UK Productivity Gap: Skills, management and innovation

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1. Overview

- The Productivity Gap (output per hour)
  - What is it
  - How far is UK behind?
  - How has it changed
- Causes of the gap
  - Worker and managerial Skills
  - Innovation
- What can be done?

2. What is labour productivity?

Basic "economic welfare" measure (GDP per capita)

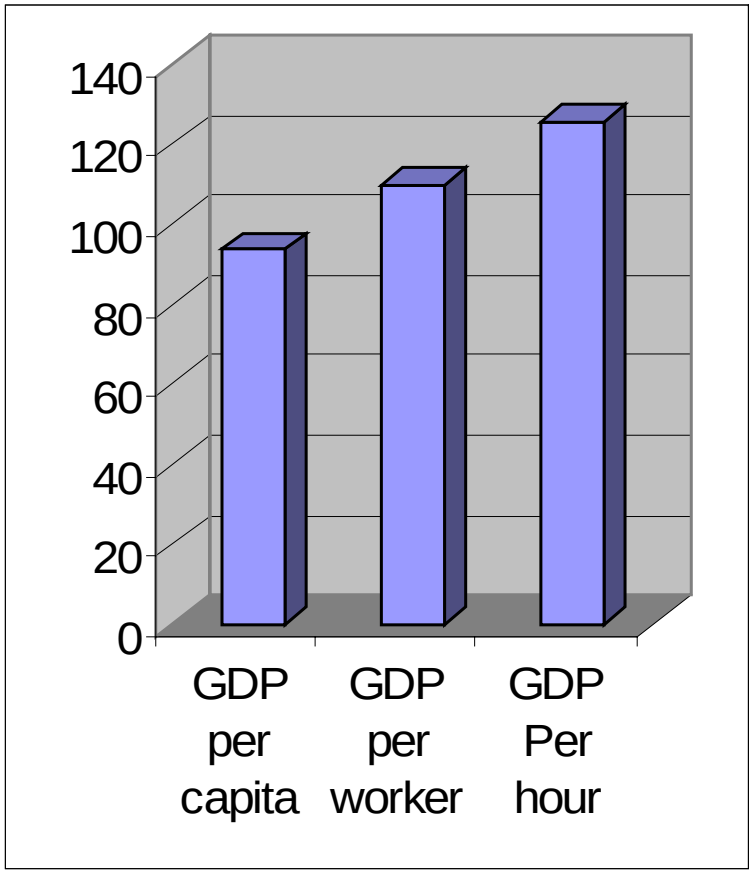
$$\frac{GDP}{Population} = \frac{GDP}{hours} \times \frac{hours}{workers} \times \frac{workers}{population}$$

Labour productivity

Employment rate (Demographics)

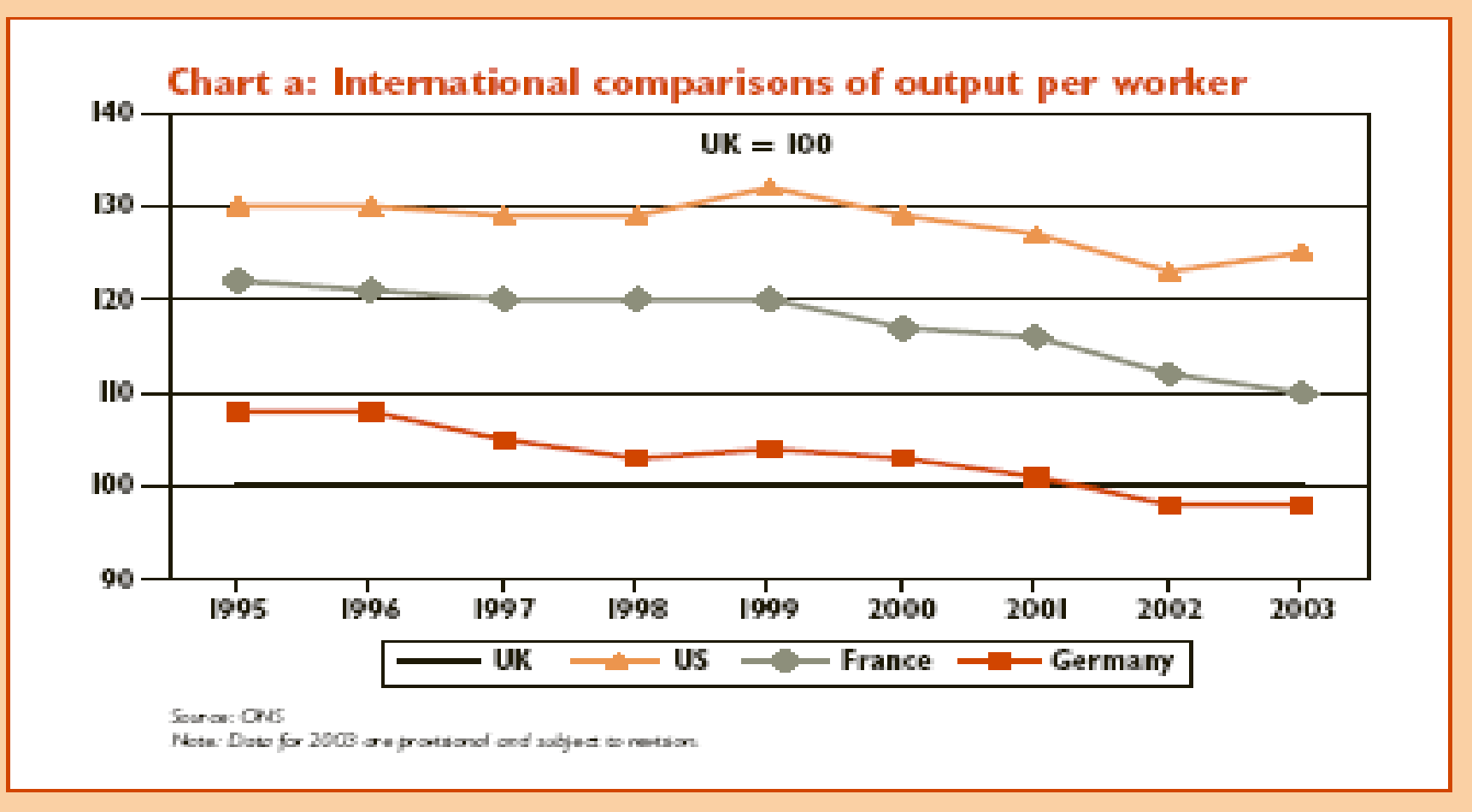
- US has much much higher GDP per capita than EU15, …….but similar GDP/hour (productivity)
- This is mainly because there are more Americans in work, and they work very long hours

GDP per capita vs. GDP per hour in 2003: France (UK=100)



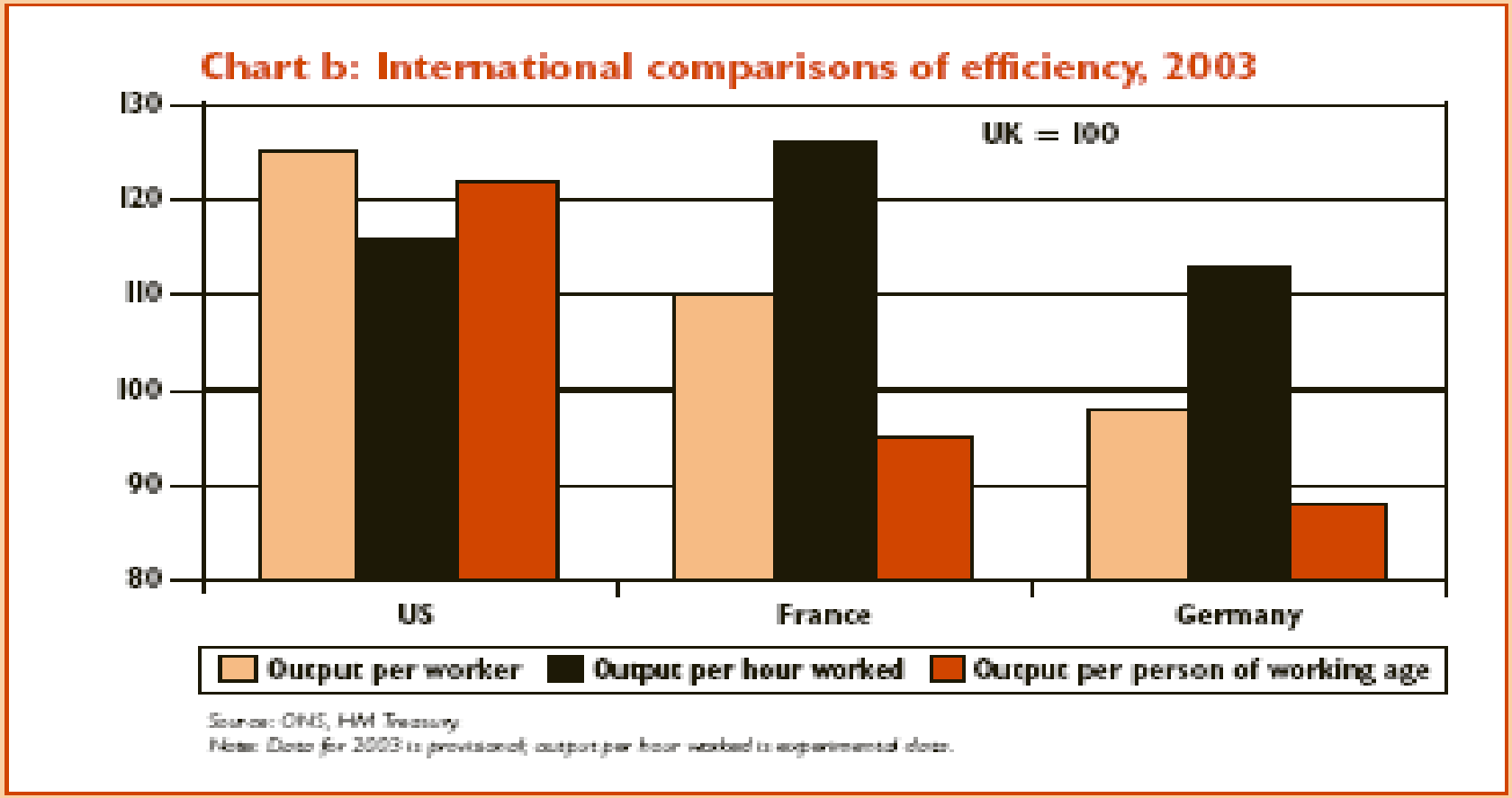
Source: ONS (2005), Eurostat (2005)

Changes over time in output per worker



Source: Budget 2005

Different measures of “productivity”

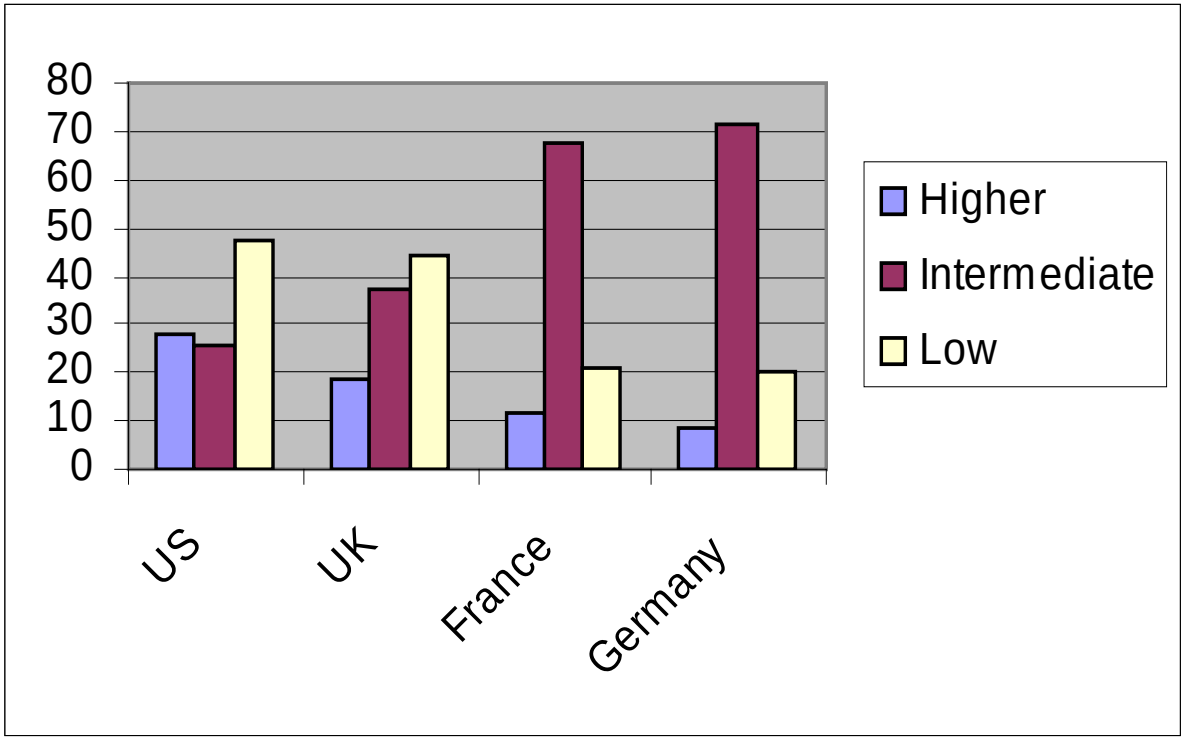


Source: Budget 2005

3. Factors accounting for the difference

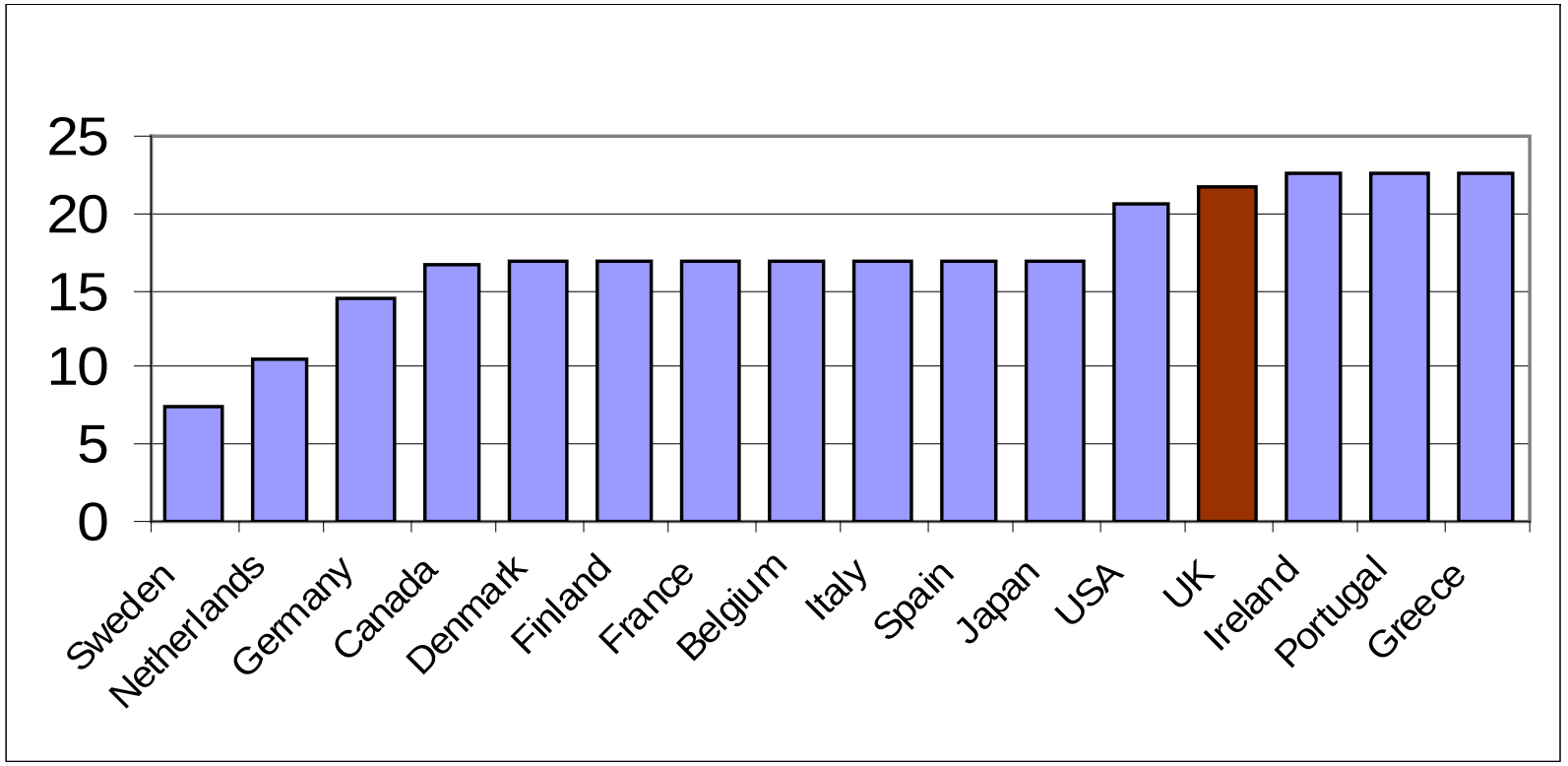
- Inputs – fixed capital, human capital
  - Very important, account for practically all of the UK difference with France and Germany
  - UK has a problem of skills
- Residual - “total factor productivity” (statistical error, technology, management, organization, etc.). Big TFP gap between UK and US

UK Skill Position: Fewer grads than US, fewer intermediate skills than EU



Source: Broadberry and O'Mahony (2005)

Too many Functionally illiterate in UK (% aged 16-65, 1995)



source HDR 1998

UK Basic Skills Gap: Little Improvement

	% of Adults Below IALS Level 2					
	Numeracy			Literacy		
	Age 16-25	Age 26-35	Age 36-45	Age 16-25	Age 26-35	Age 36-45
Belgium (Flanders)	7	9	17	8	12	20
Switzerland (German)	7	13	19	7	17	24
Netherlands	8	7	10	8	6	9
Sweden	5	4	7	4	5	7
Germany	4	5	6	9	12	14
Ireland	8	20	23	16	16	21
Britain	22	20	19	17	18	17
USA	26	20	18	23	20	19

source IALS

Management Skills?

Are we a nation of David Brents?

- Bad UK management to blame?
- Not much concrete evidence but new LSE/McKinsey survey finds that UK does score badly on overall measure of management best practice
- US most advanced, but even France and Germany ahead of UK

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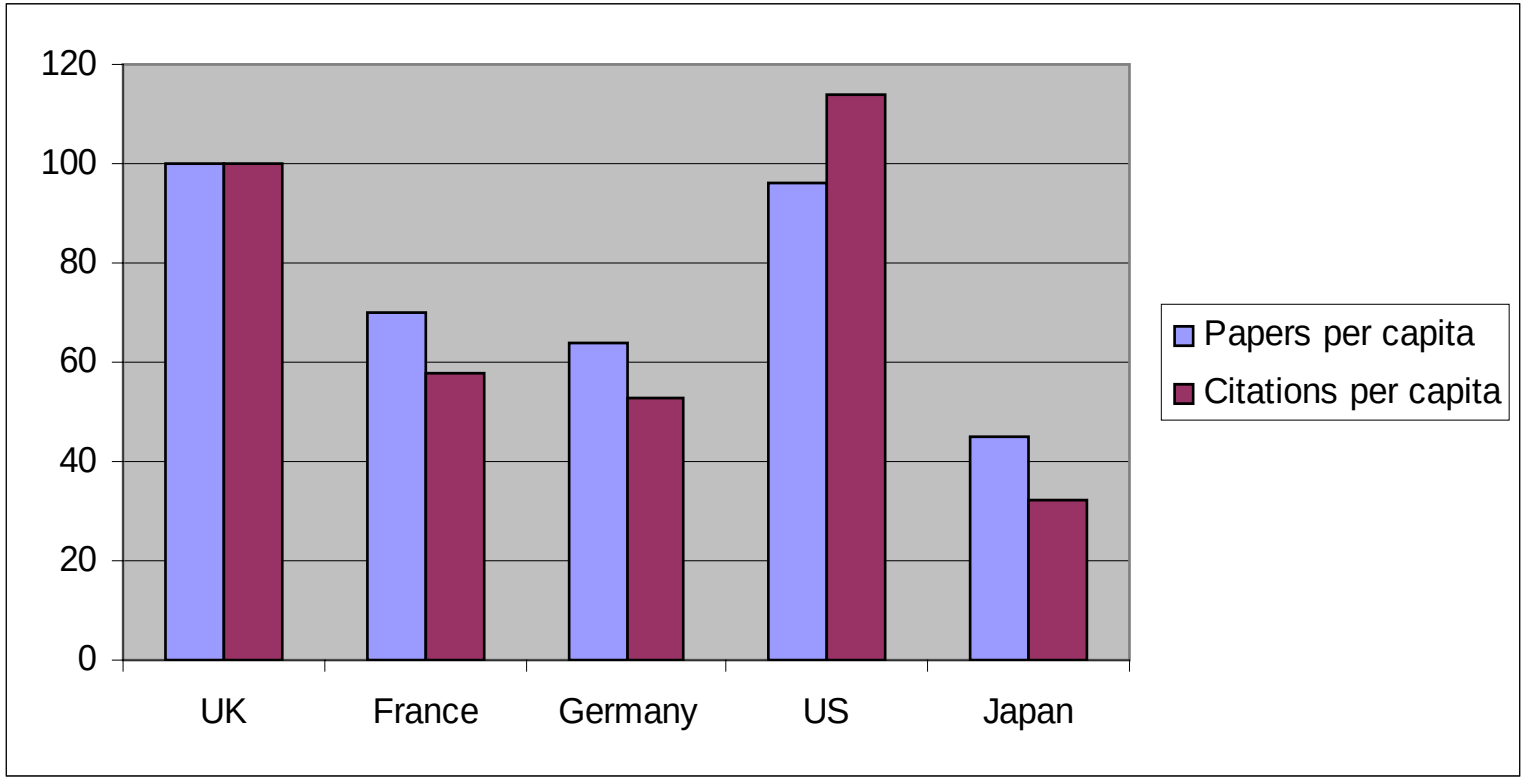
Factors behind poor management

- Product market competition, trade openness, FDI, low barriers to new firm formation foster better management practices
- But UK scores well on all of these compared to EU - these should improve managerial quality in long-run
- Is the supply of management skills and worker skills also a cause of poor management?

4. Innovation

- UK has traditionally a strong university base in science
- ….but private sector innovation weaker
- R&D intensity has stagnated since 1981 and fallen behind other countries (not just de-industrialization: within sector)
- Patent performance poor
- Innovation weaker

Indices of Science Base, (1981-94 average)

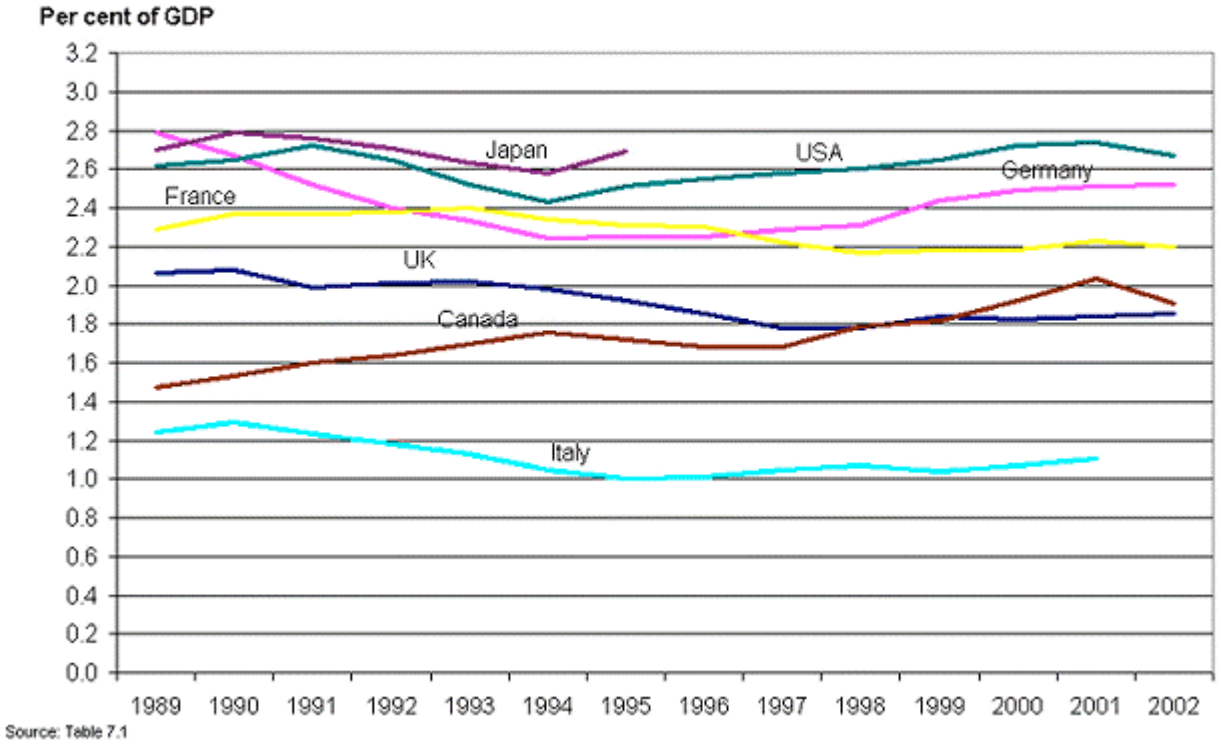


source UK Office of Science and technology

International comparison of General Expenditure on R&D (GERD)

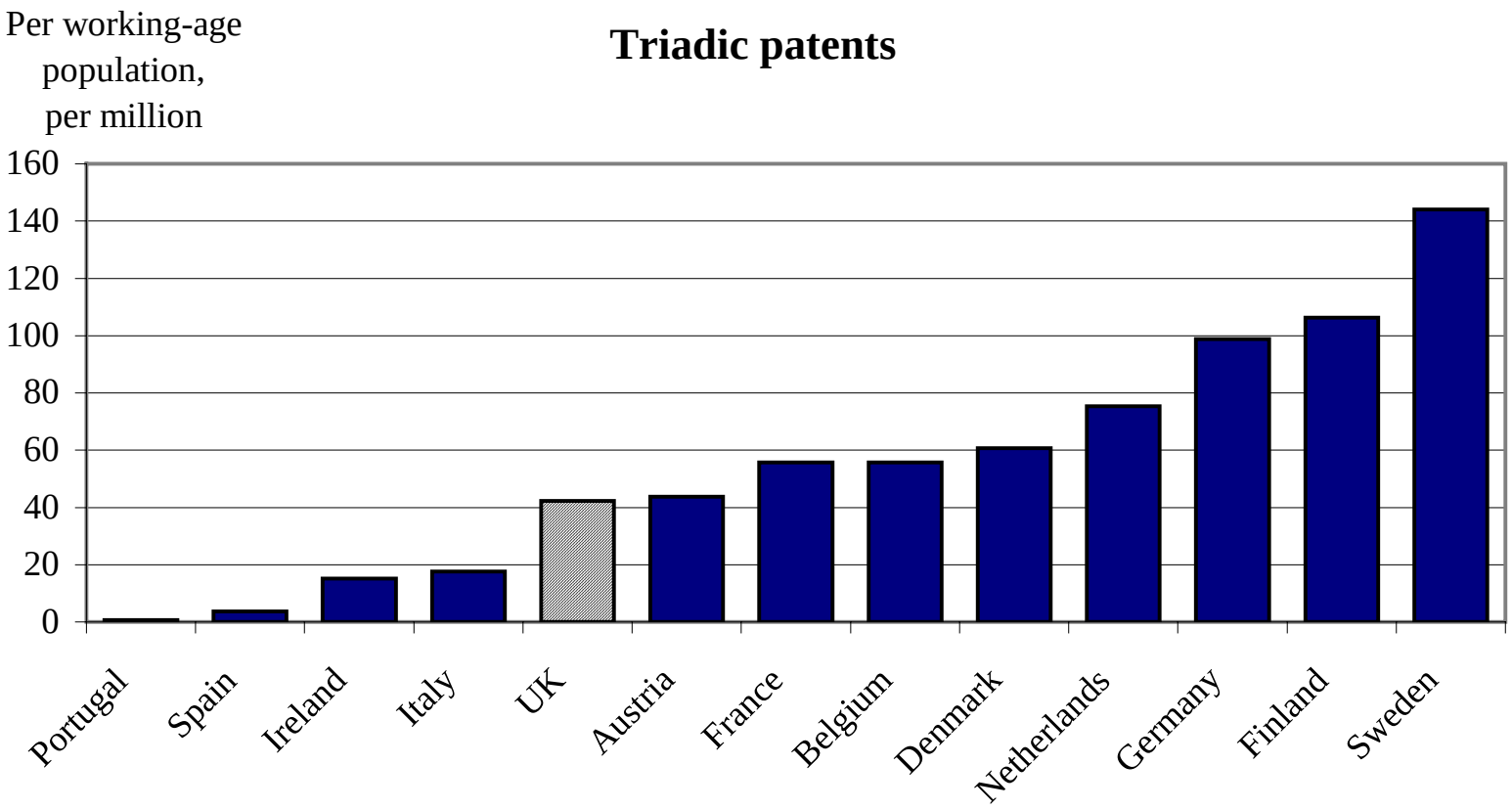
GERD to GDP 1989-2002,G7

Figure 7.1 Trends in gross domestic expenditure on R&D (GERD) in G7 countries as per cent of GDP



Source: SET, 2004;
http://www.ost.gov.uk/setstats/7a.htm

UK major patents per person



Note: Data for 1995-1999.

Does low UK innovation matter?

- Large empirical literature that suggests that innovation matters for productivity
- Also evidence of R&D “spillovers”. Firms who perform R&D are not the only ones who benefit from subsequent innovations. Implies that free market will under-supply R&D and government needs to support research
- BUT Britain is small, why not simply “free ride” on the research of other countries such as the USA?
  - Some spillovers are local (helps to be geographically near innovators in getting the benefits)
  - Also evidence that greater R&D helps firms/industries absorb new ideas created elsewhere in the world

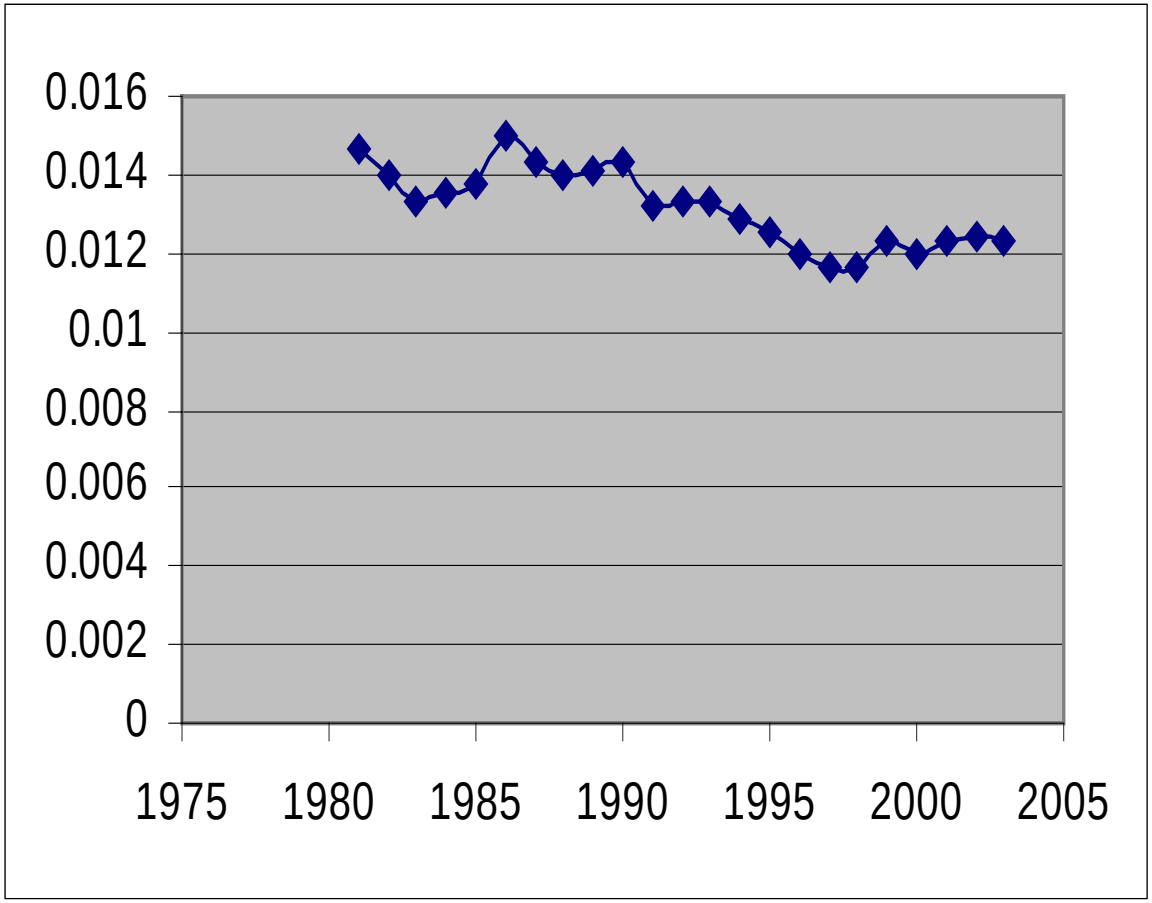
Which innovation policies?

- Supporting basic scientific research
- University-business links (Lambert)
- Increasing supply of skills – evidence of skill biased technical change
- R&D Tax credit system. Pros and cons

R&D tax credits

- Many other countries with R&D tax credits
- UK followed many other countries and adopted in 2000, first for small firms and now for all firms
- Current cost about £430m p.a.
- Good econometric evidence that R&D does react to changes in its tax-price (Hall and Van Reenen, 2000)
- But why no pick-up?

Business Enterprise R&D/GDP, 1981-2003



Source: ONS (2005)

Problems with R&D tax credit

- Slow response – If price falls by 10% R&D only increases by 1% in first year, even though long-run impact about 10%
- Cost - SME credit only £150m started in 2000, large firms in 2002
- Relabelling?
- All R&D subsidies increase wages of (high income) R&D workers

Other Innovation Policies

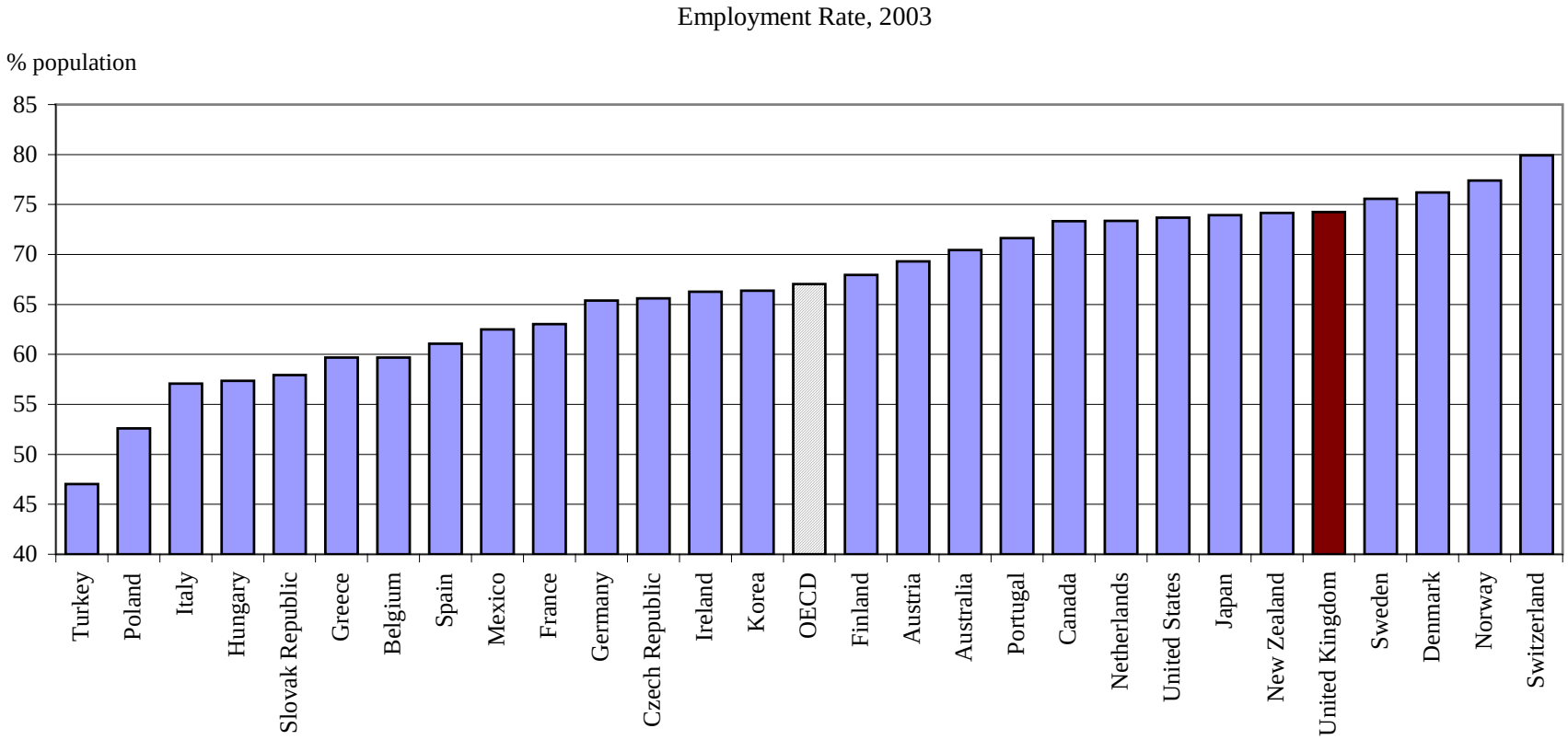
- Policy evaluation widespread in education or labour market programs
- Existing evaluations of UK innovation weak – not enough thought over what is the right “control” group
- *Example:* Small Business Scheme and LINKS – Conservatives plan to abolish, but no rigorous evidence that it works or doesn’t work (cf. New Deal for Young People where plenty of evidence that it does work!)
- University-business linkages (Lambert)

Conclusions

- UK productivity gap has not gone away, especially with the USA
- Not a single answer
  - Innovation an important difference between UK and US
  - Skills important
  - Managerial practices may be important
- Question for policy is what more should be done?
  - Much of policy framework in UK is “right” from economic perspective: emphasis on skills, tough competition, openness to trade and FDI, support for R&D
  - Delivery. Need for rigorous evaluation (e.g. education reforms, R&D policy)
  - Are we moving in the right direction? Burden of regulation increases and this could reduce competition (comp policy only one aspect)

Back up slides

UK (and USA) have high proportion of population in work



Source: OECD Labour Force Statistics.

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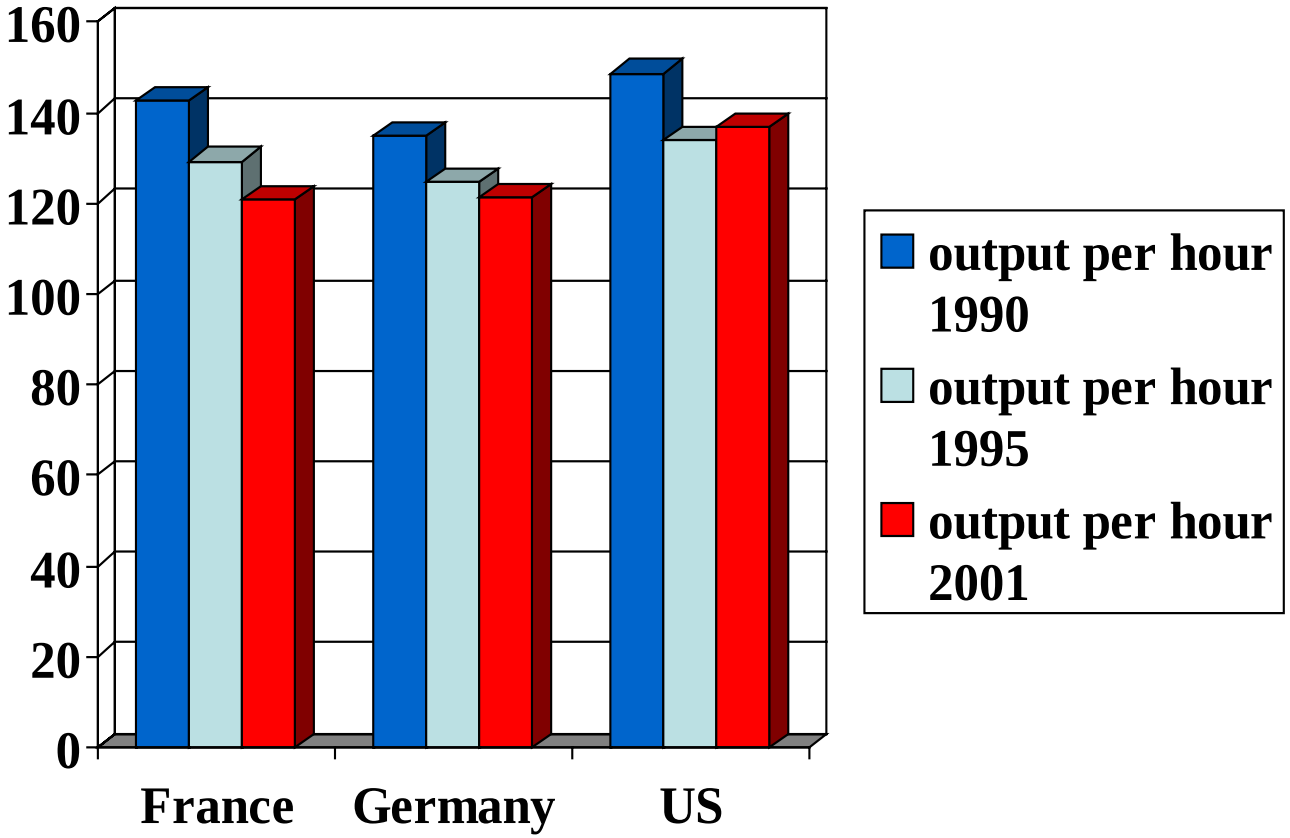
Productivity Gap, 1990-2001, Market Economy (UK=100)



Source: Broadberry and O'Mahony (2005)