VIEWPOINTSERIES

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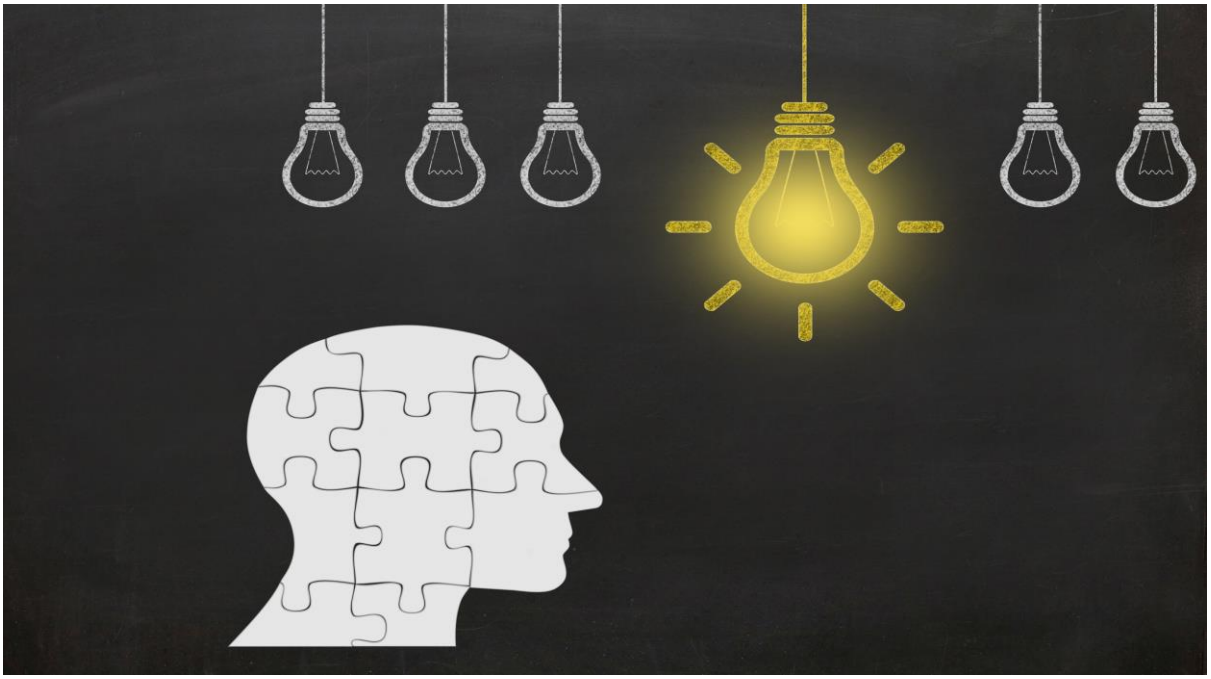
POLICIES AND RESEARCH TO SOLVE THE UK'S PRODUCTIVITY PUZZLE



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THE VIEWPOINT SERIES

The Viewpoint series presents ideas developed by SQW and Oxford Innovation, the operating divisions of SQW Group.

Each paper in the series aims to share our thoughts on a current issue in sustainable economic and social development, public policy, innovation and enterprise with clients, partners and anyone else who has an interest in its subject. Every Viewpoint, draws on our policy research and practical experience of implementing improvements to suggest strategic and practical solutions to the issue it explores.

SUMMARY

The UK has a serious productivity problem. Though the economy has started to grow again in size since the 2008-9 financial crisis, growth in labour productivity has not recovered. The UK's relatively low productivity pre-dates the crisis[1] and parts of the nation now have productivity lower than some Eastern European Countries[2].

The problem is a complex puzzle. Some UK firms are so efficient they represent the 'productivity frontier' for their sector. But each sector has a long tail of "productivity laggards [that] have been unable to keep up, much less catch up, with frontier companies"[3]. The number of companies in each tail, along with the range of their productivity performance, varies between sectors and regions.

The problem really matters because productivity is the main determinant of national living standards. Any country's ability to improve its standard of living over time depends almost entirely on its ability to raise output per worker[4].

Though recent policies to support business have tended mostly to aim for economic growth, the current Industrial Strategy recognises the UK's productivity challenge and the potential benefits of raising performance nationally. But how should local and national governments intervene to help businesses improve their productivity? And what can those businesses do to help themselves?

This paper presents SQW's view of how policy interventions to support business can best be designed and delivered to raise productivity performance across the UK, and among laggard companies in particular. Our conclusions are based on knowledge gained from SQW's research in the fields of local economic development, innovation, skills development and sector analysis. The paper also draws on the experience of Oxford Innovation, SQW's sister company, which delivers performance improvement programmes to individual businesses and their leaders.

Current knowledge and experience suggest that successful firm-level policy interventions and strategies should be designed in line with the following three principles. Together they will:

- **Target companies in the long tail of productivity laggards that have potential to improve.** Recent business support programmes have tended to target companies that have asked for help and been identified as having high growth potential. But these programmes may exclude many 'long tail' laggards with potential to improve, since generally these companies neither know they have such potential nor see themselves as needing help in realising it.
- **Holistically strengthen all the factors affecting their productivity.** Our work shows us that a range of interrelated factors affect productivity improvements in individual SMEs, notably their leadership and management strengths, workforce skills and motivation, capacity to innovate, strategic use of digital technologies and access to flexible finance. These factors are closely interrelated. So for maximum effect, support for individual SMEs needs to address these factors holistically, taking their interrelationships into account.
- **Engage target companies using the right channels and incentives.** Haldane comments that while many business leaders recognise low productivity as a general problem, they don't see it as *their* problem to fix[5]. That makes attracting the right SMEs to come forward for support and make the most of it a challenge. Our work indicates SME leaders

[1] The scale and duration of the productivity gap is contested. SQW research has looked at this using data from 1970s onwards: Mack Smith, David (2015) Reviewing Long Run Trends in Productivity: a Linear Growth Hypothesis: SQW Briefing Paper

[2] McCann, P. (2016), The UK Regional-National Economic Problem: Geography, Globalisation and Governance. Routledge.

[3] http://www.bankofengland.co.uk/publications/Documents/speeches/2017/speech968.pdf

[4] Paul Krugman in the OECD Compendium of Productivity Indicators 2006, Organisation for Economic Co-operation and Development: Paris.

[5] Andy Haldane (2017) Productivity Puzzles, a speech to given at London School of Economics. https://www.bankofengland.co.uk/speech/2017/productivity-puzzles

respond best to offers of practical, tangible support that come through their familiar networks, rather than official channels. They also need a lot of consistent external help to improve their productivity and sustain significant and lasting results.

These three principles should form the basis of initial interventions, which themselves should be evaluated so that we can learn more about how best to target, engage and support SMEs. However, there are still big knowledge gaps. Filling the gaps will inform better policy and intervention design. SQW believes the following five research questions are the most important:

1. **What drives sector productivity differentials?** Professional services, manufacturing, digital, life sciences and other sectors all have different characteristics and different reasons for their particular pattern of variation in productivity between firms. Better understanding of the drivers of sector-specific differentials will guide more precise intervention.
2. **How does the nature of places affect productivity, and in particular the patterns of long-tail companies?** We know when places boost productivity: Sheffield was great for steel in the 18th and 19th centuries, just as Cambridge has been a cradle of high tech over the past 40 years. But we don't know enough about how such places contribute to the spread of innovation or, more particularly, what barriers prevent many other places in the UK from fostering higher productivity. 'Natural' diffusion of innovations seems to be working too slowly to shrink the pool of laggards significantly. What interventions might help to diffuse existing technologies faster?
3. **How could national and local policies to improve businesses complement each other more?** This knowledge is especially important to success for the Industrial Strategy.
4. **What motivates employees to join their employers in trying to improve productivity?** Overall business productivity hangs on the productivity of individuals in the workforce. But what motivates people to contribute to their employers' efforts to raise productivity? What's in it for them?
5. **How can SMEs apply the latest digital technologies to have the most impact on their productivity?** Answering this question, and relating it to other factors such as how business managers adopt new technologies and practice and engage their employees in the process, is critical to making sure digital policy initiatives achieve their full potential.

These are the questions SQW believes should attract researchers and research funders that share our ambition to make a difference to UK labour productivity. Only a return to productivity growth will support steadily rising living standards across the nation.

1. PRODUCTIVITY: A NATIONAL IMPERATIVE

Improving productivity across the economy is now a key national policy priority. But interventions need to take into account the complexities of the UK's productivity problem.

A NATIONAL POLICY PRIORITY

National policies following the 2008 financial crash, aiming primarily for economic growth, have helped to strengthen factors known to support productivity improvement. These include infrastructure (including transport and both physical and virtual connectivity), access to flexible finance, access to skilled labour, effective management, innovation and its rapid diffusion, and effective company governance and public services. Post crash policies have indeed helped to promote some economic growth, along with high levels of employment. However, the overall productivity of UK businesses - of concern before 2008 - remains troubling.

Consequently, improving productivity is a key national policy goal. The 2015 national policy paper *Fixing the Foundations* stated "productivity is the challenge of our time…a nation flourishes when it uses the full skills of all its people in all parts of that nation". The paper also highlighted the potential rewards of getting productivity right. If UK average productivity matched average productivity in the USA and continued to grow at the US pace, UK GDP would be 31% higher, equivalent to an extra £21,000 a year for every household in the UK.

The design of interventions to improve productivity needs to start from a clear understanding of the complexities of the UK productivity problem. This is characterised by the nation's large number of 'productivity laggards' and wide variations in productivity within and between places and sectors.

LAGGARDS SKEW UK NATIONAL PRODUCTIVITY DISTRIBUTION

In 2015, the OECD categorised companies by their productivity as being either global frontier companies, national frontier companies or laggards[6]. More recently, it has proposed 'zombie companies' as a new subcategory of laggards. These are underperforming firms, normally old and small, able to hang on because they have had relatively low debt during a period of low interest rates[7].

Britain's large numbers of laggards (including a small fraction of zombies) sharply skew the distribution of productivity across firms. As a result, a large proportion of firms are substantially below the mean level of productivity. They can get caught in what Bahar has identified as a "middle productivity trap"[8]. In many countries, low productivity firms and frontier firms are seen to improve their productivity rapidly. But when lower-performing firms reach the middle of the productivity distribution, their productivity growth tends to falter. They seem to get trapped at levels of productivity that lag well behind those of frontier companies.

[6] *OECD (2015) The Future of Productivity.* https://www.oecd.org/eco/OECD-2015-The-future-of-productivity-book.pdf

[7] Müge Adalet McGowan, Dan Andrews and Valentine Millot (2017) The Walking Dead? Zombie Firms and Productivity Performance in OECD Countries, OECD.

[8] *Dany Bahar (2017) The Middle Productivity Trap: Dynamics of Productivity Dispersion, Global Economy & Development, Working Paper 107, Brookings Institute*

PRODUCTIVITY VARIATIONS IN THE UK ARE COMPLEX

National productivity data breaks down to reveal a range of variations in performance within and between regions, cities and sectors.

Regional variations. Many productivity studies remove London and the South East's productivity performance from their analysis, or use it as a benchmark, because of the extent to which this region skews the national picture. London and its hinterlands, extending to parts of the South West, are among the most successful and productive in Europe. But these regions are disconnecting from the rest of the UK economy. Other English regions, Wales and Northern Ireland have a productivity performance "similar to, or even below, that of the poorer regions of the former East Germany and weaker than many regions in the Czech Republic, Poland, Hungary and Slovakia"[9].

The reasons for this are not entirely clear, but they are likely to include the isolation of businesses in the poorer UK regions from new ideas and innovation, their lack of opportunities to collaborate, and owners who have 'satisficing' business objectives rather than maximising shareholder value. Some differences in regional productivity are also likely to stem from the particular mix of business and skills in the different regions.

Within each region the picture becomes even more nuanced. There are big variations in productivity between areas and their prevailing sectors. For example, SQW's work for the Northern Powerhouse[10] shows that several industries across the north of England are very productive relative to the geography as a whole and to their sector. Our economic review concludes that improving the region's economic performance significantly above "business as usual projections" is possible with substantial improvements in four particular factors supporting productivity across the North: transport connectivity, skills, innovation, and inward investment.

City variations. Productivity performance within and between cities is similarly complicated. Academics are now questioning the long-held association between larger cities and higher productivity. Mapping studies by the EU and OECD[11] show higher levels of productivity are no longer concentrated in cities but dispersing over wider urban regions. Other analysis suggests that the 'productive returns' to a city location vary both by city and by sector[12].

Sector variations. Growth in a sector does not necessarily bring productivity benefits. Consider the tourism and hospitality sector, prominent in many local economic growth strategies. SQW analysis shows that although this sector has grown significantly over many years, its productivity has remained unchanged over the past 15.

SHIFTING FOCUS FOR BUSINESS SUPPORT POLICY

In recent years, growth has been the main goal of most national and regional business support policy. At the national level, policy has focussed on high growth firms or firms with the potential and ambition to scale up.

That said, some national initiatives also seek to address individual drivers of productivity. For example, Innovate UK delivers support for innovation. Its programmes have attracted self-selecting frontier firms or firms aiming for the frontier that are able to secure the support. Policymakers have not considered this a problem because of the general assumption that such proactive firms are likely to contribute to diffusion of new technologies, leading to both growth and higher productivity. But the extent to which this diffusion actually occurs and over what area is unknown.

[9] McCann, P. (2016), The UK Regional-National Economic Problem: Geography, Globalisation and Governance. Routledge.
[10] Northern Powerhouse Independent Economic Review, http://www.sqw.co.uk/insights-and-publications/northern-powerhouse-independent-economic-review/
[11] Dijkstra, Lewis; Garcilazo, Enrique; McCann, Philip. (Mar-13). The Economic Performance of European Cities and City Regions: Myths and Realities. European Planning Studies
[12] Harris, Richard; Moffat, John. (Dec-12) Is Productivity Higher In British Cities? Journal of Regional Science.

Similarly, the British Business Bank supports SMEs by offering flexible finance for 'starting up', 'scaling up' or 'staying ahead'. While 'scale up' support focuses on growth, support for 'staying ahead' aims to reduce any barriers blocking firms' access to the flexible finance they may need for capital investments to improve their productivity.

Policy at a sub-national level has also concentrated largely on companies with ambitions to grow. This is true of locally-delivered Growth Hubs, for instance, and European-funded business support. Broader regional economic development policy, such as the Local Growth Deals, has focussed on growth as well.

Now, however, policy is shifting to embrace both productivity and growth. The recent national industrial strategy calls for local industrial strategies to be based on people, infrastructure and ideas, recognising the need to improve labour productivity and growth at the same time[13]. There can be a potential tension between the two objectives in places that still have relatively high levels of unemployment or underemployment. To meet both objectives, policy needs to direct support towards a big enough number of productivity laggards to improve both their productivity and growth on a scale that will generate a net increase in employment. The example in the next section shows that the two objectives can be complementary.

[13] *HM Government (2017) Industrial Strategy: Building a Britain Fit for the Future.*

2. TARGETING, DESIGNING AND GETTING TAKEUP OF EFFECTIVE INTERVENTIONS

SQW concludes from our research and experience that interventions that are likely to deliver worthwhile productivity returns from supporting laggard companies should follow three main principles: first, target the right companies; second, tackle the many factors that influence their productivity holistically, rather than strengthening individual factors in isolation; and third, engage the companies through channels and using incentives they will respond to (see box below on 'The scale of potential productivity returns).

The scale of potential productivity returns

Oxford Innovation's recent experience of taking this three-principled approach to business support in Cornwall suggests the scale of improvement it can achieve. Oxford Innovation's main task in Cornwall was helping SMEs with an ambition to grow to achieve their goals. Companies volunteered for the programme, identifying themselves as having the required ambition. A programme of assistance was designed with each company to tackle its particular growth and productivity challenges holistically.

Across the group of 100 businesses receiving this tailored support, growth and productivity improved in tandem. By the end of the programme, their productivity had improved by an average of 86%[14].

Working in this way with companies that have the capacity, ambition and openness to learn and change requires concerted and consistent effort. But the returns can be significant.

TARGET THE RIGHT COMPANIES

Understanding the complexity of the UK's productivity problem offers an opportunity to target interventions more precisely on firms and organisations able to make the most of them. But which targets to choose?

Offering performance improving interventions to laggards that lack the will or the skills to engage will waste scarce resources. On the other hand, targeting interventions on the smaller number of companies already at the productivity frontier can't deliver a big enough hike in national productivity. Nor can policymakers rely on competitive forces to eliminate zombie firms any time soon.

In our view, the way out of this dilemma is, to target interventions at those laggard SMEs with the greatest potential to raise their productivity from 'below average' to 'average' and above. That said, segmentation tools for identifying precisely those firms and diagnostic tools for deciding the interventions most appropriate to them are still in development. That shouldn't hold back government or business organisations, including those seeking to bring about change such as Be the Business, from trying out possible tools and continually refining them on the basis of careful evaluation of their effects, especially because different tools are likely to work in different places and with different types of companies. Based on the experience of Oxford Innovation's coaches and business support professionals, our view is that the right segmentation will go beyond simple differentiators like 'high growth' and 'ambitious' and take account of each firm's sector, location and supply chain relationships in determining its prospects.

[14] This was estimated using figures supplied by companies 'before' and 'after' taking part in the programme. Productivity was estimated based on GVA/Full-time equivalent employment (where GVA = Operating profit + depreciation + employee costs).

HOLISTICALLY STRENGTHEN ALL THE FACTORS AFFECTING THEIR PRODUCTIVITY

Observations from SQW's research and Oxford Innovation's practical business support show that a range of different factors affect productivity improvements in individual SMEs. Key factors are their leadership and management strengths, workforce skills and motivation, capacity to innovate, strategic use of digital technologies and access to flexible finance (see panel on page 10 on **Key factors affecting an SME's productivity**). All the factors are closely interrelated. For example, the way an innovation project is developed and implemented will have an impact on the motivation of the workforce. Addressing these factors holistically, taking their interrelationships into account, gives interventions to improve productivity a greater chance of success.

The different factors break down into four categories:

- Factors internal to a firm, including its financial condition, skills, product/service position, degree of innovation, managerial effectiveness, and organisational culture.
- Factors external to a firm, including its supply chain, partners, and R&D collaborations.
- Factors particular to a firm's industry sector, including markets, technologies, and cost and value structures.
- Factors particular to a firm's place or location, and how they may influence any of the factors above.

Interventions targeted on SMEs clearly need to focus on the internal and external factors those companies can directly control. But policymakers need to consider all the factors to make sure all measures directed at improving productivity are coherent, an issue we address in section 3, on Research Questions.

ENGAGE COMPANIES USING THE RIGHT CHANNELS AND INCENTIVES

Effort is needed from a critical mass of individual SMEs to deliver large-scale improvements in UK productivity. But how do you engage SME leaders in working on their productivity when they don't see this as a problem for their firm, and may not even think in terms of 'productivity' per se?

There are many ways to engage firms in taking part in support programmes. The main ones are: regulatory mechanisms; economic instruments that reward productive practices or penalise wasteful ones; commercial incentives delivered through supply chains or changes to procurement practices; or using peer networks, mentors or associations to encourage change. SQW has learned about their relative effectiveness from our research and our experience of helping SMEs to improve their business.

Our headline conclusion is that impact depends on a great deal of 'push' and not just 'pull'. Even SMEs with the will, skills and capacity to improve still need input from external advisers and coaches to keep up their energy and focus and stay on track. Productivity laggards in particular need proactive external support to make the most of policy interventions and achieve significant and sustained results.

More detailed insights on how to engage SMEs have emerged from our evaluation of the UK Futures Programme[15]. Run by the UK Commission for Employment and Skills, this programme looked at the particular skills and productivity challenges facing different UK sectors, from advanced manufacturing to food. It found the following:

- Reaching SME leaders and wider stakeholders through existing networks and relationships, usually face-to-face conversations, is a more efficient and effective way to engage them than 'cold' approaches through government channels.
- Intermediaries, such as trade associations, sector bodies and business representative groups, are gateways to SME networks. Their non-commercial status means SME managers view them as independent, non-competitive and operating on behalf of the sector or for social good.
- SMEs and stakeholders, especially those unfamiliar with external support, are likely to be more interested in a tangible product, or solution than an idea or concept. They will prefer an actual product innovation, or existing piece of software, or combination of goods and services that they can adopt immediately.
- Business owners/leaders with no previous experience of taking up support and advice are often unsure of their needs or the benefits to be gained. These people are more likely to engage with advisors whose initial offer comes at low or no cost, allowing them to take part at minimal risk or initial commitment. Once involved in this way, they may increase their investment later.
- Senior teams in a business must be engaged to ensure organisational buy-in and commitment to change; middle managers must be 'on board' to get the work done.

Evaluation is required as part of delivering interventions that seek to engage firms to improve their productivity. Indeed, interventions could be designed so as to test different types of messaging and engagement routes so that learning can feed back into programme delivery rapidly.

[15] *UKCES (2016) Evaluation of UK Futures Programme: https://www.gov.uk/government/publications/evaluation-of-uk-futures-programme-conclusions-and-guidance*

KEY FACTORS AFFECTING AN SME'S PRODUCTIVITY

Developing leadership and management: Firms need effective leadership and skilled management to understand their place in their market and to perform well. Strong businesses continually look ahead and systematically identify and develop leaders and managers capable of meeting future challenges. Smaller and older businesses often find this difficult, especially those with a strong family influence.

Upskilling and motivating the workforce: Employing, training, motivating and retaining skilled people is critical to improving labour productivity. SQW's work in the food and drink sector has shown us that a key to all four is having policies and practices that develop a bond between employees and the employer that invests in their training. These typically include rewards for achieving skills, structures that enable employees to apply new skills, and working with skills providers in further and higher education to build talent pipelines.

Workforce Case Study: A large food manufacturer faced two main problems: high labour turnover, and the inability or reluctance of different nationalities on the shop floor to communicate. In response, the firm introduced job rotation and trained all staff to do different jobs on different production lines. This made jobs more interesting and encouraged interaction between staff of different nationalities.

Innovation Case Study: A company specialising in hydrogen energy had invested internal funds and used UK and EU grants for R&D. Several grants from UK public funding have been used on experiments and simple modelling to test the size of potential markets and understand the costs of developing and using new manufacturing processes. This spend resulted in efficiency savings worth 10% of production costs, and increased its manufacturing capability. Sales also increased. A further benefit was better staff retention, as people gained a sense of ownership from being assigned to externally-funded projects. The experience raised their sense of being professionals in their roles.

Innovation to reach the productivity frontier: Companies can innovate in production and other business processes, products and services, organisational management, and overall business models. Some innovations are 'new-to-market', but potentially more important for improving the productivity of laggards is the adoption of 'new-to-firm' innovations pioneered elsewhere. This is what diffuses new technologies through a sector, bringing average productivity closer to frontier performance. However, current policies focus more on promoting cutting edge and new-to-market innovations, partly on the unproven assumption that these will diffuse 'naturally' through supply chains or networks at a fast enough pace.

Integrating advanced digital technology: Recent digital productivity initiatives have tended to concentrate on getting firms to use the basics, notably the internet for marketing and sales, and some cloud-based services. They have yet to encourage firms to incorporate other emerging digital technologies into business process re-design. But smart use of these emerging technologies can drive significant productivity improvements. For instance, Industry 4.0, or 'the fourth industrial revolution', is transforming production supply chains with its blend of skills in engineering, manufacturing, cyber-physical systems, cloud computing, cognitive computing, the Internet of things, software development, data analytics, creative design and management.

Ensuring access to flexible finance: Access to finance is essential for SMEs ambitious to invest in improving productivity and growth. Yet our research has identified both supply and demand-side factors that may prevent their access, especially in certain parts of the UK. For instance, regions vary significantly in the amount of appropriate equity finance available to SMEs. In regions with an 'ecosystem' that promotes innovation, strong business support and available finance - notably London and the South East - SMEs can achieve their ambitions[16].

[16] *SQW (2016) Viewpoint: The Role of Policy in SME Finance: Demand Side Perspectives.*

3. RESEARCH QUESTIONS

Although current knowledge is deep enough to form the basis of interventions following the principles described in Section 2, there are still big knowledge gaps. Filling the gaps would inform better policy design. SQW recommends investigating the five questions below.

1. What drives sector productivity differentials? Understanding the most important drivers of differentials in each sector would allow policymakers to tailor interventions to fit.

2. How does the nature of places affect productivity, and in particular the patterns of long-tail companies? How do the characteristic features of higher productivity places improve individual firms' capacity to become more productive? How can the features of networks, organisations and other 'soft' connective mechanisms support the diffusion of efficient practice and break down barriers to change in left-behind places? What else can be done to diffuse existing technologies faster and shift more laggards across the UK closer to the productivity frontier?

3. How could national and local policies to improve businesses complement each other more?

Several government agencies from the UK nations, the Departments of State through to local authorities and Local Enterprise Partnerships are considering their responses to the productivity challenge at firm, local, regional and national levels.

Some national and local responses are likely to clash or overlap in any given location or area unless steps are taken to make them cohere. A 'local review' of public policy interventions in each place would be valuable, especially for the light it would shed on details of the wider local economic system.

Further research to collate and analyse information about how policy makers are thinking about productivity, what their priority measures are, and how they link to other national and regional initiatives would generate more grounded policy. It would also help Local Industrial Strategies to draw links between people, infrastructure and ideas and not treat these issues in isolation.

4. What motivates employees to join their employers in trying to improve productivity?

Labour productivity is key to overall business productivity. Yet most business support programmes focus on leaders. What conditions will motivate staff to gain and apply the skills needed to boost productivity? In many firms, the main barrier to investing in and applying new technologies and practices is the mix of skills in the workforce and how they are used. The relationship between what motivates employees and other factors affecting productivity, such as innovation, needs investigating for interventions to gain traction.

5. How can the latest digital technologies be applied by SMEs to have the biggest impact on productivity? Different technologies and diffusion channels are likely to be critical in different sectors and sub-sectors into account. Understanding these differences, allied with understanding what motivates business managers and employees to adopt innovations, is crucial to making sure digital policy initiatives give the biggest possible boost to productivity.

SQW believes that these are the critical questions that researchers, national and local government, business groups, and sector bodies need to answer as soon as possible. The answers will inform better-designed policy interventions that in turn will deliver higher productivity returns. These are the kind of interventions we must make to see living standards rising once again across the UK.

About us

SQW and Oxford Innovation are part of SQW Group.
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SQW is a leading provider of research, analysis and advice on sustainable economic and social development for public, private and voluntary sector organisations across the UK and internationally. Core services include appraisal, economic impact assessment, and evaluation; demand assessment, feasibility and business planning; economic, social and environmental research and analysis; organisation and partnership development; policy development, strategy, and action planning.
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