

# **The Role of Academic Institutions in the National System of Innovation and the Debate in Sweden**

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# The Swedish context

- The welfare insurance system
  - funded via extensive income tax transfers
  - redistributive system with growth enhancing mechanism
- Public sector involvement
  - provision free education, health care, social security to all
  - equal opportunities to all citizens;
- Labour market regulations,
  - centralized wage negotiation
  - solidaric wage policy



# Has the Swedish Welfare Model come to an End?

- 1990's crisis
- Labour market interventions
- Political change
- 6th on UNDP's HDI
- High growth
- Re-inventing model



# The Position of Academic Institutions in Swedish NSI

- R&D, 97 billion SEK (USD 13 billion)
- Universities 22 %
- Business sector 74% in 2003
- Small Research Institute sector



	R&D expenditure in billions of (current) PPP dollars, 2001 or latest available year	R&D Intensity as a percentage of GDP, 2001 or latest available year
Finland	4,7	3,4
Norway	2,7	1,6
<b>Sweden</b>	<b>9,9</b>	<b>4,3</b>
United Kingdom	29,4	1,9
Germany	53,9	2,5
France	35,1	2,2
OECD average		2,3
EU average		1,9

Source: OECD, MSTI database, May 2003.



# The Swedish paradox

- High R&D
- Lower growth
- No strong linear relationship R&D/growth
- the *entrepreneurial* quality of American research institutions





# University R&D Spending by Academic Field

- Medical sciences 27%
- Engineering sciences 23%
- Natural sciences 19%
- Social sciences 11%
- Humanities 6 %
- Agricultural and forestry sciences 5%



# Academic System

- 41 universities and university colleges; 36 state-owned and 5 state-supported foundations
- Varied sizes; largest over 6 000 full-time employees and over 37 000 registered students
- The ten largest universities employed 71 percent of the total number of personnel in 2004



# Academic System cont.

- Public research; 64% by universities
- University R&D;
  - 52 percent 'Big Five'

➡ Academic research concentrated to the large universities



# University Research Funding

- State funding (47%)
- Public research councils
  - *The Swedish Research Council*
  - *Council for Working Life and Social Research*
  - *FORMAS*
- Research foundations (from 1993-94)
- Swedish Agency for Innovation Systems
- Private foundations and NGOs



# The Debate on Research Policy and Role of Universities

- Heated up in 1990s
- Political change → Wage-earners fund  
Research foundations (USD 300  
million/year)



# Issues of Public Debate

- Organization, funding, quality of university education and research, academic freedom and internationalization
- Rights and promotion of e.g. women, ethnic minorities, social class and regions
- Economic and industrial relevance of Swedish R&D efforts



# Organisation, funding and quality

- Third Mission (late 1990s)
  - opinions vary between univ. and dep.
  - more important to small universities
  - extra administrative burden
- Affirmative Action in Recruitment
  - Gender
  - Ethnic background



# Myths in the Debate

- “Sweden has an outstanding volume of academic research”
  - peculiarities of the Swedish R&D system
  - use time expenditure as indicator → lower volume of academic research than some OECD countries
- “‘curiosity-driven’ research dominates”
  - external funding, ‘needs-driven’, or ‘strategic’ research.
- “there is a substantial gap between academia/industry”
  - evidence that suggests the opposite

(Granberg and Jacobsson)



# Economic and Industrial Relevance

- Innovation and Entrepreneurship
  - Intellectual Property Rights
    - “Professor’s exception”
  - University Holding Companies (1994)
  - Need for Venture Capital



# Summing Up

- The Swedish academic system expanded, maintained and adjusted according to policy
- Sizeable research input
- Positive output indicators
- Research results of high international standards
- Slow growth



Debate role and performance of academic institutions in providing innovations and entrepreneurship



# Summing Up II

- How to create entrepreneurial universities and entrepreneurial professors
- Models for nurturing business ideas and innovations
- Triple Helix Model



**GRACIAS**  
**THANK YOU**  
**TACK SÅ MYCKET**

