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Copenhagen Economics

# SUMMARY: DEVELOPING A THRIVING INNOVATION AND VENTURE CAPITAL ECOSYSTEM IN OSLO

OSLO SCIENCE CITY
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# BACKGROUND: AN URGENT NEED TO PREPARE FUTURE GROWTH ENGINES FOR THE NORWEGIAN ECONOMY

Norway is among the most productive economies globally and ranks well above the EU average in terms of GDP per capita (even excluding offshore sectors). This strong performance reflects a highly skilled population, high educational attainment, generally efficient capital markets, and sound economic institutions.

However, the high productivity of mainland Norway remains to some extent linked to the oil and gas sector. Petroleum-related activities offer some of the most productive and best-paid jobs in the economy and therefore attract a significant share of highly skilled labour. This is a natural outcome in a market economy, where talent flows towards sectors with the highest productivity and returns.

As oil and gas activity is expected to decline over time,[1] Norway will need to transition towards new high-productivity sectors to sustain its economic performance. This will offer both a challenge, where high-paid jobs disappear, decreasing tax base and employment, and a possibility, where high-skilled labour becomes available to other parts of the economy.

Norway's flexible labour market with high educational levels and strong academic performance provides a strong basis for such a transition. The strong academic performance positions Norwegian researchers centrally in creating the future growth engines in Norway by turning high-quality research into commercially successful companies.

However, company dynamics and capital allocation are less adaptive. Norway has a relatively low rate of commercialisation of innovation and lacks a sufficiently strong venture capital (VC) ecosystem to scale new firms and develop alternative growth engines. Strengthening the VC ecosystem is a key element in improving the future competitiveness of the Norwegian economy.

Strengthening the innovation and VC ecosystem is therefore urgent. Developing new growth engines must begin well before the oil and gas sector phases down, as building a thriving, self-reinforcing ecosystem for innovation and scaleups takes time – often one to two decades. At the same time, heightened geopolitical tensions, defence needs, and the push for strategic autonomy increase the urgency of developing strong domestic and European innovation capacity. Acting now is essential if Norway is to remain a highly productive economy in the post-petroleum era and a competitive, resilient part of the European economy.

Against this background, Oslo Science City has commissioned Copenhagen Economics to conduct a study on how to develop a thriving innovation and VC ecosystem in Oslo, capable of generating future corporate growth engines for the Norwegian economy.

The study is structured around three core elements:

[1] In practice, many expect that production of oil and gas will stay high in years to come, but investments and new exploration will likely decrease. This will in turn reduce the need for highly skilled labour in the sector.

1. **Knowledge foundation:** An international benchmarking of the Norwegian innovation and VC ecosystem.
2. **Assessment of current policy tools, framework conditions, and economic structures:** Evaluating how effectively existing instruments support innovation, commercialisation, and access to risk capital.
3. **Recommendations:** Identifying concrete and targeted measures to strengthen the ecosystem and accelerate the development of new growth engines.

# KNOWLEDGE FOUNDATION: RESEARCH-BASED INNOVATION AND THE NORWEGIAN VENTURE CAPITAL ECOSYSTEM

## WHAT IS A VC ECOSYSTEM?

A thriving VC ecosystem capable of commercialising investable ideas rests on two core pillars.

- *First*, a strong innovation and research base that generates a continuous pipeline of investable ideas and founders. This includes high-quality research, effective technology transfer, and incentives that encourage researchers and entrepreneurs to pursue commercialisation.
- *Second*, access to sufficient private risk capital to fund startups and scaleups across all stages of development. Without capital at seed, early, and later stages, even strong ideas cannot grow into viable companies.

When these two pillars interact effectively, they create a self-reinforcing dynamic. Successful entrepreneurs reinvest their experience and capital by becoming angel investors, founding new VC funds, or actively mentoring new startups through ownership and board roles. In short, successful ecosystems turn "founders into funders."

This dynamic is a defining feature of leading innovation hubs globally. However, such ecosystems are difficult to build. They take time, patience, and sustained investment in underlying structures – both regulatory and financial. It often takes one to two decades to develop a mature, self-reinforcing VC ecosystem.

This part of the study analyses these two pillars to assess whether the necessary conditions are in place in Norway – and in Oslo in particular – to support effective commercialisation of innovation.

## LACK OF RISK CAPITAL – THE PRIMARY CONSTRAINT

The most important barrier identified across interviews with stakeholders is a lack of risk capital – especially affecting early-stage companies.

The data clearly confirms this assessment. Over the past three years, VC investment in Norway has averaged around EUR 200 million per year. Adjusted for the size of the economy, this level is well-below Nordic peers and even below the EU average, which is in clear contrast to Norway's high productivity and general strong scientific base.

**Figure 1**
**Average total yearly VC investments**
Share of average GDP (in basis point)


Note: Data depicts numbers based on the domicile of the portfolio company – not the domicile of the investor. One basis point is equal to 0.01 per cent.
Source: Invest Europe (2025), Private equity activity report 2007-2024 by country.

This pattern is consistent across the entire value chain – seed, start-up VC, and later-stage VC – all of which remain below the EU average and Nordic peers.

Fundraising provides a forward-looking indicator of future investment capacity. Here, the picture is even more concerning. Over the past three years, Norwegian VC funds have raised less than EUR 100 million per year. Relative to the economic size, the EU average is roughly four times higher, while Sweden has raised around eight times more capital.

Without sufficient capital, even the most promising ideas will lack the resources needed to grow and scale.

On growth capital, exit opportunities, and access to capital for listed companies, Norway fares better, indicating that successful scaleups are well positioned for further growth.

## PIPELINE OF INVESTABLE IDEAS – SOLID, BUT WITH ROOM FOR IMPROVEMENT

Norway has solid innovation fundamentals and performs above the EU average on the European Commission's Summary Innovation Index. In particular, Norway scores strongly on indicators related to scientific output, including the quality and internationalisation of scientific publications. This points to a strong underlying research base and high-quality knowledge production, providing a sound foundation for innovation and commercialisation.

This strong academic performance positions researchers centrally in creating the future growth engines in Norway – if commercialisation can be increased.

Besides strong research institutions, Oslo boasts a wide range of organisations offering extensive entrepreneurial support to startups linked together within Oslo Science City. The innovation districts consist of Technology Transfer Offices (TTOs), incubators, pre-seed funds offering, and research and technology offices (RTOs) expertise, guidance, and capital to startups emerging from the universities. However, several challenges are evident in the transfer from universities to the market in Oslo:

- **TTOs** are primarily privately organised and play an important role in supporting entrepreneurship. However, they also face commercial revenue requirements, which may incentivise licensing research to established corporations rather than supporting founders in building new companies. This can reduce the likelihood that strong research ideas are spun out into startups.
- **Incubators play a crucial role in early-stage innovation**, but many lack sufficient funding to provide capital to the most promising companies. There is a case for allocating more funding closer to companies, rather than through centralised programmes. Incubators are often better placed to assess teams and commercial potential, as the quality of the team is often more decisive than the initial idea.
- **Academic incentives remain skewed towards publications and citations**, with limited rewards for innovation and commercialisation. This reduces incentives for researchers to pursue applied or commercially oriented research.

In this context, note that science-based innovation is often harder to commercialise than market-driven innovation, requiring specialised expertise, patient capital, and longer timelines. Many VC ecosystems therefore develop first around consumer and software innovation before expanding into science-based sectors.

# CURRENT POLICY TOOLS, FRAMEWORK CONDITIONS, AND ECONOMIC STRUCTURES

## SECTOR COMPOSITION

Norway's starting point for building a VC ecosystem differs from that of many peer countries. In a free market economy, both capital and talent naturally gravitate towards sectors with the highest risk-adjusted returns. In Norway, the oil and gas sector has historically offered exceptionally high productivity and returns, attracting a significant share of skilled labour and capital.

As a result, innovation- and VC-dependent sectors such as ICT and life sciences account for a relatively small share of the Norwegian economy – around 5 per cent – compared with approximately 12 per cent in Denmark and 10 per cent in Sweden. This implies that stronger policy support and more targeted public capital are required to build viable innovation and VC ecosystems than in economies where innovative and capital-intensive sectors already play a larger structural role.

## TAXATION AS A KEY FRAMEWORK BARRIER

Across interviews, taxation emerges as the most significant obstacle in the current framework conditions – in particular the wealth tax and the exit tax, which are especially challenging for startups and scaleups.

The wealth tax reduces incentives both to found startups and to invest in them. Founders are required to pay wealth tax as the value of their company increases, even though no gains have been realised. In practice, this often forces founders to sell shares or take up personal debt to meet tax obligations. This weakens ownership incentives and can make startups less attractive to angel investors and early-stage capital providers.

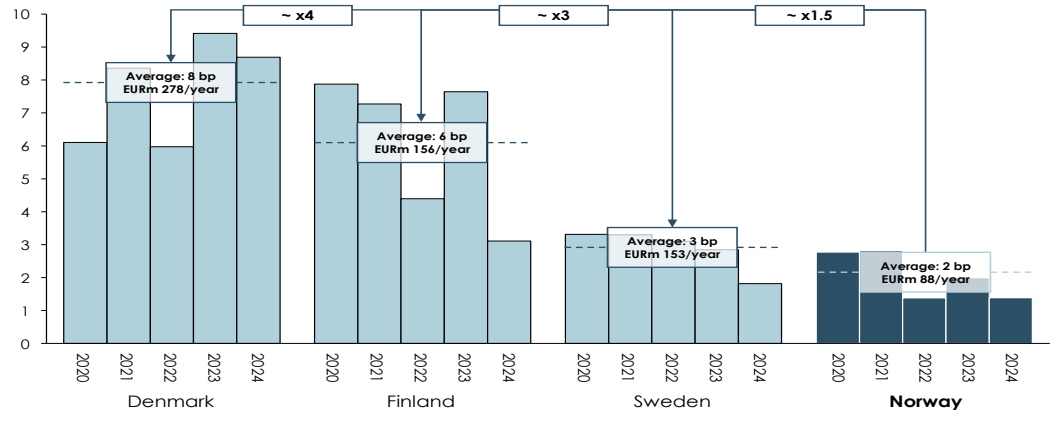
The exit tax further exacerbates these challenges. For successful founders and key employees, the tax creates incentives to relocate early – before large funding rounds raise company valuations – rather than scaling the business in Norway. At the same time, the exit tax discourages experienced international talent from relocating to Norway. Such talent is typically compensated through equity or stock options, and the prospect of facing an exit tax of up to 38 per cent on unrealised gains if they later leave Norway represents a significant deterrent.

The existing tax framework does not prevent the development of an innovation and VC ecosystem, but it raises the threshold for success. As a result, greater public effort and stronger complementary measures are required compared to a scenario with more neutral tax conditions.

## PUBLIC CAPITAL

Public capital for VC is low in Norway compared to peer countries, particularly when viewed against the structural barriers to building a functioning innovation and VC ecosystem. Measured relative to the size of the economy, public investments are estimated to be up to 4 times lower than in comparable Nordic markets. This reflects how other European countries treats VC as a competitive parameter benefiting the wider economy.

**Figure 2**
**VC and Seed investment by public investment companies, 2020-2024**
Share of GDP (in basis points)




Note: See methodology behind estimate in the background report. "bp" is short for basis point.
Source: Annual report from public investment companies in each country. Norway: Investinor & Nysno. Sweden: Industrifonden & Almi Invest. Finland: Teollisuussijoitus. Denmark: EIFO (2023-2024) & Vaekstfonden (2020-2022).

In a nascent VC market, such as Norway's, this level of public capital is insufficient to catalyse ecosystem development. International experience shows that public capital is most critical in early-stage and immature markets, where private capital, track records, and institutional participation are still limited.

Importantly, the composition of public capital matters as much as its volume. In Norway, around two thirds of public capital is provided directly to companies, rather than to VC funds. This is in sharp contrast to the other Nordic countries, which all invest more in funds than directly in companies. From an ecosystem perspective, this is a suboptimal allocation. Capital channelled through funds has multiplying and accelerating effects: Successful funds build track records, attract follow-on private capital, raise larger successor funds, and ultimately become self-sustaining without public backing. Direct company investments have it benefits in a complementary role but does not generate these system-level dynamics.

# RECOMMENDATIONS

Based on the analysis, we set out a set of recommendations aimed at strengthening innovation, improving commercialisation, and supporting the gradual development of a self-reinforcing VC ecosystem. These recommendations represent initial steps to help kick-start innovation, strengthen commercialisation, and support the further development of the VC ecosystem.

These recommendations should be seen as ways to build on and scale up the many strong initiatives already underway in Oslo's VC community – the key challenge is not the quality of activity, but the need to achieve greater scale and momentum.

Note that international experience shows that ecosystem development takes time and requires sustained, coordinated effort. Early phases often involve experimentation and learning, and not all measures will be optimally designed from the outset. Therefore, it is central that objectives and expectations must be long-term and realistic.

## RESEARCH-BASED INNOVATION AND LOCAL INITIATIVES

While many framework conditions are set nationally, Oslo Science City can act as a catalyst by shaping local practices, aligning stakeholders, and pushing for targeted reforms. This section outlines two overall areas with a total of nine recommendations where Oslo Science City and the surrounding innovation environment can play an active role in accelerating positive development.

### Push for stronger incentives for researchers to pursue research-based innovation

- **Increase founder ownership:** Universities and TTOs should take as little ownership in research-based startups as possible within EU state-aid laws. This will increase the incentive for researchers to start companies based on research.
- **Fully public funding of TTOs:** Shift TTOs to full public funding and remove revenue requirements linked to licensing income. This would allow TTOs to prioritise company formation and founder-led spinouts rather than licensing revenues. A clearer public mandate

would also enable TTOs to take a longer-term ecosystem perspective, supporting early company creation even where commercial returns are uncertain or delayed.

- **Reshape academic incentive structures:** Adjust career and evaluation criteria for researchers to recognise innovation, entrepreneurship, and commercial outcomes alongside traditional academic metrics such as publications and citations. This could include recognising spinouts, patents, industry collaboration, and contribution to startup formation in promotion and tenure decisions, thereby strengthening incentives for researchers to engage in commercialisation activities.
- **Redirect research funding towards innovation-oriented research:** Allocate a larger share of competitive research funding to projects with clear application and commercial potential, without undermining academic quality. This includes allowing greater weight to innovation criteria in grant assessments and supporting translational research that bridges basic science and market application, particularly in areas where Norway has strong research capabilities but limited commercial uptake.
- **Strengthen corporate involvement in research environment (including corporate funding):** Closer corporate engagement through joint projects, shared facilities, industry PhDs, and researcher mobility helps bridge the gap between academia and markets. This improves commercial relevance, shortens time-to-market, and increases the probability that research-based ideas are developed into scalable companies in Oslo. Additionally, increasing corporate co-funding can steer research towards clearer market needs and accelerate the transition from discovery to application. It also increases the likelihood that research results are taken forward into pilots, spinouts, or industrial partnerships, rather than remaining within academic environments.

### Take a central role in scaling the VC ecosystem

- **Move innovation funding closer to founders by strengthening incubators and decentralised grant schemes:** Incubators are better positioned than central authorities to assess teams, adapt support, and inject early capital into high-potential startups.
- **Activate private capital mobilisation by educating LPs:** Oslo Science City can play a coordinating role in informing LPs – such as family offices and pension funds – about VC risk–return profiles, the performance of local fund managers, and their track record in local investments.
- **Communicate wider benefits of VC – "VC as impact investments":** Oslo Science City can help communicate the broader societal and economic impact of VC investments, including innovation, productivity, and job creation. This framing can position VC as an impact-oriented asset class beyond purely financial returns.
- **Take a key role in scaling up VC ecosystem:** Oslo Science City should play a central coordinating role in supporting the development of specialised competencies and institutional structures required to establish the proposed seed-to-scale VC funds. This includes convening key public stakeholders – such as the Norwegian government, Investinor, and the EIF – to align mandates, capital commitments, and governance structures necessary to realise these funds.

# PUBLIC CAPITAL TO CROWD IN PRIVATE CAPITAL FLOWS TO THE VC ECOSYSTEM

Norway's innovation ecosystem's core challenge is not only a lack of capital, but a lack of specialised VC capabilities and appetite, particularly in early-stage. Public capital should therefore be used to build institutions and competences.

Here, we propose four concrete recommendations to guide public investments in the future and to kick-start research-based innovation. These recommendations are intended to set a **high-level direction of travel**, rather than provide detailed implementation designs. Further analysis and stakeholder engagement will be required to determine the most effective instruments, governance structures, and sequencing.

### Increase capital allocation to public investors to kick-start self-reinforcing VC ecosystem

Capital allocations to public investment companies should be higher, directed to a single public investor, and, critically, stable over time to enable long-term self-sufficiency through returns on market terms. We suggest, **allocating EUR 250–300 million annually over 10 years, or EUR 2.5–3 billion as a one-off investmen**t, which would allow public investments to roughly triple and reach levels comparable to Denmark and Finland. A larger and more stable capital base would enable public investors to build diversified portfolios, act as reliable anchor investors for private VC funds, and become gradually self-financing, strengthening their role as long-term partners in developing the VC ecosystem.

Public capital allocations of this magnitude should aim at generating around four times more in private capital allocations. In the short run, higher public-to-private ratios might be unavoidable.

### Change mandate of public capital to crowd in private capital and prioritise fund investments

Public capital plays a central role in developing the venture capital ecosystem, particularly in early and immature markets. To maximise its catalytic impact, public investments should prioritise fund-level support, strengthen market structures, and crowd in private capital rather than substitute for it.

Concretely, we propose using **four key principles** for public capital:

1. *Crowd in private capital*
   All public investments should aim to crowd in private capital to build a commercially sound and long-term viable VC ecosystem. Long-term success depends more on developing private investment competence than on public capital alone. Thus, the public share of deployed capital and ownership in funds and companies should decrease over time as the private market matures.
2. *Clear separation of instruments and prioritisation of fund investments*
   Public capital should prioritise fund-level investments, with direct company investments playing a complementary role. As a guiding benchmark, around 70–80% of public capital should be allocated to investments in VC funds – primarily to existing Norwegian VC funds.

3. *Sector-agnostic within broad mandates*
   Avoid detailed top-down steering of sector or geographical allocation. Investment teams should be allowed to respond flexibly to market opportunities and deal flow.
4. *High risk tolerance*
   Public capital should support increased risk-taking, particularly through seed and early-stage investments where private capital is most constrained.

### Scale investments in established Nordic VC funds

We recommend allocating public capital to experienced Nordic VC funds combined with clear requirements that invested funds commit equivalent amounts to Norwegian startups. For example, a structured programme placing around **EUR 30–50 million annually** could accelerate competence transfer and strengthen market development.

This approach ensures that capital flow back to Norway, while established Nordic funds contribute expertise, networks, and proven investment processes that raise professional standards. At the same time, Norwegian startups gain greater exposure to international investors, and Nordic funds are incentivised to build stronger deal flow and presence in Norway, supporting deeper cross-border integration of the Nordic VC ecosystem over time.

### Push for increased Nordic integration and cooperation to promote research-based innovation

Research-based innovation is capital-intensive and characterised by long time horizons. For small, open economies, national investment strategies are unlikely to achieve sufficient scale or specialist expertise. Increased Nordic cooperation should therefore be considered by widening mandates for public investors or by establishing **a dedicated pan-Nordic investment structure.**

Possible approaches include:

- An EIF-led fund-of-funds focused on research-based innovation.
- A joint investment vehicle co-owned by national public investment companies.
- A new private fund manager backed by cornerstone commitments from Nordic public investors.

Any such approaches would likely require substantial initial public capital allocations, and it may be necessary to accept lower risk-adjusted returns in early funds. Further analysis is required to determine the most effective structure and design.

## LEGISLATIVE AND STRUCTURAL FRAMEWORK CONDITIONS

The current tax framework materially raises the cost of entrepreneurship and early-stage investment in Norway. While these barriers do not make ecosystem development impossible, they significantly increase the level of public effort required elsewhere. Here, we provide two concrete recommendations to lower these barriers.

### Remove or substantially reduce exit taxation

The current exit tax creates strong incentives for founders and key employees to relocate early or avoid Norway altogether.

### Reduce wealth tax and change the base of taxation

Lower wealth tax and, crucially, limit taxation to realised values. Taxing unrealised, highly illiquid start-up value forces founders to sell shares prematurely or take on debt, weakening incentives to build and scale companies.