

Financing research and innovation³³⁰

C 4

Public financing of research and development (R&D) in the business sector can take place via either direct R&D funding (project funding) or indirect R&D funding (in particular through tax incentives). Figure C 4-1 shows direct and indirect R&D funding as a percentage of gross domestic product (GDP) in selected countries. In the year under review (2016), the instrument of tax incentives for R&D activities was available to businesses in most of the countries listed; Germany, however, was not yet making use of this funding option in that year. The German Law on Tax Incentives for R&D (Forschungszulagengesetz) came into force at the beginning of 2020. As a result, the instrument of tax incentives for R&D activities is now also available in Germany.

Financing constitutes a major challenge for many innovative companies – not only in the start-up phase, but also during the growth phase.³³¹ Young, innovative enterprises can often only establish themselves successfully on the market if private investors 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. The data used for the comparison come from Invest Europe, formerly the European Private Equity and Venture Capital Association (EVCA); they offer good international comparability due to the harmonized collection and processing system used.³³² Germany only ranks about mid-table here in a European comparison. The highest levels of venture-capital investment relative to GDP in 2018 were recorded in Finland and Sweden. In Germany, venture-capital investment as a percentage of GDP rose only slightly in 2018 compared to the previous year.

Since the Invest Europe data only include venture-capital investment companies that are organized in the association, there is a risk of underestimating volumes.³³³ Data from transactional databases³³⁴ are therefore also used in addition to the Invest Europe data for the analysis of venture-capital investment in Germany. They have the advantage that the individual transaction is the observation unit; this increases the likelihood that co-investments by atypical market participants³³⁵ and non-European investors are also included.

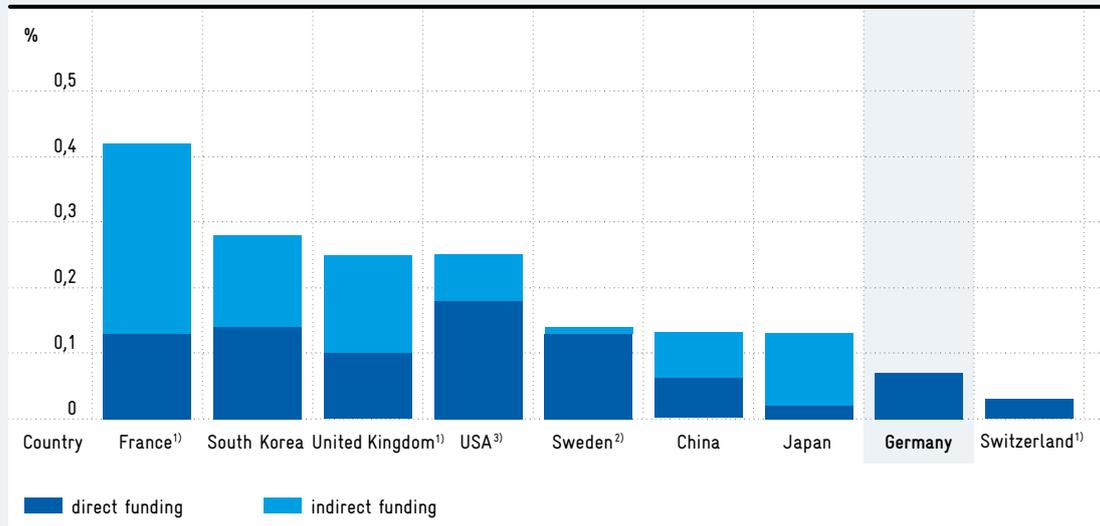
Figure C 4-3 provides an overview of the development of venture-capital investment in Germany. Invest Europe data show a slight increase in venture-capital investment in 2018 compared to the previous year due to an increase in early-stage venture-capital investments. A significant increase in transactional data can be observed in the period from 2009 to 2018. Using this data leads to a significant change in the structure of venture-capital investment. However, such a change would probably also be found for other countries. The extended data base does not, therefore, allow conclusions to be drawn on whether Germany's weak position by international comparison as regards the availability of venture capital might have improved in the meantime relative to other countries.

Fig. C 4-1

Download
data

R&D expenditure in the business sector directly and indirectly funded by the public sector in 2016 as a percentage of national gross domestic product

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



¹⁾ 2015. ²⁾ 2014. ³⁾ 2013.

Source: OECD R&D Tax Incentive Database, research December 2019.

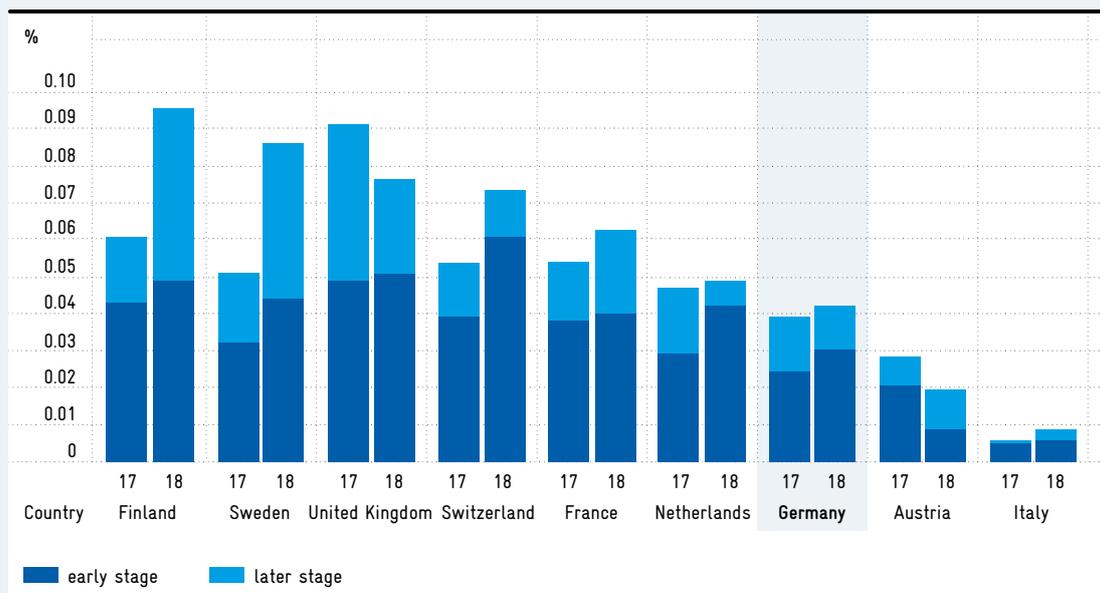
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Fig. C 4-2

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Venture-capital investment as a percentage of national gross domestic product in 2017 and 2018

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



Data for 2017 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 (ZEW - Leibniz Centre for European Economic Research) in Bersch et al. (2020).

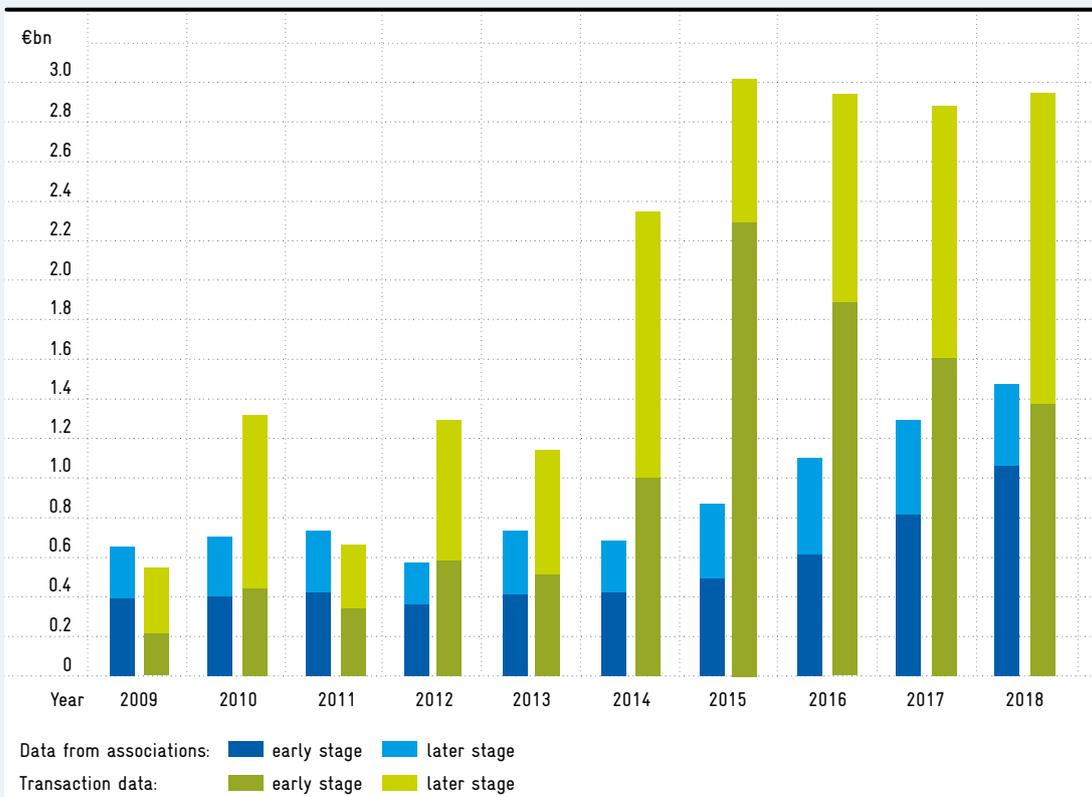
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Development of venture-capital investment in Germany 2009–2018 in €bn

Fig. C 4–3

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Download data



Data 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 (ZEW – Leibniz Centre for European Economic Research) in Bersch et al. (2020).

Source of transaction data: Bureau van Dijk, Majunke. Calculations by ZEW (Centre for European Economic Research) in Bersch et al. (2020).

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