Financing research and innovation

C 4

Public financing of research and development (R&D) in the private sector makes a distinction between direct R&D funding (project funding) and indirect R&D funding (in particular tax-based R&D funding). Figure C 4-1 shows direct and indirect R&D funding as a percentage of gross domestic product in selected countries. The bulk of resources allocated to project funding goes into application-oriented research. Project funding directed at specialised programmes usually promotes specific technologies. However, when it comes to funding programmes that are not specific to individual technologies, the government does not exert any influence on the nature or contents of the technologies funded. Tax-based R&D funding represents an indirect form of R&D funding. Here, companies receive tax credits proportionately to the amount of their R&D expenditure. Although this instrument is available to businesses in most OECD countries, up to now Germany has not made use of this form of funding (cf. on this also Chapter B 7).

Financing constitutes a major challenge for many innovative companies – not only in the start-up phase, but also during the growth phase. Internal financing of investments is rarely an option, as these companies initially generate little or no turnover with which to fund investment and pay for current expenditure. Borrowing outside capital in the form of bank loans is also difficult, as it is not easy for banks to assess the companies' success prospects. Therefore, young, innovative enterprises can often only establish themselves on the market with the help of private investors who provide venture capital during the start-up and growth phases.

Figure C 4-2 provides an overview of venture-capital investment as a percentage of national GDP in selected European countries. It shows that in Germany this figure is still relatively low by European comparison. The highest venture-capital investments in 2015 were recorded in Finland and Switzerland. Sweden, which occupied the top position by international comparison in 2014, fell back to third place in 2015. In Germany, venture-capital investment as a percentage of GDP rose slightly in 2015.

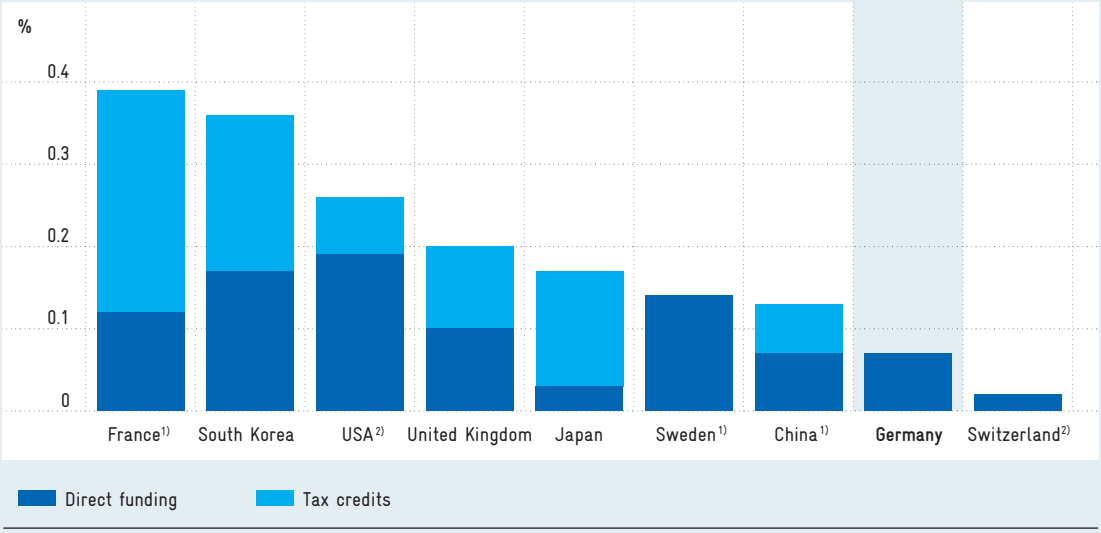
German venture-capital investment also increased in absolute terms in 2015 compared to the previous year (C 4-3). The growth is mainly due to the development in 'later stage' investment. Venture-capital investment only rose slightly in the 'early stage' field, which comprises the seed and start-up phases (C 4-3).

Fig. C 4-1

Download data

R&D spending in the business sector directly and indirectly funded by the public sector in 2014 as a percentage of national GDP

In the public funding of the private-sector R&D, a distinction is made between direct R&D funding (project funding) and indirect funding through R&D tax credits.



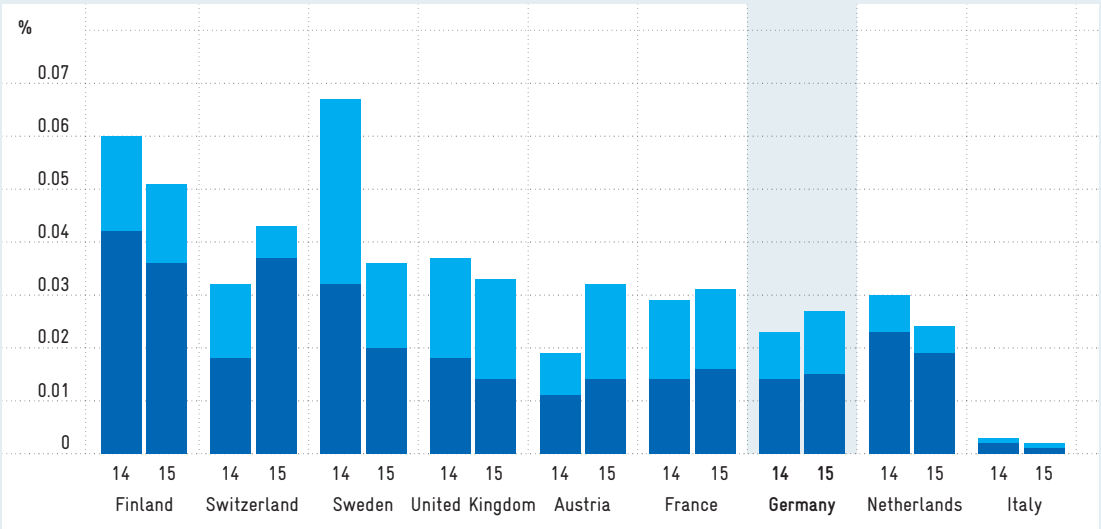
1) 2013. 2) 2012.
Source: OECD (2015 and 2016d).

Fig. C 4-2

Download data

Venture-capital investment as a percentage of national gross domestic product in 2014 and 2015

Venture capital is defined here as temporary equity investments in young, innovative, non-listed companies.



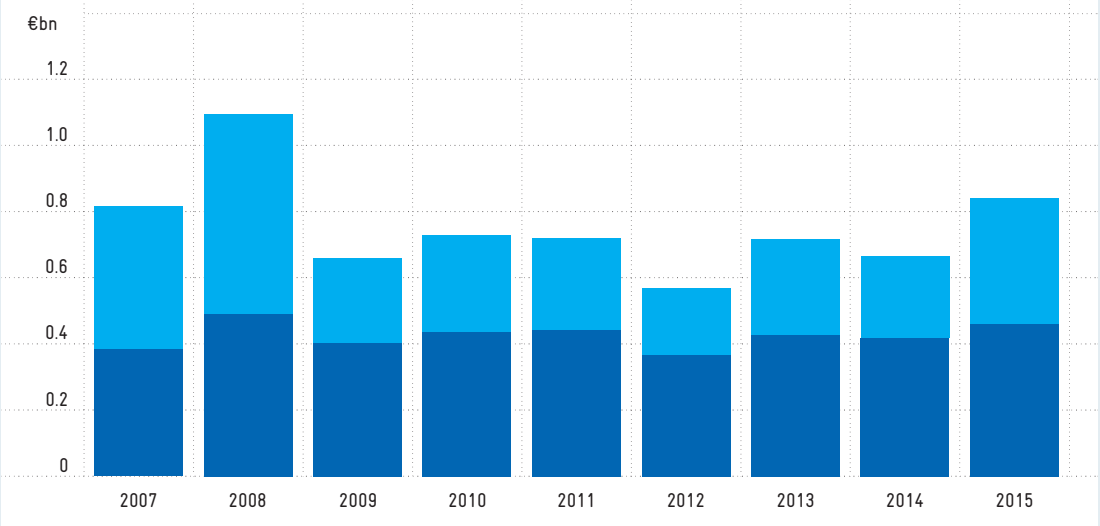
Investments according to registered office of the portfolio companies.
Early stage comprises the seed phase and the start-up phase.
Source: EVCA (2016), Eurostat. Own calculations.

Fig. C 4-3

Download data

Development of venture-capital investment in Germany, 2007 to 2015, in billions of euros

Venture capital is defined here as temporary equity investments in young, innovative, non-listed companies.



Investments according to registered office of the portfolio companies.
Early stage comprises the seed phase and the start-up phase.
Source: EVCA (2016).