

Combining excellence in research, education and impact

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Why this study?

- Growing global competition for talent
- Growing societal demands on universities
- Rise of new competitors, partners and models
- Skills (education?) mismatch:

“In Europe, 74 percent of education providers were confident that their graduates were prepared for work, but only 38 percent of youth and 35 percent of employers agreed.” (McKinsey 2014)



Why this study?

Pressure on Swedish universities

- Decline in breakthrough research and world-class excellence
- Dramatic drop in number of foreign students from outside Europe
- Growing pressure to produce 'impact' and growing importance for national competitiveness and innovative capacity
- Changing nature of education (eg MOOCs)



Swedish universities – dramatic expansion

- Account for 30% of government employees
- 2001-2011: number of people employed for teaching and research at Swedish universities increased by 31.4%
- Number of students in Swedish universities increased from 12,000 in 1950 to 400,000 in 2008/2009
- Share of population with tertiary education grew from 11% to 25% since 1990 => today 1 out of 4 has a tertiary education compared with 1 out of 10 thirty years ago.



Swedish universities: concentration of research resources

- Spending for research and development (R&D) as a share of GDP 2nd highest among OECD countries (0.90% compared with EU27 average of 0.49%)
- 2005-2011: R&D expenditure in the higher education sector grew (from 0.78% to 0.90% of GDP) while R&D expenditure in the business sector fell (from 2.59% to 2.34% of GDP). R&D expenditure in higher education sector in the US was 0.39% of GDP in 2009.

Why this comparison?


- *“Swedish universities compare themselves and compete primarily with each other, not with their equivalents in other countries”* (Strömbäck 2013)
- 15 out of top 20 universities are from the US (THES)
- Stanford and Berkeley: one private and one public, both comprehensive
- Disclaimer: US universities (incl Stanford and Berkeley) face their own challenges – these are not the focus of this analysis!

Comparison of Berkeley, Lund, Stanford and Uppsala, selected indicators

	Students ¹ (of which grad. students, incl PhD students)	Faculty ²	Revenue (m SEK) ³	Research revenue (m SEK) ³	Professors	Income from tuition ⁷	Research budget (share of total)
Stanford	15877 (56%) ⁴	1995	29920	8636	864	17%	29%
Berkeley	35899 (28%)	2082	16320 ⁵	4413 ⁶	n.a.	28%	27%
Lund	28587 (30%)	2798	6953	4672	708	31%	67%
Uppsala	23331 (30%)	2624	5546	3871	575	30%	70%

Key criteria for world class universities

1. Attracting and selecting the best students
2. Attracting and selecting the best faculty
3. Educating the whole student
4. Focus on teaching and on linking teaching and research
5. Societal interaction and benefits



1. Attracting and selecting the best students

Berkeley and Stanford

- Admissions committees apply a variety of criteria – the aim is to find applicants with the highest potential
- Highly competitive (1 in 18 at Stanford)

Sweden

- Formalized, one-dimensional admissions process (based on grades)
- ~ 50% admissions rate
- Dramatic drop in number of non-EU students
- Promoting or hindering social mobility?

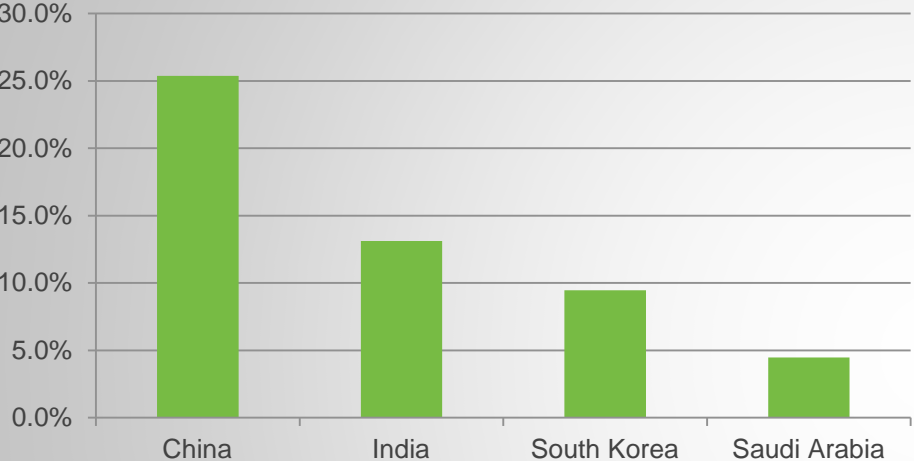


Foreign students

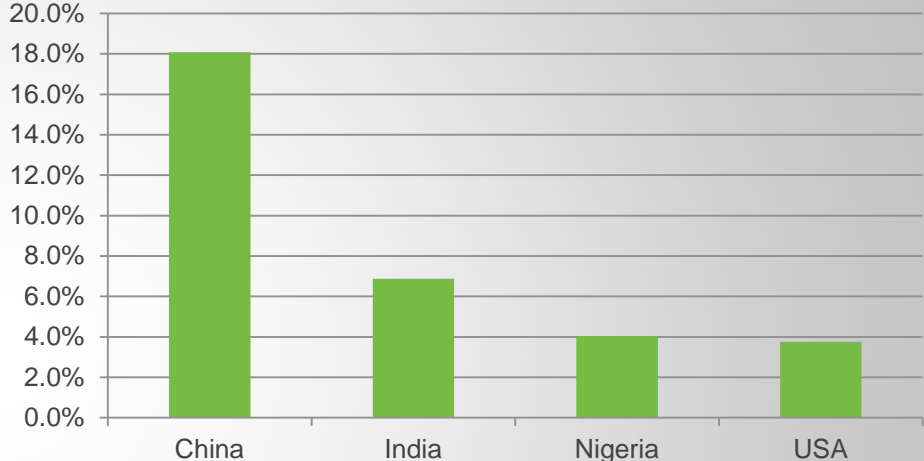
- important source of human capital and a vital link to strategic markets (Saxenian 2006)
- Since 2010 number of new incoming students fell by one third. Freemover students from outside Europe fell by 79%
- Number of new students from Asia and Africa has dropped by 70% since the introduction of tuition fees (HSV 2012)
- **Sweden is losing students from the most important future markets! (China, India, Nigeria etc)**

Foreign students: top four countries of origin in US, UK, Germany and Sweden and their share of total foreign students

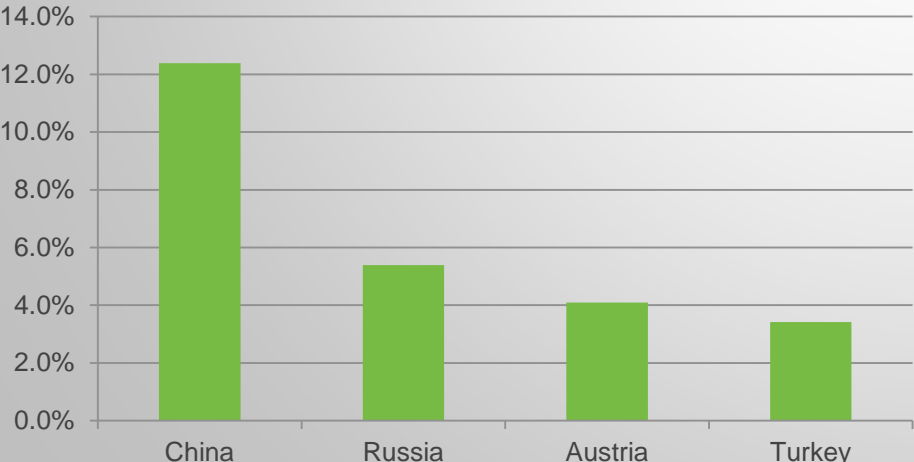
US



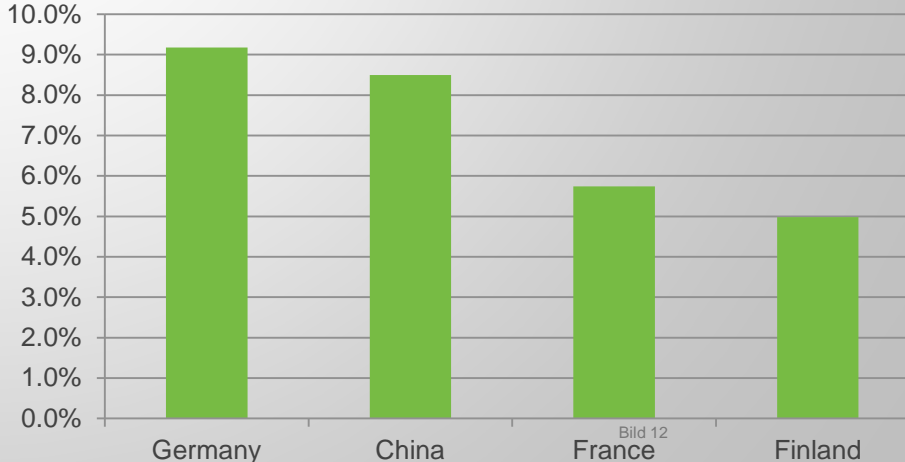
UK



Germany



Sweden



2. Attracting and recruiting the best faculty

Berkeley and Stanford

- Highly competitive, pro-active, international, transparent and systematic search and recruitment process
- Recruitment closely linked to teaching needs

Sweden

- Predominantly internal recruitment
- Recruitment and promotion processes not transparent
- People from outside seen as 'problematic', don't 'fit in'
- Recruitment follows funding rather than teaching needs or strategy

"The typical Swedish professor is white, male, born in Sweden, and he has staid in the same university from undergraduate through PhD and professorship"



Internally recruited staff at selected university departments (%) as of Jan 2013

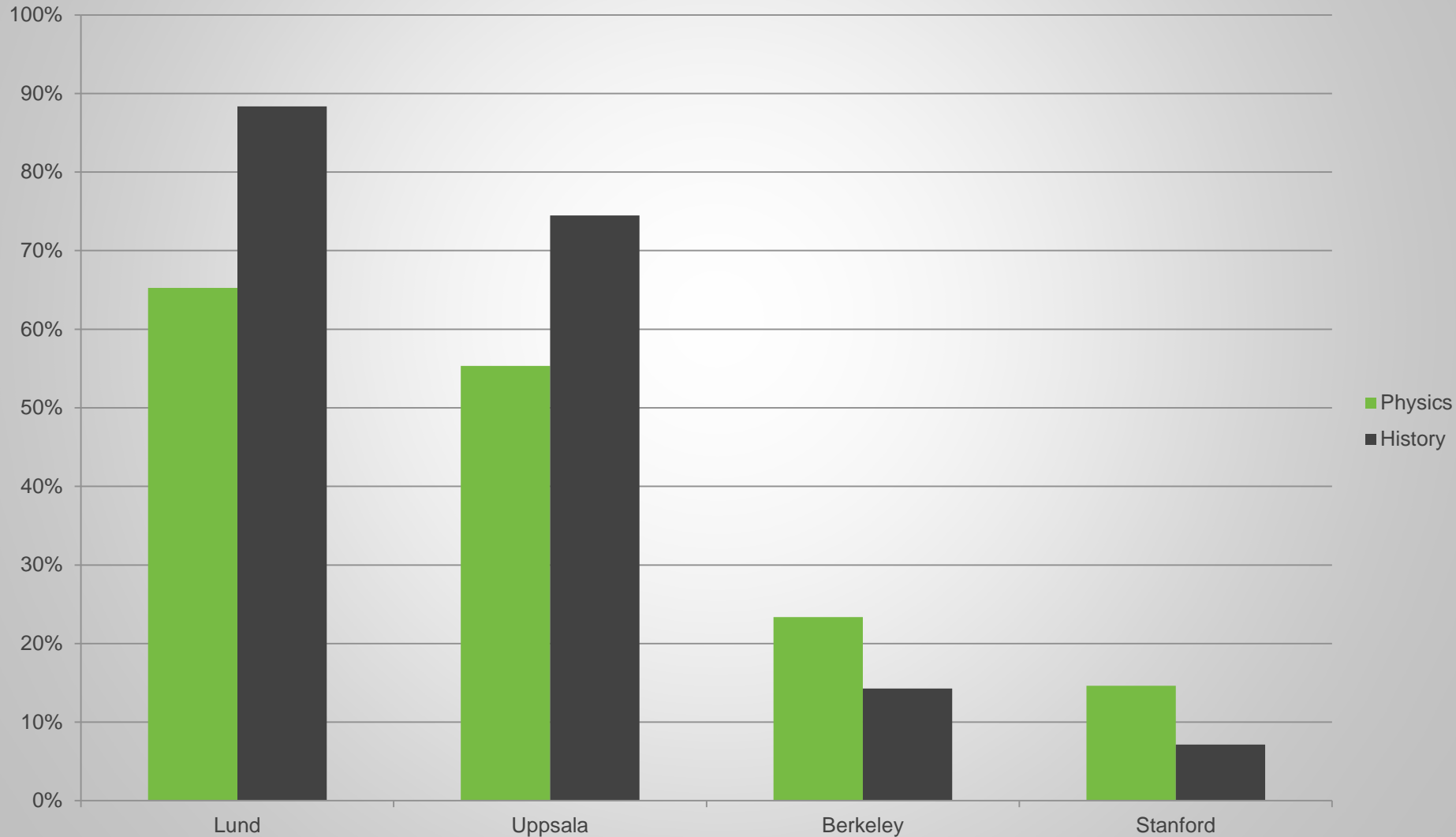


Table 2: Share of professors and lecturers which have their highest degree from the same university where they are currently employed, 11 largest universities

Academic institution	Professors	Lecturers
Lund University	70%	81%
Gothenburg University	68%	82%
Karolinska University	64%	74%
Uppsala University	64%	75%
Umeå University	63%	83%
Stockholm University	55%	67%
Swedish Agricultural University	52%	72%
Royal Institute of Technology (KTH)	51%	62%
Chalmers Technical University	51%	58%
Luleå Technical University	48%	67%
Linköping University	47%	69%

Source: Vetenskapsrådet (2013) adapted from Högskoleverket (2012)⁷



3. Educating the whole student

Berkeley and Stanford

- “ensure all undergraduates become literate, numerate and capable of creative thinking in a broad range of disciplines” (Berkeley)
- 74% of undergraduate students at Berkeley get a liberal arts degree

Sweden

- Early specialization
- Limited freedom to choose courses
- Focus on degrees rather than skills
- Differences in quality / employability between departments of same university
- Difficult to respond to changing needs and demands for education

4. Focus on teaching and linking teaching and research

Berkeley and Stanford

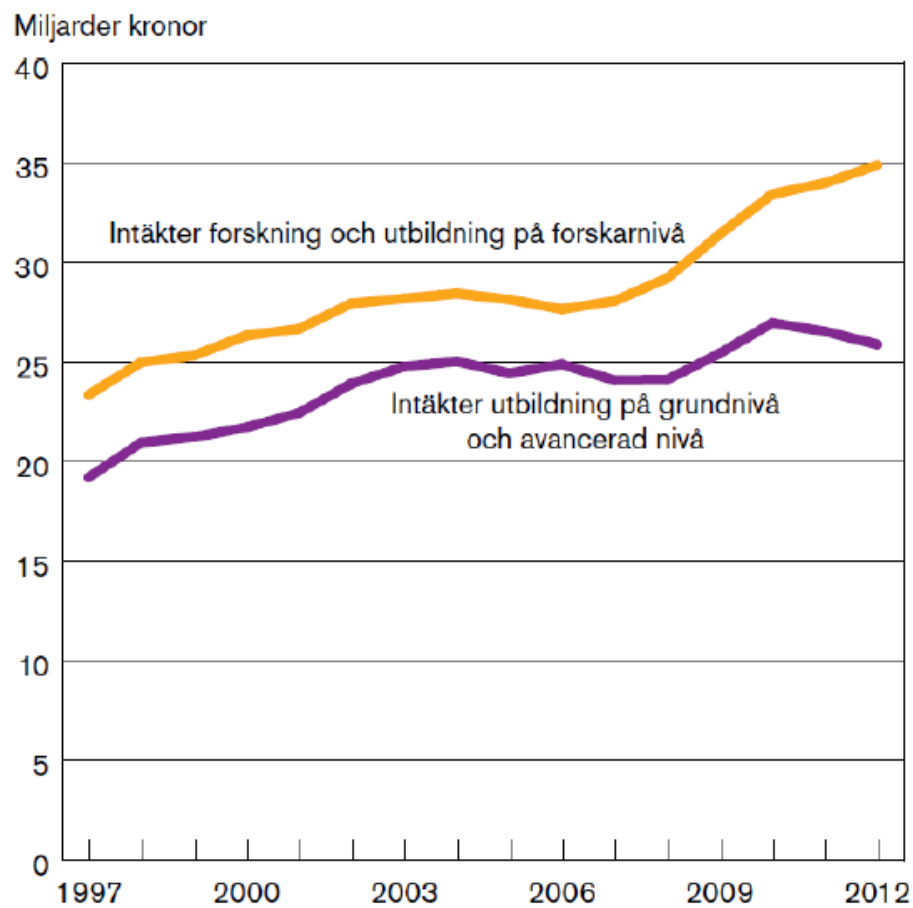
- All regular faculty expected to teach
- Strong focus on teaching in faculty recruitment and promotion
- Systematic strategy to link teaching and research
- Systematic use of evaluations

Sweden

- Clear separation of budgets for teaching and research
- Universities have become "research heavy"
- Research more 'noble' than teaching?
- Weak link between teaching and research
- **Paradox:** *compared to other countries a greater share of research is carried out at Swedish universities but link to teaching is weaker?*

➤ Teaching at Swedish universities: "Underpaid, underappreciated and underincentivized?"

Figure 2: Swedish Higher Education Institutions' (HEIs') revenues for undergraduate and graduate education (purple line) compared to revenues for research and research education (PhD) (yellow line) 1997-2012, billion Swedish Kronor in 2012 prices



Source: Universitetskanslerämbetet (2013b)

Teaching: "an endangered species"?

- "Teaching has a low status in the Swedish university system (...) and the incentives for teachers to channel their creativity and talent to seminar rooms and lecture halls are weak" (Berggren 2012)
- "[t]he attitude of the faculty towards teaching is indifferent or even negative" (Karolinska Institute 2011)

Pedagogpriser frös inne



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TEXT: CECILIA NEBEL

SYDSVENSKAN 

*...Redan i maj
uppmanades alla
fakulteter,
studentkårer med
flera att nominera
duktiga lärare.
Men bara fem
kandidater
vaskades fram
bland Lunds
universitets cirka
4 000 anställda
lärare.*

5. Societal interaction and benefits

Berkeley and Stanford

- broad view of impact
- students seen as primary contribution to society
- Interaction: two-way flow of knowledge, benefiting both universities and society
- Strength of interdisciplinary initiatives

Sweden

- Narrow view of impact: research cooperation, commercialization and spinoffs?
- Interaction primarily viewed as 'knowledge out'
- Limited mobility between academia and rest of society
- Emphasis on research, neglect of students and teaching

Universities' contribution to innovation

- “All too often, policy attention is ... focused upon the production of codified knowledge through research and its subsequent diffusion and exploitation through ... industry-academic linkages. **However, the innovation studies literature makes clear that the most significant contribution of HEIs to innovation often lies in the creation of capabilities through teaching and research training activities**”. (OECD 2009)

Conclusions

- **Recruitment of students is one-dimensional**
- **Recruitment of faculty is not transparent and often limited to a small pool of internal candidates**
- **Lack of a holistic perspective in education**
- **Education is neglected**
- **Narrow perspective on interaction with society**



Recommendations: recruitment

- Introduce a **tenure track**
- Initiate **international search for all tenure track positions.**
- Promote only those to tenure who demonstrate **consistent performance** in both research and teaching to tenure.
- **Get more serious about mobility** among universities, between academia, industry and policymaking, and, by attracting more students and faculty from abroad.
- **Acknowledge importance of relevant competence** (from industry and public sector) for both teaching and research **and bring it into the universities.**



Recommendations: teaching and linking research and teaching

→ Strengthen focus on teaching and on linking research and teaching

- Carry out **more systematic evaluations of teaching** (at University level), support improvement of teaching skills.
- **Change curricula to focus more on skills** rather than specific qualifications or degrees
- **Increase links between undergraduate / Masters education and research,**
- **Make teaching more visible** (eg ensure that universities' websites list each course, including who will be teaching it as well as the time and location)

Recommendations: funding

- Sweden should modify its university funding mechanisms so that sufficient funds are provided for teaching and the tenure track system is fully supported.

Recommendations: leadership

- **strengthen leadership of academic institutions**, by building durable structures from below (departments that join teaching, research and interaction) and by embedding and regulating these by supportive and visionary faculty and university leaders which support and sustain competitive recruitment and promotion strategies and entice strong academic leadership at all levels.
- **Rectors and pro-rectors must provide the leadership** to drive the university towards excellence in both teaching and research

Recommendations

- Acknowledge and allow for a greater diversity in the Swedish HEI landscape through a transparent, though diversified funding mechanism

Thank you!