

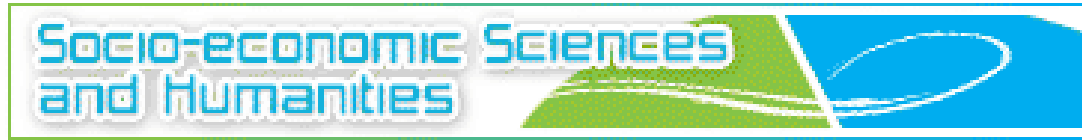
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# How much does Sweden invest in intangible assets?

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# Questions

- How large were the spending and investment in intangible assets in Sweden in 2004?
- How large was the spending compared to other countries?



# Standard CHS framework

- **Computerized information**  
(software and computerized databases)
- **Innovative property**  
(scientific R&D, mineral explorations, copyright and license costs, product development in financial industries and design)
- **Economic competencies**  
(brand equity, firm specific human capital and organizational capital)



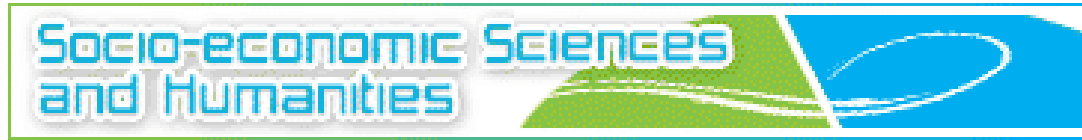
# Computerized information

- Measured as gross fixed capital formation in software
- Computerized databases included in software estimates
- Source: EU KLEMS



# Scientific R&D

- R&D spending deducted with the R&D spending of computer and related activities
- Source: OECD ANBERD database



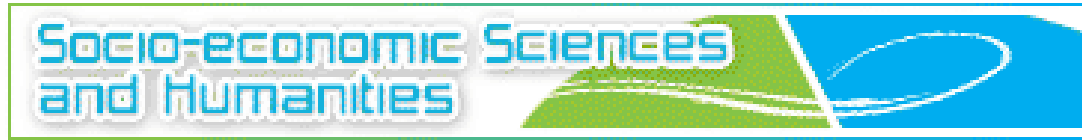
# Mineral explorations

- Prospection of new ore deposits
- Source: Geological Survey of Sweden



# Copyright and license cost

- Assumed to be equal to development costs of motion pictures
- Factor of 5 (based on Hao & Manole)
- Source: Screen Digest



# Product development in financial industries

- Measured as 20 percent of intermediate spending by financial services
- Not possible to deduct advertising, software, consulting services and engineering activities
- Source: EU KLEMS





# Design

- Purchased

$$Y_p = Y^{742} \cdot \frac{N^{742 AED}}{N^{742}}$$

- Own account

$$Y_{own} = Y_p \cdot \frac{(wN^{BAED} - wN^{742 AED})}{wN^{742 AED}}$$

- Source: Statistics Sweden



# AED-occupations based on the Swedish Standard Classification of Occupations (SSYK)

Architects and town planners	(SSYK 2141)
Civil engineers	(SSYK 2142)
Electrical engineers	(SSYK 2143)
Electronics and telecommunication engineers	(SSYK 2144)
Mechanical engineers	(SSYK 2145)
Chemical engineers	(SSYK 2146)
Designers	(SSYK 2456)
Decorators and commercial designers	(SSYK 3471)



# Brand equity

- Advertising
  - Total investment deducted with spending on classified ads and public sector spending
  - Source: Swedish Institute for Advertisement
- Market research
  - Measured as twice the turnover of market and consumer research industry (SIC 7413)
  - Source: Statistics Sweden



# Firm specific human capital

- Based on CVT survey for Sweden made in 1999 by Statistics Sweden
- Only includes companies with at least 10 employees
- Assuming the same share of total labor costs as in 1999



# Organizational capital

- Purchased
  - Measured as the revenues of the management consulting firms
  - Source: Affärsvärlden
- Own account
  - 20 percent of managers' compensation
  - Definition of managers: "Legislators, senior officials and managers"
  - Source: Statistics Sweden



## Intangible spending in the Swedish business sector

<i>Intangibles</i>	<i>2004 (bn SEK)</i>	<i>Percent of total intangibles</i>
Computerized information	48	17
Innovation property	142	51
Economic competences	87	32
<b>Total</b>	<b>277</b>	<b>100</b>



# Innovation property spending

<i>Intangibles</i>	<i>2004 (bn SEK)</i>	<i>Percent of total intangibles</i>
Scientific R&D	68	25
Mineral exploration	0.3	0.1
Copyright and license costs	3	1
Development costs in fin. industry	7	2
Design	64	23
R&D in social sciences	0.2	0.1
<b>Total</b>	<b>142</b>	<b>51</b>



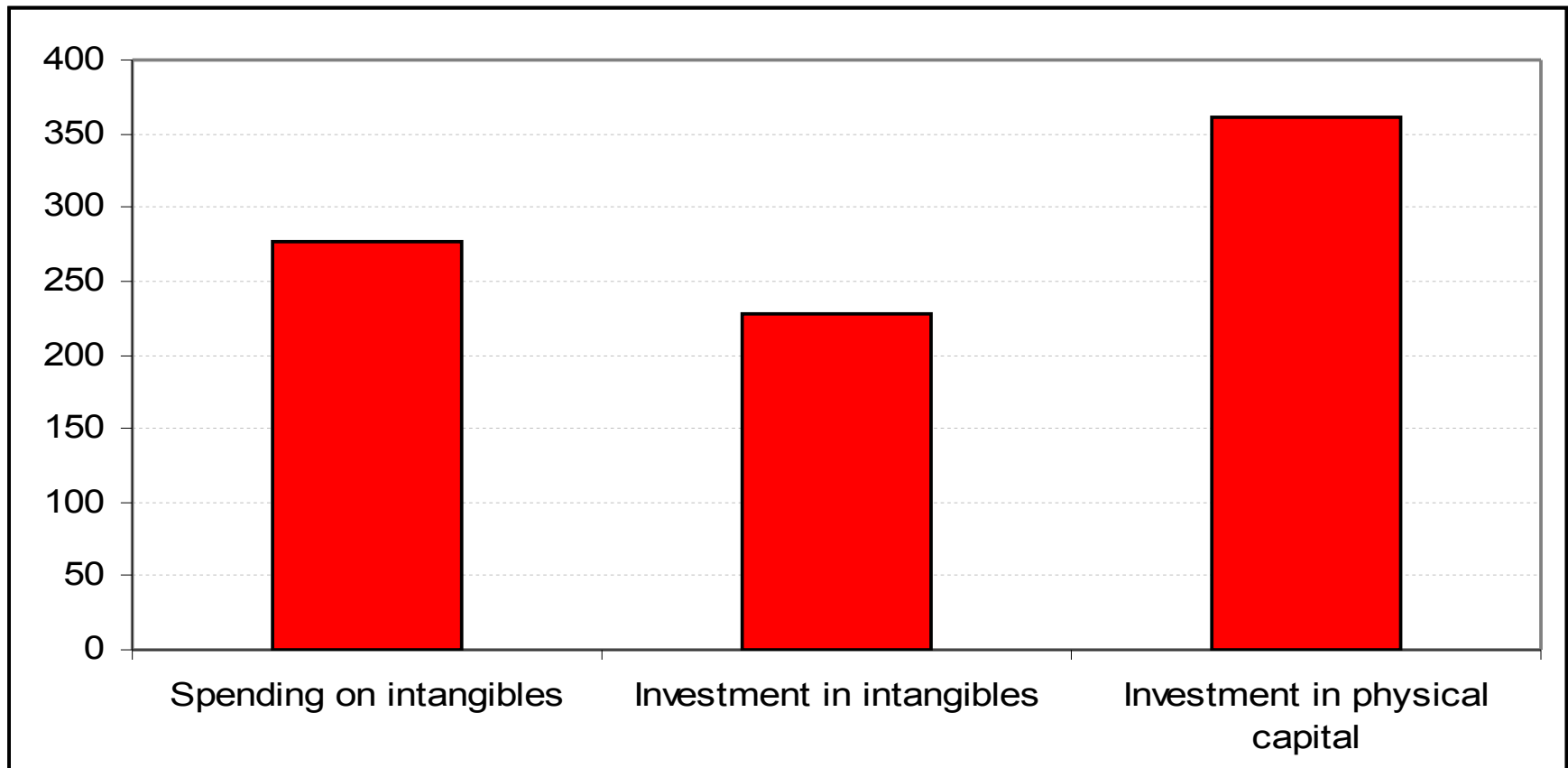
# Economic competencies

<i>Intangibles</i>	<i>2004 (bn SEK)</i>	<i>Percent of total intangibles</i>
Brand equity	42	15
<i>Advertisement</i>	37	14
<i>Market Research</i>	5	2
Firm specific human capital	28	10
Organizational structure	17	6
<i>Purchased</i>	5	2
<i>Own-account</i>	12	4
<b>Total</b>	<b>87</b>	<b>32</b>



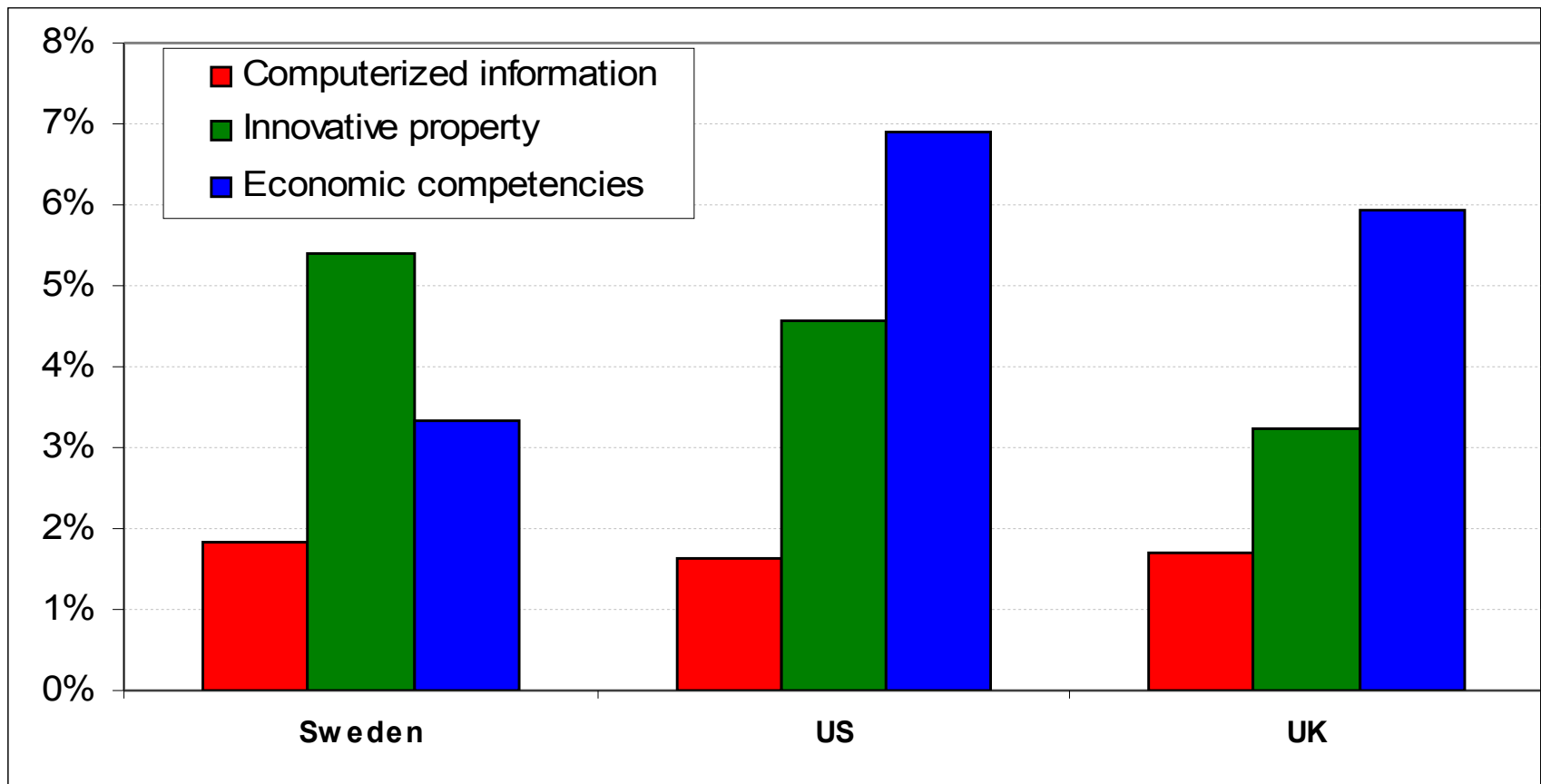


# Business sector intangibles and physical capital in 2004 (bn SEK)





# Business sector spending on intangibles in three countries (percent of GDP)





## Business sector spending on intangibles in three countries in 2004 (percent of GDP)

<i>Type of intangible investment</i>	<i>Sweden</i>	<i>US</i>	<i>UK</i>
<b>1. Computerized information</b>	<b>1.83</b>	<b>1.65</b>	<b>1.70</b>
a) Computer software	n.a.	n.a.	n.a.
b) Computerized databases	n.a.	n.a.	n.a.
<b>2. Innovative property</b>	<b>5.39</b>	<b>4.57</b>	<b>3.23</b>
a) Scientific R&D	2.59	2.06	1.06
b) Mineral exploration	0.01	0.19	0.04
c) Copyright and license costs	0.11	0.81	0.21
d) Development costs in financial industry	0.25	0.79	0.69
e) New architectural and engineering design	2.42	0.73	1.20
f) R&D in social sciences and humanities	0.01	0.08	0.03
<b>3. Economic competencies</b>	<b>3.32</b>	<b>6.91</b>	<b>5.95</b>
a) Brand equity	1.61	2.53	1.59
<i>Advertisement</i>	<i>1.43</i>	<i>2.33</i>	<i>1.20</i>
<i>Market Research</i>	<i>0.18</i>	<i>0.20</i>	<i>0.39</i>
b) Firm-specific human capital	1.05	1.25	2.45
c) Organizational structure	0.66	3.13	1.92
<i>Purchased</i>	<i>0.20</i>	<i>0.87</i>	<i>0.60</i>
<i>Own-account</i>	<i>0.47</i>	<i>2.26</i>	<i>1.31</i>



# Conclusions (I)

- Total spending on intangibles in Sweden in 2004 was 277 bn SEK (10.6 percent of GDP and 15.5 percent of business sector output)
- Total investment was 227 bn SEK or 63 percent of total investment in physical capital in 2004



# Conclusions (II)

- In relative terms innovative property spending was higher in Sweden compared to the UK and the US, while spending on economic competencies was considerably lower
- Sweden was very intensive on R&D spending, while very little resources were spent on own account organizational structure