

Growth of GDP share of R&D expenditure slow

In 2002, expenditure on research and development grew by good EUR 200 million in Finland and totalled EUR 4.8 billion. In real terms the expenditure grew by 3.4 per cent. Twelve months earlier the growth only amounted to 1.7 per cent. The GDP share of R&D expenditure went up to 3.5 per cent. However, according to the data provided by business enterprises and public sector organisations and on the basis of other calculations the real value, or the value corrected for inflation, of R&D expenditure is estimated to fall in 2003. At the same time the growth of the GDP share of R&D expenditure will, in practice, halt and may even turn to a decline. The data derive from Statistics Finland's statistics on research and development activity in Finland in 2002.

Finland accounts for 0.7 per cent of the total R&D expenditure of the OECD countries. Although the volume of Finland's R&D expenditure is fairly small when compared to larger countries, her GDP share of R&D expenditure is, nevertheless, high by international comparison. Among the OECD countries, only Sweden had a higher GDP share (4.3%) than Finland. The shares of Japan (3.1%), Iceland (3.1%), South Korea (3.0%) and the United States (2.8%) were approaching that of Finland. The share was the highest in Israel where expenditure on R&D amounted to 4.8 per cent of GDP in 2001.

Largest increase in R&D expenditure in the university sector

R&D expenditure in the university sector totalled EUR 930 million in 2002, having grown strongly in the past few years. In 2002, the sector's R&D expenditure went up by EUR 90 million, which in real terms represents 10 per cent growth. Universities accounted for the largest proportion, or EUR 71 million, of this growth. In relative terms, polytechnics showed the fastest real growth rate of R&D of 26 per cent. The volume of the R&D activity of polytechnics accounted for 6 per cent of the entire sector's R&D expenditure.

In the public sector, R&D expenditure grew by EUR 29 million to EUR 530 million in 2002. In real terms this represents an increase of nearly 5 per cent. It is estimated that in 2003 the R&D expenditure of the public sector will total EUR 518 million, meaning that it would be declining for the first time since 1995.

Business enterprises' R&D spending will not grow in 2003

The R&D expenditure of business enterprises totalled EUR 3.4 billion in 2002. As in 2001, this represented roughly 2 per cent growth in real terms. Business enterprises' proportion of all R&D expenditure decreased by one percentage point to 70 per cent. Underlying the EUR 90 million growth in R&D spending were increased investments of computer and related activities and especially those of the research and development industry, whose R&D expenditure grew by 40 per cent over the year.

Manufacturing industries did not increase their R&D expenditure to any appreciable extent in 2002. The share of the manufacturing industries of the whole enterprise sector's R&D expenditure fell by 2 percentage points to just under 78 per cent. In the electronics industry, R&D spending only

increased by EUR 31 million in 2002. The industry's share of business enterprises' R&D spending decreased slightly and was 51 per cent last year. Among the manufacturing industries, the strongest growth in R&D investments, or EUR 34 million, was recorded in the chemical industry, whereas the R&D spending of the metal and mechanical industry decreased by the same amount.

It is estimated that business enterprises' R&D expenditure will only grow by EUR 5 million in 2003. Real reduction in their expenditure was last recorded in statistics during the economic recession of the early 1990s.

Almost 5 per cent increase in research personnel

Altogether 73,100 persons were working in research and product development tasks in 2002. Enterprises employed 54 per cent of them. The total number of research personnel went up by 3,300 from the previous year, which is clearly more than in 2000 and 2001. The university sector accounted for almost half of the personnel increase in 2002. The number of person-years spent on research rose by 1,600, or 3 per cent, and totalled 55,000. Business enterprises accounted for 55 per cent and the university sector for 31 per cent of the total number of person-years. The university sector's share of the total number of person-years increased by 1.5 percentage points from 2001.

One third of manufacturing enterprises had innovations

In the electronics industry, 57 per cent of enterprises had new products or processes in the 2000-2002 period. The corresponding proportion in the chemical industry was 53 per cent. In the manufacture of metals and metal products, 18 per cent of enterprises had innovations.

The most innovative industry was that of computer and related activities, where 60 per cent of enterprises had launched a new product or service or introduced a new production process. Only one enterprise in ten in the construction and transport industries had innovations.

R&D expenditure (at current prices) in 1995-2002, estimate for 2003, and GDP share of R&D expenditure

Year	Business enterprises		Public sector****		University sector**		Total EUR million	GDP share of R&D expenditure***	
	EUR million	%	EUR million	%	EUR million	%		%	
1995	1,373.4	63.2	374.4	17.2	424.6	19.6	2,172.4	2.28	
1997	1,916.7	66.0	408.6	14.1	579.5	20.0	2,904.9	2.71	
1998	2,252.8	67.2	443.9	13.2	657.8	19.6	3,354.5	2.88	
1999	2,643.9	68.2	470.1	12.1	764.8	19.7	3,878.8	3.23	
2000	3,135.9	70.9	497.4	11.2	789.3	17.8	4,422.6	3.40	
2001	3,284.0	71.1	500.9	10.8	834.1	18.1	4,619.0	3.42	
2002	3,375.1	69.9	529.7	11.0	925.6	19.2	4,830.3	3.46	
2003*	3,380.3	69.5	518.3	10.7	963.8	19.8	4,862.4	3.43	

* Estimate based on survey response and other calculations.

** Incl. university hospitals since 1997 and polytechnics since 1999.

*** Data in accordance with revised national accounts (base year 2000).

GDP 2001 and 2002 preliminary data of Statistics Finland, GDP 2003 forecast of the Ministry of Finance.

**** Incl. private non-profit sector.

Sources: Tutkimus- ja kehittämis toiminta 2002 (Research and Development in Finland 2002). Statistics Finland. Further information available on the Internet at: http://www.stat.fi/yritystiede_en.html