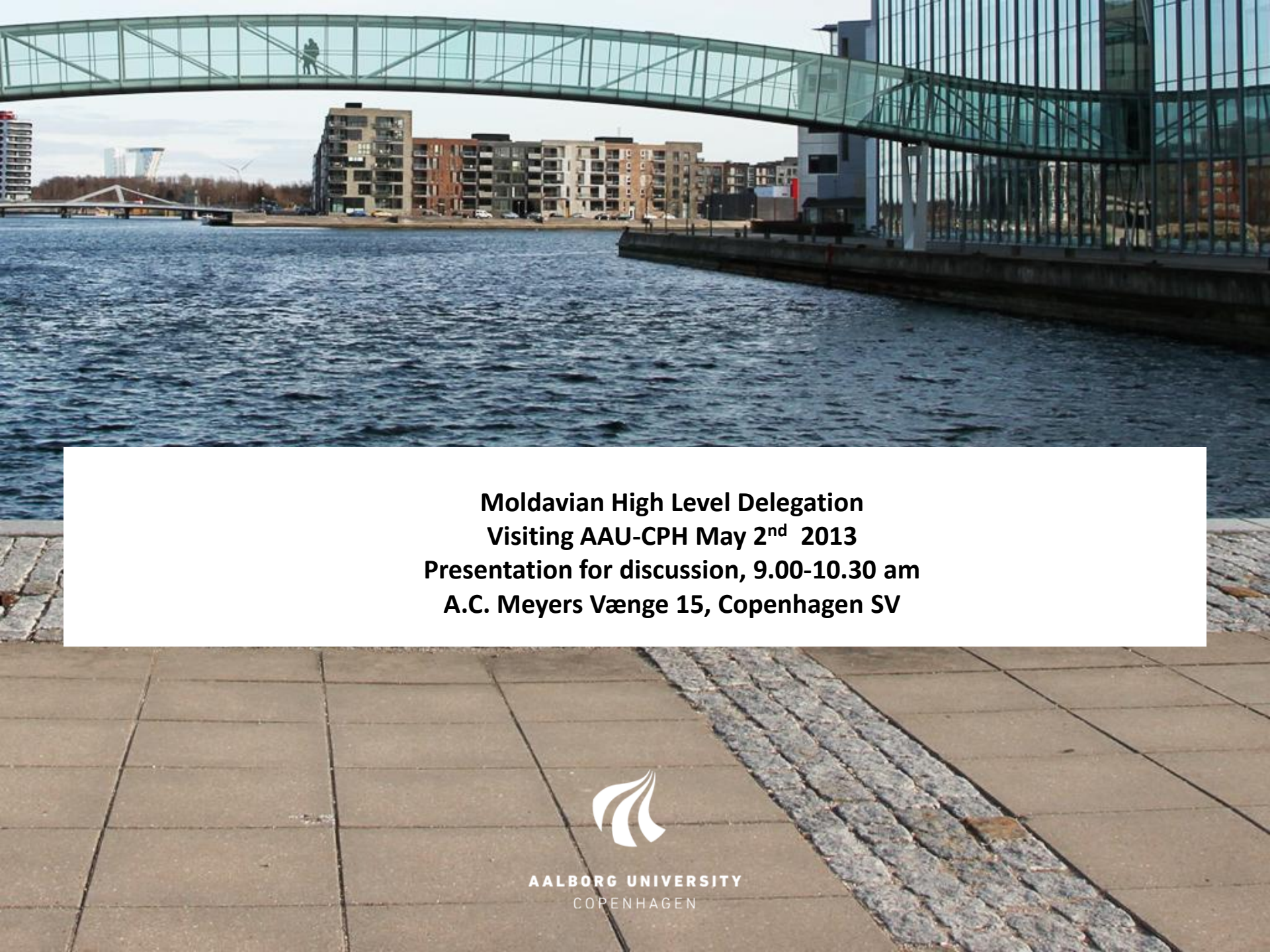


Moldavian High Level Delegation
Visiting AAU-CPH May 2nd 2013
Presentation for discussion, 9.00-10.30 am
A.C. Meyers Vænge 15, Copenhagen SV

AALBORG UNIVERSITY
COPENHAGEN

The History of establishing AAU Cph

The growth of Aalborg university in Copenhagen:

2009 we were 350 students (and 70 in staff)

2010 we were 700 students

2011 we were 1550 students

2012 we were 2500 students; expects to be >3.000 in September 2013 (almost growing X10 in 4 years)

Have merged with the two other AAU activities (SBi and Social Studies) in greater Copenhagen -adding all in all up to close to 500 in staff

Moved 2012 into an attractive location at the Copenhagen harbour front: 6 buildings, all in all >50.000m2 (picture on next slide)

The role of Universities in society

Universities are adding value to society through three “Products”:

- New knowledge (both basic and applied; relevant and inspiring)
- Research based education programs, giving highly qualified candidates (bachelors, masters, PhD´s) for the public and private sector
- Collaborating for dessimination of knowledge to both public and private sector
  - providing basis for insightsful and innovative solutions for a more sustainable and inclusive society in future

The Basics I

These three ”University Products” are produced in the institutes,

- -among researchers and students
- -in collaboration with external stakeholders
  - -the ones using the new knowledge and hiring our candidates
  - -and the other researchers, with whom we collaborate

Structure, leadership and mannagement of universities should aim at strengthening and optimizing the production of such products

The Basics II

Transparancy and openes,
Inclusivenes,
Participatory approach,
Leadership and Clear line-references,
International outlook,
Innovative and Cross disciplinary approach
-and a strong internal and external communication

-are all of vital importance

Starting a new Campus (or a new University)

- There is no way of starting a new university unit with less than a first class product
- Each of the students, receiving their teaching from day one must receive a full package
- Subcritical research environments are not satisfactory and do not give the basis for delivering what is promised. Show the students respect!

Building of AAU Cph:
AAU chose to make all researchers in the new AAU Cph campus part of larger research groups in already existing and consolidated Institutes at the main campus in Aalborg

Hereby we provided critical mass for full research quality from day one

Next in focus was to create a coherent organization and provide basis for cross disciplinary collaboration on the new campus

The organizational structure

In 2009 we had 9 departments. (Head of Departments typically in Aalborg)
Grew fast to having 18 departments represented; from 3 Faculties
–in 2012 growing to having all four Faculties on Campus

Main organizational bodies
Campus Council: each department on campus had one representative, selected among the researcher posted on AAU Cph.
Institute being large or small, following the principle that all should be represented around.Plus people from technical staff and from student-org.

Workers Health and Safety Committee established within the first months

Recruitment Committee, composed of one from each of the education programs offered. NOT a Marketing Committee! Spanning between AAU Schools and local knowledge. Focus: providing clear info to target groups

Research strategy group, focusing on cross disciplinary research /Info

Inclusivenes and culture in Focus

We merged three cultures. All staff and student groups are equally important. Therefore, we needed to build an organizational structure where all staff categories and student bodies were equally well represented.

We established Campus Development Council. CDC composition:
One student representative from each of the ”Schools” (9 in all)
Technical staff and Researchers represented from each faculty (8)
Central administrative staff represented
Faculties and Department Heads approved composition

CDC started ”social” committees to stimulate growing the Campus Life:
Study environment
Research environment
Canteen
Fittness
Bicycling
Art, etc

Communication in Focus

In a young organization, internal communication is of utmost importance
=>We established very early an Intranet

To build an organization you need to build trust.
Trust builds on transparency and on delivering what is promised

=> we prioritized:
To poste all meeting agenda´s and minutes on the intranet
To strengthen the IT support, the building support and the WHS
To follow up on all decisions made as soon as possible

Further:
Building and maintaining strong lines of communication to HQ Campus

The importance of a strong local network

Academic networking
Incentives for strengthening the strong academic networking to the neighbouring universities and international collaborations

Taking home funding and publishing together with colleagues at other universities, in Denmark and internationally

Political networking
AAU Cph used as venue for numerous ministerial meetings 2012-2013

Local networking
Participate actively in growing Copenhagen as an ”International Knowledge City”, e.g. Talent Recruitment activities and International Spouse programs

Use the Campus as a venue for important local meetings, as eg public hearing of new city planning for the local area

The Full Knowledge Triangle -on Campus!

The vision of AAU was to build a full campus, integrating all 3: Research, Education and Companies (both incubator, start ups and established firms)

We can hereby provide entrepreneurial inspiration to our students, ideas and easy and daily contact between companies and university researchers, and fast implementation and use of new knowledge for new business!

It looks like it is working!
-student projects are an efficient means of direct collaboration, giving value to all three parts of the knowledge triangle, fuelling the triangle!

Co-location gives Co-creation!

Adhering to the Aalborg model, the reason why AAU established a campus in Copenhagen

The Aalborg model:
Teaching:
Problem-based learning, Project organized
Building a learning environment where the students acquire the understanding of the theory by working on solving real problems, of relevance and importance for the world

Research:
Cross disciplinary research with a solution focus.
Circular not linear approach to research
-applied research stimulate to develop new basic knowledge
-and vice versa, new break throughs in conceptual research inspires to provide new solutions to important problems

It has been a great satisfaction and inspiration to see that talent among both students and academic staff are choosing to join the new AAU Campus


Thank you for the attention
-Questions welcome!
AALBORG UNIVERSITY
COPENHAGEN

Systemic governance of Universities in Denmark

Copenhagen, May 2, 2013

Jacob Fuchs
Head of Division, Chief Adviser
Danish Agency for Universities and Internationalisation
Ministry of Science, Innovation and Higher Education
jfu@ui.dk

CONTENT OF THE PRESENTATION

- An Overview of The Danish Universities
- The Reforms of the Recent Decade
  - Increasing funding
  - Modernising governance
  - Developing the use of economic incentives
  - Reforming institutional structure
  - Instrumentalising dialogue: The development contracts
- A Wrap-up

Overview of The Danish Universities

The Danish University Sector, 2011

- 8 universities
- 15,268 scientific personnel, year equivalents
- 136,000 enrolled students
  - Humanities: 38,500
  - Science and technology: 34,000
  - Social sciences: 51,000
  - Health sciences: 12,500
- 8,400 PhD-students

The Eight Universities

Aalborg University

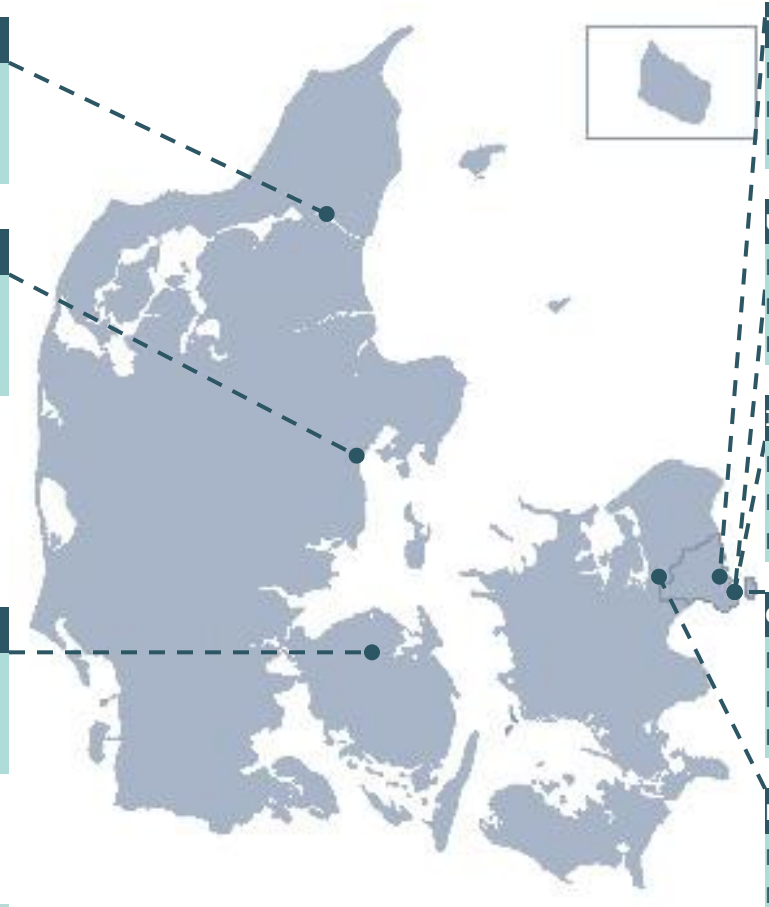
Number of scientific personnel: 1,230
Number of students: 14,412
Revenue (in DKK): 1,891 million

University of Aarhus

Number of scientific personnel: 3,204
Number of students: 30,414
Revenue (in DKK): 5,270 million

University of Southern Denmark

Number of scientific personnel: 1,504
Number of students: 14,812
Revenue (in DKK): 2,236 million



Technical University of Denmark

Number of scientific personnel: 1.522
Number of students: 6.560
Revenue (in DKK): 3.746 million

University of Copenhagen

Number of scientific personnel: 4,012
Number of students: 38,010
Revenue (in DKK): 7,077 million

IT University of Copenhagen

Number of scientific personnel: 84
Number of students: 1,068
Revenue (in DKK): 162,635 million

Copenhagen Business School

Number of scientific personnel: 566
Number of students: 17,000
Revenue (in DKK): 1,128 million

Roskilde University

Number of scientific personnel: 474
Number of students: 7,102
Revenue (in DKK): 705 million

Source: Annual Reports 2009

University Funding, 2013

	(M €)	Percent
Basic grant	1.225	35
Education performance funding	880	25
Competitive research grants	892	25
Government commissioned research	110	3
Other (various income and special initiatives like museums)	389	11
Total	**3.497**	100

Reforms of the Recent Decade: Placing Universities at the Center of Knowledge Society

- Increasing Funding
- Modernising Governance
- Developing the Use of Economic Incentives
- Reforming Institutional Structure
- Instrumentalising Dialogue: The Development Contracts

Increasing Funding

Increasing Funding

- Public research spending up from 0.75 to 1.07 per cent of GDP between 2005 and 2013

- Total university turnover up 40 per cent between 2005 and 2013

Modernizing Governance

New Institutions and Management Structure - The University Act of 2003

- Public but self-governing institutions
- Boards with external majority
  - Board selected in co-opting process
- Rector appointed by the board
- University management appointed not elected

Principle of arm's length between government and institutions

- The Ministry can only dictate changes at the institutions in situations where there is explicit legal authority

- Freedom of research is secured

Developing the Use of Economic Incentives

Activity Based Grant structure for Education

- 3 basic grant rates (overhead included):
  - Humanities and Social Sciences: 6,100 € per 60 ECTS
  - Natural Sciences (non-exp.): 8,900 € per 60 ECTS
  - Natural Sciences and Health: 12,900 € per 60 ECTS
- Additional bonus for early graduation:
  - Bachelors graduating within 4 year: an extra 65 per cent
  - Masters graduating within 2 year: an extra 35 per cent
- Incentive for students to study abroad:
  - Above basic grants to be taken overseas to pay for tuition fee

Reforming Institutional Structure

- The Mergers of Universities and Government Research Institutions

The Principal Aims of the 2006/2007 Mergers

- to strengthen the institutional infrastructure of universities to handle increased appropriations
- to strengthen Danish research and university education – also in an international context
- to increase the universities' ability to attract international research funding, including EU funding

The Result

- Before the mergers Denmark had:
  - 12 universities and 13 government research institutions

- As a result of the mergers Denmark now has:
  - 8 universities and 4 government research institutions

The Merging Institutions, 2007

Aalborg University

Turnover 2009 pct. of total: 8,5 pct.

+ Danish Building Research Institute

University of Aarhus

Turnover 2009 pct. of total: 23,7 pct.

+ Aarhus School of Business
+ Danish Institute of Agricultural Sciences
+ National Environmental Research Institute
+ Danish University of Education

University of Southern Denmark

Turnover 2009 pct. of total: 10,0 pct.

+ National Institute of Public Health

Technical University of Denmark

Turnover 2009 pct. of total: 16,9 pct.

+ Risø - National Laboratory for Sustainable Energy
+ Danish Institute for Food and Veterinary Research
+ Danish National Space Centre
+ Danish Institute for Fisheries Research
+ Danish Transport Research Institute

University of Copenhagen

Turnover 2009 pct. of total: 31,9 pct.

+ Danish University of Pharmaceutical Sciences
+ Royal Veterinary and Agricultural University

IT University of Copenhagen

Turnover 2009 pct. of total: 0,7 pct.

Copenhagen Business School

Turnover 2009 pct. of total: 5,1 pct.

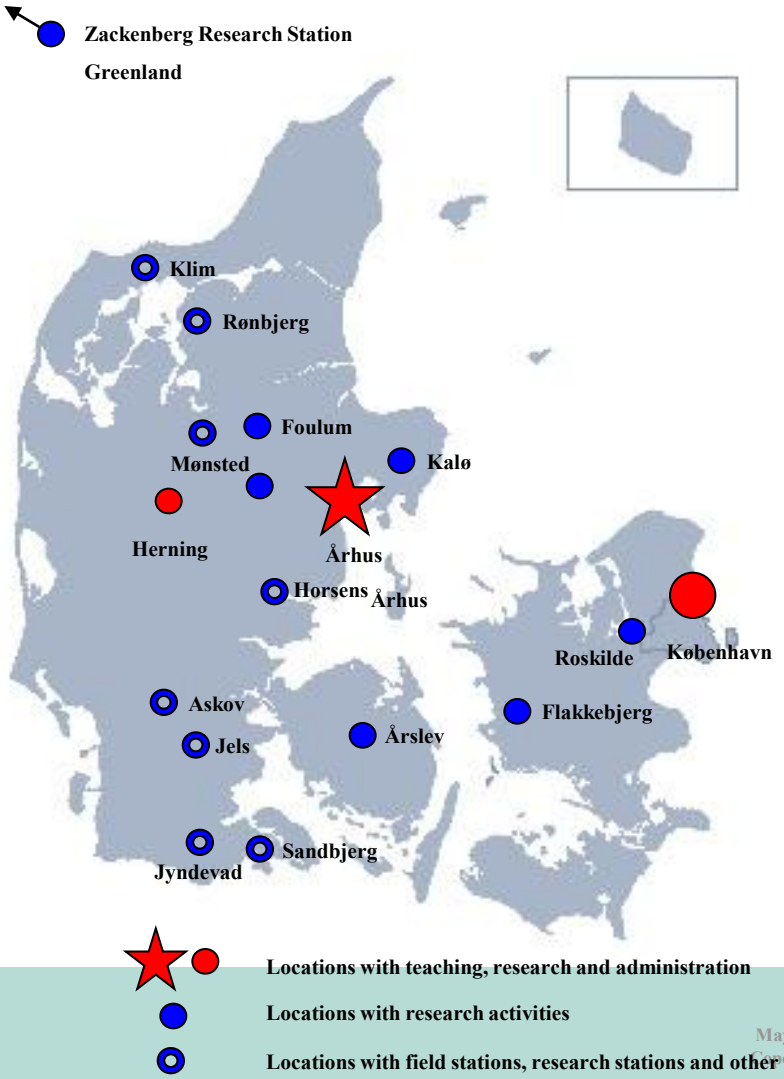
Roskilde University

Turnover 2009 pct. of total: 3,2 pct.

Mergers as Change Drivers

University of Aarhus – an example

- Consolidation of activities and new growth
  - Strengthen main campus in Aarhus
  - Develop Copenhagen satellite campus
- Reform of organisation
  - Create four new faculties out of nine
  - Engender interdisciplinary research
  - Develop ”common market” for education
  - Focus on industry relations across the university



Instrumentalising Dialogue: The Development Contracts (DC)

What is a development contracts?

- An agreement between the Minister and the chair of the university board
- Medium term targets (3-4 years)
- The purpose: to promote the strategic development and to support strategic work
- 2 types of target: 3-5 mandatory and 3-5 self-imposed

2012-2014 development contracts

The Ministers mandatory targets:

- Strengthen the quality of education
- Strengthen the cohesion of higher education.
- Faster study completion time
- Promote the capacity for innovation

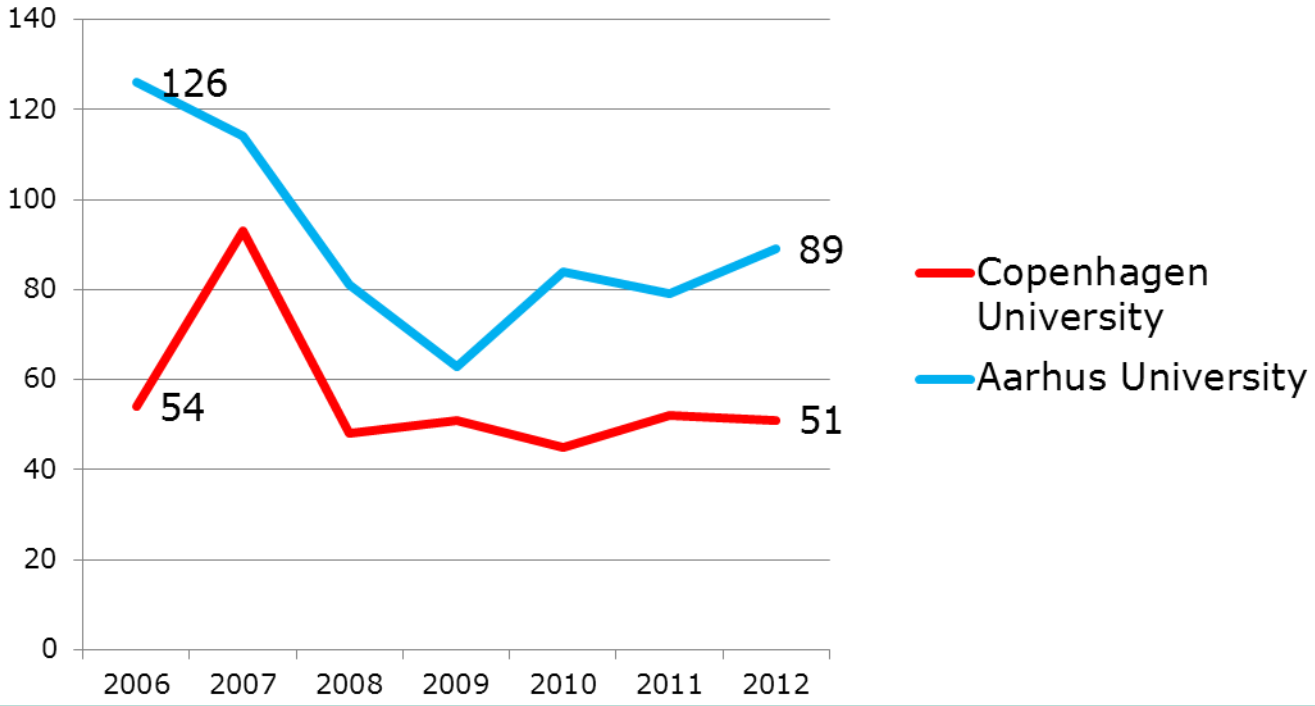
Evaluation of DC Performance: The Annual Report

- University's annual reporting on performance on DC targets is the basis of dialogue internally at institutions and with Ministry

- Universities' performance on DC targets are reported to Parliament

A Wrap-up

Copenhagen and Aarhus University in QS Ranking 2006-2010



Where are we?

- Arm's length, modernized governance structure, a reformed "map of universities" and extensive use of economic incentives main reasons for Danish universities' performance

Thank you for your attention!

jfu@ui.dk

Read more: http://fivu.dk/en/education-and-institutions/higher-education/danish-universities/the-universities-in-denmark/university-evaluation-in-2009

Danske Universiteter
Universities Denmark

Universities Denmark

Susanne Bjerregaard
Secretary General

Danske Universiteter
Universities Denmark

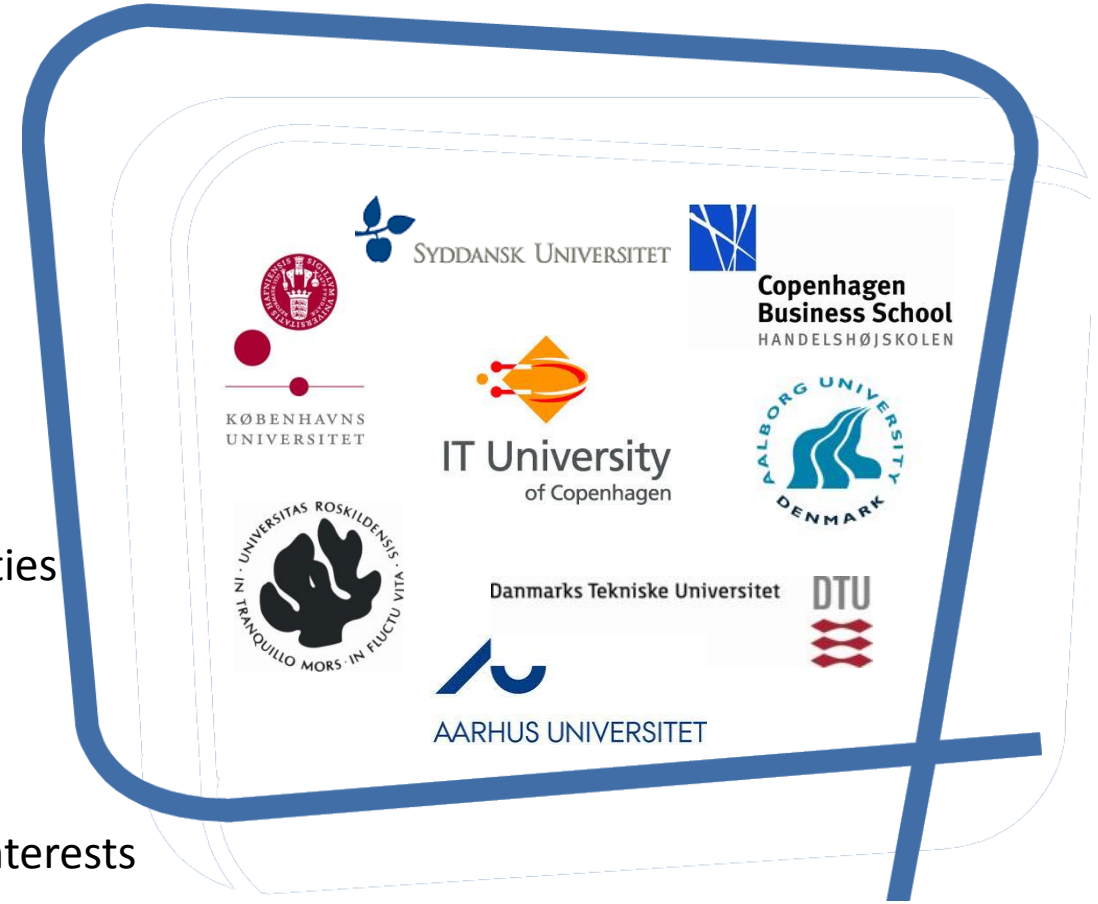
The organisation

Members:
8 research universities

Structure:
- Presidium
- Chairmen's conference
- Rectors' conference
- Directors
- Standing and ad hoc committies

150 meetings per year

Value of Universities Denmark:
- Co-operation and common interests



Danske Universiteter
Universities Denmark

Relations to key stakeholders

Politicians – continuous dialogue and annual meeting

Ministry of Science, Innovation and Higher Education – numerous meetings at all levels, hearings etc.

Other ministries (finance, buildings) – less frequent meetings

Other stakeholders, e.g.:
- University Colleges
- Research Councils
- Employers, primarily Conference of Danish Industries
- Academics, primarily Confederation of Professional Associations

International relations
- EUA
- NUS/NUAS

Danske Universiteter
Universities Denmark

The Secretariat – and its funding

Public funding
• approx. 1 mio. Euro per year plus funding for specific tasks
(in total: 1,5 mio. Euro)

Structure
• 11 emplyees (plus two students)

Main tasks:
• Exchange of knowledge
• Identification of common interests
• Hearings and appointments
• Relations to stakeholders
• Common projects
(BSU, SwB, Japan, China, University Statistics)

Danske Universiteter
Universities Denmark

Key topics

Accreditation	Steering	Funding
Internationalisation	Recruitment	Talents
Mass education	Autonomy	Innovation
Tech trans	Elite/world class	Co-funding

I will elaborate on a few of these…

Danske Universiteter
Universities Denmark

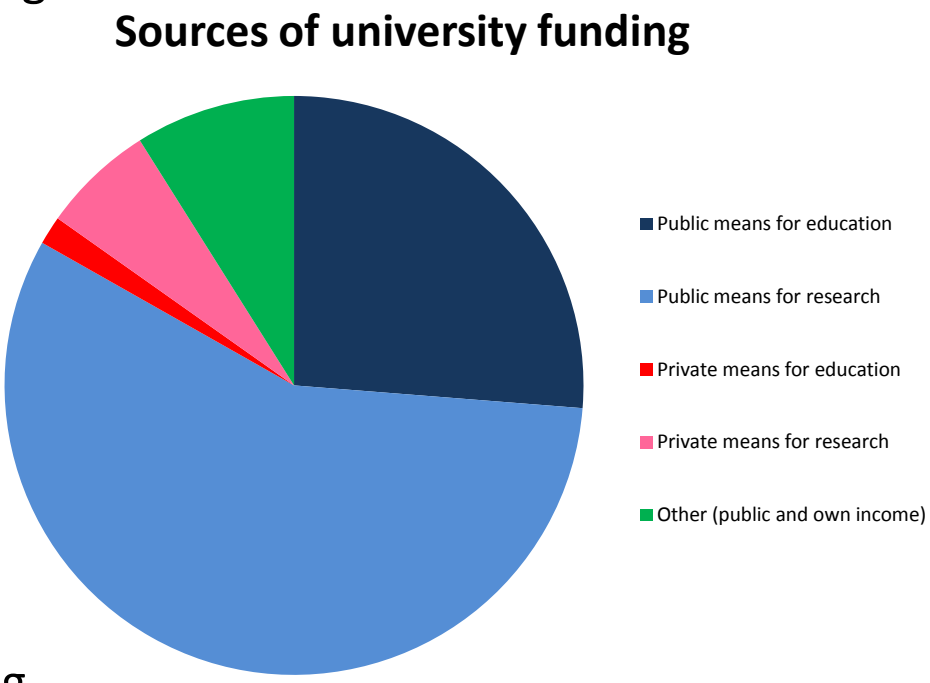
Danish Universities are state funded

State funding is primarily awarded on the basis of competion and output, e.g.:

- Taximetersystem
- Model for awarding basic funding
- Research councils

Important that the system is transparent and enables the universities to make long term investments/strategies.

This is argued in dialogues concerning the financial act.



Danske Universiteter
Universities Denmark

Autonomy

Politicians speak of increasing autonomy:

The university act of 2003:

"…Strengthened leadership must be combined with increased freedom from central state steering, particularly within education."

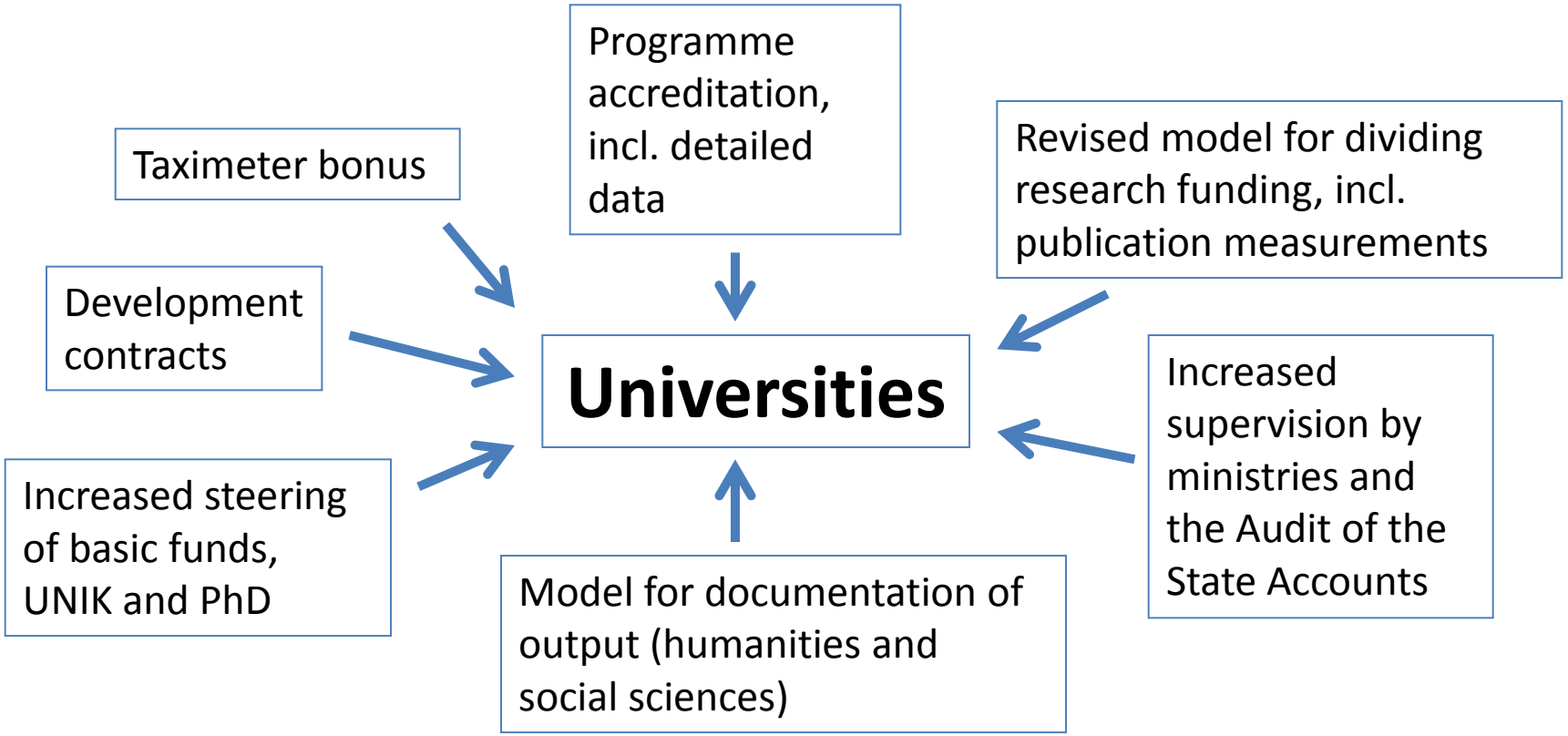
Similar arguments have been seen since 2003

And some things have improved (more funding)

But steering has not decreased

Danske Universiteter
Universities Denmark

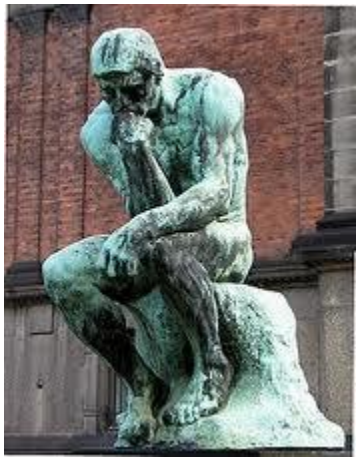
Examples of new measures of steering



Tendency: Focus on data for steering

Danske Universiteter
Universities Denmark

Genesis and evolution of steering



The concept of steering gives the impression of being:

Rational, well-considered, coherent, logical and with a clear sense of purpose

In reality it is:

Political, incremental, particularlistic (not holistic)…

Steering keeps on expanding – and quantitative measurements are the corner stone of the new annexes

Introduction to the Danish Research and Innovation System

Presentation:

1. Danish public R&D funding system
2. Policy developments

Kim Brinckmann, Head of Division
The Danish Agency for Science, Technology and Innovation

Ministry of Science, Innovation and Higher Education

The Minister
Morten Østergaard
The Social Liberal Party
September 2011

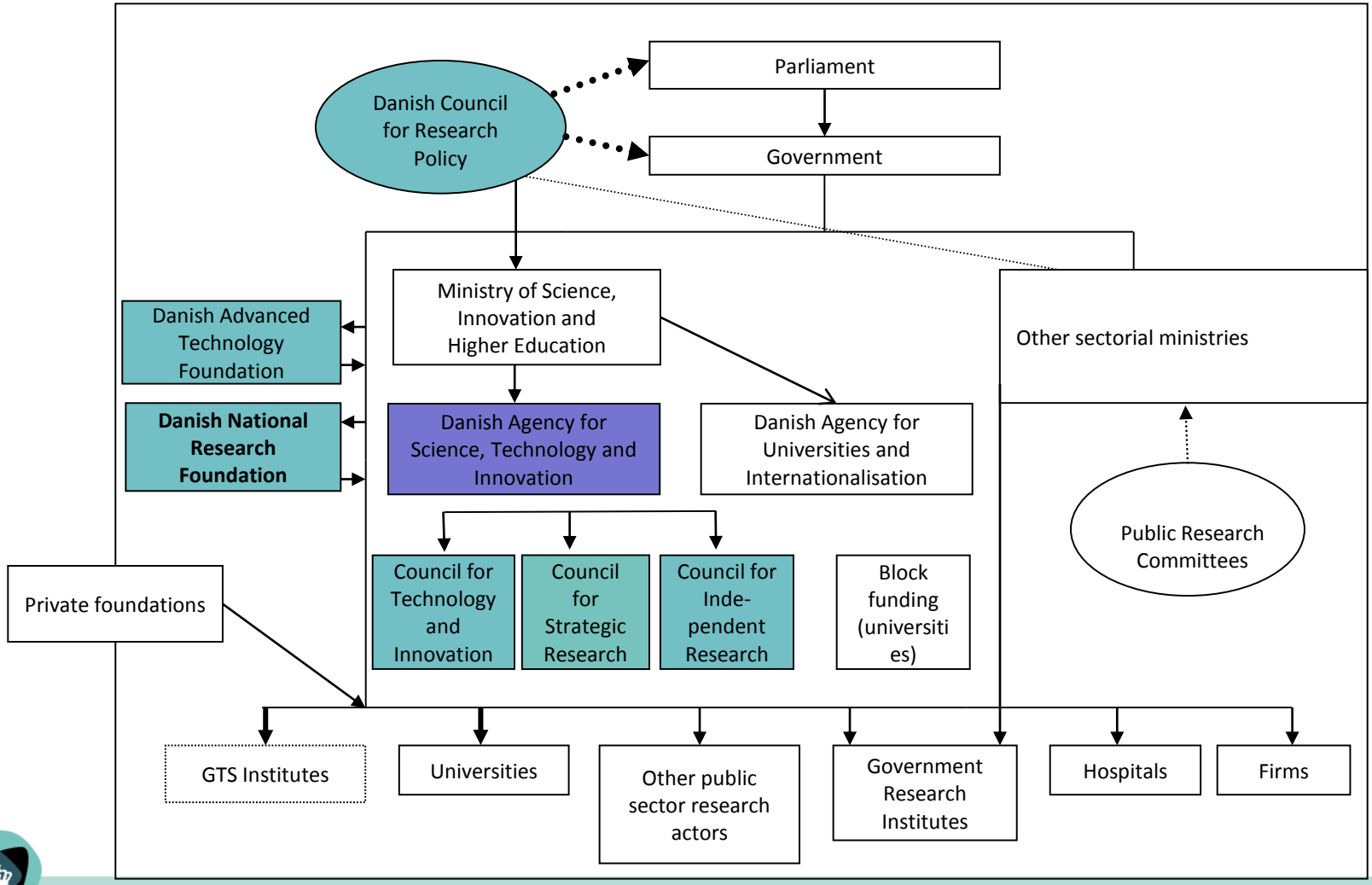
Ministeriel Department

The Danish Agency for Higher Education & Educational Support

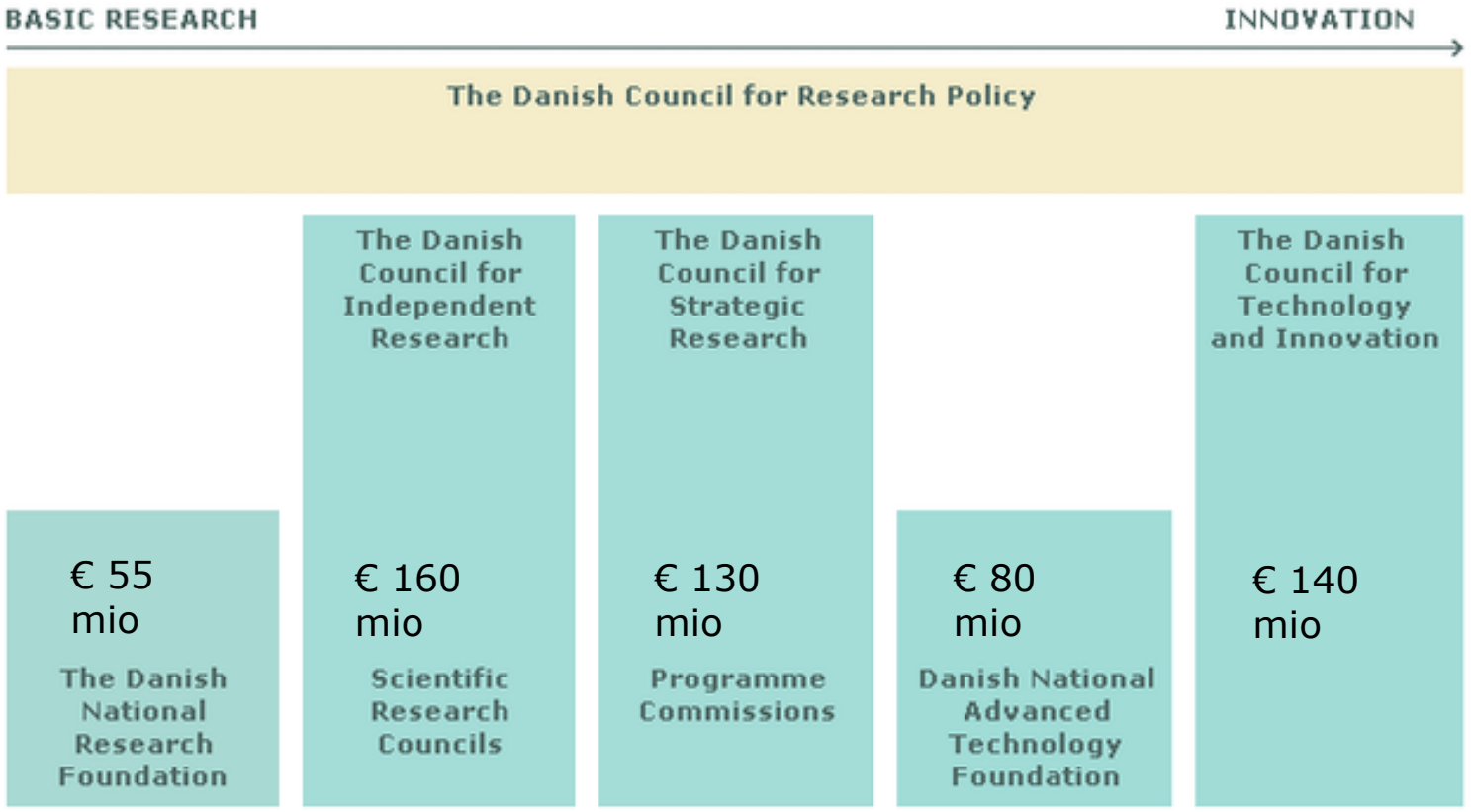
The Danish Agency for Science, Technology & Innovation

The Danish Agency for Universities & Internationalisation

The Danish research and innovation system – full version



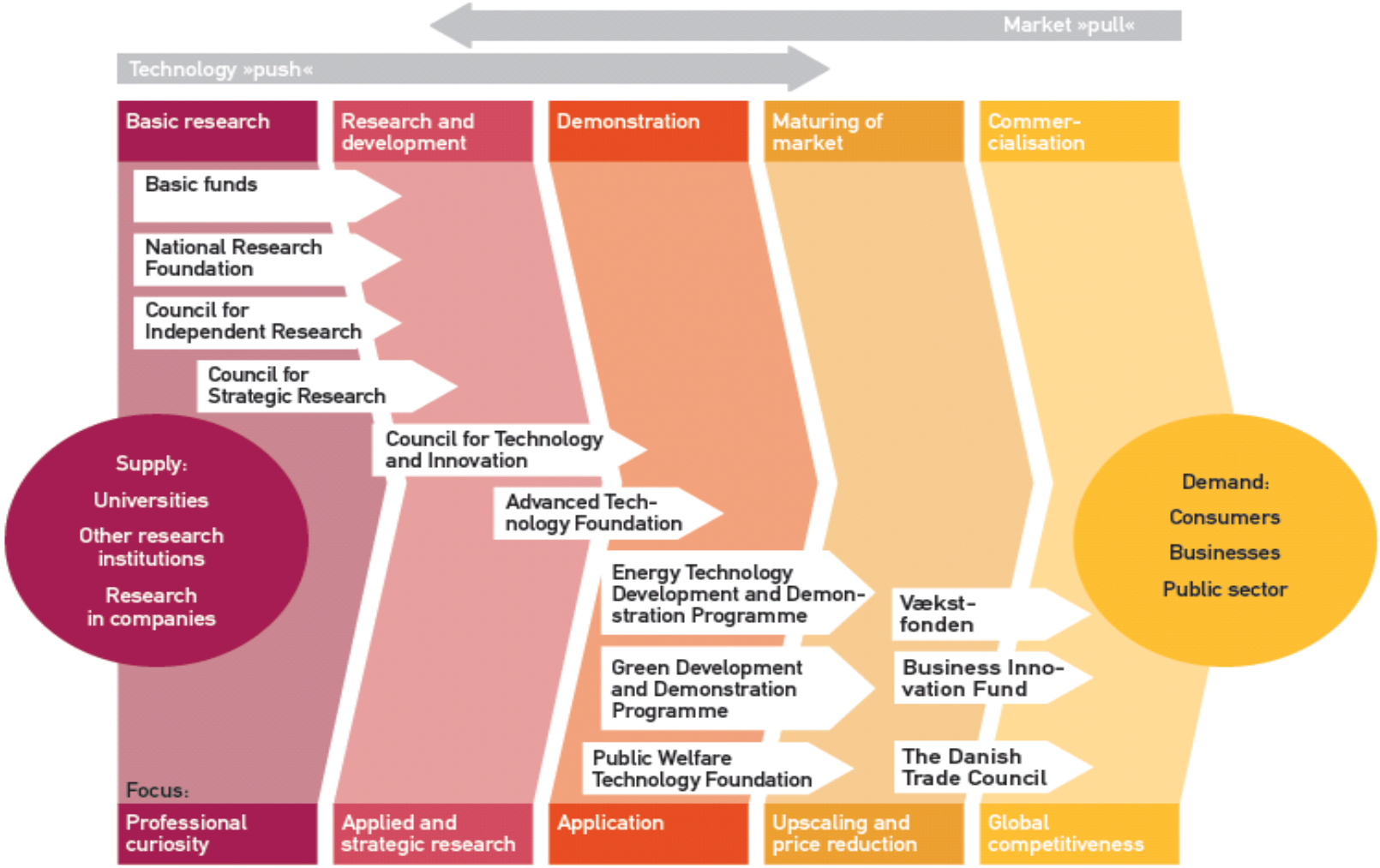
The Advisory and Funding System for Research and Innovation



Approx. € 270 mio.

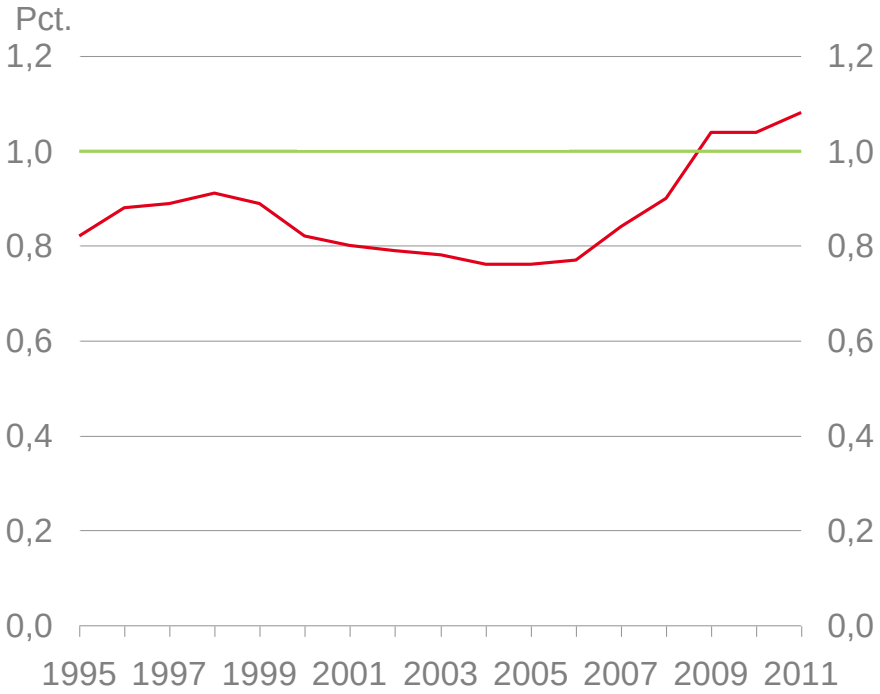
Private foundations

Major funding bodies for research and innovation

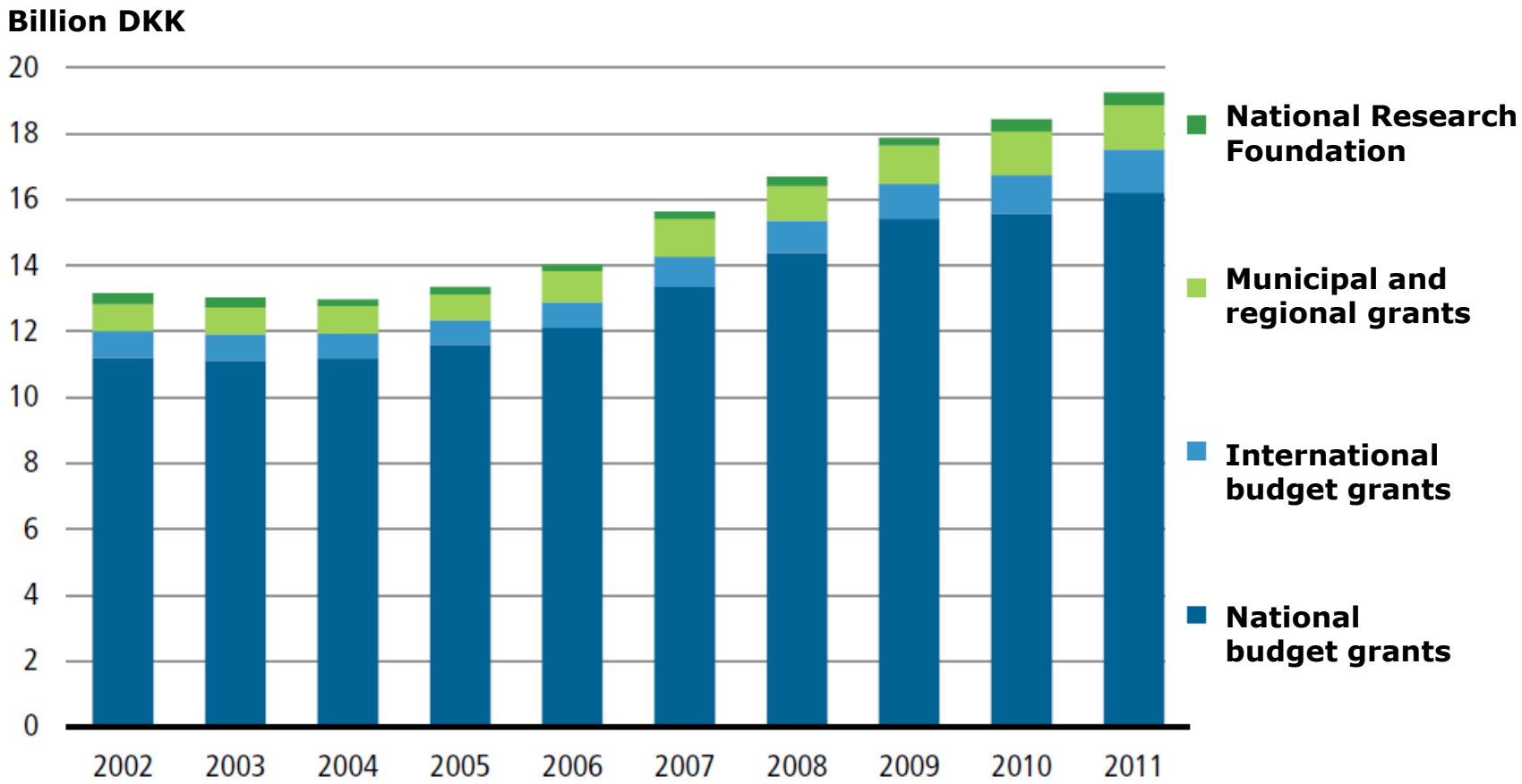


Development in government R&D expenditure

- target 1 % of GDP

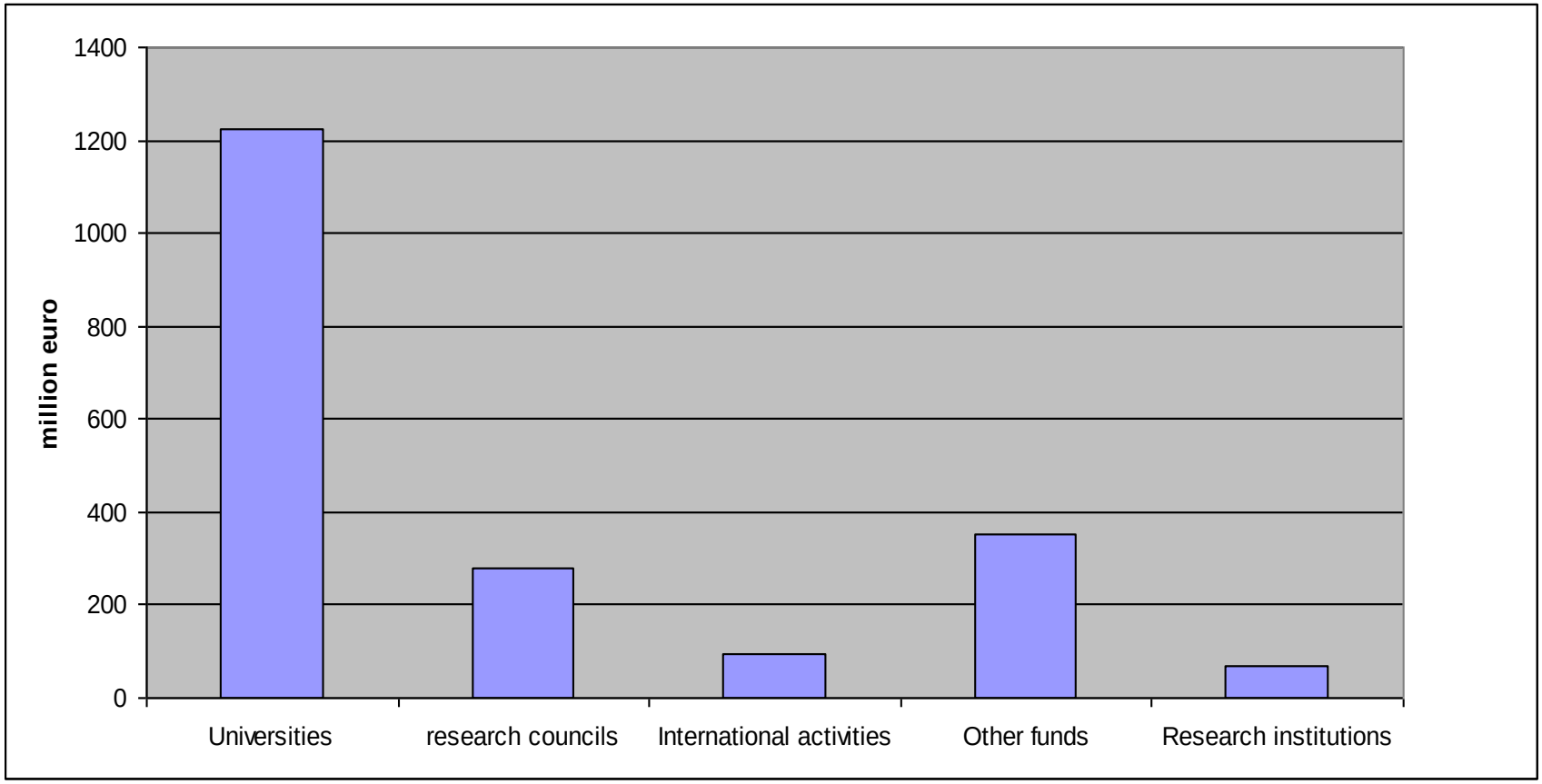


Public research budget 2002-2011



7,45 DKK = 1 €

Finance bill funds – distribution 2012



Public sector's R&D expenditure in different sectors

Public sector's R&D expenditure in different scientific areas by country. 2010 or latest year*

	Natural Science			Technical Science			Health Science			Agricultural Science			Social Science			Humanities		
1	Czech Reput	45,4%	1	Korea	57,4%	1	Singapore	31,7%	1	Argentina	20,6%	1	Luxembourg	25,3%	1	Slovenia	11,9%
2	Estonia	42,8%	2	Russia	43,7%	2	Denmark	30,1%	2	Chile	18,8%	2	Norway	20,8%	2	Hungary	11,6%
3	Hungary	37,3%	3	Iceland	42,8%	3	Norway	29,1%	3	Iceland	17,5%	3	Finland	19,2%	3	Estonia	11,4%
4	Germany	37,0%	4	Taiwan	42,7%	4	Australia	28,7%	4	Slovakia	13,2%	4	Portugal	18,6%	4	Italy	10,9%
5	Russia	35,8%	5	Singapore	41,6%	5	Turkey	28,4%	5	Hungary	11,8%	5	Italy	18,5%	5	Austria	10,7%
6	Slovenia	35,2%	6	Rumania	37,6%	6	Netherlands	27,2%	6	Ireland	10,4%	6	South Africa	18,3%	6	Germany	10,5%
7	Poland	32,5%	7	Japan	35,3%	7	Austria	27,1%	7	Belgium	9,9%	7	Ireland	18,1%	7	Portugal	10,1%
8	Australia	31,7%	8	Belgium	31,6%	8	Luxembourg	24,5%		Taiwan	9,9%	8	Turkey	17,9%		Poland	10,1%
9	Italy	31,2%	9	Slovakia	30,9%	9	Belgium	22,4%	9	South Africa	9,8%	9	Netherlands	17,6%	9	Spain	9,7%
10	Chile	30,0%	10	Poland	29,4%	10	Spain	22,2%	10	Spain	9,1%	10	Denmark	16,7%	10	Turkey	9,3%
11	Ireland	29,2%	11	Portugal	26,7%	11	Italy	19,7%	11	Japan	9,0%	11	Spain	16,5%	11	Rumania	9,0%
	Slovakia	29,2%		Slovenia	26,7%	12	Finland	19,6%	12	Denmark	8,8%	12	Slovenia	15,4%	12	Denmark	8,3%
13	Austria	27,4%	13	Finland	26,4%		Japan	19,6%	13	Australia	8,7%	13	Hungary	14,6%	13	Iceland	8,1%
14	South Africa	26,9%	14	Spain	24,2%	14	Taiwan	19,2%	14	Poland	8,0%	14	Chile	14,5%	14	Czech Reput	8,0%
15	Rumania	25,7%	15	Germany	22,9%	15	South Africa	18,7%	15	Turkey	7,8%	15	Australia	13,9%	15	Norway	7,7%
16	Portugal	24,9%	16	Argentina	22,8%	16	Germany	17,9%	16	Finland	7,7%	16	Austria	13,7%	16	Ireland	7,1%
17	Luxembourg	23,5%	17	Turkey	22,0%	17	Estonia	17,6%	17	Norway	7,6%	17	Belgium	12,2%	17	Slovakia	7,0%
18	Argentina	21,8%	18	Czech Reput	21,9%	18	Ireland	16,6%	18	Korea	7,5%	18	Slovakia	12,0%	18	South Africa	6,8%
19	Denmark	21,6%	19	Netherlands	21,5%	19	Portugal	14,2%	19	Netherlands	6,7%	19	Argentina	11,6%		Belgium	6,8%
	Finland	21,6%	20	Luxembourg	21,1%	20	Argentina	13,8%		Estonia	6,7%	20	Rumania	9,2%	20	Argentina	6,5%
21	Netherlands	20,5%	21	South Africa	19,4%	21	Chile	13,2%	21	Czech Reput	6,1%	21	Poland	9,0%		Netherlands	6,5%
22	Norway	19,7%	22	Chile	19,1%	22	Rumania	12,9%	22	Austria	5,7%		Korea	9,0%	22	Finland	5,6%
23	Japan	18,8%	23	Ireland	18,6%	23	Iceland	11,3%	23	Rumania	5,6%	23	Iceland	8,5%	23	Luxembourg	5,4%
24	Spain	18,3%	24	Austria	15,3%	24	Czech Reput	11,2%	24	Portugal	5,5%	24	Estonia	7,9%	24	Chile	4,3%
25	Belgium	18,0%	25	Norway	15,1%		Hungary	11,2%	25	Italy	4,6%	25	Czech Reput	7,4%	25	Taiwan	4,2%
26	Taiwan	16,8%	26	Italy	14,8%	26	Poland	11,0%	26	Germany	4,5%	26	Taiwan	7,2%	26	Australia	3,7%
27	Turkey	14,5%	27	Denmark	14,4%	27	Korea	10,0%	27	Russia	3,8%		Germany	7,2%	27	Russia	3,3%
28	Singapore	13,6%	28	Estonia	13,6%	28	Slovenia	8,3%	28	Slovenia	2,6%	28	Russia	5,4%	28	Korea	2,8%
29	Korea	13,3%	29	Hungary	13,5%	29	Russia	8,0%	29	Singapore	0,6%	29	Japan**	-	29	Japan**	-
30	Iceland	11,8%	30	Australia	13,3%	30	Slovakia	7,7%	30	Luxembourg	0,0%	30	Singapore**	-	30	Singapore**	-

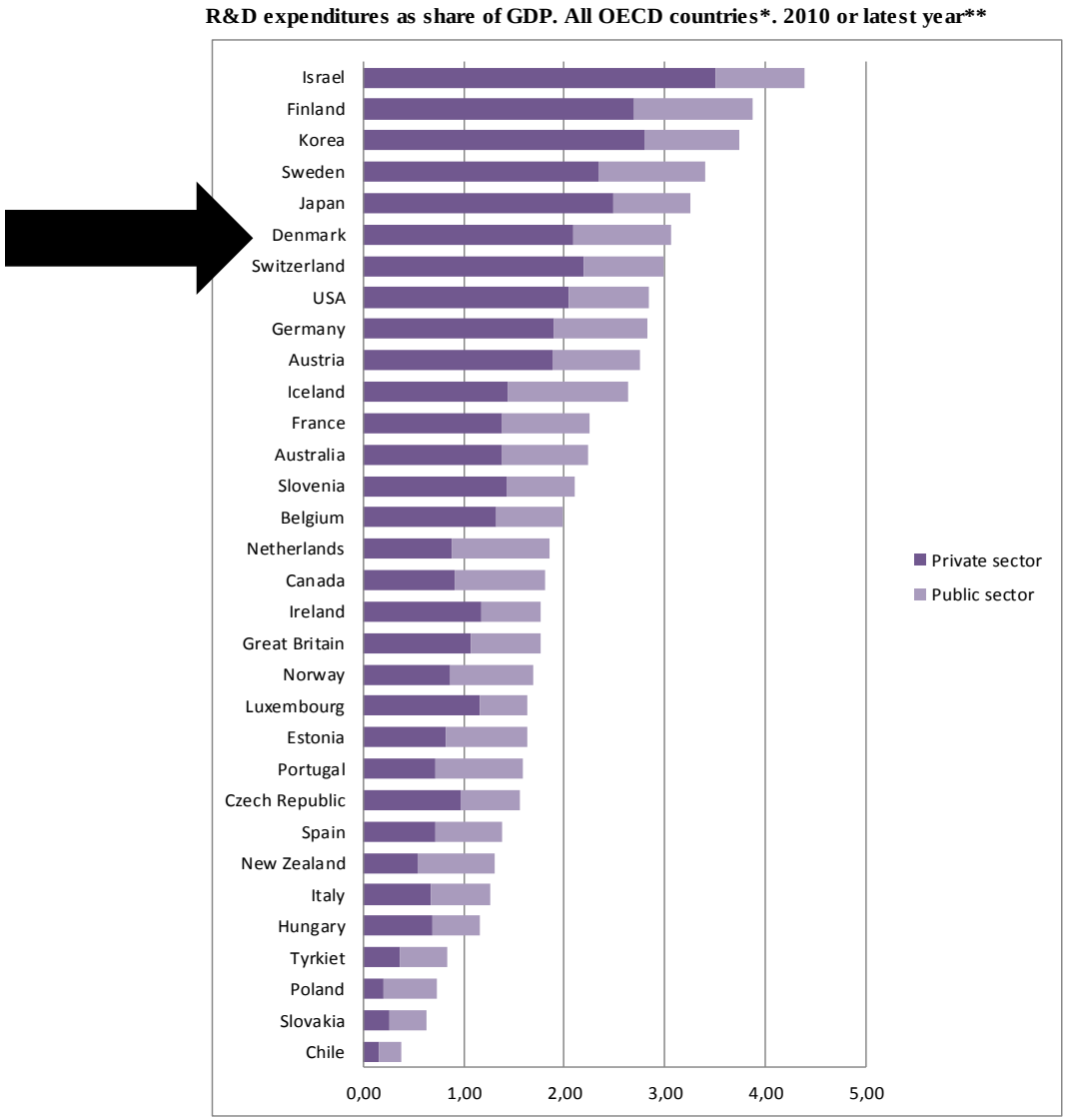
*FIN:2009, GER: 2009, HUN: 2009, ISL:2007, IRE: 2009, ITA: 2009, JPN: 2009, LUX: 2009, NLD: 2009, NOR: 2009, POL:2009, PRT: 2009, SLO: 2009, ESP: 2009, AR: 2007, ROU: 2009, SGP: 2009, ZAF: 2008, TWN: 2009

**Japan and Singapore have not available data for Humanties and Social Science

Source: OECD and Statistics Denmark

Private funded research

R&D expenditure as share of GDP - 2010



<u>Denmark (2010):</u>
Public spending: 0,98 %
Private spending: 2,10 %
Total: 3,08 %

* Data not available for Greece and Mexico
**AUS: 2008, CHL: 2008, IS: 2008, CHE: 2008, BEL: 2009, USA: 2009, NZL: 2009
Source: OECD's Science, Technology and R&D Statistics and Statistics Denmark

Private R&D top-20

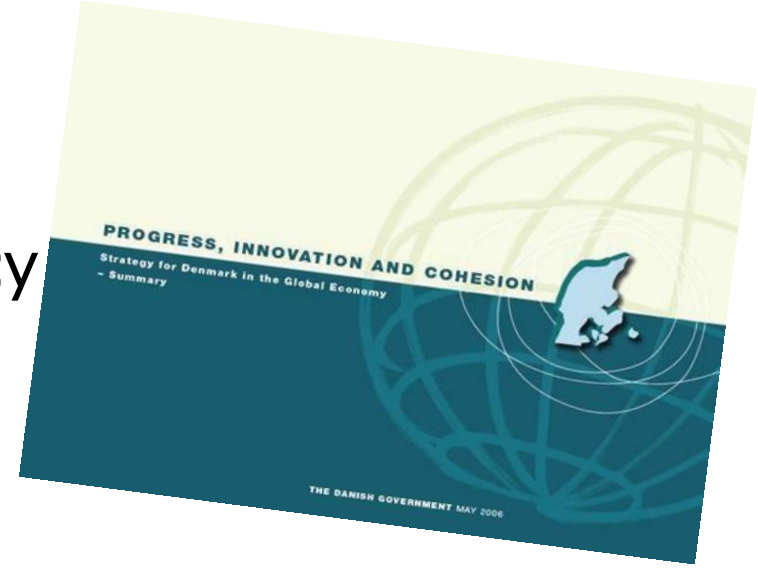
45 Danish enterprises on EU R&D top-1000 (2010)

Denmark		Rank	
1	Novo Nordisk	27	Pharmaceuticals (4577)
2	Lundbeck	61	Pharmaceuticals (4577)
3	Vestas Wind Systems	62	Alternative energy (58)
4	Danske Bank	65	Banks (835)
5	Novozymes	123	Biotechnology (4573)
6	Grundfos	140	Industrial machinery (2757)
7	Danfoss	141	Industrial machinery (2757)
8	DONG Energy	180	Oil & gas producers (53)
9	Danisco	181	Food producers (357)
10	William Demant	233	Health care equipment & services (453)
11	GN Store Nord	259	Telecommunications equipment (9578)
12	Bang & Olufsen	265	Leisure goods (374)
13	LEGO	270	Leisure goods (374)
14	Coloplast	293	Health care equipment & services (453)
15	NKT	305	Electrical components & equipment (2733)
16	Genmab	306	Biotechnology (4573)
17	ALK-Abello	323	Pharmaceuticals (4577)
18	SimCorp	336	Software (9537)
19	FLSmidth	356	Industrial machinery (2757)
20	TDC	360	Fixed line telecommunications (653)

2) Policy developments

- Political focus after 2000
- Institutional reforms
- Educational turn
- Great science, slow growth

Political focus after 2000 – research and innovation policy



The Globalization Strategy launched 2005/06

Based on the work of **"The Globalization Council"**

- Main theme: Denmark in the global economy
- Focus: vision & strategy for research, education and innovation – cope with challenges and potential, and build on coherence in society
- Involvement: Partnerships and responsibility
- Important political output: -> 3 % of GPD (2+1) (achieved in 2010)

Organisational development and current setting (the silent revolution)

Governance Reform 2003 in Danish universities

- **Main objective:** To strengthen the institutional autonomy of universities to handle increased research appropriations and increased educational task
- Public but independent **self-governing** institutions
- Boards with external majority
- Rector appointed by the board
- University management appointed not elected
- Technology Transfer Act – IPR to university

University structure anno 2007

- Universities (12 → 8)
- Research institutions (17 → 4)

Aalborg University
- Aalborg University
- Danish Building Research Institute

University of Aarhus
- University of Aarhus
- Århus School of Business
- University of Education
- Danish Institute of Agricultural Sciences
- National Environmental Research Institute

University of Southern Denmark
- University of Southern Denmark
- National Institute of Public Health

The National Research Institutions
- The National Geological Surveys of Denmark and Greenland
- The National Research Centre for the Working Environment
- The National Centre for Social Research

Technical University of Denmark
- Technical University of Denmark
- Risø National Laboratory
- Danish Institute for Food and Veterinary Research
- Danish National Space Centre
- Danish Institute for Fisheries Research
- Danish Transport Research Institute

University of Copenhagen
- University of Copenhagen
- Danish University of Pharmaceutical Sciences
- Royal Veterinary and Agricultural University

IT University of Copenhagen

Copenhagen Business School

Roskilde University

Danish Universities

University of Copenhagen
Students: 37.869
Academic staff (FTE): 4.330

Technical University of Denmark
Students: 7.597
Academic staff (FTE): 2.659

Aarhus University
Students: 34.129
Academic staff (FTE): 3.414

Copenhagen Business School
Students: 15.408
Academic staff (FTE): 557

University of Southern Denmark
Students: 17.962
Academic staff (FTE): 1.580

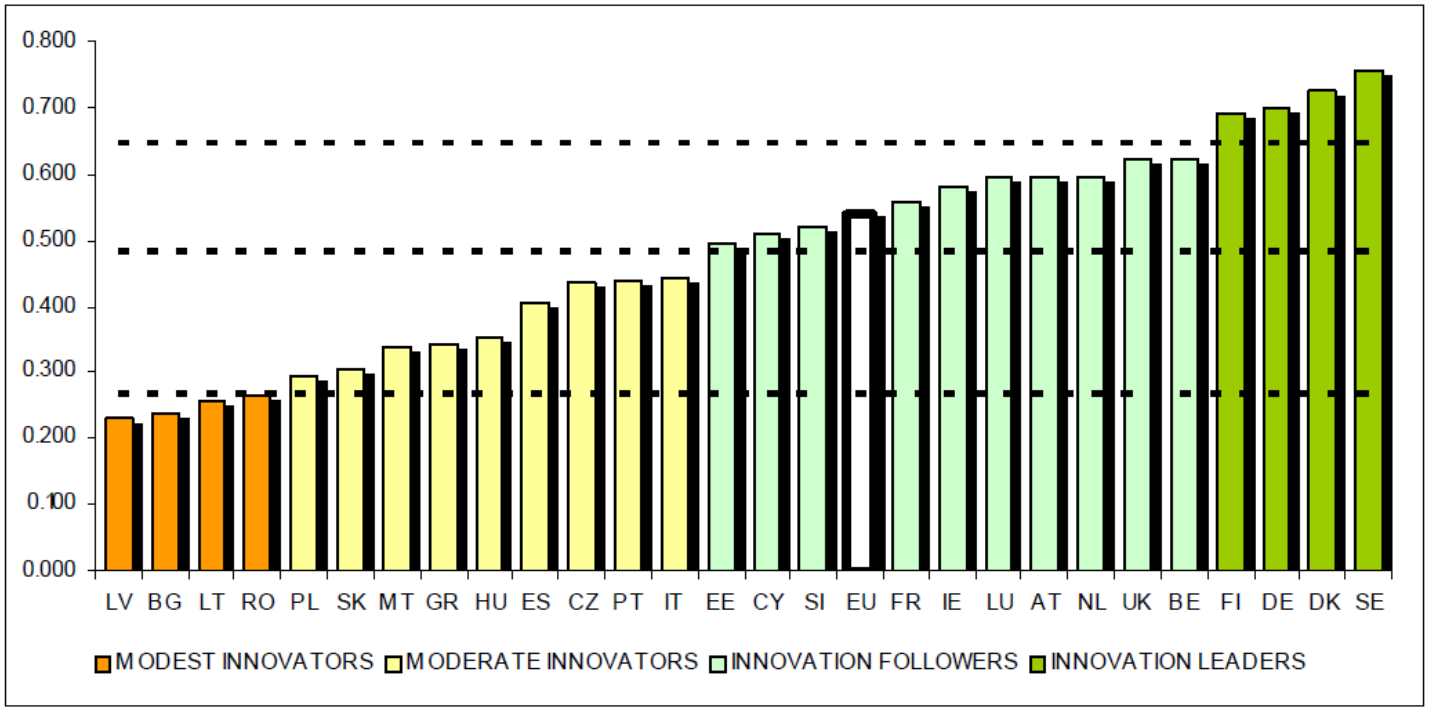
Roskilde University
Students: 7.698
Academic staff (FTE): 500

Aalborg University
Students: 13.742
Academic staff (FTE): 1.382

IT University of Copenhagen
Students: 1.602
Academic staff (FTE): 111

Innovation Union Scoreboard 2011

FIGURE 2: EU MEMBER STATES' INNOVATION PERFORMANCE



Note: Average performance is measured using a composite indicator building on data for 24 indicators going from a lowest possible performance of 0 to a maximum possible performance of 1. Average performance in 2011 reflects performance in 2009/2010 due to a lag in data availability.

Number of scientific publications (the national science indicator), OECD and BRIC countries, 2007-2011

Number of scientific publications by country according to National Science Indicators (NSI). OECD and BRIC countries. Publication years 2007-2011

		Number of articles (latest five years)
1	USA	1.647.892
2	China	622.601
3	Great Britain	445.052
4	Germany	430.083
5	Japan	380.938
6	France	309.103
7	Canada	263.421
8	Italy	248.396
9	Spain	211.110
10	India	195.247
11	Australia	185.671
12	Korea	185.129
13	Brazil	147.202
14	Netherlands	145.938
15	Russia	137.706
16	Switzerland	106.856
17	Turkey	103.198
18	Sweden	96.439
19	Poland	91.949
20	Belgium	80.623
21	Israel	58.210
22	Denmark	56.350
23	Austria	55.175
24	Greece	51.320
25	Finland	48.407
26	Mexico	45.571
27	Norway	44.634
28	Czech Republic	42.259
29	Portugal	41.890
30	New Zealand	34.028
31	Ireland	30.176
32	Hungary	27.337
33	Chile	22.151
34	Slovenia	15.472
35	Slovakia	13.937
36	Estonia	5.932
37	Iceland	3.460
38	Luxembourg	2.213

		Publications per million capita
1	Switzerland	13.554
2	Iceland	10.517
3	Sweden	10.173
4	Denmark	10.106
5	Finland	8.920
6	Norway	8.868
7	Netherlands	8.705
8	Australia	8.068
9	Israel	7.665
10	Slovenia	7.656
11	New Zealand	7.624
12	Canada	7.545
13	Belgium	7.318
14	Great Britain	7.057
15	Ireland	6.602
16	Austria	6.530
17	Germany	5.270
18	USA	5.236
19	France	4.877
20	Greece	4.581
21	Spain	4.554
22	Estonia	4.427
23	Luxembourg	4.305
24	Italy	4.079
25	Czech Republic	4.004
26	Portugal	3.924
27	Korea	3.778
28	Japan	2.992
29	Hungary	2.744
30	Slovakia	2.556
31	Poland	2.443
32	Turkey	1.378
33	Chile	1.273
34	Russia	970
35	Brazil	749
36	China	460
37	Mexico	397
38	India	160

Source: Thomson Reuters' NSI, Standard Version 2011.

Citations of scientific publications (the national science indicator), OECD and BRIC countries, 2007-2011

Number of citations by country according to National Science Indicators (NSI). OECD and BRIC countries. Citations 2007-2011

		Number of citations
1	USA	11.898.197
2	Great Britain	3.190.477
3	Germany	2.898.207
4	China	2.293.315
5	France	1.924.176
6	Japan	1.887.145
7	Canada	1.692.137
8	Italy	1.505.859
9	Spain	1.148.956
10	Netherlands	1.123.131
11	Australia	1.108.989
12	Switzerland	895.987
13	Korea	702.343
14	Sweden	689.378
15	India	606.691
16	Belgium	570.213
17	Brazil	456.072
18	Denmark	443.315
19	Austria	358.589
20	Israel	352.852
21	Russia	335.608
22	Finland	322.237
23	Poland	313.252
24	Turkey	275.224
25	Norway	266.683
26	Greece	245.288
27	Portugal	209.005
28	Czech Republic	190.878
29	Ireland	190.435
30	New Zealand	184.832
31	Mexico	165.770
32	Hungary	141.110
33	Chile	96.766
34	Slovenia	58.992
35	Slovakia	49.863
36	Iceland	31.195
37	Estonia	30.726
38	Luxembourg	10.244

		Citations per publication
1	Iceland	9,02
2	Switzerland	8,38
3	Denmark	7,87
4	Netherlands	7,70
5	USA	7,22
6	Great Britain	7,17
7	Sweden	7,15
8	Belgium	7,07
9	Germany	6,74
10	Finland	6,66
11	Austria	6,50
12	Canada	6,42
13	Ireland	6,31
14	France	6,23
15	Italy	6,06
	Israel	6,06
17	Norway	5,97
18	Australia	5,97
19	Spain	5,44
20	New Zealand	5,43
21	Estonia	5,18
22	Hungary	5,16
23	Portugal	4,99
24	Japan	4,95
25	Greece	4,78
26	Luxembourg	4,63
27	Czech Republic	4,52
28	Chile	4,37
29	Slovenia	3,81
30	Korea	3,79
31	China	3,68
32	Mexico	3,64
33	Slovakia	3,58
34	Poland	3,41
35	India	3,11
36	Brazil	3,10
37	Turkey	2,67
38	Russia	2,44

Source: Thomson Reuters' NSI, Standard Version 2011.

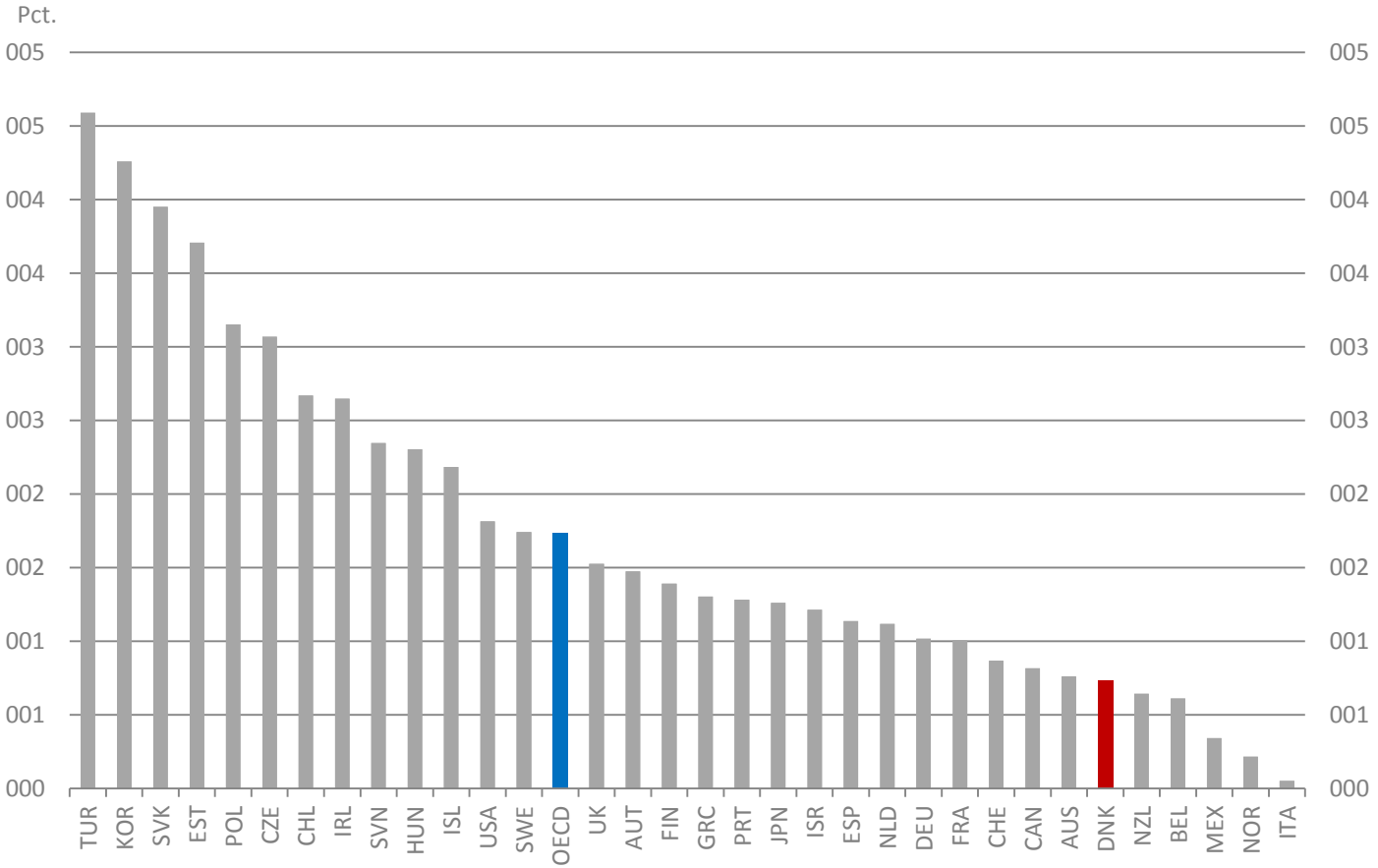
Very good performance in research and innovation

- High investments in R&D
- Coherence between scientific and industrial positions of strength
- High levels of education
- A well functioning R&D-system

But…

The challenge of growth

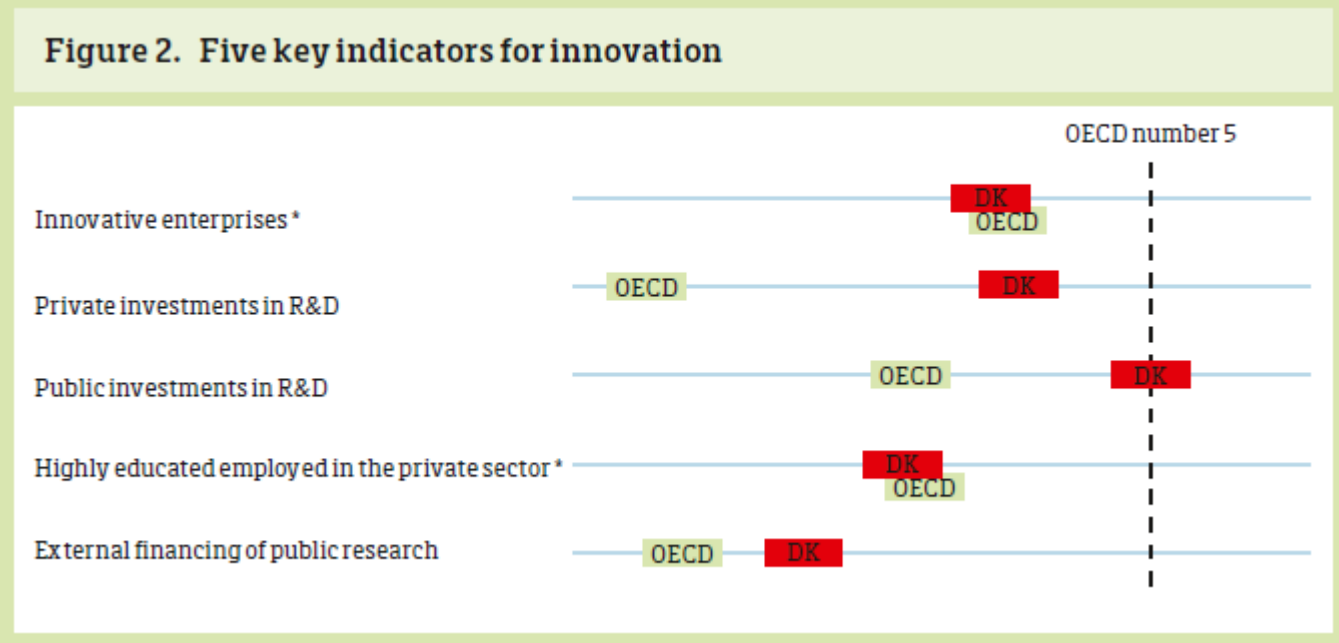
Average yearly real productivity growth, OECD comparison, 2001-2011



Danish Innovation Strategy

- Launched in December 2012
- 3 main targets
- 27 specific initiatives

New Targets

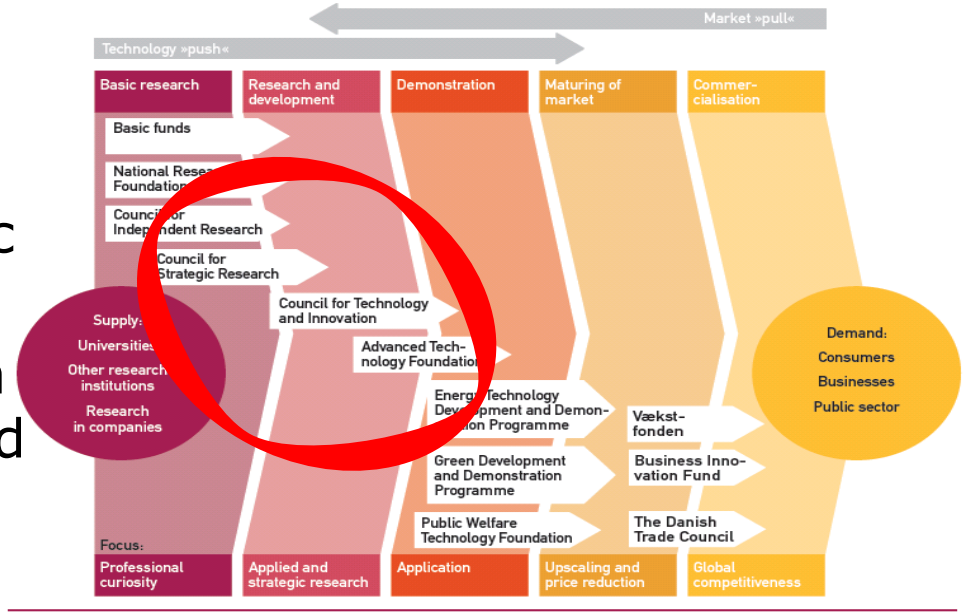


In 2020 Denmark must be in OECD top-5 in terms of:

- Percentage of innovative companies
- Private R&D investments (in per cent of GDP)
- Companies making use of highly skilled employees

Selected iniatives

- **Reformed R&D-system** - merger of:
  - 1) Danish Council for Strategic Research,
  - 2) Danish National Foundation for Advanced Technologies and
  - 3) The Danish Council for Technology and Innovation



- **INNO+ / New societal innovation partnerships**
- **Renewed support for participation in international R&D-programmes (including Horizon 2020)**
- **Support innovation in the educational system**
- **Internationalisation and set-up of innovation centres in São Paulo, Bangalore and Seoul.**

END OF STORY !

Kim Brinckmann, Head of Division
The Danish Agency for Science, Technology and Innovation