

An Anglo-German Foundation Report

# **The Determinants of Investment in Industrial Research and Development in the United Kingdom and in Germany**

*Michela Vecchi, Ray Barrel, Bettina Becker,  
Jens Schmidt-Ehmcke and Andreas Stephan*

## **Executive Summary**

- Investment in R&D has long been recognised as being among the main determinants of economic growth and prosperity. Analysing the factors that affect R&D is, therefore, a crucial issue for the economic understanding of what affects growth and competitiveness, and for the provision of public incentives that could help to increase the stock of knowledge of the society.
- Research and development intensity has risen significantly and consistently in Germany in recent years, while declining in the UK. The aim of this project is to contribute to the understanding of the reasons behind the R&D intensity gap between the two countries and to suggest possible policies that may be employed in order to increase the amount of investment in R&D undertaken by business enterprises.
- Our analysis shows that output is an important determinant of R&D expenditure. An increase in industry output leads to an increase in R&D both in the short run and the long run. However, output movements are significant only in the high-tech industries and their impact is much stronger in the UK than in Germany, particularly in the long run.
- The larger output effect in the UK could be the outcome of different institutional settings in the two countries – i.e. more flexibility in the UK compared to Germany and, hence, greater ability to adapt R&D investments to final demand.
- Another, and perhaps more plausible, explanation for this result could be the different R&D strategies in the two countries. In Germany, there is more emphasis on generating new technologies and this objective is less likely to be determined by output movements. In the UK, the focus is on imitation and technology transfers, which are probably more responsive to changes in demand.

- Among the main factors behind the decrease in R&D expenditure in UK manufacturing are the concentration of R&D in a few key sectors, the decrease in military R&D after the Peace Dividend, the insufficient supply of skills and the slowdown in government R&D subsidies to business enterprises. The R&D carried out by foreign affiliates positively affects total R&D in the UK, compensating for the decline in other sources of R&D expenditure in the business sector.
- Additional measures are needed in order to improve the innovative capacity of the UK. Policies should aim at increasing the supply of skills, particularly at the intermediate skill level, and promoting direct government funding of high-tech/high-risk projects. Benefits could also be attained by more widespread investment in R&D across all manufacturing sectors.

*For more information please contact:*

Annette Birkholz  
Anglo-German Foundation/Deutsch-Britische Stiftung  
Hackescher Markt 1, D-10178 Berlin, Germany  
Tel +49 30 2063 4985, Fax +49 30 311 099 20  
E-mail [ab@agf.org.uk](mailto:ab@agf.org.uk), Website [www.agf.org.uk](http://www.agf.org.uk)

Dr Michela Vecchi  
National Institute of Economic and Social Research  
2 Dean Trench Street, Smith Square, London SW1P 3HE  
Tel +44 20 7222 7665, Fax +44 20 7654 1900, E-mail [mvecchi@niesr.ac.uk](mailto:mvecchi@niesr.ac.uk)  
Website <http://www.niesr.ac.uk/staff/staffdetail.php?StaffID=224>

***Notes to the editor:***

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The authors of the report are:

Michela Vecchi and Ray Barrel, National Institute of Economic and Social Research (NIESR); Bettina Becker, Loughborough University; and Jens Schmidt-Ehmcke and Andreas Stephan, German Institute for Economic Research (DIW Berlin).