EA equity			-	+			-	
Global spirits (OFR)							+	
Country spirits (residuals)								+
US equity					-	+	-	
ISK / EUR	+	+	-	-	+			-