House of Commons Business, Innovation and Skills Select Committee Inquiry on the Productivity Plan

A response from the British Academy

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BACKGROUND

1. The British Academy is the UK's national academy for the humanities and social sciences, operating as a Fellowship of more than 1,000 of the world's most eminent scholars in the humanities and social sciences, elected for their outstanding research. The Academy funds research across the UK and in other parts of the world, in disciplines ranging from archaeology to economics, from psychology to history, and from literature to law – producing knowledge, insights and ideas that help us to address the great challenges of our time. The Academy seeks to increase public understanding of how all these subjects contribute to our economic, social, cultural and individual well-being.

2. The British Academy welcomes the opportunity to respond to this important inquiry. In this response, the Academy will focus on enablers or barriers to productivity that are most related to its position within the UK as a champion for excellence in research. However, this response also draws on our Fellows expertise in economics and related disciplines to comment more generally on the causes of low or high productivity in nations. To note, this response deals generally with the issue of labour productivity, unless otherwise stated.

3. The humanities and social sciences provide valuable evidence and insight into the complexities of issues such as productivity. As the Government's Productivity Plan explains, the UK's low productivity is an historical phenomenon, and the explanations for its persistence are as much cultural as they are economic. Research and expertise from across many academic disciplines can shed light on the challenges around productivity. To that end, the UK's four National Academies are collaborating on a series of events at the party conferences in September and October to explore how research and innovation can help to address the 'productivity puzzle.' Details of these meetings are provided in a covering email.

SUMMARY POINTS

4. The Productivity Plan provides a strong overview of the causes of weak productivity growth in the UK, and draws together a number of Government policies which, taken together, should have a positive impact on productivity. However, more needs to be done

5. **Knowledge economy and innovation:** The UK's strengths lie in its diverse and thriving creative and services sector, and policies designed to boost productivity must take into account this economic make-up, and ensure they are well-targeted to include those areas of the economy where the UK has strength.

6. **The science and research budget:** Investment in research is proven to have a significant positive impact on productivity. Extra resources in the university and research system would be highly productive and one of the most cost-effective routes to growth – as well as building on our competitive advantage internationally.

7. **Encouraging investment**: The Productivity Plan could go further to create a fiscal environment in the UK that is pro-investment and encourages long-term thinking in firms.

8. **Skills and talent:** There remains significant mismatch between skills and talent in the UK workforce, and the Government needs to develop a skills system that is as dynamic and flexible as the labour market it serves.

9. **Place:** interventions to encourage productivity should be sensitive to place, taking into account the kind of industries that are located in a region and the supply and demand of skills in local communities.

DETAILED COMMENT

Knowledge economy and innovation

10. Through the productivity plan, the Government has identified the major reasons for the productivity slowdown. Productivity – the amount of output we can achieve from a given level of labour input – can be raised by:

    1) increasing the capital-labour ratio
    2) improving the quality of labour input, or
    3) via innovation that increases the total factor productivity[1]

    While all of these areas are important, innovation must play a more significant role than it perhaps has so far, given the nature of the UK economy. Ideas, innovation and knowledge are the key drivers of modern economies. According to the OECD '[their role] as compared with natural resources, physical capital and low skill labour, has taken on greater importance. Although the pace may differ, all OECD economies are moving towards a knowledge-based economy.' 'Knowledge workers', according to the Work Foundation, will have grown from 31% of the UK workforce in 1984 to 45% by 2014. Over the same period skilled and semi-skilled jobs will fall from 28% to 18% and unskilled from 16% to 9%.[2]

11. It is clear that the UK in particular is primarily a service economy and some of the highest rates of productivity growth lie in this sector. It represents 78% of the economy, and while GDP has grown at an average compound annual rate of 2.0% since 1997, the service sector has grown at an average compound annual rate of 2.8%, orienting the UK's economy more strongly towards these industries. [3]

12. The UK and other nations are therefore ever more dependent on the fuel of knowledge, ideas and innovation, in place of capital, resources and equipment.

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[1] TFP – the efficiency with which inputs work together to produce output.
[2] Work Foundation (2006) Defining the Knowledge Economy: http://www.theworkfoundation.com/assets/docs/publications/65_defining%20knowledge%20economy.pdf
[3] ONS (2015), all accessible at http://www.ons.gov.uk/ons/rel/ios/index-of-services/april-2015/index.html

Whilst manufacturing remains an important component of the UK's industrial landscape, the UK is predominantly a service-sector economy, and increasingly more so. Therefore, policies around investment (in human capital and skills particularly) must take into account this economic make-up, and ensure they are well-targeted to include those areas of the economy where the UK has strength. Of course, the services 'sector' is not an undifferentiated sector of industries, and it is necessary to differentiate among different kinds of services, especially as they constitute the bulk of the economy. Different kinds of services have very different skills profiles and technological needs, and this must be taken into account when considering strategies for boosting productivity beyond manufacturing.

13. Competing in this global, innovation-driven economy will require a shake-up of some embedded business practices in the UK. UK's historically low productivity can be partly attributed to management practices, firm behaviour, and attitudes of business owners towards risk, innovation, take-overs, and creativity. These cultural aspects of business behaviour are relatively under-evidenced, but we believe crucial in tackling the under-performing tail of UK business. Best management practices are not always available to small family-run firms, and addressing skills in management in particular will be important in creating dynamic and thriving businesses of all sizes.

The science and research budget

14. Adequate and sustained investment in our internationally competitive research base is a crucial enabler of productivity growth. The Government would see significant GDP and productivity increases if it boosted funding for research across all disciplines. A serious growth strategy to raise UK productivity and GDP must place investment in research and development at its core, with the science and research budget at centre stage in the UK's growth story.

15. In fiscally constrained times, public money must be spent where it will bring about the widest range of benefits across all parts of the UK. Extra resources in the university and research system would be highly productive and one of the most cost-effective routes to growth – as well as building on our competitive advantage internationally.[4]

16. The returns on investment in research are broad and wide-ranging. There is a large evidence base confirming that the benefits to society as a whole from publically funded research investment are substantially above the "private" rates of return captured by firms who conduct their own research. Primarily this is due to spillovers – other firms are able to imitate the idea at a fraction of the cost of producing the idea. For example, Bloom, Schankerman and Van Reenen (2013) found, using US data, that social returns were more than twice as large as private returns. [5] Public investment in research, therefore, embeds resilience across our society. It does not 'crowd out' private investment, in fact it has been shown to 'crowd in' R&D spend

[4] The UK ranks second for the quality of its scientific research institutions, second in the Global Innovation Index, and fourth for its university-industry R&D. UK research and innovation also accounts for 11.6% of global citations, and 15.9% of the world's most highly cited articles with just 3% of global research funding.
[5] Bloom, N., Schankerman, M., and Van Reenen, J., (2013) 'Identifying technology spillovers and product market rivalry': http://web.stanford.edu/~nbloom/bsv.pdf

from industry, and improve its productivity such that every £1 increase in public R&D investment generates a further £1.36 of private investment (e.g. Moretti, Steinwender and Van Reenen, 2014[6], show this across multiple OECD countries, and Haskel et al, 2015. [7])

17. There is a powerful argument therefore for aiming to move our 0.5% p.a. public R&D spend to GDP ratio up to 1%, across all areas of research, in the coming years, to bring it into line with other leading economies. The evidence shows that such investment has very high potential returns. A one-off 5% increase in UK public sector R&D (an increase of £450m) would raise private sector output by about £90m per year in perpetuity, a great return on investment (Haskel et al 2014). In a highly competitive and mobile world, we can prosper by building on our strengths, but we will fall behind if we erode them.

Encouraging investment

18. The Productivity Plan highlights a lack of long-term investment as a barrier to productivity, and a drag on growth, and helpfully conceptualises investment broadly, in terms of plant and machinery, human capital, and skills.

19. More could be done to create a fiscal environment in the UK that favours long-term investment. Low investment in firms is, in part, due to tax distortions favouring investment in housing stock, and the Government should look at ways of removing these distortions. The UK tax system favours debt, and compared to equity finance this is less conducive to long-term projects where returns are uncertain. It has been estimated that only 15% of lending finances productive capital investment with the remaining 85% being investment in (mainly existing) real estate assets (Turner, 2015).

20. Innovation, as discussed, is crucial to driving productivity - the LSE Growth Commission (2013) emphasised the importance of R&D in fostering innovation, and between 2000 and 2008, 51% of productivity growth was due to innovation. The problems associated with short-termism are particularly acute for the funding of innovative businesses, due to high risks. The impact on productivity, therefore, is significant. The Coalition Government did much to develop the UK's public innovation infrastructure through the network of Catapult Centres, and these should be protected. The Academy supports the need to strengthen this network to address persistent market failures around the commercialisation of innovation.

21. Some have suggested the need to promote long-termism through reforms to corporate governance rules, including in the Kay and Cox Reviews.[8] The Academy would recommend returning to these reports to examine what more can be done to

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6 Moretti, E, Steinwender, C. and Van Reenen, J. (2014) 'The Intellectual Spoils of War? Defense R&D, Productivity and Spillovers', mimeo.
http://eml.berkeley.edu//~moretti/military.pdf

7 Haskel J., Goodridge P., Hughes A., Wallis G., (2015) The contribution of public and private R&D to UK productivity growth, Publisher: Imperial College Business School
https://spiral.imperial.ac.uk:8443/bitstream/10044/1/21171/2/Haskel%202015-03.pdf

[8] See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/253454/bis-12-917-kay-review-of-equity-markets-final-report.pdf and http://www.yourbritain.org.uk/uploads/editor/files/Overcoming_Short-termism.pdf

embed a more long-term, pro-investment culture within firms themselves, and through the wider tax environment.

Skills and talent

22. The UK's productivity problem, and its consistently weak performance on low and mid level skills in international league tables, are very closely related. Insufficient technician level skills particularly are a drag on productivity, and the previous Government correctly focused on boosting quality and increasing employer engagement as a route to improving this (these are crucial components in the world's most successful skills systems).

23. As described above, the new economy is dynamic and creative, but so too is the labour market. With a rise in self-employment and so called 'portfolio careers', accompanied by a steady decline in discretionary training by firms, the Government needs to develop a skills system that is as dynamic and flexible as the labour market it serves. Whilst apprenticeships and other work-based training is suitable for many parts of the economy – particularly manufacturing – there are other parts of our creative, services-oriented economy for which alternative vocational pathways into employment are needed. Those who score highly on international league tables for vocational skills – particularly Austria and Germany – have both strong apprenticeship systems and employer engagement, but also well-established and funded vocational pathways to mid and higher level skills. Government needs to ensure that there are job access opportunities and experience at school level and immediately after schooling, alongside creating capacity in the skills system to enable training and retraining for all sectors of the labour market. Ongoing training, career development and continuous learning in the workplace are important both to productivity directly and to job satisfactions, which has significant positive effects on productivity and innovation. For the self-employed, and those moving quickly between employment contracts, the Government needs to consider what alternative mechanisms are available to ensure that high quality training is widely available, affordable, and appropriate to the new labour market.

24. One particular skill area that needs a boost is around data. About seven in ten employees say that quantitative skills are essential or important in carrying out their work. While roughly three in 10 jobs require basic arithmetic skills, a further four in ten require the ability to apply quantitative skills to a more advanced level. There is evidence that demand for more advanced skills, which might range from the ability to use descriptive statistics to highly complex mathematical procedures, has risen sharply in the past two decades, with the proportion of employees saying advanced mathematics or statistics are important in their jobs rising from 29% in 1997 to 38% in 2012.[9] Correspondingly, the number of people reporting that arithmetical skills are not at all important in their jobs has declined. It is essential, therefore, that all training, whether at schools, FE or HE, has an adequate quantitative skills component.

[9] British Academy (2015) Count us in: quantitative skills for a new generation: http://www.britac.ac.uk/policy/count_us_in_report.cfm

25. There is evidence of a skills mismatch and a misalignment of skills and work across our economy. The Skills Commission (2014) outlines this in its report, *Still In Tune:*

> "The UKCES National Employers Skills Survey also highlights further misalignment of skills supply and demand that impact upon a greater proportion of employers than skills shortage vacancies. The 2013 survey records 15% of employers as having some staff whose skills were insufficient for the work they were doing, while 48% reported having employees who were both over-qualified for their jobs and under-used at work. This equates to around 4.2 million workers. Among these over-qualification rates are highest amongst: the young (20-24 year olds), part-timers, white workers, and those working in hotels, restaurants, retail, and other services such as arts, entertainment and recreation."[10]

The Skills Commission warned that the system is currently misaligned to the changing structures of work, and that it will become further misaligned unless action is taken. We must 'tune' our skills system better to the high-skill jobs in the creative and innovative sectors, which are growing. As mentioned above, it is also important to address the skills need at management levels, so that firms can better manage and develop the talents of the full workforce. Productivity at all levels of firm activity is closely interconnected.

26. It appears that talent is misallocated across the labour market, and the problems are more acute when looking at the participation of women, particularly mothers returning from maternity leave. The Government should consider what it can do to create as much flexibility as possible within the labour market to allow women to contribute according to their skill level and talent. There is a strong potential gain from this – it has been estimated that 15-20% of growth in aggregate output per worker in the US can be explained through better allocation of talent (Hsieh et al (2013)). Again, this is also a matter of utilising best management practices.

Place

27. In considering the factors that influence productivity and innovation it is important to take into account Marshallian concepts of industrial districts and clusters, and the associated ideas of communities of practice, collaboration and inter-firm networks, local industrial atmosphere and agglomeration. This is an area where interventions to encourage productivity should be sensitive to place, taking into account the kind of industries that are located in a region and the supply and demand of skills in the local communities.

CONCLUSION

28. The Productivity Plan is a strong statement of the Government's commitment to raising UK productivity. However, whilst it outlines many of the key drivers of productivity, more could be done to develop bold new policies – particularly around fiscal incentives and the support of innovation – to ensure that the strongest drivers of productivity are given the best possible support.

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[10] Skills Commission (2014) "Still in Tune", see: http://www.policyconnect.org.uk/sc/sites/site_sc/files/report/411/fieldreportdownload/skillscommissionreport-stillintune.pdf

29. This includes the science and research budget. The Productivity Plan has been published before the conclusion of the Comprehensive Spending Review. Therefore, whilst the plan makes reference to the already-committed spend on research infrastructure, detail is lacking on crucial drivers of productivity, including public spend on research and development through its own departments, and as part of the science and research budget. An increase in public spend on R&D across all disciplines would give productivity across sectors a much needed boost.