

5. INVESTING IN THE KNOWLEDGE ECONOMY

5.5. Employment of doctorate holders

A country's capacity to engage human resources into innovation depends on the attractiveness of its research jobs. Doctorate holders have a research qualification and are a pillar of the research system. Their employment is an indicator of a country's capability to generate new knowledge and innovation.

Employment of the 1990-2006 doctoral graduates ranges from 93% to 98% and exceeds that of university graduates. Holders of doctoral degrees in the humanities, especially in Belgium, Denmark and Austria have less favourable prospects than those in other fields. The female employment rate is much lower than the male rate in Austria, Germany, the United States and Cyprus, where female inactivity exceeds unemployment.

The majority of doctorate holders are employed in the higher education and government sectors, particularly so in Portugal, Poland and Bulgaria. Over a third works in the business sector in Austria, Australia, the United States and Belgium. The bulk of the holders of a research qualification participate in research activities, but to a lesser extent in Austria and Belgium.

Many doctorate holders face temporary employment in the early stage of their careers. They can, in particular, be employed in postdoc positions for several years. After five years of activity, 60% of doctorate holders in the Slovak Republic and over 45% in Belgium, Germany and Spain are still under temporary contracts. Yet permanent engagements account for over 80% of all jobs in most countries.

CDH guidelines

The Careers of Doctorate Holders project (CDH) is a joint OECD-Eurostat-UNESCO Institute for Statistics project initiated in 2004 to develop a harmonised system of indicators on the careers and international mobility of doctorate holders.

Doctorate holders are defined as all residents below 70 years old, economically active or not, who have completed ISCED level 6 education anywhere in the world. Owing to country differences in population coverage, the data presented here only include doctoral graduates from 1990 onwards. Temporary employment is work under a fixed-term contract in contrast to permanent work (without an end date). Employees under temporary contract are often not eligible for the same conditions, in particular in terms of employment protection.

Sources

OECD, UNESCO Institute for Statistics and Eurostat data collection on careers of doctorate holders, 2007 and 2009.

OECD, Educational Attainment Database, 2009.

OECD, *Main Science and Technology Indicators*, May 2009.

OECD, Labour Force Survey (LFS) Database, 2009.

Eurostat, 2009.

Going further

Auriol, L. (2007), "Labour Market Characteristics and International Mobility of Doctorate Holders: Results for Seven Countries", *OECD Science, Technology and Industry Working Papers 2007/2*, OECD, Paris, www.oecd.org/sti/cdh.

Auriol, L., B. Felix and E. Fernandez-Polcuch (2007), "Mapping Careers and Mobility of Doctorate Holders: Draft Guidelines, Model Questionnaire and Indicators", *OECD Science, Technology and Industry Working Papers 2007/6*, OECD, Paris, www.oecd.org/sti/cdh.

Figure notes

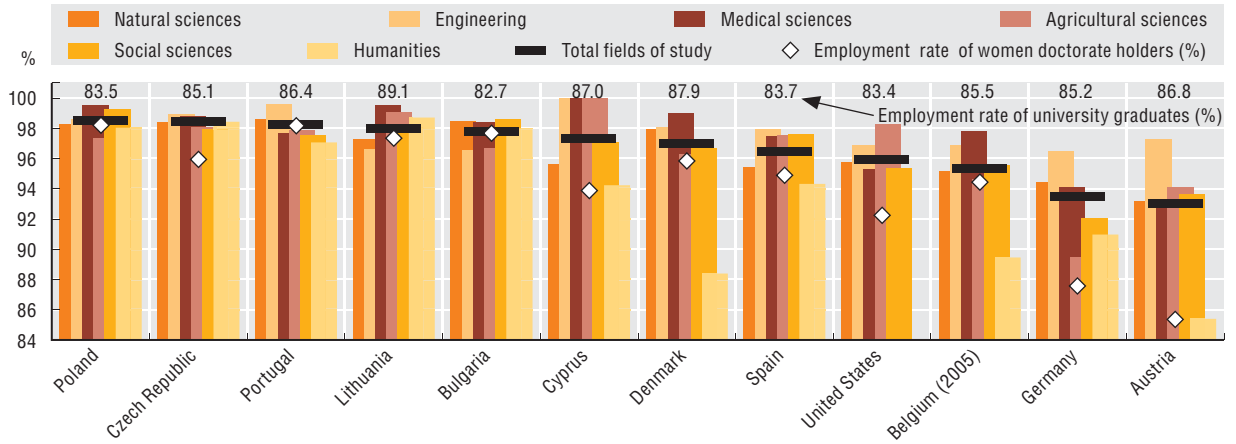
For the Czech Republic, the employment rate of doctorate holders is overestimated. Czech doctorate holders who graduated before 1999 and were not employed in 2006 are excluded. The US data do not cover doctorate holders in humanities and some social sciences (education, law, communication).

Populations are in headcounts except researchers in Australia and the United States who are full-time equivalents. For Romania, the share of the higher education and government sectors in doctorate holders' employment is overestimated. Those working in small firms with fewer than 250 employees are not included. In Portugal, the share of higher and government employment is probably overestimated.

Doctorate holders on temporary contracts over career path: Data on median age of recent doctorate recipients at graduation refer to doctorate recipients within the past two years.

Employment rate of doctorate holders by field of doctorate award, 2006

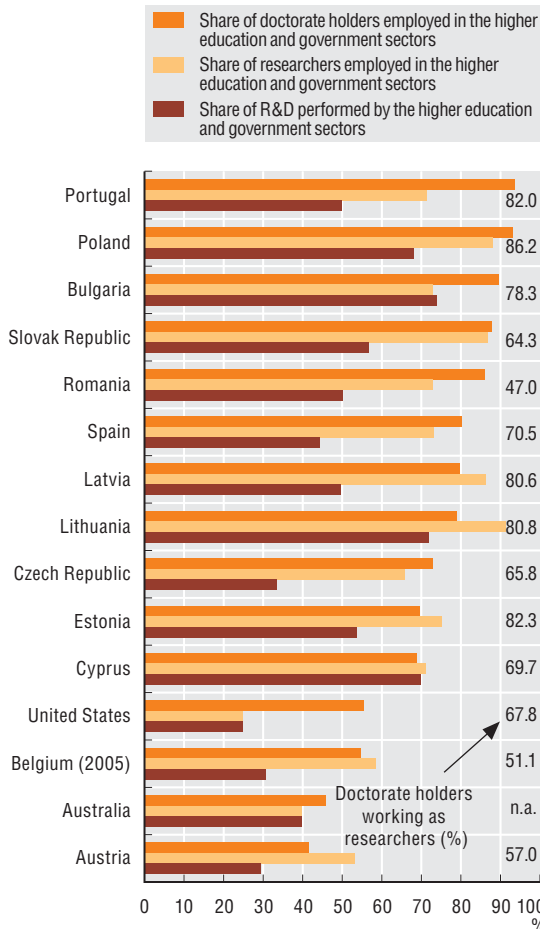
As a percentage of total doctorate holders



StatLink <http://dx.doi.org/10.1787/746684788824>

Employment of doctorate holders in the higher education and government sectors and participation in research activities, 2006

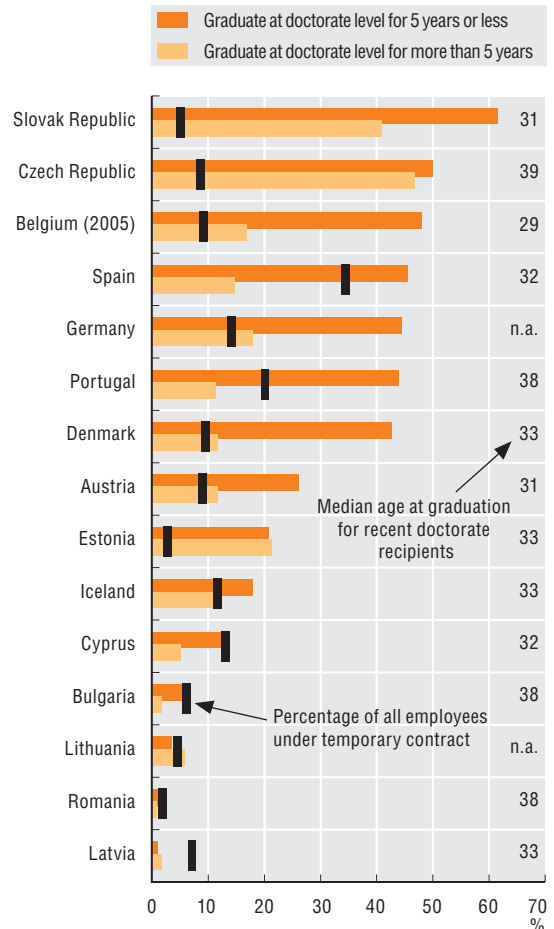
As a percentage of employed doctorate holders



StatLink <http://dx.doi.org/10.1787/746685132680>

Doctorate holders on temporary contracts over career path, 2006

As a percentage of employed doctorate holders



StatLink <http://dx.doi.org/10.1787/746724506041>



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