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The Finnish Economic Development as an Example of Endogenous Economic Growth

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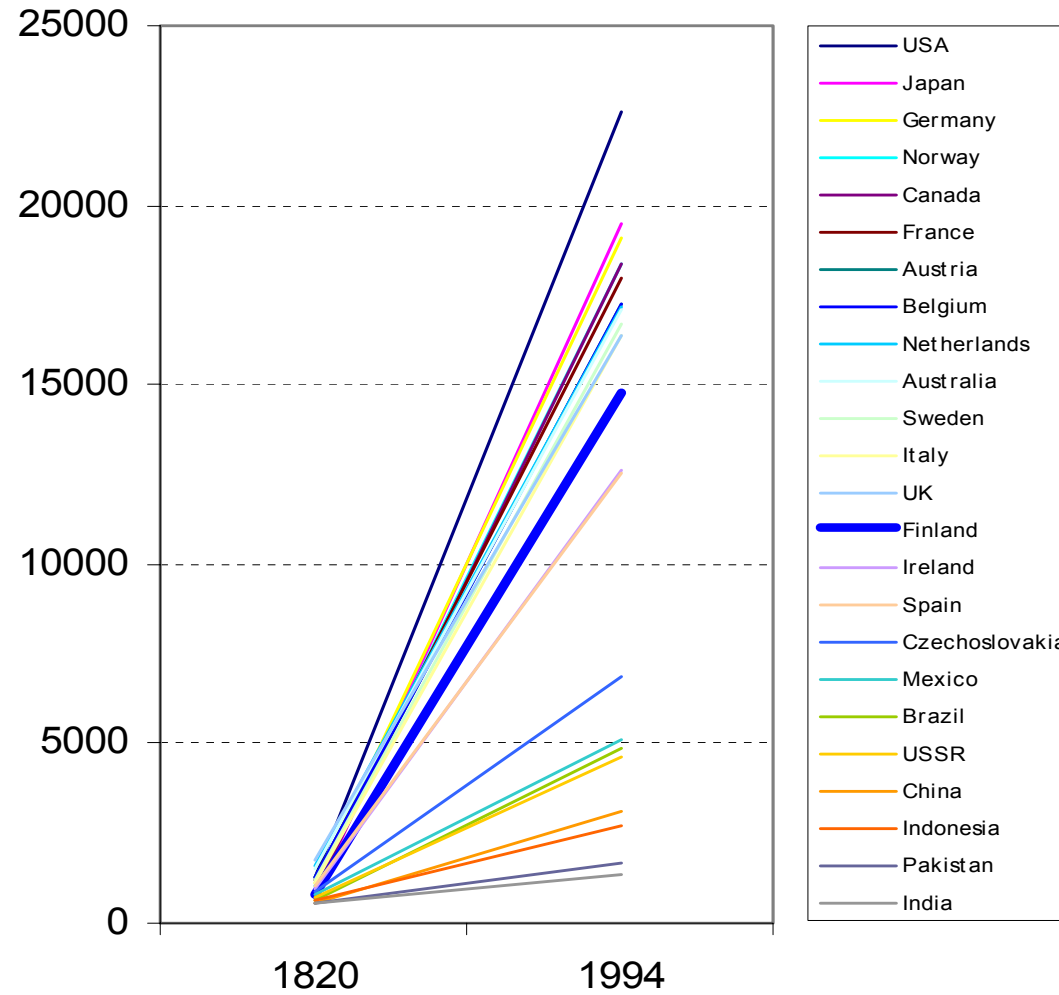


Stylized facts on growth

1. There is very large variation in income per capita across economies (in Canada 107 times higher than in Burundi)
2. Rates of growth vary substantially across countries
3. Growth rates are not constant over time
4. A country's relative position in the world distribution of per capita income is not fixed (movement from poor to rich and also vice-versa is possible; catching up)
5. Rate of return to capital is fairly constant; income distribution between labour and capital is quite stable
6. Output growth and growth in the volume of international trade are closely related
7. Both skilled and unskilled workers tend to migrate from poor to rich countries or regions



GDP per capita in 1820 and in 1994 (in 1990 dollars)



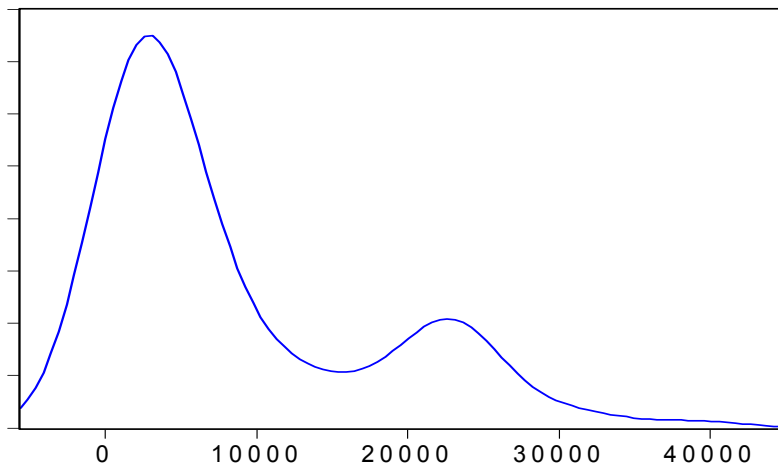
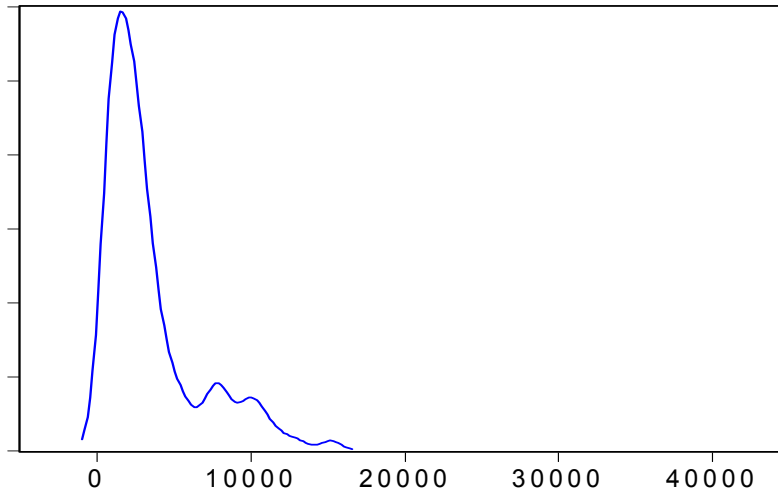
Maddison 1995

PO



Selective economic growth: twin peaks!

Distribution of GDP per capita (\$) in 1960 and 1998 (108 countries)



Finland

1960 7,300 \$

1998 22,400 \$

source:

Matti Pohjola



GDP has come up by 40 % from 1993 but only 20 % from 1989
(trend and seasonally adjusted observations)





Endogenous technological progress and growth

- Knowledge (human capital) is a factor of production
- It can be created by investing into it
- Knowledge/ideas has both the public and the private good characteristics: it is profitable also for the private firms to invest into knowledge
- But the private sector may invest into R&D less than optimal: that is why government policies are needed
- There are economies of scale in production
- This approach offers new explanations to the convergence or divergence debate: human capital has the key role in explaining the catching up -capability



What is endogenous growth?

Long-run growth is not endogenous in the sense that it can be easily manipulated by policymakers

But countries capable for catching-up have some special features, which may be promoted:

- investment into fixed capital
- investment into human capital
- institutions and infrastructure matter, but institutions are also endogenous to some extent

Growth is an endogenous outcome in the sense that profit-seeking individuals who are allowed to earn rents/profits on their activities are searching for new ideas and promoting growth via their efforts



A broader look at growth

(broader than production function approach)

1. Endowment (natural resources and geography)
2. Institutions
3. Policy

Institutions seem to be in a key role. They are endogenous, too. Some researchers argue that geographical endowment has an impact on institutions and the main explanatory variable is institutional set up. It is also determining the technological status of a country.

Estonia and Finland were at the same income level at the end of 1930s: institutions seem to be a good explanation to the current difference?

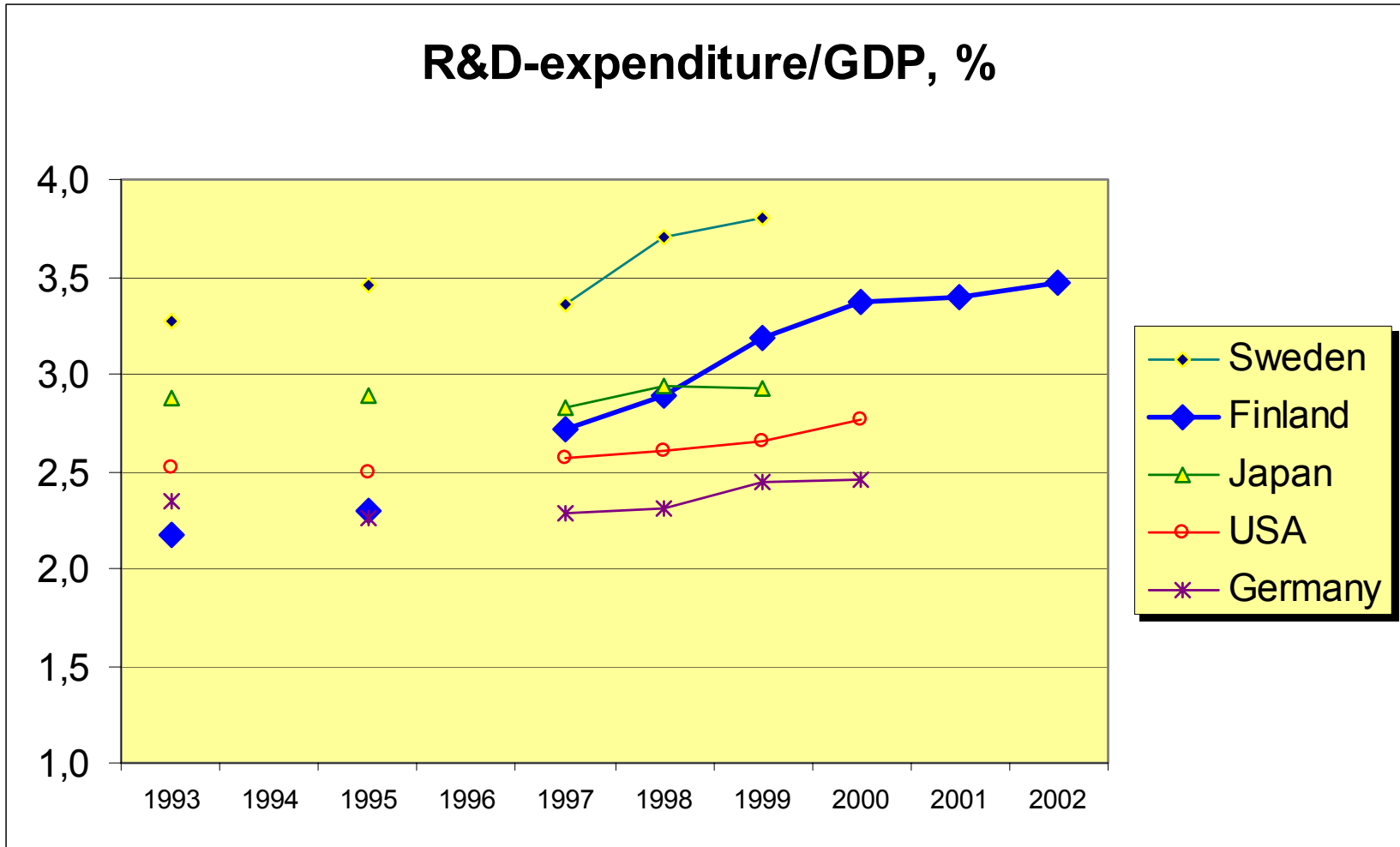


The Finnish Strategy “A Knowledge-based Society”

- Targeted programme in 1996: R&D intensity (%/GDP) up to the level 2,9 % in 1999 (it was 3,2)
- The Government’s additional finding 1997-1999 (public funding 40 % and private 60 %)
- The large scale development of the national innovation system
- A rapid expansion in ICT-sector (Nokia) resulted into a better performance than expected!
- A clever policy or a good luck?



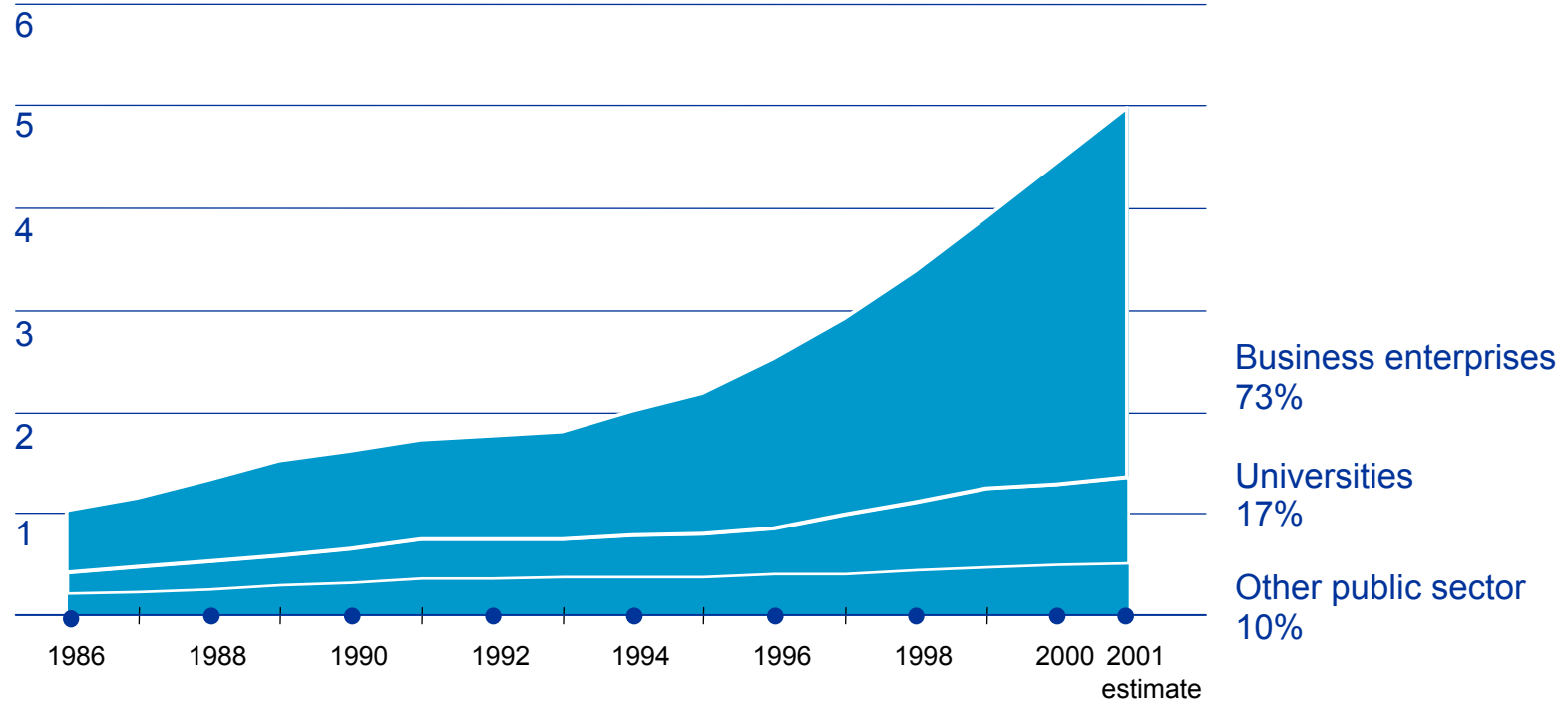
A clear shift upwards in R&D-input





R&D input in Finland in 1986-2001, by actor

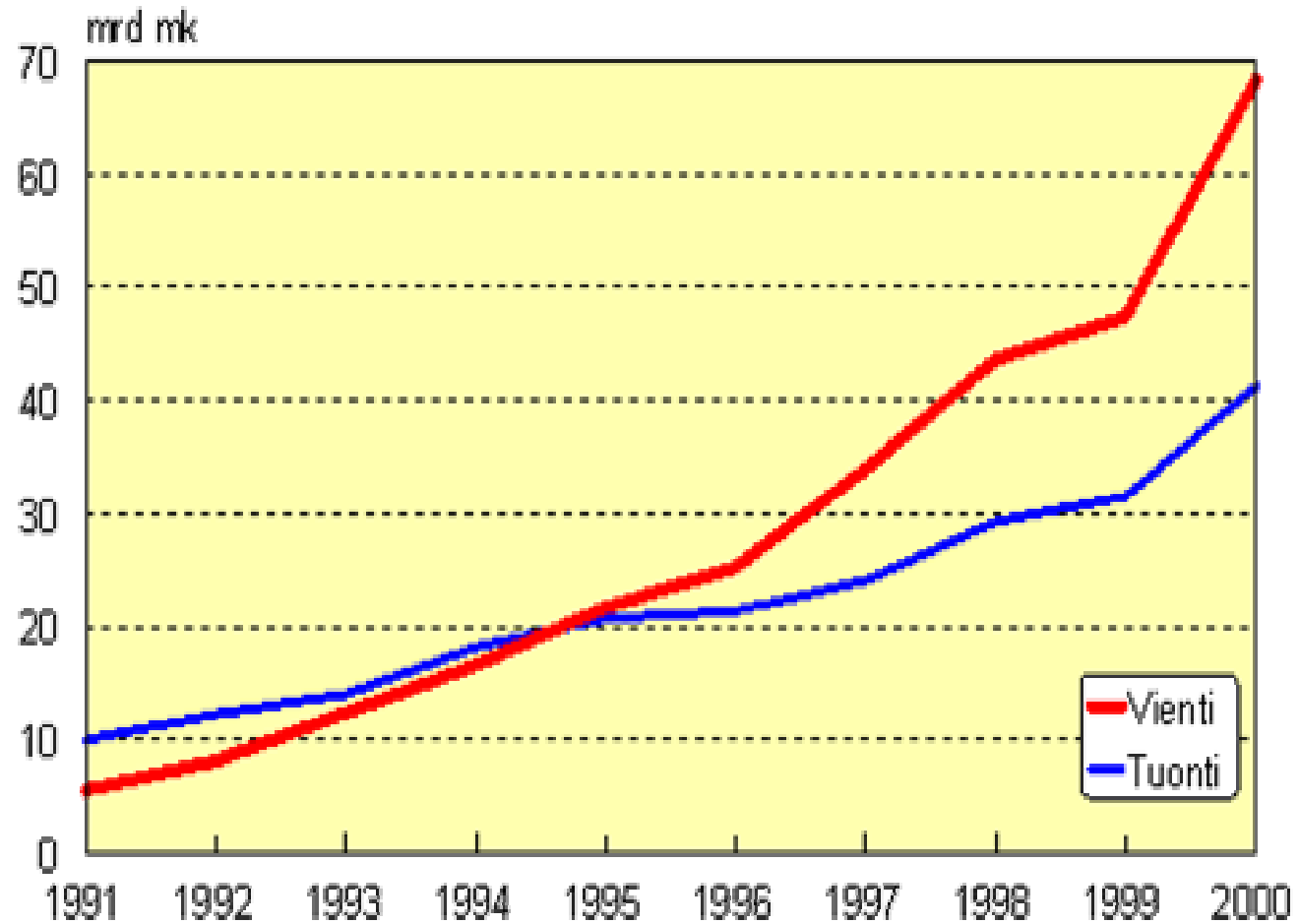
EUR billion



Source: Statistics Finland 2001



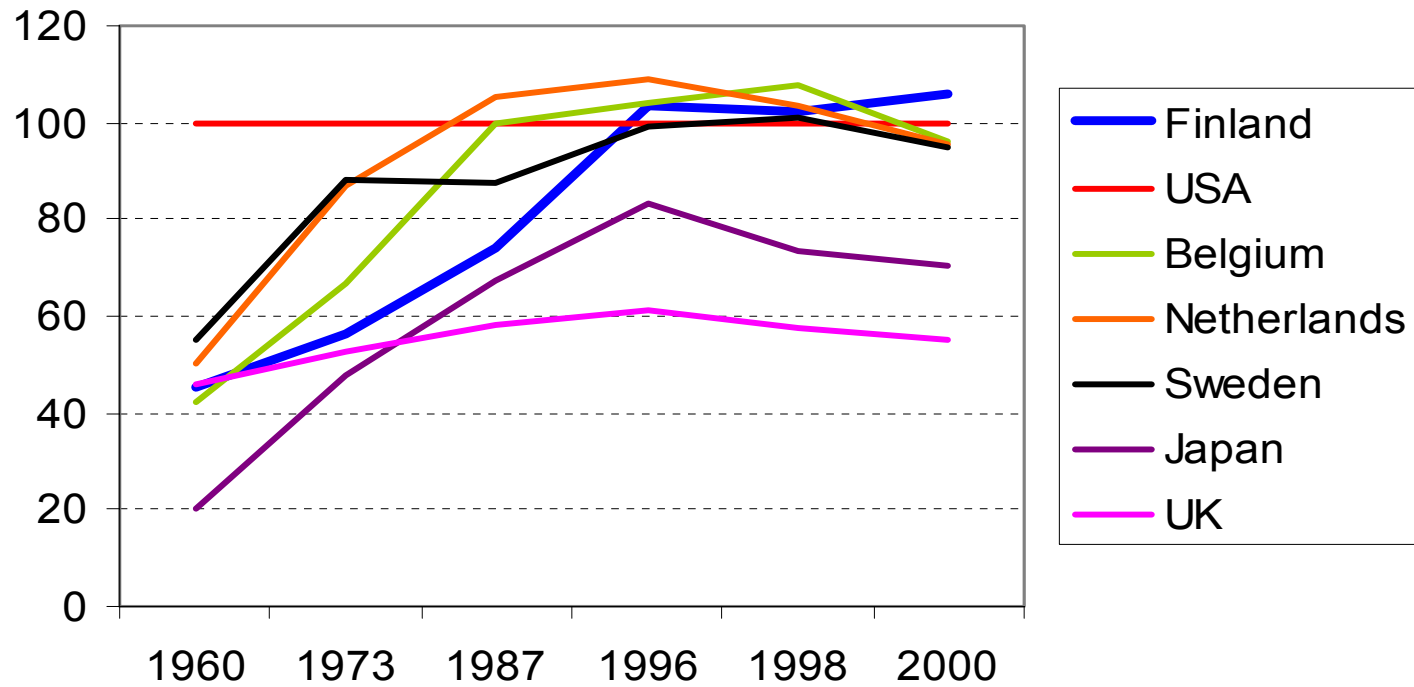
High-tech exports and imports, Finland is currently net exporter in high-tech products





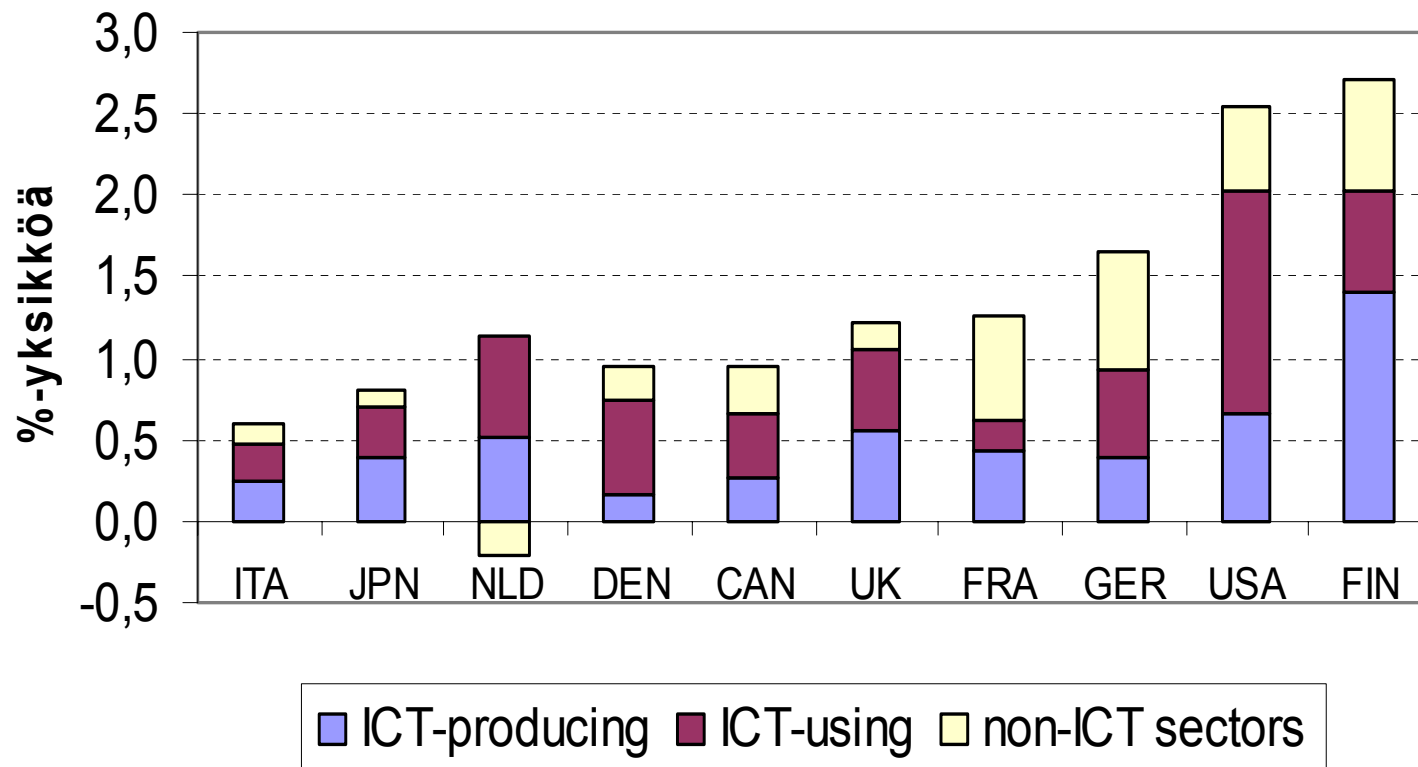
Productivity in manufacturing

(value added per hour, 1960-2000, USA=100): source: Matti Pohjola





Contribution of different branches to the labour productivity in 1995-99



Source: van Ark, 2001 (Matti Pohjola)



What does this mean for the future

- The theory says that an increase in R&D input creates an increase in *growth rate* (Finland 1995-2000)
- But a higher level in R&D input does not mean a constantly higher growth rate; only a higher *level of income per capita*
- Our challenge is to keep R&D investments on a high level even if the growth rate will be obviously lower than until now
- Until now *ICT-producing sectors* (“the new economy”) have had a major role; there are large opportunities not yet benefited in *ICT-using sectors* (“the old economy”)
- We must also scan the future in order to recognise new expanding sectors (but do not wait for a new Nokia!)