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PCAST Plenary Meeting

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Measuring the Economic Benefits of Mathematical Science Research in the UK

Final Report

November 2012



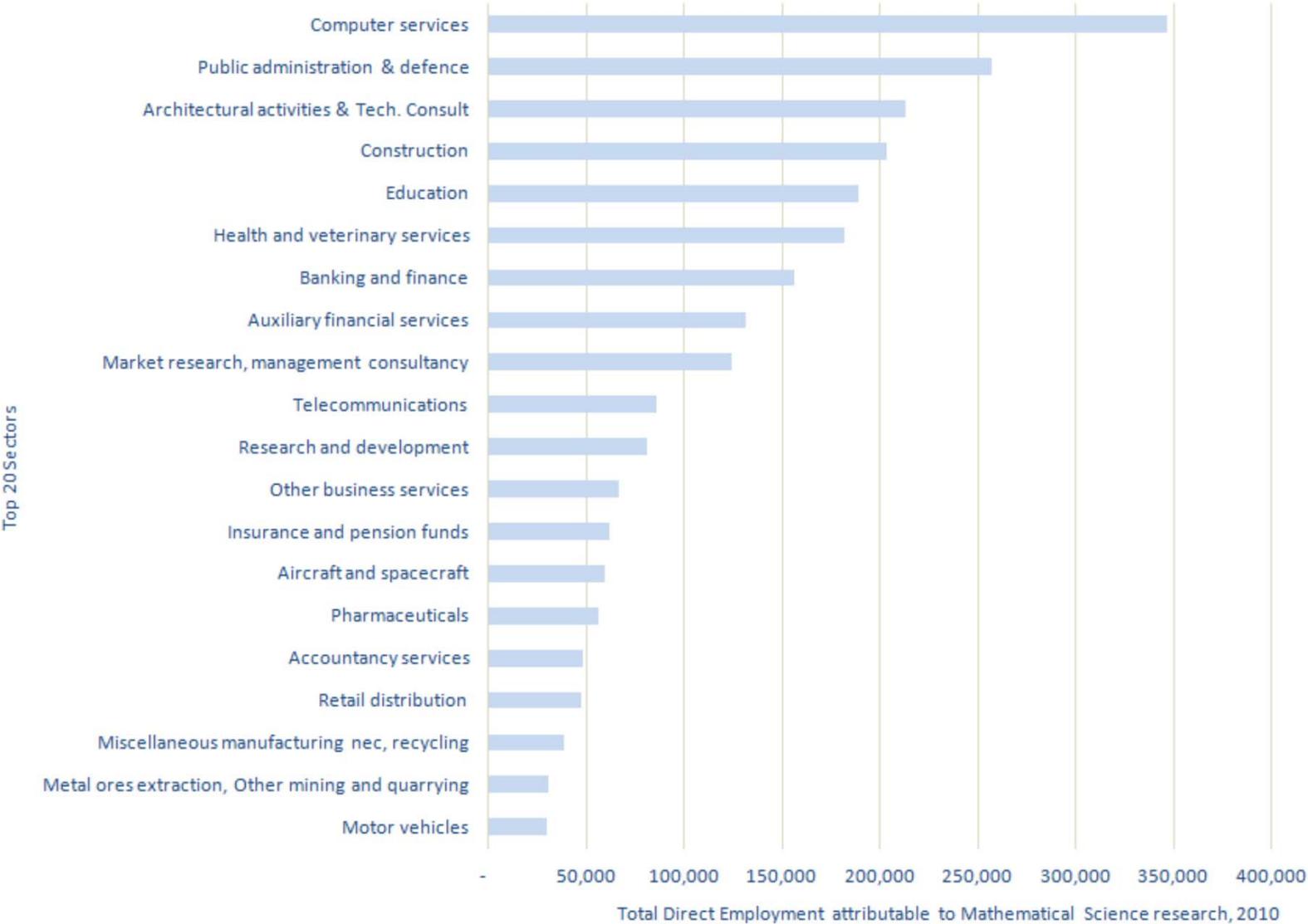
Deloitte Report

Funded by the Engineering and Physical Sciences Research Council (EPSRC)

Report looked at mathematical science occupations, defined as occupations which either entail mathematical science research or which use tools and techniques derived from mathematical science research.

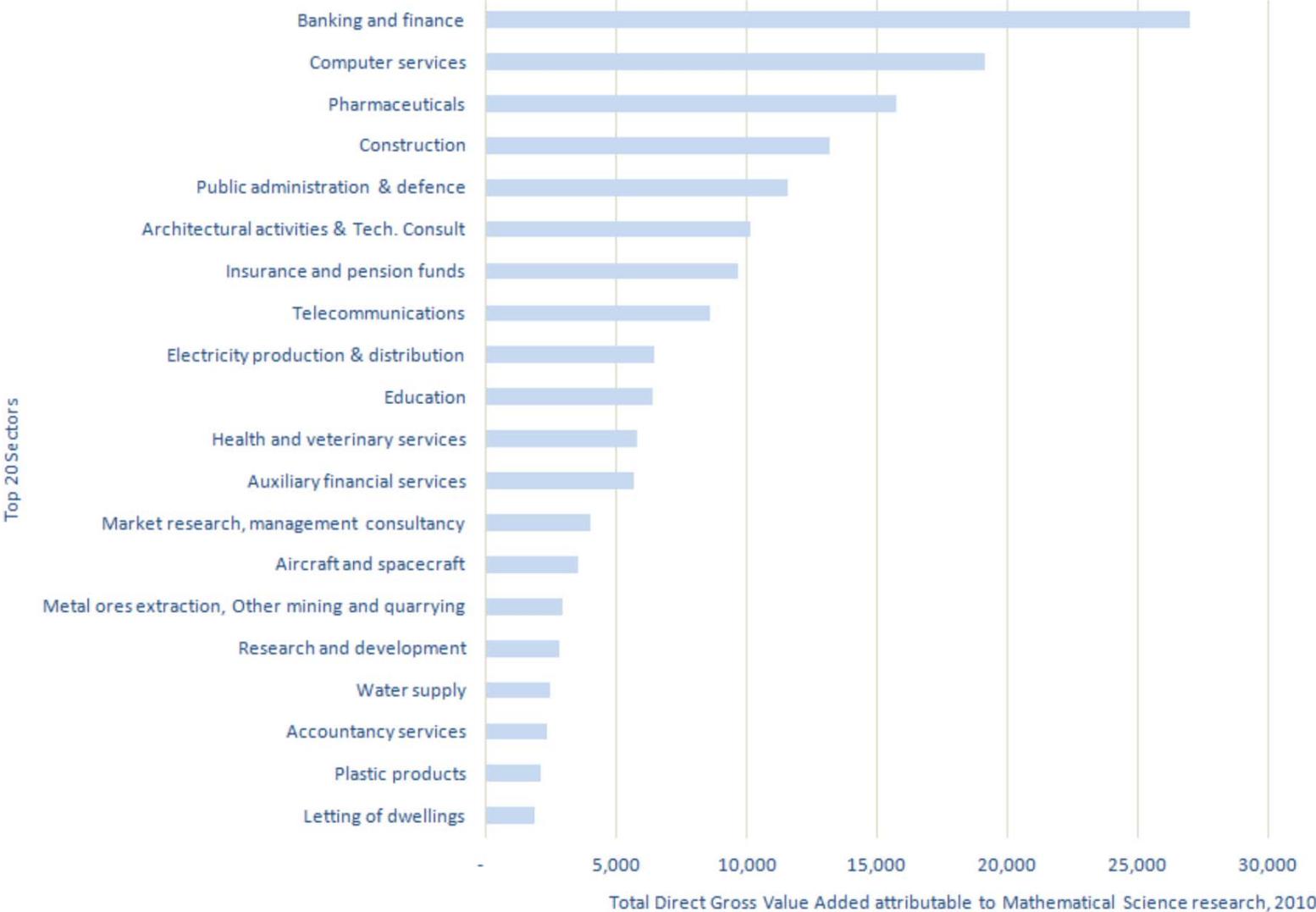
Estimates the contribution of mathematical science to the UK economy in 2010 to be quite remarkable: 2.8 million in employment terms (around 10 per cent of all jobs in the UK) and £208 billion in terms of Gross Value Added (around 16 per cent of total UK GVA).

Figure 4.1.1: Top 20 sectors for direct employment in the UK, 2010



Source: Deloitte using ONS data

Figure 4.2.1: Top 20 sectors for direct mathematical science GVA in the UK, 2010, £m



Source: Deloitte using ONS data

Mathematical sciences graduates are in high demand

Subject	First degree	Postgraduate (ex PGCE)
Biological Sciences	£16,500	£22,500
Physical Sciences	£19,000	£24,000
Computer Science	£21,000	£24,000
Engineering & technology	£23,000	£25,500
Mathematical Sciences	£22,500	£27,000

Table 2: average salary of undergraduates and postgraduates six months after graduation in 2007/08⁵

Source: One Step Beyond: Making the most of postgraduate education (March 2010), (Smith Report)

Number of first degree qualifications

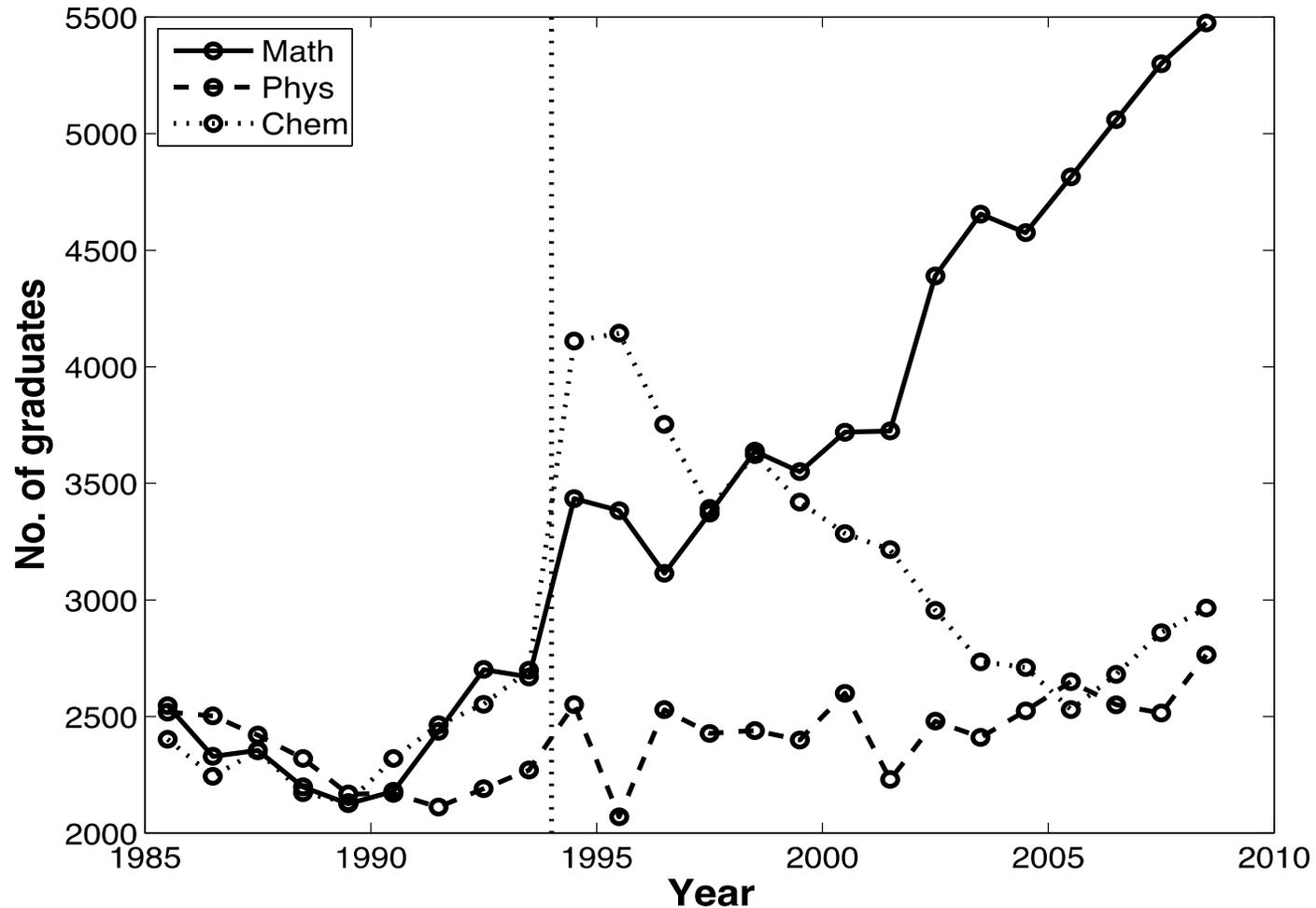


Figure 1: number of first degree qualifications obtained by students at universities in mathematics, physics (including astronomy) and chemistry from 1985/86 to 2008/09. The data up to 1993/94 relates to universities only and does not contain any data for polytechnics (shown by the vertical dotted line)⁶

Source: Higher Education Statistics Agency

Severe lack of qualified mathematics teachers

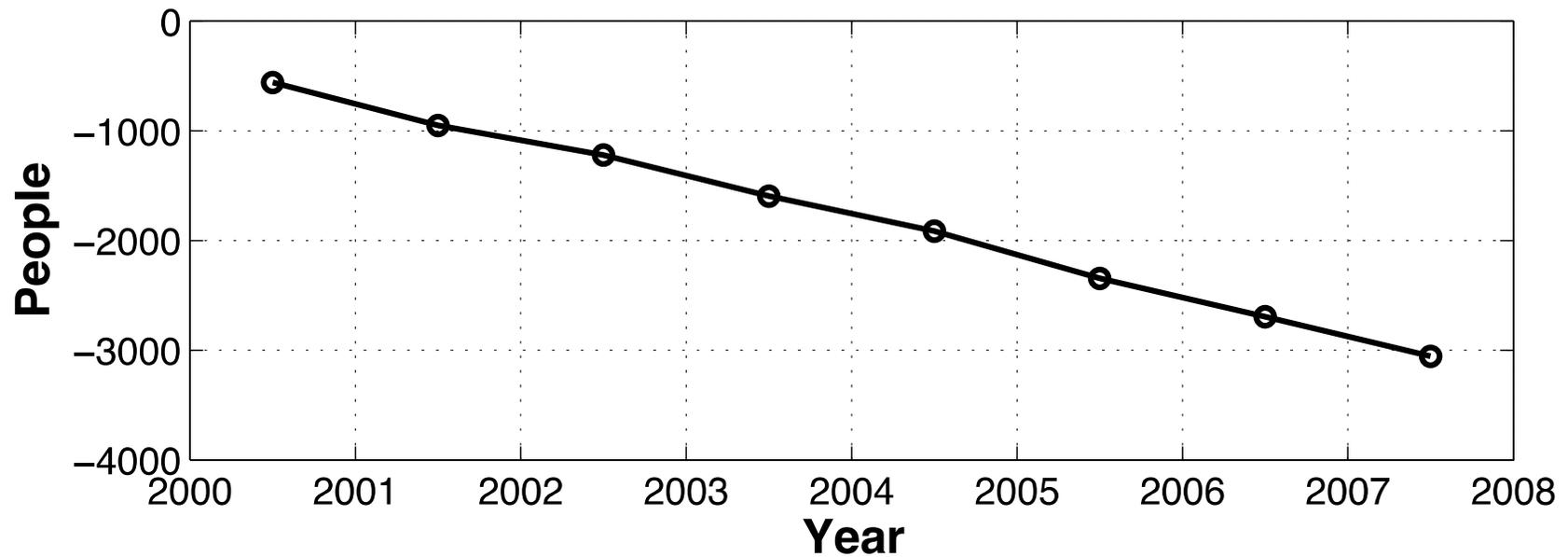


Figure 2: cumulative shortfall in meeting mathematics recruitment targets, 2000/01 to 2007/08⁹

Source: The Scientific Century: securing our future prosperity, The Royal Society, 2010

Message: beautiful and useful

“The flow of trained mathematical scientists into other disciplines and into the industries of the future is critical to the UK’s economic growth prospects, as whole sectors of the economy are transformed by new, essentially mathematical, technologies.

“Young people with an aptitude and interest in the subject will find University Mathematics and Statistics to be beautiful, challenging and extraordinarily stimulating.

“They should be reassured that, in addition, it is a subject which underpins our 21st century technology, economy and society, and that the demand for trained mathematical scientists is exceptionally high.”

