

Executive summary

Strong performance but signs of weakening of Sweden’s research and innovation system

Sweden has maintained a high level of performance in science, technology and innovation (STI) but there are signs of weakening. As the OECD Review of Innovation Policy: Sweden 2012 observed, Sweden’s research performance has lost some ground vis-à-vis traditional comparators such as Denmark, the Netherlands and Switzerland, and a number of emerging economies are catching up fast. Business R&D expenditure has declined in the wake of the restructuring and change in ownership of large multinational enterprises of Swedish origin, which now have new global corporate strategies. Sweden’s overall R&D intensity is no longer the highest in the world. Remaining a global leader in STI in this changing environment will require policy adjustments.

The Research and Innovation Bills of 2008 and 2012 (hereafter referred to as the 2008 and 2012 Bill, respectively) introduced a number of policy initiatives aimed at strengthening the performance of the Swedish STI system. These include:

- a significant increase in the “block funding” for universities and the introduction of a performance-based allocation mechanism
- additional funding for selected Strategic Research Areas (SFOs); an enhanced role and funding for research institutes (RIs)
- the development and funding of public-private partnerships within selected Strategic Innovation Areas (SIOs); the initiation of a Challenge-driven Innovation (UDI) programme focusing on societal challenges
- improved prioritisation and support for Swedish participation in European research and innovation activities.

Limited success in strengthening the university research base

Sweden attempted to enhance its universities’ research base and performance by increasing block funding and establishing SFOs, giving universities an opportunity to bid for funds that would allow them to channel money into areas they deemed “strategic”. Neither of these initiatives can be considered truly effective: there is little evidence of resulting performance increases. The increase in block funding of universities has not succeeded in breaking the long-standing, circular link between institutional and “third-party” funding which has been detrimental to consolidating research excellence. An external evaluation of the SFO has concluded that universities with overt strategies benefited most from the scheme, but that relatively few universities possess such strategies. The impact of the implementation of a new performance assessment scheme to allocate part of the block funding appears to have been marginal.

The initiatives themselves can be criticised to some extent; there are probably insufficient focus in the SFO scheme and shortcomings in the magnitude and mechanics

of the performance assessment scheme. However, the effectiveness of the two initiatives was severely constrained by a number of systemic factors: absence of adequate governance mechanisms to ensure that high-level priorities and goals are taken up by the academic research community; weak leadership and strategic capabilities in many universities; lack of clarity concerning career paths and inability to manage academic staff based on organisational strategies and performance. Overall, there is insufficient specialisation and concentration of research resources in priority areas. Wise strategic choices coupled with larger centres to exploit the benefits of scale, as well as emphasis on the global positioning of Swedish universities, could help improve their performance.

Commendable efforts to link research and innovation, but some concerns

The Swedish innovation landscape historically included many small specialised research institutes serving specific sectoral needs. Given that innovation is embedded in the statutory “third mission” of the much larger university sector, these research institutes have occupied a marginal position in the Swedish innovation system as a whole. The 2008 and 2012 Bills featured several measures to consolidate and strengthen their role, such that they complement and work more closely with the universities. These measures included increases in core funding for the institutes. The 2008 Bill also announced the formation of a new federated structure, the Research Institutes of Sweden (RISE). The transition towards a strong institutes sector has been slow but steady. Further progress will require changes to the current membership-based governance structure of RISE to enable it to satisfy wider industrial and social needs.

The SIO initiative set out to prioritise cross-sectoral areas considered of strategic importance to Sweden and support research and innovation programmes or projects within each of these areas by developing bottom-up strategic innovation agendas (SIA). This initiative has succeeded in attracting a broad range of research and innovation stakeholders, but it is too early to go further in assessing its impact. International experience suggests that areas selected through bottom-up competition tend to favour conventional thinking to the detriment of emerging areas. Additional efforts, possibly involving new, more forward-looking policy instruments and a stronger role for public agencies, may be needed to ensure a longer-term time horizon.

Need for more concerted effort to tackle societal challenges

The UDI programme, launched in the wake of the 2009 Lund Declaration, aimed to support research and innovation in areas relevant to societal challenges. It has shifted policy attention onto the demand side and its coupling with innovation. However, the UDI budget is too small to mainstream this approach in the research and innovation system. Tackling societal challenges requires new forms of R&D funding, coupled with governance and co-ordination mechanisms to identify and address priorities at the societal level. It also demands levels of financial commitment that signal the importance of this policy reorientation.

Sweden increased funding for the participation in European public-to-public (P2P) networks that attempt to better align national and European research efforts on topics of mutual interest, many of them pertinent to societal challenges. Thanks to the establishment of an office to co-ordinate participation across government agencies, Swedish involvement now seems to be more strategic than previously.

Sweden has yet to take up the opportunity offered by the Lund Declaration and to place efforts designed to tackle societal challenges at the heart of a distinctive national research and innovation strategy. Efforts so far have remained modest and piecemeal, and have not been sustained by an overall vision of how the system as a whole might develop, nor the direction it might take. In particular, there has been no indication of how a strong emphasis on societal challenges might fit into an overarching long-term strategy for support capable of satisfying the needs of all relevant stakeholders.

Prioritisation and strategy development constrained by weak governance

A lack of adequate governance, leadership and strategic vision is at the heart of many of the difficulties encountered in successfully implementing the policy initiatives examined. This could be observed at different levels: the research performing organisations (universities and research institutes), the funding institutions and the implementation of programmes such as SFO, SIO and UDI.

For example, deeply ingrained – and laudable – concepts of academic freedom and autonomy for universities and individual researchers, when combined with weak internal governance structures, have tended to prevent universities from making strategic choices and investments. There are concerns also about the governance of research councils and their dominance by academics (their main beneficiaries); about the level of private-sector stakeholder involvement in the RISE institutes; and about an apparent diminution of the checks-and-balances needed in the relationship between funding agencies (such as VINNOVA) and the research and innovation communities they support. There are also reasons to consider the rationalisation of funding organisations, together with re-alignment of missions and governance structures.

Perhaps the greatest challenges lie at the overall system level. Swedish policy makers, together with relevant stakeholders, should devise and implement a national visioning mechanism that can build greater consensus around major priorities, without excluding other research and innovation efforts that are necessary in a well-functioning innovation system. Research and innovation policy, governance and co-ordination mechanisms should be transformed to effectively link public research and innovation and address societal challenges.



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