Response to the Industrial Strategy White Paper

November 2017

The Academy of Social Sciences and its Campaign for Social Science welcome the Government's recently released Industrial Strategy White Paper. It is good to see recognition of arguments long made by many social scientists about the important and entrepreneurial role governments can play in making public good investments and stimulating and co-ordinating private sector investment where market failure or co-ordination are important to address.[1]

Here, we show how the social sciences are a vital part of Industrial Strategy and how we can do more to help.

A strategy based on ideas, people, infrastructure, the business environment, and places not only demonstrates a wide-ranging approach by government, but also highlights the importance of the social sciences to achieving many of its aims. Indeed, the Industrial Strategy explicitly recognises the vital role our universities and research sector will need to play in almost every aspect of the economy and its future growth. The White Paper exhibits a willingness and desire on the part of government to listen to and consult with private sector and academic experts. We are pleased that there will be an independent 'Industrial Strategy Council' to monitor progress and make continuing recommendations to government, as originally proposed by the Industrial Strategy Commission chaired by Dame Kate Barker DBE FAcSS, and **we encourage the new Council to adopt the Commission's recommendations about the evaluation and metrics needed to properly assess economic policy and success**.[2]

Social Sciences and the Industrial Strategy Themes

The Strategy's four Grand Challenges – artificial intelligence (AI) and the data economy, clean growth, the future of mobility, and meeting the needs of an ageing society – seek to provide focus; new themes will no doubt emerge. These issues not only require STEM research and skills but social science expertise as well.

As we highlighted in our April 2017 response to the Industrial Strategy Green Paper, as the government seeks to refine the policies used to implement its vision, it will need to seek the advice and evidence of social scientists such as urban, transport, infrastructure and environmental planners, lawyers, policy analysts, data analysts, behavioural scientists, economists and economic historians.[3] Robust evidence from the social sciences will also be

[1] See: Mazzucato, M. (2013), "The Entrepreneurial State – Debunking Public vs. Private Sector Myths", Anthem Press, ISBN 978-0-857282-52-1.
[2] See: Industrial Strategy Commission. (November 2017), "The Final Report of the Industrial Strategy Commission", available at: http://industrialstrategycommission.org.uk/wp-content/uploads/2017/10/The-Final-Report-of-the-Industrial-Strategy-Commission.pdf
[3] See: Academy of Social Sciences and Campaign for Social Sciences. (April 2017), "AcSS/CfSS response to the Industrial Strategy Green Paper Consultation", available at: https://www.acss.org.uk/wp-content/uploads/2017/04/Response-to-the-Industrial-Strategy-Green-Paper-Consultation.pdf.

important in identifying future areas of investment for the Industrial Challenge Strategy Fund and the National Productivity Investment Fund.[4]

Most importantly, the social sciences are needed in order to address each of the four grand challenges, working with the STEM research community to create an evidence-base and evaluate policy and practice-based interventions, and ensure the success, refinement, and integration of potential solutions into local economies and societies.[5] Government has announced its intent for each of the Grand Challenges to "ask leading figures from industry and academia to act as expert advisors, led by a Business Champion." **We encourage government to ensure that these expert advisors include representatives from the social sciences as well as the technical and practitioner communities in each area.**

For example, putting the UK at the forefront of the artificial intelligence (AI) revolution will require behavioural scientists, economists, public opinion analysts, and lawyers so that development, adaptation and regulation of artificial intelligence and robotic technologies retains public support and works on behalf of the public. Similarly, economists, financial services, patent lawyers, and business analysts will need to be involved for the successful commercialisation of such technology.[6] We welcome the Government's announcement that it will create an industry-led AI council, a government Office for AI, and a new international Centre for Data Ethics and Innovation, but again **encourage inclusion of expert social scientists to help tackle the ethical, regulatory, and social challenges**.

The social sciences have historically played a crucial role in advancing healthcare. Innovations in healthcare delivery, in assessing and evaluating the utility of novel interventions, and in understanding the social determinants of human health and behaviour depend on the contributions of social and behavioural scientists. The White Paper also sets out an ambitious plan to tackle the needs of the UK's ageing population; part of its approach hinges on leveraging health data to improve health outcomes in the UK. The proposals for Digital Innovation Hubs, allowing access to data for research are a good start. **However, wider access to health data, linking it to other social and administrative data will be essential to achieve the aims set out in the White Paper, and is largely within the government's control.** So far, it has not been willing to take the actions needed to ensure health data are made available for public-benefit research. The social consent model set out in our Health of People report, provides a possible way forward, building on the model set out in the Digital Economy Act for other data.

PRODUCTIVITY

Much of the industrial strategy is rightly focused on efforts aimed at improving and "strengthening the foundations" of UK productivity, which has not only stagnated since the financial crisis in 2008, but is 15% less than that of the rest of the G7 economies, lagging

[4] See response to Question 6 in: Academy of Social Sciences and Campaign for Social Sciences. (April 2017), "AcSS/CfSS response to the Industrial Strategy Green Paper Consultation", available at: https://www.acss.org.uk/wp-content/uploads/2017/04/Response-to-the-Industrial-Strategy-Green-Paper-Consultation.pdf.

[5] In relation to clean growth, for example, Oxford Energy has noted that 'the challenge of devising policies and regulatory interventions that will enable this to be done in an economically efficient, politically feasible, and socially and ethically acceptable manner is even greater' than the 'technical challenge.' See: http://www.energy.ox.ac.uk/wordpress/economics-policy-politics/.

[6] For an example of such work, see: http://www.cbi.org.uk/index.cfm/_api/render/file/?method=inline&fileID=65F7E3B8-3109-4A8A-AB76029C857A4DB9.

significantly behind global leaders like the US and Germany.[7] The Government's proposed efforts largely focus on increased public investment, increased stimulation of private investment in research and development (R&D), increasing the national skills base, sector and city deals, and improving infrastructure – all of which are important.

However, beyond announcing a government Review of the issue, there is little detail about how the government will seek to address the 'long tail' of underperforming enterprises across the UK that account for a significant component of its productivity puzzle.[8] Similarly, there are relatively few clear actions taken to address productivity across the UK supply chain.[9] There is a large body of social science evidence, expertise and skills that can help government to develop appropriate policy interventions in these areas, to experiment with innovation and to evaluate their success.[10] Haldane points out that "even marginal improvements to productivity among the long tail of low-productivity companies – or, equivalently, a speeding up of rates of technological diffusion to these companies – could make significant inroads into the productivity puzzle."[11] The White Paper has signalled its intent "to increase the diffusion of best practice" but this will, we believe**, require a continued focussed programme of experiment, innovation and learning to work out practical means of improving productivity in different sectors and different areas;** the social sciences can help.

Investment in Research and Development

As in our statement on the Autumn Budget, we welcome the government's goal of achieving spending of 2.4% of GDP on research and development by 2027, as a driver of productivity and national innovation, and welcome the long-term aspiration to match the EU target of 3%. Given, however, the long-standing weakness of UK private enterprise in investing in R&D, especially for smaller and medium-sized enterprises, and recent analysis suggesting that "between 57 and 80 per cent of R&D tax credits are deadweight, subsidising spending which would have happened anyway, at an annual cost of £1.8–1.9 billion,"[12] **we encourage further work on how to stimulate private sector R&D investment;**[13] again, this will need to involve social scientists, including economists and political scientists.

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[7] ONS. (6 October 2017). "International comparisons of UK productivity (ICP), first estimates: 2016", available at: https://www.ons.gov.uk/economy/economicoutputandproductivity/productivitymeasures/bulletins/internationalcomparisonsofproductivityfirstestimates/2016.

[8] For a detailed explanation of the roots of the UK's productivity puzzle, see: Haldane, A. (2017), "Productivity Puzzles", available at: http://www.bankofengland.co.uk/publications/Documents/speeches/2017/speech968.pdf

[9] See: Hollinger, P. (27 November 2017), "Four key challenges raised by the UK's new industrial strategy", available at: https://www.ft.com/content/f2857abc-d398-11e7-a303-9060cb1e5f44.

[10] See, for example, the body of research produced by the Structural Economics and Productivity Programme of the National Institute of Economic and Social Research at: http://www.niesr.ac.uk/research-theme/structural-economics-productivity/; Haldane, A. (2017), "Productivity Puzzles", available at: http://www.bankofengland.co.uk/publications/Documents/speeches/2017/speech968.pdf; Aghion, P, T, Besley, J, Browne, D, Caselli, R, Lambert, R, Lomax, C, Pissarides, N, Stern, J, Van Reenen (2017) 'Investing for Propsperity: skills, infrastructure and innovation', LSE Growth Commission Report; Dan Corry, Anna Valero, and John Van Reenan (2011). 'UK Economic Performance Since 1997: Growth, Productivity and Jobs.' Centre for Economic Performance, London School of Economics. http://cep.lse.ac.uk/pubs/download/special/cepsp24.pdf; Rebecca Riley and Chiara Rosazza Bondibene (2016). 'Sources of Labour Productivity Growth at Sector Level in Britain, After 2007: A Firm Level Analysis.' Nesta Working Paper 16/01 April 2016. www.nesta.org.uk/wp16-01; R. L. Martin, P. Sunley, B. Gardiner, E. Evenhuis and P. Tyler (2017). 'Structural Change and Productivity Growth In Cities.' Working Paper 3, ESRC Project on Structural Transformation, Adaptability and City Economic Evolutions (ES/N006135/1), Department of Geography, University of Cambridge; or the ESRC's programme of research investments related to boosting innovation and productivity, available at: http://www.esrc.ac.uk/news-events-and-publications/news/boosting-innovation-and-productivity/.

[11] Haldane, A. (2017), "Productivity Puzzles", available at: http://www.bankofengland.co.uk/publications/Documents/speeches/2017/speech968.pdf

[12] https://www.ippr.org/files/2017-11/1511445722_industrial-strategy-cej-november17.pdf

[13] See, e.g. – the call for greater direct spending in: https://www.theguardian.com/commentisfree/2017/nov/27/white-paper-industrial-strategy-government-economy

SKILLS

The Campaign for Social Science has long promoted the importance of better, deeper and wider data and number skills in the UK. We have argued they are important for national productivity and future changes in the world of work, and for new generations of social scientists with the number and data skills to address questions that are important to the wider well-being of society, such as better ageing or population health.[14]

The steps set out in the Industrial Strategy may encourage additional pupils to take A level maths or Core Maths, and we hope this will be extended to include A-level statistics. However, as we said in our response to the Smith Review on Post 16 Mathematics, improving UK schooling in mathematics and statistics requires multiple pathways by which students with different aims and aspirations can improve their data and number skills. **We believe that the government should re-think its policy about maths and statistics AS levels, and also provide additional funding to encourage greater take-up of these.** This would be attractive for students who would benefit from qualifications higher than Core Maths (which is not in any case available in all schools) but who are doing three other A-levels. Before funding was withdrawn from stand-alone AS levels, AS maths take-up had been growing strongly, and we believe this should be restored as an additional pathway to widen data and number skills of a large group of secondary students.

Achieving the goals set out for improving number and data skills in the Industrial Strategy will require major investments and innovative programmes to address the quality of maths education in primary and secondary schools, in order to break the cycle of low skills and low expectations. The pupil premiums and teacher development premiums announced in the White Paper are a start, but for too long the short-fall in maths teachers has stood in the way. **We believe that targeted visas to bring in new capacity from outside the UK may be an idea worth looking at**.

While the Industrial Strategy White Paper is explicit that the UK will need to attract the best and brightest STEM researchers from abroad, and confirms its commitments to increasing the numbers of Tier 1 visas for exceptional research talent, **further clarity and measures are required to ensure that the UK is able to continue to attract and retain the international researchers and teachers across all areas needed for the Industrial Strategy, including social scientists in particular areas and those with quantitative skills**. Visas for international (including EU-origin) staff and students, and participation in EU research collaborations and funding, will require detailed attention during and after the Brexit negotiations. The additional 1,000 Tier 1 (Exceptional Talent) visas, including those for the social sciences and humanities via the British Academy as an endorsing organisation, provide a starting point, not an end. Appropriate visa policies and processes for the wider research community – including international staff at UK universities and in private sector research firms – will also be needed to enable straightforward and flexible recruitment across all disciplines, from STEM to the social sciences and humanities.

Similarly, research investment and PhD studentships will also need to be more balanced to ensure we have the right substantive and methodological expertise to support the ambitious aims of the White Paper.

[14] See for instance the arguments in Health of People: https://campaignforsocialscience.org.uk/healthofpeople/.

INFRASTRUCTURE & PLACE

We also welcome the government's intent to improve UK infrastructure for productivity signalled in the White Paper. While we welcome the recognition in the White Paper of the role of universities as drivers of regional economic growth, we note **the need to develop a clear strategy for regional institutions as part of the national infrastructure for productivity and growth**. Social science evidence can play a critical role in understanding not only how best to drive regional growth, but also how universities can be used to anchor such developments.[15] The social science and higher education communities can help policy makers support research and foster innovation in local areas by helping build capacity for collaborative working across the boundaries between research, commercial businesses, government and civil society.

Universities in these regions and core cities also have a critical role in contributing to policies and practice for local economic growth, and serve as a source of advice and consultancy. Partnerships among universities, like the N8 and Catapult Centres, can act as powerful accelerators. While some regions may be well placed to focus on cutting edge technology, others may instead find their competitive advantage in acting as a test-sites for innovative policies and interventions to tackle local level productivity among particular types of firms, or grand challenges, such as aging and sustainability that are in fact 'local problems with potentially global markets.'[16] **Government should aim to support and strengthen 'the role of universities as anchor institutions in left behind city regions [as] an important component of a place-based innovation strategy**.'[17]

These will also be vital to help central government understand what does and does not work for promoting regional economic growth and development. If the What Works Centre for Local Economic Growth is to help with the development of policy *and* to support Local Enterprise Partnerships (LEPs), the government will need to ensure that the Centre is properly resourced not only to conduct its own systematic reviews, but also to commission the necessary research to bolster the evidence base in these areas, and to increase their capacity to advise regional institutions and local policy makers.

CONCLUSION

We stress that the STEM community and the social sciences need to work together to address societal challenges, and the relevant disciplines must be properly resourced to do so. Investment in technological priorities alone, with only minimal investment in social institutions and science research relating to productivity, management, organisation, the economy, cities and regions, would ignore half a century of evidence about why the UK has so often failed to build on its initial technical leads and turn those into large scale industries and the social structures that promote them. Ensuring that national and local policy-makers, investors, workers and others have the appropriate incentives and skills to foster the development of initial innovations into sustainable industries requires learning from social science evidence.

[15] See, e.g.: Mike Emmerich (2017). Britain's Cities, Britain's Future. London: London Publishing Partnership; and the work of the Industrial Strategy Commission: http://industrialstrategycommission.org.uk/.
[16] John Goddard FAcSS (2016). 'Left-Behind Places Need New Ideas and New Money.' Research Fortnight, 7 December.
[17] John Goddard FAcSS (2017). 'Towards a Place Based Science and Innovation Strategy for England: A Role for Universities?' A paper for the BEIS Advisory Group on Smart Specialisation and Innovation Audits, p. 8, 15.