

B 1-1 Research at tertiary education institutions

Development of federal framework conditions

With a few exceptions, tertiary education institutions (universities and colleges) in Germany are subject to the right of initiative and executive powers of the Länder (federal states). The Federal Government's options are regulated by Germany's constitution, the Basic Law, when it comes to contributing to the financing of tertiary education institutions. There have been significant changes here in the last few years (cf. Infochart B 1). The 2006 amendment to the Basic Law, which severely restricted the Federal Government's previously existing financing options in higher education, was the subject of a great deal of criticism because it restricted opportunities to further develop the German science system.¹³ The Commission of Experts, too, has on several occasions advocated putting the Federal Government back into a position to take responsibility for the long-term institutional funding of tertiary education institutions.¹⁴ In 2014, the Bundestag and Bundesrat finally decided to amend Article 91b of the Basic Law once more to make long-term institutional funding possible again.¹⁵ This will create new opportunities for advancing the development of the German science system. In June 2016, an agreement was concluded between the Federal and Länder governments on the Excellence Strategy on the basis of the amended Article 91b of the Basic Law (cf. Chapter B 1-2).

Staffing and financial resources of tertiary education institutions

In 2015, there were 426 tertiary education institutions in Germany: 107 universities, 215 universities of applied sciences (UAS) and 104 other tertiary education institutions.¹⁶ They employed 385,300 people as academic or artistic staff; for 239,200 of them this was their principal employment, for 146,100 their secondary employment.¹⁷ The total number of

academic and artistic staff has risen by 60 percent compared to 2005. At the same time, there have been significant changes in the personnel structure due to an above-average growth of fixed-term, third-party-funded jobs for young academics (cf. Chapter B 1-3 for more details).

Despite the increase in academic and artistic staff, there has been a slight worsening of the student/faculty ratio – i.e. the numerical ratio between students and academic/artistic staff in terms of full-time equivalents (FTEs) without externally funded staff. It rose from 15.2 to 16.6 students per FTE between 2004 and 2014.¹⁸ In the same period, the ratio between students and full-time professors deteriorated from 51.1 to 59.0.¹⁹

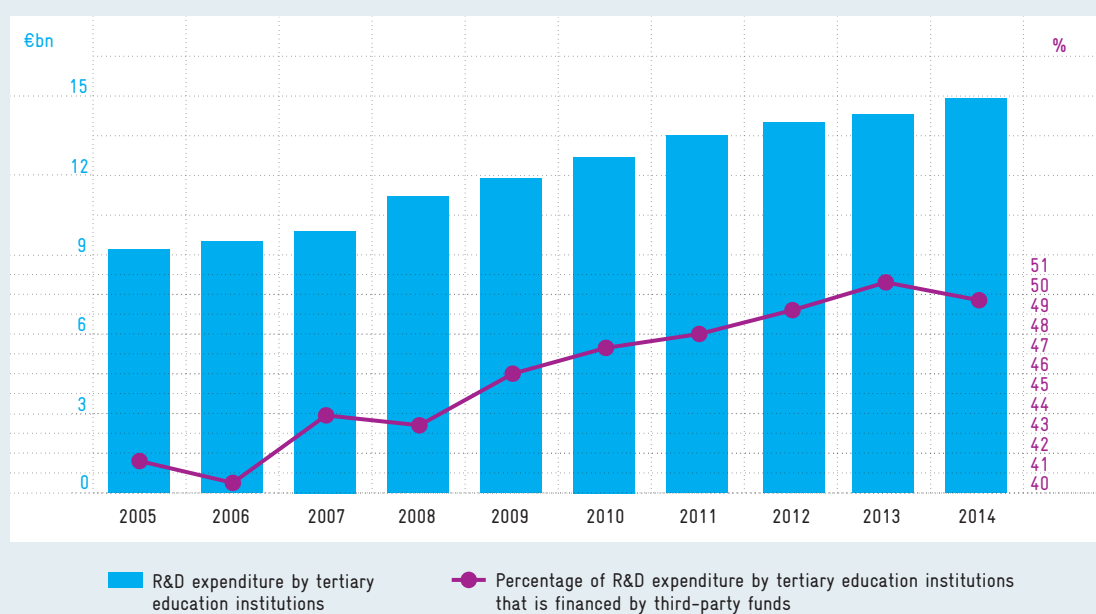
The basic funds (Grundmittel)²⁰ of the tertiary education institutions totalled 23.1 billion euros in 2014, having risen by 43 percent in nominal terms since 2005.²¹ The Higher Education Pact contributed to this growth because funding from its first pillar is attributed to basic funds. The Higher Education Pact was initiated as a Federal and Federal-State programme (Bund-Länder-Programm) in 2007 with the aims of securing sufficient study opportunities to meet demand (first pillar) and strengthening research at tertiary education institutions by introducing overhead allowances (second pillar) (cf. Infochart B 1).

Over the last ten years, the overall importance of third-party funding has increased considerably compared to basic funds. In 2005, 23 euro cents in third-party funds was received for every euro of basic funds; by 2014 this figure had risen to 32 euro cents.²² Third-party funds are generally used to finance research, but not teaching.²³ The costs of teaching must ultimately be covered by tertiary education institutions' basic funds, so that the financial room for manoeuvre is reduced whenever third-party funds do not adequately cover the overhead costs²⁴ related to third-party projects (cf. next section).

Fig. B 1-1-1

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R&D expenditure by tertiary education institutions in billions of euros and percentage of externally funded R&D expenditure by tertiary education institutions between 2005 and 2014



How to read: R&D expenditure by tertiary education institutions amounted to €11.9bn in 2009; 46 percent of R&D expenditure was financed by third-party funds.
Source: Statistisches Bundesamt (Federal Statistical Office), Fachserie 11, Reihe 4.3.2; own calculations.

R&D personnel and the funding of R&D at tertiary education institutions

In 2014, the year for which the latest statistics are available, Germany's tertiary education institutions employed R&D personnel amounting to approximately 132,500 full-time equivalents.²⁵ This was an increase of 40 percent since 2005. The percentage of all R&D staff who were third-party-funded rose from 50 percent in 2005 to 62 percent in 2014.

The R&D expenditure of German tertiary education institutions amounted to approximately 14.9 billion euros in 2014.²⁶ Third-party funding accounted for 50 percent in 2014, having risen from 42 percent in 2005. The increase in third-party funds stemmed from different sources. In absolute terms, there were increases in third-party funding particularly by the German Research Foundation (Deutsche Forschungsgemeinschaft, DFG), including funding within the framework of the Excellence Initiative, and the Federal Government.²⁷

On the one hand, this increase in third-party funds brought major benefits, because it allowed a marked expansion of research at tertiary education institutions.²⁸ In addition, it can be assumed to have contributed to an improvement in quality, since the allocation of research funds within the framework of an application and competition procedure is more geared towards specific quality criteria than the allocation of basic funding.

On the other hand, increasing third-party funding also involves risks. For example, the greater orientation towards third-party funding can restrict the freedom of researchers in terms of content and the amount of time available. Writing research applications is very time consuming, and the review and assessment of applications by other researchers also increasingly ties up valuable resources. Moreover, third-party funds sometimes have thematic restrictions, creating incentives for the researchers to gear their research to areas where funding is available. On the one hand, this is the intention of providers of the third-

party funds. On the other hand, promising research programmes and important topics with a comparatively low chance of third-party funding might be neglected. The increase in third-party funding thus also involves the risk that university research might lose breadth and diversity. These problems should be taken seriously by political decision-makers – research and teaching at tertiary education institutions must therefore be sustainably and substantially financed by basic funding.

Another problem with rising third-party funding is overhead costs, some of which have to be covered by resources from basic funding. At present, the DFG provides a programme allowance amounting to 22 percent of the direct costs (cf. Infochart B 1), and the Federal Ministry for Education and Research (BMBF) pays a project allowance of 20 percent for research projects conducted by tertiary education institutions and university hospitals, in order to cover overhead costs. However, these allowances cannot fully cover the overhead costs that are actually incurred. Thus, with growing volumes of third-party funding, tertiary education institutions are forced to use more and more basic funds to cover the overhead costs of third-party projects.²⁹ The Commission of Experts is therefore in favour of bringing the overhead allowances more into line with the overhead costs actually incurred. Discipline-specific differences must be taken into account to avoid distortions in the allocation and use of funds.