



# Medical Research and the UK economy: Complementarity and the Rate of Return

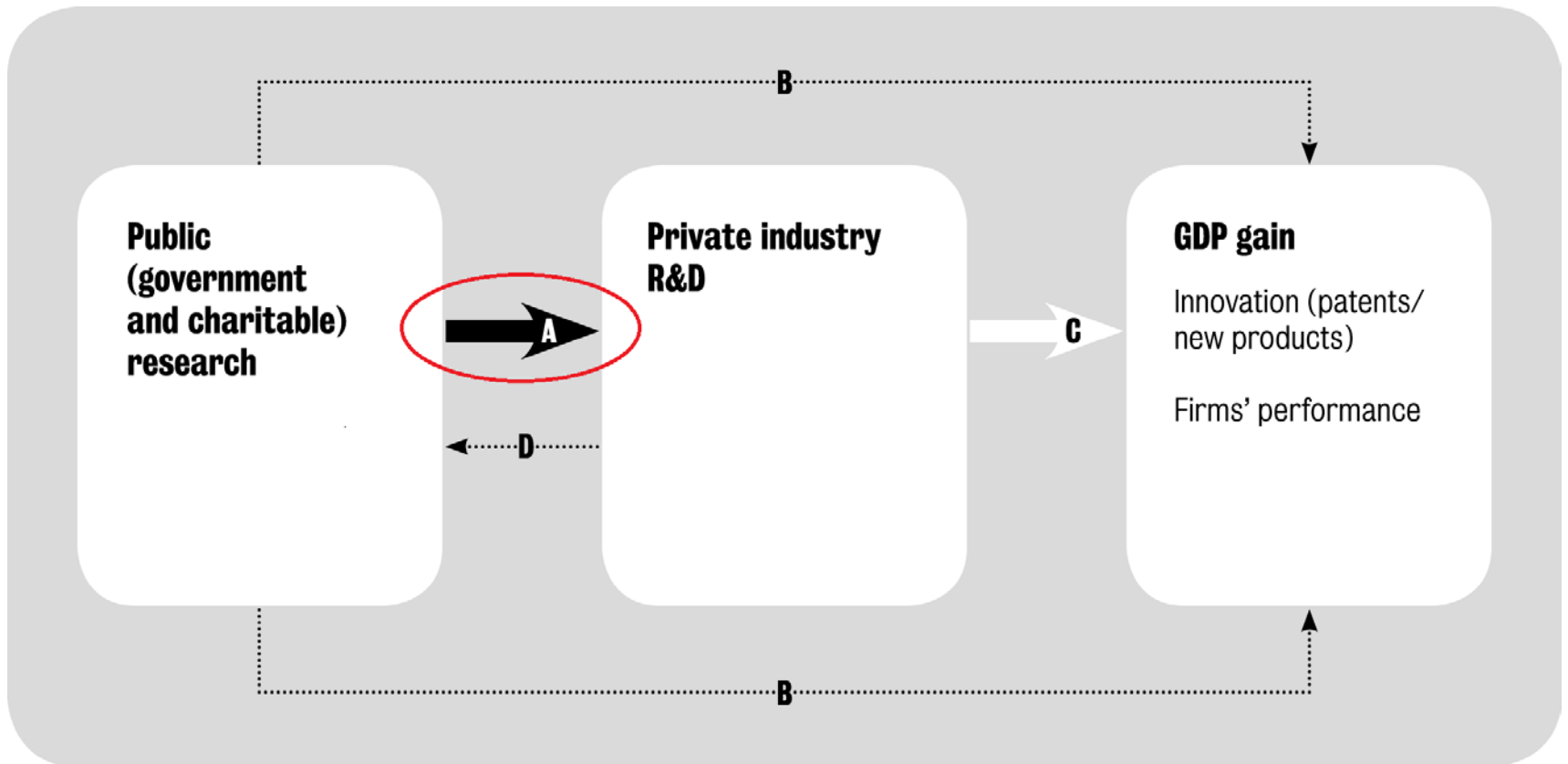
CSaP Annual Conference, London

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Jon Sussex

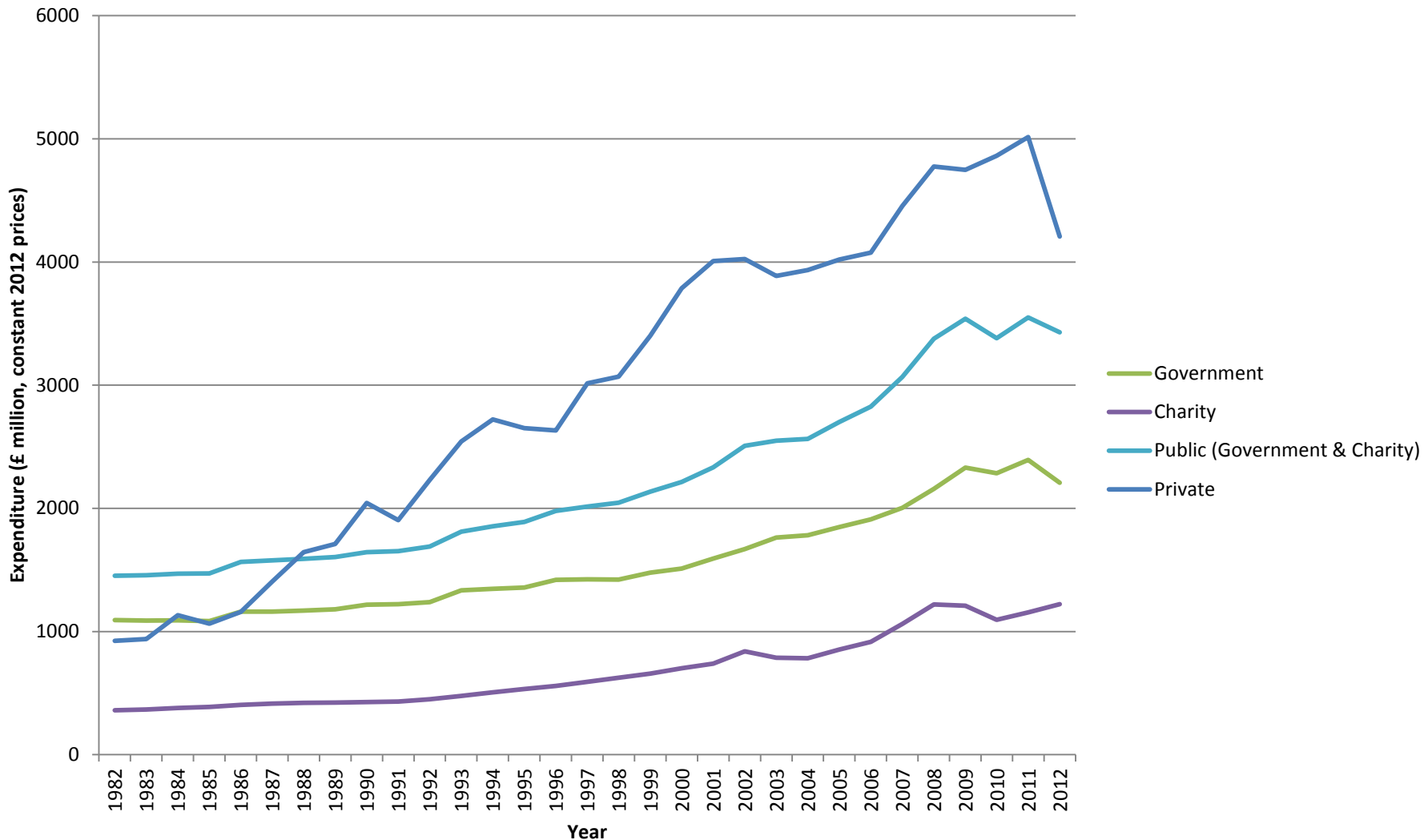
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# Spillovers in medical research



Sussex et al. 2016 “Quantifying the economic impact of government and charity funding of medical research on private research and development funding in the United Kingdom.” BMC Medicine, 14:32

# Biomedical and health care research expenditure in the UK since 1982



# Research questions / Policy questions

1. Is there a long run equilibrium relationship between the level of
  - Government and charity biomedical and health research expenditure in the UK; and
  - Private sector pharmaceutical R&D expenditure in the UK?
2. Are these complements or substitutes in the long run?
3. What is the long-run **elasticity** of private spend with respect to public spend?

1. Does public spend really affect private?
2. Positively or negatively?
3. How much bang for the bucks?

# What we found

- 1% increase in 'public' expenditure on R&D will lead eventually to between 0.38% and 1.12% increase in private expenditure on R&D. Best model suggests an **elasticity of 0.81**
- **£1** increase in public+charity research spend produces an eventual **£0.99** increase in private pharmaceutical industry R&D in the UK
- **=> 15%-18% real rate of return** to the economy from public investment in medical research in the UK

# And another thing ...

Shah et al. *Health Research Policy and Systems* (2015) 13:38  
DOI 10.1186/s12961-015-0027-6



HEALTH RESEARCH POLICY  
AND SYSTEMS

RESEARCH

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## Government and charity funding of cancer research: public preferences and choices



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**“Conclusions:** The public’s **decisions about how much to donate** to cancer research or other medical research charities are **not greatly affected by** (hypothetical) changes to **government plans** about the amount of public funding of cancer or other medical research.”

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