4FRONT

10th October 2025

RECLAIMING INNOVATION LEADERSHIP

How to keep Finland at the forefront of tech, innovation, and competitiveness?

4FRONT TEN-YEAR ANNIVERSARY POLICY BRIEF

INNOVATION POLICY IN A NEW ERA

Over the past ten years, innovation and startup policies have changed profoundly. Where EU, national, and regional policy frameworks once evolved largely in parallel, they are now increasingly interconnected. Priorities are often set at the European level, translated into national strategies, and tested in regional ecosystems – which in turn feed back into European networks.

At the same time, innovation has expanded far beyond research and technology. It now shapes industrial renewal, security and defence, sustainability, and the future of work. This broadened scope has made innovation policy more complex, but also more influential, requiring new forms of cooperation across levels and sectors.

At 4FRONT, we have had the chance of being part of this development. Since the establishment of the company in 2015, we have completed more than 220 projects for national governments and agencies, regional actors, and – increasingly – for European institutions.

Reclaiming innovation leadership has been the guiding theme of this brief. Finland's innovation journey over the past decades has been shaped by both achievements and setbacks: from the rise of a global tech leader to years of fragmentation and uncertainty. Yet, Finland has shown the ability to renew itself by turning challenges into opportunities.

Today, as Europe faces profound industrial, technological and societal transitions, the question is not only how Finland keeps pace, but how it contributes to shaping the future of innovation in Europe. We argue that the next decade will bring even stronger interdependence between European, national, and regional innovation policies – as well as increasing importance of innovation in all policy areas.

At 4FRONT, our ambition is to continue strengthening our role in delivering insights and evidence for forward-looking organisations and institutions at European, national, and regional levels. We strongly believe that the true strength of innovation policy comes combining European visions and frameworks with national policies and hands-on regional initiatives.

We would like to warmly thank our Finnish and European clients and partners for the trust and collaboration during the past ten years – and look forward to continuing our shared mission of keeping Finland and Europe at the forefront of tech, innovation and competitiveness.

4FRONT Team

Helsinki, 10.10.2025

Executive Summary – Key Messages

- **Finland's innovation model is entering a new phase**: after a decade of fragmentation, strategic direction and investment are being rebuilt through the 4% R&D expenditure target, multiannual funding framework, and the ongoing process to identify future strategic choices.
- **Finland needs to build on its strengths to keep up with innovation leaders.** This includes:
    - Turning strong R&D performance into growth and productivity
    - Utilising the full potential of R&D incentives
    - Addressing the need for talent
    - Unlocking the power of R&D collaboration
    - Leveraging sustainable innovations as engines of national and regional renewal
    - Becoming one of Europe's leading scaleup ecosystems
- At the same time, **EU's role in innovation continues to grow:** Funding from EU will continue to become more and more important for Finnish national and regional innovation ecosystem actors.
- **European integration is deepening**: innovation, industrial, and regional policies are becoming more and more intertwined. Finland must shift from adapting to EU priorities to actively shaping them.
- **Innovation is becoming increasingly important:** The next decade will be defined by innovation's central role in industrial, sustainability, and security policies. Success depends on collaboration, bold investment, and policy alignment across all levels.
- **In an era of accelerated change, innovation policy must combine speed with direction** – enabling rapid experimentation and learning-by-doing, while maintaining a clear, shared strategic vision that aligns national, regional, and European actors.

1. THE PAST 10 YEARS OF INNOVATION POLICY

From crises to renewal

Finland's innovation policy has long been shaped by crises and structural changes. The recession of the early 1990s is often cited as the turning point when bold investments in research, education, and technology helped the country recover and reposition itself as a knowledge-driven economy. For nearly two decades, Finland was admired internationally for combining economic resilience with a forward-looking innovation strategy.

By the mid-2000s, however, the foundations of this model began to erode. The dominance of the electronics sector, particularly Nokia and its supply chain, created both opportunities and vulnerabilities. When the sector faltered, its share of business R&D dropped sharply—from more than half of national private research in the late 1990s to roughly a third within a decade. At the same time, Finland's other industrial pillars—the forest and metal sectors—were hit hard by global shifts, the financial crisis of 2008, and the collapse of trade with Russia. With no clear new growth sector emerging, the national innovation policy lost much of its strategic orientation.

The lost decade?

The 2010s were marked by attempts at structural reform rather than proactive renewal. Policymakers sought efficiency gains through system-wide changes: universities were merged and re-capitalised, a "third mission" of societal engagement was added to higher education, and state research institutes were consolidated, often with steep funding reductions. Tekes (later Business Finland) was steered toward commercialisation and exports, while direct support for early-stage research was curtailed. These reforms were not without merit, but in practice they created fragmentation. A gap opened between science and business, and different administrative sectors began protecting their own budgets rather than working toward a shared vision.

Public R&D spending was also cut during this period, breaking with the earlier consensus that state investment should lead the way. The cumulative effect was a slowdown in innovation-driven growth. By 2017, the OECD concluded in its external review that Finland had experienced a "lost decade" in research and innovation policy, drifting without a clear strategy or sufficient investment. For a country once seen as a global leader in innovation governance, this was a sobering verdict.

In search of a new growth paradigm

In the 2020s, Finland and Europe have faced unprecedented challenges due to the global pandemic, Russia's war of aggression, and an increasingly tense geopolitical situation. In Finland, these have been compounded by severe pressures on public finances and a slowdown in productivity and economic growth. Amid this turbulence, Finland has sought to re-establish a long-term direction for the research and innovation policy. The parliamentary RDI working group launched in 2021 marked a turning point by setting a binding target: to increase R&D expenditure to 4% of GDP by 2030. The group also proposed a multiannual funding law, strengthening predictability and providing the Research and Innovation Council with a renewed mandate to coordinate policy. The multi-annual plan for state R&D funding adopted in 2024 was the first concrete outcome of this new commitment.

Yet, much of the discussion so far has remained narrowly focused on financing formulas and institutional arrangements. Broader questions—what strategic priorities Finland should pursue, how to integrate societal challenges into innovation policy, and how to reconnect research with business and society—are still open. The process initiated in late 2024 to identify future strategic choices is therefore

crucial. Without substantive direction, Finland risks repeating the mistakes of the previous decade: strong institutions and targets, but insufficient clarity on where renewal should come from.

Meanwhile in the EU: Increasing emphasis on innovation

Over the past decade, the European Union has transformed its innovation policy from a set of research-oriented programmes into a fully-fledged competitiveness and industrial renewal strategy. This shift is visible not only in the size of the budgets but also in the concrete tools and initiatives launched since 2015.

The multiannual framework programmes have long been the flagship instrument of EU research and innovation policy. The eighth programme, Horizon 2020 (2014–2020), introduced the first large-scale emphasis on societal challenges and industrial leadership. Its successor, Horizon Europe (2021–2027), took this a step further by embedding mission-oriented innovation policy as a core feature. The five EU Missions—on climate adaptation, cancer, climate-neutral cities, healthy soils, and ocean health—represent a new strategic tool for aligning research, industry, and societal actors around shared goals.

Equally significant has been the expansions of the EU's toolkit beyond grants such as the InvestEU programme or the European Innovation Council (EIC) under Horizon Europe. With instruments like the EIC Accelerator and EIC Pathfinder, the EIC provides both grant and equity financing to high-risk, breakthrough innovations, particularly targeting startups and scaleups. The EIC has become one of the most important EU-level tools for deep-tech entrepreneurship.

A crucial dimension of EU innovation policy lies in its regional orientation. Since the 2014–2020 programming period, Smart Specialisation Strategies (S3) have been mandatory for regions seeking structural funds for R&I. This requirement has transformed the way innovation is governed at subnational levels: instead of top-down allocation, regions are encouraged to define their own priorities based on entrepreneurial discovery processes. The approach has helped regions specialise in areas where they have genuine competitive strengths, while simultaneously linking them to European value chains. Also for Finland and Finnish regional ecosystems, EU regional innovation policy has become an even more important driver of both funding and strategic positioning.

2. WHERE DO WE STAND NOW? KEY CHALLENGES AND OPPORTUNITIES FOR FINLAND

Building on Finnish strengths to keep up with innovation leaders

In terms of overall innovation performance, Finland still remains among the leading countries in Europe (Figure 1). This is confirmed by the most recent European Innovation Scoreboard (EIS) 2025 of the European Commission. With an overall innovation performance at 125.3% of the EU average, Finland ranks 4th among EU Member States. However, Finland's relative performance in the EIS has been on decline since 2023, and this trend shows its position among the leaders can be challenged in the future. Denmark, Norway and the Netherlands continue to outperform Finland in the EIS, and Ireland is quickly catching up.

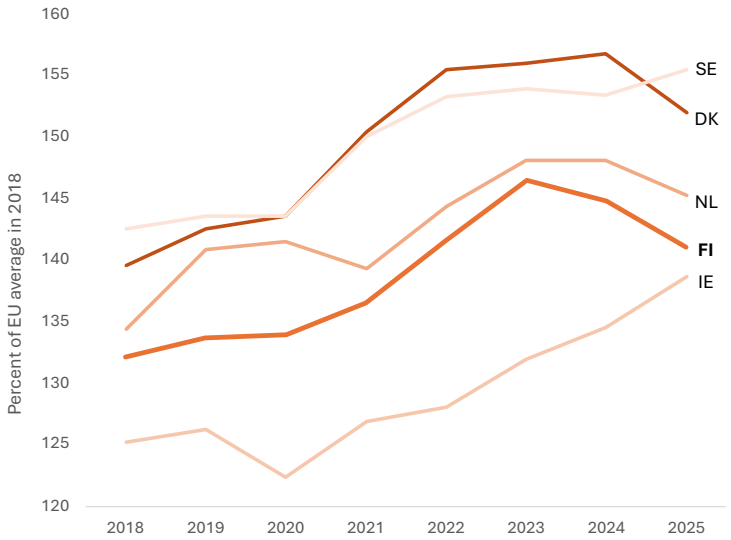

Figure 1: European Innovation Scoreboard summary index in % of the 2018 EU score for Finland and key benchmark countries 2018 – 2025

Finland's innovation strengths stand out in several areas, particularly in digital skills and research excellence, while the biggest challenges for Finland lie in the areas of productivity, tertiary education, and government support for R&D.

Strengths 2025	Weaknesses 2025
Digitalisation. Finland ranks first in individuals with above basic overall digital skills, as well as in employed ICT specialists and business use of cloud computing.	**Resource productivity (Rank: 27th) and production-based CO2 productivity** (22nd) remain among the weakest in the EU, reflecting heavy material consumption.
VC Investments. Finland ranks third in VC expenditure.	**Tertiary education.** The share of the population with tertiary education lags behind the EU average (Rank: 22nd).
Research collaboration. Finland ranks fifth in international scientific co-publications and public-private co-publications.	**Direct and indirect government support of business R&D** is comparatively low (Rank: 19th)
Lifelong learning. Finland ranks first in the EU for adult participation in education.	**Exports of medium and high-tech products remain below average (Rank: 17th).** However**,** knowledge-intensive services exports is a relative strength (6th).

In the **Regional Innovation Scoreboard (RIS) 2025**, all five Finnish regions (i.e. suuralue) perform above the EU average. Helsinki-Uusimaa was ranked as the 8th most innovative region in Europe and remains the country's engine of innovation. In the areas of ICT employment, international co-publications, and patent activity, it even ranked first among all regions in Europe. Länsi-Suomi stands out as the European leader in cloud computing in enterprises. However, Finland's overall RIS performance has declined between 2023 and 2025 in all regions (except in Åland), thus reflecting a similar downward trend in regions as in the EIS.

The European Innovation Scoreboard and Regional Innovation Scoreboard

The European Innovation Scoreboard (EIS) is produced annually by a consortium of experts and published by the European Commission. The Regional Innovation Scoreboard (RIS) is only produced biannually, and the latest version was published in 2025. Since 2024, 4FRONT is part of the international team (led by EFIS Centre) updating and developing the EIS & RIS scoreboards. In the previous iteration of the EIS/RIS, 4FRONT has worked closely on revising the indicator framework to better reflect technological changes ongoing policy priorities. Take a closer look at European Innovation Scoreboard

In the following sections we highlight some of the key challenges and opportunities of the Finnish innovation policy performance in more detail, drawing on additional insights and data from some of our recent studies and projects.

Turning strong R&D performance into growth and productivity

In the EIS 2025, Finland outperforms the EU average in several R&D related indicators. Public sector R&D expenditure stands at 145.0% of the EU 2025 average, while business sector R&D expenditure, mostly driven by large enterprises in the ICT sector, has remained on a steady positive trend (+4.5%-points from 2024) and represents 141.4% of the EU 2025 average.

Finland has the highest number of R&D-intensive SMEs[1] in Europe, as well as the highest ratio of SMEs that are engaged in R&D in the EU (Figure 2). Finland also ranks first in the share of young (less than five-year-old) SMEs that are intensively engaged in R&D activities.[2]

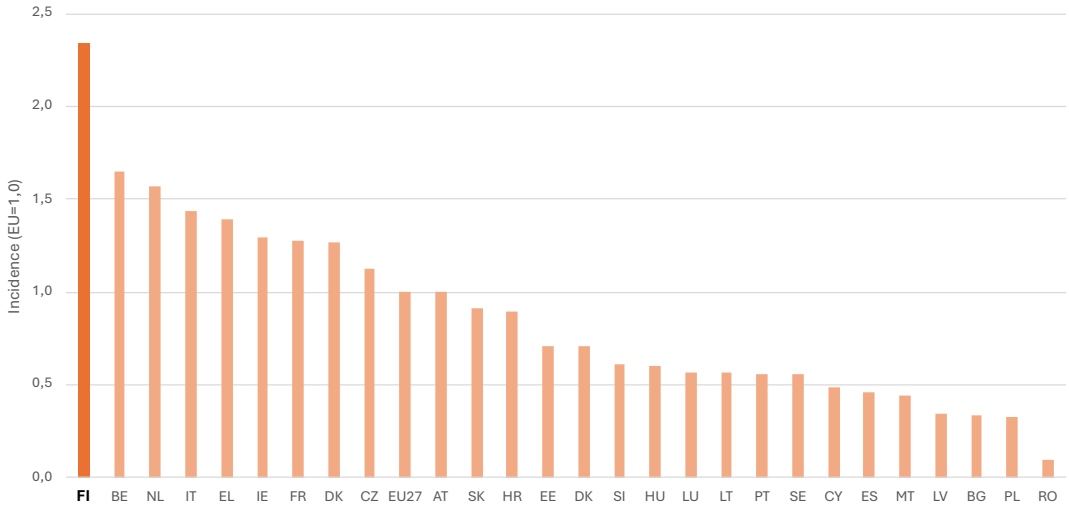

Figure 2. Incidence of R&D intensive SMEs in EU Member States (R&D intensive firms per hundred firms relative to the EU's incidence, EU average = 1,0). Data from 2021. Source: JRC Innovative Firms Dashboard.

Despite performing strongly in R&D, Finland's productivity and revenue growth are lagging its international peers. Although there are many reasons, one key finding is that Finland is clearly behind countries like Sweden in intangible investments beyond R&D—such as brand building, design, and the adoption of digital technologies. Closing this gap will require targeted policy measures, more effective

[1] SMEs which have expend at least 10% of their total operating costs in R&D activities, either externally or internally, in at least one of the previous three years.
[2] Source: JRC innovative firms dashboard (data from 2021).

funding instruments (including equity financing), and stronger incentives for technology uptake and innovation scaling. It is important not to view research and development too narrowly and overlook other forms of intangible investment.[3]

Utilising the full potential of R&D incentives

Direct measures, such as grants and loans, are often seen as more effective in generating immediate multiplier effects, while indirect measures, particularly tax incentives, can broaden participation and lower barriers for firms of different sizes. Across Europe, governments have increasingly turned to tax-based incentives, reflecting both international policy trends and growing evidence of their effectiveness in stimulating private R&D. In Finland, however, the overall level of government support for business R&D—whether direct or indirect—remains significantly below the EU average. This raises important questions about the appropriate mix of instruments and how different approaches can best serve the needs of Finnish enterprises in a competitive global landscape. There are several important reasons behind the increase in tax incentives.

On the one hand, there is pressure from international trade and competition rules to move away from direct business support. On the other hand, knowledge and experience on the design, functionality, and efficiency of tax incentives have increased, and according to various estimates, tax subsidies have at least the same incentive effects as direct R&D subsidies – especially for small and medium-sized enterprises. In 2023, a total of 23 EU countries offered companies cost-based R&D tax incentives. The total volume of tax incentives for corporate R&D investments has already surpassed direct R&D subsidies to companies in the EU in 2015 and in the OECD in 2016. Tax incentives have thus become the main means by which most governments encourage companies to increase R&D investments.[4]

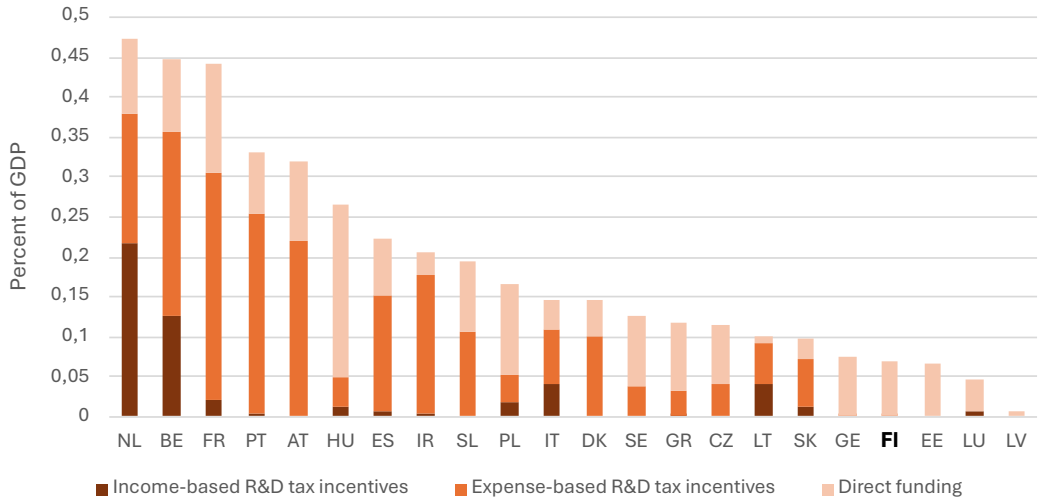

Figure 3: Direct and indirect government R&D incentives for companies, as percentage of GDP in 2021. Source: OECD, 2024.

Due to their different nature, R&D tax subsidies should be designed to complement, rather than replace direct R&D subsidies. This has been done in most European countries, especially in the recovery after

[3] The innovation potential and the challenges of RDI activities of Finnish SMEs were assessed in our recent study assigned by Ministry of Economic Affairs and Employment of Finland. The study is available here.
[4] OECD (2025). R&D tax incentives continue to outpace other forms of government support for R&D in most countries.

the financial crisis and the corona pandemic.[5] At the same time, competition for R&D investments by international companies has intensified, and tax incentives play a role in attracting investments.

Finland's approach to R&D tax incentives has long differed from the mainstream practices of the EU and OECD and, until recently, indirect instruments were applied only cautiously and on a limited scale. High hopes were attached to the new incentive introduced at the start of 2023, which was expected to generate broader and more substantial impacts than earlier schemes. However, as with previous attempts, implementation has faced significant challenges. Nevertheless, tax incentives remain an essential element of Finland's research and innovation policy toolbox. The scope and design of these incentives, and the degree to which they complement direct support measures, will be among the defining policy questions for the coming years.

Unlocking the power of R&D collaboration

Strengthening collaboration between HEIs, public research organisations, and companies has been identified as one of the key objectives of Finnish innovation policy. While the EIS 2025 results show that public-private R&D collaboration (measured in public-private co-publications) is still one of the strengths of the Finnish research and innovation system, collaboration has substantially decreased during the last decade, and there are many opportunities for improving the Finnish research-business collaboration.

The recent expert country review of Finland's R&D collaboration through the European Commission's Policy Support Facility identified several barriers to public-private R&D collaboration that require action, and it provided concrete recommendations to broaden the base of companies engaged in R&D. These recommendations include, for example, developing tailored instruments to encourage SMEs to hire researchers, creating stronger incentives for universities to prioritise collaboration with businesses, strengthening the role of Business Finland and the Academy of Finland through better coordination and adequate resources, and strengthening the commitment by sector ministries to promote R&I.

Horizon Europe Policy Support Facility

4FRONT is part of an international consortium that delivers the European Commission's Horizon Policy Support Facility. Over the years, our experts have supported authorities in Latvia, Croatia and Czechia in reforming their R&I systems. In 2025, 4FRONT was part of an expert panel performing a review of Finland's R&D collaboration. The final report for this is available here.

Becoming one of Europe's leading scaleup ecosystems

There is a dynamic and active start up community in Finland. When comparing the number of startups and scaleups[6] per inhabitant, Finland ranks 5th among all EU countries, with around 22 startups for every 100 000 inhabitants. Finland is also among the leading countries when it comes to VC investments: Venture Capital investments into Finnish companies as percentage of GDP, were the fourth highest in Europe in 2024.

[5] González Cabral, A., S. Appelt and T. Hanappi (2021), "Corporate effective tax rates for R&D: The case of expenditure-based R&D tax incentives", OECD Taxation Working Papers, No. 54, OECD Publishing, Paris

[6] Startups are considered companies that are max. 10 years old, have received VC or other innovation funding and have been founded or their HQs in the respective country. Scaleups are considered companies that are founded after 1990, and have received at least 3 million EUR in VC funding or any Series A funding have their HQs in the respective country.

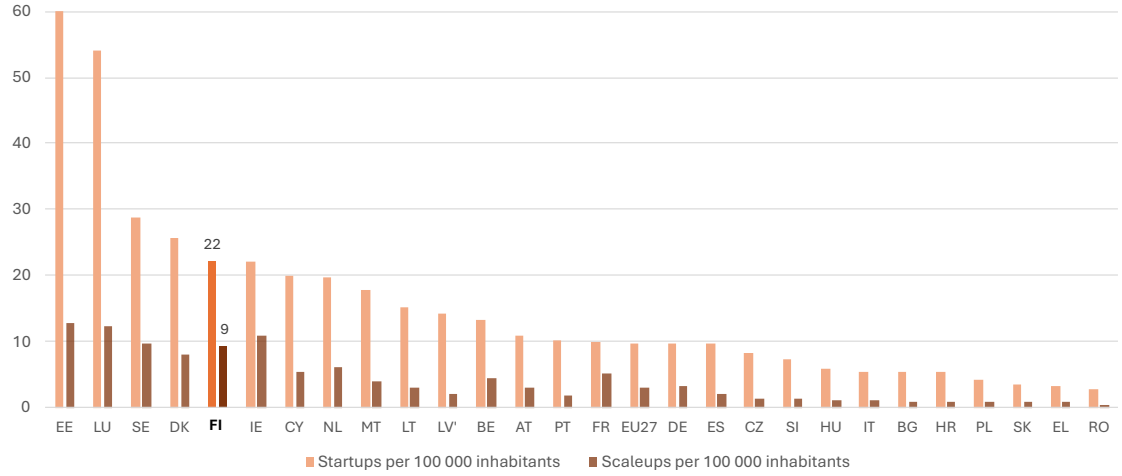

Figure 4: Number of startups and scaleups per 100 000 inhabitants by country in 2025. Data source: Dealroom

Despite the reasonably positive development of the volume, internationalisation, and returns of the venture capital market, the Finnish venture capital market still has niches and development challenges, such as the special needs of the green transition, the capacity of domestic venture capital investors to attract larger financing rounds, and the need for complementary financing instruments as the market develops.[7]

In particular, the typically small fund sizes of Finnish VC investors and the small number of large VC funds limit the ability of Finnish investors to act as lead investors, especially in later-stage rounds. This can be seen as a major bottleneck and something that should be addressed if Finland is to become one of the leading scaleup ecosystems in Europe.

European Startup and Scaleup Scoreboard

4FRONT is currently leading a consortium that is developing the European Startup and Scaleup Scoreboard for the European Commission. The pilot study will also include definitions of startups, scaleups, deeptech and innovative companies. The scoreboard will play a key role in the monitoring of the impacts of the Commissions Startups and scaleup Strategy. The results of the first scoreboard are expected to be released in early 2026.

Leveraging sustainable innovations as engines of national and regional renewal

Sustainability has become a defining driver of competitiveness across Europe. In Finland, the government has played a strong steering role in the transition, reflected in above-average sustainability-related R&D funding and increasingly stringent policy frameworks. Yet, comparative performance indicators reveal persistent gaps: Finland lags behind benchmark countries in material productivity, CO_2 efficiency, and the export share of environmental products. The Eco-Innovation Index confirms that, while Finland scores well in supportive policies and R&D investment, the conversion of these inputs into concrete eco-innovation outputs and market impact remains underdeveloped.[8]

[7] For further analysis, see also the evaluation of Finnish Industrial Investment in 2023. https://julkaisut.valtioneuvosto.fi/handle/10024/165082

[8] European Commission: Directorate-General for Research and Innovation (2024): EU eco-innovation index 2024, Publications Office of the European Union, 2024

These shortcomings represent untapped potential. Finland can strengthen its eco-innovation capacity by mobilising its regional ecosystems, each with its distinct sectoral strengths. From circular bioeconomy solutions in Eastern and Northern Finland, to clean energy and smart mobility in the West, and digital green technologies in Helsinki-Uusimaa, these ecosystems provide high potential for driving eco-innovations. When combined with a vibrant startup and scaleup scene, as well as strong public R&D investment, these ecosystems can serve as testbeds for solutions that not only meet domestic sustainability goals but also scale into international markets.

4FRONT's effort in supporting regional innovation ecosystems

4FRONT works closely with European and Finnish regional ecosystems in supporting them to develop their interregional value chains and regional innovation ecosystem. For instance, since 2023, 4FRONT has been part of the Smart Specialisation Community of Practice of the European Commission to help European regions and regional partnerships to develop their interregional innovation capacities. Also, 4FRONT provided advice and technical assistance to Finnish municipalities in their efforts to lead the green and digital transition as part of the European Commission's Intelligent Cities Challenge (ICC).

Addressing the need for talent

In the EIS 2025, Finland excels in share of population engaged in lifelong learning (highest in the EU), and also performs clearly above the EU average in the number of new doctorate graduates (6th). However, when looking at the more general indicator of tertiary education attainment, Finland lags significantly behind (22nd). This apparent contradiction reflects Finland's education pipeline: while the system produces a relatively high number of PhDs, the proportion of the population completing bachelor's and master's degrees remains lower than in peer countries.

At the same time, demographic trends are tightening the labour market. Finland faces one of the fastest rates of population ageing in the EU: the share of people aged 65 and over rose from 29% in 2013 to 38% in 2024, one of the highest levels in Europe. Combined with the declining share of highly educated individuals in the workforce (53% in 2023, below benchmark peers though still above the EU average) this poses a long-term risk to innovation capacity and economic renewal.

To sustain its innovation capacity, Finland will need to reform higher education to broaden participation and better align study pathways with emerging skill needs, while simultaneously strengthening its ability to attract and retain international talent.

3. THE NEXT 10 YEARS – INCREASING IMPORTANCE OF INNOVATION

Looking ahead, the European and Finnish innovation landscapes are entering a decade of accelerated change. The drivers of competitiveness are no longer confined to education, science, and technology policy. Instead, innovation has become deeply intertwined with industrial strategy, security, and societal renewal. Over the next ten years, several broad developments are likely to shape both the EU and Finland's role within it.

EU's role in innovation continues to grow – towards a genuine European single market for research and innovation

Over the past decades, the EU FPs have become a major source of funding in Europe, and its relevance for Finnish R&I actors has increased significantly. Today, the FPs make up almost 8% of the EU's overall budget, growing much faster than the Finnish government budget allocation to R&D. The early Framework Programmes accounted for only about 2–3% of what Member States together spent on R&D. Today, Horizon Europe (FP9) makes up roughly 11–13% of that total. Looking ahead, the Commission's proposal for the post-2027 period could push this share beyond 15%, further strengthening the EU's role in funding research and innovation. This shows that funding from EU FPs is growing much faster than Finland's national funding for R&D, and will thus continue to become more and more important for Finnish national and regional innovation ecosystem actors.

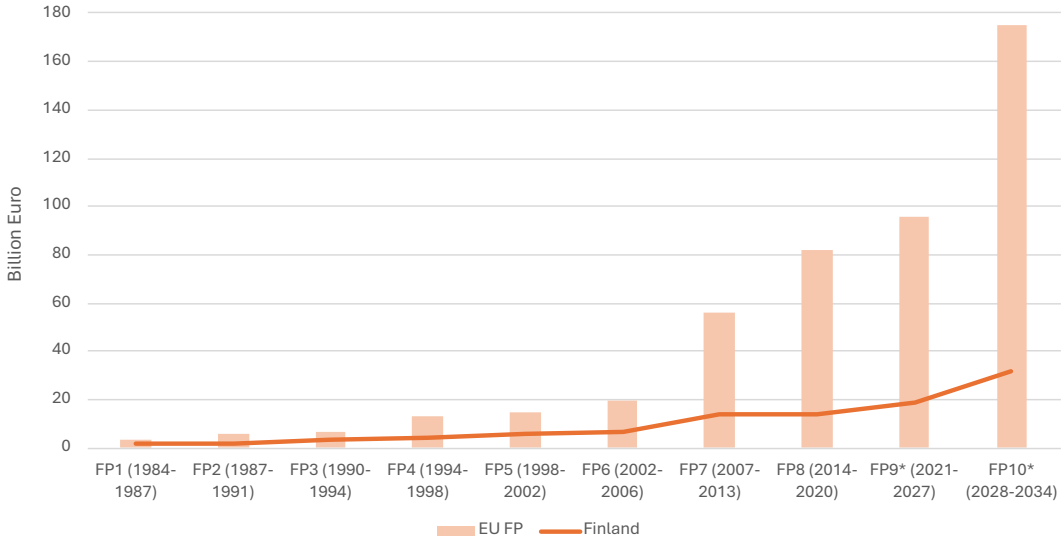

Figure 5: Development of EU Framework Programme volumes versus Finnish government budget allocations to R&D (billion euros, indicative). Source: Various.

Currently, preparations for the tenth framework programme (FP10) are already underway. A doubling of the budget and the creation of a dedicated Competitiveness Fund for Research and Innovation and a European Scaleup Fund are under discussion. These developments illustrate how framework programmes are evolving from funding instruments into strategic levers for Europe's long-term industrial and technological positioning.

Despite years of progress, Europe's innovation system remains fragmented. Research funding is still primarily national, capital markets are underdeveloped, and the scaling of startups across borders is slow. In the 2020s, greater integration of the European Research Area and a push towards a Capital Markets Union for innovation will be decisive. If successful, this could allow European innovators to operate at the same scale as their American and Chinese counterparts. For Finland, this means not just participating but actively shaping niches where its ecosystems—digitalisation, health data, clean tech—can anchor European value chains.

Innovation will become even more integral part of all sectoral policies – especially in safety and security

In the next decade, innovation policy is expected to continue shifting from a narrow focus on research and technology towards a broad, cross-cutting role in industrial and societal renewal. Innovation is increasingly seen as a lever for Europe's industrial strategy, green transition, and digital sovereignty. Innovations and novel approaches are urgently needed across all policy sectors.

Russia's war in Ukraine, global supply chain disruptions, and heightened geopolitical competition have made security and defence an integral part of innovation policy (and vice versa). The EU's Competitiveness Compass and the implementation of the Draghi report point to a reorientation where industrial, technology, and defence policies are merged. This shift will likely benefit larger member states with strong defence industries, but smaller innovation-driven countries like Finland must also define their role. Cybersecurity, dual-use technologies, and Arctic resilience could become natural areas of Finnish specialisation.

Traditionally, research and innovation policy enjoyed a relatively technocratic status, often insulated from day-to-day political battles. This too is changing rapidly. As innovation becomes a central tool for addressing societal challenges—from the green transition and digital sovereignty to security and defence—it is increasingly drawn into the political arena. Competing priorities, ethical and distributional questions, and industrial interests make innovation policy less about neutral knowledge and more about contested choices. This politicisation is not inherently negative: it can bring visibility, resources, and urgency. But it also raises the risk of short-termism and fragmentation if long-term innovation goals are captured by immediate political pressures.

Agile regulation of emerging technologies creates competitive advantages

A key challenge for the European Union and its Member States will be to strike a delicate balance between upholding the Union's core regulatory values—such as transparency in decision-making, sustainability in economic and environmental practices, and the security and safety of citizens and markets—while simultaneously addressing the growing demand to streamline and simplify rules and procedures to support the development and uptake of new technologies. On the one hand, these values are fundamental to the EU's identity and legitimacy, ensuring trust, accountability, and long-term societal cohesion. On the other hand, excessive red tape and complex compliance requirements are discouraging innovation, slowing down investment, and placing heavy administrative burdens on both businesses and public administrations. The central question, therefore, is whether the EU can maintain high regulatory standards without compromising competitiveness, by designing smarter, more adaptive, and proportionate regulations. The EU has the opportunity to be the frontrunner in developing and implementing highly innovative regulatory regimes for new technologies that can serve as an example globally.

As highlighted by the recent AI Act and Net Zero Act, and the proposed European Innovation Act, regulatory sandboxes and regulatory experimentation are becoming an essential part of EU

competitiveness and innovation policies. For Finland, the opportunity lies in becoming a testbed for next-generation regulatory practices, turning compliance into competitive advantage.

Innovation-friendly regulation and regulatory sandboxes

4FRONT has worked on multiple studies in the field of innovation-friendly regulation and regulatory sandboxes, both in Finland and the EU. Most relevant examples include a study on the current-state of innovation-friendly regulation, an analysis of new approaches for innovation-friendly regulation in growth sectors, a European Commission study assessing the costs and benefits of innovation-sensitive legislation and a study for EISMEA on regulatory sandboxes and regulation of emerging technologies. Currently, 4FRONT is supporting the Region of Ostrobothnia in setting up regulatory sandboxes in the energy sector.

Development of deep tech ecosystems will define European startup landscape

In the coming decade, Europe's competitiveness will depend increasingly on its ability to scale companies into global players and nurture deep-tech breakthroughs. Fields such as artificial intelligence, quantum computing, and synthetic biology demand long-term investment, specialised talent, and regulatory environments that balance trust with speed. Finland's strong digital skills base and startup culture provide a solid launchpad, but the real test lies in scaling these ventures into internationally competitive firms. Achieving this will require not only national effort but also European-level coordination in financing, regulation, and industrial policy to ensure that innovations can grow and compete on a global stage. In this context, recent forthcoming EU initiatives such as the new Commission Innovation Agenda, the Startup and Scaleup Strategy, and a proposed European Innovation Act are set to play a decisive role in shaping the framework conditions for growth. For Finland, the key will be to align its national strengths with these EU-level priorities, positioning itself as an active shaper of Europe's emerging deep-tech landscape.

Accelerated change needs speed combined with direction

In times of accelerated change, innovation policy must combine agility with a strong sense of direction. The pace of transformation in technology, markets, and geopolitics demands faster experimentation, adaptive governance, and learning by doing. Yet speed alone is not enough: without a shared direction, the innovation system risks fragmentation and wasted effort. Clear strategic priorities and long-term orientation are needed to align actors across government, research, and industry—turning rapid reactions into coherent renewal.

Mission-oriented programmes, such as those in Horizon Europe, have already represented a step in this direction. They have succeeded in mobilising attention around challenges like climate adaptation, cancer, and sustainable cities, but implementation has not been straightforward. Missions often overlap with existing instruments, struggle with governance complexity, and require new forms of cross-sector collaboration and experimentation that are not yet fully developed. For Finland, this means ensuring that national strategies align with European missions, while also identifying niches where Finnish expertise can shape and influence EU-wide priorities.

How to keep Finland at the forefront of tech, innovation and competitiveness? The million-euro questions

1. Are we ready and committed to building a genuine European single market for R&I, and fully engaging with EU-level planning?
2. How can Finland best position itself in the European R&I single market, turning its small size and security challenges into opportunities and added value?
3. When building alliances in R&I, should Finland partner with the big and strong or with the small and agile-and are the Nordics partners or competitors?
4. As innovation becomes more complex and systemic, while policy tools remain narrowly focused on R&D, is Finland at risk of losing direction as an innovation leader-and how can we avoid this with limited resources?
5. Do we have the courage to take bold risks and commit resources to new openings?
6. Amid accelerated change, can Finland build an innovation system that moves fast without losing direction-combining rapid experimentation and learning-by-doing with a clear, shared strategic vision?

4FRONT is an expert company delivering leading-edge evaluations, analyses, and advisory services for forward-looking organisations and institutions at European, national, and regional levels. We support our clients in building effective institutions and future-fit policies for innovation, technology, research, and education.

Selected recent references for EU institutions:

- EIC and SMEs Executive Agency EISMEA (2025 - ongoing): **Exploratory Study on the European Startup and Scaleup Scoreboard**
- European Commission, DG RTD (2025 - ongoing): **Fostering academia – public authorities co-operation for value creation in Research & Innovation.**
- European Commission, DG RTD (2024 – ongoing): **European Innovation Scoreboard (EIS) and the Regional Innovation Scoreboard (RIS) 2024-2027.** Link
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