

A.2. TRENDS IN DOMESTIC R&D EXPENDITURE

■ In 2005, OECD expenditure on R&D reached USD 771.5 billion (in current purchasing power parity – PPP), or about 2.25% of overall GDP.

■ OECD-area R&D expenditure has increased steadily in recent years although more slowly than during the second half of the 1990s. Total gross expenditure on R&D (GERD) grew by 4.6% annually (in real terms) between 1995 and 2001, but by less than 2.2% a year between 2001 and 2005.

■ Since the mid-1990s, R&D spending has grown at a similar pace in the United States, Japan and the EU (around 2.9% a year in real terms). The share of the three main OECD regions in total R&D expenditure remained stable in 2005 at around 42% for the United States, 30% for the EU and 17% for Japan.

■ In both Japan and the EU, R&D intensity (R&D expenditure relative to GDP) picked up in 2005, reaching 3.33% and 1.74%, respectively, following a drop in 2004. In the United States, R&D intensity declined from a peak of 2.76 in 2001 to 2.61 in 2006, mainly owing to stronger growth in GDP than in the other main regions.

■ In 2005, Sweden, Finland and Japan were the only three OECD countries in which the R&D-to-GDP ratio exceeded

3%, well above the OECD average of 2.2%. Among OECD countries, R&D expenditure has grown fastest (in real terms) since 1995 in Iceland, Turkey, Ireland and Finland with average annual growth rates of over 7.5%.

■ Some non-OECD countries are also important R&D spenders. At USD 115 billion, China's GERD in 2005 was around half of that of the EU and has been growing at over 18% annually (in real terms) since 2000. GERD growth has also been strong in South Africa (8.5% annually between 1997 and 2004), while GERD in Russia reached USD 16.7 billion in 2005.

Source

- OECD, Main Science and Technology Indicators database, May 2007.

For further reading

- OECD (2002), *Frascati Manual: Proposed Standard Practice for Surveys on Research and Development*, OECD, Paris, available at: www.oecd.org/sti/frascaticmanual.

Resources allocated to gross domestic expenditure on R&D (GERD)

Resources allocated to a country's R&D efforts are measured using two indicators, R&D expenditure and personnel. For R&D expenditure, the main aggregate used for international comparisons is gross domestic expenditure on R&D (GERD), which represents a country's domestic R&D-related expenditure for a given year. The R&D data are compiled on the basis of the methodology of the *Frascati Manual 2002* which defines R&D as "creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications".

The magnitude of estimated resources allocated to R&D is affected by several national characteristics, principally:

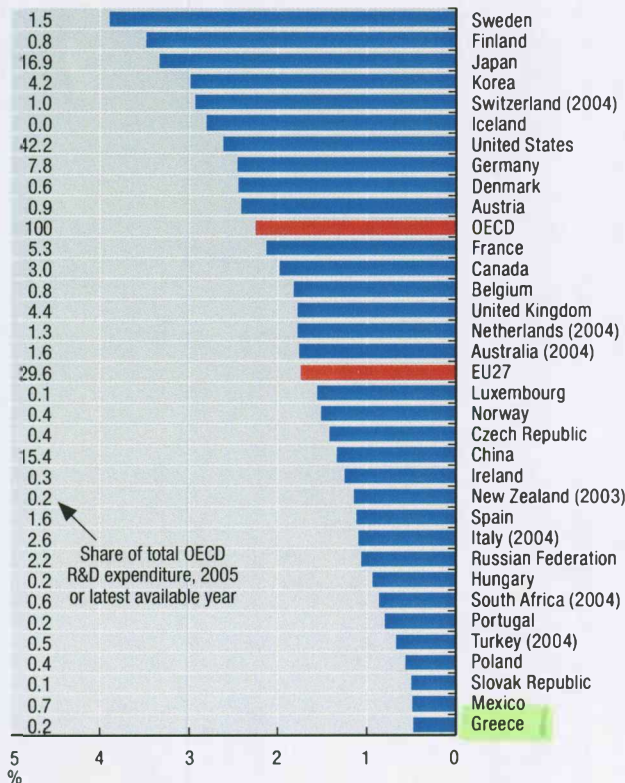
- Coverage of national surveys on R&D in terms of industries, firm size, sampling methods.
- Frequency of national surveys.

Methodology used, e.g. for the United States, capital expenditure is not covered.

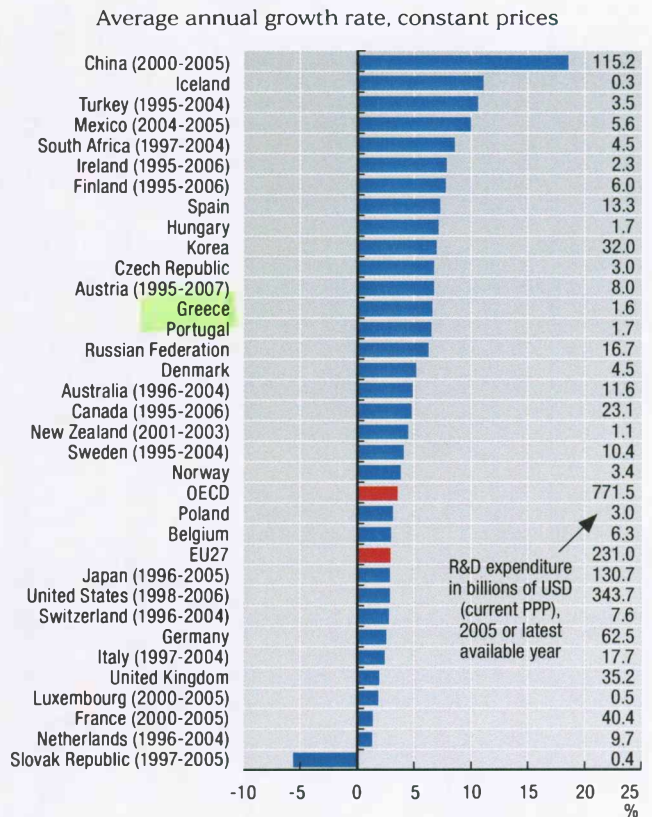
A. R&D AND INVESTMENT IN KNOWLEDGE

A.2. TRENDS IN DOMESTIC R&D EXPENDITURE

R&D intensity¹, 2005

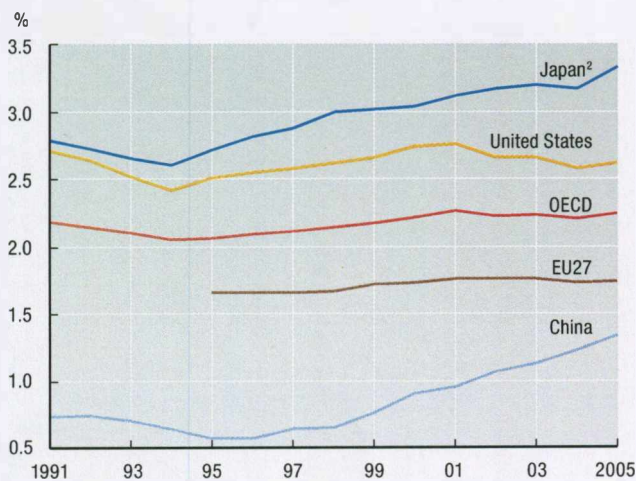


Evolution of gross domestic expenditure on R&D, 1995-2005



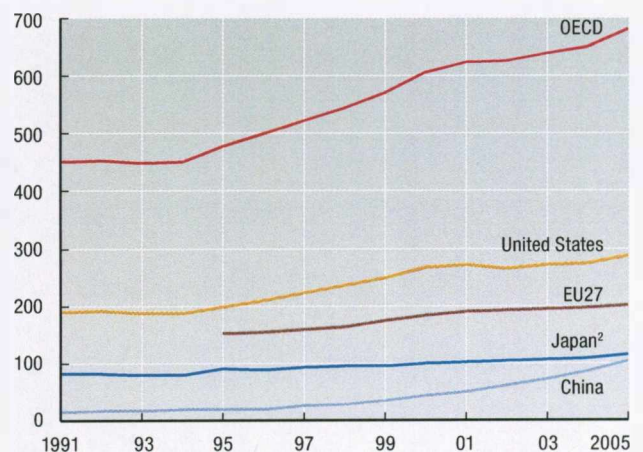
Trends in R&D intensity¹ by area, 1991-2005

As a percentage of GDP



Gross domestic expenditure on R&D by area, 1991-2005

Billions of USD PPP (2000)³



1. Gross domestic expenditure on R&D as a percentage of GDP.
2. Data are adjusted up to 1995.
3. USD of 2000 in purchasing power parity (PPP).

1 2 <http://dx.doi.org/10.1787/116588372230>



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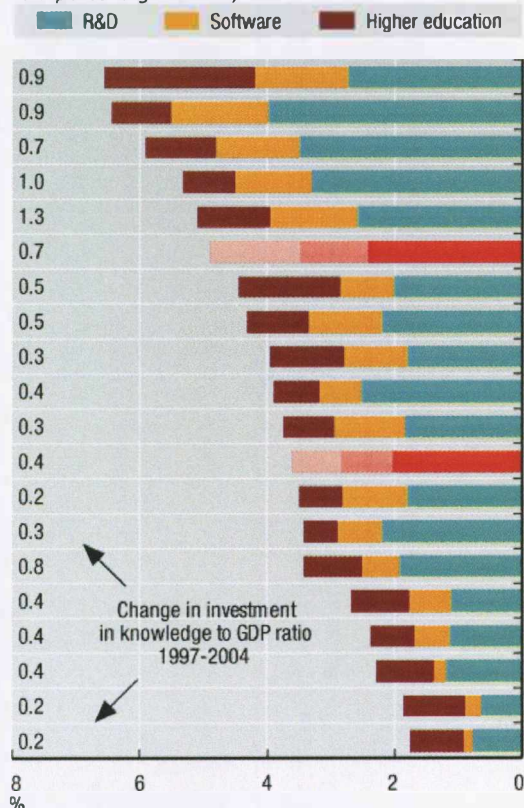
R&D and investment in knowledge

A-1. Investment in knowledge

[BACK](#)

Investment in knowledge

As a percentage of GDP, 2004



Change in investment in knowledge to GDP ratio 1997-2004

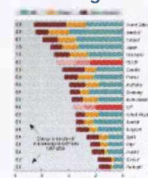
Texts

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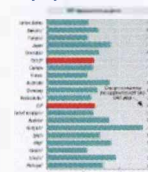
Graphs

- Investment in knowledge
- Investment in machinery and equipment
- Sources of change in investment in knowledge, as a percentage of GDP, 1997-2004

Investment in knowledge



Investment in machinery and equipment



Sources of change in investment in knowledge, as a percentage of GDP, 1997-2004



1. For all countries, investment in education refers to 2003. For Belgium, Australia and Austria the period of reference is 1998-2003. Data on machinery and equipment for Belgium concerns total gross fixed capital investment.
2. 2003.
3. OECD excludes Greece, Australia and Austria from the group of reporting countries.
4. EU excludes Greece from the group of reporting countries.

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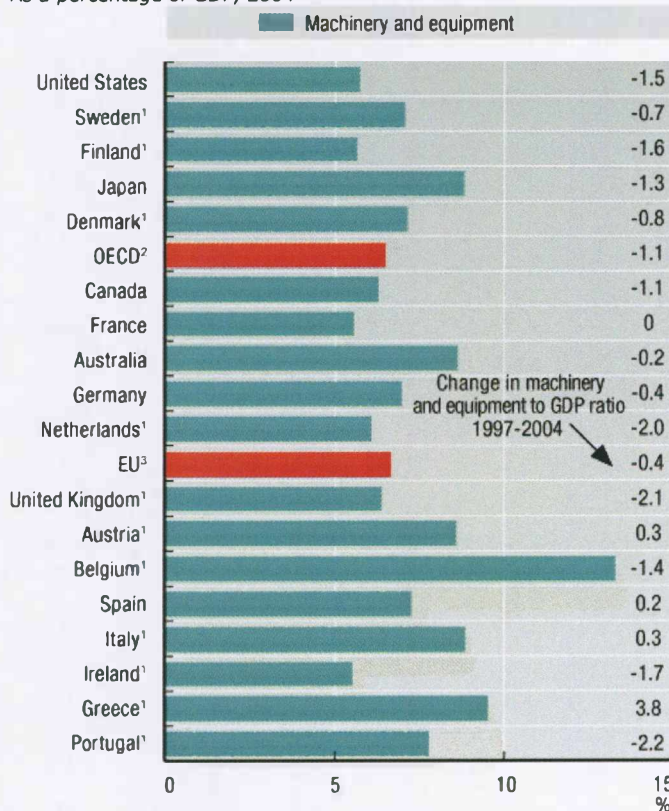
↳ R&D and investment in knowledge

↳ A-1. Investment in knowledge

◀ BACK

Investment in machinery and equipment

As a percentage of GDP, 2004



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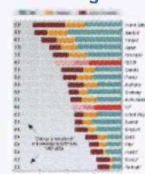
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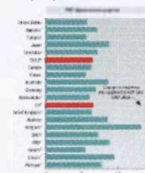
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Investment in knowledge



Investment in machinery and equipment



Sources of change in investment in knowledge, as a percentage of GDP, 1997-2004





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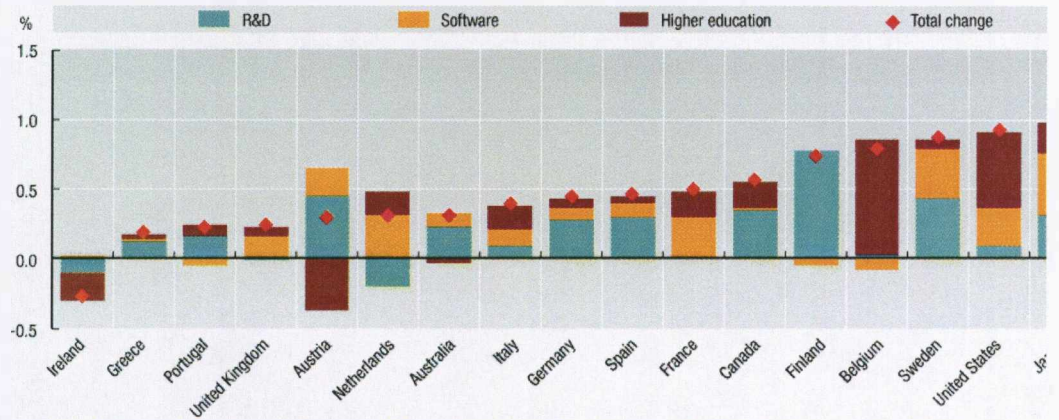
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↳ **A-1. Investment in knowledge**

Sources of change in investment in knowledge, as a percentage of GDP, 1997-2004



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