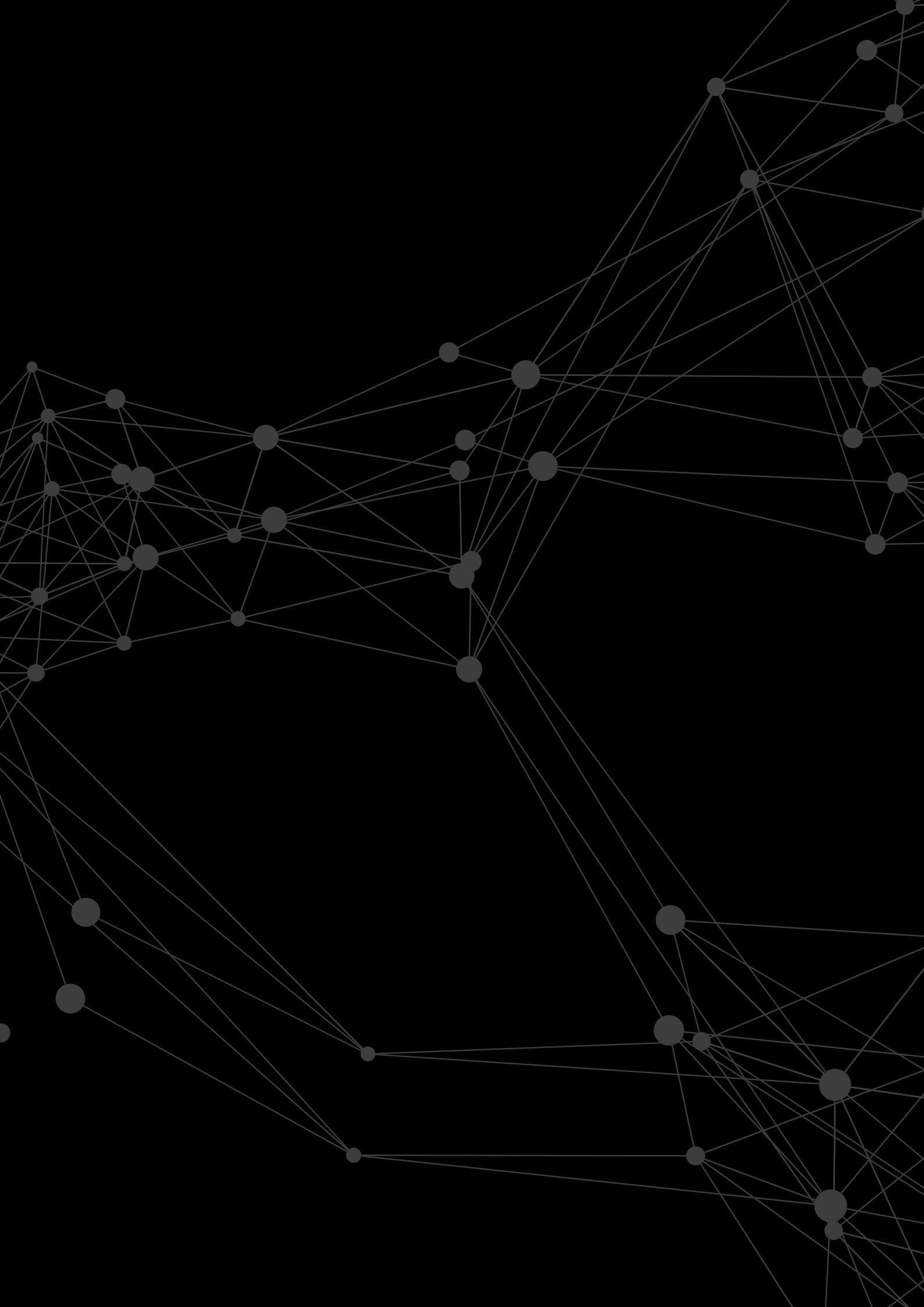
CRISIS

INNOVATIVE AND
SUSTAINABLE
RESEARCH
FOR THE FUTURE



CONTENT

INNOVATIVE AND SUSTAINABLE RESEARCH FOR THE FUTURE

The Center for Excellence for Science and Innovation Studies (CESIS) was founded in 2004 by the Royal Institute of Technology (KTH) in collaboration with Jonkoping University with the objective to be recognized as an important focal point in the international research community focusing on micro-foundations for innovation and growth.

The innovative use of methods and techniques to develop and analyze extensive high quality data has proven successful and has led to a high international visibility. Since its inception, CESIS has managed to establish itself among the top 5% research institutions world-wide in eight of the about 80 research areas ranked by IDEAS, the world's largest bibliographic open access database for economics and finance research.

A key feature of the CESIS research environment is the development of extensive databases for innovation studies. These databases originate from Statistics Sweden, based on individuals and companies, covering the entire population of people, companies, industries and regions in Sweden. Over time, CESIS has supplemented these databases with other essential information such as world-wide patent statistics, information on trademarks and composition of board of directors. Today, the CESIS environment offers world-class microdata for innovation research.

Since 2004, about 30 researchers within the CESIS network have published several hundred international peer-reviewed scientific papers in field-specialized journals, special issues around particular topics and in top-ranked journals. In addition, several book volumes and edited journals have been released, and CESIS working-paper series is approaching 500 scientific works. The researchers have also participated in public commissions on economics, taxes and regulations. Research has been carried out on behalf of government and regional authorities as well as international bodies.

Furthermore, there is also a clear ambition for researchers to participate in the public debate in areas where they have special expertise. This means that research also has a bearing on public service and other media.

CESIS footprints in the academic environment can also be read in the form of initiation of master's and doctoral programs. Over the past 10 years, several hundred master students and about 20 doctors have graduated from these programs.

In recent years, climate and sustainability issues have gained a critical role in the CESIS research environment, fueled by changing conditions for financial markets and economic growth, as well as the increased importance of clean technology and clean innovation. Innovation is at the heart of sustainable development. Our economy, and ultimately society, is historically shaped by fossil fuelled energy as it has produced cheap energy enabling expanding production. However, this energy source comes with a by-product of greenhouse gas emissions and ultimately environmental degradation. It is therefore crucial that we encourage innovations in low carbon technologies so that we can shape a society that can coexist alongside the environment in a sustainable way and yet continue to provide services essential for human welfare.

This report provides an overview of the CESIS research environment during the period 2004-2017, when CESIS was funded by the public agency Vinnova as a center of excellence for innovation and growth studies.

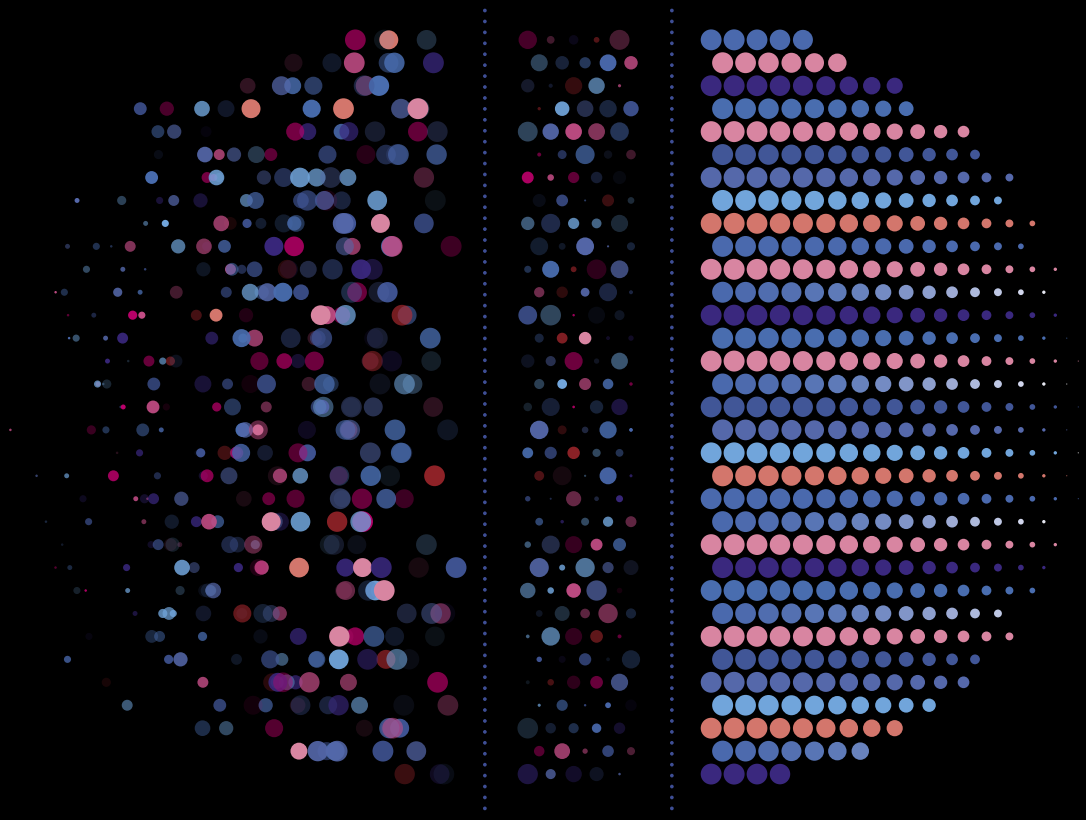
Hans Lööf
Director of CESIS

14 YEARS OF EXCELLENCE

TOP 9%

CESIS RANKS AMONG THE TOP 9% OF ALL ECONOMIC INSTITUTIONS IN THE WORLD, A REMARKABLE FEAT FOR A CENTRE OF THIS SIZE

465 WORKING PAPERS



” It is crucial to encourage innovations in low carbon technologies so we can shape a society that can coexist alongside the environment in a sustainable way and yet continue to provide services essential for human welfare.”

DRIVING SUSTAINABILITY THROUGH INNOVATIVE RESEARCH

Innovation is at the heart of sustainable development. Our economy, and ultimately society, is historically shaped by fossil fuelled energy as it has produced cheap energy enabling expanding production.

However, this energy source comes with a by-product of greenhouse gas emissions and more broadly environmental degradation. It is therefore crucial that we understand how to encourage innovations in low carbon technologies so we can shape a society that can coexist alongside the environment in a sustainable way and yet continue to provide services essential for human welfare.

Research close to the activities at CESIS show that the nature of technological change plays a central role in determining how environmental constraints and regulations impact human welfare and economic performance. And that policy action is likely necessary to encourage the adoption of new sustainable technologies, due in part to path dependence in technical change.

For instance, there are two main channels through which innovation can foster environmentally sustainable technical change: i) the diffusion, or broader adoption, of existing pollution abatement technologies, and ii) the development of entirely new technologies and production techniques with low or no carbon emissions. The way through which such innovations takes place and can be encouraged is complex. Therefore, we require continuous research efforts so we can shape the most useful policies and management practices in order to facilitate the pivotal societal transformation toward a sustainable economy.

14 YEARS OF EXELLENCE - ACHIEVEMENTS

Let's start by looking at the achievements of CESIS. In the past 14 years, CESIS has attracted research in innovation studies in many research areas. Six persistent themes have emerged that permeate all CESIS-related work. Each of these areas are explored below to emphasise the unique contributions CESIS has made in the field of innovation.

1. DIFFUSION OF KNOWLEDGE
2. INTRODUCTION OF NOVEL EXPORT PRODUCTS
3. PERSISTENT R&D EFFORTS
4. CONJUNCTION OF INTERNAL AND EXTERNAL KNOWLEDGE SOURCES
5. GLOBAL NETWORKS OF MULTINATIONAL COMPANIES
6. ACCESS TO EXTERNAL KNOWLEDGE SOURCES

DIFFUSION OF KNOWLEDGE

CESIS has contributed to the understanding of the diffusion of knowledge for both internal and external knowledge sources. It has been suggested that a measure of persistent renewal efforts is a good indicator of firms' internal knowledge, including both innovation and adoption of know-how. This together with a measure of a firm's external knowledge potential can explain why a similar number of firms in every industry perform much better than the average firm in terms of TFP growth, labor productivity and export performance.

INTRODUCTION OF NOVEL EXPORT PRODUCTS

As a third theme the introduction of novel export products is explored. Product development can be monitored indirectly, applying price and quality indices. Another approach is to observe new product codes in Sweden's trade statistics to indicate various measures of export performance. Conditions that affect the performance comprise each industry's internal knowledge, the regional knowledge external to the industry and the conjunction of internal and external knowledge. Performance indicators include export value, number of product varieties, average price of product varieties.

PERSISTENT R&D EFFORTS

Another contribution by CESIS-research is the understanding of the effect of persistent R&D efforts. In a series of studies firms are sorted into three categories: (i) firms that abstain from R&D activities, (ii) firms that occasionally engage in R&D activities, and (iii) firms that persistently engage in R&D on a regular basis. The third group differs in several significant ways from the rest of the population. In particular, a firm from the third category cumulates experiences based on its continuous R&D activities. In this way such a firm develops its own internal knowledge about how to organize and direct R&D resources. A major conclusion is that this type of know-how is embodied in the firm's staff of knowledge handlers, implying spatial stickiness of the knowledge.

The know-how type of knowledge, as generated by persistent R&D processes deviates from knowledge about technical solutions by being more difficult and costly to imitate. However, know-how may be imported by means of recruitment of knowledge carriers. Moreover, spinoffs can spread capabilities from knowledge intensive parent firms to new firms.

CONJUNCTION OF INTERNAL AND EXTERNAL KNOWLEDGE SOURCES

The fourth emerging theme is the conjunction of internal and external knowledge sources. R&D processes makes use of a firm's internal knowledge in combination with external knowledge that can be accessed in collaboration networks and via other links for knowledge accession and adoption of technical solutions. The results from CESIS studies are distinct: innovation and adoption efforts are more successful when internal and external knowledge are combined. When firms with small internal knowledge are located in places with a rich knowledge milieu, the limited internal capacity prevent those firms from making use of the external knowledge supply. The preconditions are somewhat more advantageous for firms with large internal and small external knowledge. The observation of knowledge conjunction effects in R&D processes brings a challenging message. It indicates that in recent decades R&D is focused on systems properties, which implies that the individual is stimulated to combine its own internal "knowledge pieces" with external "knowledge components". To systemize this research, CESIS projects have employed measures of a firm's "external knowledge potential".

GLOBAL NETWORKS OF MULTINATIONAL COMPANIES

The role of global networks of multinational companies has also been examined in CESIS-research. Conjunction of internal and external knowledge can be realized by means of knowledge-network formation. A stricter form of the same type of networks develop inside a typical multinational company. A firm that is a member of a multinational company group displays a robust performance advantage as measured by profitability, productivity, TFP growth, and introduction of new services and goods. Referring to Swedish data (from the past 20 years), a multinational firm gets a labor productivity premium as well as a TFP-growth advantage.

Having a global network, means that a multinational firm has wider and deeper knowledge potentials than most other categories of firms, which is an important background to the advantage of multinationals. Another factor is that a large share of the knowledge network of a multinational group is internal, and therefore this network better protects secrets.

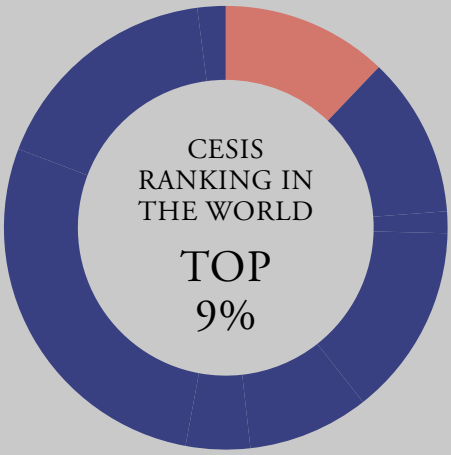
ACCESS TO EXTERNAL KNOWLEDGE SOURCES

The access to external knowledge can materialize in many different forms. First, we recognize spillover phenomena where suppliers deliver inputs to a customer firm on a commercial basis, while technology unintendedly spills over on both firms. Second, we note purchase of knowledge with license contracts and royalty income. Third, we observe collaborative R&D interaction between two or several firms as well as between firms and other innovation actors.

A series of CESIS studies show how one may calculate accessibility measures that reflect the knowledge potential of a location (municipality). One of the employed measures describes each firm's access to knowledge-intensive labor. Another measure depicts the individual firm's access to supply of knowledge-intensive and very knowledge-intensive business services. These alternative measures indicate the probability that an individual firm can find its way to external knowledge sources, and the likelihood that it can develop R&D cooperation with other innovation actors. All this implies that the rate of return to R&D efforts tends to increase as a firm's external knowledge potential is enlarged. Moreover, the conjunction of internal and external knowledge is more likely to develop in regions where the innovative firms have a large external knowledge potential.

CESIS RANKING IN THE WORLD

Take a look at the numbers! CESIS is listed as an institution at RePEc which ranks these institutions in many different categories. We have looked at a number of Subjec areas to see if CESIS truly is a centre of excellence. CESIS ranks among the top 9 % of all economic institutions in the world, a remarkable feat for a centre of this size. CESIS ranks particularly high in the areas relating to entrep reneurship, knowledge and innovation. Below is a full list of subjects and percentage rankings where CESIS is in the top.



SUBJECT	TOP %
Small Business Management	1.5%
Economics of Strategic Management	2%
Entrepreneurship	2.5%
Knowledge Management and Knowledge Economy	2.5%
Innovation	3%
Efficiency and Productivity	4%
Economic Geography	4%
Technology and Industrial Dynamic	4%
Intellectual Property Rights	6%
Business Economics	7%
International Trade	8%
Human Capital and Human Resource Management	8%
Urban and Real Estate Economics	8%
Project, Program and Portfolio Management	8,5%

RECENT CESIS

PARTNERSHIPS

MISTRA is The Swedish Foundation for Strategic Environmental Research and invest in research that will help to create sustainable development of society. MISTRA have invested 30 million SEK in the Mistra Financial Systems reseach program investigates both possibilities and limitations for the financial sector to support the transition to sustainable societies

MISTRA FINANCIAL SYSTEMS

The financial sector, i.e. banks, pension funds, insurance companies and other institutions, and also financial markets affect a range of critical sustainability issues, such as the environmental impact of the economy and financial stability, but also households' access to appropriate and efficient financial services. How well are these functions performed at present? What could be done differently? What can be learnt from current experiments and innovation? All these issues are touched on in the research projects included in the programme.

The Mistra Financial System program is a joint project where KTH is one of the nine research partners and Misum (Stockholm School of Economics) is the program host. Through a total of 30 research projects, divided into five work packages, carried out by 50 researchers, and over a period of 4 years, we will investigate both possibilities and limitations for the financial sector to support the transition to sustainable societies. At Mistra Financial Systems, we understand "sustainable development" as the realization of the UN's Sustainable Development Goals.

SCIENTIFICALLY CORRECT RESEARCH OR CLEAR-CUT ANSWERS?

Scientifically correct research or clear and comprehensible answers to societal challenges? Many researchers are faced with this dilemma when they deal with the sometimes conflicting interests of science and policy issues. For example, Vinnova sometimes seeksclear answers to questions they have asked researchers to study. Answers that on a pure scientifical lever may be difficult to give.

INTERVIEW WITH ANDERS BROSTRÖM, ASSOCIATE PROFESSOR ECONOMICS,
KTH ROYAL INSTITUTE OF TECHNOLOGY

– There is always a risk of control. This is the main reason why state research, which is not funded by an interest, is needed. But both research methods are legitimate, says Anders Broström, lecturer in innovation and entrepreneurship on Department of Industrial Economics at KTH.

Anders has since 2003 worked with policy-related research and consulting activities in the economics and management of knowledge. He believes that the expectations of "useful" knowledge can sometimes be difficult to live up to. What can be seen as a failure may rather be a result of misguided expectations.
– The responsibility rests heavily on the researcher to be cautious when taking on research jobs that are obviously commissioned. This is always important to me when I consider new assignments, it is a decency requirement.

A researcher's driving force is to be heard and seen, but equally important is often one's dedication to a specific question. Anders believes that passion and commitment is important, but it is even more important to be critical and thorough.
– It's easier to get lost, you can fool yourself. However, CESIS has taught us to be better equipped to work critically.

Are more control bodies needed?
– No, the academy is already based on control and academic stringency.
– However, the discussion on this issue needs to be discussed and developed. The research sector and policy sphere must learn to understand each other and be open to new perspectives. The answers may be not as Vinnova thought.

Anders Broström thinks CESIS has fostered researchers who have gained a deeper understanding for the world that politicians, civil servants, and authorities live in.

Anders Broström has since 2003 worked with policy-related research and consulting activities in the economics and management of knowledge; its production, dissemination and use. In particular, his interests concern three key activities in this context: (higher) education, scientific research and innovation. Articles documenting his research in these areas have been published in e.g. Research Policy, the Journal of Technology Transfer, Industrial and Corporate Change and the Journal of Product Innovation Management. Anders currently serves as Associate Editor for Industry & Innovation.

THE IMPORTANCE OF SIMPLIFYING RESEARCH

INTERVIEW WITH CHARLOTTA MELLANDER, PROFESSOR ECONOMICS DIRECTOR FOR THE PROSPERITY INSTITUTE, JÖNKÖPING INTERNATIONAL BUSINESS SCHOOL.

– Simplifying in order to be comprehensible in the strict research world is controversial. This is the path that Charlotta Mellander has chosen. She is Professor of Economics at the International business school in Jönköping, focusing her research on what creates viable regional environments.

– What's the alternative? No one finds out anything? Too few read the actual research. It doesen't mean that simplified research may be incorrect.

Her research environment within CESIS has given her a stable foundation to stand on.
– At CESIS I have learned a lot and I have been able to merit myself properly as a researcher, which in turn has helped me manage critical comments about my simplified work from other researchers .Without the support of CESIS, I am doubtful that I would have had the courage to address this critique.

Charlotta believes that research has a central role to share knowledge and contribute to an important basis for decision makers. She has learned communication by blogging for five years and she is often quoted in the media.
– Sometimes I get questions that I cannot answer, and in these cases I only guess or refer to another researcher. A researcher is not expected to know everything.

There are always risks associated with simplifying research. Charlotta has made mistakes along the way but emphasizes that she always asks to make corrections.
–We do not only represent ourselves but also our universities.
– Sometimes people make mistakes. You have to accept that but should of course make sure that the mistake is corrected as soon as possible.
The two-way communication has over time made Charlotta turn her focus:
– Today, I put more emphasis on what knowledge people and organizations are demanding.

Charlotta is cautious not to take any political positions. Her research area may be relevant in the country-city debate in an election year.
– This is what statistics look like, we can discuss that, but how to manage it is up to the politicians.

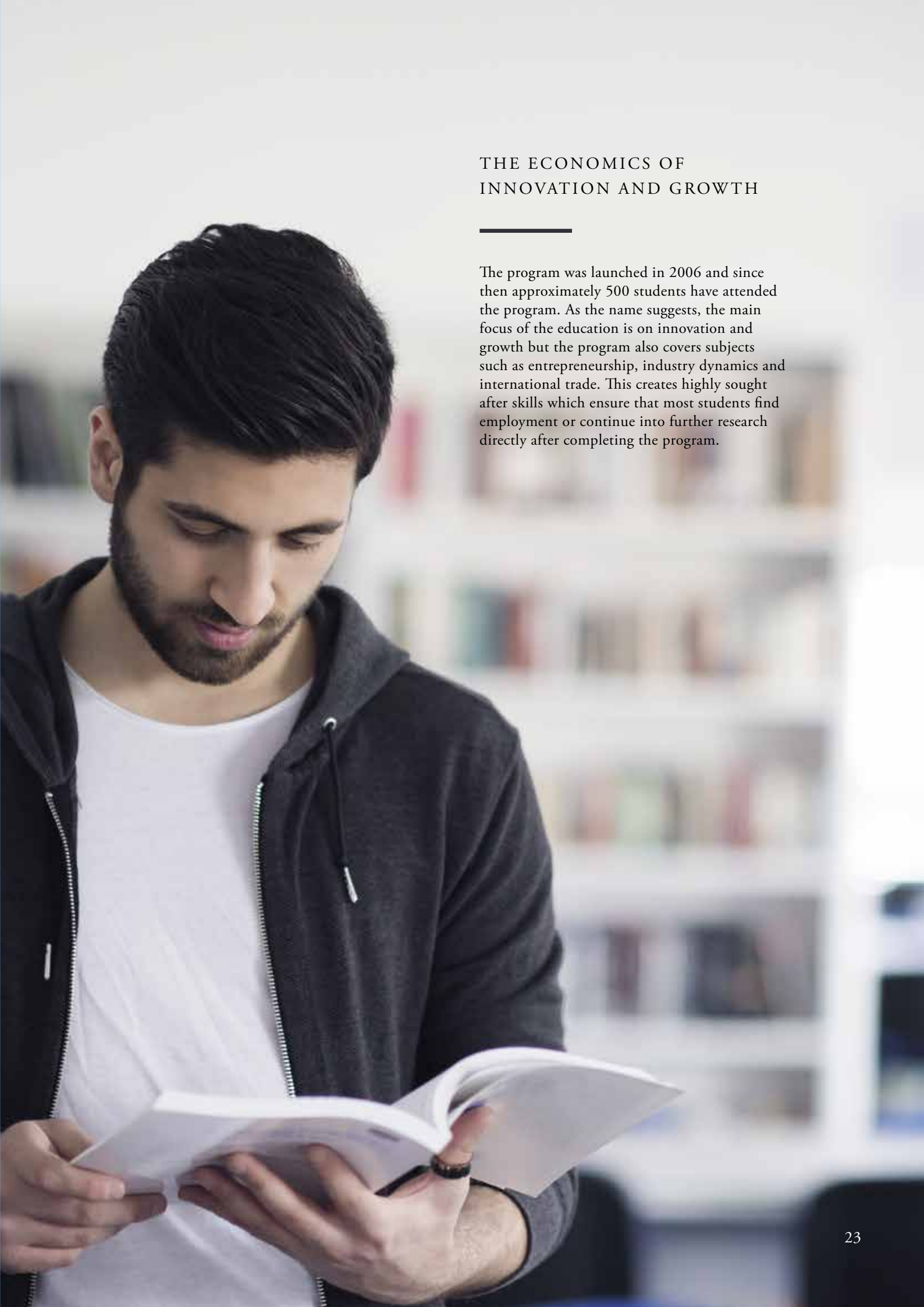
Charlotta Mellander has no simple answer to the question of flawless science or clear-cut answers.
– But in the long run, higher demands will be placed on researchers in communicating their research than has been the case historically.

Charlotta Mellander is one of the Sweden's leading experts in cities, creativity and regional development. She is a highly demanded speaker both in Sweden and internationally. Together with Professor Richard Florida, Charlotta has developed and published theories around the creative class and cities where they want to live. The research explores both companies and regions that strive to attract creative individuals.

CESIS STRONG CONNECTION TO

EDUCATION

In the spirit of CESIS a master program in The Economics of Innovation and Growth was launched at KTH. The program was created in an effort to introduce CESIS core ideas in a complete master program.



THE ECONOMICS OF INNOVATION AND GROWTH

The program was launched in 2006 and since then approximately 500 students have attended the program. As the name suggests, the main focus of the education is on innovation and growth but the program also covers subjects such as entrepreneurship, industry dynamics and international trade. This creates highly sought after skills which ensure that most students find employment or continue into further research directly after completing the program.

INTERNATIONAL COLLABORATION

CESIS have collaborated with many international researchers through the years. Since collaboration is key for progress, this sections presents some of the guest researchers and special friends of CESIS. These people have contributed with ideas and insights that have furthered the contributions from CESIS.

Christopher Baum is Professor of Economics and Social Work at Boston College, USA.

Sierdjan Koster at the Urban and Regional Studies Institute (URSI), Rijksuniversiteit Groningen, Netherlands.

Joachim Wagner at Leuphana Universität Lüneburg, Germany.

Cristiano Antonelli is professor in economics at the University of Torino, Italy.

Flora Bellone at the University of Nice Sophia Antipolis in Nice, France.

Van Anh Vuong at the faculty of management, economics and social sciences, University of Cologne, Germany.

Gary Cook at the University of Liverpool Management School, United Kingdom.

Bettina Peters at Zentrum für Europäische Wirtschaftsforschung (ZEW), Germany.

Kiyoshi Kobayashi at the Department of Urban Management of Kyoto University, Japan.

Paul Cheshire at the London School of Economics and Political Sience in London, UK.

Maureen Kilkenny at the University of Minnesota - Twin Cities, USA and honorary doctor at JIBS.

CESIS MOST IMPORTANT ROLE IN THE PAST AND IN THE FUTURE

Börje Johansson was part of founding CESIS and served as director from the start in 2004 until 2012. He has been higly involved in much of the research, not only contributing himself but guiding an shaping other bright minds to become their best. We celebrate his contributions to the great success of CESIS. Below he answers what he believes has been the most important contribution of CESIS and what role CESIS may have in the future.

BÖRJE JOHANSSON IS EMERITUS PROFESSOR AT THE DIVISION OF ENTREPRENEURSHIP AND INNOVATION AT KTH, THE ROYAL INSTITUTE OF TECHNOLOGY AND PROFESSOR OF ECONOMICS AT THE JÖNKÖPING INTERNATIONAL BUSINESS SCHOOL (JIBS). DURING 2004-2012 HE WAS DIRECTOR OF CESIS, CENTRE OF EXCELLENCE FOR SCIENCE AND INNOVATION STUDIES, SHARING HIS TIME BETWEEN KTH AND JIBS.

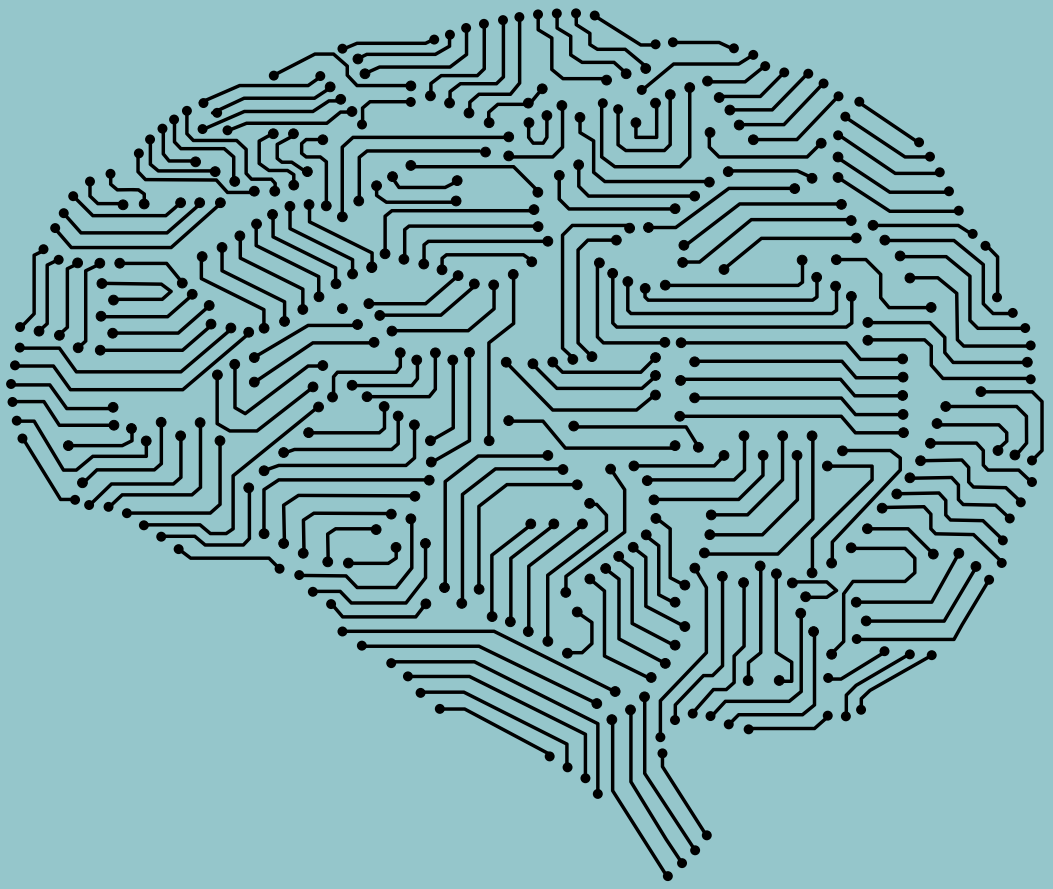
CESIS research has developed in the period 2004-2018 with KTH and JIBS as two hubs of scholars that jointly orchestrated innovation research efforts. In addition, the center strived to be an international hub where researchers from primarily North America, Europe, and Japan could participate in projects that in many cases extended over several years. For Sweden and other European countries, the period after 2000 offered new opportunities due to the emergence of novel data sources that allowed the formation of micro level panels. CESIS was an active participant in designing new econometric models, encompassing rich observations both inside and outside the firm, and making it possible to pose new research questions.

”future CESIS research will continue to rely on possibilities to monitor individual firms over time”

The accessibility of new data sources was timely for CESIS. The reason for this was a fundamental observation that gradually gained acceptance – firms and their characteristics are heterogenous, contradicting the message from classic economic theory, which suggests that when firms face similar external conditions, they should be forced to behave alike over the long run, and thereby making firm-level heterogeneity vanish. Instead, heterogeneity should be appreciated as a generic phenomenon, where R&D and innovation efforts help to explain lasting differences in firm performance. In view of this, future CESIS research will continue to rely on possibilities to monitor individual firms over time.

Heterogeneity also applies in studies of how knowledge affects growth and development in functional regions. In this endeavour, it is crucial to understand those factors that make knowledge spatialy sticky and knowledge-production capacity trapped. Continuing CESIS contribution in this area could comprise definition, measurement and assessment of concepts such as knowledge accessibility of firms located in a given municipality (city), where the total accessibility can be partitioned into (1) local, (2) regional and (3) extra-regional access to (A) knowledge intensive labour, (B) R&D activities, (C) transport node capacity, and so forth. These accessibility variables help to explain the conditions for knowledge flows and diffusion, while linking knowledge generation to creativity.

The associated arena is a global knowledge economy, in which urban regions are looked upon as independent, dynamic market places, connected with each other via knowledge and commodity flows. Each such region has its own base of scientific, technological, and entrepreneurial knowledge, framing the conditions for knowledge creation, appropriation, and absorption, as well as transforming knowledge to innovations.



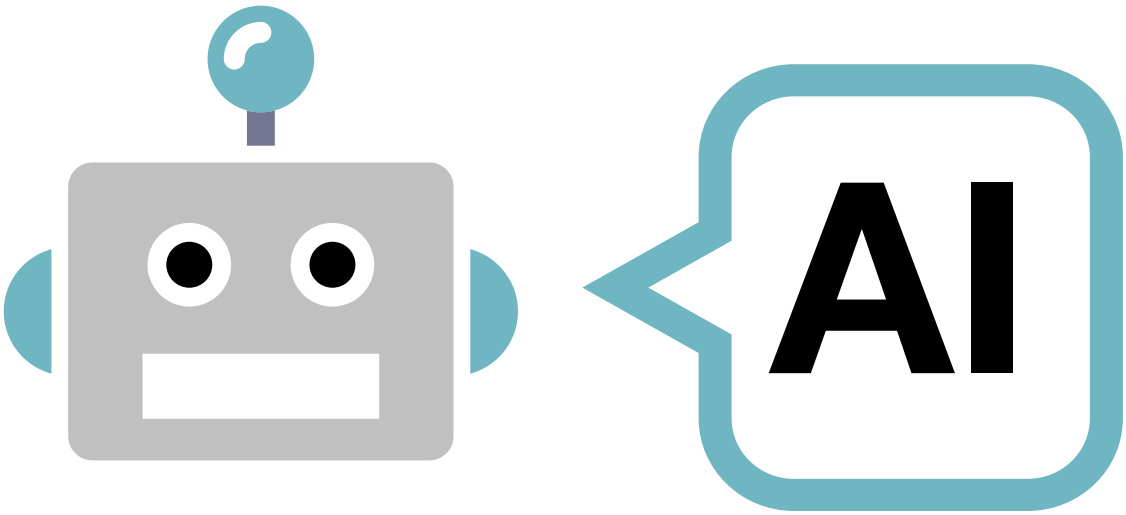
CESIS - A CATALYST FOR SUSTAINABILITY

Björn Hårsman has been a cherished part of CESIS.
He joined the board in 2006, two years after CESIS was founded.
As part of the celebration Björn was asked about his experience with CESIS and what he envisions for the future.

BJÖRN HÅRSMAN IS PROFESSOR EMERITUS AT THE DEPARTMENT OF INDUSTRIAL ECONOMICS AND MANAGEMENT, KTH AND WAS CHAIRMAN OF CECIS 2006-2016. HE WAS CHAIRMAN OF THE SAME DEPARTMENT 2011-2012, DEAN FOR KTH´S SCHOOL OF ARCHITECTURE AND THE BUILT ENVIRONMENT 2004-2008 AND CHAIRMAN OF THE INSTITUTE FOR MANAGEMENT OF INNOVATION AND TECHNOLOGY, IMIT, 2016-2018.

I felt honored and excited when I, as a dean for KTH's School of Architecture and the Built Environment, was asked to chair to board of CESIS in 2006. I thought that KTH had both the capacity and the obligation to complement its leading role as a technical university with research about the economic and social impact of its technologically oriented R&D. I also thought that the close link between new knowledge and action that characterizes large parts of the engineering research might inspire CECIS to translate findings about different innovation processes into concrete policy suggestions, in the form of e g new incentives and supporting institutions.

Stagnating productivity, growing power of corporate monopolies, increasing hostility to migration flows and global trade, and, of course, global warming makes knowledge of the kind produced by CESIS more needed than ever. I think it is especially important to consider the likely transformative impacts of innovations related to AI and machine learning. The R&D in this area has already produced concrete benefits in e g health care and transportation and it has the potential to become a main future driver of sustainability, economic growth and social progress. I have no doubt that CESIS can play a decisive role for furthering the possibilities to realize this potential.



”I think it is especially important to consider the likely transformative impacts of AI and machine learning”

CESIS WORKING PAPER SERIES

There have been many papers written by CESIS authors in the past 14 years. To get an overview you can look at the CESIS Working Paper Series where many CESIS papers are found. Not all articles by CESIS researchers are published here and some papers in the working series are published in other journals when finished, but as of February 2018 there were 465 papers in the Series. Below is a list of the 10 most cited papers on Google Scholar that are part of the CESIS Working Paper Series

Paper	Authors	Citations
77. The Knowledge Spillover Theory of Entrepreneurship	Z. Acs, D. Audrestch, P. Braunerhjelm, B. Carlsson	1082
88. Inside the Black Box of Regional Development - human capital, the creative class and tolerance	R. Florida, C. Mellander, K. Stolarick	751
129. The Rise of the Mega-Region	R. Florida, T. Gulden, C. Mellander	311
10. Regional Innovation Systems in Small & Medium-Sized Regions A Critical Review & Assessment	M. Andersson, C. Karlsson	293
394. Do Financing Constraints Matter for R&D?	J. R. Brown, G. Martinsson, B. C. Petersen	271
24. Firm Level Innovation and Productivity - Is there a Common Story Across Countries?	N. Janz, H. Lööf, B. Peters	263
21. Does Knowledge Diffusion between University and Industry Increase Innovativeness?	H. Lööf, A. Broström	257
298. What Do We Learn From Schumpeterian Growth Theory?	P. Aghion, U. Akcigit, P. Howitt	234
58. The Effects of FDI Inflows on Host Country Economic Growth	A. Johnson	197
54. Why Do Some Multinational Corporations Relocate Their Headquarters Overseas?	J. Birkinshaw, P. Braunerhjelm, U. Holm, S. Terjesen	171

BOOKS BY CESIS AUTHORS

CESIS researchers has been part of many books, both as chapter authors and editors. Here is a selection of books that show the core of CESIS and the work done during these 14 years.

Knowledge, Innovation and Space
C. Karlsson, B. Johansson, K. Kobayashi and R. R. Stough

Agglomeration, Clusters and Entrepreneurship
C. Karlsson, B. Johansson and R. R. Stough

The Regional Economics of Knowledge and Talent – Local Advantage in a Global Context
C. Karlsson, B. Johansson and R. R. Stough 2012

Entrepreneurship, Social Capital and Governance – Directions for the Sustainable Development and Competitiveness of Regions
C. Karlsson, B. Johansson and R. R. Stough 2012

Innovation and Growth: From R&D Strategies of Innovating Firms to Economy-wide Technological Change
M. Andersson, B. Johansson, C. Karlsson and H. Lööf, 2012

Time, Space and Capital - New Horizons in Institutional and Evolutionary Economics series
Å. E. Andersson, and D. E. Andersson, 2017

Routledge Handbook of the Economics of Knowledge
C. Antonelli and A. N . Link, 2015

Entrepreneurship and Regional Development – Local processes and global patterns
B. Johansson, C. Karlsson and R.R. Stough, 2010

Entrepreneurship and Innovations in Functional Regions
B. Johansson, C. Karlsson and R.R. Stough, 2009

Innovation, Agglomeration and Regional Competition
B. Johansson, C. Karlsson and R.R. Stough, 2009

The Management and Measurement of Infrastructure – Performance, Efficiency and Innovation
B. Johansson, C. Karlsson, W.P. Anderson and K. Kobayashi, 2007

Entrepreneurship and Dynamics in a Knowledge Economy
B. Johansson, C. Karlsson and R Stough, 2006

The Emerging Digital Economy, Entrepreneurship, Clusters and Policy
B. Johansson, C Karlsson and R Stough, 2006

Industrial Clusters and Inter-Firm Networks
B. Johansson, C. Karlsson and R Stough, 2005

Economics of Knowledge: Theory, Models and Measurements
Å. E Andersson and M. J. Beckmann, 2009

Handbook of Research on Cluster Theory
C. Karlsson, 2008

Handbook of Research Methods and Applications in Economic Geography
C. Karlsson and M. Andersson, 2016

Entrepreneurial Knowledge, Technology and the Transformation of Regions (Regions and Cities)
C. Karlsson and B. Johansson, 2013

THE ANNALS OF REGIONAL SCIENCE

The Annals of Regional Science is an international journal of urban, regional and environmental research and policy. It presents high-quality research in the interdisciplinary field of regional and urban studies.

The journal publishes papers which make a new or substantial contribution to the body of knowledge in which the spatial dimension plays a fundamental role, including regional economics, resource management, location theory, urban and regional planning, transportation and communication, population distribution and environmental quality. The Journal is also the official journal of the Western Regional Science Association.

The Journal has 3 permanent editors, one from Europe, one from North America and one from Asia. Between 1994 and 2014 Professor Börje Johansson of CESIS had the priviledge to hold the European seat. His successor is Martin Andersson, who we also associated with CESIS.

The first issue in 2015 was a special issue titled The Geography of Innovation and Entrepreneurship and guest editors were Hans Lööf and Mikaela Backman. The focus is on the agglomeration economies and spatial heterogeneity of regions and firms. The issue seek to explain how firms, industries and regions are affected by innovation and entrepreneurship.

Another special issue with CESIS conection is in progress. This issue is in honor of Professor Charlie Karlsson with guest editors David Andersson and Martin Andersson. It was published in 2018.

EINT - ECONOMICS OF INNOVATION AND NEW TECHNOLOGY

The journal "Economics of Innovation and New Technology", EINT aims to analyze the theoretical and empirical determinants of innovation, new technology and technological knowledge.

The journal also strives to provide a bridge between different strands of literature and different contributions of economic theory and empirical economics. EINT has on two occations been guest edited by CESIS researchers. One in 2015 and the second one in 2017.

Professors Börje Johansson and Hans Lööf were guest editors of the special edition of EINT in 2015. This issue is focused on Productivity, Networks and Knowledge Flows. Some of CESIS main themes are present in this issue. The ideas of persistent innovation efforts, accession of external knowledge sources and innovation networks are at the core of the issue.

In 2017, Hans Lööf, Jaques Mairesse and Pierre Mohnen were guest editors of the EINT special issue titled CMD 20 Years After. The CMD framework is an influencial empirical framework in the economics of innovation, named after the original authors, Crépon, Duguet an Mairesse. THe purpose of this special issue is to analyse the past 20 years and mapping out the research ahead.

NEXT GENERATION OF CESIS RESEARCHERS

At CESIS, it is crucial that there is a strong core of knowledge in a dynamic research environment. This is a prerequisite for persistent quality and research productivity. CESIS takes great pride in attracting and recruiting young promising researchers, which in turn contributes to both renewal and continuity. The young researchers can benefit from the research environment while at the same time revitalizing it with their own skills, research issues and networks.

RESEARCH KEY TO UNDERSTAND

SOCIO-ECONOMIC & ENVIRONMENTAL PROBLEMS

JULIA LILJEGREN, PHD STUDENT IN FINANCIAL ECONOMICS AT THE DEPARTMENT OF INDUSTRIAL ECONOMICS AND MANAGEMENT AT THE ROYAL INSTITUTE OF TECHNOLOGY (KTH).

”My vision is that further research will lead to a broader understanding of sustainability which ultimately will bring more efficient ways of reaching our goals for a more sustainable world."

In 2014, I obtained my master degree of Econometrics from the Department of Economics at the University of Stockholm. After having worked two years as a risk analyst and financial supervisor at the Swedish Financial Supervisory Authority, I decided to go back to academia and start the PhD program to fulfill my dreams of conducting research. I have always had a broad interest for different research areas in order to understand socio-economic and environmental problems. My research focuses on corporate and behavioral finance in connection to sustainability and economic growth. For the moment, I am involved in two different research projects that focus on how corporate taxes affect investment behavior and how CEO gender affects financial performance.

IDENTIFYING INEFFICIENCIES

TO REDUCE ENVIRONMENTAL IMPACT

ALI MOHAMMADI, ASSISTANT PROFESSOR OF ENTREPRENEURSHIP IN KTH.

I joined CESIS and KTH in 2011 as a postdoc after I finished my PhD in Politecnico di Milano, Italy. Before starting my current position at KTH, I was a senior lecturer (Lektor) at The School of Business, Economics and Law, University of Gothenburg during 2017. The postdoc position in CESIS was very vital in shaping my research career.

My research focuses on three main areas. First, I study tech-based entrepreneurship with special focus on sources of financing such as venture capital, business angels and recently crowdfunding. Second, I am interested in strategic value of intellectual property rights (i.e patents) for firms. In this stream of research, I try to understand how decisions to apply for a patent or keep innovation as trade secret affects resource acquisition of entrepreneurial firms and large established firms. More recently, I studied innovation and different technological developments using patent and trademark. We are planning to investigate how green and sustainable technology is developing in Sweden and compare it with rest of the world using patent data. This research can help us to identify the key players in different technological fields and evaluate their strength and weaknesses.

My general aim with my research is to identify inefficiencies in innovation and entrepreneurship. One of the most important socio-economic issues of today is environmental concerns. By identifying the inefficiencies in innovation processes we can help to reduce our impact on planet and environment through new solutions and technological development. These inefficiencies can be related to lack of resources such as human capital, technical knowledge or financing.

One of my passions in academic life is teaching. It truly makes me feel useful and the I have learned a lot from the interaction with my students.

”My general aim with my research is to identify inefficiencies in innovation and entrepreneurship."

PRODUCTION

PUBLISHER: HANS LÖÖF, CESIS
DESIGN & STRATEGY: SARA ALINDER, WWW.ALINDERDESIGN.SE
TEXT & PROJECT MANAGEMENT: JOHAN ELIASSON, ELIASSON GROUP

CESIS

CESIS stands for Centre of Excellence for Science and Innovation Studies and was established 2004 as a joint effort by researchers at the Royal Institute of Technology (KTH) and Jönköping International Business School (JIBS). The mission was to organise and carry out studies of innovation systems with main focus on Sweden. The ambition of CESIS has been to provide a deeper understanding of the interdependencies between innovations and economic development. Special attention is paid to developing models and methods designed to examine how R&D influences economic growth. In this endeavour CESIS has strived to become a hub for collaboration between international research centres. After 14 years, the main findings are summarized to demonstrate the success and impact of CESIS.

JÖNKÖPING UNIVERSITY
Jönköping International Business School

The Cesis programme is hosted by Cesis in collaboration with Jönköping univesity and KTH.