



OECD REVIEW OF INNOVATION POLICY: FINLAND

PRELIMINARY FINDINGS

HIGHER EDUCATION INSTITUTIONS AND PUBLIC RESEARCH INSTITUTES

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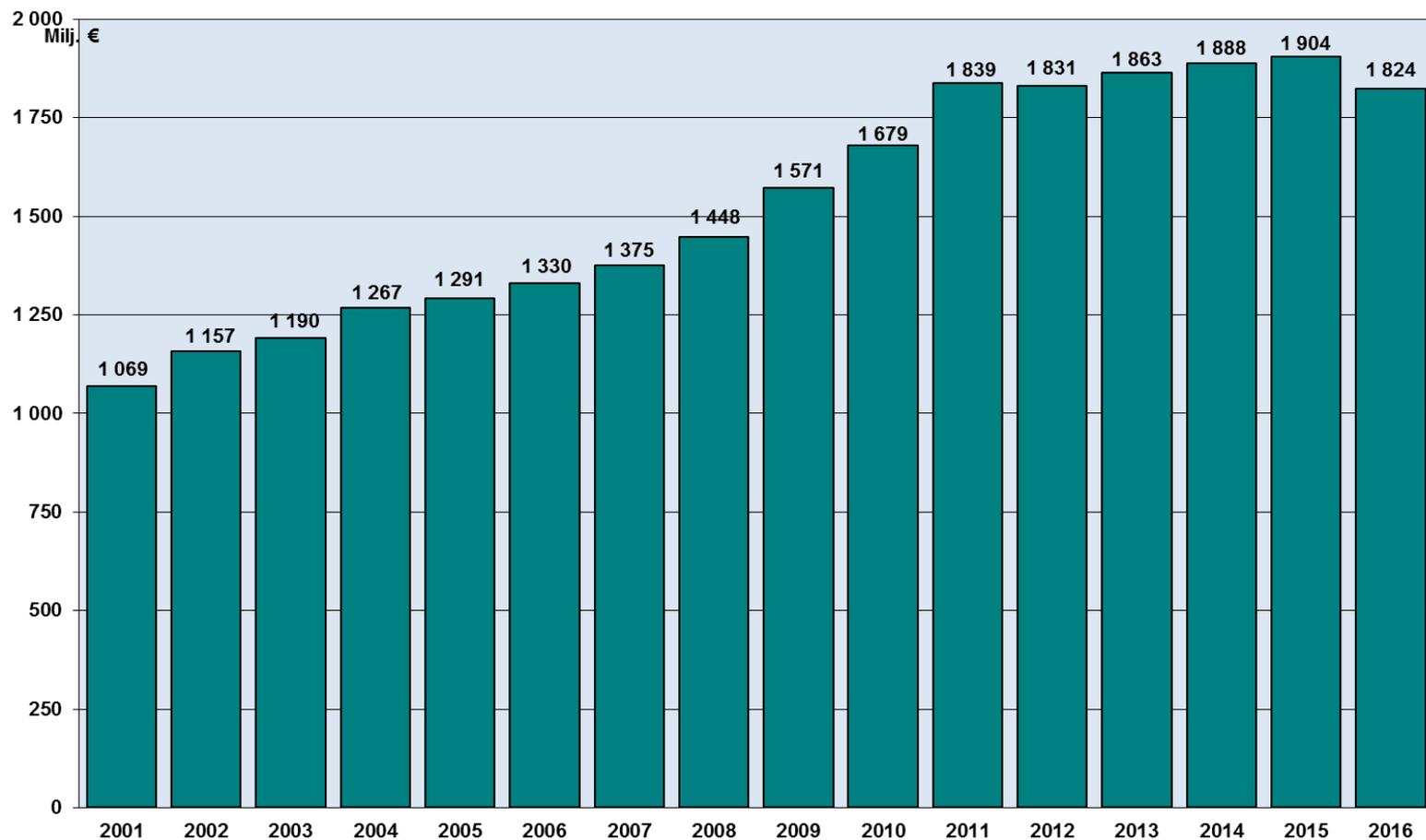


Background

- Rapidly rising education levels in the 1970s and 1980s (now stagnant)
- Continuous increases in public funding for universities up until 2013, since then stagnation and even cuts
- Many changes to Higher Education Institutions (funding, policy, governance, IPR) but slow transformation



Public funding for Universities 2001-16, nominal value, million Euros



Source: Ministry of Education and Culture



Higher education institutions in the Nordic countries

| | Number of universities and university colleges | Student enrolment (Full time) 2014 | Student enrolment (full and part time) 2014 | Population 2015 | universities per m inhabitants | universities per 10 000 full-time students | universities per 10 000 students |
|---------|--|------------------------------------|---|-----------------|--------------------------------|--|----------------------------------|
| Denmark | 16 | 269493 | 301399 | 5,1 | 3,14 | 0,59 | 0,53 |
| Finland | 38 | 174037 | 306080 | 5,5 | 6,91 | 2,18 | 1,24 |
| Norway | 19 | 166322 | 264207 | 5,7 | 3,33 | 1,14 | 0,72 |
| Sweden | 33 | 230549 | 429444 | 9,9 | 3,33 | 1,43 | 0,77 |



University reforms – a slow transformation?

- Governance – e.g. financial and administrative autonomy has been reinforced, but opportunities have not been fully exploited
- University boards have gained a greater influence in universities' strategic decisions, the rector's position has been strengthened
- Performance-based funding model since 2013, changed several times
 - strong emphasis on research excellence in terms of publications in peer-reviewed top journals and on strategic development (profiling of universities)
 - low priority on impact or utilization of research, societal relevance and cooperation or interaction with surrounding society
- University reforms coincided with a number of other changes, all of which affect universities, such as funding cuts, university mergers, the drastic reduction of Nokia's R&D activities and the economic crisis



Unplanned undermining of societal interaction?

- Interaction with surrounding society negatively affected in several ways:
 - Funding model does not incentivize societal interaction or relevance
 - Cuts in Tekes funding and VTT funding
 - Cuts in companies' R&D funding to universities
- At the same time some global trends:
 - Need for managing global competition and local embeddedness
 - Companies increasingly shop globally for cooperation partners; cooperation with academia also partially determined by market factors (example China)
- Concurrence of increasing focus on research excellence combined with drastic cuts for funding of long-term industry-academia cooperation and research institute funding does not appear to be part of a grand design or conscious strategy. It has unintended potentially quite damaging consequences for the societal impact, utilization, relevance of the Finnish HEI system and the long-term competitiveness of Finnish companies.



Challenges with the current model/system

- Finnish universities reacting at a rather slow pace to the need for consolidation and specialisation and for changes in course content
- high proportion of institutional funding based on performance minimises universities' room for autonomous manoeuvre and can make research more short term, avoiding high-risk or transformative research, discouraging inter-disciplinarity, reducing career prospects for women and impeding inter-sectoral mobility
- HEIs' contribution to innovation and societal development (both through research and education) under-incentivized at all levels?
- Quality of the supply of human capital but frictions in the education system



Challenges contd.

- Weak internationalization
- Quality of science lower than some peers – and flattening since 2000s
- Highly fragmented university research system
 - The discipline units of Finnish universities are typically small. More than 1/3 of the university disciplines employ three professors or fewer, calculated in terms of FTE
- University reforms partially accomplished
 - Not clear consolidation of diploma/schools/ departments
 - Financial and administrative autonomy has been reinforced, but opportunities have not been fully exploited



Possible policy directions to strengthen HEIs and their contribution to renewal

- Revisit education needs for a changing world (skills, programmes, transferability between programmes and universities)
- Continue to encourage profiling, strategy, defragmentation, excellence (in education, research and interaction) and internationalization (e.g. STINT Internationalization Index)
- Requires strengthened leadership (rectors and boards)
- Performance-based funding: is good in principle! But: smaller share? Long-term perspective; Incentivize interaction
- Strengthen interaction across disciplines (in research and education); don't forget humanities!



Public research institutes (PRIs)

- Historically an important part of the research system
- Research institute sector larger than in Sweden but smaller than in Finland:
 - VTT the ninth largest publishing institution in Finland 2011-2015. PRIs made up six of the top twenty publishing institutions between 2011 and 2015 (seven in Norway, none in Sweden)
- Significant changes since 2013 (funding, governance, organization)



Public research institutes (PRIs) and the reform of strategic research funding

- Two goals:
 - reallocate funds towards higher value-added areas
 - evidence-based policymaking (came later);
- Overall, the reform of the research institutes is driven by the desire to make institutes more dynamic, as well as more responsive to societal and industry needs and more effective in their ability to meet these needs
- *“The idea of the transfer of resources to high value-added areas did not happen”; “we didn’t get the idea of strategic research right”*



Public research institutes and the reform of strategic research funding

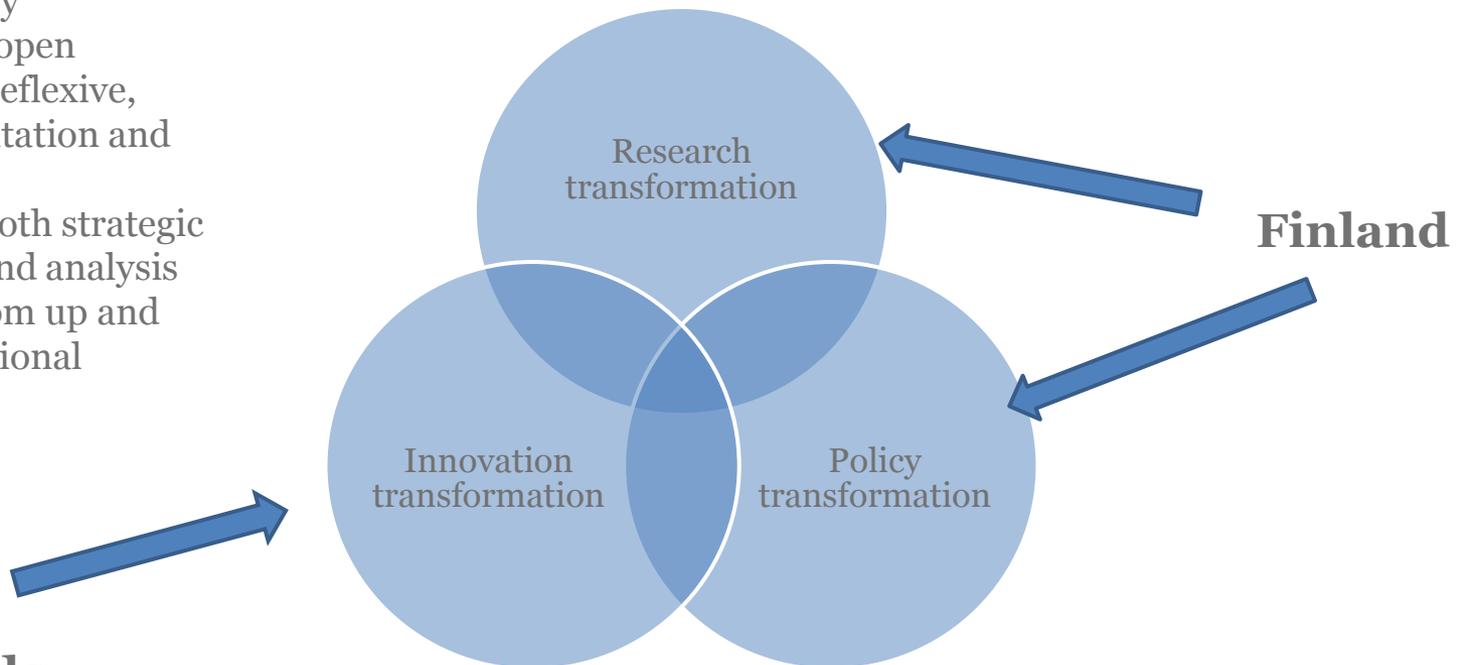
| Objective | Measure | Assessment / effect |
|---|--|---|
| More strategic research oriented towards societal goals | Strategic Research Council | Not clear this has been accomplished in terms of strategic research on key enabling technologies or prioritized areas or on applied research and development (with companies and users) for concrete, competitive and scalable products and services SRC very good start to strengthen research for policymaking and multidisciplinary but not yet matched by translational efforts and innovation (part. development of concrete and scalable solutions where companies should play a critical role) (3 companies in 31 projects) |
| More dynamic institutes | Cut basic funding, institutes to compete more for funds | Too early to say but given institutes' rather generous basic funding (esp institutes other than VTT) should mobilize institutes to seek more external funding (and thus be more dynamic and relevant?) |
| More knowledge- and evidence-based policymaking | Pooling research resources and experimentation at PMO | Seems like the right thing to do to overcome ministerial silos but too early to tell how the results of the analysis and research will be used in policymaking |
| Better coordination of ministries' research funding and more horizontal / cross-cutting agenda for research / analysis | Ministries annually provide an overview over planned research within their respective area | This has been strengthened |
| More cross-disciplinary / multi-disciplinary research | Merging of institutes; SRC | More needs to be done such as changing education but also rethinking government programs and focusing more on policies / initiatives that really address societal challenges; such policies and initiatives need to be both long-term and flexible/reflexive; strengthen multidisciplinary within HEIs |



System transformation for societal challenges and industrial renewal

Common elements:

- Cross-sectoral, multi-disciplinary
- Inclusive, open
- Iterative, reflexive, experimentation and learning
- Need for both strategic research and analysis AND bottom up and non-directional initiatives



**Sweden
Netherlands**

Finland



Possible policy directions

- Complement SRC (important instrument for research 'on real world problems', evidence-based decisionmaking and multidisciplinary) with efforts to strengthen strategic research (e.g. on enabling technologies) and long-term strategic research and innovation partnerships between industry, academia, research institutes and other stakeholders
- Cutting basic funding and mergers of research institutes makes sense but reconsider the 'cheese slicer approach' to institute funding
- Could institutes play a stronger role in internationalization and international collaboration on societal challenges?