

C 4 Financing Research and Innovation³³³

Public funding of R&D in the business sector can take the form of direct R&D funding or indirect R&D funding (fiscal R&D funding). Figure C 4-1 shows the share of direct and indirect R&D funding in the business sector in the gross domestic product (GDP) in selected countries. The instrument of fiscal R&D funding was available to companies in most of the countries listed in the year under review (2017); Germany did not yet make use of this funding option in 2017. The Research Allowance Act (Forschungszulagengesetz) then came into force in Germany at the beginning of 2020.

Financing R&D and innovation projects is a key challenge for many companies in both the start-up and growth phases.³³⁴ Young, innovative companies can often only establish themselves successfully on the market if private investors participate with venture capital in the start-up and development phase.

Figure C 4-2 provides an overview of the share of venture capital investments in the national GDP of selected countries. For the comparison, data from Invest Europe are used, which allow good international comparability due to the harmonized collection and processing.³³⁵ The highest venture capital investments relative to GDP in 2019 were recorded in Finland and the UK. In an international comparison, Germany only occupies a mid-table position, even though the share of venture capital investments in GDP increased in 2019 compared to the previous year.

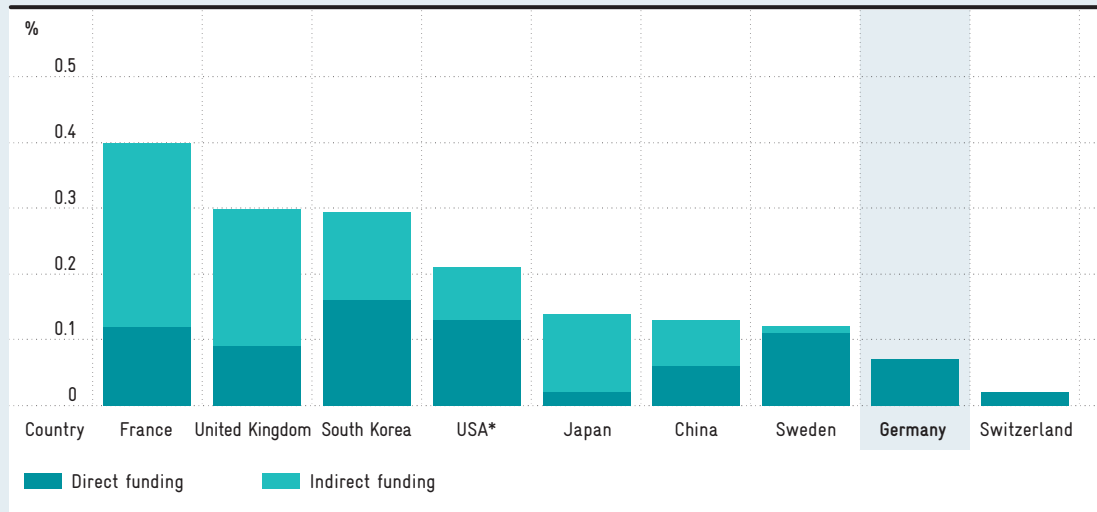
Since Invest Europe data only covers venture capital investments by companies organized in the association, there is a risk of underestimating the volume.³³⁶ For the analysis of venture capital investments in Germany, data from transaction databases³³⁷ are therefore used in addition to Invest Europe data. Their advantage is that the unit of observation is the individual transaction, which increases the probability that co-investments by atypical market participants³³⁸ and non-European investors are also covered.

Figure C 4-3 provides an overview of the development of venture capital investments in Germany. Both Invest Europe data and transaction data show a significant increase in venture capital investment between 2009 and 2019. However, this is considerably larger for the transaction data. Based on this data, there is a clear change in the structure of venture capital investments. Indeed, such a change would probably also be observed for other countries. The expanded data basis therefore does not allow any conclusions to be drawn as to whether Germany's weak position in the availability of venture capital relative to other countries could be improved in an international comparison.

Publicly funded R&D expenditure in the business sector as a percentage of the national gross domestic product of selected countries in 2017

Fig. C 4-1

Download data



The public funding of private-sector R&D is divided into direct R&D funding and indirect R&D funding (through tax incentives).

* 2016.

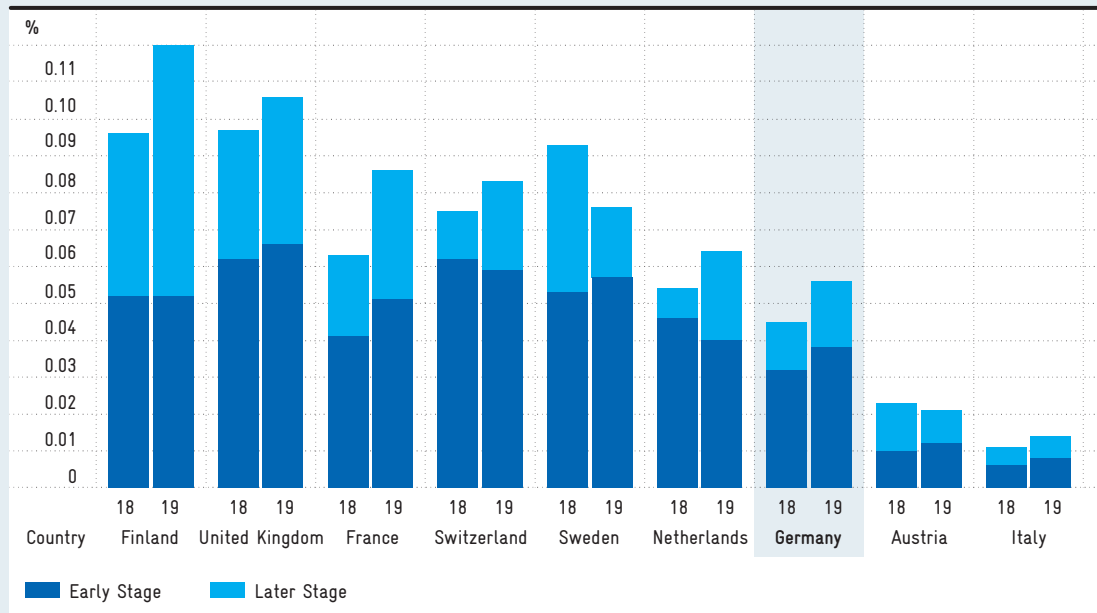
Source: OECD R&D Tax Incentive Database, research December 2020.

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Venture capital investments as a percentage of the national gross domestic product of selected countries in 2018 and 2019

Fig. C 4-2

Download data



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

Data for 2018 partly revised.

Investments are broken down according to the portfolio companies' head offices. Early stage comprises the seed phase and the start-up phase.

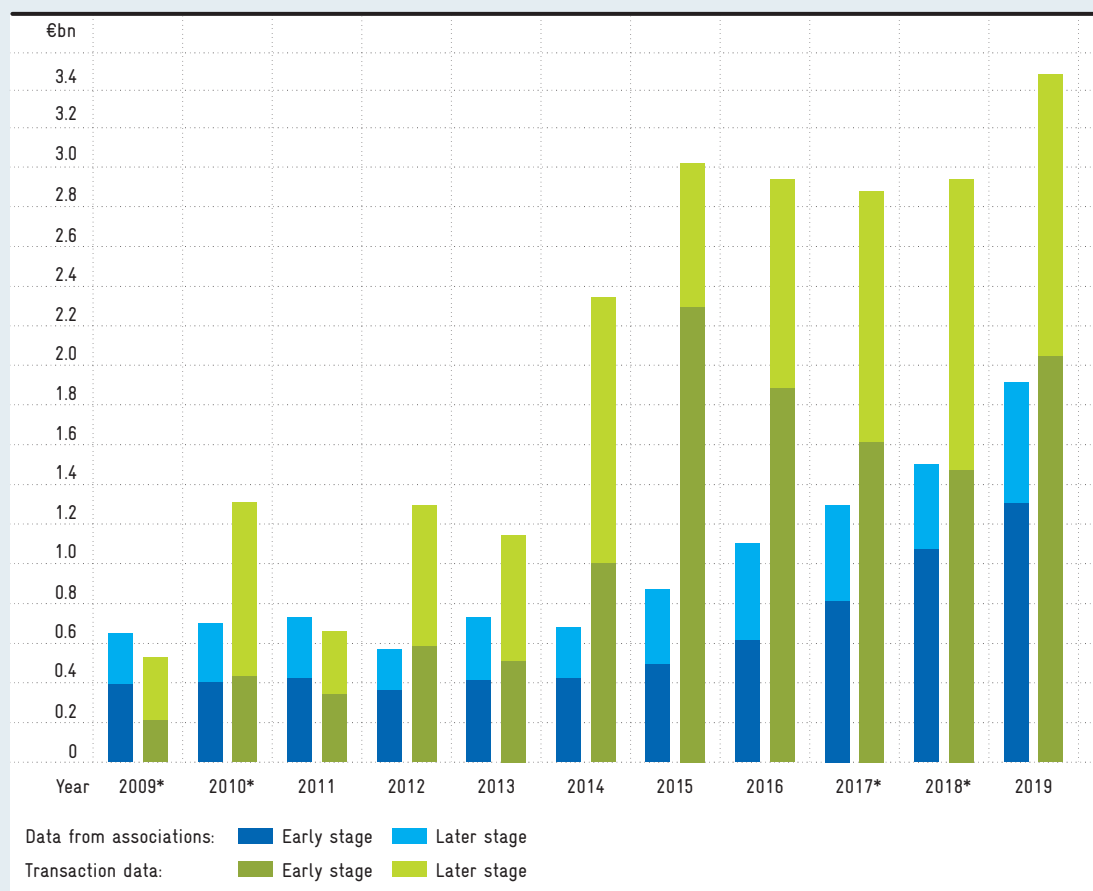
Source: Invest Europe. Calculations by ZEW in Bersch et al. (2021).

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Fig. C 4-3

Venture capital investment in Germany 2009–2019 in billion euros

Download data



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

* Data partly slightly revised.

Investments are broken down according to the portfolio companies' head offices. Early stage comprises the seed phase and the start-up phase.

Source of association data: Invest Europe. Calculations by ZEW in Bersch et al. (2021).

Source of transaction data: Bureau van Dijk, Majunke. Calculations by ZEW.

in Bersch et al. (2021).

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