Nordic Council of Ministers

ANALYSIS OF

COMPETITIVENESS IN A NORDIC PERSPECTIVE



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Preface

European productivity growth has increasingly fallen behind the United States, creating renewed focus on European competitiveness. This debate intensified following the Draghi Report from 2024, which highlighted a persistent productivity gap between Europe and the US, partly reflecting lower investment in technology, innovation, and other growth-enhancing areas.

This raises the question of whether the same diagnosis applies to the Nordic countries, which differ structurally from many other European economies.

Historically, the Nordic economies have remained close to the global productivity frontier while combining strong institutions, high labour-market participation, social cohesion, and relatively ambitious climate policies. At the same time, there are increasing indications that the Nordic model is facing new challenges in maintaining this position.

Against this background, the purpose of this report is twofold. First, we examine the factors that have historically contributed to strong Nordic competitiveness and productivity performance. Second, we analyse the key challenges and barriers that may shape the ability of the Nordic economies to remain among the world's leading economies in the years ahead.

The report is structured in two main sections.

This first section examines the factors that have historically contributed to strong Nordic competitiveness and productivity performance, as well as the key challenges and barriers that may shape the ability of the Nordic economies to remain among the world's leading economies in the years ahead.

The second section consists of a structured international benchmarking analysis of Nordic competitiveness across eight dimensions:

1. Innovation capacity
2. Entrepreneurship and firm dynamics
3. Access to capital
4. Digitalisation
5. Administrative and regulatory burdens
6. Energy costs and the green transition
7. Economic resilience
8. The Nordic region as an integrated market

The benchmarking analysis combines quantitative indicators, case studies, and international comparisons to identify both Nordic strengths and areas where competitiveness may be under pressure.

Note on geographic coverage

The Nordic region comprises the five states Denmark, Finland, Iceland, Norway, and Sweden, as well as the three autonomous territories of Greenland, the Faroe Islands, and Åland. Unless otherwise stated, the statistical analysis in this report covers the five countries, reflecting the constraints of data availability at the national level.

SECTION 1



Executive summary

A distinct economic model at the global competitiveness frontier

Nordic countries are among the most productive and innovative economies in the world and remain at the forefront of global competitiveness. Productivity levels are broadly on a par with those in the US and remain significantly above those in the EU (by around 24%).

A range of factors has contributed to this strong performance. These can broadly be grouped into three key pillars:

1. Strong human capital and innovative economies: The Nordic countries benefit from highly developed education systems and strong academic institutions, with all five countries exceeding the EU average for tertiary educational attainment[1], combined with high levels of educational attainment across the population. This results in a broadly distributed and highly skilled workforce, supporting both innovation and the diffusion of new technologies across the economy.

2. Strong institutions: The Nordics are characterised by effective legal systems, low levels of corruption[2], and high levels of trust. These imply that many transactions can be conducted with relatively low contractual complexity and enforcement costs.

3. Strong macro financial fundamentals: Robust macroeconomic frameworks and well-developed financial systems underpin competitiveness. Pension systems and labour market institutions have contributed to high structural savings, while a shift towards defined contribution schemes has increased the allocation of capital to equities and other risk-bearing assets. At the same time, government debt levels are generally moderate and stable across the Nordics, contributing to low country risk, and, in turn, leading to favourable financing conditions for firms.

Taken together, these factors contribute to making the Nordic economies attractive locations for business and investment. This is reflected in investment patterns: over the past five years, aggregate investment levels have been higher in the Nordic countries than in the US (8%) and exceed EU levels by around 13%. The capital stock (although subject to significant uncertainty) is estimated to be around 20% higher in the Nordics than in the US.

1. OECD (2026). Share of population aged 25–64 with tertiary education in 2024: Sweden (52%), Norway (50%), Denmark (45%), Iceland (44%), Finland (43%), compared with 39% in the EU27 average (link).
2. Transparency International (2026). Corruption Perceptions Index 2025: Denmark ranked 1st, Finland 2nd, Norway 4th, Sweden 6th and Iceland 10th (link).

As mentioned, Nordic competitiveness is situated at the global frontier, but the underlying economic and societal model differs in important ways from that of the US, China, and, to some extent, the EU.

A key distinction lies in **labour markets and labour input**. Labour market participation is higher across the population, including among women. In 2024, male labour force participation reached 85% in the Nordics, while female participation stood at 81%, compared with 71% in the EU and 70% in the US. However, average hours worked per employee are significantly lower than in the US and, to some extent, the EU. As a result, total labour input relative to the population is lower in the Nordic economies. This lower labour input is thus the main driver of the gap in GDP per capita of around 9% compared with the US.

Another important distinguishing feature lies in the organisation of labour markets. The Nordic model **combines relatively high labour market flexibility with strong income protection for workers**, occupying an intermediate position between the more flexible US model and the more regulated labour markets found in much of Europe.

The **distribution of income also differs** from global peers, with a higher degree of equality. Compared to the US, this reflects two main factors. *First*, productivity and wages are more evenly distributed across the population, with relatively higher incomes at the lower end and comparatively lower incomes at the top. *Second*, there is a higher degree of redistribution through taxation and social transfers, including unemployment and social benefits.

There are indications in the literature that high levels of equality contribute to higher levels of trust, which in turn support well-functioning institutions and economic interactions[3]. This creates a reinforcing dynamic, where elements of prosperity support social cohesion, which in turn strengthens the institutional foundations for continued economic performance.

Finally, the Nordic economies combine a relatively strong competitive position with **ambitious climate targets and lower emissions intensity** (CO_2 per GDP) than many peers[4]. This partly reflects favourable access to renewable energy sources, including hydropower in Norway, Sweden, and Finland, offshore wind in Denmark, and geothermal energy in Iceland. At the same time, emissions per capita remain broadly comparable to those of other advanced economies. Since 1990, emissions have declined by around 41% in the Nordics, compared with 38% in the EU and 30% in the US.

Taken together, these findings suggest that high levels of competitiveness and innovation can coexist with strong social cohesion and ambitious climate objectives.

At the same time, the Nordic model faces a number of emerging challenges. If not addressed appropriately, these could weaken the foundations of the region's competitive position and, over time, also affect the sustainability of the underlying welfare model and the high levels of social cohesion it supports.

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3. See e.g. OECD (2014), Trends in Income Inequality and its Impact on Economic Growth (link); and Rothstein, B. & Uslaner, E. M. (2005), "All for All: Equality, Corruption, and Social Trust", *World Politics*, 58(1), 41–72. https://muse.jhu.edu/article/200282
4. Emissions are measured as territorial GHG emissions and therefore do not account for where goods and services are ultimately consumed. International shipping and aviation are excluded from the territorial emissions figures, see European Commission (2025), GHG emissions of all world countries (link).

We identify two major macro risks facing the Nordic economies:

1) Falling behind the global productivity frontier

Nordic productivity growth is losing pace relative to global leaders. Since 2000, productivity growth in the Nordics has been around 25%, compared to 43% in the US. Since 2005, the differences in productivity growth is even greater: productivity in the US has grown by roughly 1.13% annually, compared with around 0.6% in the Nordic countries. As a result, a productivity lead of around 14% two decades ago has gradually narrowed to near parity today. If current trends persist, the Nordics risk falling behind the US within the next decade, while maintaining only a limited gap relative to the EU.

This pattern is also reflected in total factor productivity (TFP), which captures the efficiency with which both labour and capital are used. TFP growth in the Nordics has been around 0.5%, compared to 1% in the US and 0.6% in the EU, indicating a relative loss of momentum.

The productivity slowdown is mirrored by a slowdown in R&D investment: In 2000, the Nordics invested on average around 2.8% of GDP in R&D, slightly above the United States. However, this position reversed in 2012, when the US overtook the Nordics and has since significantly increased its R&D intensity, while Nordic spending has remained broadly stable.

Importantly, this does not appear to be driven by insufficient overall investment. As mentioned, aggregate investment levels in the Nordics are comparable to US. The composition of investment, rather than its volume, may be the most relevant factor.

The literature increasingly highlights the importance of investments in intangible assets and digital technologies as key drivers of productivity growth. In this area, the Nordics appear to lag behind leading economies: investment in intangible assets as a share of GDP is around 3.7% in the Nordics, compared to 3.8% in the US. Similarly, other indicators such as AI adoption, and patent activity point to a relative gap, with patent applications around 30% lower than in the US and less than half the level observed in China.

This pattern suggests that investment might be less oriented towards high-growth high-productivity activities. This is partly explained by a gap in the depth and orientation of Nordic capital markets. Investments in tangible assets such as buildings and infrastructure are typically associated with lower risk and can often be financed through traditional bank lending. In contrast, investments in intangible assets are inherently harder to collateralise and require a different kind of capital markets, with a higher risk appetite and capable of evaluating complex business models with uncertain payoffs. If capital markets lack the depth or the risk appetite to back innovative and scalable firms at the right stage of their development, investment will naturally gravitate towards safer, more tangible alternatives.

Taken together, the evidence points to potential constraints on both the supply of risk capital and the financial system's ability to channel resources towards more growth-oriented investments.

2) Increased vulnerability in a more geopolitically unstable world

The global economy has entered a period of heightened geopolitical uncertainty, where established alliances and a stable, rules-based efficiency-driven international order can no longer be taken for granted. While this presents challenges for all economies, it is particularly relevant for small, open economies such as the Nordic countries.

The Nordic growth model is deeply integrated into global trade. Exports correspond to around 50% of GDP in the Nordics, compared to around 20% in China and 10% in the US. Imports share on GDP are similarly high, amounting to around 45% of GDP, compared with around 17% in China and 14% in the US. This illustrates that the Nordic economies are significantly more exposed to global trade dynamics.

High reliance on exports and imports has enabled a high degree of specialisation, which has been central to achieving strong global competitiveness. This specialisation comes with a trade-off: Denmark and Norway show a relatively high concentration of exports in a small number of sectors, with transport services accounting for a large share of Danish exports and oil and gas accounting for a large share of Norwegian exports.

In a more uncertain geopolitical environment, overreliance on exports and on external partners for imports of critical materials and energy creates vulnerabilities. Disruptions to trade can have more immediate and pronounced effects, materialising through several channels: reduced access to export markets, disruptions to imports of intermediate inputs affecting production, and restrictions on imports of final goods requiring adjustments in domestic production. Therefore, going forward, there is a growing need to balance these strengths with a consideration for resilience and strategic autonomy. This implies a shift, where competitiveness is determined not only by comparative advantages, but also by the ability to contribute to security of supply and reduce strategic dependencies.

These considerations are particularly relevant in a set of key sectors that are critical for economic resilience and security, including defence, raw materials, energy, advanced technologies, and food and health. The Nordic countries have different strengths across these areas, reflecting their diverse economic structures and resource endowments. At the same time, there are indications that electricity infrastructure is coming under increasing pressure and emerging as a significant bottleneck to the green and digital transition. It is therefore important to prioritise investment, as timely access to reliable and affordable power is now a core precondition for sustaining Nordic competitiveness and economic resilience.

Going forward, there is an increasing need to consider how Nordic economies contribute to resilience at the European level. This implies a greater focus on strategic importance within Europe, rather than purely global competitiveness.

In this context, certain sectors may require scaling and strengthening, including areas where the Nordics have existing capabilities. Based on the analysis in this report, this may include defence, critical raw materials, energy, technology, and pharmaceuticals. Leveraging these strengths can support both European resilience and continued Nordic competitiveness, although it may also involve trade-offs between efficiency and security of supply.

Creating the next generation of growth engines in the Nordics to address the competitiveness challenge

Preserving the Nordics' position at the competitiveness frontier will depend on their ability to strengthen the creation, scaling, and diffusion of new technologies and business models. Innovative firms are a key engine of future growth, given their contribution to productivity gains, high-quality employment, and technological upgrading.

The Nordics have a higher share of high-growth firms than the EU average, but challenges remain in scaling these firms globally, as reflected in the relatively lower number of unicorns compared with the United States. This suggests that the key gap is not relative to European peers, but to the global frontier.

In our work, we identify three main barriers that may contribute to this limited capacity to generate future growth engines:

1) Capital constraints and weak incentive structure limit firm creation and scaling

Access to venture capital plays a critical role in scaling innovative firms. While the Nordics have a relatively strong base of early-stage innovation and public R&D support, they lag significantly behind the United States in the availability of large-scale venture capital and private equity financing needed for scale-up phases. Nordic countries perform somewhat better than the EU average, but the gap to the US remains very large: venture capital investment is only a small fraction of US levels (around 0.1–0.2% of GDP in the Nordics versus roughly 0.8% in the US).

Access to capital for larger, more mature companies is also challenged in the Nordics. Private equity markets show a relevant gap relative to the US, indicating that the constraint extends beyond early-stage financing. Moreover, while Nordic IPO markets showed signs of recovery in 2025, this recovery has been uneven across the region, with Denmark seeing no listing activity in 2025.

Capital allocation patterns are also highly dependent on institutional and tax-related factors. In particular, capital gains taxation varies significantly across countries, affecting after-tax returns on equity investment and potentially influencing investment strategies. In addition, differences in tax-advantaged investment vehicles and the preferential treatment of housing relative to financial assets may further skew household savings towards real estate rather than productive equity investment.

While Nordic pension systems are large and well-developed, a relatively smaller share of capital is directed towards the domestic market. This reflects a limited degree of home bias in investment strategies. While international diversification is appropriate for large, established firms, there may be a case for greater allocation to domestic growth segments, where information advantages and ecosystem effects are stronger.

Taken together, these factors suggest that while overall investment levels are high, the Nordics are comparatively less effective in channelling capital towards high-risk, high-growth firms, which may limit long-term productivity and innovation.

2) Complex regulatory frameworks can hinder firm growth and scaling

While the Nordic countries generally rank highly in ease of doing business due to strong institutions and transparent regulation, survey-based evidence suggests that firms perceive regulatory burdens to be relatively low compared to European peers, but about twice the level reported by US firms. We ascribe this primarily to reporting and compliance requirements, which increase administrative and cost burdens for firms, particularly smaller and growing firms.

Additionally, gold-plating of EU regulations, such as those on capital requirements, can, in some cases, reduce incentives for risk-taking among institutional investors and hinder firm growth.

Finally, regulatory uncertainty can discourage investment. Large projects rely on predictable rules and timely approvals, and delays in permitting or infrastructure connections can increase costs and postpone decisions.

3) Attracting and retaining talent is a key challenge to competitiveness

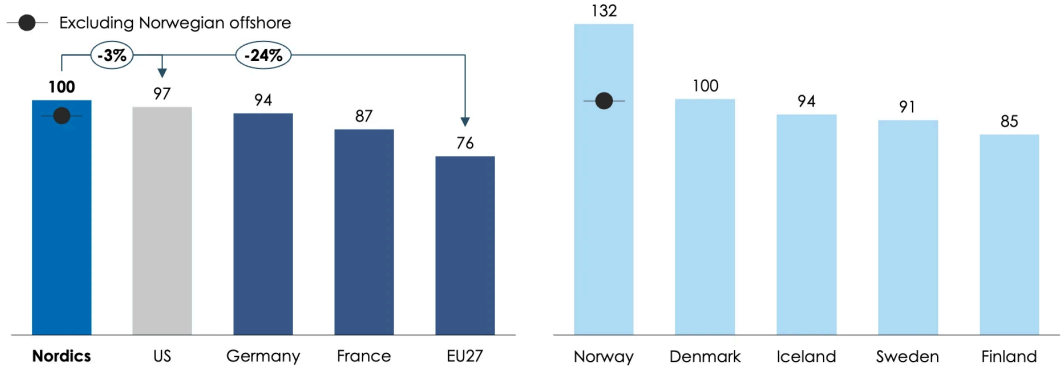
Access to highly skilled labour is an increasingly important determinant of competitiveness and long-term growth. Survey evidence illustrates the scale of the challenge: 79% of Swedish firms and around 67% of Danish and Finnish firms report that access to skilled staff limits investment, particularly for STEM skills critical to digitalisation, AI, and the green transition. While the Nordics benefit from strong education systems, domestic supply alone is unlikely to suffice to stay at the global competitiveness frontier, reinforcing the importance of attracting international talent. Equally important is growing talent from within: despite the Nordic model's traditional strengths in adult education, participation in formal upskilling has stagnated or declined across several countries, raising concerns about workforce adaptability to rapid technological change.

Nordic economies at the forefront of global competitiveness

Nordic countries consistently rank highly in global competitiveness metrics. The Global Sustainable Competitiveness Index 2024[5] highlights the region's strengths in resource efficiency, governance, innovation, and social capital, while the World Economic Forum's Global Competitiveness Report 2020 underscores the Nordic model as "*the most promising in shifting towards a productive, sustainable and inclusive economic system*".[6]

Competitiveness is widely understood as a country's ability to sustainably generate productivity and economic value. According to the World Economic Forum, "*A competitive economy, is a productive one. And productivity leads to growth, which leads to income levels and hopefully, at the risk of sounding simplistic, improved well-being.*"[7]. In this regard, the Nordic countries stand out as among the most productive economies globally, with 2023 estimates indicating productivity levels well above the European average, see Figure **1**.

Figure 1
Structural GDP per hour worked, 2023
US dollars per hour, PPP converted, current prices



Note: We have estimated structural GDP by adjusting for output gap as a percentage of potential GDP. We rely on data for GDP and total hours worked from the same data table from OECD. Excluding GDP from off-shore activities in Norway, structural GDP per hour worked is estimated at USD 100 in Norway and USD 94 in the Nordics. In 2023, offshore activities contributed 24% of GDP. Nordics is calculated as a total region summing all GDP across the five Nordic countries and dividing with total hours worked across the five countries.
Source: Copenhagen Economics based on OECD (2026, website), Productivity levels (link); OECD (2026), Economic Outlook 118 (link); and Statistics Norway (2026, website), 09189: Final expenditure and gross domestic product, by macroeconomic indicator, year and contents (link).

5. The Global Sustainability Competitiveness Index (2024). Global Sustainable Competitiveness Index 2024. The 13th edition of the Global Sustainable Competitiveness Index (link).
6. World Economic Forum (2020). The Global Competitiveness Report: Special Edition 2020. How Countries Are Performing on the Road to Recovery, p. 7 (link).
7. World Economic Forum (2016). What is competitiveness? (link).

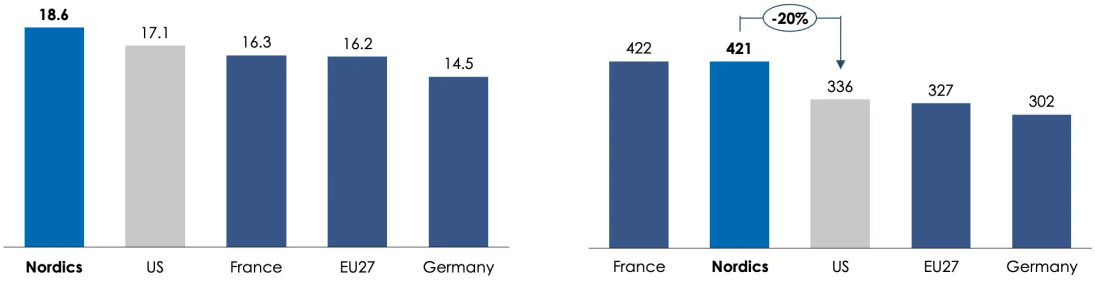
All Nordic countries appear highly productive with output per hour closer to the US than the EU average, despite some variation across countries. Norway stands out with particularly high productivity, largely driven by its oil and gas activities, which generate high output with relatively limited labour input. Excluding this effect, Nordic productivity levels are broadly on par with the US.[8] At the other end, Finland records the lowest productivity. This reflects structural factors, including the contraction of the ICT sector and a broader transition from a production-based to a more service-oriented economy.[9]

This high level of productivity stands in notable contrast to the broader diagnosis set out in the Draghi Report on European Competitiveness, which highlights a structural productivity gap between Europe and the United States. The Nordic economies defy this pattern, combining high productivity with strong investment performance and an attractive environment for business and capital. Sustained investment has helped create a virtuous cycle, whereby productivity supports further investment and long-term competitiveness.

Over the past five years, total productive investments have been 1.5 and 2.4 percentage points higher in the Nordics than in the US and the EU, respectively, see the left panel of Figure **2**. The picture is similar across the Nordics, where Sweden stands out with the highest investments (20.7%), while Denmark and Finland are lowest (17.5%).[10]

High investment levels feed into a larger capital stock in the Nordics, where capital per worker is 20% higher than in the United States, see the right panel of Figure **2**.

Figure 2



Productive investments, 5-year average from 2020 to 2024
Gross fixed capital formation, excluding dwellings (Per cent of GDP)

Net capital stock per worker, 2024
Thousand USD per worker (PPP converted, constant 2020 prices)

Note: 'Nordics' is calculated by weighing the investment shares in Sweden, Denmark, Finland, Norway, and Iceland by each country's share of total Nordic GDP in each year and by aggregating the total capital divided by the total employment in Denmark, Finland, Iceland, Norway, and Sweden. We measure net capital stock using AMECO, where net capital stock is defined as the written-down value of all fixed assets still in use. We convert net capital stocks to 2020 PPP-USD using OECD PPPs for gross fixed capital formation and divide by employment (persons, thousands) from the OECD Productivity database. We show 5-year averages for 2020–2024 and, for missing country–year observations, we use the latest available value.
Source: Copenhagen Economics based on OECD (2026, website), Gross fixed capital formation by asset type (link) and OECD (2026, website), Annual GDP and components - expenditure approach (link); OECD (2026, website), Productivity levels (link), OECD (2026, website), PPP detailed results – 2020 onwards (link) and EU AMECO (2026, website), Capital Stock (link).

8. Excluding offshore oil and gas activities in Norway, structural GDP per hour worked is estimated at USD 100 in the Nordics, compared with USD 97 in the US in 2023.
9. See e.g. Bank of Finland (2019). Several Reasons Behind Weak Labour Productivity (link) and Sitra (2025), Miksi Suomen talous ei kasva? (link).
10. See Section 2 for country-level details.

It is important to interpret capital stock estimates with caution, as cross-country comparisons are influenced by differences in economic structure and asset composition, with some types of capital depreciating more slowly and generating returns over longer periods than others.

1.1 Human capital and strong institutions provide a solid foundation for competitiveness

The strong and sustained productivity and investment performance reflect a set of structural characteristics shared across the Nordic economies, which also underpin their high levels of competitiveness.

These can be grouped into three key pillars:

1. Strong human capital and innovation
2. Strong institutions
3. Strong macro financial fundamentals

1.1.1 Strong human capital and innovation

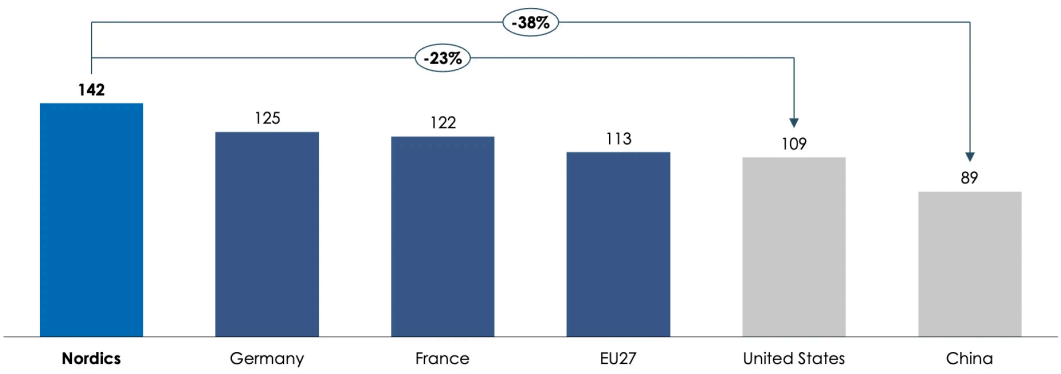
A key foundation of Nordic competitiveness lies in its strong human capital base. Across the region, educational attainment is consistently high, with approximately 48% of the population having completed tertiary education compared with 39% in the EU.[11] This is complemented by a strong performance in academic outputs, including high university rankings, a strong presence in high-impact research publications, and a steady pipeline of PhD graduates.[12]

High educational attainment, a culture of life-long learning, and high academic standards are key pillars for innovation, productivity, and overall competitiveness.[13]

Building on this human capital base, the Nordics also stand out as leading innovators in Europe and globally. On aggregate measures, such as the EU Innovation Index,[14] the Nordics significantly outperform peers. The Nordics' average score is around 16% higher than the US and 24% higher than the EU, reflecting strong capabilities in research, human capital, and innovation systems, see Figure 3.[15] All Nordic countries rank higher than the EU average, with Denmark and Sweden standing out at the top (157 and 153, respectively).

11. Based on data from OECD (2026) (link).
12. Nordregio (2024), Comparing research in Nordic higher education institutions using bibliometric indicators (link), and European Commission (2024), Science, Research and Innovation Performance of the EU 2024 (link).
13. See e.g. Krueger and Lindahl (1999), Education for growth in Sweden and the world (link) or Hanushek and Woessmann (2020), Education, knowledge capital, and economic growth (link).
14. Based on the European Innovation Scoreboard Summary Innovation Index, which is calculated from 32 innovation-related indicators (link).
15. Based on data from European Commission (2026, website), European Innovation Scoreboard (link). See section 2 for details.

Figure 3
European Innovation Index – total score based on 32 indicators, 2025
Index relative to EU average in 2018 (EU average in 2018 = 100)



Note: 'Nordics' is calculated by weighting the 2025 SII scores in Sweden, Denmark, Finland, Norway, and Iceland by each country's share of total Nordic population in 2024.
Source: Copenhagen Economics based on European Commission (2025), European Innovation Scoreboard (link) and the World Bank (2026, website), Population, total (link).

Besides high educational attainment, the Nordics are generally highly digitalised and have been among the best in Europe in adopting new technologies such as AI and cloud computing.[16]

Taken together, the combination of strong human capital and high innovation capacity forms a reinforcing cycle that underpins the Nordics' sustained competitiveness advantage.

1.1.2 Strong institutions

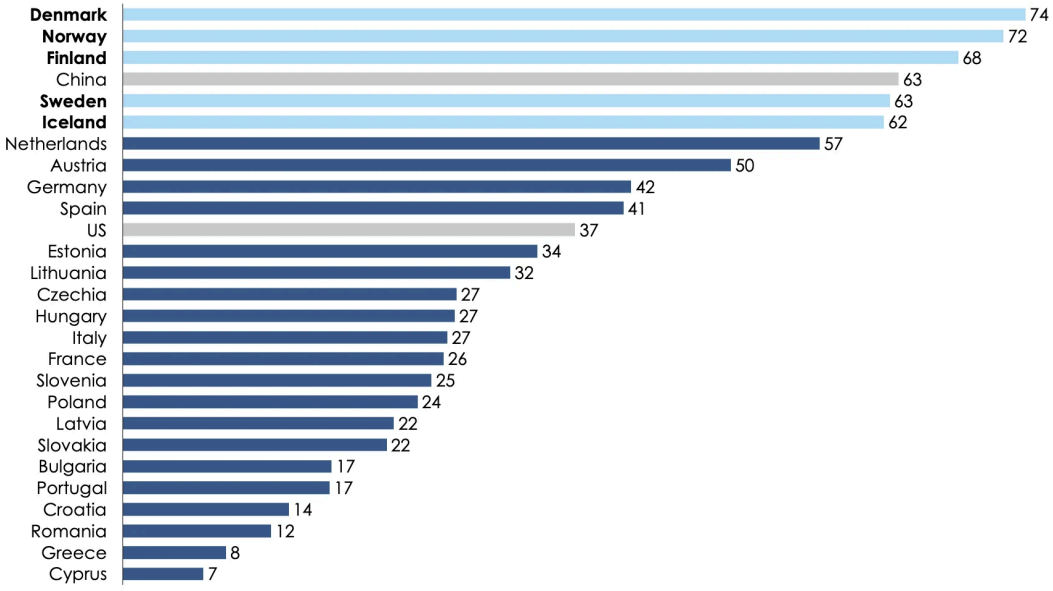
The Nordic countries are characterised by strong institutional frameworks, which support efficient economic activity. Across international comparisons, Nordic countries consistently rank at the top on measures such as the rule of law. The World Justice Project places the Nordic countries at the very top globally, reflecting strong performance across areas such as government accountability, regulatory quality, and effective dispute resolution.[17] These institutional strengths reduce uncertainty and support well-functioning markets, and the quality of institutions is generally considered as one of the key determinants of long-term economic growth.[18]

Corruption levels are also very low by international standards. All Nordic countries rank within the top 10 globally on Transparency International's Corruption Perceptions Index.[19] Low corruption reduces transaction risks and limits the need for costly monitoring and enforcement mechanisms, thus contributing to long-run positive effects on growth. [20] Combined with strong legal systems, this contributes to a business environment where contracts are more likely to be upheld, and economic actors can operate with a high degree of predictability.

16. Eurostat (2025), Usage of AI technologies increasing in EU enterprises (link).
17. World Justice Project (2025), Rule of Law Index 2024, p. 22 (link). Alternatively, see also Property Rights Alliance (2026), International Property Rights Index 2025, pp. 14–15 (link), where the Nordic countries are all in the top 20.
18. See e.g. Acemoglu et al. (2005), Institutions as a Fundamental Cause of Long-Run Growth (link)
19. Transparency International (2026), Corruption Perceptions index 2025, p. 4 (link).
20. See e.g. Gründler and Potrafke (2019), Corruption and economic growth: New empirical evidence. (link)

The Nordic countries also exhibit high levels of social trust, see Figure **4**. High trust is partly supported by strong institutions, low corruption, and broader cultural characteristics, which reinforce confidence in public authorities and economic interactions.[21] High trust reduces the need for complex contractual arrangements and lowers transaction costs, as economic actors can rely more on informal mechanisms and expectations of compliance.[22]

Figure 4
Social trust, 2022
Percentage of people agreeing with the statement "most people can be trusted"



Note: We have included all available EU countries, the US and China. Data refer to 2022, the latest year available.
Source: Copenhagen Economics based on Our World in Data (2026, website), Share of people agreeing with the statement "most people can be trusted "(link).

Together, strong institutions, high social trust, and low corruption form an important foundation for the efficiency and competitiveness of Nordic economies by creating positive feedback loops and supporting overall levels of prosperity.[23]

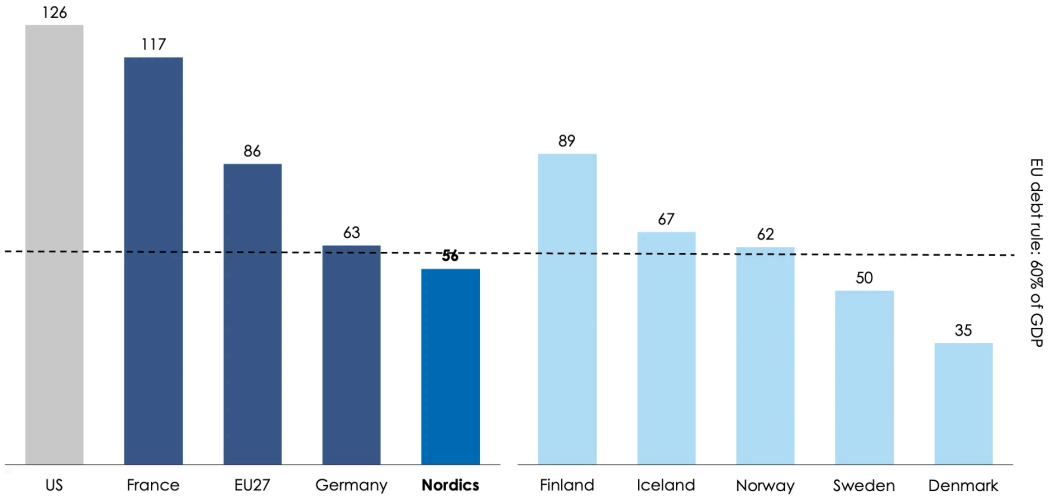
21. China stands out here, ranking 95th on the Rule of Law Index, see World Justice Project (2025), Rule of Law Index 2024, p. 22 (link), and 43rd on perceived corruption, see Transparency International (2026), Corruption Perceptions Index 2025, p. 4 (link).
22. See e.g. Algan and Cahuc (2014), Trust, Growth, and Well-Being: New Evidence and Policy Implications. (link)
23. See e.g. Growiec and Growiec (2009), Social capital, trust, and multiple equilibria in economic performance. (link)

1.1.3 Strong macro financial fundamentals

Robust macroeconomic frameworks and well-developed financial systems support Nordic competitiveness through two main channels: low country risk and strong capital availability.

First, stable public finances contribute to low country risk and favourable financing conditions. Government debt levels in the Nordic countries are generally moderate and stable, averaging around 55% of GDP in 2024, see Figure **5**. This places the Nordic average below the EU debt benchmark of 60% of GDP and below most comparator economies. Lower sovereign risk reduces government borrowing costs and feeds through to the broader economy via lower interest rates and better financing conditions for firms.

Figure 5
Gross public debt, 2025
Per cent of GDP



Note: Nordics are calculated as a GDP-weighted average. EU27 is calculated as a GDP-weighted average of 25 EU countries (Malta and Cyprus are excluded due to data availability). 2024 data are used for Iceland due to the unavailability of 2025 data.
Source: Copenhagen Economics based on OECD (2026, website), Public finance main indicators – government at a glance, yearly updates (link).

Lower country risk also affects the cost of equity. Estimates of country risk and equity risk premiums place Denmark, Norway and Sweden among the lowest globally, alongside countries such as Germany and the US. Finland and Iceland have slightly higher risk premiums,[24] reflecting lower credit ratings[25] and greater macroeconomic volatility.[26]Overall, lower risk premiums reduce the cost of capital for firms and support investment and competitiveness.[27]

24. Damodaran (2023), Country Risk: Determinants, Measures and Implications – The 2023 Edition, Appendix 7 (link). Denmark, Norway, Germany and the US are estimated to have a 0% country risk premium and an equity risk premium of 5.0%. Finland and Iceland are estimated to have country risk premiums of 0.61% and 1.28%, respectively.
25. Moodys ratings from Damodaran (2023), Country Risk: Determinants, Measures and Implications – The 2023 Edition, Appendix 7 (link).
26. See e.g. Nordics Info (2019, website), Economic development in the Nordic countries (link). Finland and Iceland were more strongly affected by the 2007–2008 financial crisis than the other Nordic countries. Iceland is likely also affected by its limited size.
27. Damodaran (2023), Country Risk: Determinants, Measures and Implications – The 2023 Edition, pp. 33 and 86 (link).

Second, high structural savings contribute to strong capital availability. Nordic economies benefit from well-developed pension systems that generate high levels of domestic savings.[28] The shift towards defined contribution schemes has increased the allocation of capital to equities and other risk-bearing assets, supporting deeper capital markets and improving access to funding for firms.[29]

However, a relatively low home bias among Nordic institutional investors means that a significant share of these savings is invested abroad.[30] As a result, high savings are reflected in persistently strong current account surpluses and the accumulation of foreign assets,[31] consistent with well-functioning and integrated capital markets. While this supports efficient global capital allocation, it also implies that high domestic savings do not automatically translate into lower funding costs for domestic firms.

28. World Bank (2026, website), Gross savings (link) and Eurostat (2026, website), Pensions in national accounts – statistics (link).
29. For Denmark as an example, see e.g. Danmarks Nationalbank (2025), The road to more risky assets in the Danish pension sector (link).
30. Foreningen af Børsnoterede Virksomheder (2026), Børsmarkedets fremtid – Delrapport 1 af 3, p. 20 (link).
31. The Nordic countries had an average 8.4% surplus on the current account from 2020 to 2024, based on OECD (2026, website), Balance of payments (link).

Nordics' distinct economic and social model

The Nordic countries are at the global competitiveness frontier, supported by an economic model that differs in important respects from both the United States and the broader European Union. This chapter explores these differences, focusing on four key structural dimensions: low labour input, a flexible labour market combined with high levels of unemployment and social benefits, relatively even income distribution, and low greenhouse gas emissions.

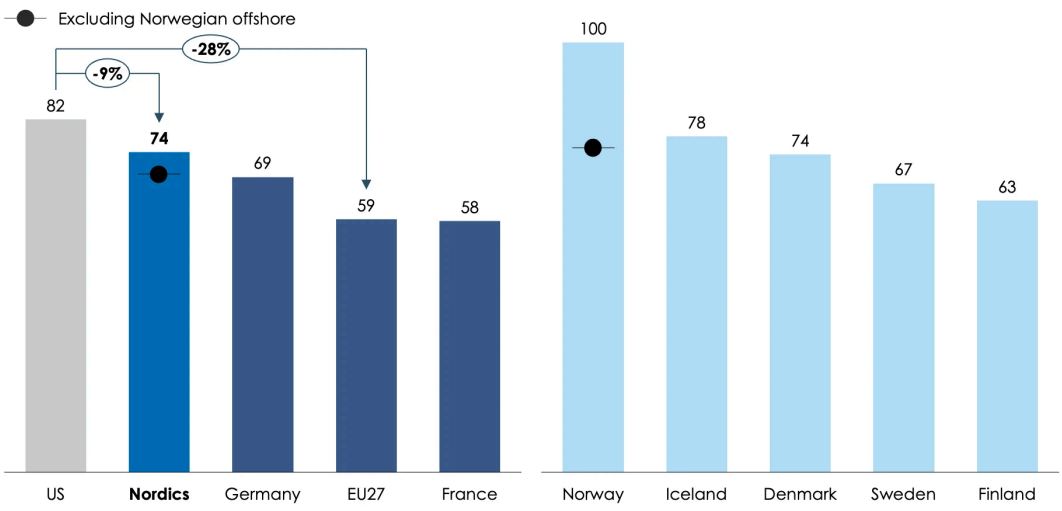
Together, these elements provide a comparative perspective on how the Nordic model sustains high competitiveness while balancing economic efficiency, social cohesion, and environmental sustainability.

2.1 Lower labour input is the main driver of the GDP per capita gap in the Nordics

In 2023, GDP per capita in the Nordics was around 9% lower than in the US, see Figure **6**. The Nordic countries were all comfortably above the EU average in 2023, but there was substantial variation across countries. Norway stands out in the top, partly due to income from oil and gas activities, and Finland is at the bottom.[32]

32. Excluding oil and gas does not fundamentally change conclusions, despite lowering levels somewhat. The relatively low performance of Finland can likely be attributed to the same structural challenges briefly discussed previously, see Bank of Finland (2019), Several reasons behind weak labour productivity (link); and Sitra (2025), Miksi Suomen talous ei kasva? (link).

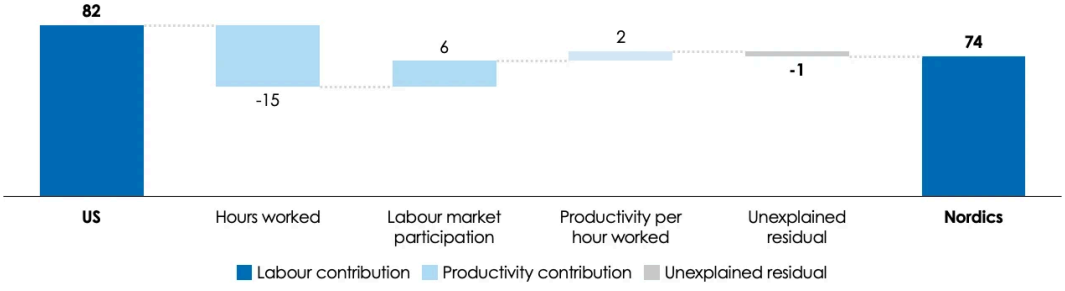
Figure 6
Structural GDP per capita, 2023
Thousand US dollars per capita, PPP converted, current prices



Note: We have estimated structural GDP by adjusting for output gap as a percentage of potential GDP. We rely on data for GDP and population from the same data table from OECD. Excluding GDP from off-shore activities in Norway, structural GDP per capita is estimated at USD 76,000 in Norway and USD 70,000 in the Nordics. In 2023, offshore activities contributed 24% of GDP in Norway. Nordics is calculated as a total region summing all GDP across the five Nordic countries and dividing with total population across the five countries.
Source: Copenhagen Economics based on OECD (2026, website), Productivity levels (link); OECD (2026), Economic Outlook 118 (link); and Statistics Norway (2026, website), 09189: Final expenditure and gross domestic product, by macroeconomic indicator, year and contents (link).

The gap in GDP per capita between the Nordics and the United States can be explained by two main factors: labour input and productivity. While productivity levels are similar (see Figure 1), differences in labour input account for most of the output gap, see Figure **7**.

Figure 7
Factors behind income gap between the Nordics and the US, 2023
Structural GDP per capita, thousand US dollars, PPP-adjusted, current prices



Note: We decompose the GDP per capita gap into four contributions based on the following identity: GDP per capita = GDP per hour worked × hours per worker × workers per capita × unexplained residual. As we use labour force participation as a proxy for workers per capita, we include a small unexplained residual term capturing the difference between the two measures. The *hours worked* block reflects that Nordic workers work around 18.5% fewer hours than their US counterparts (82 × (-18.5%) ≈ -15). This effect is partly offset by a 9.5% higher labour market participation rate in the Nordics ((82-15) × 9.5% ≈ 6), and a 3.1% higher GDP per hour worked in the Nordics ((82-15+6) × 3.1%) ≈ 2. As the contributions are computed sequentially - first hours, then participation, then productivity - the exact size of each contribution will vary depending on the order used. In practice, the variables move together - for example, fewer hours with the same capital stock typically raise output per hour. The figures should therefore only be seen as a description of today's income gap.
Source: Copenhagen Economics based on OECD (2026, website), Productivity levels (link); OECD (2026), Economic Outlook 118 (link); OECD (2026, website), Employment and unemployment by five-year age group and sex – indicators (link).

This gap in labour input is affected by two main factors: *First*, employees in the Nordics work around 300 hours less per year than workers in the US, corresponding to around 18.5%.[33] If the average American worker worked the same number of hours as the average Nordic worker, and everything else stayed the same, US GDP per capita would be about 15,000 US dollars lower than it is today, see **Figure 7**.

However, a *second* factor pulls in the opposite direction: a larger share of the population participates in the labour market in the Nordic countries than in the US. Labour force participation is around 9.5 per cent higher in the Nordics, which offsets part of the effect of shorter working hours and narrows the income gap by around 6,000 US dollars per capita.

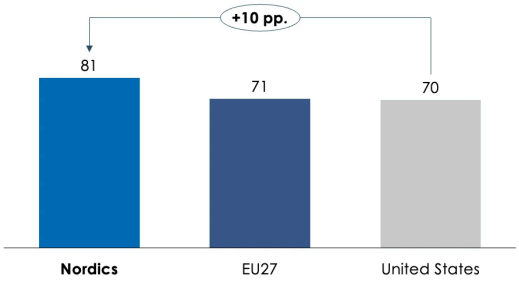
In addition, GDP per hour worked is slightly higher in the Nordics, reducing the gap by a further 2,000 dollars. Finally, there is a small unexplained residual of about 1,000 dollars.

Zooming in on the labour force participation, we see that the difference is largely driven by women: female labour market participation is 10 percentage points higher in the Nordics than in the US, while the difference is only 5 percentage points for men, see Figure **8**.

Figure 8

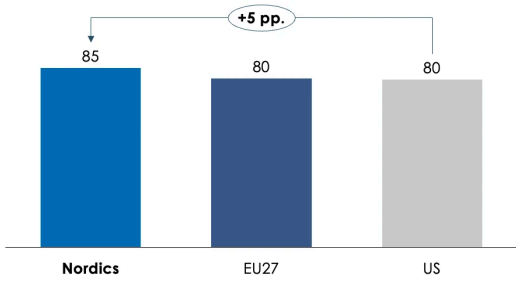
Female labour market participation rate, 2024

Percentage of women aged 15-64 years



Male labour market participation rate, 2024

Percentage of men aged 15-64 years



Note: The figure shows the labour market participation rate for males and females aged 15-64 years. The pattern is similar across the Nordic countries.*
Source: Copenhagen Economics based on OECD (2026, website), Employment and unemployment by five-year age group and sex – indicators (link).

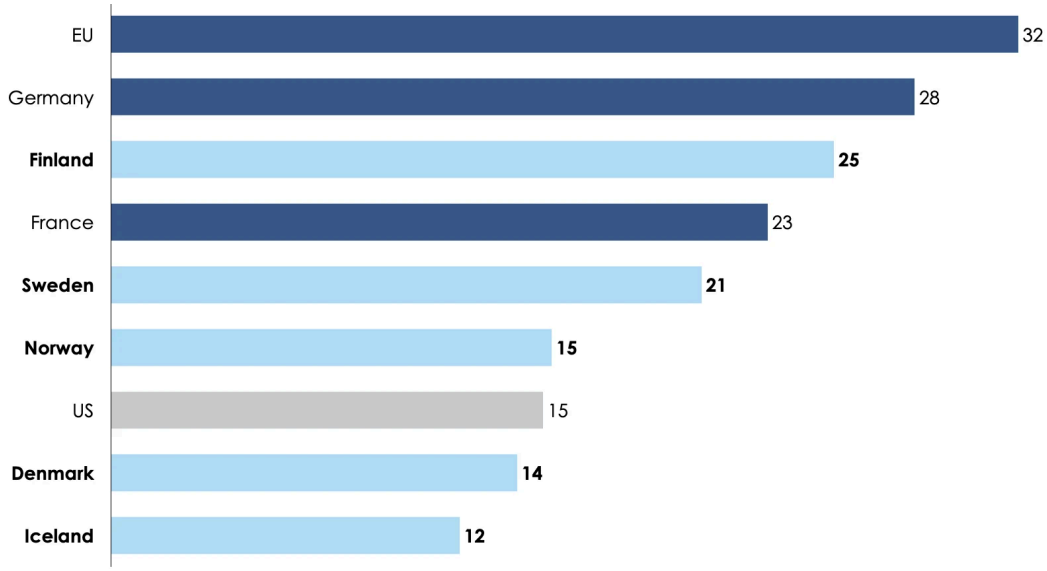
Higher female labour market participation rates in the Nordics reflects a societal model built around dual-earner households. Labour market institutions and welfare systems are designed to support full-time employment for both men and women. Universal and subsidised childcare reduces the cost of participating in the labour market and makes it easier to combine work and family life. In addition, generous parental leave schemes, which are increasingly designed to be shared between parents, support continued labour market attachment. Together, these policies lower structural barriers to female employment and contribute to higher overall labour force participation.

33. OECD (2026, website), Productivity levels (link). The labour quantity in the Nordics is also low compared to the United Kingdom and the OECD average, see Mogstad, M., Salvanes, K. G., & Torsvik, G. (2025). Income Equality in the Nordic Countries: Myths, Facts, and Lessons. NBER Working Paper No. 33444. National Bureau of Economic Research. https://www.nber.org/papers/w33444

2.2 Nordic labour market model combines flexibility with strong social security

The Nordic labour markets are characterised by a combination of relatively high hiring and firing flexibility with strong income security for workers – in Denmark, this model is commonly referred to as "flexicurity". Rather than protecting specific jobs, the model focuses on protecting individuals through income support and facilitating transitions between jobs. This is supported by coordinated wage-setting and strong social partnership, where high union density and employer organisation help manage labour market adjustments. Together, this supports labour mobility and allows firms to adjust to changing economic conditions, while maintaining high employment levels.[34] This is testified by relatively low long-term unemployment across the Nordics over the past decade, see Figure **9**. This reflects the role of active labour market policies and strong incentives to return to work, which help limit the risk of long-term unemployment.

Figure 9
Long-term unemployment, 2025
Per cent of unemployed 12 months or more



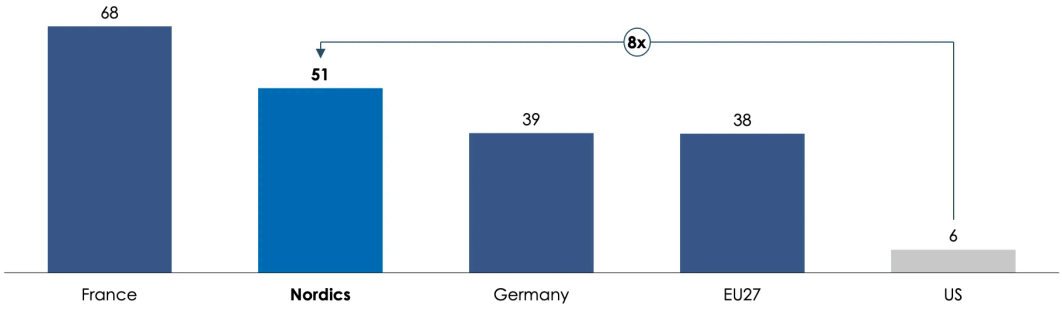
Note: We have included the US and all available EU27 countries alongside the Nordics. (1) 2022 data for the US (OECD). (2) 2024 data for Iceland due to unavailability of 2025 data. Data for China are unavailable.
Source: Copenhagen Economics based on OECD (2026, website), Employment and unemployment by five-year age group and sex – indicators (link).

34. See e.g. Nordics Info (2019, website), Labour markets in the Nordics (link); Danish Agency for Labour Market and Recruitment (2026, website), Flexicurity (link); and Andersen et al. (2014), Nordic labour market models in open markets (link).

A key element of the model is relatively generous income support during unemployment. Replacement rates, the proportion of previous gross or net income that is "replaced" by unemployment benefits, are high in the Nordics, with unemployment benefits covering a substantial share of previous earnings in the first two years after job loss. On average, the replacement rate in the Nordics is at 51%, significantly higher than in the EU on average and eight times that of the US.

Within the Nordics, Norway stands out with the highest replacement rate at 63%, while it is lowest in Finland at 45%,[35] see Figure **10**.

Figure 10
Unemployment benefits in the first two years of unemployment, 2024
Replacement rate



Note: The figure shows the average unemployment benefits in the first two years of unemployment as a share of disposable income before job loss (replacement rate) for a single person earning the average income. 'Nordics' is approximated as the population-weighted average using population data for 2024. EU27 is approximated as a simple average of the 21 countries with available data.
Source: Copenhagen Economics based on OECD (2026, website), Net replacement rates in unemployment (link) and the World Bank (2026, website), Population, total (link).

While central elements of the Nordic "flexicurity" model are shared, there are important differences across countries, which contribute to different labour market outcomes. Denmark represents the archetype of the model, with high flexibility, generous benefits, and strong activation policies. Sweden and Finland place more emphasis on employment protection and internal flexibility, while maintaining strong welfare systems. Norway combines generous income security with relatively stronger job protection and high employment stability, supported by resource revenues.[36]

2.3 Nordic countries exhibit low income inequality

Low-income inequality is a defining feature of the Nordic economic model. This outcome reflects two main drivers: a more even distribution of productivity and wages across firms and workers, and a higher degree of redistribution through the tax and welfare system. Together, these mechanisms play a broadly equal role in explaining the difference between the Nordics and the United States.

35. OECD (2026, website), Net replacement rates in unemployment (link).
36. Heggebø (2016), Hiring, employment, and health in Scandinavia: the Danish 'flexicurity' model in comparative perspective (link)

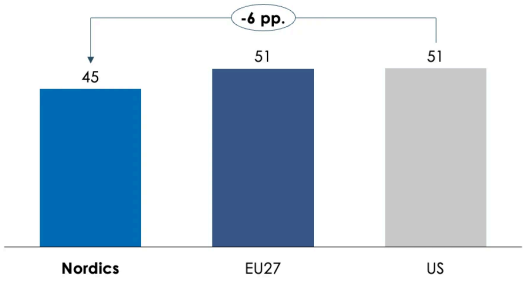
First, productivity and wages are more evenly distributed across the workforce in the Nordics than in Europe and the US. Market income inequality is 6 percentage points lower in the Nordics than in the US, see the left panel of Figure **11**. In competitive labour markets, wages broadly reflect workers' marginal productivity, so income differences provide an indication of how productivity is distributed. This suggests that productivity is less concentrated in the Nordics.

This more equal distribution is also shaped by institutional and policy factors. Wage formation is influenced by coordinated bargaining systems, where unions play a central role in compressing wage differences across sectors and skill levels. At the same time, universal access to education reduces pre-market inequality by ensuring a relatively even distribution of skills. Together, these factors contribute to lower skill premia and a more compressed wage distribution.[37]

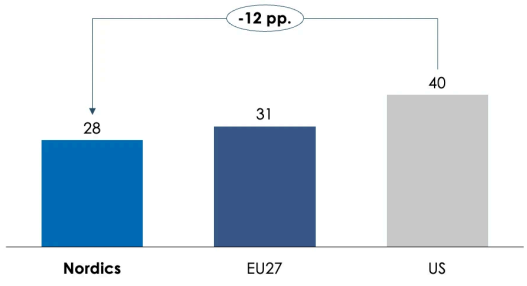
Second, redistribution through taxes and transfers further reduces inequality in disposable income, see the right panel of Figure **11**. Disposable income inequality is 12 percentage points lower in the Nordics than in the US, reflecting more extensive welfare systems and stronger redistribution. This includes mechanisms such as progressive taxation, as well as unemployment and social benefits, which compress income differences after taxes and transfers.

Figure 11

Inequality: Market income, 2022
Gini coefficient, 0-1 (0 is no income inequality)



Inequality: Disposable income, 2022
Gini coefficient, 0-1 (0 is no income inequality)



Note: The figure shows the income inequality measured by the Gini index using both disposable income and market income, i.e. income before tax and excluding transfers. The Nordics are calculated as a population-weighted average. The most recent data for Iceland are from 2019. EU27 is calculated as a population-weighted average of 25 EU countries (Malta and Cyprus are excluded due to data availability).
Source: Copenhagen Economics based on OECD (2026, website), Income distribution database (link).

Within the Nordics, Finland stands out with market income inequality closer to US and EU levels (Gini index of 51), indicating higher structural inequality than its Nordic peers. This might be driven by higher unemployment in Finland[38] and geographical differences, where parts of the country are characterised by higherproductivity jobs and incomes, while other regions face weaker labour demand, lower employment, and fewer highwage sectors, resulting in a more dispersed distribution of individual market earnings.[39]

37. See e.g. Mogstad et al. (2025), Income Equality in the Nordic Countries: Myths, Facts, and Lessons (link).
38. OECD (2026, website), Monthly unemployment rates (link).
39. Fina et al. (2021), Unequal Finland: Regional socio-economic disparities in Finland (link).

While there is no clear consensus in the economic literature on an optimal level of income inequality, a more equal distribution of income can generate a range of positive economic effects through several complementary channels:

- Greater equality can support human capital formation by enabling broader access to education and skill development, particularly for lower-income households.[40] This helps to ensure that talent is more effectively identified and developed across the entire population, strengthening long-term productivity and innovation potential.
- More equal societies tend to exhibit higher levels of social cohesion and trust. These factors can reduce transaction costs in the economy, facilitate cooperation between firms, workers, and government, and contribute to more efficient functioning of markets and institutions.[41]
- Lower levels of inequality are often associated with greater political stability and policy continuity. This can create a more predictable environment for long-term investment decisions, reducing uncertainty for businesses and supporting sustained economic activity over time.[42]

2.4 The Nordics record relatively low greenhouse gas emissions

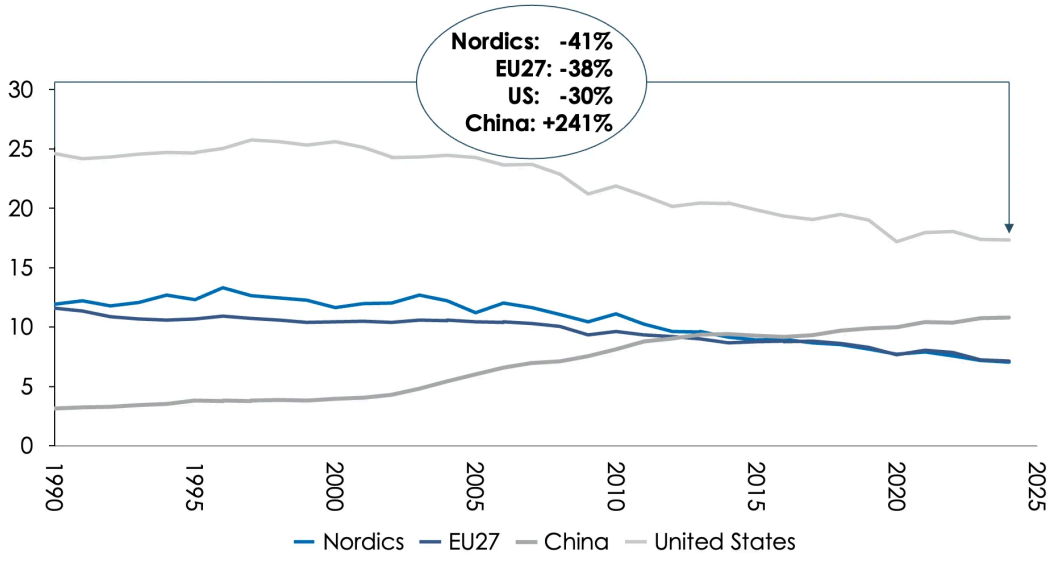
The Nordics are often highlighted among the more sustainable economies, and while there remains a considerable distance to ambitious climate targets, the region combines high productivity with relatively low greenhouse gas (GHG) emissions, performing somewhat ahead of other advanced economies on this dimension.

Emissions per capita in the Nordics are significantly lower than in the US and broadly in line with the EU average, see Figure **12**. Since 1990, the Nordics have also achieved the largest reductions, with emissions declining by around 41%, compared to 38% in the EU and 30% in the US.

When adjusting for economic output, the Nordic countries are ahead of peers in terms of emissions efficiency. Carbon intensity is lower than in both the EU and the US, reflecting both a lower reliance on emission-intensive industries and a higher share of renewable energy. Despite starting from an already low level, the Nordics have reduced emissions intensity by as much as the EU (63%) and more than the US, see Figure **13**. It is interesting to note that, over the same period, China has achieved one of the most pronounced reductions in emissions intensity globally, largely driven by exceptionally strong GDP growth that has outpaced the growth in emissions for an extended period. However, China remains the world's largest CO_2 emitter in absolute terms.

40. Soldani et al. (2024), Policy approaches to reduce inequalities while boosting productivity growth. https://www.oecd.org/content/dam/oecd/en/publications/reports/2024/09/policy-approaches-to-reduce-inequalities-while-boosting-productivity-growth_bf9b2e9d/af121c8f-en.pdf
41. German Development Institute (2019), Social Cohesion and Economic Development: Unpacking the Relationship (link).
42. Alesina, A. and Perotti, R. (1996), Income distribution, political instability, and investment (link).

Figure 12
Emissions per capita
Ton CO2e per capita

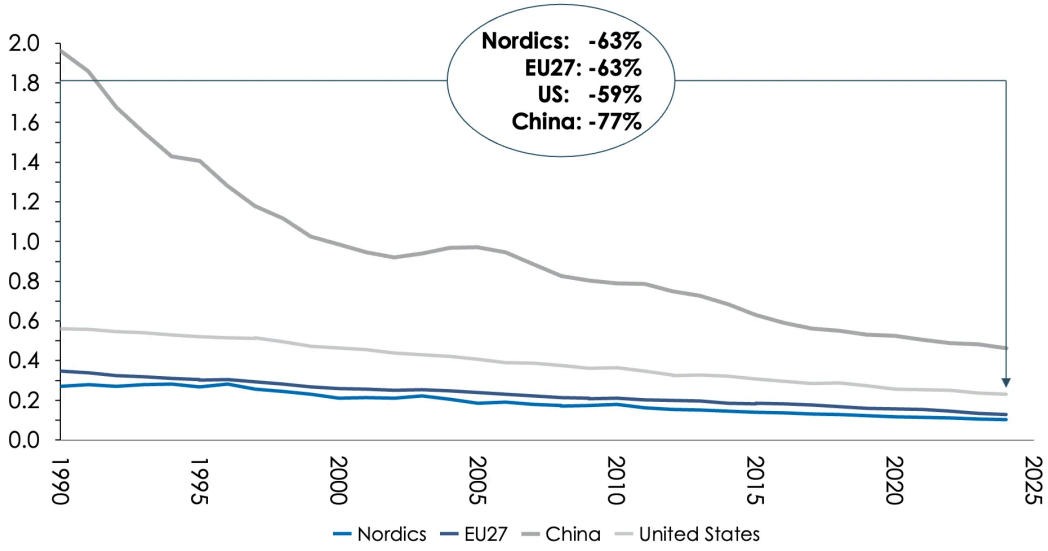


Note: We calculate the Nordics and EU27 as weighted averages.
Source: Copenhagen Economics based on European Commission (2025), GHG emissions of all world countries (link).

An important caveat applies to this analysis. Emissions here are measured on a territorial basis, so they reflect where emissions physically occur rather than where the goods and services generating them are ultimately consumed. This measure also excludes international shipping and aviation. As a result, the low emissions figures reported for the Nordic countries do not capture emissions embedded in imported goods, nor the emissions generated by Nordic-linked shipping and aviation activity, both of which are significant given the region's trade and maritime profile. The true environmental footprint of Nordic consumption and trade may therefore be higher than the figures suggest.

Overall, the Nordic experience suggests that it is possible to combine high productivity with relatively low emissions, performing somewhat ahead of other advanced economies on this dimension. However, looking ahead, it is clear that the relatively low emission levels do not imply that climate targets are easily within reach, and significant challenges remain for some Nordic countries, see more in Section 2.

Figure 13
Emissions per GDP
Ton CO2e per 1000 USD



Note: We calculate the Nordics and EU27 as weighted averages.
Source: Copenhagen Economics based on European Commission (2025), GHG emissions of all world countries (link).

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43. European Commission (2025), GHG emissions of all world countries (link).

Challenges ahead for the Nordic position of strength

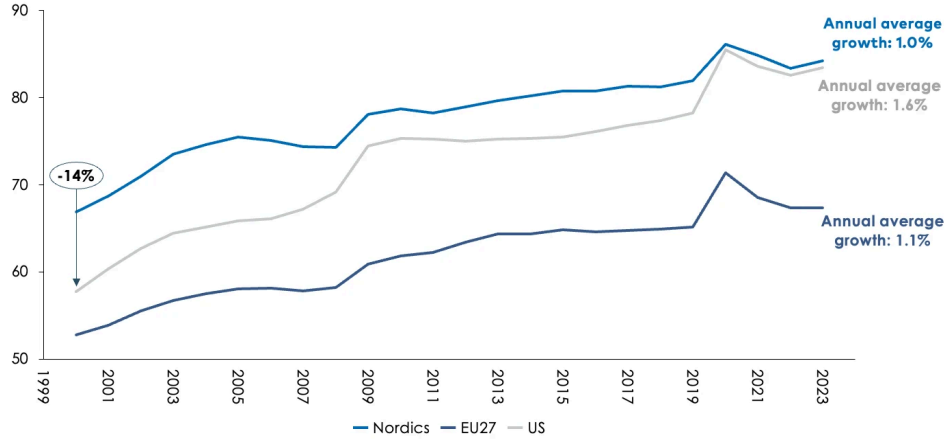
The Nordic countries have achieved strong economic performance over time, but there are indications that this position of strength is being challenged. Global economic dynamics are shifting, and several underlying trends suggest that maintaining current levels of productivity and competitiveness will require renewed focus.

In this chapter, we identify two key challenges to the Nordic position of strength. *First*, we highlight indications that the Nordics are losing momentum relative to the global productivity frontier, see Section 3.1. *Second*, we focus on the increasing geopolitical tensions that are making the global environment more unstable, exposing small open economies such as the Nordics to greater risks and requiring a renewed focus on strategic autonomy, see Section 3.2.

3.1 The Nordics risk to fall behind the global productivity frontier

As documented in Chapters 1 and 2, the Nordics exhibit high levels of productivity. However, growth has been relatively weak over the past decades. Since 2000, productivity has grown by around 1% per year in the Nordics, compared to 1.6% in the US and 1.1% in the EU. As a result, the US has caught up significantly, reducing the gap from around 14% in 2000 to broadly similar levels in 2023, see Figure **14**.

Figure 14
Productivity: Structural GDP per hour worked, 2000-2023
USD per capita, PPP-converted, 2020 prices

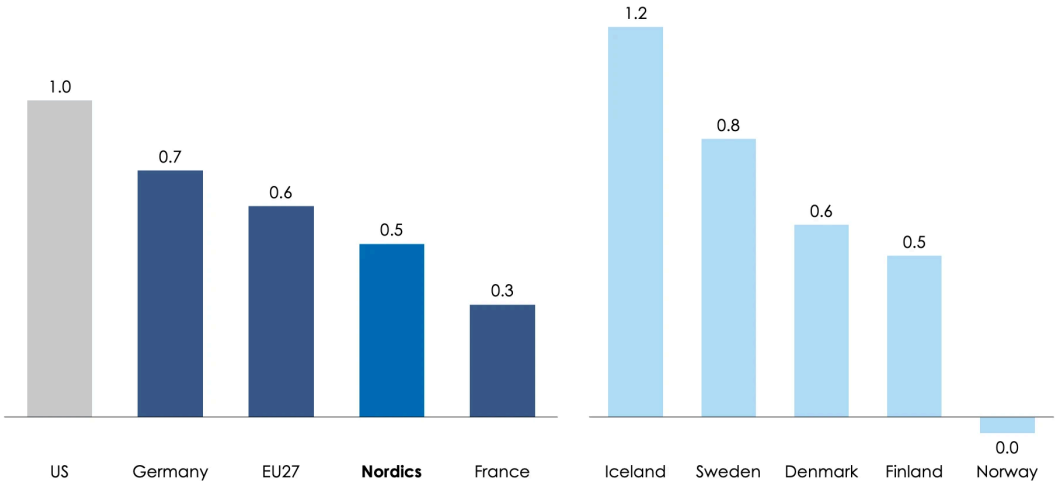


Note: We have estimated structural GDP by adjusting for the output gap as a percentage of potential GDP. We rely on data for GDP and total hours worked from the same OECD data table. The Nordics are calculated as a total region by summing GDP across the five Nordic countries and dividing by total hours worked across the five countries.
Source: Copenhagen Economics based on OECD (2026, website), Productivity levels (link); OECD (2026), Economic Outlook 118 (link).

The Nordic countries have successfully maintained productivity levels above both the EU average and the US. However, while their productivity gap over the rest of Europe has remained broadly unchanged, the gap vis-à-vis the US has steadily narrowed over the years.

A similar picture emerges when looking at total factor productivity (TFP), which captures efficiency beyond capital and labour inputs. Several estimates point to stagnating TFP growth in the Nordics in recent decades,[44] suggesting limited improvements in underlying efficiency. Our analysis shows that, Nordic TFP grew by only 0.5% per year from 2000 to 2024, see Figure **15**. This is below the US at 1.0%, Germany at 0.7% and the EU average at 0.6%. However, the Nordic average hides considerable differences across the five countries. While Iceland and Sweden recorded TFP growth above or close to the US level, Denmark and Finland were near the EU average and Norway saw a decline in TFP.

Figure 15
Total factor productivity (TFP) annual growth, 2000 - 2024
Compound annual growth rate (per cent)



Note: TFP is calculated as the residual from a Cobb-Douglas production function, where output is explained by capital and labour inputs, e.g. $\mathbf{TFP} = \frac{Y^*}{K^{\alpha}L^{1-\alpha}}$ where is structural GDP, is net capital stock, is total hours worked, and is the capital share. Because labour is measured by hours, human capital is captured within TFP. Structural GDP is derived by adjusting observed GDP for the output gap, expressed as a percentage of potential GDP. Both structural GDP and net capital stock are in USD, PPP-adjusted, constant 2020 prices. Capital shares are country-specific constants calculated as the 2000–2024 average of capital share of total gross domestic product at factor price. We construct the Nordics aggregate by summing GDP, net capital stock and hours worked across all five Nordic countries before computing TFP. We calculate an average capital share for the Nordics by weighting each country's capital share by structural GDP. For missing values, we either interpolate or extrapolate values based on growth in the other countries. More information on the methodology is available in the Appendix.
Source: Copenhagen Economics based on OECD (2026, website), *Annual GDP and components – expenditure approach* (link); OECD (2026, website), *PPP detailed results, 2020 onwards* (link); OECD (2026, website), *Economic Outlook 119* (output gap as a percentage of potential GDP) (link); OECD (2026, website), *Employment and labour market statistics* (link); European Commission (2026, website), *AMECO database* (link); and World Inequality Database (2026, website) (link).

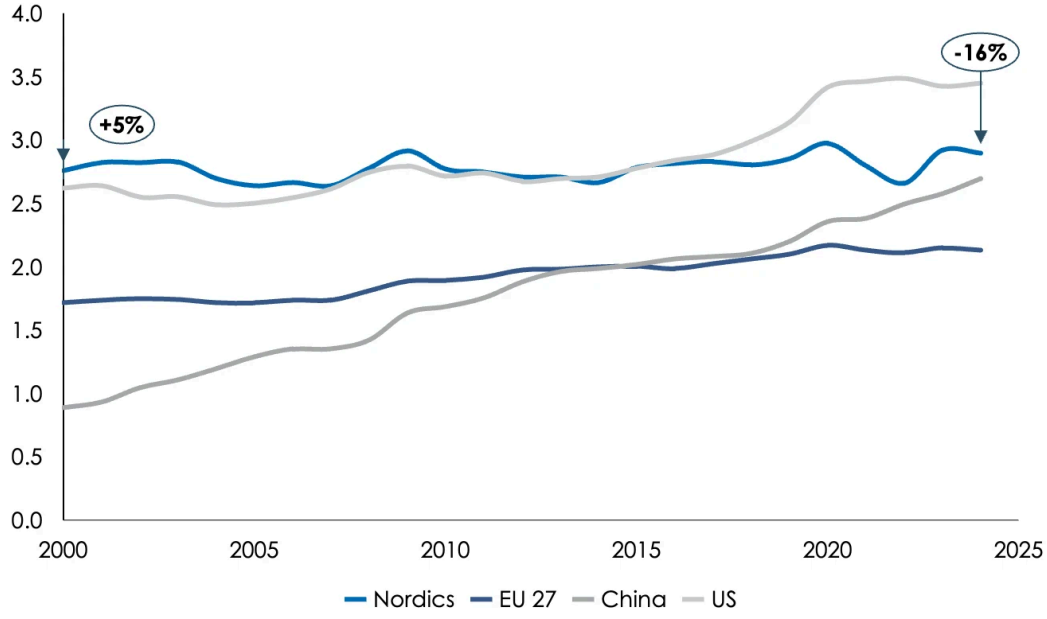
44. See e.g. using the estimates of TFP available from Feenstra et al. (2025), Penn World Table – Total Factor Productivity (link).

While productivity is the result of a complex mix of interrelated factors, the Draghi report suggests that most of the European productivity slowdown is closely linked to weak innovation performance and limited productive investment.

Using a core indicator of innovation capacity, R&D expenditure as a share of GDP, the evidence indicates that the Nordics have experienced a marked slowdown. In 2000, the Nordics invested on average around 2.8% of GDP in R&D, slightly above the United States, which was approximately 0.2 percentage points lower at the time. However, this position reversed in 2012, when the US overtook the Nordics and has since significantly increased its R&D intensity, while Nordic spending has remained broadly stable, see Figure **16**.[45]

Over the same period, both the EU and China have increased their R&D expenditure more rapidly than the Nordics, albeit from lower initial levels and still remaining below Nordic and US benchmarks. This indicates that, while the Nordics remain among the global leaders in R&D intensity, their relative dynamism in innovation investment has weakened compared with other major economies.

Figure 16
Gross domestic expenditure on R&D, 2000-2024
Per cent of GDP

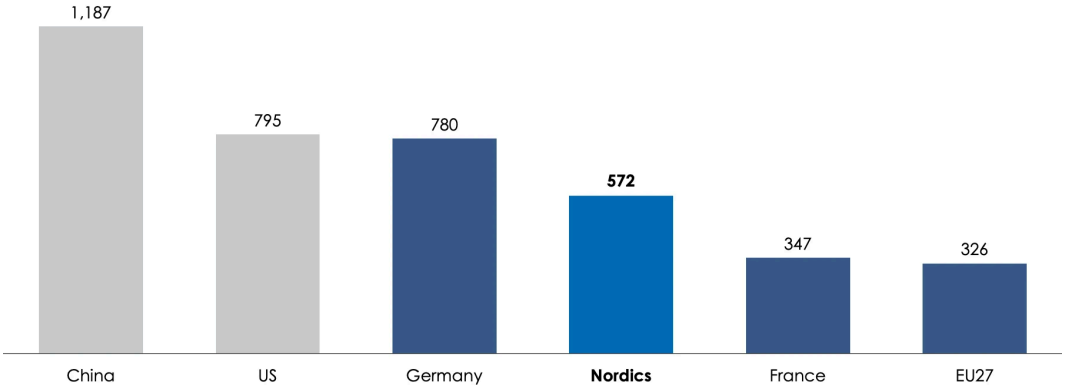


Note: Nordics is calculated as the GDP-weighted average for Sweden, Denmark, Finland, Norway, and Iceland using GDP values for 2024. China is based on 2023 values.
Source: Copenhagen Economics based on OECD (2026, website), Annual GDP and components - expenditure approach (link).

45. When focusing on private sector R&D, the gap is even larger at around 0.8 percentage points of GDP.

Additionally, while the Nordic countries remain relatively highly innovative, this strength is not always fully reflected in measures of commercialisation, such as patent activity. In other words, the region is comparatively weaker in converting research outputs into sustained productivity gains through commercial deployment. Patent activity is significantly weaker than in both China and the US, see Figure **17**.

Figure 17
Patent applications, 2024
Number of patent applications per million population



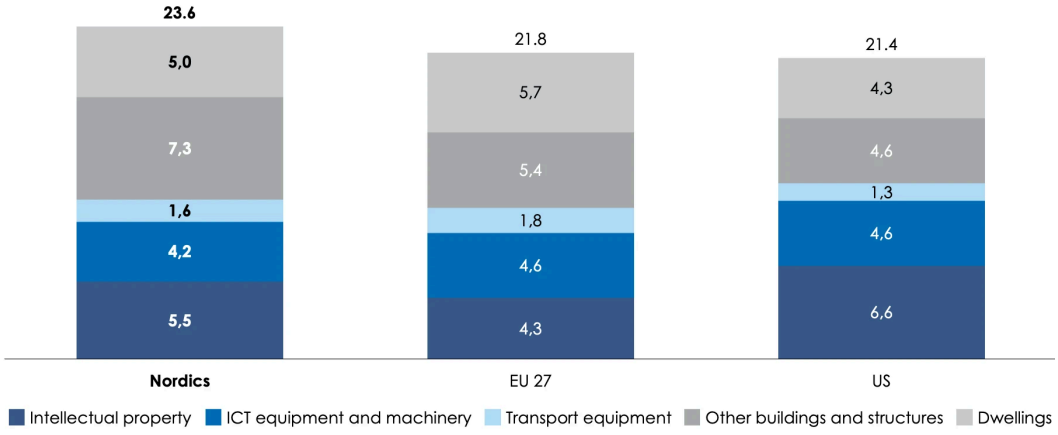
Note: 'Nordics' is calculated as the population-weighted average for the five countries using population data for 2024. Data for Iceland come from a different source due to data availability.
Source: Copenhagen Economics based on World Intellectual Property Organization (2026, website), WIPO IP Statistics Data Center (link); European Patent Office (2026, website), Statistics & Trends Centre – Iceland (link); and World Bank (2026, website), Population – total (link).

Finally, despite relatively high overall investment levels, the composition of investment differs in ways that may have implications for long-term productivity growth. The United States stands out by directing a larger share of investment towards so-called "growth-oriented assets", particularly intangible capital such as intellectual property (IP), as well as ICT equipment and machinery, which are closely linked to innovation, digitalisation, and productivity expansion. In particular, the US allocates around 1.1 percentage points more of GDP to IP investments than the Nordics, see Figure **18**. This difference is important, as investments in IP are closely linked to innovation, digitalisation and efficiency gains, and therefore tend to have stronger productivity effects.[46] A higher share of such investments likely contributes to stronger productivity dynamics in the US, thus supporting high productivity despite fewer total investments and a smaller capital stock.[47]

By contrast, a comparatively larger share of investment in the Nordic countries is allocated to dwellings and other buildings. While these investments contribute to economic activity and welfare, they are generally less directly associated with productivity-enhancing technological diffusion and innovation. This difference in investment composition may therefore help explain variations in medium- to long-term productivity dynamics across economies.

46. See e.g. Corrado, C., Haskel, J., Jona-Lasinio, C., & Iommi, M. (2014). Intangibles and Industry Productivity Growth: Evidence from the EU. Review of Income and Wealth, 60(4), 686–716 (link).
47. We showed in Section 1.2 that the US capital stock was relatively smaller than that of all included European countries.

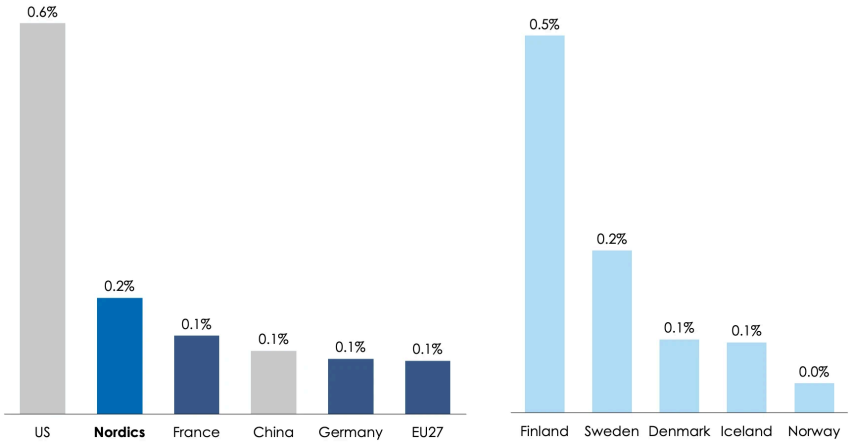
Figure 18
Distribution of investments, 5-year average from 2020 to 2024
Gross fixed capital formation (per cent of GDP)



Note: 'Nordics' is calculated by weighting the investment shares of Sweden, Denmark, Finland, Norway, and Iceland by each country's share of total Nordic GDP in each year.
Source: Copenhagen Economics based on OECD (2026, website), NAAG Chapter 3B: Gross fixed capital formation by asset type (link).

A clear example is the US dominance in investments in AI, which is widely seen as a transformative technology with significant implications for productivity and labour markets. In 2025, venture capital investment in AI in the US was almost 12 times higher than in the second-largest investor, China. This highlights both the scale of US investment and a higher willingness to take risks in emerging technologies. From a Nordic perspective, only Finland and Sweden rank among the top 15 global investors, while Denmark, Norway, and Iceland lag behind. Despite the overall lower investment in absolute terms, both Finland and Sweden exhibit higher investment levels relative to GDP than France and Germany, see Figure **19**.[48]

Figure 19
VC investments in AI by country, 2025
Venture capital as a share of GDP



Note: Data for China are from 2024.
Source: Copenhagen Economics based on OECD (2026, website), *Investments in AI and data* (link)

48. OECD.AI Policy Observatory, VC investments in AI by country (link)

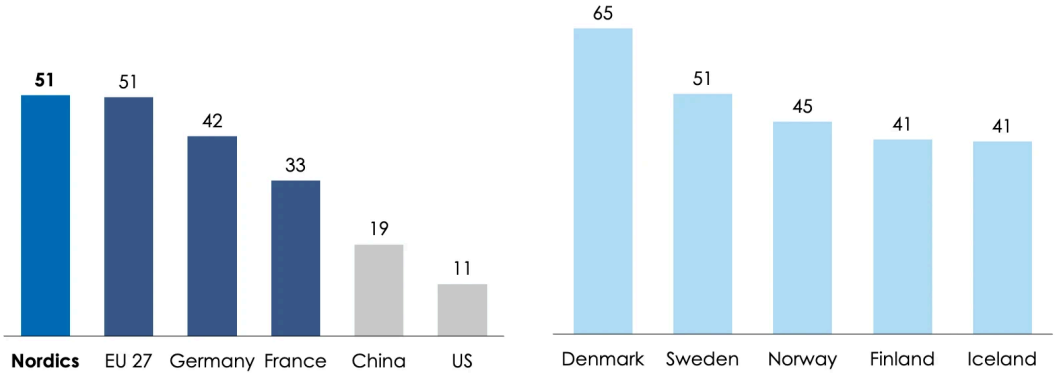
3.2 Increased vulnerability in a more geopolitically unstable world underscores the need for strategic autonomy

The global economic environment is becoming more unstable, with geopolitical tensions increasingly shaping trade and industrial policy. Economic relationships are no longer driven solely by efficiency considerations, but also by security concerns, resilience and strategic interests.[49] This changes the conditions for small, open economies like the Nordics.

The Nordic countries are highly integrated into global markets and rely heavily on international trade. This has supported strong economic performance, but also increases exposure to external shocks, shifts in global demand and changes in trade policy.

Exports of goods and services accounted for more than 50% of combined Nordic GDP on average over the last five years, see Figure **20**. In contrast, large economies such as the US and China are significantly less dependent on exports, reflecting the size of their domestic markets and their greater reliance on internal demand.

Figure 20
Exported goods and services as a share of GDP, 2020-2024 average
Per cent of GDP



Note: We calculate the Nordics and the EU 27 as weighted averages.
Source: Copenhagen Economics based on World Bank (2026, website), Exports of goods and services (link).

This reliance on exports is consistent across the Nordic countries, although there are differences. Denmark stands out with exports corresponding to around 65% of GDP in the last five years, while Finland and Iceland are somewhat less export-oriented at around 40%.[50]

A strong export position, per se, tells us that Nordic economies are highly integrated into the global economy. But this measure alone does not reveal whether this

49. See e.g. UNCTAD (2025), World Economic Situation and Prospects 2025 (link).
50. World Bank (2026, website), Exports of goods and services (link).

integration poses a challenge to economic resilience. The geographical composition of exports is therefore also relevant.

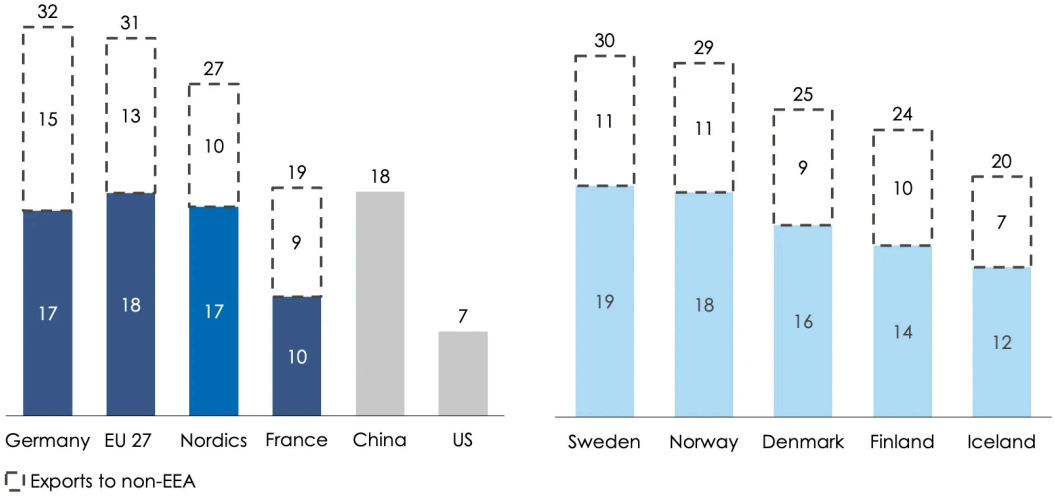
Nordic goods exports show a strong regional orientation. More than two-thirds go to countries within the EEA, and around 10% of GDP is accounted for by goods exports to non-EEA destinations, as **Figure 21** shows. We focus on goods exports here because detailed data on export destinations are available for goods. Comparable data on the destination of services exports are more limited, so a similar breakdown is not possible for services.

Strong regional integration can support resilience by providing access to large and closely integrated markets, lower trade costs, established supply chains and relatively aligned regulatory frameworks. Proximity can also make it easier for firms to maintain and diversify trading relationships within the region. At the same time, a high concentration of exports within the EEA can increase exposure to shocks affecting the region as a whole, such as a broad-based slowdown in demand or regional disruption.

By contrast, a wider geographical spread of export destinations can provide an additional source of diversification. If demand weakens in one market or region, exporters may be able to redirect sales towards others, reducing reliance on any single source of external demand.

Resilience therefore depends on striking a balance between the benefits of strong regional integration and the diversification provided by access to a wider range of international markets. This balance is an important factor in assessing Nordic economies' exposure to external shocks and their ability to adapt to changing global conditions.

Figure 21
Exported goods as a share of GDP by economic area of destination, 2024
Per cent of GDP



Note: For China and the US, exports are not differentiated between EEA and non-EEA exports. Due to rounding, the numbers do not necessarily sum perfectly.
Source: Copenhagen Economics based on Growth Lap at Havard University, the Atlas of Economic Complexity (2024), Exports of goods (link); and World Bank (2024), GDP (current USD) (link).

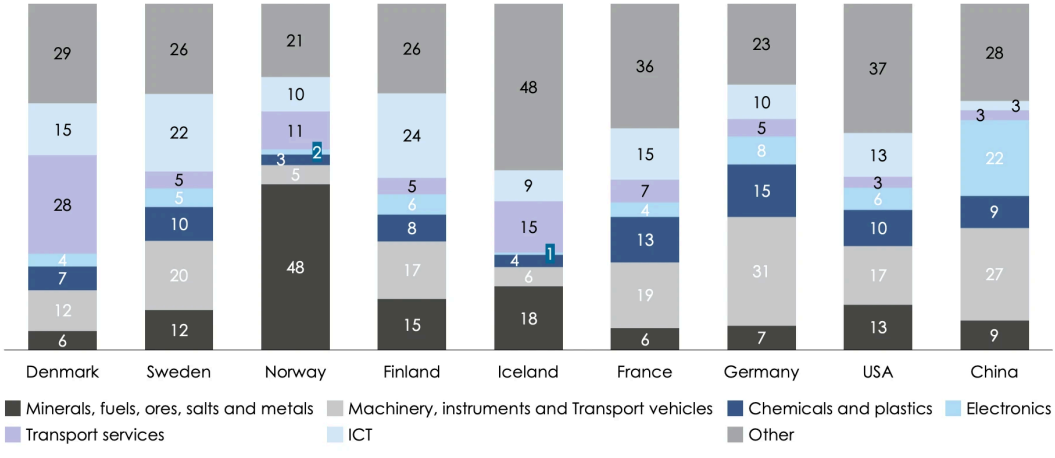
Sector composition is a second important dimension of export resilience. While sharing similar institutional frameworks, the Nordic economies have distinct export structures.

Denmark's exports are concentrated in transport services, representing 28% of overall exports in 2024 and value creation within the Danish business landscape has become increasingly concentrated in fewer larger companies, which in turn increases the potential effects of economic shocks on these companies.[51] Sweden and Finland are more exposed to traditional manufacturing sectors such as metals, machinery, and transport equipment, alongside growing ICT industries, which also increases exposure to global competition, particularly from China, whose rapid industrial expansion and technological upgrading have intensified competition in core manufacturing segments such as machinery and electronics.[52] Norway is highly dependent on oil and gas exports, while Iceland relies heavily on aluminium production supported by low-cost renewable energy, see Figure **22**.

Overall, the Nordic countries' export concentration does not differ markedly from that of the US, China or their European peers. Norway and Denmark are the exception, as each draws on two main sectors for a large share of its exports. Beyond this, the more striking pattern is not the level of concentration but the composition of exports, which varies considerably across the Nordic countries themselves.

These differences imply that Nordic countries are affected differently by external shocks. For example, higher energy prices may benefit Norway, while placing greater pressure on Sweden and Finland due to their more energy-intensive industrial bases. The Faroe Islands provide a particularly clear example of how a highly specialised economic structure can create both competitive strengths and concentrated vulnerabilities. We provide an overview of the Faroe Islands' economy in the box at the end of this chapter.

Figure 22
Contribution to exports from selected industries, 2024
Per cent of total exports of goods and services

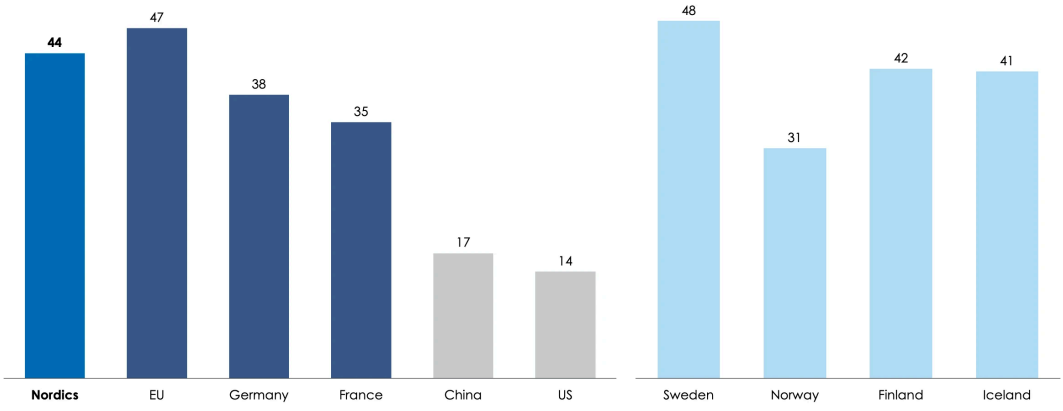


Note: We combine the datasets for Unilateral Trade and Services Unilateral. For a better overview, the categories Minerals, fuels, ores, salts and metals are combined as well as Machinery, instruments and Transport vehicles.
Source: Copenhagen Economics based on Growth Lap at Havard University, the Atlas of Economic Complexity (2024), Unilateral Trade and Services Unilateral (link).

51. Erhvervsministeriet (2025), Draghi og Danmarks produktivitet, p. 8 (link).
52. Grjebine et al. (2026), The Chinese Steamroller: Quantifying the Systemic Threat to Europe's Industrial Base (link).

The import side adds a further layer to the picture. As with exports, imports also account for a high share of Nordic countries' GDP. This share is higher than in the US and China, and broadly similar to the EU average, see Figure **23**.

Figure 23
Imported goods and services as a share of GDP, 2020-2024 average
Per cent of GDP

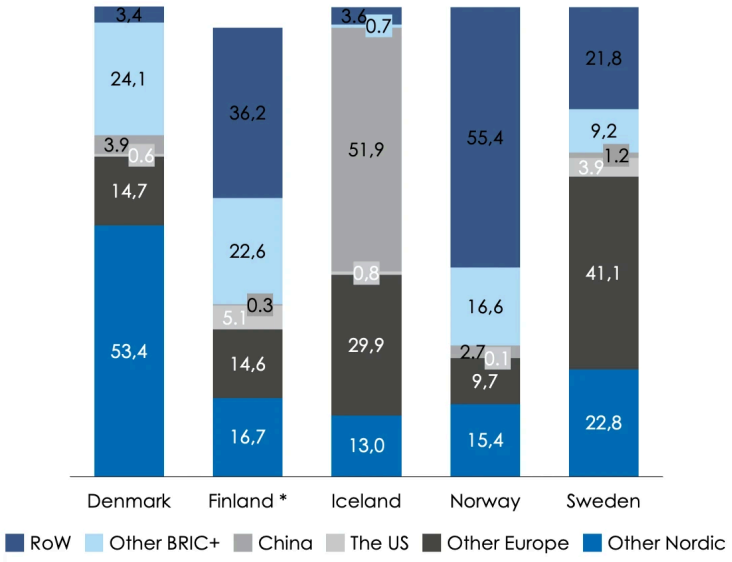


Note: We calculate the Nordics and the EU 27 as weighted averages.
Source: Copenhagen Economics based on World Bank (2026, website), Imports of goods and services (link).

This reflects the same underlying openness that characterises Nordic economies on the export side. Small domestic markets mean Nordic countries rely on imports for a wide range of goods and services that are not produced, or not produced efficiently, at home, from raw materials and intermediate inputs used in domestic production to final consumer goods.

When we look in more detail at import composition, we find that as for exports, Nordic supply chains are mostly regional and anchored in nearby European and Nordic markets. However, the situation differs significantly for supply-sensitive goods and critical raw materials, where non-European suppliers account for a much larger share and exposure varies considerably across countries, see Figure **24** (further analysis is presented in Section 2). The main resilience concern is therefore not overall import dependence, but rather reliance on a narrow set of strategic inputs for which disruptions would be particularly costly and for which substitution possibilities are limited.

Figure 24
Import of Critical Raw Materials broken down by region/country, 2024
Share of imports (per cent)



Note: ** Due to confidentiality, the percentages do not add to 100%. Total values (bill, EUR): Denmark (1.2), Finland (5.0), Iceland (0), Norway (3.6) and Sweden (4.4).*
Source: *Copenhagen Economics based on Nordic Council of Ministers (2026), Imports of critical raw materials* (link).

Increasing geopolitical tensions, supply chain disruptions and a more fragmented global economy have highlighted that access to critical inputs and markets can no longer be taken for granted. As a result, economic policy is increasingly shaped by considerations of resilience and security, with a growing role for active industrial policy in key sectors.[53]

This represents a structural shift for the Nordic economies. Historically, the region has benefited from high levels of openness, specialisation, and integration into global value chains. Going forward, the region increasingly needs to balance these strengths with a consideration for resilience and strategic autonomy. This implies a shift in which competitiveness is determined not only by comparative advantages, but also by the ability to contribute to security of supply and reduce strategic dependencies.

These considerations are particularly relevant in a set of key sectors that are critical for economic resilience and security, including defence, raw materials, energy, advanced technologies, and food and health. The Nordic countries have different strengths across these areas, reflecting their diverse economic structures and resource endowments.

Defence capabilities are a core pillar of strategic autonomy in an increasingly uncertain geopolitical environment. Focusing on the underlying industrial base

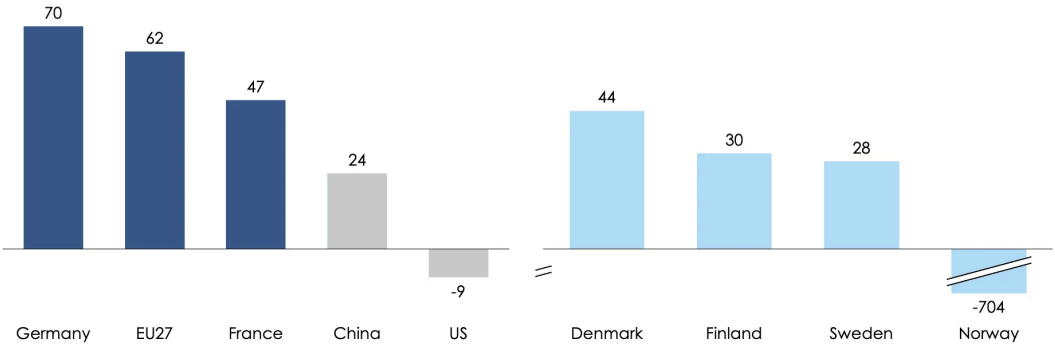
53. See e.g. REPowerEU and the Critical Raw Materials Act, see European Commission (2026, website), REPowerEU (link); and European Commission (2026, website), Critical Raw Materials Act (link).

rather than overall military capacity, Sweden stands out with a highly developed defence industry, including advanced systems such as fighter aircraft and submarines, reflecting strong engineering and manufacturing capabilities.[54]

Access to critical raw materials is a key enabler of the green and digital transitions. Within the Nordics, Finland has a particularly strong mining base and is the EU's only producer of cobalt and platinum, both essential for batteries and clean technologies. Sweden also has a significant mining sector, including copper and nickel, while Norway produces titanium and graphite and may develop future capacity in rare earths and offshore minerals. Greenland holds potential rare earth deposits, although projects are not yet commercially mature, and Iceland, while lacking mining activity, has a strong tradition in metallurgy.[55] We provide an overview of Greenland's economy in the box at the end of this chapter.

Energy security is equally central to strategic autonomy, especially given Europe's reliance on imported fossil fuels alongside the transition to low-carbon systems. Although the Nordic countries generally rely less on energy imports than major European economies such as Germany and France, they are, on average, more import-dependent than China and the United States. Norway is the notable exception, as a major net energy exporter, see Figure **25**.

Figure 25
Net energy imports, 2023
Per cent of energy use



Note: Net energy imports are estimated as gross imports less gross exports, both measured in tons of oil equivalents (toe). A negative value indicates that the country is a net exporter. Energy use refers to use of primary energy before transformation to other end-use fuels, which is equal to indigenous production plus imports and stock changes, minus exports and fuels supplied to ships and aircraft engaged in international transport, see the source below. We don't include Iceland due to lack of data.
Source: World Bank (2026, website) based on data from IEA, Energy imports, net (% of energy use) (link).

Compared with many other European economies, the Nordic countries benefit from energy mixes with a higher share of renewable and domestically sourced energy, reducing their reliance on fossil fuel imports. This strengthens resilience to supply-side disruptions and enhances the region's overall degree of strategic

54. Business Sweden (2025), Global boom in defence and security shines spotlight on Swedish exporters (link).
55. Nordic Innovation (2024), Critical Raw Material Act: a Key Opportunity For The Nordics (link).

autonomy.[56] Norway is a major oil and gas exporter and a key supplier to Europe, while also benefiting from extensive hydropower resources. Denmark is a leader in wind energy and offshore wind development, as well as emerging Power-to-X technologies. Iceland has abundant geothermal resources and strong potential in green fuel production, while Sweden and Finland combine established nuclear capacity with significant access to bioenergy.

Despite the comparative advantage with European peers, electricity infrastructure is coming under increasing pressure and emerging as a significant bottleneck to the green and digital transition. Demand for grid connections from industrial electrification, data centres, renewable energy projects, and batteries has increased rapidly, resulting in substantial connection queues across both transmission and distribution networks. These constraints can increase investment uncertainty, postpone project implementation, and slow the deployment of new productive capacity.[57]

Finally, advanced technologies and food and health systems are important for resilience and competitiveness. Sweden and Finland both have strong positions in deep tech, advanced manufacturing, ICT, and telecommunications.[58] In parallel, Denmark plays a key role in pharmaceuticals[59] and has a highly developed agricultural sector, increasingly focused on sustainable farming and climate innovation.[60]

While the Nordics are well-positioned to contribute within these key strategic areas, this shift also represents a core challenge. Strategic autonomy changes the underlying logic for how resources are allocated, as decisions are no longer driven solely by economic efficiency but increasingly by considerations of resilience and security of supply. This can create trade-offs, as policies aimed at strengthening domestic or European capabilities may come at the cost of higher production costs or reduced specialisation.

For the Nordic economies, this may create new opportunities in sectors of strength, but it also increases the risk of inefficient capital allocation if strategic objectives override market signals. Balancing considerations of strategic autonomy and standard market signals will be central to maintaining both competitiveness and resilience in the years ahead.

Strategic autonomy is likely to remain a central pillar of European economic policy in the years ahead. While this section highlights the key implications for the Nordic countries, a comprehensive assessment of their comparative strengths, associated trade-offs, and potential policy responses warrants further analysis.

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56. See e.g. European Commission (2026), Shared power, shared security: Nordic lessons for Europe's energy resilience (link); and Nordic Energy (2026), Strengthening Nordic energy security with offshore wind (link).
57. Energinet (2026), Nordic Grid development (link).
58. Heinonen et al. (2020), AI in 4 Nordic countries (link).
59. Danish Agriculture & Food Council (2023) Facts and Figures 2023. (link).
60. Denmark is the only country in the Nordic-Baltic region that is a net exporter of agricultural products, producing three times the amount of food it needs for self-sufficiency, see International Trade Administration (2026, website), Denmark Country Commercial Guide – Agricultural Sector (link).

IN FOCUS

Faroe Islands

The Faroe Islands are a small island economy with around 55,000 inhabitants, yet they have developed into a high-income and well-functioning economy. In recent years, growth has been among the highest in Europe, with annual GDP growth exceeding 3% in the period 2021–2023.[61]

The labour market is characterised by very high participation and low unemployment, which has been around 1% in recent years, effectively corresponding to full employment. While this underpins strong economic performance, it also creates pressures in the labour market, including labour shortages.[62]

A key driver of this performance is the fishing sector, which accounts for around 93% of goods exports in 2025, with exports overall representing a very large share of the economy. The sector has experienced substantial productivity gains over time, supported by strong natural resources and favourable conditions for both wild catch and fish farming. The Faroe Islands are now among the world's largest salmon producers, with production more than doubling since 2011.[63]

However, this success also highlights key structural challenges. The Faroese economy is highly specialised and concentrated, making it vulnerable to sector-specific shocks. This was evident in the early 2000s, when disease outbreaks in fish farming led to a sharp downturn, followed by bankruptcies, consolidation within the sector, and stricter regulation.[64] This in turn led to stronger growth but also limited competition and elements of oligopolistic market structures.[65]

These challenges point to the importance of effective regulation. Current frameworks show signs of inefficiencies, including the use of non-market-based allocation mechanisms, overcapacity and underutilisation of resources. For example, fishing rights are partly allocated through "fishing days", of which only around half are typically used, leading to both economic and biological inefficiencies. At the same time, a significant share of the resource rent is not captured, with estimates suggesting that uncollected rents have amounted to around 6% of GDP annually.[66]

61. Nationalbanken (2026), Fremgang i færøsk økonomi trods stor global usikkerhed (link).
62. Nationalbanken (2026), Fremgang i færøsk økonomi trods stor global usikkerhed (link).
63. Nationalbanken (2026), Fremgang i færøsk økonomi trods stor global usikkerhed (link).
64. Danmarks Nationalleksikon (2026, website), 1970-2007 på Færøerne (link).
65. Based on input from interviews. See also e.g. Ellefsen (2024), Haldføristrupulleiki og gjøld fyri at nýta náttúrutilfeingi (link).
66. Ellefsen (2024), Haldføristrupulleiki og gjøld fyri at nýta náttúrutilfeingi (link).

Overall, the Faroe Islands illustrate how a small economy can achieve strong growth and increasing economic independence through high productivity in a resource-based sector. At the same time, it highlights the risks associated with high specialisation and the importance of smart regulation. Greater reliance on market-based mechanisms, such as auctions for access rights, could improve efficiency, support sustainable resource use and strengthen long-term economic outcomes.

IN FOCUS

Greenland

Greenland is a large, sparsely populated island with around 56,000 inhabitants spread across a vast geographic area. The Greenlandic economy is small, highly specialised, and can hardly be described within a "standard competitiveness framework" designed for larger economies.

After several years of strong growth driven by booming fisheries and large-scale infrastructure investments, the economy has entered a phase of slowdown. At the same time, deep-rooted challenges are becoming more visible: heavy dependence on a single export sector, persistent labour shortages increasingly filled by foreign workers, and mounting fiscal pressures from an ageing and gradually shrinking population. Taken together, Greenland's economic outlook is defined less by short-term cycles and more by the need for structural reform to secure long-term sustainability and greater self-reliance.[67]

The country's geography defines both its opportunities and its challenges. Large distances and a dispersed population imply high infrastructure costs per capita.[68] At the same time, many local communities are too small to sustain key public services such as education and healthcare. This has contributed to ongoing urbanisation, as people move from smaller coastal settlements to larger towns, particularly the capital, Nuuk. As a result, housing demand in Nuuk and other larger towns has increased significantly, leading to housing shortages and rising prices.[69]

These dynamics also contribute to labour market imbalances. Employment opportunities are mainly concentrated in larger cities, while it is often too expensive to move to the larger cities from the rural coastal areas. Combined with lower educational attainment than in the rest of the Nordics and the fact that many students pursue higher education in Denmark and do not return, this creates skills shortages in key sectors.[70]

At the same time, Greenland's structural characteristics also represent its potential strengths. The small population could potentially enable a higher degree of agility, since it is possible – unlike in larger economies – to bring together key stakeholders within industry, politics, and civil society to make decisions fast and

67. Danmarks Nationalbank (2025), Reformer kan gøre grønlandsk økonomi mere selvbærende (link) and Danmarks Nationalbank (2026), Opbremsning i væksten og store udfordringer forude (link).
68. Danmarks Nationalbank (2026), Opbremsning i væksten og store udfordringer forude (link).
69. Kalaallit Nunaata Radioa (2025), Boligpriser på vej i vejret: Kvadratmeterprisen stiger med 1.000 kroner (link).
70. Danmarks Nationalbank (2026), Opbremsning i væksten og store udfordringer forude (link).

efficiently.[71] Additionally, Greenland is rich in natural resources, which provide a basis for future growth and increased diversification.

The natural resources create opportunities in three important economic sectors: fishing, tourism, and mining and raw materials.

Fishing remains the most important sector, driving around a third of total value creation[72] and 99% of exports.[73] The sector has experienced substantial productivity improvements over time, driven by increased capital intensity and automation, potentially making future productivity gains harder to reap.

The sector's long-term outlook is closely tied to the sustainable management of fish stocks. Fisheries are a common resource that can generate high economic returns if exploited at sustainable levels, but overfishing can reduce future yields and overall economic value. While parts of the Greenlandic fishery, such as shrimp and offshore halibut, are managed in line with biological recommendations, other segments operate above sustainable catch levels. This creates a risk of short-term gains at the expense of long-term productivity and income.[74]

Climate change adds further uncertainty. Rising sea temperatures and melting ice caps may open new fishing areas and increase accessibility but can also alter species migration patterns and stock availability.[75] Combined with existing pressures on resource management, this highlights that future growth in the sector will depend not only on technological development, but also on effective regulation to balance economic returns with long-term sustainability.

Tourism is responsible for only a limited share of the value added in Greenland (around 3–5.5% in recent years),[76] but it is an emerging sector, supported by infrastructure investments in airports, for example, and a growing international interest in Greenland's nature. However, access to capital, infrastructure, and skilled labour remains a key constraint on scaling the sector. At the same time, tourism activity is highly seasonal and geographically concentrated, and partly dependent on international cruise operators, which limits local value creation. The development of the sector will therefore depend on strengthening infrastructure and competencies, increasing local value capture, and ensuring that growth is aligned with environmental and societal sustainability.[77]

Mining and raw materials currently contribute only marginally to value added in Greenland,[78] but hold significant long-term potential. Greenland's subsoil contains

71. Based on insights from interviews with stakeholders within the Greenlandic economy. They highlight that this is a possibility, but not something they utilise now.
72. In 2022, fishing and related industries ("Fiskeri og fiskerirelateret industri og handel") were responsible for 33.1% of total value added, see Statistikbanken (2026, website), Regnskabsstatistik efter branche, art og tid (link).
73. NAALAKKERSUISUT (2023), Udviklingsplan for Fiskeriet i Østgrønland 2023-2030 (link), p. 3.
74. Andersen (2022), Grønland, en selvbærende økonomi – krav og muligheder (link).
75. See e.g. Jacobsen et al. (2023), Ten years of climate change adaptation in Greenlandic fisheries: key observations from local ecological knowledge. https://vbn.aau.dk/ws/files/668916912/c091p175.pdf or Hatton et al. (2025), Climate Change Opens Up New Fishing Possibilities for Large-Scale Trawling Vessels Off West Greenland. https://onlinelibrary.wiley.com/doi/epdf/10.1111/fog.12736
76. Statistikbanken (2026, website), Regnskabsstatistik efter branche, art og tid (link).
77. See e.g. Nordisk Råd (2025), Grønland viser vejen: Bæredygtig turisme med nordisk potentiale (link) and Ren & Hall (2022), Fem årtiers turismeudvikling i Grønland – selvstændighed, geopolitik og nye paradokser (link).
78. Statistikbanken (2026, website), Regnskabsstatistik efter branche, art og tid (link).

substantial deposits of minerals and critical raw materials, which could support future economic diversification.

Realising this potential is challenging. Mining projects are highly capital intensive and require large upfront investments and long development timelines. Several projects have not been developed due to financing constraints, uncertain profitability, and political considerations, including environmental restrictions. As a result, the future contribution of the sector will depend on improving framework conditions, attracting investment, and balancing economic development with environmental sustainability, while keeping an eye on the geopolitical landscape, where raw materials are becoming hard currency.[79]

Overall, Greenland illustrates the trade-offs faced by small, remote economies. Structural constraints related to geography and scale limit diversification and increase costs, while natural resources provide opportunities for growth if supported by investment and institutional capacity.

79. See e.g. Andersen (2022), Grønland, en selvbærende økonomi – krav og muligheder (link); Videnskab.dk (2025), Grønlands undergrund bugner af kritiske råstoffer – hvorfor er de ikke allerede hentet op? (link); and NAALAKKERSUISUT (2025), GRØNLANDS RÅSTOFSTRATEGI 2025 – 2029 (link).

IN FOCUS

Åland

Åland is an autonomous island in the Baltic Sea between Finland and Sweden, with around 30,000 inhabitants. Despite its size, Åland has a relatively high-income level, in line with Finland and Sweden.[80] The economy is specialised, with employment concentrated in a few key sectors. The shipping sector in particular has historically been the backbone of the Åland economy.

Shipping activities, particularly passenger transport and tourism in the northern Baltic Sea, accounted for 18% of Åland's GDP and almost 6% of employment in 2023.[81] Over time, this importance has led to the development of a broader maritime ecosystem, including finance, insurance and smaller firms providing a range of different services to the shipping sector. While this cluster provides stability and employment, it is closely tied to regional demand and tourism flows, making it sensitive to economic cycles and external shocks.

Other core sectors include tourism and agriculture, which are natural areas of specialisation given Åland's geography. However, both sectors are typically characterised by relatively low productivity growth and limited scalability.

In recent years, Åland has taken steps to broaden its economic structure by investing in knowledge-intensive activities. One example is Grit:lab, an education initiative aimed at adults looking to build new skills and a mindset that helps them create career opportunities within technology.[82] By providing hands-on, project-based learning, the programme aims to build local capabilities in IT while also attracting international talent to the island. This contributes to strengthening the local skills base and supports the development of new sectors.

Ålandsbanken provides another example of how a small economy can develop internationally competitive activities. Despite operating in a limited domestic market, the bank has expanded beyond traditional banking services and built a successful digital business through its subsidiary Crosskey. Crosskey delivers software solutions to banks across the Nordic region, representing an export-oriented, high-productivity activity. This illustrates how existing institutions can leverage digitalisation to scale beyond local market constraints.[83]

80. Ålands statistik- och utredningsbyrå (2026, website), Gross domestic product per capita at current prices (converted to purchasing power parities) by region and year (link).
81. Ålands statistik- och utredningsbyrå (2026, website), Facts about Åland (link).
82. Grit:lab (2026, website), About (link).
83. Crosskey (2026, website), The story of Crosskey (link).

Together, these developments point to a gradual diversification of the Åland economy. While traditional sectors such as shipping and tourism remain important, investments in digital skills and scalable business models are creating new sources of growth. For small, specialised economies, such diversification is key to maintaining competitiveness and supporting long-term economic development, and productivity growth.

Creating the next generation of Nordic growth engines to face the competitiveness challenge

Remaining at the competitive frontier in an increasingly uncertain global environment will require the Nordic countries to both build on the core strengths of their economic model and address emerging internal challenges, particularly the slowdown in innovation and productivity growth. While geopolitical fragmentation and external shocks represent important headwinds to the broader economic environment, this chapter focuses on internal drivers of performance.

Preserving the Nordics' position at the competitiveness frontier will depend on their ability to strengthen the creation, scaling, and diffusion of new technologies and business models. Innovative firms are a key engine of future growth, given their contribution to productivity gains, high-quality employment, and technological upgrading.

Ensuring that these firms can emerge, attract capital and talent, and scale without unnecessary frictions is therefore critical. This chapter explores a set of structural constraints that may be limiting the growth of innovative companies in the Nordic countries.

Section 4.1 reviews the current landscape for high-growth firms in the Nordic economies. Sections 4.2 to 4.4 then examine three key categories of potential obstacles: limited access to risk capital and incentives for investment; regulatory burdens; and challenges in attracting, retaining, and developing talent.

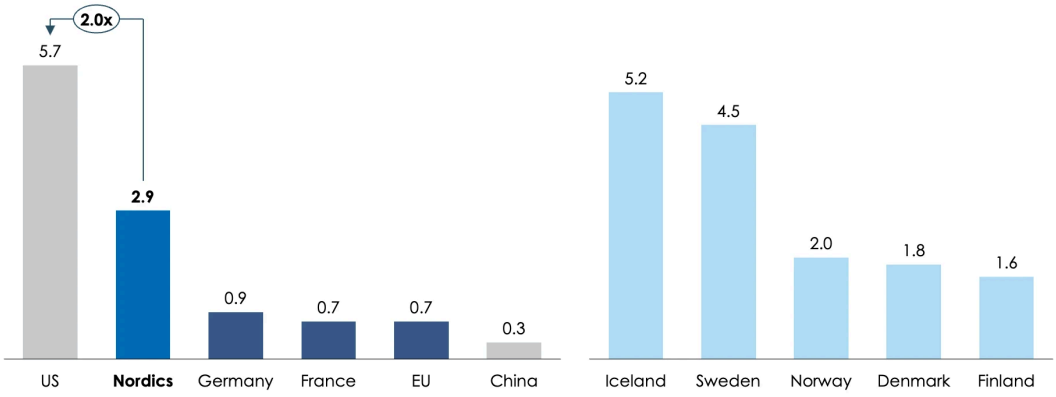
4.1 Nordic economies show strong fundamentals but untapped potential for scaling high-growth firms

Young high-growth firms are key drivers of innovation, investment, and competitive dynamism, especially during recoveries from economic shocks.[84] These firms contribute disproportionately to net job creation and productivity growth, despite representing only a small share of the total firm population. Their importance lies not only in their rapid expansion, but also in their ability to introduce new technologies, business models, and organisational practices that diffuse throughout the wider economy.[85]

84. World Economic Forum (2023) *Gazelles: An endangered yet essential species of company* (link).
85. OECD. (2010). *High-Growth Enterprises: What Governments Can Do to Make a Difference*. OECD Studies on SMEs and Entrepreneurship. OECD Publishing. (link).

The Nordics have a higher share of young high-growth firms compared with the EU average; however, they seem to face challenges in developing such companies at scale. This is evident when looking at the number of unicorns,[86] where the Nordics, while standing out in Europe as best performers, lag behind the US, with only around half as many relative to the population size, see Figure **26**.[87] This highlights that the challenge is relative to the global frontier rather than within Europe.

Figure 26
Unicorns, 2026
Number of unicorns per million population



Note: We rely on population data for 2024 for all countries since that is the most recently available. Iceland stands out with a high number of unicorns due to their limited population size rather than their ability to produce many unicorns (2). Unicorns are defined as "companies founded since 1990, that is currently valued, or previously exited at over $1B", see Dealroom (2025, website), Glossary & definitions (link).
Source: Copenhagen Economics based on Dealroom (2026, website), Explore the most promising ecosystems (link) and the World Bank (2026, website), Population, total (link).

The challenge is not only to create new growth companies, but also to retain them. In particular, Danish unicorns show a tendency to relocate, with around 64% of Danish unicorns founded after 2000 having moved abroad (7 of 11). This share is significantly lower in the other Nordic countries, suggesting differences in framework conditions for scaling companies domestically.[88]

4.2 Capital constraints and weak incentive structures limit firm creation and scaling

One of the main conclusions of the Draghi report concerns the structural shortage of late-stage, growth-oriented risk capital in Europe, which constrains the scaling of innovative firms.

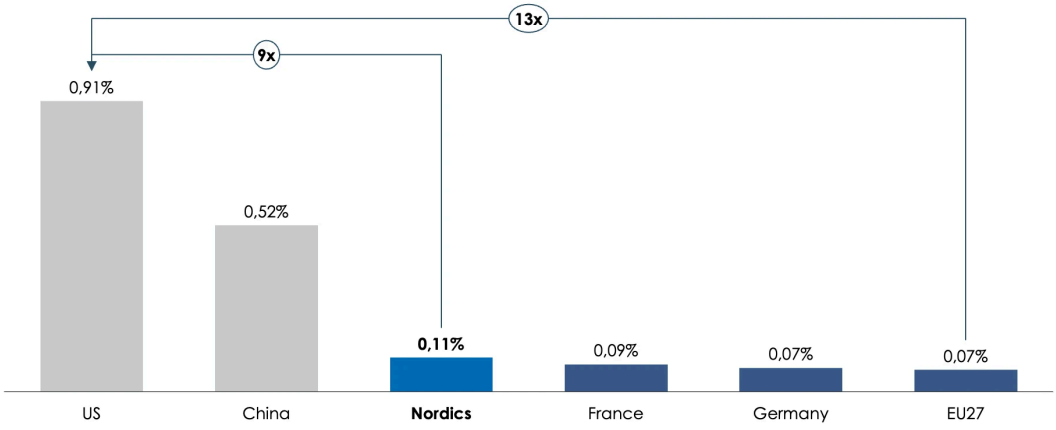
In particular, the report highlights that while Europe (including the Nordics) has a relatively strong base of early-stage innovation and public R&D support, they lag

86. The term "unicorn" describes a privately owned, tech or innovative company valued at over $1 billion.
87. Note that Iceland has produced two unicorns and stand out due to the small population.
88. 11% has left Norway (1 of 9), 9% has left Sweden (3 of 32), and none has left Finland, see Dansk Erhverv (2023), Fra iværksætter til vækstsætter (link).

significantly behind the United States in the availability of large-scale venture capital funding for scaling companies. This gap becomes especially pronounced in growth and expansion phases, where European firms often struggle to secure the financing needed to scale into global leaders.[89]

Within Europe, the Nordics perform relatively well, with investment levels above both the EU and traditionally deeper capital markets such as France, but the differences are marginal compared to the gap with the US and China. Nordic companies have access to around nine times less VC investment than companies in the US, equivalent to 0.8% of GDP, see Figure **27**. The US remains the global VC hub, with investment levels far exceeding those in other regions. China also stands out, with relatively high levels of VC investment, reflecting a strong focus on developing new technologies and scaling emerging industries.

Figure 27
Average yearly VC investments, 2020-2024
Per cent of GDP



Note: The Nordics exclude Iceland due to a lack of data. The Icelandic VC market is expected to make up a small share of the Nordics, and we do not expect that exclusion to impact the overall picture. For the Nordics and EU27 (Invest Europe data), the figure shows numbers based on the domicile of the portfolio company, not the domicile of the investor. Pitchbook does not state whether the same is true for US and China data. However, differences in terminology would likely not impact the overall picture, since we expect the difference between investments based on fund location and portfolio company location to diminish with the size of the private capital market/economy.
Source: Copenhagen Economics based on Invest Europe (2025), Private equity activity report 2007-2024 by country and Pitchbook data (link).

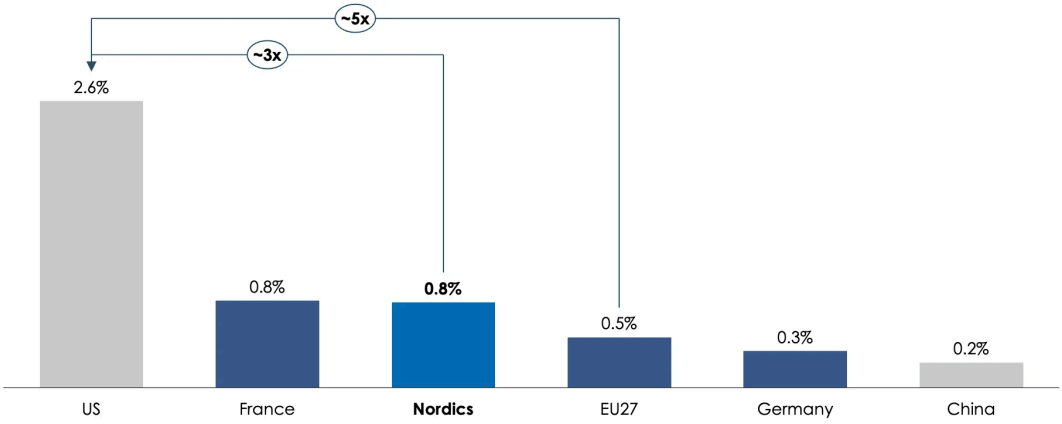
Within the Nordics, Denmark, Sweden, and Finland all show similar levels at 0.14%, 0.12%, and 0.11% of GDP,[90] respectively, while Norway is multiple times lower with investments only at 0.4% of GDP in the last five years.

While VC is particularly important for startups and early-stage companies, private equity plays a key role as companies grow. Access to capital for larger, established

89. A growing body of economic research shows that VC investments generate substantial positive spillovers to the wider economy. One study finds that an increase in VC investments of EUR 1 leads to an increase in economic output of EUR 3.33. These spillovers are particularly strong in knowledge intensive sectors, see Romain and van Pottelsberghe (2004), The economic impact of Venture Capital. https://www.researchgate.net/profile/Astrid-Romain/publication/23754892_The_Economic_Impact_of_Venture_Capital/links/0c960524fb786db630000000/The-Economic-Impact-of-Venture-Capital.pdf
90. Investments in Denmark and Finland are partly driven by strong public investment activity, while the Swedish market functions more on private terms, see Copenhagen Economics (2026), Developing a thriving innovation and venture capital ecosystem in Oslo, p. 39 (link).

companies is also challenged in the Nordics. Here, there again exists a substantial gap to the US, where investments are around 3 times higher than in the Nordics, see Figure **28**. Measured as a share of GDP, the gap is even larger at 1.8% of GDP compared to 0.8% for VC. This indicates that the challenge extends beyond early-stage financing to later stages of firm growth.

Figure 28
Average yearly PE investment (excluding VC), 2020-2024
Per cent of GDP



Note: The Nordics exclude Iceland due to a lack of data. The Icelandic PE market is expected to make up a small share of the Nordics, and we do not expect that exclusion impact the overall picture. For the Nordics and EU27 (Invest Europe data), the figure shows numbers based on the domicile of the portfolio company – not the domicile of the investor. Pitchbook does not state whether the same is true for US and China data. However, differences in terminology would likely not impact the overall picture since we expect the difference between investments based by fund location or portfolio company location to diminish with the size of the private capital market.
Source: Nordics and EU27 - Invest Europe (2025), Private equity activity report 2007-2024 by country. / US and China – Pitchbook (link).

Additionally, while Nordic IPO markets showed signs of recovery in 2025, with an increase in capital raised and renewed listing activity, this recovery has been uneven across the region. Denmark, in particular, has seen very limited IPO activity compared with its Nordic peers. This may limit the range of domestic financing options available to companies.[91]

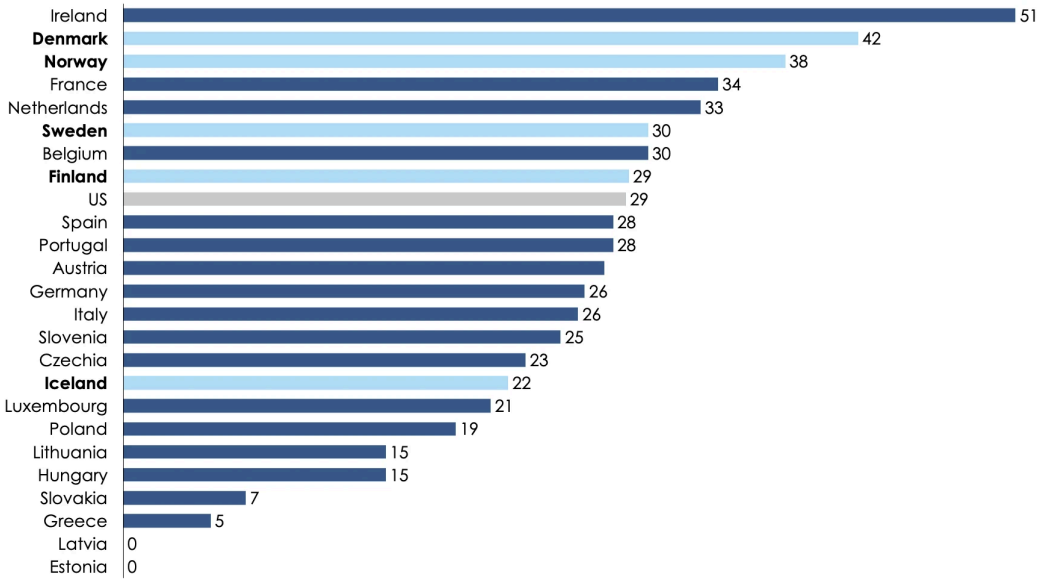
Overall, this suggests that while the Nordics maintain high levels of investment, they are comparatively less effective in mobilising risk capital towards the high-risk, high-reward segments of the economy, including innovative and high-growth firms.

These differences in capital allocation are reinforced by variation in investor conditions and incentives across Nordic countries, particularly in household taxation and investment frameworks. In this context, capital gains taxation differs markedly within the region. Denmark applies one of the highest marginal capital gains tax rates at around 42%, followed by Norway at approximately 38%. By contrast, Sweden and Finland are closer to the US level at around 30%, while Iceland stands significantly lower at around 22%, see Figure **29**.

91. PWC (2026, website), Nordic IPO Watch 2025 (link).

Higher capital gains taxation reduces the after-tax return on equity investments and may therefore weaken incentives for households to allocate capital to invest in more productive assets, such as equity. Over time, these differences can affect the depth and dynamism of venture capital markets and the overall availability of funding for firms.

Figure 29
Capital gains tax, 2022
Marginal tax rate on capital gains



Note: We have included the US, EU, and Nordic countries. Capital gains tax is denoted "net personal tax rate" in the OECD tax database.
Source: Copenhagen Economics based on OECD (2026, website), Combined (corporate and shareholder) statutory tax rates on dividend income (link).

In addition, the framework for retail equity investment differs across countries. Nordic investors face varying opportunities to invest in equities under favourable tax conditions. Denmark stands out as the most restrictive, with relatively limited scope for tax-advantaged investment accounts.[92] This reduces incentives for households to allocate savings to equities compared to other Nordic countries.

In contrast, the Nordic tax systems generally favour investments in housing over other asset classes. Capital gains on primary residences are fully exempt from taxation in all Nordic countries except Sweden,[93] which applies an effective tax rate of around 22%.[94] This creates a structural incentive for households to allocate

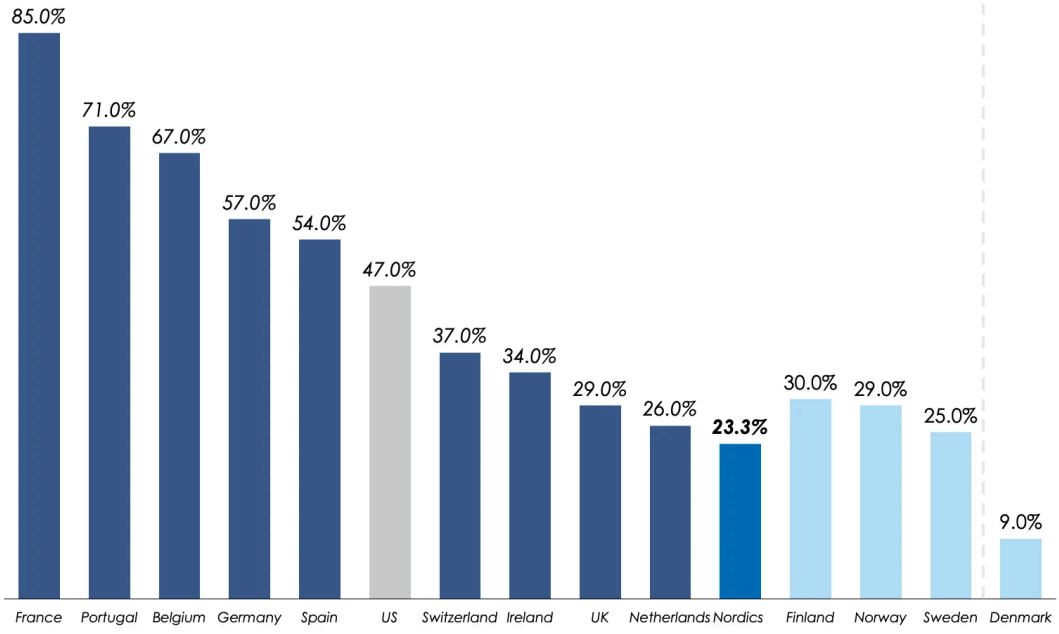
92. Foreningen af Børsnoterede Virksomheder (2026), Børsmarkedets fremtid – Delrapport 1 af 3, p. 9 (link).
93. Note that there exists special tax schemes, which drives up the effective tax rate above zero, but these are not tied directly to gains. For Denmark see e.g. DLA Piper (2026, website), Taxation of asset deals – Denmark (link). For Finland see e.g. Vero Skatt (2026, website), Oman asunnon tai sijoitusasunnon myynti (link). For Norway see e.g. The Norwegian Tax Administration (2026, website), Tax when you sell a residential property or other property (link). For Iceland see e.g. PWC (2026, website), Iceland: Individual – Income determination (link).
94. Skatteverket (2026, website), Sale of real property (link).

savings towards housing, which is typically a lower-risk and less productive asset compared to equity investments.

From a productivity perspective, there is no clear economic rationale for preferential treatment. By incentivising investments in housing over more productive assets such as equities, it can contribute to a misallocation of capital. This may reduce the availability of capital and limit investment in sectors that are central to long-term productivity growth.

Pension savings are another potential source of risk capital, although their contribution depends on investment strategies. A relatively large share of household wealth in the Nordics is held in pension assets, which could help finance domestic companies through equity markets. In practice, however, Nordic pension funds invest a relatively small share of their portfolios domestically, particularly in Denmark, see Figure **30**. This reflects a trade-off: international diversification may improve risk-adjusted returns for savers but directs less capital towards domestic firms.

Figure 30
Pension funds' home bias
Share of listed equity investments invested domestically (per cent)



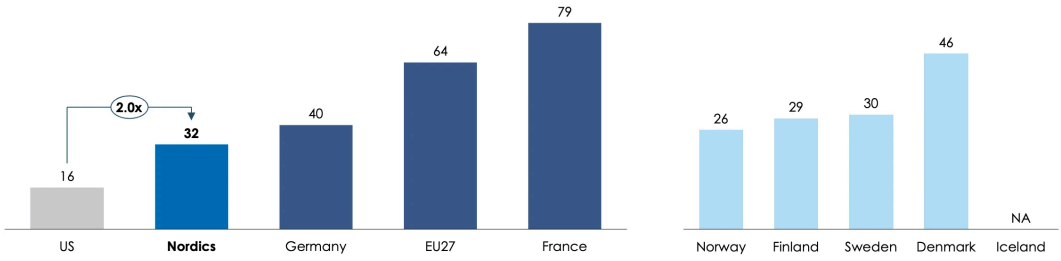
Note: The Nordics are excluding Iceland due to a lack of data. The figure shows the share of listed equity investments by pension funds invested domestically.
Source: Copenhagen Economics based on FBV – Association of Listed Companies (2024), *FBV Analysis Report 1 of 3 – The Future of the Stock Market (link).*

4.3 Complex regulatory frameworks can hinder firm growth and scaling

A well-functioning regulatory environment is an important determinant of competitiveness and the ability of firms to innovate and grow. Excessive administrative burdens, fragmented rules, and regulatory uncertainty can impose significant costs on businesses.

International evidence suggests that the challenge for the Nordic countries and Europe is not primarily the quality of regulation, but its complexity and implementation. While indicators such as the OECD Product Market Regulation (PMR) index suggest that the Nordic countries perform relatively well compared with their international peers, this favourable assessment is not fully reflected in businesses' experiences. Survey evidence indicates that many firms continue to view administrative and regulatory burdens as a significant obstacle to their operations and growth, see Figure **31**. This apparent discrepancy suggests that, although the overall design of the regulatory framework is generally conducive to competition and market entry, the practical implementation of regulation may impose substantial compliance costs on businesses.

Figure 31
Administrative and regulatory burdens, 2025
Share of SMEs reporting that regulatory obstacles or administrative burdens are a problem for their enterprise (per cent)*



Note: (*) the survey question was "Q1t (a) From the following list, please indicate the area that poses the biggest problem for your enterprise in general. (b) From the same list, are there any other areas that pose a problem for your enterprise? [MULTIPLE ANSWERS]". 'Nordics' is approximated as the population-weighted average of the shares in Denmark, Sweden, Finland, and Norway using 2024 population data.
Source: Copenhagen Economics based on European Commission (2025), *Flash Eurobarometer 559: Startups, scaleups and entrepreneurship*, pp. 5–6 (link); and World Bank (2026, website), *Population, total*(link).

There are also notable differences within the Nordic region. Denmark stands out as the country where firms most frequently identify regulation as a barrier to growth.

Regulatory burdens may also arise from differences in national implementation of common European rules. In some cases, Nordic countries have adopted standards that go beyond EU minimum requirements, a phenomenon often referred to as "gold-plating". For example, stricter capital requirements in parts of the Nordic financial sector may contribute to a higher cost of capital relative to other European markets, potentially affecting investment and competitiveness, see section 2 of this report for further analysis.

Another challenge stems from regulatory fragmentation across borders. Firms operating in multiple European markets often face different reporting requirements, technical standards, and administrative procedures, increasing compliance costs and reducing economies of scale. The potential gains from greater harmonisation are substantial.

Finally, regulatory uncertainty can itself become a barrier to investment. Large, long-term projects often depend on predictable policy frameworks and timely regulatory decisions. Delays or uncertainty in planning processes, permitting procedures, or infrastructure connections can postpone investment decisions and increase project costs. In Sweden, for example, the municipal veto halted 63% of planned land-based wind power projects in 2024, underscoring how approval processes can constrain renewable energy expansion.[95]

4.4 Attracting and retaining talent is a key challenge for competitiveness

As highlighted in the Draghi Report, access to highly skilled labour is an increasingly important determinant of competitiveness and long-term economic growth. Skill shortages are already emerging as a significant constraint on business activity across the Nordic region. Business surveys indicate that access to skilled labour is increasingly becoming a barrier to investment. According to the European Investment Bank Investment Survey, 79% of Swedish firms and around 67% of Danish and Finnish firms identify the availability of skilled staff as an obstacle to investment.[96]

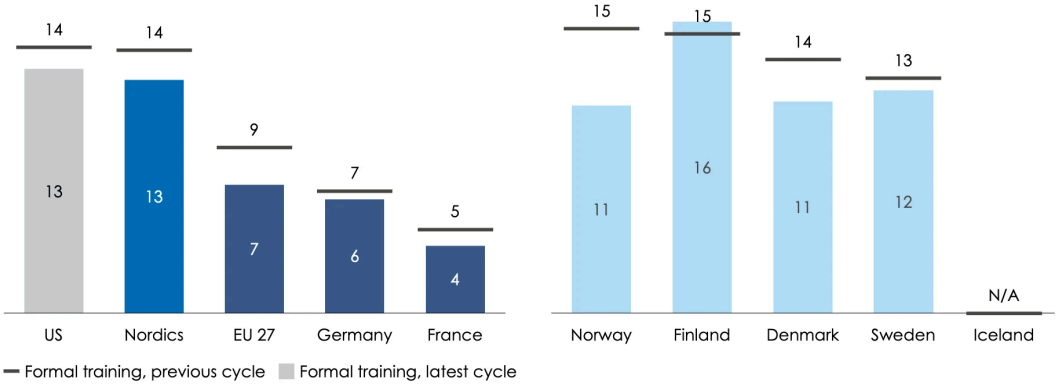
A particular challenge concerns STEM (science, technology, engineering and mathematics) skills, which are becoming increasingly important as digitalisation, artificial intelligence, and the green transition reshape labour demand. While the Nordic countries have strong educational systems and high levels of human capital, domestic labour supply alone is unlikely to satisfy future demand. International competition for highly skilled workers is therefore likely to intensify. Historically, the United States has benefited from its ability to attract global talent, with foreign-born workers accounting for 19% of the US STEM workforce.[97] As immigration policies become more restrictive in some traditional destination countries, the Nordics may have an opportunity to strengthen their attractiveness to highly skilled international workers.[98]

Addressing skill shortages will, however, require more than attracting talent from abroad. The rapid pace of technological change means that continuous upskilling and reskilling of the existing workforce will become increasingly important. Lifelong learning has long been a comparative advantage of the Nordic model, with

95. IEA Wind (2025), Annual Report 2024, Sweden (link).
96. European Investment Bank (2026), EIB Investment Survey 2025 (link).
97. National Center for Science and Engineering Statistics (NCSES) (2024) *Foreign-Born STEM Workers in the United States*. Alexandria, VA: National Science Foundation. (link).
98. Bloomberg News (2025) US Visa Policy Uncertainties Drive Tech Talent Toward New Hubs. Bloomberg, 26 September (link).

participation in adult education and training among the highest in Europe. However, recent trends suggest that progress has slowed. In several Nordic countries, the share of workers participating in formal education and training has stagnated or even declined in recent years, see Figure **32**. This development is particularly concerning given the accelerating pace of technological change and the growing importance of digital and AI-related skills. As jobs evolve and new technologies are adopted, maintaining competitiveness will require workers to update their skills throughout their careers rather than relying solely on initial education. In the box at the end of this chapter, we highlight the experience of Grit:lab in Åland as an illustrative case of how targeted training and skills development initiatives can support talent formation and strengthen local innovation ecosystems.

Figure 32
Trend in participation in adult training, 2012 and 2013
Percentage of adults in formal or non-formal training, comparison between survey cycles



Source: Copenhagen Economics based on OECD (2025), Trends in Adult Learning: New Data from the 2023 Survey of Adult Skills (link).

Taken together, these trends point towards a dual challenge for the Nordic countries. On the one hand, they need to strengthen their ability to attract and retain highly skilled international talent to alleviate immediate labour shortages. On the other, they need to ensure that domestic workers can continuously adapt to changing skill requirements through effective lifelong learning and reskilling systems. In an economy increasingly driven by innovation and technological change, the ability to develop and mobilise human capital is likely to become an even more important source of competitive advantage.

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Total factor productivity methodology

Total Factor Productivity (TFP) is estimated using a standard growth accounting framework based on a Cobb-Douglas production function. This approach is widely used in empirical macroeconomics and allows for a consistent decomposition of economic output into contributions from capital, labour, and a residual component capturing overall efficiency.

The starting point is the assumption that aggregate output can be represented as:

$$Y = A \cdot K^{\alpha} L^{(1-\alpha)}$$

where output Y is produced using capital K and labour L, while A represents Total Factor Productivity. The parameter α captures the income share of capital and is typically assumed to be constant over time and comparable across countries.

TFP is thus interpreted as the efficiency term that scales the contribution of measured inputs. It reflects how effectively an economy combines capital and labour to generate output and therefore captures a broad range of factors such as technological progress, organisational efficiency, institutional quality, and allocative efficiency.

Empirically, TFP is derived as a residual once the contributions of capital and labour have been accounted for. In level terms, this can be expressed as:

$$A = \frac{Y}{K^{\alpha} \cdot L^{(1-\alpha)}}$$

In practice, the implementation requires consistent time series data on real structural GDP, capital stock, and labour input (typically measured in hours worked). The capital share parameter is the capital share of total gross domestic product at factor-price.

To conduct this analysis, we combine several internationally harmonised datasets to construct a consistent growth accounting database across countries, see Table **1**

Table 1
Data sources used for TFP analysis

Number	Variables	unit	source
1	GDP	US dollars, PPP converted, constant prices, millions, 2020	OECD Productivity levels, link
2	Output gap for GDP	% of potential GDP	OECD Economic Outlook, link
3	Labor input	Hours worked for total employment, hours, millions	OECD Productivity levels, link
4	Net capital stock	Net capital stock at 2020 prices: total economy, local currency	European Commission AMECO8, link
5	PPP conversion	National currency per US dollar in 2020 for gross fixed capital formation (GFCF)	OECD, PPP detailed results, 2020 onwards, link
6	Capital share	Capital share of total gross domestic product at factor-price	World inequality database, link

Source: Copenhagen Economics

Combining the data sources:
To make the data sources compatible for the TFP analysis, we do the following conversions of the raw data, see Figure **33**:

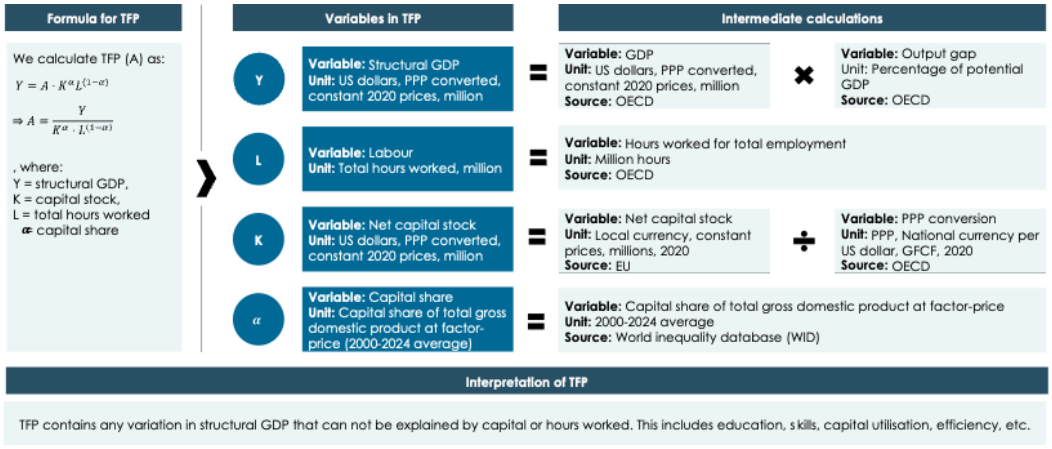
Step 1 - Output, Y :
We construct structural GDP by adjusting observed GDP (source 1) for the business cycle. Specifically, we divide observed GDP by $(1 + g/100)$, where g is the output gap as a percentage of potential GDP (source 2). This removes cyclical variation, ensuring that Y reflects structural productive capacity rather than transitory demand conditions.

Step 2 - Labour, L:
We measure labour input as total hours worked by all employed persons (source 3), used directly without further transformation. We prefer hours worked over headcount employment as it accounts for cross-country differences in part-time work, annual leave, and statutory working-time regulation, etc.

Step 3 - Capital, K:
We convert the net capital stock (source 4), expressed in national currency, to US dollars, PPP-converted, constant 2020 prices by dividing by the GFCF-based purchasing power parity for 2020 (source 5). We use an investment-specific PPP rather than the economy-wide GDP PPP, as the relative price of capital goods differs systematically from that of consumption across countries.

Step 4 - Capital share, α:
We compute a country-specific, time-constant capital income share as the unweighted average of annual capital shares from source 6 over 2000–2024.

Figure 33
Methodology used to calculate Total Factor Productivity



Source: Copenhagen Economics

Our approach relies on a set of simplifying assumptions, including competitive factor markets, constant returns to scale, and a common production technology structure across countries. While these assumptions are strong, the Cobb-Douglas framework remains the most widely used method for international productivity comparisons due to its transparency and comparability across datasets.

Moreover, our specific framework has three specific limitations that can make our results different from other TFP estimates in the literature:

1) We include human capital growth in TFP growth:
We do not adjust hours worked for workforce educational attainment. Cross-country differences in human capital are therefore absorbed into the TFP residual rather than attributed to labour input. Our TFP estimates thus capture both pure efficiency gains and human capital accumulation and will be upward biased for countries where educational attainment has grown rapidly over the period.

2) We include non-productive capital in the capital stock:
We use the total net capital stock and do not exclude assets that contribute little to measured GDP, such as residential housing. For our TFP growth estimates, this is consequential only if the share of non-productive capital in the total stock trends differently over the period in the various countries. For example, if housing's share of the capital stock rises faster in country A than in country B, we will overstate capital input growth and thus understate TFP growth in country A relative to country B.

3) We do not exclude oil and gas in our analysis:
We do not exclude offshore activities in our analysis. This matters especially for Norway, where offshore petroleum extraction accounts for a large share of the economy while also being highly capital-intensive. This raises Norway's capital share, so a larger part of GDP growth is attributed to capital accumulation rather than labour. As capital has grown much faster than labour over the past 25 years, less of Norway's GDP growth is left unexplained by factor inputs, and thus attributed to TFP, than in other countries. As a result, our framework yields very low measured TFP growth for Norway compared with the other economies in our sample.

We have not excluded offshore activities from our analysis because compatible data from reliable sources are not available for use in the analysis; for instance, PPP conversion for GFCF without offshore activities.

SECTION 2



Executive summary

This report provides the in-depth analysis behind the competitiveness diagnosis presented in Section 1, detailing how the Nordics are faring in key eight areas. Below we report our main findings.

1) Innovation capacity

Innovation capacity is one of the clearest Nordic strengths. The region ranks well above the EU average on broad innovation indicators, supported by strong education systems, attractive research environments and advanced digital readiness. On the European Commission's Summary Innovation Index (SII), the Nordic average score is 149, well above the EU average at 113 and ahead of global peers such as the US and China. Yet these indicators mainly capture capacity rather than commercialisation. R&D investment is high by European standards (in 2024, the gross domestic expenditure on R&D was 2.9% of the Nordics' GDP, while the EU's was at 2.2%) but generally below the US frontier (3.5%), and patent activity suggests that Nordic innovation foundations are not fully reflected in commercial intellectual property. The implication is not that the Nordics lack innovative potential, but that the path from research and ideas to market-leading companies and productivity gains remains too weak.

2) Labour market, entrepreneurship, and firm dynamics

Nordic labour markets are relatively adaptable, with strong participation, especially among women, and institutions that combine income security with labour-market transitions. This supports economic resilience and helps sustain the welfare model. Male labour-market participation is 84% in the Nordics, compared with 80% in both the EU and the US. The difference is larger for women, where participation is 80% in the Nordics compared with 71% in the EU and 70% in the US. However, firm renewal is less dynamic. The largest Nordic companies are mostly long-established incumbents, and relatively few young firms grow into the top tier of Nordic business. While the Nordics perform well by European standards in producing unicorns and future unicorns, they remain far behind the US. The Nordics have an average of 3.3 future unicorns per million population, more than France, Germany, and China, but considerably lower than the US, at 7.2. This evidence suggests that resources, both talent and capital, are not always channelled sufficiently into the industries and firms with the highest growth potential, particularly compared with the US.

3) Access to capital

Access to capital is a key bottleneck in this scaling challenge. The Nordics have promising substantial savings, but risk-capital markets are much thinner than in the

US across both venture capital and later-stage growth capital. Average yearly venture capital investment is 0.11% of GDP in the Nordics. This is far below the US level at 0.91%, and also well below China at 0.52%. Large pools of household and pension savings do not automatically become growth capital, partly because household portfolios are less equity-oriented than in the US and pension savings are often invested internationally. The challenge is therefore not only to increase the quantity of capital, but to improve how savings and international capital flows are mobilised into high-growth firms.

4) Digitalisation

Digitalisation is another broad Nordic strength, but mainly as an adoption advantage. Nordic firms and public authorities are among the most digitally mature in Europe, creating favourable conditions for productivity, innovation diffusion and more efficient public services. In 2025, 71% of individuals in the Nordics used the internet to obtain government information. This is far above the EU average at 44%, Germany at 47% and France at 48%. The pattern is also consistent across the Nordic countries. However, investment in research and development is uneven across the region, with Sweden standing out more clearly than other Nordic countries. The evidence therefore points to strong capacity to use and diffuse digital technologies, but less clear leadership in developing and scaling frontier digital and AI companies.

5) Administrative and regulatory burdens

Regulatory burdens present a mixed picture. Standard OECD indicators suggest that Nordic regulation is generally efficient and competition-friendly and does not appear more burdensome than comparable economies on average. On the OECD product market regulation scale, a summary indicator commonly used to measure the extent to which regulatory frameworks promote or hinder competition, the Nordics perform better than the EU average, Germany, France, the US, and China. However, firm-level experience can differ from formal indicators. Businesses, especially SMEs, may still face practical compliance costs, reporting obligations, approval delays and regulatory uncertainty. Additionally, gold-plating, where national implementation goes beyond the minimum required at EU level, represents a further obstacle. One key example is the Common Equity Tier 1 (CET1) requirement, which refers to the strongest form of bank capital, mainly ordinary shares and retained earnings. Nordic banks face a requirement of 18%, compared with 16% in the EU and France and 17% in Germany.

6) Energy costs and the green transition

Energy and the green transition are increasingly central to Nordic competitiveness. The Nordics benefit from a relatively low-fossil energy mix and high shares of renewable and other low-carbon electricity, which reduce exposure to fossil-fuel price shocks and support comparatively low industrial electricity prices. Nordic firms pay lower industrial electricity prices than firms in the EU and the US on average. In 2024, industrial power prices were 75 EUR/MWh in the Nordics, compared with 160 EUR/MWh in the EU and 88 EUR/MWh in the US. At the same time, industrial gas prices are structurally higher in the Nordics and the EU than in the US. In 2024,

industrial gas prices were 638% higher in the Nordics, excluding Norway, and 399% higher in the EU compared with the US. This confirms that gas remains a significant cost disadvantage for European and Nordic firms relative to US competitors. Overall, the region has made substantial progress where clean electricity and heating solutions could replace fossil fuels, but further reductions increasingly depend on harder-to-abate sectors such as transport, industry, and agriculture.

7) Economic resilience

Economic resilience is another Nordic strength, but it is unevenly distributed and comes with strategic exposure. Many Nordic countries have solid fiscal positions, strong institutions and labour-market systems that help absorb shocks. Denmark, Sweden, and Norway are generally better positioned than Finland and Iceland on several macro-financial indicators. At the same time, the Nordics are small, open, and specialised economies. Openness has supported prosperity by allowing firms to scale beyond small domestic markets, but it also exposes the region to trade disruptions, supply-chain vulnerabilities, and geopolitical shocks. The policy challenge is not to reduce openness, but to make it more robust through diversified markets, reliable partnerships and stronger Nordic and European coordination in strategic areas.

8) The Nordic region as an integrated region

Finally, Nordic integration strengthens competitiveness by giving small economies an additional layer of scale, coordination, and resilience. Trade, labour mobility, education flows and cross-border knowledge collaboration connect the Nordic countries to each other and to the wider European market.

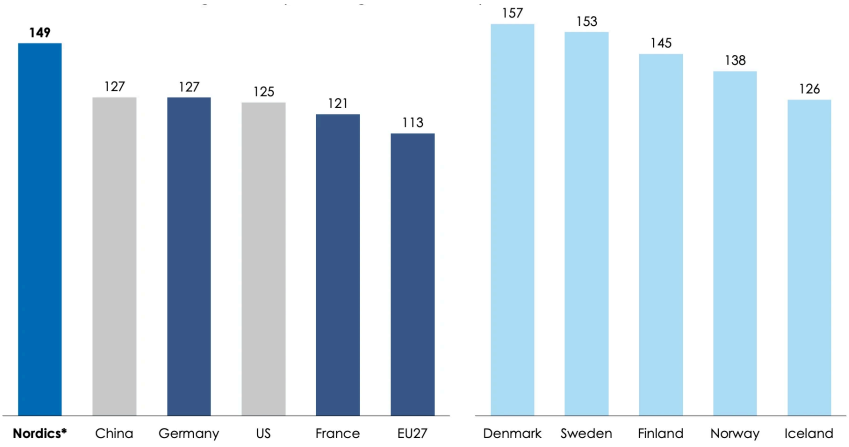
Innovation capacity

The Nordics have strong innovation capacity, but their key challenge is turning this strength into commercial outcomes. The region has strong foundations for innovation, supported by high education levels, strong research systems, advanced digitalisation, and relatively high R&D investment in some countries. This is reflected in the Summary Innovation Index, where the Nordic average is well above the EU and ahead of global peers such as the US and China. However, the Nordic lead is narrowing, and the areas where the Nordics perform well are mainly input or capacity indicators rather than direct measures of commercial outcomes. Limited patent activity points to the same message. Data on R&D intensity and patent activity show that the Nordics are not weak by European standards, but they lag behind China and the US. Maintaining a position at the productivity frontier will therefore require stronger conversion of Nordic innovation capacity into new products, scalable firms, and productivity gains.

1.1 The Nordics have strong foundations for innovation

The Nordics rank highly on broad measures of innovation performance. On the European Commission's Summary Innovation Index (SII), which combines 32 indicators into a comparative measure of research and innovation performance across EU countries, neighbouring European countries and selected global competitors, the Nordic average score is 149, see Figure **1**. This is well above the EU average at 113 and ahead of global peers such as the US and China. The strong performance is visible across the region: Denmark and Sweden lead with scores of 157 and 153, followed by Finland at 145 and Norway at 138. Iceland scores lower than the other Nordic countries at 126 but remains above the EU average and close to the main international comparators.

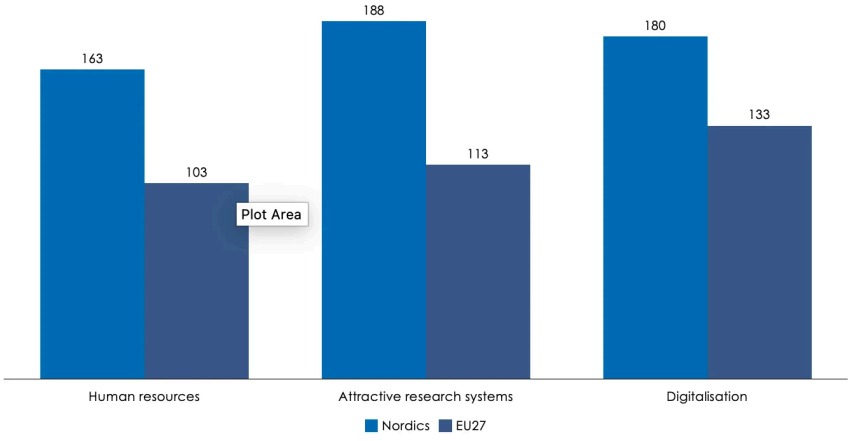
Figure 1
Summary innovation index (2024)
Index relative to EU average in 2018 (EU average in 2018 = 100)



Note: 'Nordics' is calculated by weighting the 2025 SII scores in Sweden, Denmark, Finland, Norway, and Iceland by each country's share of total Nordic population in 2024.
Source: Copenhagen Economics based on European Innovation Scoreboard (link) and OECD (link).

The strong Nordic performance on the Summary Innovation Index is closely linked to the underlying framework conditions for innovation. These are the parts of the index that capture the broader prerequisites for innovation, including human resources, attractive research systems and digitalisation. The Nordics score above the EU on all three dimensions, see Figure **2**: 163 compared with 103 for human resources, 188 compared with 113 for attractive research systems, and 180 compared with 133 for digitalisation. This supports the conclusion that the Nordic innovation system rests on strong fundamentals: a skilled workforce, strong research environments and a high level of digital readiness. These are important assets for innovation diffusion, productivity growth and firm renewal.

Figure 2
Selected variables within the summary innovation index
Index relative to EU average in 2018 (EU average in 2018 = 100)

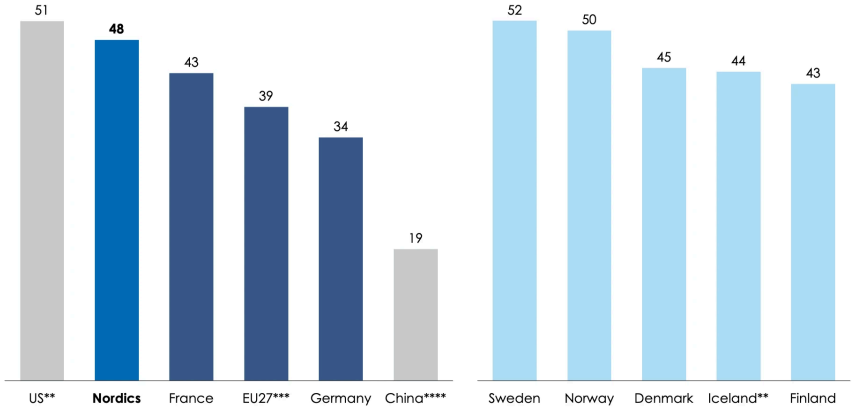


Note: 'Nordics' is calculated by weighting the 2025 SII scores in Sweden, Denmark, Finland, Norway, and Iceland by each country's share of total Nordic population in 2024.
Source: Copenhagen Economics based on European Innovation Scoreboard (link) and OECD (link).

A high level of formal education is one of the main reasons why the Nordics score strongly on the human-resources dimension of the innovation index. Across the region, 48% of the population aged 25–64 has attained tertiary education, Figure **3**. This is above France at 43%, the EU at 39%, Germany at 34% and China at 19%. Within the Nordics, Sweden and Norway stand out with tertiary attainment rates of 52% and 50%, followed by Denmark at 45%, Iceland at 44% and Finland at 43%.

The US is slightly higher than the Nordics at 51%, however, the US comparison should be interpreted with care, as tertiary education systems differ across countries and the OECD measure covers all completed tertiary qualifications, including short-cycle tertiary degrees.[99] Figure 3 supports the conclusion that the Nordics have a broad formal skills base, which is important for both innovation creation and the diffusion of new technologies across the economy. At the same time, tertiary education measures formal attainment and does not show whether the realised education matches the specific skills needed in frontier technologies, such as AI or advanced manufacturing, or in the commercialisation of new ideas.

Figure 3
Tertiary education share*
Per cent of population (age 25 – 64) with tertiary education in 2024



Note: (*) Population with tertiary education is defined as those having completed the highest level of education, by age group. This includes both theoretical programmes leading to advanced research or high skill professions such as medicine and more vocational (ISCED 5-8), see OECD/ (**) 2023 value / (***) is EU25, see OECD / (****) 2020 value.
Source: Copenhagen Economics based on OECD (link) and World Bank (link).

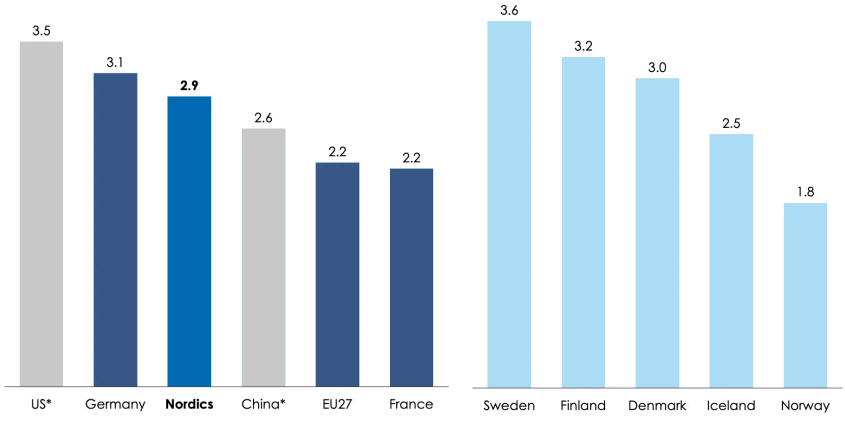
While the indicators above suggest that the Nordics rank among the world's leading innovators, reflecting strong innovation capabilities and favourable framework conditions, these indicators primarily measure innovation inputs and capacity rather than the ability to commercialise innovation and scale successful firms. Moreover, the Nordics' innovation lead has been narrowing in recent years as countries such as the US and China have improved at a faster pace (see chapter 3.1 in Section 1). The key challenge is therefore not building innovation capacity, but translating existing strengths into commercial success, globally competitive companies, and future growth engines.

99. OECD (2025), Education at a Glance 2025: OECD Indicators (link).

1.2 R&D investment is high, but not at the global frontier

R&D investment is a central channel through which strong research systems and human capital are turned into new knowledge, technologies, and productivity growth. In this respect, the Nordics perform well, but are not leading in global comparison. In 2024, the gross domestic expenditure on R&D was 2.9% of the Nordics' GDP. This ranks the Nordics above China at 2.6%, the EU at 2.2% and France at 2.2%, but below Germany at 3.1% and the US at 3.5%, see Figure **4**. The gap to the US stands out because Nordic productivity levels are broadly on par with the US[100], and given the similar levels of productivity, one would expect the Nordics to invest equally much in R&D.

Figure 4
Gross domestic expenditure on R&D (GERD) in all sectors, 2024
Per cent of GDP



Note: 'Nordics' is calculated as the GDP-weighted average for Sweden, Denmark, Finland, Norway, and Iceland using GDP values for 2024 / (*) 2023 values.
Source: Copenhagen Economics based on Eurostat (2026), *GERD by sector of performance* (link); and OECD (2026, website), *Annual GDP and components – expenditure approach* (link).

At the same time, the Nordic average hides large differences across countries. Sweden, Finland, and Denmark have stronger R&D economies, with R&D intensity of 3.6%, 3.2% and 3.0%, respectively. Iceland is lower at 2.5%, while Norway stands out at 1.8% and only half the Swedish level despite Norway's high measured productivity. This suggests that Norway's high productivity, partly linked to resource-based activities, does not necessarily imply equally strong investment in future-oriented knowledge creation.

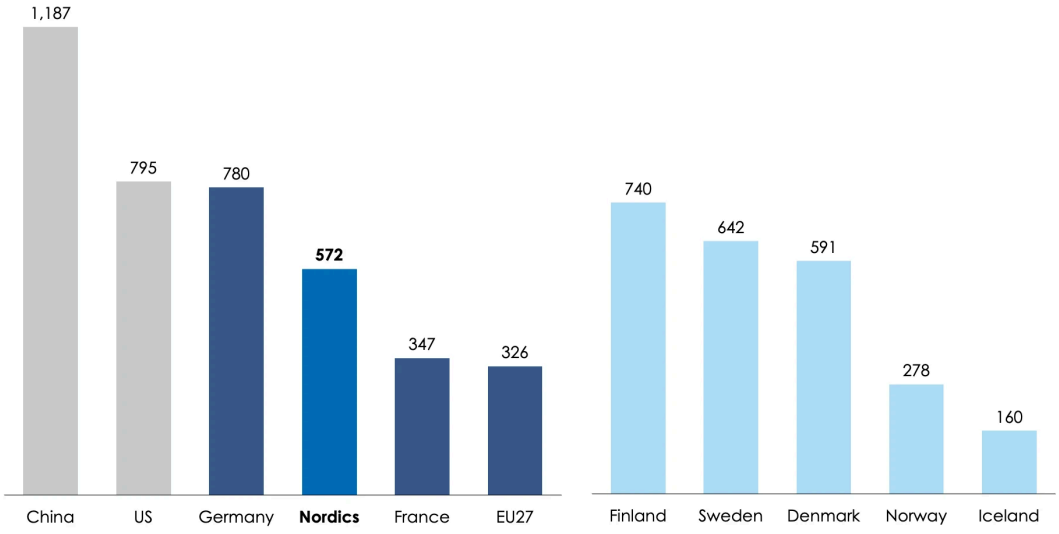
Overall, the Nordics are strong R&D investors by European standards, but only Sweden is at the global frontier. Achieving a position at the productivity frontier will therefore require not only strong R&D investment, but also a stronger conversion of research activity into new products, scalable firms, and productivity gains.

100.OECD (2023), *GDP per hour worked* (link).

1.3 The challenge is converting innovation capacity into commercial outcomes

The Nordics have strong innovation foundations, but there are indications that these strengths are only partly converted into commercial outcomes. One indicator of this, despite important caveats, is patent activity. The region combines high levels of education, strong research systems, advanced digitalisation and, at least in part, high R&D investment. However, they record only 572 patent applications per million population, see Figure **5**. While this is still above the EU average, it lies well below the global benchmarks in China, the US and Germany.

Figure 5
Patent applications, 2024
Number of patent applications per million population



Note: 'Nordics' is calculated as the population-weighted average for the five countries using population data for 2024. Data for Iceland come from a different source due to data availability.
Source: Copenhagen Economics based on World Intellectual Property Organization (2026, website), WIPO IP Statistics Data Centre (link); European Patent Office (2026, website), Statistics & Trends Centre – Iceland (link); and World Bank (2026, website), Population – total (link).

The Nordic average also hides large differences across the region. Finland is close to the US and Germany, with 740 patent applications per million population, while Sweden and Denmark are lower at 642 and 591, respectively. However, Norway and Iceland stand out with much weaker patent activity, at 278 and 160 patent applications per million population. The low level in Norway is consistent with the low R&D intensity discussed above, while the Icelandic result is likely also affected by the country's small size and sector structure. Even so, all Nordic countries remain below US patenting levels, which is striking given that Nordic productivity levels are broadly on par with the US.[101]

101. OECD (2023), *GDP per hour worked* (link).

The importance of patents should not be overstated. Patenting differs across industries and business models, and some types of innovation are less visible in patent statistics. For example, pharmaceuticals and advanced manufacturing tend to rely more heavily on patents, while innovation in services, digital business models or resource-based activities may be captured less directly. Nevertheless, patent activity still suggests that the Nordics have strong innovation foundations, but these strengths are not reflected in equally strong commercial intellectual property compared with the global frontier.

A remarkable example of a project that aims at bridging the gap between innovation capacity and commercialisation is Oslo Science City, the box below provides an overview.

CASE STUDY

Oslo Science City

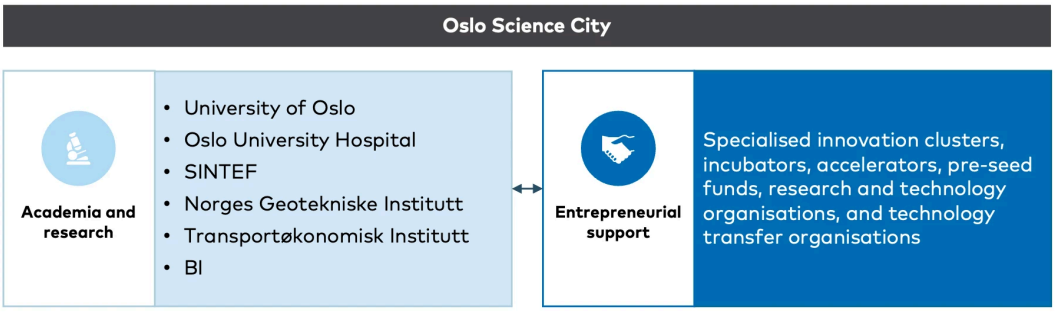
The Nordic countries rank among the world's most innovative economies with strong academic traditions. However, there are indications that strong innovative capabilities and research performance do not always fully translate into commercial outcomes, for example reflected in patent applications and the emergence of high-growth companies. This suggests that the challenge is not only generating knowledge but also strengthening the path from research and innovation to commercial success.

Innovation districts have emerged as an important component in addressing this gap.[102] These districts are concentrated ecosystems where universities, hospitals, research institutes, start-ups, and established companies work together to accelerate innovation and commercialisation. By bringing together the full value chain, they reduce the distance between research and market application.[103] Emerging networks of leading innovation districts in the Nordics are being developed to strengthen these effects.

Oslo Science City provides an example of how a geographically concentrated innovation ecosystem, anchored by Oslo's leading research institutions, can help strengthen the commercialisation of research and innovation. Oslo Science City brings together the full innovation and commercialisation value chain to strengthen collaboration between academia, industry, and investors and to accelerate research-driven innovation. It hosts a high density of research and entrepreneurial activity, including more than 8,000 researchers, around 40,000 students, and over 300 start-ups.[104]

102. For examples across the Nordics, see e.g. Stockholm Science City (2026, website), What we do (link); Innovation District Copenhagen (2026, website), About us (link); Espoo Innovation Garden (2026, website), Why Espoo Innovation Garden? (link); Oslo Science City (2026, website), About Oslo Science City (link).
103. See Katz & Wagner (2014), The Rise of Innovation Districts: A New Geography of Innovation in America (link).
104. Oslo Science City (2026, website), About Oslo Science City (link).

Figure 6
Illustration of the innovative environment around Oslo Science City



Source: Copenhagen Economics.

The talent and investable ideas coming from the research environment are supported by entrepreneurial organisations like technology transfer offices, research and technology organisations, accelerators, and incubators, helping to formalise and mature start-ups. Between 2012 and 2022, more than 650 start-ups were linked to Oslo Science City through five incubators in the area, illustrating the role of the district in strengthening the pipeline from research to company formation.[105]

Co-location reduces coordination frictions and facilitates knowledge spill overs, talent matching, and the development of investable ideas.

At the same time, the case shows that proximity and early-stage support structures are not sufficient to build a fully functioning ecosystem. While Oslo Science City has strengthened the pipeline from research to company formation, access to scale-up capital remains limited. This suggests that the final stages of commercialisation are less developed, highlighting the need to address the full innovation value chain. Targeted ecosystem-building can move projects closer to market readiness, but realising full commercial potential depends on deep and well-functioning capital markets.[106]

105. Menon Economics (2023), Oppstartsmiljøene i Oslo Science City – en kartlegging og noen vurderinger (link).
106. Copenhagen Economics (2026), Developing a thriving innovation and venture capital ecosystem in Oslo (link).

Labour market, Entrepreneurship and Firm Dynamics

The Nordics have strong labour-market foundations, but firm renewal remains constrained by international comparison. Labour-market adaptability rests on a combination of flexibility for firms and income security for workers, with high unemployment benefits coexisting with relatively low long-term unemployment. High labour-market participation, especially among women, also strengthens the model by expanding the labour supply and supporting the tax base that finances welfare services. However, youth unemployment shows that labour-market entry is not equally smooth across the region, with Sweden standing out as weaker than the other Nordic countries.

At the firm level, renewal appears more limited, as the largest Nordic companies are mostly long-established incumbents and fewer young firms grow into the Nordic business elite. The Nordics perform well by European standards in producing unicorns and future unicorns but remain well behind the US frontier. Improving future competitiveness will therefore require the Nordics to build on their strong labour-market foundations while directing more talent and capital towards young firms and technologies that can become the next generation of growth engines.

2.1 Labour-market adaptability is a Nordic strength

Nordic labour-market adaptability rests on a combination of flexibility for firms and income security for workers. The core idea is that labour-market policy should protect individuals rather than specific jobs, making transitions between firms, sectors, and occupations less socially costly. By supporting job search and reallocation, the model is also intended to reduce structural unemployment and keep workers attached to the labour market.

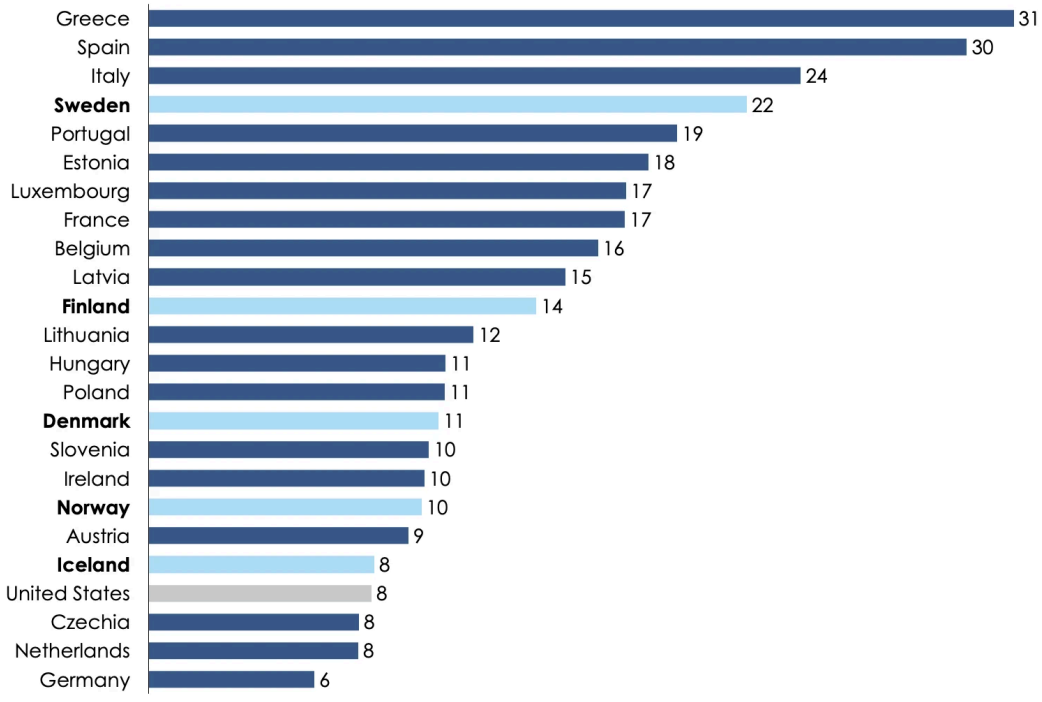
This institutional balance is reflected in labour-market outcomes. Generous income security in the Nordics coexists with relatively low long-term unemployment. This is important because it shows that high unemployment benefits do not automatically translate into long periods outside the labour market when combined with job search incentives and functioning labour markets. Iceland has the lowest share of long-term unemployment at 12%, followed by Denmark at 14%, Norway at 15%, Sweden at 21% and Finland at 25%, see Figure **9** in Section 1. These levels are below many European peers, including Germany at 28%.

Notably, the US also records a low level of long-term unemployment at 15%, placing it below Norway, Sweden, and Finland. This comparison is important because the

US reaches this outcome with much lower unemployment benefits, while the Nordics achieve relatively low long-term unemployment with much stronger income security. That is, the two models reach broadly similar labour-market attachment through different institutional arrangements. For the Nordics, this supports the interpretation that income security can coexist with labour-market adjustment when it is combined with job-search incentives and functioning labour markets. In a more uncertain economic environment, this adaptability matters because workers can move more easily towards firms and sectors where labour demand is growing.

Youth unemployment adds an important nuance to this labour-market picture. While the Nordics generally perform well on long-term unemployment, labour-market entry is less uniform across the region. Iceland, Norway, and Denmark have relatively low youth unemployment at 8%, 10% and 11%, respectively, while Finland is higher at 14%, see Figure **7**. However, Sweden stands out with a youth unemployment rate of 22%, which is closer to weaker-performing European labour markets than to the other Nordic countries. This does not overturn the broader message that Nordic labour markets are relatively adaptable, but it shows that adaptability is weaker where young people first enter employment. In Sweden, the issue appears less related to reallocating experienced workers and more to entry-level matching and vocational pathways.

Figure 7
Youth unemployment rate (ages 15–24), 2022
Unemployment rate (per cent of labour force)



Note: The unemployment rate is defined as the number of unemployed persons as a percentage of the labour force in the same age group (15–24).
Source: Copenhagen Economics based on OECD (2022), Monthly unemployment rates (link).

High labour-market participation is an important precondition for the fiscal sustainability of the Nordic welfare model. The Nordics mobilise a larger share of the working-age population than both the EU and the US, especially among women, see Figure **8** in Section 1. Male labour-market participation is 85% in the Nordics, compared with 80% in both the EU and the US. The difference is larger for women, where participation is 81% in the Nordics compared with 71% in the EU and 70% in the US.

This matters for both competitiveness and public finances. High participation expands the labour supply and means that more people contribute to the tax base that finances welfare services. At the same time, the relationship also works in the other direction. Welfare services such as childcare help to make high labour force participation possible. The Nordic model therefore rests on a reinforcing mechanism: broad participation helps finance the welfare state, and the welfare state helps sustain broad participation.

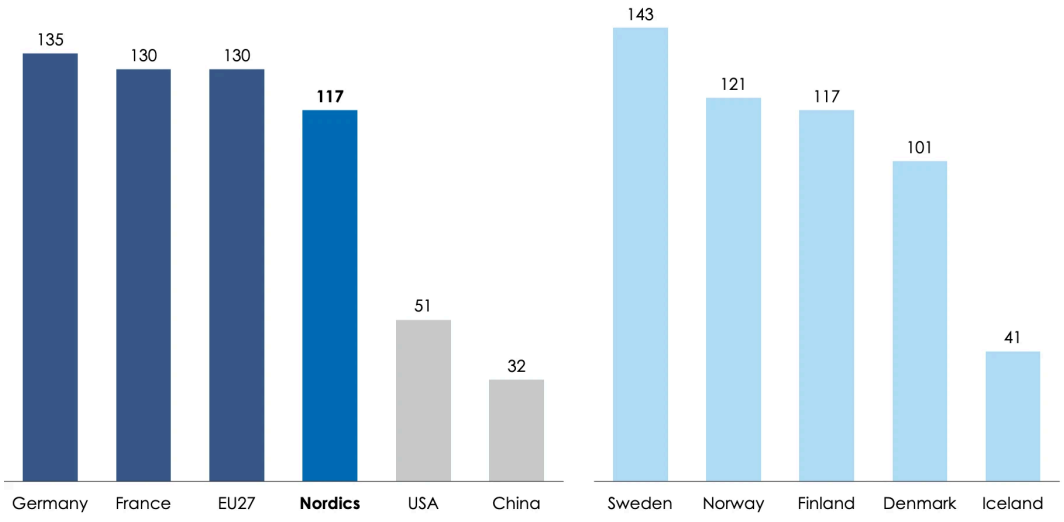
It is important in this context to distinguish between labour force participation and labour input. As discussed in Section 1, the average hours worked are lower in the Nordics than in the US. Therefore, high labour force participation does not imply that total labour input is higher. The main point is that the Nordics draw on a broad talent pool across the population.

2.2 Few young firms grow into Nordic Growth ENGINES

The Nordics have strong labour-market adaptability, but firm renewal appears more limited when looking at whether young firms grow into large companies and future growth engines. The largest companies are mostly long-established incumbents. The median age of the 15 largest listed companies is 117 years in the Nordics, see Figure **8**. This is far above the US at 51 years and China at 32 years, and places the Nordics close to the broader European average at 130 years. In the Nordics' top-15 lists, 40% of companies were founded before 1900, including the two oldest firms, KONGSBERG, and Nokia, while only 7% were founded after 2000. In the US list, the corresponding shares are 20% and 13%, respectively, with Meta/Facebook and Tesla as the two youngest companies.

This should not be interpreted as evidence that older firms hinder innovation. In fact, many are highly productive, innovative, and globally competitive. The point is instead that relatively few younger firms have grown large enough to enter the top tier of Nordic business. Within the region, Sweden has the oldest top companies, with a median age of 143 years, followed by Norway at 121, Finland at 117 and Denmark at 101. Iceland is the exception at 41 years, partly reflecting its smaller and more distinct corporate landscape, see Figure **8**.

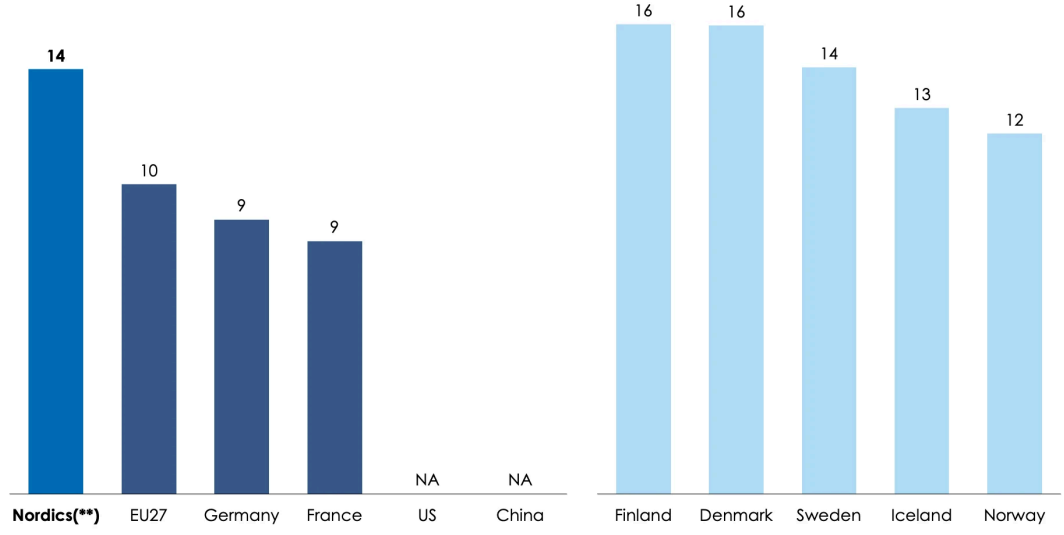
Figure 8
Median age of the 15 largest listed companies within each country/region, 2026
Median number of years since oldest part of the company was established



Note: The figure shows the median age of the 15 most valuable listed companies in each country/region as of 20/01/2026. Age is measured as the number of years since establishment. For companies formed from mergers, the oldest part of that merger is used. We have used median to avoid outliers affecting the result unproportionally, but results are similar using averages. The median value for all Nordic countries is used for the Nordics as a whole.
Source: Copenhagen Economics based on desk research.

Despite the relatively high median age of their largest companies, the Nordic economies display a healthy degree of firm dynamism, with respect to European firms. In particular, they have a higher share of young high-growth firms than the EU average, with Finland and Denmark standing out as the strongest performers, see Figure **9**.

Figure 9
Share of young high-growth enterprises, 2023
Per cent of active enterprises with at least 10 employees*



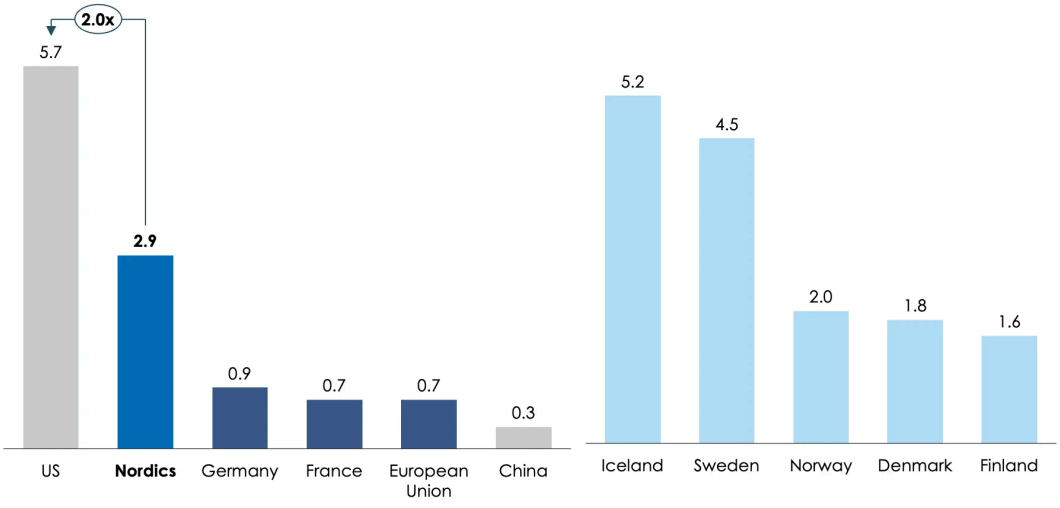
Note: 'Nordics' is approximated as the GDP-weighted average for Sweden, Denmark, Finland, Norway, and Iceland using GDP data for 2023 /(*) a high-growth enterprise is an enterprise with an average annualised growth in employees that is greater than 10% over a 3-year period, whereby the enterprise must have at least 10 employees at the beginning of said growth period', see Eurostat.
Source: Copenhagen Economics based on Eurostat and OECD

This evidence suggests that the Nordic business environment continues to support the creation and expansion of new firms, even though many of the region's largest companies are well established. At the same time, the challenge lies not so much in generating promising young firms as in enabling them to scale into globally leading companies.

Moreover, many of today's largest Nordic companies are rooted in older industrial strengths, such as manufacturing, shipping, and pharmaceuticals. While these companies remain important, future productivity growth is increasingly linked to tech, software, AI, and other IP-intensive activities[107]. Therefore, the ability to create and scale young technology firms is central to Nordic firm renewal.

Compared with the US, the Nordics lag considerably behind in the innovative potential created by so-called unicorns, defined as tech or tech-enabled companies founded since 1990 that are currently valued, or have previously exited, at more than USD 1 billion. In this context, the US is the relevant benchmark for the competitiveness discussion, even though the Nordics perform well compared with European peers. The Nordics have been relatively successful in producing unicorns by European standards and also have a strong pipeline of future unicorns, see Figure **10** and Figure **11** below.

Figure 10
Number of unicorns, 2026
Unicorns per 1 million population



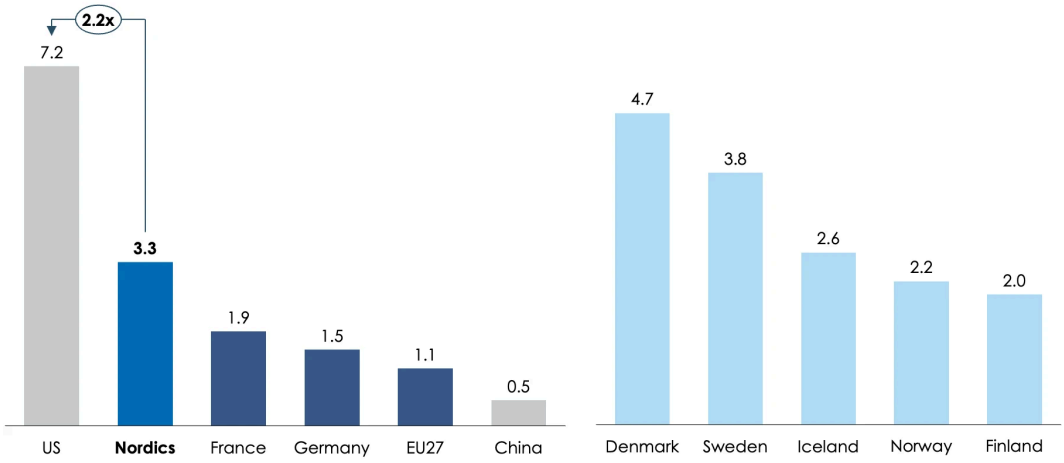
Note: We rely on population data for 2024 for all countries since that is the most recently available. 'Nordics' is calculated as the population-weighted average for Sweden, Denmark, Finland, Norway, and Iceland using population data for 2024. Unicorns are tech or tech-enabled companies founded since 1990 that are currently valued, or have previously exited, at over USD 1 billion, see Deal room (2025, website), Glossary & definitions (link).
Source: Copenhagen Economics based on Deal room (2026, website), Explore the most promising ecosystems (link) and the World Bank (2026, website), Population, total (link).

107. European Commission (2024), *The Draghi report: A competitiveness strategy for Europe (Part A)* (link).

In 2026, the Nordics had an average of 2.9 unicorns per million population, see Figure **10**. This is well above Germany, France, and China. However, the US ranks considerably higher with almost twice as many unicorns compared to the Nordics. Within the Nordics, Iceland and Sweden stand out with 5.2 and 4.5 unicorns per million population, followed by Norway at 2.0, Denmark at 1.8 and Finland at 1.6. One example of a Finnish unicorn is RELEX Solutions, a Helsinki-based software company that provides an AI-driven platform for retail, manufacturing, and supply chain planning, we provide an overview in the box at the end of this chapter. This points to substantial differences across the five countries, although the Icelandic figure should be interpreted carefully, as it reflects only two unicorns in a small economy. Sweden's stronger performance is structurally more important, as it indicates a broader scale-up ecosystem than in the other larger Nordic economies.

The pipeline of future unicorns provides a similar, but more forward-looking, picture. Future unicorns are fast-growing tech-related companies valued between USD 250 million and USD 1 billion. The Nordics have an average of 3.3 future unicorns per million population, see Figure **11**. Again, this ranks above France, Germany and China but is considerably below the US number at 7.2. Unlike for current unicorns, Denmark leads this ranking among the Nordics with 4.7 future unicorns per million population, suggesting that Denmark is closing the unicorn gap to Sweden. While all Nordic countries have a stronger future-unicorn pipeline than most European peers, the gap to the US does not appear to be closing in the next generation of scale-ups.

Figure 11
Number of future unicorns, 2026
Future unicorns per 1 million population



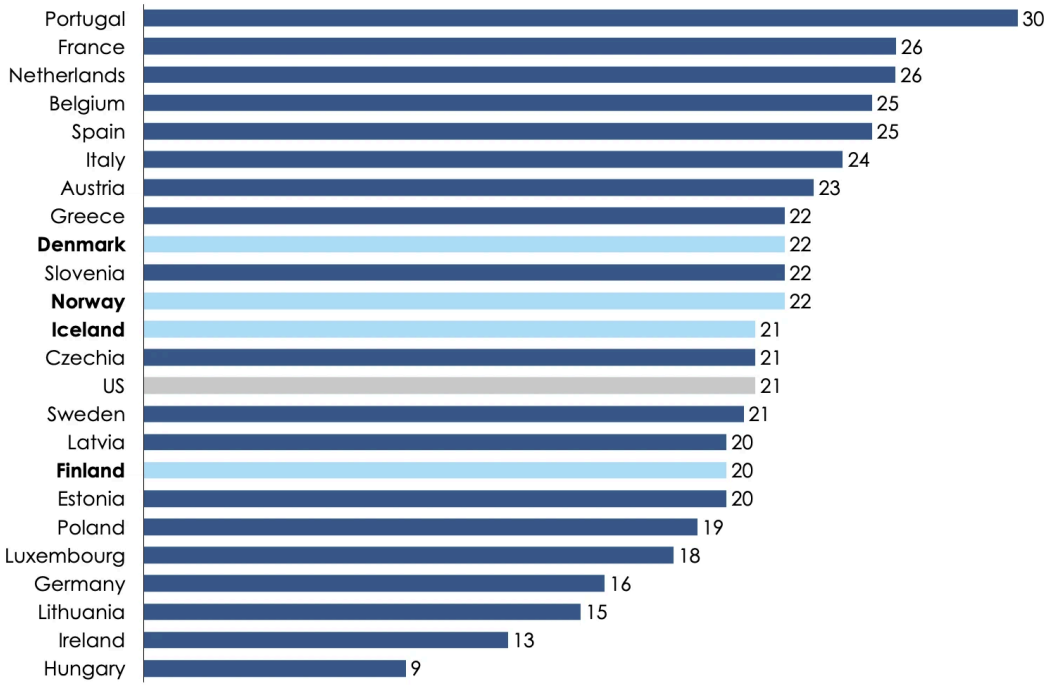
Note: We rely on population data for 2024 for all countries since that is the most recently available. 'Nordics' is calculated as the population-weighted average for Sweden, Denmark, Finland, Norway, and Iceland using population data for 2024. Future unicorns are defined as "private companies valued between $250M and $1B (or generating $100M+ in annual revenue) that show the highest velocity to cross the billion-dollar threshold", see Dealroom (2025, website), Glossary & definitions (link).
Source: Copenhagen Economics based on Dealroom (2026, website), Explore the most promising ecosystems (link) and the World Bank (2026, website), Population, total (link).

However, the future-unicorn pipeline should also be interpreted carefully as evidence suggests that Denmark has been considerably less successful than Sweden in keeping successful scale-ups headquartered domestically.[108] 9 out of 13 Danish-founded unicorns since 2000 have moved their headquarters abroad, compared with 3 out of 32 Swedish-founded unicorns. Moreover, a broader Danish pipeline measure shows that three Danish rising unicorns had already relocated before reaching unicorn status. This implies that Denmark's strong future-unicorn pipeline may overstate the domestic economic payoff if firms relocate before maturity. Sweden's stronger retention suggests that the challenge is not only market size, since both countries are small, but also the framework conditions for scaling.

One possible explanation for the Nordic scale-up gap relative to the US, often brought up in the debate, is corporate taxation, because it affects the expected return on investment. In general, lower corporate taxes increase after-tax profits and can make investment more attractive, especially for larger and profitable firms. For early-stage start-ups, however, corporate taxation is less likely to be the main constraint, as these firms often depend more on access to risk capital, founder incentives and the ability to scale across markets. The evidence in Figure **12** supports this as it does not point to corporate taxation as the main Nordic bottleneck. Statutory corporate income tax rates are broadly in line with the US and European peers: Denmark and Norway have rates of 22%, Iceland and Sweden are at 21% and Finland at 20%, compared with 21% in the US. Corporate tax rates may therefore matter for investment incentives, but they are unlikely to explain the weaker Nordic scale-up performance relative to the US. The evidence instead points towards capital markets and scaling conditions as more central constraints, which is examined in the next chapter.

108.Danish Chamber of Commerce (2023), Denmark: A Unicorn Factory – but why do they leave? (link).

Figure 12
Statutory corporate income tax rates, 2024
Statutory corporate income tax rate (per cent)



Note: Statutory corporate income tax rates shown are combined central and sub-central headline CIT rates for 2024.
Source: OECD (2024), Corporate Income Tax Rates Database (link).

Taken together, the evidence from this chapter reinforces the distinction between labour-market adaptability and firm renewal. The Nordic labour-market side is strong, with high participation and relatively good conditions for worker transitions. However, the evidence suggests that resources, both talent and capital, are not always channelled sufficiently into the industries and firms with the highest growth potential, particularly compared with the US. Improving future competitiveness will therefore require the Nordics to build on their strong labour-market foundations while strengthening the conditions that direct more resources towards young firms and technologies that can become the next generation of growth engines. This matters not only for start-ups themselves, but also for large established firms, as innovation in sectors such as pharmaceuticals and tech often take place in scale-ups that later collaborate with, supply or are acquired by larger companies. As a result, promising firms may either move to countries with deeper scaling opportunities or continue to compete from the Nordics under more challenging conditions, which constraints their growth.

CASE STUDY

Relex Solutions

A common theme across the challenges facing the Nordics is the ability to create and scale new growth companies. While the region has historically relied on a strong base of established firms, sustaining competitiveness going forward will increasingly depend on developing new growth engines. These companies are essential for driving productivity, attracting skilled labour, and ensuring continued renewal of the economic structure. RELEX Solutions provides a strong example of how Nordic innovation can be successfully translated into a globally competitive business.

RELEX Solutions is a Finnish software company that develops advanced analytics and AI tools for retail and supply chain planning. Its solutions help companies improve demand forecasting, optimise replenishment, and reduce waste, particularly in complex environments such as grocery retail where perishability and uncertainty make planning difficult.[109]

The company was founded in 2005 by a group of researchers with roots in academia. From the outset, RELEX Solutions focused on combining cutting-edge technology with practical applications, including early adoption of software-as-a-service and advanced data processing capabilities. Strong investment in R&D, a focus on talent and a collaborative company culture have supported its growth. While international from the beginning, the company remains rooted in Nordic values, including a strong emphasis on responsibility and long-term impact.[110]

RELEX Solutions illustrates how strong research environments, combined with entrepreneurial ambition and the ability to scale, can create globally competitive companies in the Nordic economies.

109. RELEX Solutions (2026, website), About (link) and Aalto Blogs (2024), Johanna from Relex: "Find a problem that is relevant and above all, meaningful to you" (link).
110. Software Finland (2024), "RELEX on todiste suomalaisten kyvystä maailmanvalloituksiin" (link) and Labore (2026), Minä olen se outo tyyppi, Mikko Kärkkäinen on todennut (link).

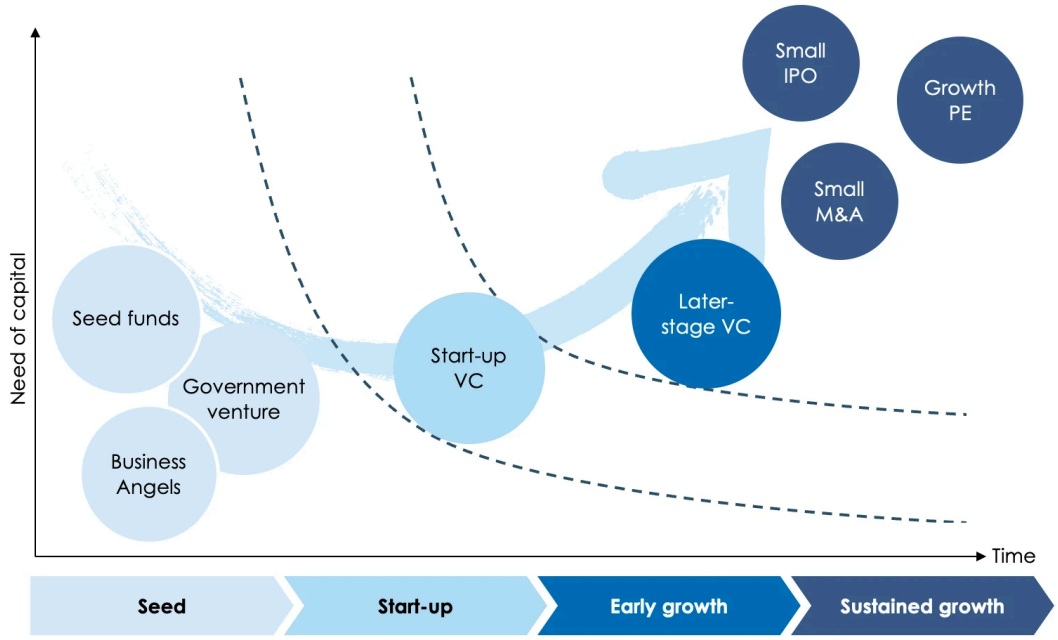
Access to capital

Access to capital is a central link between Nordic innovation capacity and the ability to create new growth companies. The Nordics have promising firms and relatively strong savings, but the risk-capital ecosystem is thinner than in the US across the full growth journey, from venture capital to later-stage growth capital. Cross-border financing helps fill part of this gap, as Nordic companies receive more risk capital than domestic Nordic funds provide, but this also shows that domestic markets are not deep enough to finance scaling on their own. At the same time, large pools of household and pension savings do not automatically become growth capital, because savings are often less exposed to risk assets than in the US or invested internationally rather than domestically. The main challenge is therefore not the absence of capital in the Nordic economies, but how effectively savings and international capital flows are mobilised into the firms with the highest growth potential.

3.1 Risk capital is the missing link between ideas and scale

The Nordics have strong innovation capacity and a pipeline of promising firms but turning these firms into global growth companies requires a full capital food chain. Young innovative firms need different types of financing as they grow. Early-stage companies often start with founders, business angels and seed funding, before moving to venture capital, later-stage venture capital, growth private equity, and eventually mergers and acquisitions or stock-market listing, see Figure **13**. Each stage depends on the previous one. If early-stage funding is weak, fewer firms reach the scale-up phase; if later-stage funding is weak, promising firms may struggle to internationalise, remain headquartered in the region, or grow into global competitors. The issue is therefore not only whether the Nordics have enough capital in aggregate, but whether the right type of risk capital is available at each stage of firm growth.

Figure 13
Capital ecosystem of innovative start-ups



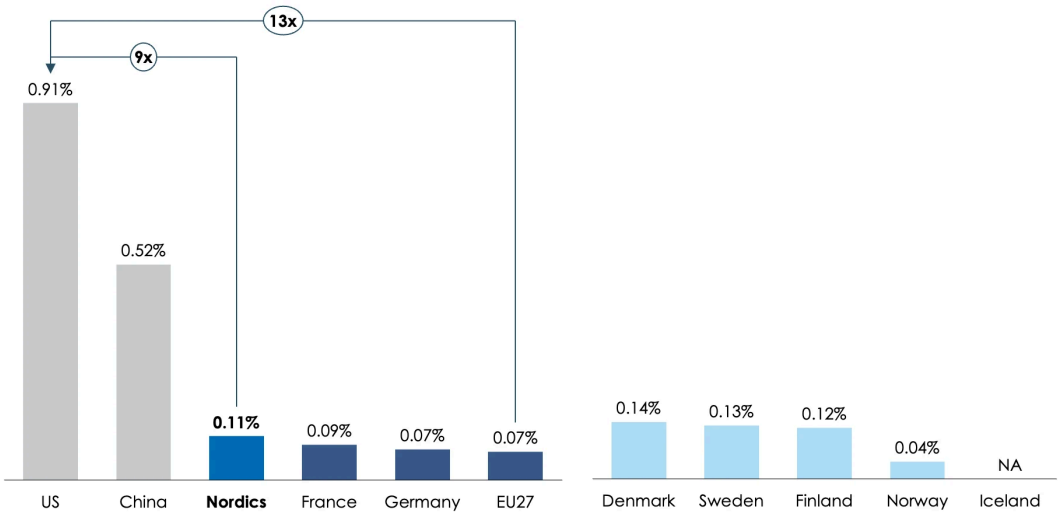
Note: Illustrative
Source: Copenhagen Economics

Within this capital food chain, venture capital plays a particularly important role in the early scaling phase. Many young innovative firms are difficult to finance through traditional bank lending because their value often lies in technology, intellectual property, software, data, or future growth potential, rather than assets that can be used as collateral. Venture capital therefore provides risk capital to firms that may have high growth potential but limited current earnings. Importantly, it also brings more than money. Venture investors often contribute sector knowledge, networks, active ownership, access to later funding rounds and experience with scaling companies internationally. This is why venture capital is a central part of the capital food chain, especially in sectors where future productivity growth is linked to technology, software, AI, and other IP-intensive activities.[111]

The Nordic venture capital gap is large when measured against the global frontier, most notably the US and China. This limits the ability of young innovative firms to access the capital and investor support needed to scale. Average yearly venture capital investment is 0.11% of GDP in the Nordics, see Figure **14**. This is far below the US level at 0.91%, and also well below China at 0.52%. The Nordics are not weak in a European comparison, as they rank above France at 0.09%, Germany at 0.07% and the EU average at 0.07%. However, the relevant benchmark for scaling young technology firms is the US, and here the Nordics lag considerably behind. Within the Nordics, Denmark, Sweden, and Finland are relatively close at 0.14%, 0.13% and 0.12%, while Norway stands out at only 0.04%. Promising firms may therefore either grow more slowly or move to markets with deeper venture capital ecosystems.

111. Copenhagen Economics (2026), Developing a thriving innovation and venture capital ecosystem in Oslo (link).

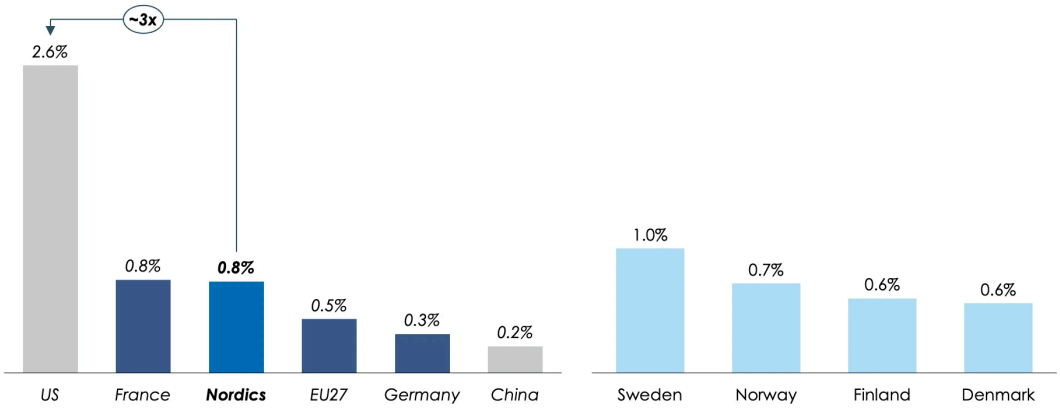
Figure 14
Average yearly VC investments, 2020-2024
Per cent of GDP



Note: The Nordics are excluding Iceland due to a lack of data. The Icelandic VC/PE market is expected to make up a small share of the Nordics, and we do not expect that exclusion impacts the overall picture. For the Nordics and EU27 (Invest Europe data), the figure shows numbers based on the domicile of the portfolio company – not the domicile of the investor. Pitchbook does not state whether the same is true for US and China data. However, difference in terminology would likely not impact the overall picture since we expect the difference between investments based by fund location or portfolio company location to diminish with the size of the private capital market/economy.
Source: Copenhagen Economics based on Invest Europe (2025), *Private equity activity report 2007–2024 by country*; and PitchBook (2025) (link).

Later-stage risk capital is also weaker in the Nordics than at the US frontier. This matter because firms that have passed the early start-up phase often need larger funding rounds to professionalise and internationalise. Private equity can support this in different ways, including growth capital for companies that are ready to scale and buyouts of more mature firms that need restructuring or renewed strategic direction. Private equity investment amounts to 0.8% of GDP in the Nordics, see Figure **15**. While this is above the EU average at 0.5% and China at 0.2%, it is much lower than the US level of 2.6%. Within the Nordics, Sweden leads at 1.0%, followed by Norway at 0.7%, while Finland and Denmark are both at 0.6%. Thus, the capital gap does not disappear after the venture capital stage. It continues later in the growth journey, where firms need larger pools of capital to scale into international competitors. This increases the risk that promising firms struggle to finance expansion at the point where they are ready to grow beyond their home markets.

Figure 15
Average yearly PE investment (excluding VC), 2020-2024
Per cent of GDP



Note: The Nordics are excluding Iceland due to a lack of data. The Icelandic VC/PE market is expected to make up a small share of the Nordics, and we do not expect that exclusion impacts the overall picture. For the Nordics and EU27 (Invest Europe data), the figure shows numbers based on the domicile of the portfolio company – not the domicile of the investor. Pitchbook does not state whether the same is true for US and China data. However, difference in terminology would likely not impact the overall picture since we expect the difference between investments based by fund location or portfolio company location to diminish with the size of the private capital market/economy.
Source: Copenhagen Economics based on Invest Europe (2025), *Private equity activity report 2007–2024 by country*; and PitchBook (2025) (link).

Taken together, the venture capital and private equity evidence points to a gap across the full risk-capital ecosystem. The Nordics perform relatively well compared with most European peers, but the comparison with the US shows that young firms have access to much smaller pools of specialised growth capital at both the early and later stages. This matter because the firms most likely to drive future productivity growth often need several rounds of financing before they become large enough to compete globally. The Nordic challenge is therefore not confined to one point in the capital chain. It is about building a deeper risk-capital market that can support firms from early innovation to international scale.

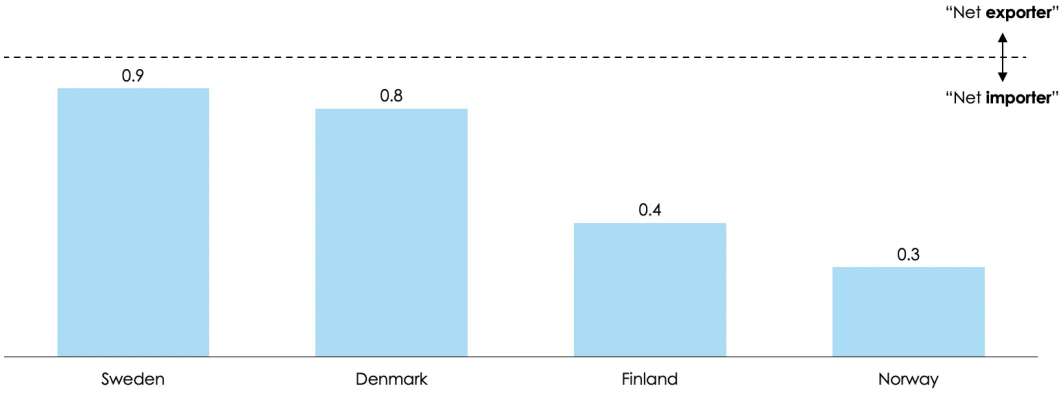
A more detailed discussion of the Swedish market for private risk capital is provided in the case study at the end of this chapter.

3.2 Nordic firms attract foreign capital, but domestic risk-capital markets remain thin

The previous subchapter showed that Nordic risk-capital markets are much thinner than in the US. However, this does not imply that the Nordics lack investable companies. In fact, Nordic companies receive more risk capital than domestic Nordic funds provide, which suggests that foreign investors see attractive opportunities in the region. This provides an indication that the main bottleneck is a lack of domestic risk capital. The ratio between domestic fund investment and investment into domestic portfolio companies is below one in all Nordic countries with data availability, see Figure **16**. A ratio below one means that domestic funds invest less capital than domestic companies receive, so part of the financing comes from foreign investors. Sweden is closest to balance at 0.9, followed by Denmark at 0.8,

while Finland at 0.4 and Norway at 0.3 rely much more on foreign capital. This points to a Nordic capital market that is internationally integrated, but not deep enough domestically to finance scaling on its own.

Figure 16
Proxy for net import/export of risk capital, 2020-2024
Ratio between capital invested by domestic funds and capital invested into domestic portfolio companies



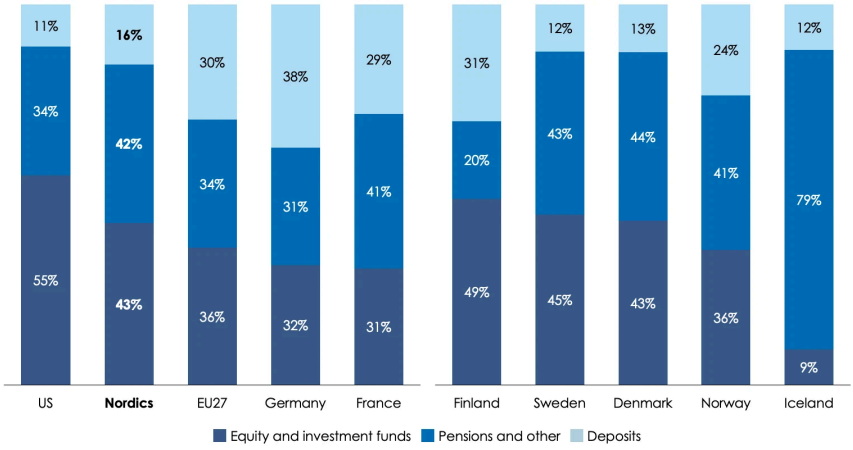
Note: The Nordics are excluding Iceland due to a lack of data. The Icelandic VC/PE market is expected to make up a small share of the Nordics, and we do not expect that exclusion impacts the overall picture. The figure shows the ratio between capital invested by domestic PE/VC funds and investments in domestic portfolio companies. Higher investments by funds (ratio above 1) indicates that there is a net inflow of capital from foreign funds.
Source: Copenhagen Economics based on Invest Europe (2025), *Private equity activity report 2007–2024 by country*; and PitchBook (2025) (link).

3.3 High savings do not automatically become growth capital

Household savings are one potential source of the capital that ultimately finances growth companies. However, the depth of risk-capital markets depends not only on the level of savings, but also on how those savings are allocated. On average, Nordic households hold 43% of financial assets in equities and investment funds, see Figure **17**. This is above the EU average at 36%, Germany at 32% and France at 31%, showing that Nordic households are not conservative by European standards. Compared with the US, however, households remain less exposed to risk assets, with 55% of US financial assets held in equities and investment funds and only 11% held in deposits, compared with 43% and 16% in the Nordics. This matter because deposits are generally not channelled into risk capital.

Within the Nordics, Finland, Sweden, and Denmark have relatively high equity and investment-fund shares, while Norway is closer to the EU average and Iceland stands out with a much lower direct equity share. The evidence therefore supports a nuanced message: the Nordics have substantial savings and relatively strong equity participation in a European context, but household portfolios still appear more risk averse than in the US. This implies that a smaller share of household savings is directly exposed to equity markets and the type of risk-taking that can support growth companies.

Figure 17
Distribution of household assets, 2024
Share of total household assets

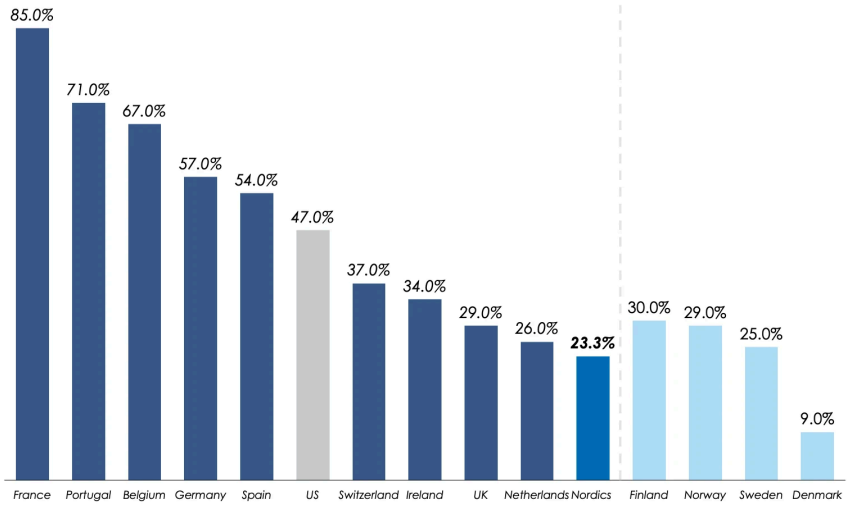


Note: Pensions and other are calculated as a residual.
Source: European data from Eurostat (2026, website), Financial balance sheets - annual data (link); US from OECD (2026, website), Financial indicators dashboard: Households and NPISH (link).

Pension savings are another channel through which household wealth can support risk capital, but this depends on where pension funds invest. Figure **17** showed that a relatively large share of household assets in Sweden, Denmark, Norway and, in particular, Iceland is held in pensions and related assets. These savings could, in principle, help finance national companies through equity markets.

In practice, however, Nordic pension funds appear to invest a smaller share of listed-equity portfolios domestically than many European peers, see Figure **18**. This is especially clear in Denmark, where only 9% of listed-equity investments are placed in Danish companies. This reflects a different approach to pension investment: international diversification can benefit savers by spreading risk and increasing access to global returns, but it also means that less pension capital is directed towards domestic listed companies. The evidence therefore points to a trade-off rather than a simple weakness. Nordic pension systems may serve savers well through international diversification, while contributing less directly to the domestic capital base available to national firms.

Figure 18
Pension funds' home bias
Share of listed equity investments invested domestically (per cent)



Note: The Nordics are excluding Iceland due to a lack of data. The figure shows the share of listed equity investments by pension funds invested domestically.
Source: Copenhagen Economics based on FBV – Association of Listed Companies (2024), *FBV Analysis Report 1 of 3 – The Future of the Stock Market* (link).

Taken together, the evidence shows that the Nordics do not lack savings, but that savings are not always channelled into risk capital for firm growth. Households are relatively equity-oriented by European standards, but less so than in the US. In addition, pension capital is often invested internationally rather than domestically. This can benefit savers, but it also means that large pools of Nordic savings do not automatically deepen domestic capital markets. The access-to-capital challenge is therefore mainly about mobilising savings into venture capital, later-stage growth capital and firms with high growth potential.

CASE STUDY

Swedish market for private risk capital

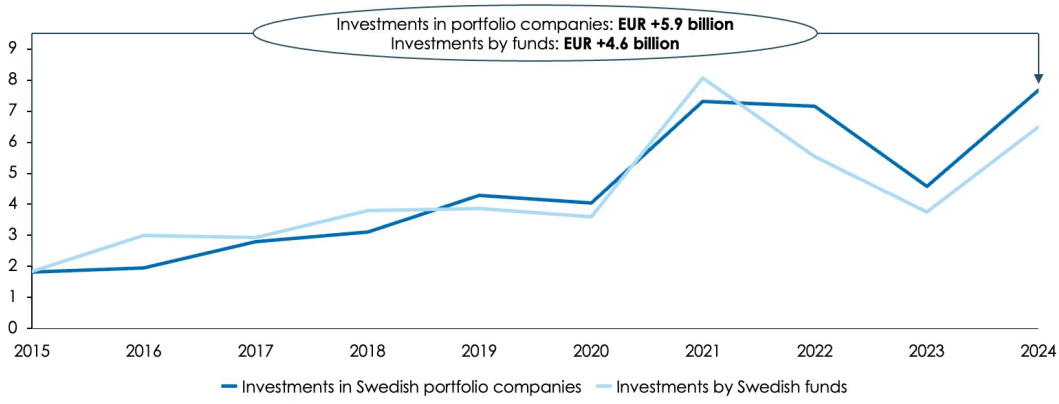
Sweden has the most developed risk-capital market in the Nordics and, on several relative indicators such as venture capital intensity and start-up density, is comparable to major European hubs such as France, although it remains smaller in absolute investment volume.

The country hosts several globally active venture capital firms who are investing in leading European technology companies. These firms have played an important role in demonstrating viable growth paths for start-ups and in building a local investment ecosystem with experienced investors and entrepreneurs.[112]

Over the past decade, Sweden has experienced strong growth both in investments into Swedish portfolio companies and investments by Swedish funds, see Figure **19**. Despite a slight difference between investment in domestic companies and by domestic funds in recent years, Sweden is the country in the Nordics closest to being "net self-sufficient", i.e., the domestic funds would be able to meet the domestic capital demand if they allocated all investments to domestic companies. In reality, the risk-capital markets – especially later stage investments such as buyout PE – are highly international and these numbers cover large foreign investments into Swedish companies and similar large investment in foreign companies by Swedish funds.

112. Chambers and Partners (2026, website), Venture Capital 2025 – Sweden – Trends and Developments (link)

Figure 19
Private equity investment in Sweden, 2015-2024
Billion EUR



Note: Figures include all investment stages including venture capital, growth capital, and buyout capital.
Source: Copenhagen Economics based on Invest Europe (2025): Private equity activity report 2007-2024 by country (link).

The growth reflects a maturing ecosystem where successful entrepreneurs, institutional investors and specialised funds reinforce each other, and the depth of the Swedish market has reduced the need for public capital to support the venture capital ecosystem relative to similar countries.[113]

The private equity and venture capital sector has also had measurable economic effects. Beyond financing start-ups and high-growth firms, the sector contributes to productivity improvements through active ownership, strategic guidance, and access to international markets.[114] We have previously estimated that private equity ownership increases the productivity of Swedish portfolio companies by around 22% after seven years of ownership. At the macro level, total private risk-capital investments in Sweden are estimated to increase GDP by around 1.5%,[115] suggesting that access to private risk capital is of national importance to generate economic growth.

113. See e.g. Copenhagen Economics (2026), Developing a thriving innovation and venture capital ecosystem in Oslo, p. 39 (link) or OECD (2025), Benchmarking government support for venture capital, p. 21 (link).
114. A growing body of economic research shows that VC investments generate substantial positive spillovers to the wider economy. One study finds that an increase in VC investments of EUR 1 leads to an increase in economic output of EUR 3.33, see Romain and van Pottelsberghe (2004), The economic impact of Venture Capital (link). These spill overs are particularly strong in knowledge intensive sectors.
115. Copenhagen Economics (2022), The economic footprint of Swedish Venture Capital and Private Equity (link).

Digitalisation

The Nordics are among the most digitalised economies, reflected in strong coverage of high-speed digital infrastructure,[116] and leading positions in international digitalisation rankings.[117] Companies have high digital intensity, and citizens use digital channels to interact with public authorities more than in comparable European economies. This creates a strong foundation for productivity, innovation diffusion and digital public-service efficiency. However, the investment picture is more uneven, with Sweden standing out in broader IT investment and AI-related assets, while the rest of the region invests at lower levels. The core message is therefore that digitalisation is a Nordic strength, but mainly as an adoption and diffusion advantage rather than clear leadership in developing frontier digital technologies.

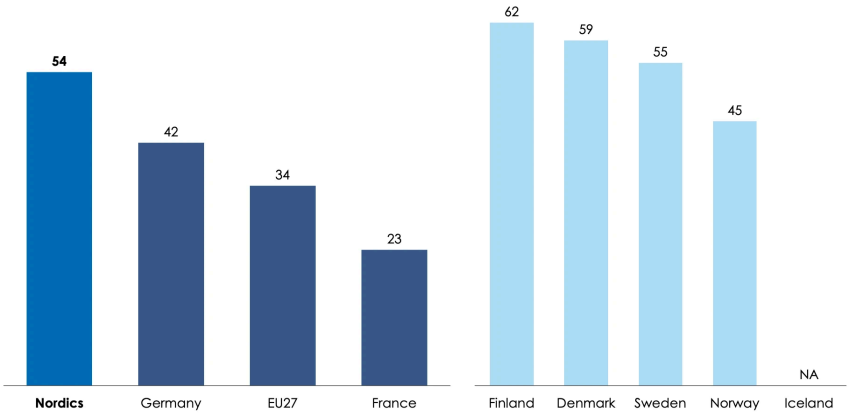
4.1 Digital adoption is a broad Nordic strength

Digital adoption is a strength of the Nordic business sector. Nordic firms are more likely than European peers to have a high or very high level of digital intensity, which means that digital tools are used broadly across business processes rather than being confined to a narrow technology sector. In 2024, 54% of Nordic enterprises had high or very high digital intensity, see Figure **20**. This is well above the EU average at 34%, Germany at 42% and France at 23%. Within the Nordics, Finland leads at 62%, followed by Denmark at 59%, Sweden at 55% and Norway at 45%. This provides a strong foundation for productivity and innovation diffusion, because digitally mature firms are better placed to automate tasks, use data, integrate systems, and adopt new technologies.

A core contributor of digital adoption in the Nordics is NORDUnet, a joint initiative of the national research and education networks (NRENs) of Denmark, Finland, Iceland, Norway, and Sweden, that drives digitalisation across research and education. We provide an overview in the box at the end of the chapter.

116. European Commission (2025), Digital Decade 2025: Broadband Coverage in Europe 2024 (link).
117. Portulans Institute (2026), Network Readiness Index 2025 (link).

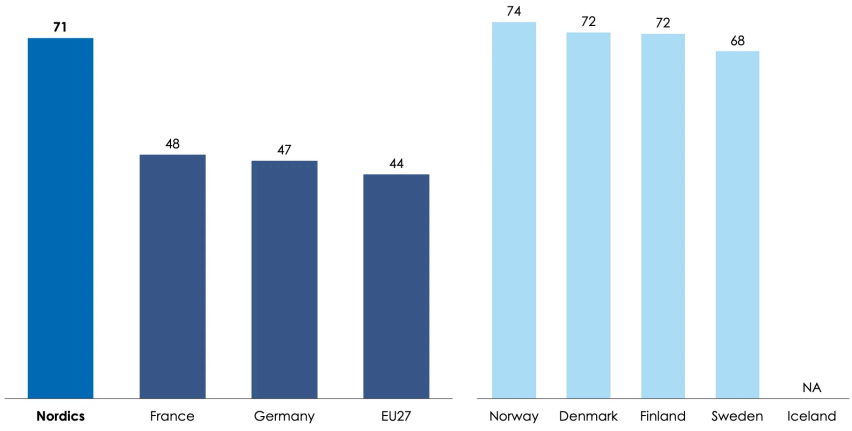
Figure 20
Enterprise digitalisation, 2024
Share of enterprises with high or very high digital intensity (per cent)



Note: 'Nordics' is approximated as the GDP weighted average of the five Nordic countries.
Source: Copenhagen Economics based on Eurostat (2026), *Digital Intensity by size class of enterprise* (link); and OECD (2026, website), *Annual GDP and components – expenditure approach* (link).

Digital adoption is also visible in the interaction between citizens and public authorities. In 2025, 71% of individuals in the Nordics used the internet to obtain government information, see **Figure 21**. This is far above the EU average at 44%, Germany at 47% and France at 48%. The pattern is also consistent across the Nordic countries with available data: Norway stands at 74%, Denmark and Finland at 72%, and Sweden at 68%. This suggests that public digitalisation is not concentrated in one country but is a shared regional strength. Together with high enterprise digitalisation, it points to a broader digital ecosystem in which firms, citizens and public institutions are all relatively advanced users of digital tools. This can reduce administrative friction, support more efficient public services, and make it easier for firms and individuals to interact with authorities digitally.

Figure 21
Public sector digitalisation, 2025
Share of individuals using the internet to obtain government information about services, benefits, entitlements, laws, opening hours (per cent)



Note: Nordics is calculated as the population weighted average of Norway, Denmark, Finland, and Sweden using population data from 2024.
Source: Copenhagen Economics based on Eurostat (2026), *E-government activities of individuals via websites* (link).

This combination of high enterprise digitalisation and widespread use of digital public services gives the Nordics a strong basis for further digital integration. When firms, citizens and public authorities are already advanced users of digital tools, it becomes easier to build shared digital infrastructure, exchange data and reduce administrative barriers across borders. The prerequisites for stronger digital cooperation therefore appear strong: digitally capable firms, digitally engaged citizens and public institutions with established digital channels.

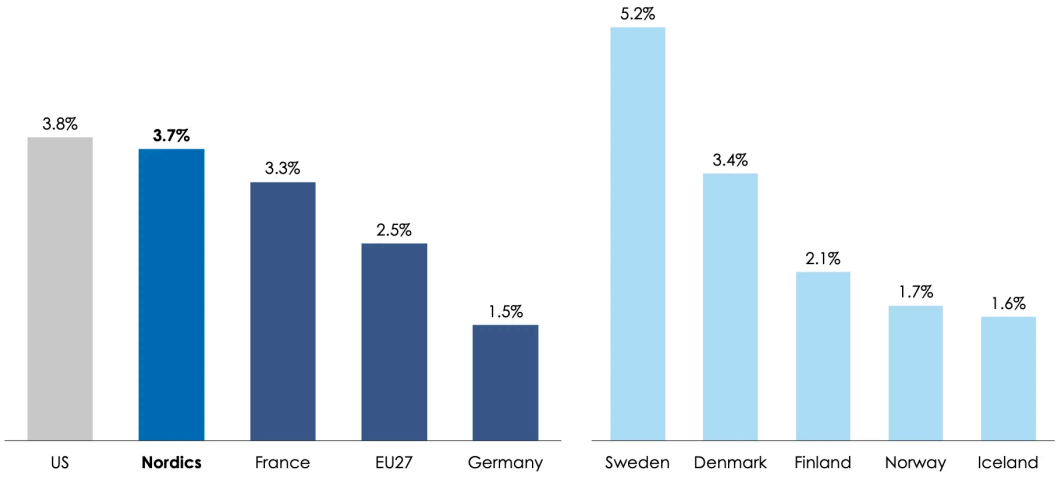
4.2 Digital investment is strong in parts of the region, but uneven

High digital adoption is not matched by equally broad-based digital investment across the Nordics. Sweden stands out with IT investments of 5.2% of GDP, well above both the US at 3.8%, while Denmark also performs relatively well at 3.4%, see **Figure 22**. Finland, Norway, and Iceland, however, invest much less with only 2.1%, 1.7% and 1.6%, respectively, which ranks them below the EU average at 2.5%. These large country differences are why a Nordic average would be less informative in this context.

Sweden's position does not appear to be a one-year outlier. It is consistent with Sweden having a large and established digital sector, with information and communication technology accounting for nearly 5% of Swedish GDP.[118] At the same time, it is important to note that this figure captures investment in IT used for production and adoption, rather than evidence that countries are necessarily developing frontier digital technologies.

118. Canadian Trade Commissioner Service (2025), *Information and communications technologies market in Sweden* (link).

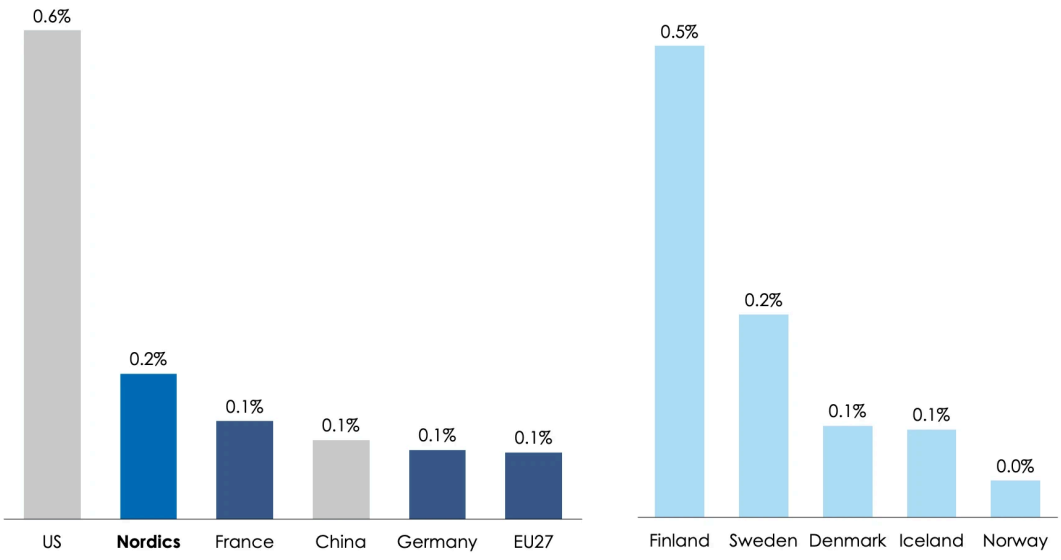
Figure 22
IT investments, 2020
Share of GDP spent on ICT equipment, computer software and databases (per cent)



Note: We use data from 2020 since this is the most recent year where data is available for all countries. 'Nordics' is calculated as the GDP-weighted average for Sweden, Denmark, Finland, Norway, and Iceland using GDP data for 2020. EU27 is calculated as the GDP-weighted average for the 27 EU countries using GDP data for 2020.
Source: Copenhagen Economics based on OECD (2026, website), *Annual GDP and components – expenditure approach* (link); and OECD (2026, website), *Annual capital formation by economic activity* (link).

AI-related VC investment follows a different pattern, with only Finland and Sweden that rank among the top 15 global investors in 2025, while Denmark, Norway, and Iceland lag behind. In 2025, Finland invested 0.5 % of GDP in AI-related assets, close to the US at 0.6%, while Sweden invested around 0.2%, see **Figure 23**. Results for Finland must be interpreted with care as VC investment in AI was very high in 2025 compared to previous years (109 USD millions in 2023, 366 in 2024 and 1499 in 2025). Conversely, Sweden shows consistently high investment levels: 2058 USD millions in 2023, 1030 in 2024, and 1362 in 2025.

Figure 23
VC investments in AI by country, 2025
Share of GDP spent on VC investments in AI (per cent)



Note: Data is estimated and associated with uncertainty. 2024 data for China due to unavailability of 2025 data.
Source: Copenhagen Economics based on OECD AI Policy Observatory (2026), *Investments in AI and data* (link); OECD (2026, website), *Annual GDP and components – expenditure approach* (link); and Exchange Rates UK (2026, website), *US Dollar to Euro History: 2023* (link).

CASE STUDY

NORDUnet

Established in 1980 as a joint initiative of the national research and education networks (NRENs) of Denmark, Finland, Iceland, Norway, and Sweden, NORDUnet has grown from a shared telecommunications project into a cornerstone of the Nordic digital ecosystem. Over four decades, it has demonstrated how sustained investment in shared digital infrastructure, combined with structured cross-border collaboration, can generate durable economic, scientific, and societal value for an entire region.

A core contribution of NORDUnet has been its role in driving digitalisation across research and education. High-capacity, reliable connectivity underpins digital research, and data-intensive innovation. A central driver of Nordic collaboration through NORDUnet became the high cost and complexity of international connectivity: Nordic universities and research institutes needed robust, high-bandwidth links to Europe, North America, and other regions that were too expensive and too risky for each country to procure on its own. By acting together, the Nordic NRENs increased their purchasing power, procured international capacity jointly, and shared critical but otherwise prohibitively costly infrastructure resources. This created significant economies of scale, improved resilience, and ensured high-quality services for all five countries. In this way, NORDUnet became a strategic instrument for digitalisation, enabling Nordic institutions to participate fully in an increasingly digital, data-driven research and education landscape.

The current NORDUnet strategy for 2024–2028 reinforces this role by committing to "*actively enhance digitalization of research and education in the Nordic countries through Nordic collaboration.*" In practical terms, NORDUnet delivers a high-capacity, resilient backbone network, complemented by media services and other shared e-infrastructures. This common platform makes it easier and more cost-effective for universities and research organisations to shift core activities online, experiment with new digital services, and collaborate across borders.

Beyond connecting the Nordic countries to one another, NORDUnet serves as the region's gateway to the global research and education networking ecosystem. It represents the Nordics in pan-European collaboration through GÉANT and is a founding or key partner in major intercontinental initiatives such as the Advanced North Atlantic (ANA) and the Asia-Pacific Europe Ring (AER), which provide resilient, high-capacity links between Europe, North America, and Asia. Building on this legacy, NORDUnet has recently engaged in the Polar Connect initiative together with Japan's NII/SINET, using new Arctic routes to create secure,

sustainable connectivity between Europe and Asia. These international partnerships extend the reach of Nordic research and education, support global collaboration, and further anchor NORDUnet as a critical enabler of digitalisation both within the Nordic region and in its wider international network community.

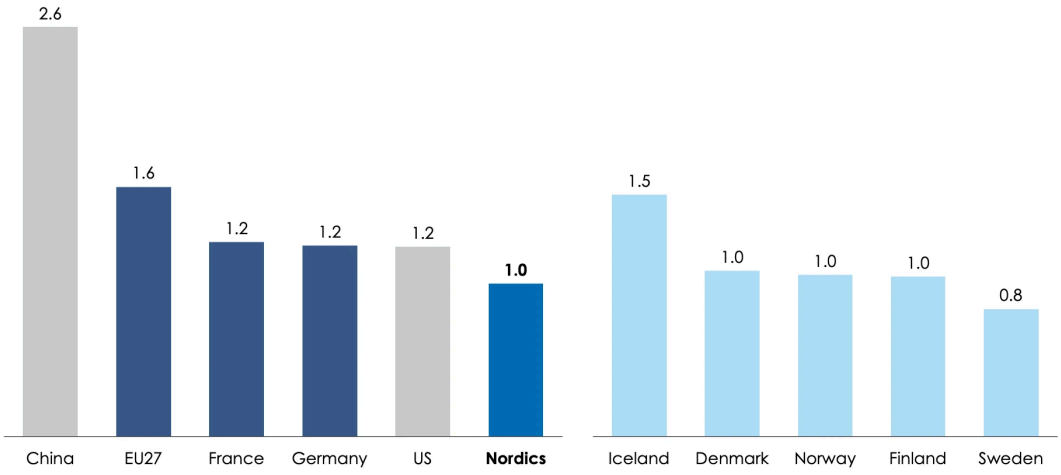
Administrative and regulatory burdens

Administrative and regulatory burden affects competitiveness not only through formal market-entry rules, but also through practical compliance costs, approval processes and financing conditions for firms. From the perspective of standard OECD indicators, the Nordics have relatively competition-friendly regulation and do not appear more burdensome than comparable economies on average. However, these indicators may not fully reflect firms' day-to-day experience. In practice, businesses, particularly SMEs, report facing significant reporting obligations, regulatory complexity, implementation uncertainty and slow approval processes. A further part of the burden arises during implementation, through gold-plating, where national authorities go beyond the minimum required at EU level, raising compliance costs, and affecting firms, including indirectly through financing conditions.

From the perspective of standard OECD indicators, the Nordics have relatively competition-friendly regulation. This means that formal barriers to entry and competition are low by international standards, which makes it easier for firms to enter markets, compete and challenge incumbents. On the OECD product market regulation scale[119], where a lower score means fewer regulatory barriers, the Nordics have an average score of 1.0, see Figure **24**. This is better than the EU average, Germany, and France, all at 1.2, and well below the US at 1.6 and China at 2.6. Within the Nordics, Sweden has the lowest score of 0.8, while Finland, Norway and Denmark are all at 1.0. Iceland stands out with a higher score of 1.5, closer to the US than to the other Nordic countries. The OECD evidence therefore seems to suggest that formal product market regulation is not a Nordic weakness, but rather a strength for competition and market entry.

119. Product Market Regulation (PMR) refers to the set of laws and regulations that shape how firms enter, operate, and compete in markets. The OECD Product Market Regulation indicators measure the extent to which these regulatory frameworks promote or hinder competition by identifying barriers to entry, expansion, and competition across the economy (link).

Figure 24
Regulatory barriers to doing business, 2023/2024*
Scale from 0 (most competition-friendly regulatory set-up) to 6 (least competition-friendly regulatory set-up)

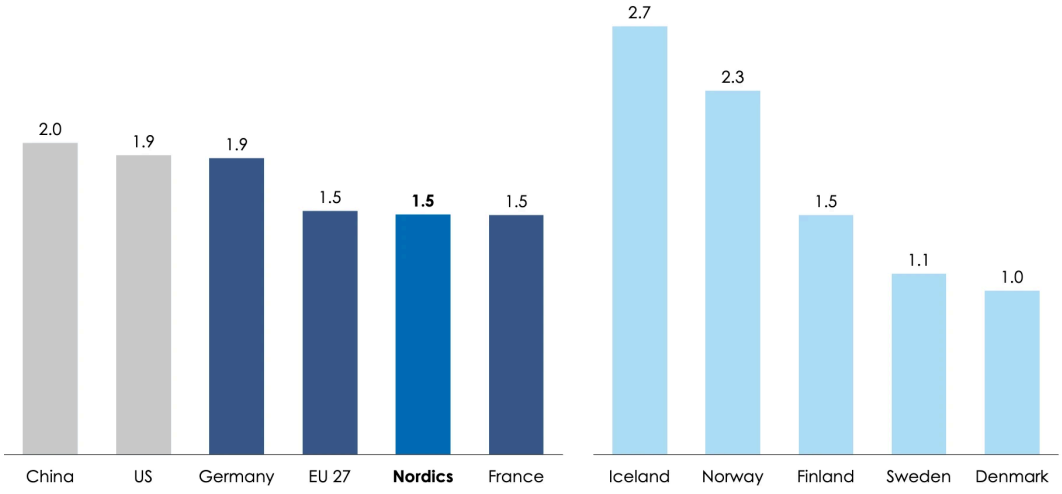


Note: (*) for some countries/regions, the score reflects the laws and regulation that were in force in 2023 and for others the laws and regulation that were in force in 2024, see source. 'Nordics' and 'EU27' are approximated as GDP-weighted averages of each region's countries' scores.
Source: Copenhagen Economics based on OECD (2026, website), GDP and main components (expenditure approach) (link); and OECD (2026), Product Market Regulation Indicators 2023/24 (link).

A similar picture is visible when looking more directly at measured administrative and regulatory burdens, one of the components of the index above. On this OECD indicator, the Nordic average is 1.5, see Figure **25**, the same as the EU and France, and below Germany at 1.9, the US at 1.9 and China at 2.0. Again, this suggests that, on standard regulatory indicators, the Nordics do not appear more burdensome than comparable economies. However, the Nordic average hides large country differences. Denmark and Sweden have relatively low measured burdens, at 1.0 and 1.1, while Finland is equal to the Nordic and EU average at 1.5. Norway and Iceland stand out with much higher scores, at 2.3 and 2.7.

One practical example of how Denmark has reduced administrative burdens and improved efficiency is through automatic reporting systems that ensure standardisation and consistent data formatting. An overview is provided in the box at the end of this chapter.

Figure 25
Administrative and regulatory burdens, 2023/2024*
Scale from 0 (most competition-friendly regulatory set-up) to 6 (least competition-friendly regulatory set-up)



Note: (*) for some countries/regions, the score reflects the laws and regulation that were in force in 2023 and for others the laws and regulation that were in force in 2024, see source. 'Nordics' and 'European Union' are approximated as GDP-weighted averages of each region's countries' scores.
Source: Copenhagen Economics based on OECD (2026, website), GDP and main components (expenditure approach) (link); and OECD (2026), Product Market Regulation Indicators 2023/24 (link).

5.1 Firms still experience regulation as a practical burden

While the formal OECD indicators provide an important starting point to assess regulatory burden, they might not capture the full experience of firms dealing with regulation in practice. Survey evidence from SMEs therefore adds a useful firm-level perspective. Nordic SMEs report fewer regulatory and administrative problems than SMEs in most European peer economies, but more than SMEs in the US. Across the Nordics, 32% of SMEs report regulatory obstacles or administrative burdens as a problem for their enterprise, see Figure 31 in Section 1. This is below Germany at 40% or France at 79%, but twice the US level of 16%. Within the Nordics, Norway, Finland, and Sweden are relatively close, at 26%, 29% and 30%, while in Denmark 46% of the companies report regulatory obstacles and burdens. The evidence therefore suggests that many Nordic countries perform relatively well compared with Europe, but that regulation and administration still create practical burdens for many firms, especially compared with the US. This adds an important nuance to the OECD evidence: Nordic regulation may look relatively competition-friendly on paper, but firms can still experience compliance, reporting and administration as a practical burden.

Permitting for energy and infrastructure projects provides a concrete example of how regulatory burden can affect investment, with direct Nordic relevance. The issue is not that regulation has no legitimate purpose, as permitting often reflects environmental, safety and local planning considerations. The competitiveness

concern is that long and complex approval processes can delay investment and create uncertainty for firms. In Sweden, for example, the municipal veto stopped 63% of planned land-based wind power projects in 2024, underscoring how approval processes can constrain renewable energy expansion.[120] The challenge is also recognised at the European level, where the IEA identifies lengthy and complex administrative procedures as a key barrier to faster renewable deployment, while the European Commission has introduced rules to simplify and shorten permitting procedures for renewable energy projects.[121] This supports the broader point that regulatory burden is not only about the content of rules, but also about the speed, clarity and predictability of implementation.

5.2 Regulatory gold-plating

The gap between formal regulatory indicators and firms' practical experience can partly arise during implementation. Even when requirements originate at EU level, national authorities often have choices about how directives are transposed into domestic rules. Gold-plating refers to cases where national implementation goes beyond the minimum required at EU level, for example by adding obligations, applying stricter standards, or making limited use of exemptions. Such choices can be justified by national priorities such as financial stability, consumer protection, environmental protection, or labour standards. However, they can also raise compliance costs, increase uncertainty, and make it harder for firms to operate across otherwise integrated European markets.

The issue is better understood as a broader European implementation risk, where national choices can make common EU rules more burdensome or less uniform across countries.[122] This distinction matters for the Nordics because Denmark, Sweden and Finland implement EU law directly, while Norway and Iceland are closely linked to EU rules through the EEA. Available evidence does not show that gold-plating is systematically more prevalent in the Nordics than elsewhere in Europe, only few countries systematically measure the additional impact of national provisions that go beyond EU requirements. Nevertheless, the presence of gold-plating in several Nordic regulatory debates indicates that it is a relevant issue in the Nordic context.

In Sweden, gold-plating has been identified in environmental permitting, where Swedish rules have extended EU environmental impact assessment requirements to more businesses than required by the directive.[123] This increased permitting costs and approval uncertainty for affected firms. In Denmark, draft pay-transparency rules extend reporting obligations to employers with 50–99 employees, expanding compliance requirements for smaller firms.[124] In Finland, smaller companies listed on growth markets face ownership-notification and takeover-related rules that normally apply to larger listed firms, which increases legal and administrative

120. IEA Wind (2025), Annual Report 2024, Sweden (link).
121. IEA, 2024, IEA support to accelerating renewable energy permitting (link).
122. OECD (2022), Better Regulation Practices across the European Union 2022 (link); Letta, E. (2024), Much more than a market: Speed, security, solidarity. Empowering the Single Market to deliver a sustainable future and prosperity for all EU citizens (link).
123. NNR and Swedish Better Regulation Council (2012), Clarifying Gold-Plating: Better Implementation of EU Legislation (link).
124. L&E Global (2026), Transposition of the EU Pay Transparency Directive Across 27 Member States (link).

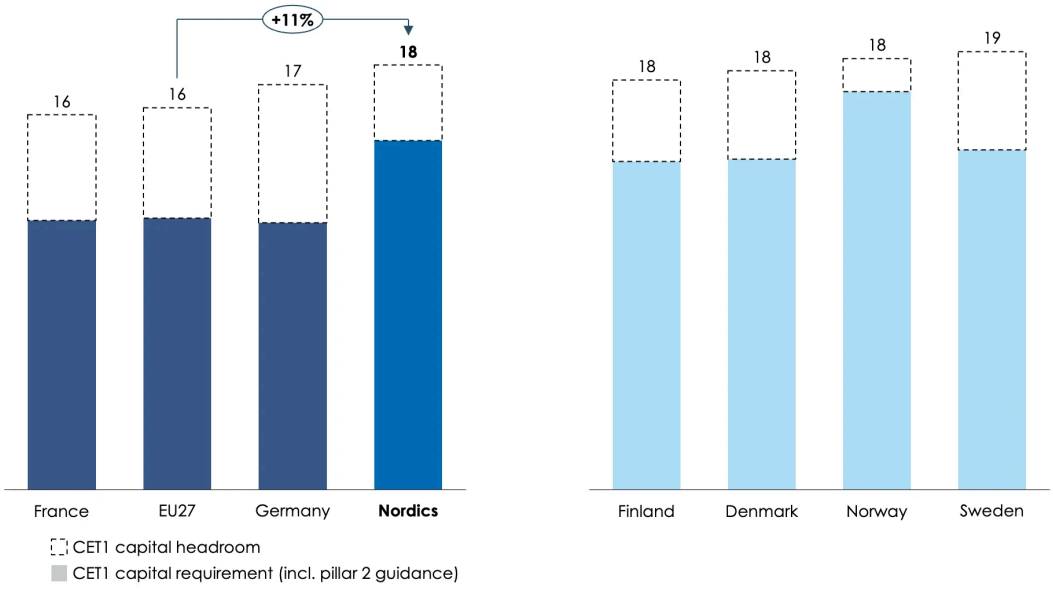
complexity beyond the EU baseline.[125] In Norway and Iceland, the issue is less severe as the two countries are not forced to implement EU regulation unless it extends to the EEA framework, but the underlying concern is similar.

To address the concern, several Nordic governments have introduced mechanisms to limit over implementation of EU and EEA rules. Denmark has the most established framework, with implementation principles stating that business-related EU regulation should normally not go beyond EU minimum requirements, should make use of available exemptions and should not weaken Danish firms' competitiveness relative to firms in comparable countries.[126] Sweden has recently moved in the same direction by establishing an implementation council tasked with advising the government on EU rules that affect businesses, including how to avoid implementation above the EU minimum level and reduce administrative costs.[127] Finland has also made this a stated government priority by committing to avoid additional national regulation when implementing EU law and to reduce existing "Suomi-lisä", meaning national requirements added on top of EU rules.[128] Iceland has taken a more diagnostic approach through a working group on gold-plating of EEA rules and a project using artificial intelligence to identify where implementation may have gone further than required.[129] These initiatives suggest that Nordic governments recognise gold-plating as a competitiveness risk, but also that the practical challenge is continuous. Each implementation choice must balance national policy objectives against the cost of making common European rules less common in practice. This is particularly relevant in areas such as financial regulation, where national choices can affect firms indirectly through financing conditions.

A financial-sector example shows how national implementation choices can matter even when the underlying rules are European. Bank capital requirements are designed to strengthen financial stability by ensuring that banks hold sufficient high-quality capital to absorb losses. One key measure is the Common Equity Tier 1 (CET1) requirement, which refers to the strongest form of bank capital, mainly ordinary shares and retained earnings. Nordic banks face a requirement of 18%, see Figure **26** compared with 16% in the EU and France and 17% in Germany. Requirements are high across the region, with Finland, Denmark, and Norway at 18% and Sweden at 19%. A high CET1 requirement can make the financial system more resilient, but it may also increase the cost of lending or reduce banks' willingness to finance riskier corporate investments. This matters for firms, which rely on bank lending and have fewer alternatives in capital markets.

125. FA Society Poland and Matczuk Suchta Dylak (2024), Gold-Plating in EU Capital Market Law: Regulatory Practices in Select Jurisdictions (link).
126. Erhvervsministeriet (2015), Fem principper skal sikre ny EU-regulering ikke overimplementeres (link); Erhvervsministeriet (2023), Kommissorium for Implementeringsrådet (link).
127. Government of Sweden (2024), An implementation council for implementation of EU legal instruments that impact businesses in Sweden (link).
128. Finnish Government (2023), A strong and committed Finland: Programme of Prime Minister Petteri Orpo's Government (link); Finnish Government (2024), One in, one out: Annual burden report 2024 (link).
129. Government of Iceland (2024), Skýrsla starfshóps um aðgerðir gegn gullhúðun EES-gerða (link).

Figure 26
CET1 capital ratios, Q2 2025
Per cent



Note: 'Nordics' is calculated as a simple average of Finland, Denmark, Norway, and Sweden. Capital requirement is calculated as the sum of pillar 2 guidance, CCyB, SII buffer, systemic risk buffer, the capital conservation buffer, pillar 2 requirement and pillar 1 requirement.
Source: Copenhagen Economics based on EBA (2026, website) (link).

Taken together, the evidence in this chapter suggests that the Nordic regulatory challenge is less about formal barriers to competition and more about practical complexity, uncertainty, and indirect costs. Standard OECD indicators show relatively competition-friendly regulation, but firm surveys show that regulation can still affect firms through compliance burdens, approval processes and financing conditions. This matters particularly for small and growing firms, which often have fewer administrative resources and fewer alternatives when regulation delays investment or makes financing more difficult. The competitiveness agenda is therefore not deregulation for its own sake, but simpler, clearer, and more predictable implementation across national and European levels.

CASE STUDY

Automated reporting in the Nordics

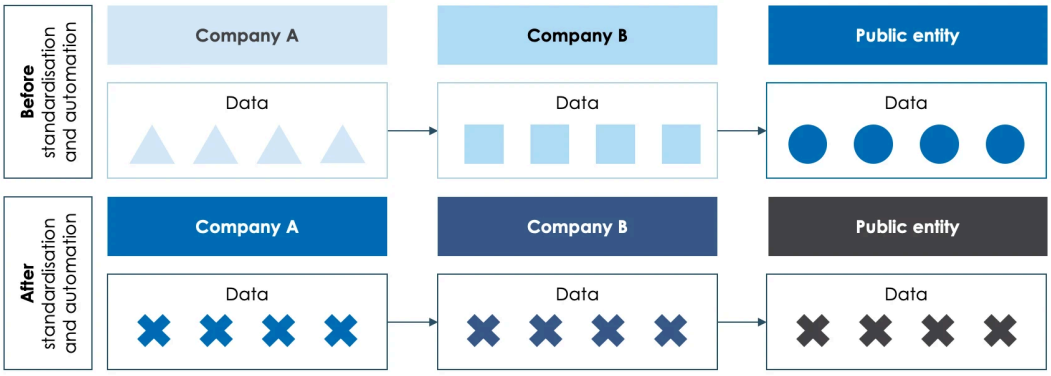
Regulation and reporting requirements impose substantial administrative burdens and costs on companies, as they must collect, process, and validate data across fragmented internal systems and value chains. Business-to-business data exchange is particularly resource-intensive and is estimated to account for around 80–90% of total reporting costs.[130] While the final reporting step is relatively simple, the underlying data handling is complex, manual, and costly.

The Nordic countries are at the forefront of reducing burdens through digitalisation. One example is Denmark, which has sought to address this challenge through targeted regulation that requires companies to use digital invoicing and bookkeeping systems that follow certain standards. By ensuring standardisation and consistent data formatting, the Danish approach is estimated to reduce administrative burdens and improve efficiency by as much as EUR 1.7 billion per year.[131]

Danish regulation requires companies to use digital invoicing and bookkeeping systems – systems that were already widely adopted by companies prior to regulation – and requires the service providers to follow certain standards. This allows companies to embed reporting requirements directly into their existing digital systems, so business data can be reused automatically for other reporting purposes, e.g., sustainability reporting, instead of being recreated through separate processes.

130. Erhvervsministeriet (2025), Action Plan for a Single Market driven by business data (link).
131. DKK 3.5 billion from automatic invoicing and DKK 9 billion from automatic bookkeeping, see Erhvervsstyrelsen (2024), Revideret businesscase for ny bogføringslov (link) and Erhvervsministeriet (2024), Regeringen fjerner byrder for 9 mia. årligt (link).

Figure 27
Illustration of the effects of data standardisation



Note: The figure is a crude illustration of data standardisation.
Source: Copenhagen Economics.

The economic gains arise through several mechanisms. First, standardisation reduces the need for manual data collection and validation by ensuring that information is structured consistently across firms and systems. Second, aligning data across value chains enables the same information to be reused multiple times, lowering the marginal cost of reporting. Third, a standardised data format allows increased automation, thus freeing up time for other value creating activities. Together, these shift reporting from a manual compliance exercise to an integrated by-product of normal business operations.

Other Nordic countries are using similar approaches as exemplified by Norway's recent strategy on simplification for business[132] or Finland's work on Real Time Economy. Also, Nordic cooperation programmes such as *Nordic Smart Government & Business (2016-2024)* and *Nordic Automated Sustainability Reporting Programme* (2025-2027) are examples of how Nordic cooperation in this field can help bring concrete value to businesses across the Nordic region and how the Nordics can lead the way internationally.

This common Nordic approach could be extended to the rest of Europe if similar standards were adopted across borders. When companies use compatible formats across countries, data can move more seamlessly, reducing frictions across borders. Estimates suggest that scaling the Danish approach to the EU level could generate productivity gains of around EUR 87 billion,[133] highlighting the potential for standardised digital reporting to strengthen competitiveness at both Nordic and European level.

Private-public initiatives can play an important role in enabling this transition. Many companies are already digitalising their internal processes, but regulatory frameworks and public initiatives can help ensure that systems use compatible formats and standards. Thus, learnings from Denmark and the Nordics provide examples of how smart regulation can support digital adoption and development, reduce administrative and regulatory burdens, and improve competitiveness

132. Regeringen.no (2026), Strategi for forenklinger for næringslivet 2026-2029 (link)
133. Erhvervsministeriet (2025), Action Plan for a Single Market driven by business data (link).

Energy costs and the green transition

Energy costs and the green transition are increasingly central to Nordic competitiveness. The Nordics enter a more uncertain energy environment from a relatively strong position because their energy systems rely less on fossil fuels and more on renewable and other low-carbon sources than the EU and the US. This lowers exposure to fossil-fuel price shocks and supports comparatively low industrial electricity prices. However, the advantage is not uniform across all forms of energy. Gas remains tied to the wider European market, where import dependence keeps prices far above US levels, making gas the clearest energy-cost disadvantage for Nordic and European firms.

The green transition therefore matters not only for climate policy, but also for competitiveness and strategic autonomy. The Nordics have combined high productivity with relatively low emissions intensity, and past decarbonisation has been supported mainly by cleaner electricity and heating systems. The remaining challenge is that future carbon reductions will increasingly need to come from sectors where decarbonisation is harder, including transport, industry, and agriculture. The core message is therefore balanced: the Nordic energy position is strong, especially in electricity, but maintaining this advantage will require continued investment in low-carbon energy and technologies that reduce fossil-fuel dependence beyond the power sector.

6.1 The Nordic Energy system reduces fossil-fuel exposure, but gas remains a cost disadvantage

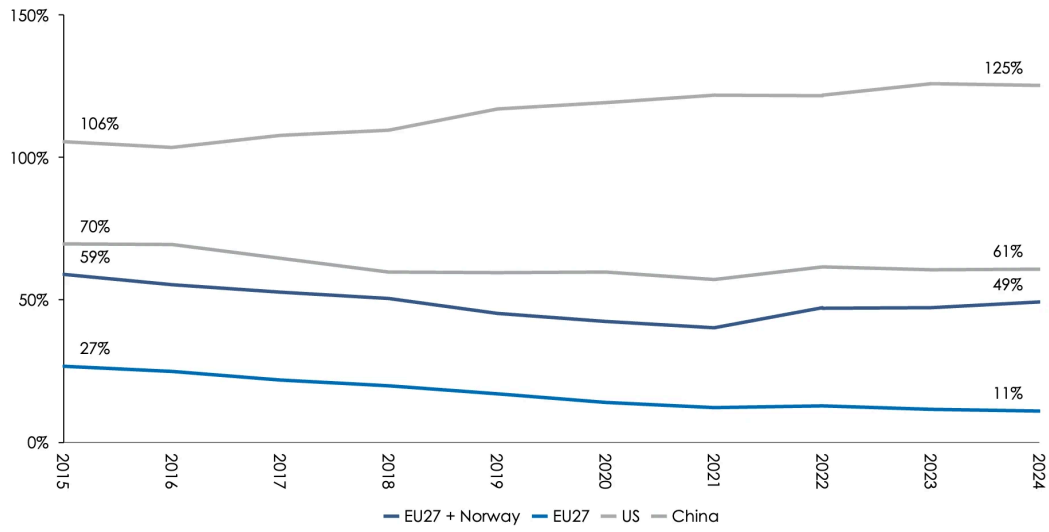
Energy has become a core part of competitiveness and strategic autonomy. Recent geopolitical events have shown that disruptions in energy supply can quickly translate into higher prices for consumers and industry. The Nordics enter this environment from a stronger position than much of Europe because their electricity systems rely heavily on renewable and other low-carbon sources. This reduces exposure to fossil-fuel price volatility and contributes to comparatively low industrial power prices. However, the Nordic advantage is not uniform across all forms of energy. Gas remains tied to the wider European market, where import dependence keeps industrial prices far above US levels. The key message is therefore that the Nordic energy system provides resilience in electricity but does not fully insulate firms from European energy-cost pressures.

This energy resilience can be understood through three connected dimensions. The first is dependency, meaning whether energy demand can be met through domestic production or depends on imports. The second is exposure, meaning how much the energy system relies on fossil fuels that are more vulnerable to geopolitical shocks. The third is prices, because energy resilience matters for competitiveness only insofar as it affects the costs faced by households and firms. These dimensions are closely linked. Import dependence and fossil-fuel exposure can make economies more vulnerable to supply shocks, while a renewable-heavy electricity system can reduce exposure and support lower power prices.

Gas illustrates the main European vulnerability. Unlike electricity, gas is traded in integrated European and global markets, and Europe remains structurally dependent on imports. This became particularly visible after Russia's invasion of Ukraine, when reduced access to Russian pipeline gas forced Europe to rely more on liquefied natural gas in competition with global buyers. While the US has increased its natural gas self-sufficiency and become a major liquefied natural gas exporter, Europe including Norway has become less self-sufficient over the past decade, see Figure **28**. The figure shows that US self-sufficiency increased from 106% to 125% between 2015 and 2024, while in the EU alone it fell from 27% to 11%. The figure also highlights Norway's importance as a natural gas supplier to the EU: including Norwegian gas, EU self-sufficiency increases from 11% to 49% in 2024. China provides an additional benchmark. It is not self-sufficient in gas to the same extent as the US, but its exposure is still different from Europe's because European gas markets were more directly affected by the loss of Russian pipeline gas. This illustrates why gas remains a larger strategic vulnerability for Europe than for the US.[134]

134. U.S. Department of Energy (2026), America's Rise as a Global Energy Leader (link).

Figure 28
Natural gas self-sufficiency, 2015-2024
Per cent of inland consumption met by inland production



Note: Iceland is excluded since there is practically no gas consumption in Iceland. We calculate the self-sufficiency rate as inland consumption divided by inland production of natural gas. Including Norway in the EU, self-sufficiency increases to around 59-49% in the period.
Source: Copenhagen Economics based on Eurostat (2026, website), Supply, transformation and consumption of gas (link); EIA (2026, website), Natural Gas Gross Withdrawals and Production (link); EIA (2026, website), Natural Gas Consumption by End Use (link)); and EIA (2026, website), China, "Dry natural gas production" (link).

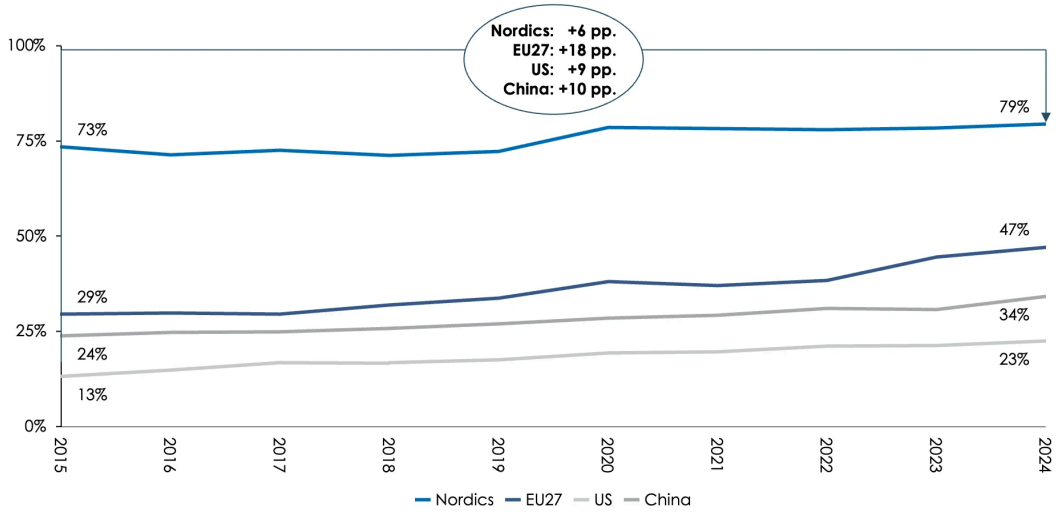
Carving out the Nordics in this context is less meaningful because gas markets are highly integrated across Europe. If considered separately, the Nordics would appear highly self-sufficient in gas due to Norwegian production, but this does not mean that Nordic gas prices are disconnected from the wider European market. A similar picture emerges for oil and coal, where Europe imports a large share of its consumption.[135] However, the vulnerability is somewhat different because oil, and to some extent coal, are traded in global markets. This means that even countries with higher domestic production can still be affected by global price shocks. In more extreme cases, however, higher self-sufficiency can reduce the risk of physical shortages or rationing, which is more relevant for import-dependent regions.[136]

Electricity differs from fossil fuels because power markets are more regional. Electricity cannot be stored or transported over long distances without substantial infrastructure, so resilience depends more directly on the technologies used to meet domestic demand. In this respect, the Nordics stand out. Around 79% of electricity generation in the Nordics was based on renewable energy in 2024, compared with 47% in the EU and 23% in the US, see Figure **29**. China has rapidly expanded renewable electricity generation in absolute terms, although its renewable share remains below that of the Nordic region. The EU has increased its renewable electricity share more rapidly over the past decade, but the Nordics continue to

135. All European countries apart from Norway import almost all oil for domestic consumption, see e.g., Eurostat (2026, website), Energy imports dependency (link).
136. The U.S. could meet own demand of crude oil, but still import substantial amounts since the cost of domestic production is often higher than that of foreign production and transport, see e.g., Nasdaq (2022), America Produces Enough Oil to Meet Its Needs, So Why Do We Import Crude? (link).

benefit from a structurally high renewable base. This reflects favourable natural endowments, such as hydropower in Norway and geothermal energy in Iceland, as well as early adoption of renewable technologies, particularly wind energy.[137] However, renewable shares of electricity generation also vary substantially across the Nordic countries. In 2024, Finland had the lowest share in 2024, at 56%, while Iceland had the highest, with almost all electricity generated from renewable sources.

Figure 29
Renewable electricity generation, 2015-2024
Per cent of total electricity generation met by renewable sources (including biofuels)

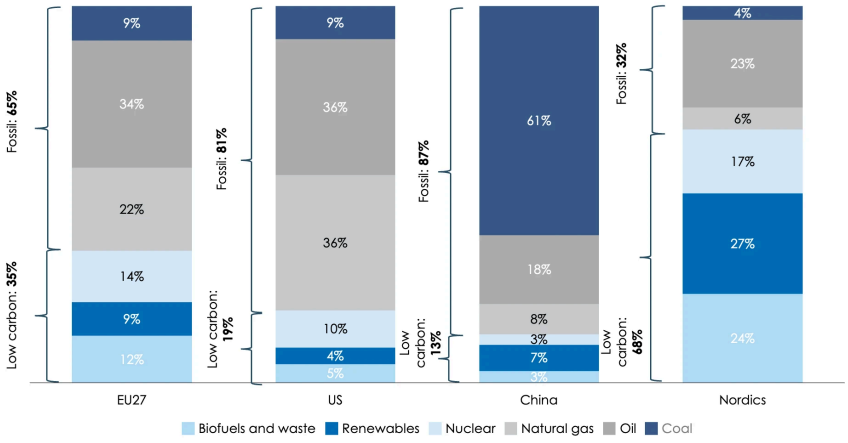


Source: Copenhagen Economics based on Eurostat (2026, website), Complete energy balances (link); EIA (2026, website), Total Energy (link); and EIA (2026, website), China, "Electricity generation" (link).

The strong renewable electricity position is part of a broader low-fossil energy mix. The energy mix includes the sources used to generate electricity, as well as fuels supplied directly for transport, heating, buildings, and industry. Fossil fuels, meaning oil, natural gas and coal, account for only 33% of total energy supply in the Nordics, compared with 65% in the EU and 81% in the US, see Figure **30**. China also remains much more fossil-dependent than the Nordics, mainly due to the continued role of coal in its total energy supply. The figure also shows that around 68% of Nordic total energy supply comes from renewables, biofuels, and nuclear energy, compared with 35% in the EU and 19% in the US. This reduces direct exposure to fossil-fuel price volatility and supply disruptions. The Nordics therefore have a stronger starting point than both the EU and the US when energy resilience is assessed through the composition of the energy system.[138]

137. Eurostat (2026), Complete energy balances (link). EIA (2026), Total Energy (link).
138. IEA (2026), Total energy supply by source (link).

Figure 30
Energy mix in each region, 2023
Per cent of total energy supply

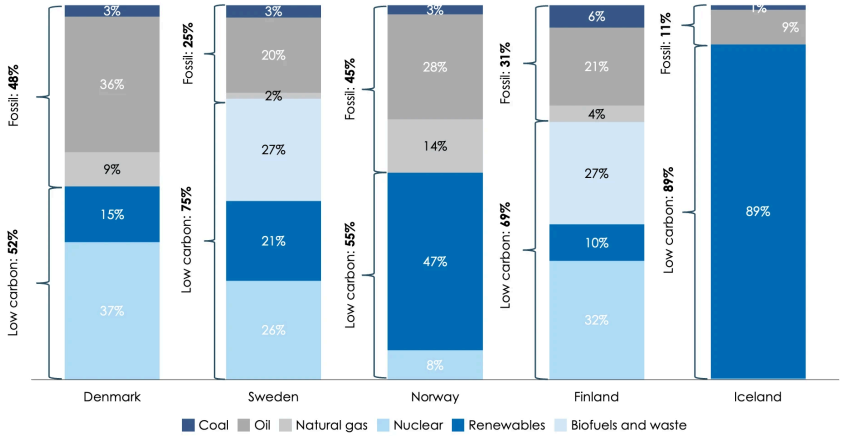


Note: Renewables include wind, solar, hydro, and other renewables. Oil includes oil and oil products. Coal includes coal and coal products. Due to rounding, the number do not necessarily sum.
Source: Copenhagen Economics based on IEA (2026, website), Total energy supply (TES) by source, "country", 1990-2023 (link).

The average Nordic energy mix hides important differences across countries. Denmark has the highest reliance on wind and solar energy, but also depends on biofuels and oil, much of which is imported. Finland and Sweden combine large nuclear fleets with substantial use of biofuels, while Norway relies heavily on hydropower but still has notable oil and gas exposure. Iceland stands out with an almost fully renewable energy system, driven by geothermal and hydropower resources, see Figure **31**.[139] These differences matter because the Nordic energy advantage is not one single model. It reflects different national combinations of renewables, nuclear energy, biofuels, and domestic resources, which reduce fossil-fuel exposure in different ways.

139. IEA (2026), Total energy supply by source (link).

Figure 31
Energy mix in the Nordics, 2023
Per cent of total energy supply

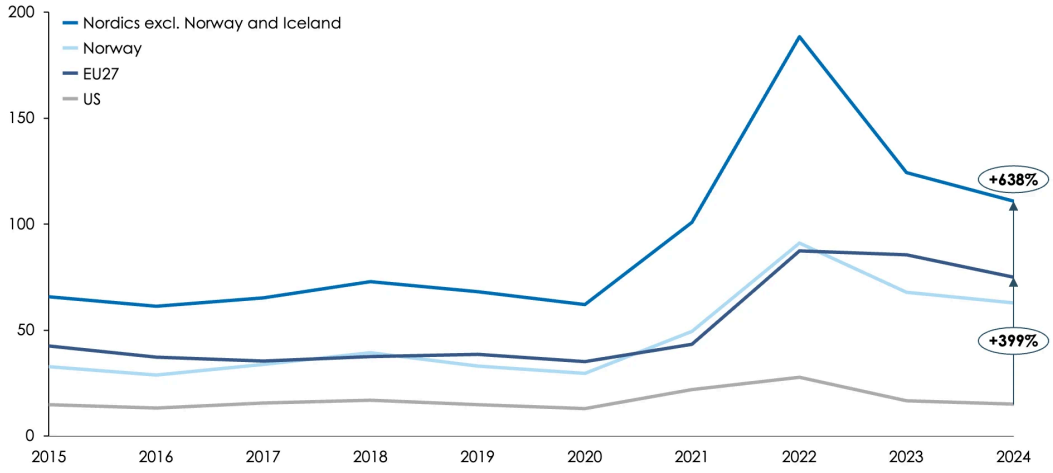


Note: Renewables include wind, solar, hydro, and other renewables. Oil includes oil and oil products. Coal includes coal and coal products. Due to rounding, the number do not necessarily sum.
Source: Copenhagen Economics based on IEA (2026, website), Total energy supply (TES) by source, "country", 1990-2023 (link).

Energy prices are the point where energy resilience becomes directly relevant for industrial competitiveness. The Draghi report highlights energy costs as a central challenge for Europe, and this is especially clear for gas.[140] Industrial gas prices are structurally higher in the Nordics and the EU than in the US. The prices are particularly high for the Nordics, and this is particularly evident if Norway is excluded from the Nordics average, see Figure **32**. The figure shows that the gap widened sharply after 2021 and that, in 2024, industrial gas prices were 638% higher in the Nordics, excluding Norway, and 399% higher in the EU compared with the US. This confirms that gas remains a significant cost disadvantage for European and Nordic firms relative to US competitors.

140.European Commission (2024), The Draghi report: A competitiveness strategy for Europe (Part A) (link).

Figure 32
Industrial gas prices including taxes, 2015-2024
EUR per MWh



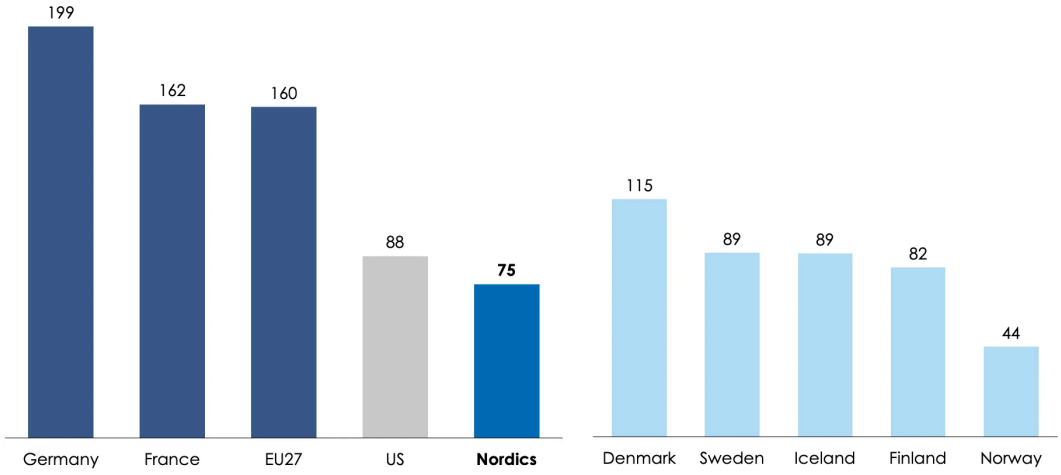
Note: We exclude Norway and Iceland from the Nordics average. We exclude Norway as it has substantially lower industrial gas prices than the other Nordic countries. We exclude Iceland since there is practically no gas consumption in Iceland. It is calculated as a consumption weighted average for the remaining four countries. For EU countries we show gas prices for medium sized industrial consumers (Consumption from 10 000 GJ to 99 999 GJ - band I3). Prices are biannual. We take an unweighted average to arrive at a yearly price. For the US, we show the industrial price (unspecified consumption band). For Norway, we show the average price for purchased gas by companies within manufacturing, mining, and quarrying.
Source: Copenhagen Economics based on Eurostat (2026, website), Gas prices for non-household consumers (link); EIA (2026, website) Natural Gas Prices (link); Statistics Norway (2026, website), 08205: Energy use, energy costs and energy prices in manufacturing sector, by industry (SIC2007), contents, year and energy product (link).

The gas price gap largely reflects differences in self-sufficiency. The US is a net exporter of gas, while Europe relies more heavily on imports. The gap widened significantly after the 2022 energy crisis, when reduced access to relatively cheap Russian gas forced Europe to rely more on liquefied natural gas imports in competition with global buyers, see Figure **32**. European gas markets are highly integrated, and wholesale prices therefore tend to converge across countries. The observed differences between the Nordics and the EU are therefore largely driven by non-market factors such as taxes.

Electricity prices show the other side of the Nordic energy position. Electricity markets are increasingly integrated across Europe, but physical constraints, such as limited cross-border transmission capacity, still limit full price convergence. This matter because electricity prices are shaped by the cost of the power plants needed to meet demand. In the Nordics, the high share of low-cost renewable generation means that gas-fired power plants are less often needed to set the market price than in much of Europe. This helps explain why Nordic firms pay lower industrial electricity prices than firms in the EU and the US on average, see Figure **33**. The figure shows that industrial power prices were 75 EUR/MWh in the Nordics in 2024, compared with 160 EUR/MWh in the EU and 88 EUR/MWh in the US. However, the Nordic average hides important country differences. Norway has by far the lowest industrial power price, at 44 EUR/MWh, reflecting its large hydropower base. Denmark is higher, at 113 EUR/MWh, which partly reflects that the figure includes taxes, and that Denmark does not have the same hydropower-based low-cost

generation base as Norway. Sweden, Finland, and Iceland are closer to the Nordic average, at 89, 82 and 89 EUR/MWh, respectively. The Nordic electricity-price advantage therefore shows why the green transition matters for competitiveness, not only for emissions.

Figure 33
Industrial power prices including taxes, 2024
EUR per MWh



Note: EU data is reported in bi-annual values. We transform these to annual observations by taking a simple average. We calculate the Nordic average as a production weighted average as consumption data is not as up to date. This will likely create a slight downward bias of the estimate as net exporting countries such as Norway and Sweden have lower prices and get a larger weight compared to using consumption-based weights. This does, however, not influence any conclusions or the overall picture. For EU countries we show electricity prices for medium sized industrial consumers (Consumption from 500 MWh to 1 999 MWh - band IC). For the US, we show the industrial price (unspecified consumption band). For Norway, we show the average price for purchased electricity by companies within manufacturing, mining, and quarrying.
Source: Copenhagen Economics based on Eurostat (2026, website), Electricity prices for non-household consumers (link); EIA (2026, website), Average retail price of electricity to ultimate customers: Annual retail price by sector, by state (link); Statistics Norway (2026, website), 08205: Energy use, energy costs and energy prices in manufacturing sector, by industry (SIC2007), contents, year and energy product (link).

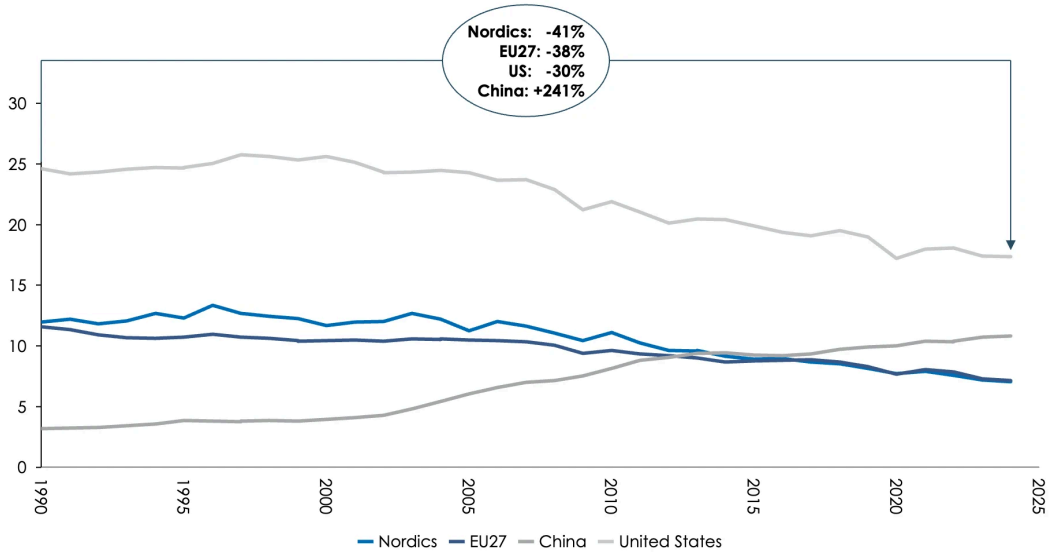
The overall message is therefore balanced. The Nordic energy system reduces fossil-fuel exposure and supports lower electricity prices, but it does not fully remove energy-cost disadvantages for firms. Gas remains tied to the wider European market, where prices are still far above US levels. Compared with China, the Nordics combine high renewable electricity generation with a much lower fossil-fuel share in total energy supply, making their energy advantage broader than electricity alone. The Nordic energy position is therefore strongest in electricity, while gas remains the main cost vulnerability.

At the end of this chapter, we present the case of SnerpaPower, an Icelandic energy management software provider. The case illustrates how SnerpaPower's solution can significantly improve energy and grid efficiency, while also highlighting its broader implications for energy security.

6.2 The Nordics have lowered emissions, but ambitious targets still require further transition

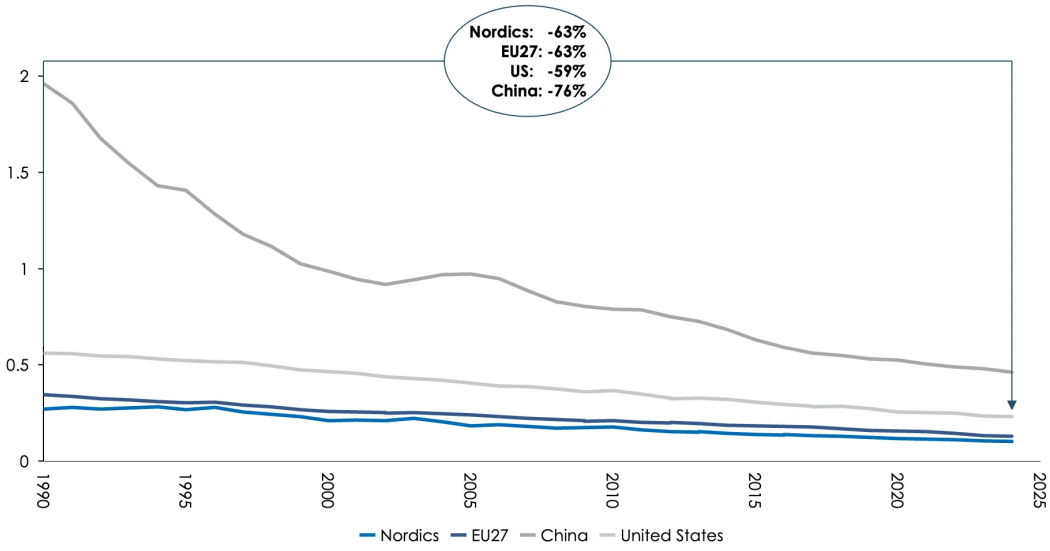
The lower fossil-fuel exposure discussed above is also visible in the Nordic emissions profile. The Nordics combine high productivity with relatively low emissions intensity, meaning that they generate less greenhouse gas emissions per unit of economic output than both the EU and the US. Since 1990, emissions per capita have fallen by 41% in the Nordics, compared with 38% in the EU and 30% in the US, see Figure **34**. The reduction in emissions per GDP has also been substantial, at 63% in the Nordics, the same as in the EU and slightly above the US at 59%, see Figure **35**. This supports the broader point that Nordic competitiveness and decarbonisation have so far been able to develop together, although past reductions do not imply that future targets will be easy to reach.

Figure 34
Emissions per capita
Ton CO2e per capita



Note: We calculate Nordics and EU27 as weighted averages.
Source: Copenhagen Economics based on European Commission (2025), GHG emissions of all world countries (link).

Figure 35
CO2 emissions per GDP
Ton CO2e per 1000 USD



Note: We calculate Nordics and EU27 as weighted averages.
Source: Copenhagen Economics based on European Commission (2025), GHG emissions of all world countries (link).

Past Nordic decarbonisation has been driven mainly by changes in energy supply rather than uniform progress across all sectors. Denmark's reduction reflects the expansion of wind power and the near phase-out of coal in district heating.[141] Finland's progress has been supported by nuclear power, bioenergy, wind generation, energy efficiency and a gradual shift in heating away from fossil fuels.[142] Sweden and Norway show a related pattern. Both benefit from low-carbon electricity systems, with Sweden also having largely decarbonised power and buildings,[143] while Norway's hydropower base has enabled high electrification with limited emissions from electricity.[144] This helps explain both the Nordic strength and the remaining challenge. The region has made substantial progress where clean electricity and heating solutions could replace fossil fuels, but further reductions increasingly depend on harder-to-abate sectors such as transport, industry, and agriculture.

Looking ahead, the Nordic countries have ambitious climate targets, but the remaining reductions are substantial. Denmark, Finland, Norway, and Sweden all have 2030 targets that are at least as ambitious as the EU target of reducing emissions by 55% compared with 1990, while Iceland's target is lower at 40%, see Table **1**. However, the Nordics are not necessarily closer to reaching their targets than the EU. Denmark and Finland still need reductions of 25 and 27 percentage points, respectively, while Sweden needs 33 percentage points. Iceland and Norway stand out with larger remaining gaps of 37 and 52 percentage points, respectively.

141. IEA (2023), Denmark 2023 (link).
142. IEA (2023), Finland 2023 (link).
143. IEA (2024), Sweden 2024 (link).
144. IEA (2022), Norway 2022 (link).

This suggests that the Nordics have made important progress, but the green transition still requires significant additional reductions before 2030.

Table 1
Emission reductions and targets

	1990-2024 reductions	2030 Reduction target	Remaining to target
Denmark	45%	70%	25%
Finland	33%	60%	27%
Iceland	3%	40%	37%
Norway	3%	55%	52%
Sweden	30%	63%	33%
EU	35%	55%	20%
US	17%	No current target; 51% under the Biden administration	-
China	+ 318% (increase)	7–10% below peak net GHG emissions by 2035	-

Source: Copenhagen Economics based on European Commission (2025), GHG emissions of all world countries (link); Nordregio (2024), Nordic Toolbox for a Just Green Transition – Climate goals and emissions in the Nordics (link); Bundesregierung (2026, website), Climate Action Programme 2023 (link); Enerdata (2025), France's low-carbon strategy targets 50% gross GHG emissions cut by 2030 (link); and Office of the Federal Chief Sustainability Officer (2026, website), Federal Sustainability Plan (link), UNFCCC (2021) China's Nationally Determined Contribution (link).

The distance to the 2030 targets should be interpreted in light of differences in national energy systems. Iceland and Norway stand out with both smaller realised reductions since 1990 and larger remaining gaps to their targets, but this partly reflects that their electricity generation was already largely emissions-free due to geothermal energy in Iceland and hydropower in Norway.[145] Therefore they had less scope to reduce emissions through power-sector decarbonisation than countries where fossil fuels played a larger role in electricity generation. For the Nordics as a whole, the next phase of the green transition will therefore depend more on reducing emissions outside the power sector.

The green transition is therefore already part of the Nordic competitiveness story, not only an environmental objective. A cleaner electricity system has reduced fossil-fuel exposure and helped keep industrial power prices below the levels seen in the EU and the US. However, this advantage is uneven and incomplete. Gas remains a cost disadvantage, and future emission reductions will increasingly have to come from sectors where decarbonisation is harder than in electricity. The Nordic position is therefore strong, but not settled. Maintaining the energy advantage will require continued investment in low-carbon energy and the technologies that allow transport and industry to move away from fossil fuels.

145. European Commission (2025), GHG emissions of all world countries (link).

CASE STUDY

SnerpaPower

European and Nordic energy-intensive industries face increasing cost pressures, with implications for their global competitiveness.[146] This challenge has become clearer in recent years, as geopolitical shocks such as the Russian invasion of Ukraine and the US conflict with Iran have led to sharp increases in European energy prices. These developments reflect Europe's continued dependence on imported fossil fuels, making industrial energy costs highly sensitive to external disruptions.[147]

The long-term solution is a transition towards electrification and greater reliance on renewable energy.[148] However, renewable energy sources such as wind and solar are inherently variable, leading to more volatile power systems, where supply, demand and prices fluctuate rapidly and often unpredictably.[149] This increases the need for system balancing and overall investments in the grid.

One part of the solution is increased accuracy in load and production forecasts, in combination with **demand-side flexibility**, where consumers are able to adjust power consumption in response to price signals, can reduce costs, improve system stability and utilisation, and support the integration of renewable energy.

SnerpaPower, an Icelandic energy management software provider founded in 2022, provides a solution enabling power intensive industries to minimize their imbalance energy and power costs. The solution automatically optimises power demand and market participation in real-time utilising advanced AI technologies. This includes automatic planning of production processes and maintenance, as well as communicating directly with grid operators, power providers and engaging in balancing markets, where industrial clients can adjust power demand in response to system needs. The solution has proven to reduce the imbalance energy need by 25% and up to 95% for individual industrial sites comparing actual performance before platform implementation to after integrating the software platform. This imbalance energy reduction equals adding new capacity on the grid without investing in new infrastructure (production capacity). Simultaneously, the solution

146. European Parliament (2025), Energy-intensive industries (link).
147. See e.g. ECB (2022), The impact of the war in Ukraine on euro area energy markets (link). Note that oil prices are set globally, so lower import dependence would have limited effect on prices. Gas prices also converge to a similar price across integrated markets, but high transport costs can create global differences such that prices are substantially higher e.g., in Europe (net importer) than in the US (net exporter).
148. See e.g., IEA (2023), Net Zero Roadmap: A Global Pathway to Keep the 1.5 °C Goal in Reach (link).
149. See e.g. Wang et al. (2024), The impact of renewable energy on extreme volatility in wholesale electricity prices: Evidence from organisation for economic co-operation and development countries (link).

increases industrial flexibility provision without causing additional risk to the production process. This leads to increased energy security, grid efficiency and lowering of the total cost of electricity across the market[150] – while generating an additional revenue stream for power intensive industries.[151]

SnerpaPower's software platform is already widely adopted in Iceland, where a large share of the metallurgy and data centre industry has integrated the solution into their operations. Results in Iceland, supported by analysis and case studies of the Nordic power market, indicate that companies can reduce electricity costs by up to and beyond 10%,[152] directly improving competitiveness in energy-intensive sectors while supporting the continued shift towards electrification.

Besides lowering cost of energy and capturing revenue from balancing services, the company aims to support emission reductions and support the wider electrification by improving grid utilisation. Improved grid stability and utilisation is an important element in supporting the overall electrification of societies since it allows increased and faster connection to power grids for both producers and consumers. Additionally, better utilisation lowers the total cost of the power grid. Costs which are ultimately borne by consumers through higher transmission and distribution tariffs.

Together, this illustrates how digital solutions enabling demand-side flexibility can strengthen both competitiveness and sustainability in Nordic and European industry. This is in line with previous analysis showing that increased demand-side flexibility can generate substantial societal benefits by reducing system costs, lowering power prices, and improving the overall efficiency of the power market.[153]

150. Power market imbalances occur when there is a discrepancy between production and consumption at any point in time. It requires system operators to take quick and often expensive action to increase or decrease production or consumption. Ultimately, imbalances can also lead to blackouts if the discrepancies are sufficiently large or occur sufficiently fast.
151. Information provided by SnerpaPower. Effects vary substantially across business cases.
152. Information provided by SnerpaPower. Savings vary substantially across business cases.
153. See e.g. Copenhagen Economics (2025), Demand-side flexibility as a driver of greener electricity and more efficient grid use (link) or IEA (2025), The Value of Demand Flexibility (link).

Economic resilience

Economic resilience in the Nordics rests on a balance between strong shock-absorption capacity and high external exposure. Most Nordic countries have solid macro-financial buffers, supported by moderate public debt, strong institutions and labour-market systems that help workers move back into employment after downturns. Some Nordic countries also have strong current account positions, which means they are less dependent on foreign financing when external conditions tighten. However, these strengths are not evenly distributed, with Denmark, Sweden and Norway generally better positioned than Finland and Iceland on several macro-financial indicators.

At the same time, some of the region's main competitiveness strengths also create vulnerabilities. The Nordics have built prosperity through openness and specialisation, allowing firms to compete globally despite small domestic markets. This makes the region more exposed when trade conditions, export markets or supply chains are disrupted. The main resilience challenge is therefore not to reduce openness, but to make it more robust through diversified markets, reliable partnerships and stronger Nordic and European coordination in strategic areas were security of supply matters most.

7.1 Macro-Financial buffers are a Nordic resilience strength

Macro-financial resilience is one of the foundations of Nordic competitiveness and rests on strong macro-financial fundamentals. Robust public finances, including moderate public debt, reduce the perceived risk associated with an economy and help keep financing conditions favourable for both governments and firms. They also give governments more room to respond when shocks occur, because countries with lower debt can more easily support households, firms, and strategic investments during downturns without putting long-term fiscal sustainability under pressure. In 2024, gross public debt was 55% of GDP in the Nordics, see Figure 5 in Section 1. This is below the EU debt benchmark of 60% and well below the EU average at 88%, France at 117% and the US at 123%. The Nordic average therefore points to a relatively strong fiscal starting point, but the country differences are important for understanding how evenly this resilience is distributed across the region.

The fiscal strength is not evenly distributed across the Nordics. Denmark and Sweden have particularly low public debt, at 38% and 46% of GDP, which gives them substantial fiscal room to respond to shocks. Norway is close to the EU debt benchmark at 61%, although gross public debt does not fully capture Norway's

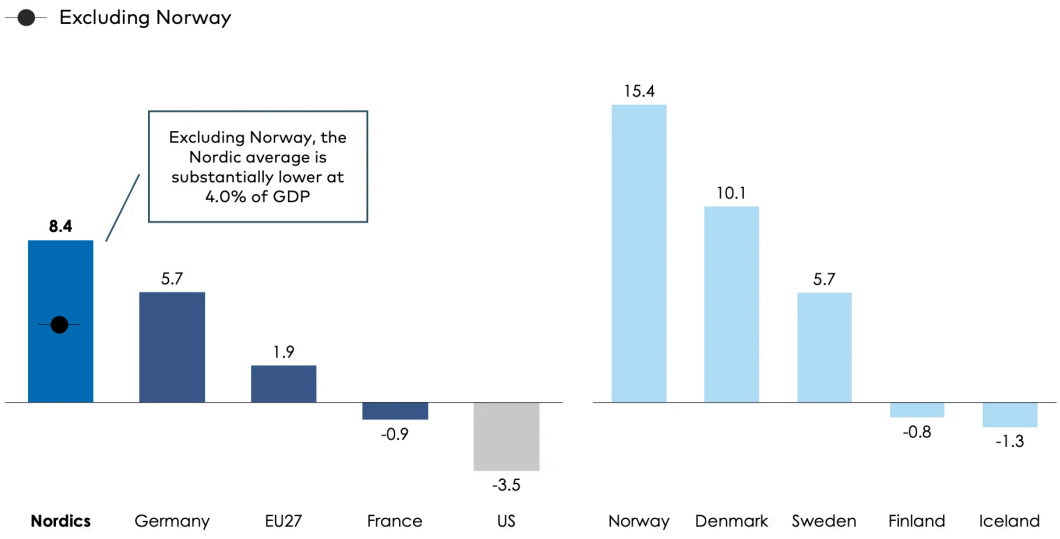
broader fiscal position given its large petroleum-related financial assets. Iceland is higher at 67%, but still well below the EU, France, and the US. Finland stands out with the highest Nordic debt level at 85% of GDP, reflecting a longer period of weak growth, repeated shocks and spending pressures linked to ageing and defence needs. The figure therefore supports a differentiated message. Low public debt is a Nordic resilience strength, but Denmark and Sweden have the most fiscal room, Norway's gross debt position is more moderate, and Finland and Iceland have more constrained fiscal space.

Macro-financial buffers are not the only reason why Nordic economies can absorb shocks. Labour-market institutions also matter. The Nordic model combines income security with job-search incentives and active labour-market policies, which can help prevent temporary unemployment from becoming long-term unemployment.[154] This supports faster reintegration into work after downturns and makes the economy more adaptable when shocks change the demand for labour across firms or sectors. Evidence from the COVID-19 recovery points in the same direction: Nordic labour markets absorbed a large shock without persistent labour-market damage when income support was combined with reactivation and skills policies.[155] This strengthens the resilience story, because the Nordics' capacity to respond to shocks is not only fiscal, but also institutional.

The public-debt picture is complemented by strong external financial positions in several Nordic countries. A current account surplus means that an economy saves more than it invests domestically and is a net lender to the rest of the world, which is often reflected in the accumulation of foreign assets. This can strengthen resilience because the country is less dependent on foreign financing when external conditions tighten. Norway has a very large current account surplus at 15.4% of GDP, see Figure **36**, partly reflecting its strong energy export position. Denmark also stands out with a surplus of 10.1%, while Sweden has a solid surplus of 5.7%. Finland and Iceland are in slight deficit, at -0.8% and -1.3%, respectively. The Nordic average is therefore strong, but it is lifted substantially by Norway. Excluding Norway, the Nordic average falls from 8.4% to 4.0% of GDP. Overall, external resilience is a clear strength for Norway, Denmark, and Sweden, while Finland and Iceland have a weaker position on this indicator.

154. Bjørsted et al. (2016), Lessons Learnt from the Nordics: How to Fight Long-term Unemployment (link).
155. OECD (2023), Nordic Lessons for an Inclusive Recovery? Responses to the Impact of COVID-19 on the Labour Market (link).

Figure 36
Current account, yearly average 2020-2024
Per cent of GDP



Note: 'Nordics' is calculated as a GDP weighted average
Source: Copenhagen Economics based on OECD (2026, website), Balance of payments (link); OECD (2026, website), Annual GDP and components - expenditure approach (link).

Taken together, the public debt and current account figures show that the Nordics have important macro-financial buffers, but that these buffers are not evenly distributed across the region. Denmark and Sweden combine low public debt with strong external positions, while Norway has a particularly strong external position linked to energy exports. Finland and Iceland appear more constrained on these indicators. These buffers strengthen the ability to absorb shocks, but they do not remove exposure to shocks. The next part of the chapter therefore turns from the Nordics' capacity to respond to disruptions to the sources of exposure that arise from being small, open, and specialised economies.

7.2 Openness supports Nordic Competitiveness, but creates strategic exposure

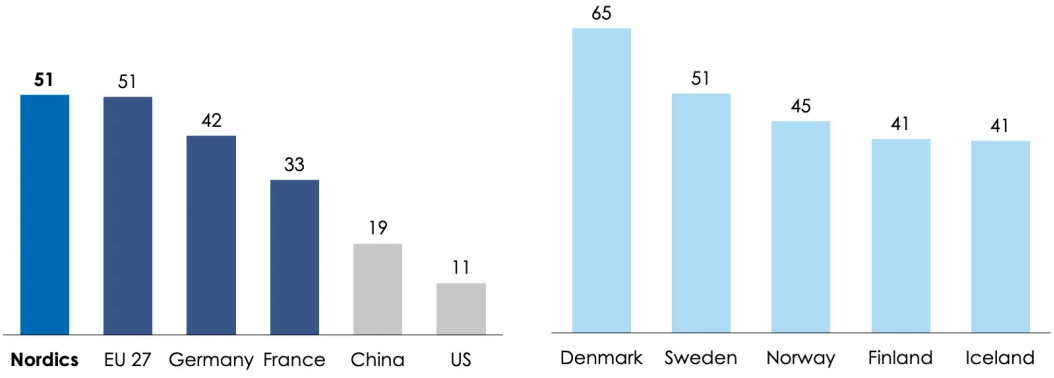
The macro-financial buffers described above strengthen the Nordics' ability to respond to shocks, but they do not remove the sources of exposure that come with being small, open economies. The Nordic growth model is deeply integrated into global trade. This has supported strong economic performance by allowing firms to specialise, compete globally and scale beyond small domestic markets. At the same time, high reliance on exports and imports makes the Nordics more exposed to external demand shocks, trade disruptions and changes in global trade policy such as recent US tariff measures and the wider increase in trade policy uncertainty.[156] This is particularly relevant in a more geopolitically unstable world, where economic

156. UNCTAD (2025), Global Trade Update: Trade policy uncertainty looms over global markets (link).

relationships are increasingly shaped not only by efficiency, but also by security and strategic interests, as seen in the energy shock following Russia's invasion of Ukraine.[157]

This exposure is visible in the scale of Nordic exports. All Nordic countries are highly open economies, with exports playing a much larger role than in the US and China, see Figure **37**. Denmark stands out with exports equal to 65% of GDP, making it the most export-reliant Nordic economy, while Sweden is also highly export-oriented at 51%. Norway, Finland, and Iceland are lower, at 45%, 41% and 41%, respectively, but still far above the US at 11% and China at 19%. This openness has been central to Nordic competitiveness because it allows firms to specialise and serve markets far beyond their small domestic economies. However, it also means that Nordic resilience depends heavily on continued access to foreign markets and the ability to adapt when global demand or trade conditions change.

Figure 37
Exported goods and services as a share of GDP, 2020-2024 average
Per cent of GDP



Note: We calculate the Nordics and the EU 27 as weighted averages.
Source: Copenhagen Economics based on World Bank (2026, website), Exports of goods and services (link).

The exposure is mainly concentrated around nearby European markets, but the US also plays an important role. For all Nordic countries, European or Nordic partners are among the largest goods export destinations. This regional concentration supports resilience when European markets remain stable, because firms can rely on nearby and broadly aligned markets. At the same time, the US is the third export destination for Denmark, Sweden, and Finland and the second destination for Iceland. This matter because the US is both a major growth market and a more relevant source of trade-policy uncertainty than intra-European trade.

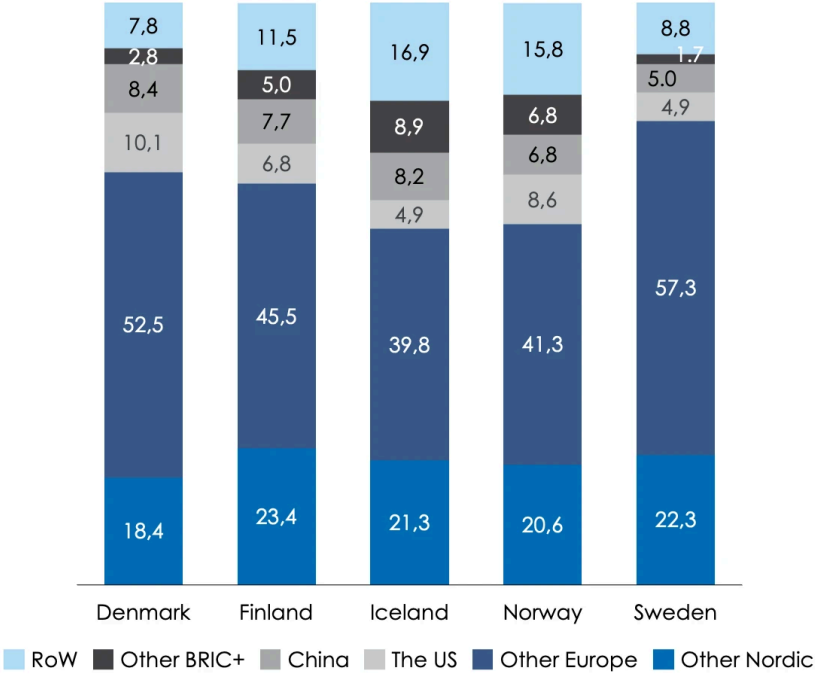
The resilience implications also depend on *what* the Nordic countries export. High reliance on exports makes the Nordics more sensitive to how these exports are structured, especially when exposure is concentrated in specific industries or a relatively small number of large companies. Denmark's exports are concentrated in transport services and pharmaceuticals, reflecting strong global positions in

157. ECB (2022), The impact of the war in Ukraine on euro area energy markets (link).

shipping and life sciences. Sweden and Finland rely more on industrial manufacturing, including metals, machinery, and transport equipment, while Norway stands out because oil and gas account for more than half of exports. Iceland differs again, with a high dependence on metals manufacturing, particularly aluminium production. This means that the Nordic countries are not exposed to the same shocks. For example, an energy-price shock may benefit Norway through fossil fuel exports, while creating more pressure for industrial exporters in Sweden and Finland.

The import side adds a further layer to the resilience picture. Intermediate goods are inputs used by firms in production, and disruptions to these imports can therefore affect domestic output directly. For broad intermediate goods, Nordic supply chains are mainly regional, see Figure **38**.

Figure 38
Import of intermediate goods broken down by regions/countries, 2024
Share of imports (per cent)



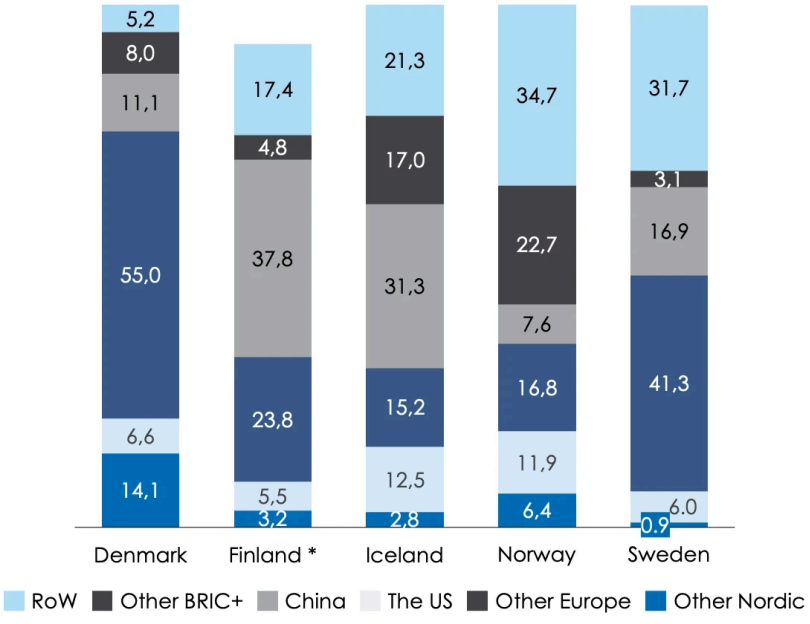
Note: *Total value (Bill. EUR): Denmark (41.5), Finland (40.1), Iceland (3.8), Norway (42.1) and Sweden (78.3). The "Other BRIC+" group includes Brazil, Russia, India, South Africa, Egypt, Ethiopia, Iran, Saudi Arabia, the United Arab Emirates, and Indonesia.*
Source: Copenhagen Economics based on Nordic Council of Ministers (2026), *Nordic imports of intermediate goods* (link).

Across the five countries, other Nordic, and European countries account for around 61–80% of intermediate-goods imports. Sweden is the most regionally anchored, with almost 80% coming from other Nordic and European countries, while Iceland and Norway are lower at around 61–62%. By contrast, the US accounts for only around 5–10% of intermediate-goods imports, and China for around 5–8%. This suggests that the first tier of the Nordic production supply chain is largely linked to

nearby and broadly aligned markets. Regional sourcing should not, however, be read as regional autonomy, since a component imported from German or Sweden may itself embed critical raw materials, specialised chemicals, or semiconductors whose production is concentrated far outside Europe. The import structure therefore looks relatively resilient when viewed through the geography to the last production step but becomes more exposed once narrower strategic inputs and their upstream origin are considered.

The import picture is different for vulnerable goods[158], where imports are much less regionally anchored, Figure **39**. For this type of goods, other Nordic, and European countries account for only around 7–21% of the imports across the five countries. Instead, exposure to non-European partners is much larger and differs strongly by country. Denmark and Sweden are particularly exposed to the US, which accounts for 55% and 41% of their imports in this category, while Finland and Iceland have larger exposure to China, at 38% and 31%, respectively. Norway stands out with a high share from the rest of the world, at 35%, and from other BRIC+ countries, at 23%. This shows why supply-chain resilience cannot be assessed from total imports alone. While the broad production supply chain looks relatively regional, imports of supply-sensitive goods are much more dependent on global partners.

Figure 39
Import of vulnerable goods broken down by region/country, 2024
Share of imports (per cent)

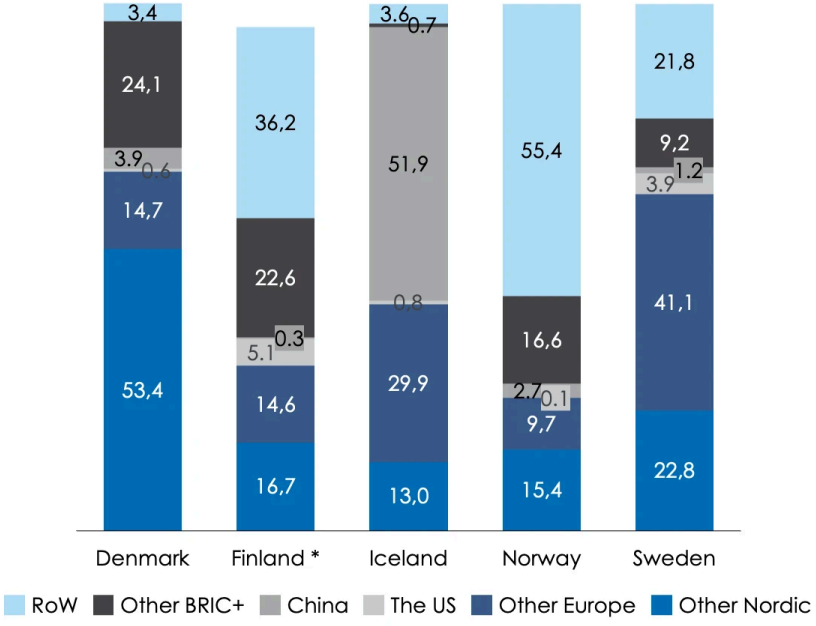


Note: ** Due to confidentiality the percentages do not add to 100%. Total value (Bill. EUR): Denmark (3.9), Finland (3.1), Iceland (0.1), Norway (6.1) and Sweden (1.6).*
Source: Copenhagen Economics based on Nordic Council of Ministers (2026), *Vulnerability of imports* (link).

158. Vulnerable goods refer to imported intermediate goods that are considered vulnerable to supply disruptions, based on three criteria: high concentration of sourcing, reliance on regions outside Europe, and low capacity for domestic substitution.

Critical raw materials[159] are an even more strategic category, because they are important for the green transition, digital technologies, defence, and industrial production, while supply is often concentrated globally. Greenland is relevant in this context because its subsoil contains minerals and critical raw materials that could support future diversification, although mining currently contributes only marginally to the economy and commercial development remains difficult, see case study below. The Nordic picture for critical raw materials is highly country-specific, see Figure **40**. Denmark relies mainly on other Nordic countries and other BRIC+ countries, which account for 53% and 24% of imports, respectively. Sweden is the most regionally anchored, with 64% of imports coming from other Nordic and European countries. Norway is much more exposed to the rest of the world, which accounts for 55%, while Finland also has a high share of 36% from the rest of the world. Iceland stands out with 52% of critical raw material imports coming from China, although the total value is very small.

Figure 40
Import of Critical Raw Materials broken down by region/country, 2024
Share of imports (per cent)



Note: ** Due to confidentiality, the percentages do not add to 100%. Total values (bill, EUR): Denmark (1.2), Finland (5.0), Iceland (0), Norway (3.6) and Sweden (4.4).*
Source: Copenhagen Economics based on Nordic Council of Ministers (2026), *Nordic imports of critical raw material* (link).

Taken together, the import figures show that Nordic supply-chain exposure depends strongly on the type of goods considered. For broad intermediate goods, Nordic supply chains are mostly regional, anchored in nearby European and Nordic markets. These figures may nevertheless mask deeper dependencies: because trade statistics record only the country of last production, imports classified as Nordic or

159. Critical raw materials (CRMs) refer to raw materials of strategic importance for green and digital technologies, as well as for defense and space industries. Examples include rare earth elements used in wind turbines motors, lithium, cobalt, and nickel used in batteries, and silicon used in semiconductors.

European may still rely on upstream inputs supplied by a small number of non-European producers.

Semiconductors illustrate the point. The EU is strong in equipment and design but relies on a handful of sites outside Europe for wafer fabrication and for assembly, testing and packaging. A chip-containing component bought from a European supplier can therefore carry much the same risk as a direct import from Asia.[160] Critical raw materials follow the same pattern: dependencies are best assessed by technology and application rather than by trade partner, because the same few supplier countries recur across green, digital and defence value chains The relevant resilience question is therefore not only where the Nordics buy from, but whether the inputs embedded in those purchases originate in a few locations exposed to natural events, pandemics or political decisions such as export controls.

Economic resilience in the Nordics therefore rests on a balance between the capacity to absorb shocks and the exposure created by openness. Moderate public debt gives many Nordic governments fiscal room to act in downturns, and current account surpluses leave several of the economies less dependent on foreign financing. At the same time, the openness and specialisation that built Nordic prosperity also leave the region more exposed when trade relationships, supply chains or strategic priorities shift. The policy challenge is not to reduce openness, but to make it more robust through diversified markets, reliable partnerships and stronger Nordic and European coordination were security of supply matters most.

160. European Commission, Joint Research Centre (2025), EU's strengths and weaknesses in the global semiconductor sector (link).

The Nordic region as an integrated region

Nordic integration is an important part of the region's competitiveness, but it should not be understood as the Nordics functioning as one single economy. The region is strongly connected through trade, mobility, power (see case study at the end of this chapter), education and knowledge flows, which gives the individually small economies access to larger nearby markets, a broader labour and skills base and more cross-border innovation than each country could generate alone. This supports several of the strengths discussed in earlier chapters, including labour-market adaptability, innovation capacity and resilience. The Nordic countries have also built practical cooperation to help people work across borders. According to the OECD, public employment services cooperate through border-region services, Nordic initiatives, and wider European frameworks such as EURES, although cooperation still focuses more on information exchange than on joint labour-market strategies.[161]

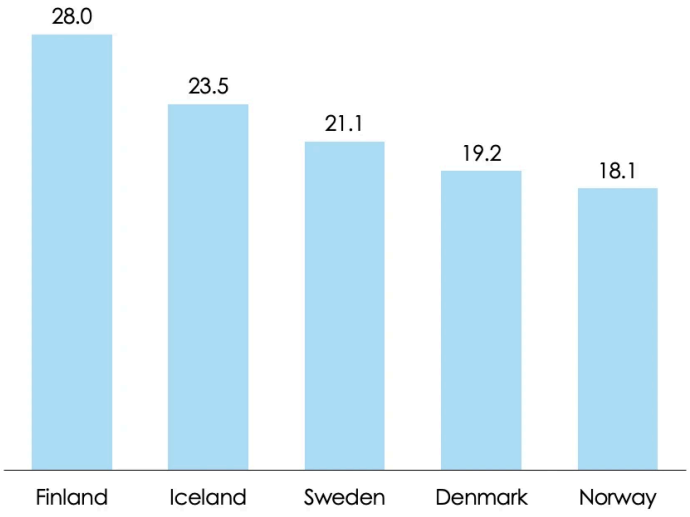
Nordic integration matters because it connects the countries to each other, while also linking them into wider European and global markets. Trade connects the Nordic countries both to each other and to the wider European market. Mobility creates clear labour and skills corridors across the region, while knowledge collaboration links Nordic actors to Nordic, European and global innovation networks. The core message is therefore that Nordic integration strengthens competitiveness by giving small economies an additional layer of scale, coordination, and resilience.

8.1 Trade integration gives Nordic firms access to a larger regional market

Trade is the most direct way in which Nordic integration supports competitiveness. For small economies, nearby markets matter because they expand the effective market size for firms and can make trade less dependent on distant partners. Other Nordic countries account for a meaningful share of goods trade in all five countries, see Figure **41**. The share is highest in Sweden, where trade with other Nordic countries accounts for 23% of total goods trade, followed by Denmark at 18%, Norway at 17%, and Finland and Iceland at 16%.

161. OECD (2025), The Role of Public Employment Services in Promoting an Inclusive Nordic Common Labour Market (link).

Figure 41
Intra – Nordic foreign trade, 2024
Per cent of total goods imported from other Nordic countries on total imports



Source: Nordic statistics database, *Intra-Nordic foreign trade by reporting country and time* database (link).

The trade figures show important regional integration, but they should not be interpreted as evidence that the Nordics function as one frictionless market. Practical border barriers still exist, especially where firms and workers meet different national rules on taxation, labour-market administration, or cross-border procedures. This is reflected in the Nordic Council of Ministers' border database, which tracks unresolved obstacles across areas such as business life, labour markets, tax, and finance.[162] The implication is that Nordic integration already supports competitiveness by giving firms access to nearby markets, but further gains depend on reducing the practical frictions that still make cross-border activity more complex than domestic activity.

8.2 People and knowledge flows support a more integrated Nordic economy

People mobility is another important channel of Nordic integration. It has a long institutional basis, as Nordic citizens have broad rights to live and work in other Nordic countries with fewer formal barriers than in many other cross-border settings. This matters for competitiveness because it expands the effective labour market beyond national borders and makes it easier for workers to move towards places where their skills are in demand. These rights are also supported by practical cooperation between Nordic public employment services, which the OECD describes as taking place through dedicated border services, Nordic-level initiatives, and wider European frameworks such as EURES.[163] The direction of mobility is concentrated in specific corridors, see Figure **42**. Sweden is the main destination for Nordic

162. Nordic Council of Ministers (2026), Border database (link).
163. OECD (2025), The Role of Public Employment Services in Promoting an Inclusive Nordic Common Labour Market (link).

citizens from Denmark, Finland, and Norway, while Norway is especially important for Danish and Swedish migrants, and Denmark is the main destination for Icelandic migrants. This supports the view that Nordic labour-market integration is real in practice but concentrated around specific country links rather than functioning as one evenly balanced regional labour market.

Figure 42
Intra-Nordic migration of Nordic citizens, 2023
Per cent of total intra-Nordic migrant stock

MOVING FROM	MOVING TO: Denmark	Finland	Iceland	Norway	Sweden	Row total
Denmark	-	2%	2%	42%	55%	100%
Finland	7%	-	0%	12%	81%	100%
Iceland	47%	1%	-	33%	20%	100%
Norway	37%	2%	1%	-	60%	100%
Sweden	30%	13%	1%	57%	-	100%

Note: Data refer to 1 January 2024.
Source: Copenhagen Economics based on Nordic Statistics Database, *CITI01: Citizenship by reporting country, country of citizenship, age and sex* (link).

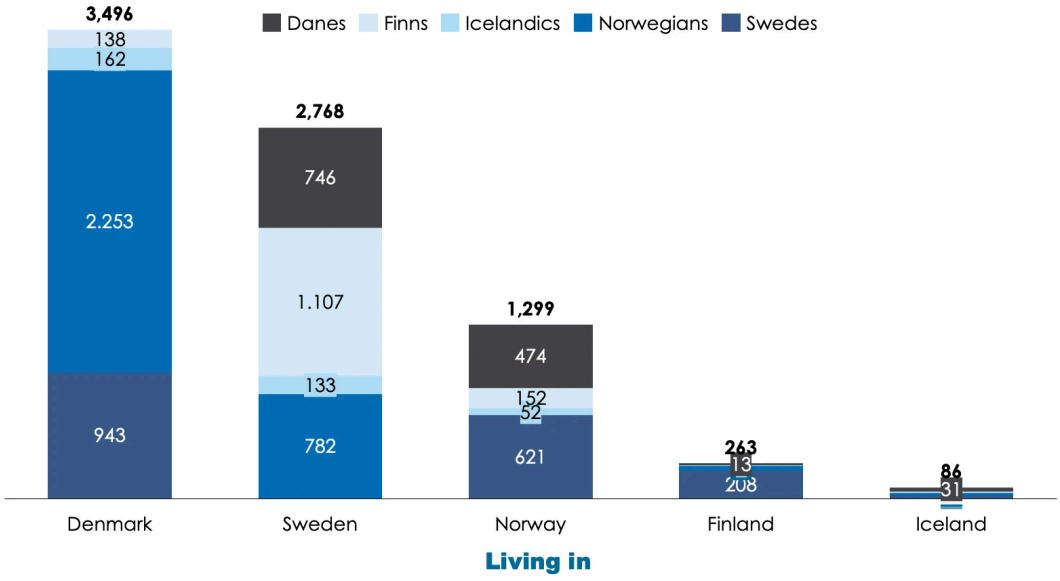
The OECD report points to the same conclusion from an institutional perspective. Cross-border employment services help workers and firms navigate practical issues such as job matching, tax, pensions, unemployment benefits and employment legislation, especially in border regions such as Öresund, the Sweden-Norway border and the Sweden-Norway-Finland border.[164] However, the OECD also finds that cooperation remains incomplete. Nordic public employment services mainly cooperate through information exchange and mutual learning, while systematic data exchange and joint strategies to address shared labour-market challenges remain limited. The Nordic labour market is therefore supported by strong cooperation structures, but it is still not a frictionless common labour market.

Nordic integration already begins before workers enter the labour market. Student mobility can create cross-border networks early in the skills pipeline and make it easier for knowledge to circulate across the region. Nordic students can study across the region through ordinary university admission systems and cooperation programmes such as Nordplus, which supports student exchanges, joint study

164. OECD (2025), The Role of Public Employment Services in Promoting an Inclusive Nordic Common Labour Market (link).

programmes and higher-education networks. Denmark and Sweden are the main destinations for Nordic students studying in another Nordic country, see Figure **43**. Denmark hosts 3,496 Nordic students, mainly from Norway and Sweden, while Sweden hosts 2,768, mainly from Finland, Norway, and Denmark. Norway hosts 1,299 Nordic students, while Finland and Iceland host much smaller numbers. The evidence therefore points to a Nordic education space that supports skills circulation, but with Denmark and Sweden acting as the main hubs rather than mobility being evenly distributed across the region.

Figure 43
Nordic students studying in another Nordic country, by destination and origin, 2024
Number of students



Note: Destination country names show where students study. Legend labels show where students come from.
Source: Nordic Statistics Database, table EDUC13 (link).

The Nordic region is therefore meaningfully integrated, but not fully integrated as one single economy. Trade links give firms access to nearby markets, mobility expands the effective labour and skills base, and cross-border knowledge flows support innovation. However, the evidence also shows that integration is uneven. Trade is embedded in the wider European market, mobility is concentrated in specific corridors, and innovation collaboration extends beyond the Nordics to Europe and global partners. The competitiveness value of Nordic integration is therefore not that the region replaces national or European markets, but that it gives small economies an additional layer of scale, coordination, and resilience.

CASE STUDY

Nord Pool

The Nordic countries have a long tradition of economic integration, which has enabled more efficient use of resources across borders. A prominent example is the integration of power markets, which historically were highly regulated, state-controlled and characterised by limited competition. As part of broader liberalisation reforms in the 1990s, Norway and Sweden established Nord Pool in 1996 as the world's first multinational liberalised power market. Finland and Denmark subsequently joined, creating a fully integrated Nordic power market.[165]

Nord Pool functions as a common marketplace where power producers and consumers trade power in day-ahead and intraday markets. Prices are determined through auction mechanisms within defined bidding zones, ensuring that the lowest-cost – and often renewable – power is dispatched first, while more expensive generation is only activated when needed. At the same time, the market clears cross-border flows, allowing power to move between countries based on differences in supply and demand conditions.

This integration enables the Nordic countries to exploit differences in production structures, including hydropower in Norway and Sweden, wind, and thermal power in Denmark, and nuclear in Finland. By pooling resources across borders, the system improves overall efficiency, reduces costs, and enhances security of supply compared to isolated national markets. Thus, it also supports the efficient integration of renewable energy by balancing variability across countries.

Economic evaluations show that this cross-border integration has generated measurable welfare gains across the Nordic region. Consumers benefit from lower and more stable prices, while producers gain access to larger markets.[166]

Nord Pool has since expanded beyond the Nordic region to include the Baltic countries and other European markets. It has served as a model for broader European power market integration and is widely regarded as a best-practice example of how cross-border integration can improve market outcomes.[167]

165. Bolton (2023), A history of electricity liberalisation: Origins and evolution of the Nordic model (link).
166. Note that benefits are not necessarily evenly distributed, and consumers in traditional low-price areas can be subject to higher prices than they would otherwise. This is the mechanism that has driven debate about market integration in Norway. However, welfare benefits are considered to be positive, see e.g., Lundgreen (2012), Market liberalization and market integration: Essays on the Nordic electricity market (link) or Zakeri et al. (2018), The direct interconnection of the UK and Nordic power market – Impact on social welfare and renewable energy integration (link).
167. Nord Pool (2026, website), The establishment and evolution of the Pan-European Electricity Market (link).

The experience from Nord Pool illustrates the broader potential of Nordic integration. By reducing fragmentation and enabling cross-border markets, integration can create tangible benefits for companies and consumers. While power markets have specific characteristics, the underlying principles may also be relevant for other areas, such as capital markets, where deeper integration could similarly improve efficiency and competitiveness.

The model of a highly integrated Nordic power market integration is, however, under pressure as e.g. Norway is debating whether to renew interconnector capacity to Denmark when current cables reach their technical lifetime.[168] The political debate was sparked by discontent among Norwegian consumers unhappy about high power prices – especially during the energy crisis in 2022 – which they conceive as coming from integration with the European continent and export of cheap Norwegian power.[169] This same debate has led to publicly funded fixed power prices ("Norgespris"),[170] which ensures low and stable power prices for households – thus achieving its redistribution purpose – but also receives extensive critique that the scheme increases the overall consumption, reduces incentives to react to price signals, and can lead to more issues within the power grid.[171]

From an economic perspective, the argument is strongest for increased power market integration, rather than rolling it back, as the overall economic welfare gains associated with trade are positive. This is true both from a Norwegian perspective and a wider Nordic and European perspective, but it can be important to consider redistribution of gains to ensure a socially just transition.

From a Norwegian perspective, the benefits reaped by producers outweigh the costs incurred by consumers, since producers can sell power at a high price to mainland Europe, when the continent faces shortages – often due to low wind and solar output – and buy power at a lower price, when it is abundant – often due to strong wind and solar output. Here, they can utilise hydro assets as natural batteries, where water can be pumped back into reservoirs when prices are low and later used to generate power when prices are higher. Consumers can then be compensated for the incurred cost – either through a fixed price scheme such as Norgespris or, preferably, through a lumpsum transfer to avoid distorting market dynamics.

From a Nordic and wider European perspective, the integration is positive since it can help stabilise power systems by providing needed power when there are shortages and absorbing excess supply when there is too much. This reduces price volatility and improves security of supply. Additionally, cross-border integration is an essential driver for the successful integration of variable power sources such as renewables.[172]

At an overall European level, the European Union Agency of the Cooperation of Energy Regulators (ACER), estimates that cross-border power trade and the integration of power markets in Europe have delivered benefits of around EUR 34 billion per year,[173] highlighting the value of power market integration.

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172. Tattini, J., & Gargiulo, M. (2015). Value of the interconnectors in the Nordic countries (link).
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