

**COINVEST**

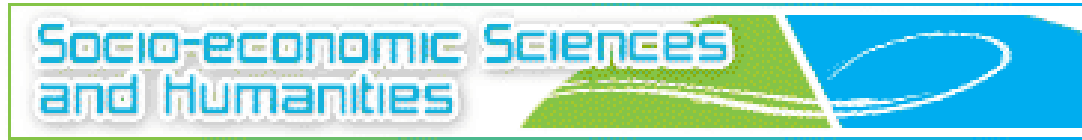
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# **COINVEST: Competitiveness, Innovation and Intangible Investment in Europe**

*Stockholm meeting  
28 -29 September 2009*

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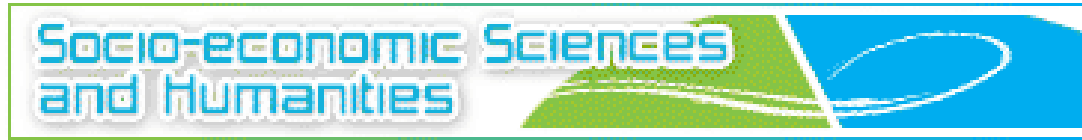
# Some UK work

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## Some UK work

1. Update of all estimates to 2007
2. Intangible Assets survey = extended R&D survey
3. Financial services



## Updated estimates

- a. Consistent with July National Accounts
- b. Main changes in last 3 years
  - a. Incorporation of FISIM
  - b. Incorporation of own-account software
- c. Main effects: raises TFPG in late 1990s



# 1. Intangible Assets Survey

- employer funded training
- software
  - reputation and branding
  - R&D
  - design
  - organisation or business process improvement
- Purchased and own-account
- Life lengths
- Pilot of 50
- Survey of 1,000 firms to be sent out in October



## Section C - Software

### 8. During the year, did this business purchase or develop any software?

Purchase of external software and development of software in-house.

For example, operating systems, general purpose office applications (e.g. word processing), special purpose applications (e.g. financial accounting systems, databases, production control systems), etc.

Exclude software development conducted as part of R&D and included in Section E.

Yes  → Go to question **9**

No  → Go to question **12**



**9. During the year, what was this business's expenditure on software bought from other organisations?**

Include:

- off-the-shelf software
- software licenses and license renewals
- generic and bespoke software.

Exclude:

- software embedded in other items of current or capital expenditure, e.g. software pre-installed on IT hardware .....

£    ,    ,    9

**10. During the year, what was this business's spending on software development carried out by its own staff?**

Include:

- staff costs of all staff involved, excluding contractors
- associated costs, including office facilities, overheads and materials but not capital items.

**Note:** Estimates based on proportions of staff time are acceptable . . .

£    ,    ,    10

Years      Months

**11. On average, how long does the business expect to benefit from a typical investment in software? .....**

       11



# 3. What is R&D in Financial Sector?

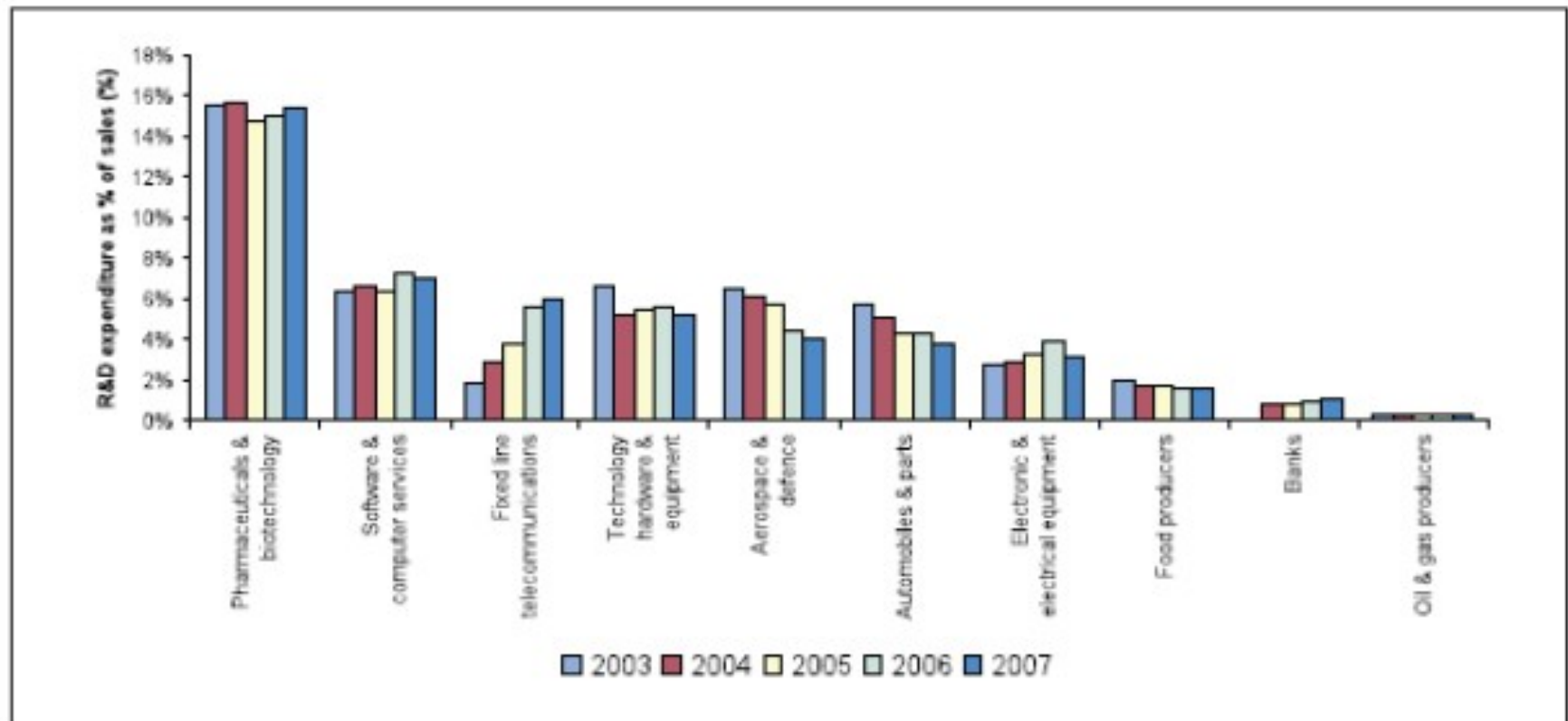
In the traditional definition, R&D is devoted to the solution of technical uncertainty

Aim to measure the resources devoted to the development of new financial products and business model in the financial sector.

Measured R&D is very low in finance:



Figure 1: R&D Intensity in Banks versus other sectors





# Research methodology

Follows CHS

1. select a set of occupations we define “knowledge occupations” we believe active in the development of new financial products/processes
  1. Software (currently done in NAs)
  2. Managers (CHS assumption: 20% of wages and salaries)
  3. “Researchers” (new work)
2. Use UK data on wages by industry and occupations.
3. Adjust our estimate by fraction of time spent in research activities and overhead costs (Software methodology)



Table 2 : “Knowledge Occupations in Financial Intermediation”

<b>soc 2000</b>	<b>description</b>
	<b><i>Managers</i></b>
1131	Financial managers and chartered secretaries
1132	Marketing and sales managers
1136	ICT managers
1137	Research and Development managers
1142	Customer care managers
1151	Financial institution managers
	<b><i>Researchers</i></b>
2423	Management consultant, actuaries, economist and statisticians
2126	Design and development engineers
2321	Scientific researchers
2322	Social science researchers
2329	Researchers n.e.c.
	<b><i>Software</i></b>
2131	IT strategy and planning professionals
2132	Software professionals



Table 5: “2004, Knowledge Occupations wage bills in Finance sector under different cases.

Research occupations	Wage bills, £m	Fraction of time	Overhead costs	case 1	case 2	case 3
Managers	12,800	20%	1	2,560	2,560	X
Engineers	100	50%	1.6	80	50	50
Software	1,400	75%	1.6	1,680	X	X
Actuaries	852	50%	1.6	682	426	426
Others	163	50%	1.6	130	82	82
Own-Account Financial services				5,132	3,118	558

Memo: measured R&D = £400m



Contributions to labour productivity, 2000-2005										
Excluding Software										
	Labour Productivity	Capital Deepening			Labour Quality	Intermed Input Deep	TFP			
		Total	ICT Tangible	Non-ICT Tangible						
Manufacturing	3.79	0.3	0.09	0.2	0.29	2.31	0.89			
Trade, Hotels & Rest., Transport & Comm.	3.03	0.56	0.33	0.23	0.22	1.64	0.61			
Financial Services	2.94	0.34	0.47	-0.14	0.27	0.93	1.4			
Business activities	1.93	0.51	0.38	0.13	0.3	0.48	0.64			
Including all intangibles										
	Labour Productivity	Capital Deepening			Intangible capital	Labour Quality	Intermed Input Deep	TFP		
		Total	ICT Tangible	Non-ICT Tangible						
Manufacturing	3.72	1.33	0.1	0.24	0.99	0.29	1.71	0.39		
Trade, Hotels & Rest., Transport & Comm.	3.07	1.12	0.35	0.27	0.5	0.22	1.42	0.32		
Financial Services	2.88	0.89	0.42	-0.06	0.53	0.27	1.25	0.46		
Business activities	2.23	1.43	0.4	0.15	0.89	0.3	0.44	0.05		

Include intang: TFPG fall, K deep rises. Fin svcs highest TFPG without, middle of pack with



- # Work in progress
- Improve estimates of time processes via interviews.
    - What are “research” activities?
      - model building
      - Talking to clients
      - Writing reports?
      - Product development?
  - Bonuses in wage bill data ?
  - Output of fin svcs
    - EUKLEMS data used here has early version of FISIM in it, reconcile with latest data?