

INNOCATE - Indicators for an innovative economy

Project description

Innocate is to contribute to policy learning as regards the use of innovation policy indicators.

Present EU policies do, for very sound reasons, underline the importance of innovation as a key determinant of economic growth. However, European policy makers have had a tendency to focus on research and development and presence of *R&D intensive industries* as the main source of innovation – hence the Lisbon agenda in general and the Barcelona goals more specifically of R&D investments reaching 3 percent of GDP by 2010. Underlying the Lisbon agenda’s prioritization of innovation and research is a set of key structural indicators to provide diagnostic and benchmarking measures of member state performance in these areas.

Related to this is clearly a “high tech” bias, i.e. a widely held conviction that high tech companies and industries determine the growth of our economies. Ultimately the thesis would imply seeing dynamic high tech industries replacing mature, large industries.

These views are in conflict with the insights generated by recent socio-economic research. Potentially these policy views may lead to misallocation of social resources and activities and the efficiencies of their use.

R&D is important for innovation in a range of different economic contexts and industries. The importance of R&D-generated knowledge – including the interplay of strong public research with private R&D – is well corroborated in the research literature. At a general level R&D has been essential for the development of our economies. However, from stating this, to claiming that scientific and technological research activities alone are determinants of economic and social development is misleading.

On the Nordic scene this can clearly be seen in terms of what we can see as the Norwegian and the Swedish paradoxes. The thesis we claim underlie the Lisbon style policies implies that the growth performance of the two countries over a period of many decades should be posited as anomalous, or paradoxical.

Norway, having seemingly been a weak performer as regards “high tech” resource development over several decades, is at present among the top 3 economies in the world in terms of income generation – as measured f.i. by GDP pr capita . Norway ranks as no. 2 at UNCTAD’s composite Foreign Direct Investment Indicator, indicating framework

conditions that should be attractive to foreign investors,¹ productivity levels are among the highest in the world, with unemployment rate around 3,5%, one of the lowest in Europe.

During the last three decades, the Swedish economies established itself as globally one of the most RTD-intensive economies. At the same time, Swedish economic performance since the mid-1975 has been lacklustre along several dimensions in comparison to almost all other OECD economies.

It is the purpose of this project to explore these issues along multiple dimensions. The starting point of this proposal is that the theories underlying the Lisbon objectives are imperfect at best. With this it should be no surprise that the interpretative framework and “stories” built around the harmonized indicator system used for benchmarking and diagnosis of performance, and the interpretation of individual indicators in economic and innovation policy discourses have serious limitations.

At the outset, there are three obvious structural features of these indicator systems and the associated policies limiting their relevance and productivity as a basis for formulation of social objectives in these areas:

- These indicator systems, as seen most clearly in terms of the European Innovation Scoreboard exercise, have a strong bias towards to measuring levels of R&D intensive and “high tech” resources.
- These frameworks are weak on the description and analysis of economic resources and activities beyond this. In particular it is our clear impression that major parts of our economies are seen simply in terms of being passive recipients of growth enhancing resources developed elsewhere.
- The data basis and the derived indicators used are generally based on “simplifying assumptions” to allow data collection and structuring and ensuring the “within-the-dataset” comparability and quality. Generally these limitations seem to be neglected in the use of various relevant indicator sets.
- The data bases are generally not society-wide. Several sectors and key resource generation processes potentially very important for the overall economic and social objectives of innovation and industrial policies are at best weakly integrated.
- Finally it must be noted that in spite of extensive socio-economic innovation research over the last three decades, there still remains substantial lacks in our understanding of the socio-economic macroprocess we call economic growth and the role and importance of microlevel changes in the behaviours of organizations, of firms, public organizations, and so on.

¹www.weforum.org/site/homepublic.nsf/Content/Global+Competitiveness+Programme%5CGlobal+Competitiveness+Report; www.unctad.org/Templates/Page.asp?intltemID=2095&lang=1

Summary

Present policies underline the importance of innovation as an engine for economic growth. However, European policy makers have had a tendency to focus on research and development as the main source of innovation. This focus is partly caused by a “high tech” philosophy, i.e. the belief that high tech industries contribute more to growth than others. High tech companies are per definition companies that invest much in R&D.

We are not contesting the claim that R&D is important for innovation. However, there is no direct relationship between R&D investments and economic performance. For instance: The Norwegian paradox is that a country that invests only 1.7 percent of GDP in R&D has become one of the richest countries in the world. The Swedish paradox is that a country that invests close to 4 percent is not significantly more innovative than Norway, and actually less productive.

These paradoxes can partly be explained by industrial structure. Sweden and Finland have a handful of large, “high-tech” companies that explain why these countries score so well R&D wise. Iceland and Norway on the other hand has a business sector dominated by small enterprises, often in raw material based industries or services that do not normally invest much in R&D – relatively speaking.

This project is to ascertain to what extent the present use of innovation policy indicators capture the reality of innovation in the Nordic area, help policy makers find interpret and make use of such indicators, and make recommendations as regards the development of more relevant sets of indicators.

Relations to other Nordic projects

This project is related to two other projects on innovation indicators that are also invited to develop full applications for the present call, where NIFU STEP co-ordinates or participates in the consortium. They are Ignored - Indicators for an innovative economy lead by NIFU STEP, and NIND - Policy relevant Nordic innovation indicators, lead by Statistics Finland. The three projects are clearly complementary in our view in that they address different aspects of utilization and development of innovation indicators, and do so from different perspectives.

A central part of Innocate is to help policy makers find, understand and make use of relevant indicators. Hence Innocate applies primarily *a policymaker's view* and asks what kind of information is needed to make good innovation policy strategies.

NIND addresses the topics mainly from the perspective of *the producers of statistics* and indicators. In this case the starting point is the existing databases with relevance for input factors and intermediate innovation results; how they can be improved upon, become more comparable over time and across countries – in particular the Nordic countries – and better integrated between themselves and with supplementary data sources. In this

sense NIND represents the more operative part of the system which it is essential to have in place for any kind of analysis.

IGNOREd argues that it is not a lack of output indicators that is the problem, as they are found in the basic measures of economic performance at the levels of the firms and society. Rather, there is a lack of sufficient input indicators and in particular for analysis that bridge inputs and outputs. Innocate can make use of this analysis in its discussion of innovation policy interpretation of indicators

Innocate will also make use of the experience gained by using indicators for innovation policy advice from NICE projects such as GoodNIP Good Practices in Nordic Innovation Policies, FOTON on foreign take-overs, and Domus on domestic multinationals.

Aims

The project is to give policy makers a better understanding of how to find, understand and make use of statistics in innovation policy development, thus laying the foundation for a more nuanced and detailed picture of learning and innovation processes in the innovation systems. This may lead to shifts in innovation policy priorities and the development of strategies and policy measures for a wider set of learning and innovation practices in the business sector.

Innocate has been designed to

1. Provide an overall review of the main objectives and rationales of recent Nordic and European innovation policy strategies within the framework of the Lisbon agenda.
2. Provide a synthesis of the analysis of national economic performance and structural change and impediments, based on existing public economic research and analysis that has had substantial impact on national policy debates.
3. On this basis requirements for innovation indicator and data frameworks will be discussed, with a particular eye towards the compatibility between the use of present indicator systems and the long term challenges identified in the policy analysis.
4. Present and discuss the current use and interpretation of innovation indicators at the European, Nordic, and national levels.
5. Provide an analysis of the match between key structural indicator systems and core characteristics of the Nordic economies and innovation systems and their recent performance.
6. Develop a guide for innovation related indicator interpretation and use in policy making processes and debates on social objectives.
7. Suggest frameworks for new indicators to enhance relevance and quality of the indicator and data base for these policy areas. Providing advice and implications for the future development of relevant international standards and recommendations within the framework of OECD, UN and EU should be seen as a key task of this project.

8. Discuss the repercussions of an improved and more general model and understanding of innovation led economic growth would have innovation policies in the Nordic area.
9. Provide input to the discussion on use of such indicators on the European level, especially as regards the European Innovation Scoreboard and the EU Trend Chart on Innovation, and to the OECD.

The project is to give innovation policy makers a better understanding of how to, understand and make use of statistics. Furthermore, the project is to give a critical analysis of the present day use of innovation indicators, especially as regards the present R&D bias. This may lead to shifts in innovation policy priorities and the development of strategies and policy measures for a wider set of learning and innovation practices in the business sector.

European/international context

The Nordic paradoxes reflect a general weakness in current innovation policy benchmarking and analysis that requires further reflection. This study can be used as a case for similar learning processes on the European arena in particular and world wide in general. Given that several of the participating researchers take part in the development of European statistics, indicators and innovation policies through OECD NESTI, Eurostat, the EU Trend Chart on Innovation and the ERAWATCH both as researchers and policy makers, we can guarantee that this analysis will be distributed among experts working in this field. It should be noted that several of the Innocate analysts also take actively part in policy development in their own countries, ensuring an integration of Innocate results in the national innovation policy arenas.

The ambition of this project is to make a significant contribution to the discussion on

1. The use of existing traditional indicators for measuring innovation performance
2. The use of existing indicators that are not commonly used by innovation analysts and innovation policy makers
3. The development of new indicators that may widen the knowledge base for innovation policy development

Above all the ambition is to deepen the analytical competences of policy makers in Nordic and European institutions for innovation policy development, helping them find, understand and make use of relevant indicators.

Project partners

The following institutions will be part of the consortium. The names of researchers and analysts are tentative.

- NIFU STEP, Oslo (coordinator): Per Koch, Johan Hauknes
- Dansk Center for Forskningsanalyse (University of Aarhus)
- Karen Siune, Ebbe K. Graversen
- IKED, Malmö: Thomas Andersson, Matthieu Roest
- VTT, Helsinki: Juha Oksanen
- Rannis, Reykjavik: Thorvald Finnbjörnsson
- Granskingarráðið, Torshavn: Runa Hilduberg, Heini Hátun

The study will be based on existing research and analysis and use this research as a basis for a thorough discussion of the use of innovation policy indicators.

Hence the discussion will present:

1. Existing indicators that is commonly used in innovation policy development.
2. Other relevant indicators that are not commonly used.
3. The development of new indicators.

The reports will discuss the strengths and weaknesses of these indicators, using concrete numbers to illustrate the various problems and possibilities. The reports will also discuss the use of larger sets of indicators used to “take the temperature of the knowledge economy” as well as the use of composite indicators.

The reports will discuss the problems and opportunities presented by benchmarking, and in particular discuss the complexity and heterogeneity of the various national innovation systems.

There will be three main deliveries:

1. One comprehensive background report with analysis and statistics. This report should include a survey of existing literature and resources in the area, both internationally and for each participating country. This includes an assessment of the accessibility of relevant national and international statistics for policy makers, and to what extent policy makers are assisted in finding, interpreting and making use of the data.
2. One short “popular” policy oriented report presenting the main findings and policy recommendations.
3. Input to a Nordic conference on innovation indicators arranged in cooperation with the Nordic Innovation Centre and other relevant policy agencies. (The costs for the conference itself are not included in the budget). This conference may be held before the end of the project to generate input to the project from the participants. If NICE decides to fund several projects in this area, we would suggest that such a conference can be used to present them all.

The work will mainly be based on desktop research and debate among participants, reference group members and their contacts. However, the national teams will also interview policy makers in all the Nordic countries to ascertain their knowledge and use of existing indicators, and to ask them for their input as regards future needs in this area. Furthermore, the participants will arrange meetings and interviews with representatives of the national bureaus of statistics, as well as representatives for the OECD DSTI secretariat and the European Commission.

The final reports must fulfil the following objectives:

1. They should be written in a way that makes Nordic and European policy makers understand and value the complexities and heterogeneity of various innovation systems.
2. They should help Nordic and European policy makers understand and make use of a wide set of innovation, knowledge and R&D indicators.
3. They should deepen our understanding of the peculiarities of the various Nordic innovation systems, and the consequences the industrial structures, the knowledge systems and the cultural, social and economic framework conditions must have on innovation policy development.