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Joining Up Pro-Productivity Policies in the UK

By Bart van Ark, Stephen Millard,
Adrian Pabst and Andy Westwood (Eds.)

THE PRODUCTIVITY INSTITUTE

National Institute of Economic and Social Research

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National Institute of Economic and Social Research
Occasional Paper LXV.

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THE NATIONAL INSTITUTE OF
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The National Institute of Economic and Social Research is an independent research institute, founded in 1938. The vision of our founders was to carry out research to improve understanding of the economic and social forces that affect people's lives, and the ways in which policy can bring about change. And this remains central to NIESR's ethos. We continue to apply our expertise in both quantitative and qualitative methods and our understanding of economic and social issues to current debates and to influence policy. The Institute is independent of all party political interests.

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Introduction: Pro-Productivity Policies for this Parliament

Bart van Ark, Stephen Millard, Adrian Pabst and Andy Westwood

There is a growing consensus among researchers and policymakers that improving the poor UK productivity performance at the aggregate, regional and sectoral levels requires sustained political leadership, significant public and business investment, as well as close policy coordination. Which pro-productivity policies should the Government adopt? How to join them up in the UK system of governance which, paradoxically, is both too centralised and too fragmented to shift the dial on low economic growth and flatlining productivity?

As the Government has set out its Comprehensive Spending Review and the White Paper on industrial strategy, and is soon to publish its New Towns strategy, the Productivity Commission hosted by the National Institute of Economic and Social Research (NIESR) together with The Productivity Institute's Productivity Policy Unit (PPU) have brought together leading academics, policy experts and practitioners to address these questions. Divided into seven themes, the 14 chapters in this volume cover the main areas of policy that are directly relevant to productivity – from fiscal frameworks and rewiring the central government machine via regional policy and skills to public-sector productivity, trade, FDI, planning, housing and transport.

Overhauling the Fiscal Framework

As it stands, the UK fiscal framework undermines joined-up productivity policies in two respects. First, by sticking to arbitrary targets, it effectively prevents government from raising net public investment, which as a share of GDP remains at only 2.7 per cent. That is lower than many other advanced economies and insufficient to plug the total UK capital gap of about £2 trillion compared to other countries. Well-tailored public investment

projects have direct positive effects, crowd in private investment and boost productivity across a range of important sectors, such as defence, energy, transport, health, education, and manufacturing. Government should replace the current rules with one rule specifying a path for government consumption and another mandating a minimum level of public investment of, say, 4-5 per cent of GDP.

Second, the fiscal framework hinders coordination between the central government and the devolved administrations on public investment and pro-productivity policies in areas such as skills, innovation and business support, which are of particular importance to a more ambitious industrial strategy with a place-based focus that benefits long-neglected UK regions. This requires a streamlining of funding arrangements for regional economic development, coupled with further devolution to city-regions in the devolved nations and improving their capacity to develop, coordinate and execute local and regional economic plans.

Rewiring the Central State and Devolving More Powers

The lack of coordination highlights one of the major obstacles to joined-up pro-productivity policies: the fragmentation of decision-making at the level of central, regional and local government. Instead of centralising power under the auspices of Treasury control, better UK economic policymaking needs a full – if incremental – system of devolution whereby devolved bodies have greater decision-making powers and financial autonomy, including the ability to raise tax. This should include enabling city-regions and Mayoral Combined Authorities to form integrated regional units to spur economic development and devolve responsibility for public service provision. The latter can be done with the use of flexible budgeting and integrated local models that align services like health, education and transport to improved responsiveness and collaboration.

If further decentralisation is vitally important to boost regional productivity, it is also the case that central government needs more focus. Fusing No 10 with the Cabinet Office to create a Prime Minister's Department taking overall charge of growth and pro-productivity policy would enable better prime ministerial

leadership. Another pro-productivity policy is to join up the growth and regional policy missions by embedding a transformative industrial policy across government with a focus on place-based public investment projects outside London and the South East.

Increased R&D investment has to be aligned with national industrial priorities, particularly in energy and defence, linked to the creation of regional institutions with an explicit mandate to develop private sector innovation capacity in lagging regions. Government should also give serious consideration to creating a statutory Growth and Productivity Commission (of which different versions exist in many countries) and a National Development Bank to appraise, allocate and assess the performance of public investment projects.

Skills, Trade & FDI, Transport and Housing Priorities

For all funding decisions in relation to skills, central government should prioritise missions, sectors and clusters in its industrial strategy, including the use of incentives and regulatory levers to boost provision in areas with skills shortages such as STEM and technical skills. A particular priority is to increase investment in higher level vocational and technical skills, via the Growth and Skills Levy. Skills England should ensure that people can retrain and move across qualification pathways by accrediting prior learning on other tracks, including through an expansion of the Lifelong Learning Entitlement.

On trade and FDI, central government and lower tiers need to ensure that inward investment is linked to local policy on skills, business support and supply chain development and align FDI attraction with innovation zones and devolved support for innovation. Priorities for trade policy include the development of firm capabilities and supply chain resilience through the creation of a national supply chain observatory and the expansion of digital export tools for SMEs to access global markets by scaling tailored export support and capacity-building through localised trade and innovation hubs. Government should consolidate the UK-EU trade reset, while diversifying global trade partnerships, especially with India, South Korea and countries in the Trans-Pacific.

Increased infrastructure investment is of vital importance to boost UK productivity performance. It is the task of government to ensure that the industrial strategy, devolution and the local growth agenda, as well as UK infrastructure and housing-provision strategies all dovetail, notably through a focus on improving the diffusion, dissemination and transmission linkages between London and the rest of the country and the role that infrastructure and housing play in these transmission mechanisms. Concrete proposals include more roads, especially motorways, between the Midlands and key ports such as Felixstowe, Southampton and Hull, as well as links between large cities, particularly trans-Pennine routes.

To maximise the agglomeration and productivity benefits of roads and rail, the UK Government should also (1) reduce road user costs by keeping electric vehicle costs low, (2) relocate rail subsidies towards lower fares in, and into, principal cities (reducing services at off peak times) and on lesser used routes, (3) create a tram network in Leeds and similar cities and, (4) allow far more housing, at high densities, in the main UK cities.

Boosting Public-Sector Productivity

To boost public-sector productivity, the Government should support the Office for National Statistics in continuing the Public Services Productivity Review to develop broader productivity metrics that reflect outcomes and public value. On this basis, there is an urgent need to invest in organisational and workforce capabilities through skills and leadership programmes by sector, such as the College of Policing, focusing on digital literacy, change management, and collaborative governance.

Linked to this is the case for establishing a dedicated innovation fund to support AI and digital experimentation in the public sector. This will necessitate replacing across-the-board budget cuts with targeted efficiency reviews and outcome-based funding models. Some practical suggestions are to require all senior public sector appointees to pass a digital transformation test, ban any new policy, law or regulation that is not digitally enabled, and enshrine in law a universal right to digital public services.

Three Policy Challenges

After the Comprehensive Spending Review there is now a clearer strategy on the part of the Government to boost productivity across the country, not just in London and the South East. Some of the investment decisions, notably in the areas of transport and energy, will reap benefits over five to ten years, whereas by frontloading spending on defence, skills and housing, the government hopes for some quick wins.

There are three key challenges:

- One is to devise well-tailored and well-targeted public investment projects to kickstart growth and unlock greater business investment while at the same time enabling people to live healthier lives and gain the skills needed for more productive jobs.
- Another challenge is to align policies regarding transport, housing, skills and digital budgets, so that they are synchronised rather than siloed. The task is to scale up and commit to a coherent pro-productivity strategy instead of churn and short-term, small-scale reforms.
- The third – and possibly most fundamental – challenge is to remove the obstacles that block pro-productivity policies, notably fragmented decision-making at the central, regional and local levels. Prime ministerial leadership, coupled with a single delivery unit on productivity, will be needed to turn announcements into action.

1. Reforming the UK Fiscal Framework and Boosting Public Investment

Stephen Millard

Policy Actions

1. Government to commit to only one fiscal event (i.e. the Budget) a year, starting in October 2025
2. Government to commit to delivering a 'State of the UK Economy' address to coincide with the Office for Budget Responsibility (OBR) 'non-budget' forecast, starting in April 2026
3. OBR to assess long-run fiscal sustainability in its Fiscal Risks and Sustainability Report. This needs to be emphasised as the OBR's main report with the Economic and Fiscal Outlooks de-emphasised, something that requires a public campaign by the OBR itself, supported by the media
4. The Government replaces the current fiscal rules with one rule specifying a path for government consumption and a second rule mandating a minimum level of public investment as a proportion of GDP. This could be announced in the October 2025 budget. There is a risk that such an announcement could lead to an adverse market response, something that would have to be carefully managed by the Government

Introduction

Since around 1980 public investment in the UK has been low relative to both the past and to other OECD countries.[1] Since 1987, the public investment to GDP ratio has averaged around 2.5 per cent (figure 1), compared with a UK average of around 4.5 per cent between 1949 and 1980 and an OECD average since 2000 of 3.7 per cent. Many authors have suggested that the lack of public investment in the UK is, at least, partly responsible for low UK productivity growth over this period.[2]

A likely contributor to the low public investment in the UK has been the fiscal rules. When governments have needed to rein in spending in order to hit a target for the budget deficit or government debt, they have found it easier to postpone or cut investment projects rather than to cut current spending. Voters are less likely to be upset by new motorway construction being put on hold than by cuts to spending on the NHS or schools. As a result, fiscal tightening has always resulted in falls in public investment.

Figure 1.1: Public investment to GDP ratio

Notes: Public investment defined as the sum of Central (RPYJ) and Local Government (RQAL) Gross Capital Formation and Central (RPYI) and Local Government (RQAK) Acquisitions less disposals of Valuables. GDP is seasonally adjusted and measured at current market prices (YBHA).
Source: ONS

In that light, this paper examines how to reform the UK fiscal framework in a way that would allow the Government to boost public investment, and so UK productivity. I first discuss the current fiscal framework in the UK and the problems associated with it. I then propose a new framework emphasising what the Government wishes to achieve from its fiscal policy, rather than the levels of deficits and debt, while still ensuring fiscal sustainability.

The Current Fiscal Framework

The current UK fiscal framework revolves around a set of 'fiscal rules' with the independent Office for Budget Responsibility (OBR) assessing the Government's compliance with these rules. The OBR was set up in 2010 and given four responsibilities:

- To produce forecasts for the economy and the public finances twice a year, which are published in its Economic and Fiscal Outlook
- To assess publicly the Government's performance against its fiscal rules
- To ensure that the Government's spending projections are realistic
- To assess long-run fiscal sustainability in a biennial report, which is published in the now annual Fiscal Risks and Sustainability Report

Importantly, the Government itself was responsible for setting the fiscal rules, which were initially that: the deficit to GDP ratio should be falling in every year over the 2010/11 to 2015/2016 period; that it should have fallen to half of its level in 2009/10 by 2013/14; and that the debt to GDP ratio should be falling in 2015/16. Since then, the rules have been changed eight times, reflecting how difficult the Government has found it to keep to the rules.[3] The current rules are:

- Public sector net financial liabilities (PSNFL) should be falling as a share of GDP by 2029–30
- Current budget should be in balance or surplus by fifth year of forecast period
- Spending on working-age benefits must not exceed a pre-defined limit

We can note that none of these rules mention public investment, though the rule based on the current budget means that increases in public investment do not require an automatic increase in taxes, since they do not worsen the current budget deficit. Indeed, the increase in public investment announced in the October 2024 Budget suggests that moving to a current budget rule was partly to enable this increase to happen.

But an increase in public investment will make it less likely that the PSNFL rule will be met since boosting public investment – e.g. on infrastructure – will add to government debt (and PSNFL) immediately but will not lead to higher GDP for a number of years. Even though the OBR now includes the positive effects of public investment on GDP in its projections, it is still the case that the current PSNFL rule acts to disincentivise any investment project taking longer than five years to generate higher GDP.[4]

Towards a New Fiscal Framework

Having discussed the problems associated with the current UK fiscal framework, I next put forward a new fiscal framework, which seeks to deal with these problems while allowing the Government to boost public investment. The main elements of this framework are an emphasis on what the Government wishes to achieve from its fiscal policy, a single fiscal event each year to a fixed timetable, independent oversight of potential risks to long-run fiscal sustainability, and a 'guardrail' to ensure that fiscal sustainability remains on track.

The Budget and the 'State of the Economy'

Chancellor Rachel Reeves had indicated in her October 2024 Budget that, from that point onwards, there would be one budget each year in the Autumn. There would also be a Spring Statement accompanying the OBR's forecast. That is, the OBR would continue to produce two forecasts each year, but only one of them would be accompanied by a 'fiscal event'.

Unfortunately, the March 2025 Spring Statement demonstrated that if the OBR's forecast implied the fiscal rules were not being met, the Chancellor would announce tax and/or spending changes within the Spring Statement. Effectively, this meant that there continues to be at least two fiscal events a year.

To my mind, that was a mistake. I would like to see the Chancellor commit to one fiscal event – a Budget – each year on a fixed timetable, e.g. the final Wednesday in October each year. This would provide the financial markets and the general public with increased certainty around when any major fiscal announcements would take place. Further to this, it is important in a democratic society that elected officials are the first to hear tax and spending decisions so that they can be properly debated. In other words, the process of 'flying kites' by leaking potential policy announcements to the press to gauge public reaction ahead of putting them in front of parliament needs to stop. Accountability must always be towards the public through their democratically elected representatives.

Given the OBR is tasked with making two forecasts a year, the Chancellor could use the 'non Budget' forecast to provide an annual 'State of the UK Economy' address.[5] This would be backed up by a substantive analytical report produced by the Civil Service, but with the backing of independent learned bodies such as the Royal Economic Society, the British Academy and the Royal Statistical Society.

The report would cover the macro economy and developments at the regional and household levels, and would rely on themed requests for relevant contributions. The OBR could then examine progress against stated government objectives as well as against some notion of progress or social welfare. Where possible, examination of relevant policies would also be drawn out. The report would be presented to the Treasury Select Committee to ensure it received appropriate scrutiny.

This report would shift the emphasis away from the fiscal rules and towards what the Government wishes to achieve from its fiscal policy. At a macroeconomic level the main goals of government are achieving high growth, low inflation and low unemployment. Boosting public investment is important as well-targeted public investment should lead to higher growth and lower unemployment.

The State of the Economy report would concentrate on what the Government was doing to achieve its macroeconomic goals and, as such, would help provide it with the opportunity to put forward the arguments for boosting public investment. In turn, this should lead to the increase in public investment the economy needs just now.

The Budget Constraint

Like everyone else, the Government faces a budget constraint: public debt cannot be allowed to expand without limit as there will come a point at which no-one will lend to the Government. So, public investment cannot expand without limit. Within the framework I propose, the OBR would be tasked with assessing the long-run sustainability of the public finances. Indeed, the Budget Responsibility and National Audit Act (HMG, 2011) makes this role the overarching duty of the OBR. The Act gave the OBR complete discretion in how it does this. So, in the rest of this sub-section, I discuss how I think about long-run fiscal sustainability and what that means the OBR could do in practice.

The sustainability of the public finances is dependent on the relationship between the steady-state real interest rate (equal to the steady-state nominal interest rate less the steady-state rate of inflation) and the steady-state growth rate of GDP. If the real rate of interest is greater than the GDP growth rate then the Government needs to run primary surpluses if public-sector debt is not going to explode.

We should note that the primary surplus includes spending on, and income from, public investment. Thus, it is not clear from this analysis why the Government would want to target the current budget balance – which does not include capital expenditures (such as infrastructure projects) and capital revenues (such as proceeds from asset sales) – as opposed to the overall budget balance.

The analysis above points at a way for the OBR to assess the long-run sustainability of public finances. Given the current debt to GDP ratio, and assumptions about the steady-state real rate of interest and growth rate of GDP, the OBR could calculate the primary surplus that the Government should be running.

A more detailed approach might be to forecast Government spending, tax revenue and debt out for five years, say, fix the debt to GDP ratio at its level at the end of that period and interest rates and GDP growth at their assumed steady-state rates, and then calculate the primary surplus that the Government will need to be running from that point onwards. Either way, the OBR will want to consider different scenarios based around different assumptions about the paths of the real interest rate and the GDP growth rate.

The OBR can then publish its findings in its Financial Risks and Sustainability Report, as it does currently. The difference between the current framework and my proposal is that the emphasis would now be placed on this document, rather than on the Economic and Fiscal Outlook as currently. This would become the OBR's way of fulfilling its mandate to assess long-run fiscal sustainability, would act as the constraint for politicians, and would form a guide for the bond markets.

Where does Public Investment Fit?

So far, the analysis does not point to a distinction between public consumption and public investment. So, the incentive to cut back on public investment when the Government needs to reduce its deficit remains. But the analysis has not taken account of the 'public return' from public investment: that is, the externality generated by public investment that leads to higher GDP. These externalities are crucial to the argument for increasing public investment. Indeed, OBR research has estimated the dynamic effects of an increase in public investment on long-run GDP based on previous empirical work estimating the size of these externalities.[6]

In terms of the fiscal framework, I would argue that, as the OBR considers different scenarios based around different assumptions about the paths of the real interest rate and the GDP growth rate, it should also consider the implications for the ratio of public investment to GDP based on different assumptions around the size of the externalities generated by public investment. As part of the Fiscal Risks and Sustainability Report, it could present this analysis and enable the Government to make a call as to whether the public capital stock was too low, or too high, relative to where it needs to be. The Government could then propose and follow a rule for a minimum level of public investment as a percentage of GDP over its term of office to get the public capital stock in the right place. On the (reasonable) assumption that public capital and public investment are currently too low, this should help boost public investment.

Guardrails

So far, my proposed framework has allowed the Government to concentrate on achieving its macroeconomic goals while leaving the OBR to comment independently on long-run fiscal sustainability. It also allows the OBR to specify a path for primary surpluses and

for public investment, which would enable the Government to move the public finances towards the steady-state position. But, so far, there are no rules governing how the Government achieves these paths, nor how it should respond to positive or negative economic shocks. To that end, I propose adding the 'guardrail' of an expenditure rule to the framework.

Given the OBR's proposed path for the primary budget surplus, we could imagine the Government committing to this path at the beginning of its term in office. The problem with following a path for the primary surplus is that it will depend on the state of the economy. In a boom, tax revenue will be higher than normal. This means that to achieve a given target for the primary surplus, government spending will also need to be higher than normal, exacerbating the boom. Similarly, in a recession, achieving a given target for the primary surplus will require cutting back on government spending, worsening the recession. Thus, achieving a primary surplus target requires pro-cyclical fiscal policy, which is not desirable.

Instead, at the beginning of its time in office, the Government could commit itself to a path for government consumption spending that, based on the OBR's medium-run economic forecast, would lead to the desired path for primary surpluses. If the economy were then hit by a negative shock, tax revenue would fall but government spending, importantly including spending on public investment, would hold up. The Government would increase borrowing to inject money into the economy at a time when it was needed. Similarly, if the economy was then hit by a positive demand shock, tax revenue would rise but government spending would not rise with it. This would act to push down on demand at a time when this was the right policy to pursue.

The path for government consumption expenditure to which the Government committed would act as a guardrail to ensure that fiscal sustainability does not go way off track. At the same time, the Government would commit to the path for public investment laid out by the OBR, which would act as a guardrail to ensure that public investment received the boost it needed rather than being cut to allow for additional government consumption or to make way for existing government consumption that would otherwise need to be cut.

Conclusion

In this paper I have discussed why the current UK fiscal framework might result in low public investment and proposed a new framework that addresses these problems. The main elements of this framework are an emphasis on what the Government wishes to achieve from its fiscal policy, a single fiscal event each year to a fixed timetable, independent oversight of long-run fiscal sustainability by the OBR, and a government consumption 'guardrail' to ensure that fiscal sustainability remains on track.

Most importantly, the framework provides a guardrail to ensure that public investment receives the boost it needs if we are to address the poor UK productivity performance.

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2 See, eg, Chadha, J S (2023), 'The missing link: Modelling potential output at the Office for Budget Responsibility', National Institute Economic Review, Vol. 263, pages 1–5; Carreras, O, Liadze, I, Kirby, S and Piggott, R (2016), 'Quantifying Fiscal Multipliers', National Institute of Economic and Social Research Discussion Paper No. 469; and Pain, N, Rusticelli, E, Salins, V and Turner, D (2018), 'A model-based analysis of the effect of increased public investment', National Institute Economic Review, Vol. 244, pages R15-R20.

3 Hourston, P, Pope, O and Sangha, S (2024), 'Fiscal rules in the UK since 1997', Institute for Government, available at https://www.instituteforgovernment.org.uk/explainer/fiscal-rules-history.

4 Ghaw, R, Obeng-Osei, R, Suresh, N and Wickstead, T (2024), 'Public investment and potential output', Office for Budget Responsibility Discussion Paper No. 5, suggests that, once the government starts spending money on an investment project, it can take 10 years or more for all of the effect to come through.

5 This proposal has previously been put forward by Chadha, J S, Küçük, H and Pabst, A (2021), 'Designing a new fiscal framework: Understanding and confronting uncertainty', National Institute of Economic and Social Research Occasional Paper LXI.

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2. Reforming the UK Fiscal Framework and Boosting Public Investment – a Perspective from Scotland

Anton Muscatelli and Graeme Roy

Policy Actions

1. The UK and devolved governments should work in closer partnership to better coordinate public investment and productivity (skills, innovation, business support) policies. This is particularly important for the industrial strategy and securing the economic benefits from the energy transition
2. The funding landscape for regional economic development should be streamlined and provide greater certainty for city regions
3. As English city region devolution proceeds and increases in scope, Scotland's cities should be given the advantage of the suite of policy levers in innovation, skills and business support being made available to other parts of the UK. Devolution of economic policy should not stop at Holyrood
4. Regional Economic Development Partnerships in Scotland are limited compared to the best in class in England (e.g. Manchester). They need to improve their capacity to develop, coordinate and execute regional economic plans, bringing together key stakeholders, including local research-intensive universities
5. For Scotland to maximize the benefits of the industrial strategy, it needs greater co-operation between its major city regions in areas such as biomedicine, quantum technology and semiconductors, and digital technology/deep tech

Introduction

The Productivity Institute (TPI) has identified[1] three key challenges underlying the UK's persistent productivity underperformance: chronic underinvestment; inadequate diffusion of productivity-enhancing practices between firms and places; and institutional fragmentation and lack of joined up policies.

In response, the UK Government reformed its fiscal rules in November 2024 to address weak public investment and adopted measures to seek to 'crowd in' private investment. The Industrial Strategy is aimed broadly at addressing the second challenge, particularly in key sectors and technologies. Under the third heading identified by TPI, various measures are being taken, including promises to bolster devolved government in England and seeking to better coordinate innovation, skills and business support with regional economic policies.

This paper argues that there is a risk that these developments will miss the opportunity to involve the devolved administrations in Scotland, Wales and Northern Ireland. This would be unfortunate, particularly given the scope for city regions in the devolved nations to contribute to shared economic goals across the UK.

The failure so far to fully embrace the devolved nations in UK debates over regional economic development reflects, in part, a nervousness to interfere (or be seen to interfere) with devolution. The devolution settlement in Scotland and Wales is now 25 years old. Since then, it has evolved to rest on an implicit design principle that often seeks to neatly categorise policies into devolved competencies (such as health and education), and reserved competencies (such as defence or many areas of taxation and social security).

But this approach – which has in the past been referred to as 'devolve and forget' – fails to recognise that in many areas of policymaking, including those related to the economy, there are shared competencies as well as areas where coordination between UK, Scottish and local policy is needed to secure the best outcomes. This is particularly true regarding the industrial strategy, research and innovation policy, or aligning investments in net zero, which by their nature gain from being well co-ordinated across the UK's nations and regions. Existing intergovernmental frameworks are not effective at identifying shared policy priorities, co-determining policy solutions, or simply in coordinating effective responses.

Furthermore, in Scotland economic devolution to city regions is limited (and has become increasingly so over the last 25 years). Economic development and investment agencies have retained a largely 'Scotland-wide' perspective. City Deals have provided benefits, but the landscape has become cluttered with a plethora of new funding initiatives from Investment Zones to Innovation Accelerators and there remains uncertainty about what comes next, with many of the City Deals now a decade old. With TPI highlighting that the growth of second-tier cities will be fundamental to addressing the UK's overall productivity challenge, the economic development of all UK cities – including large Scottish cities such as Glasgow – need to be considered based upon economic merit and not be constrained by broader policy or constitutional frameworks.

All this raises the issue of how a 'growth mission' can be co-ordinated across the UK with a fiscal environment that is under pressure.

The Current Situation in Scotland

Starting with the UK fiscal framework, the recent reforms announced in November's Budget increased the headroom for public investment.[2] The move to a Public Sector Net Financial Liabilities (PSNFL) measure of debt for the UK Government's fiscal target created more headroom to borrow for public investment.

Under the Scottish fiscal framework,[3] the key source of funding for capital investment remains a block grant from the UK Government. This block grant is determined by the Barnett Formula which allocates a population share to the Scottish Budget of equivalent spending in Whitehall departments where spending has been devolved to Scotland. The aforementioned revised fiscal framework for the UK helped therefore to support a significant increase in capital spending for the Scottish Government in the near term beyond what had been planned. However, such spending is projected to fall back in real terms toward the end of the Spending Review, such that by 2029-30 capital spending in real terms will only be around 6 per cent above the level in 2024-25.[4]

Crucially, the reforms to the UK fiscal framework only impacted upon the Scottish Government's funding for investment through the Barnett Formula. It did not extend the Scottish Government's ability to borrow, whilst the new Financial Transaction Control Framework does not apply to devolved governments. The Scottish Government can borrow up to £450 million per year, and £3 billion cumulatively for capital spending, in 2023-24 prices. Hence the 2025-26 Scottish Budget limits are calculated as £471.7 million and £3.14 billion. To put this in context £471.7 million is approximately 0.2% of Scottish GDP. Faced with growing pressures in its infrastructure investment portfolio – including in healthcare and the energy transition – the total spending power at the Scottish Government's disposal to invest in economic development purposes will remain constrained.[5]

Of course, what matters too for successful economic outcomes is not just capital investment but support for resource spending in education, skills, business support and innovation. Here again, whilst the new UK fiscal framework provided an immediate uplift in resource spending through the Barnett Formula, the benefits over time are limited. Firstly, projections for growth in spending after 2026 are just over 1 per cent in real terms per annum. In addition, the Scottish Government's decision to prioritise spending on its newly devolved social security payments is taking up a larger share of resource budgets. Added to this, pressure on public sector pay (which makes up around half of the Scottish Government's resource budget) and commitments to NHS investment, means that other budgets – including those linked to economic development – are being squeezed.

This follows a trend. Since 2010, and the start of the fiscal consolidation/austerity agenda, budgets for economic development have been under considerable pressure in Scotland. Limited real terms increases in aggregate budgets, coupled with growing pressures in areas such as health, have led to a deprioritisation of economic development, relative to other areas of spending.

Recurrent spending has been squeezed over time: for instance, the discretionary funding for Scotland's enterprise agencies has fallen in real terms over the last decade[6] with even deeper cuts in local authority economic development departments. Similarly, in areas of spending such as higher education, in respect of research and innovation, the amount of spending by Scottish Government has

not kept up with inflation. For instance, the Research Excellence Grant to Scottish universities (the equivalent of QR Funding in England) has fallen[7] in real terms by 20.1 per cent between 2014-15 and 2024-25 using a GDP deflator and by 29.3 per cent using RPIx. The University Innovation Fund (UIF) also fell in real terms, although less sharply.[8]

Policy Coordination Challenges

This raises the first issue of co-ordination between different tiers of government. If the current Spending Review results in major UK-wide investments in key infrastructure or R&D linked to the industrial strategy and the missions aimed at enhancing UK productivity, how will this be delivered in the devolved nations? Could the current fiscal position for the Scottish Government limit, both in scale and timing, the ability of Scotland and its city regions to participate in future major UK-wide investment? Might Scottish cities be able to 'bid' for UK-wide funds?

Much will depend on whether the announced investments in England increase devolved resources, through the Barnett block grant. But even if they do increase the Scottish Government's capacity to invest, there is a co-ordination argument for this investment to be planned jointly. Moreover, if some of the investment is directed at priorities in the UK industrial strategy, in areas of innovation infrastructure in key sectors and technologies, would there be scope and merit for the UK Government to increase some of these key public investments outside the normal borrowing limits? Or could there be pragmatic efforts to support joint funding for such projects? This would help Scotland's second-tier city regions keep pace with English second-tier cities.

The question is of course whether this is in the spirit of Scotland's devolution settlement. The argument in favour is that these interventions have already happened over time, delivered and overseen by individual UK Government departments in partnership/consultation with Scottish Government. Initiatives such as the first wave of City Deals are such an initiative, and there are many more. But one could also consider whether there might be new ways to stimulate co-operation and co-ordination across the UK.

For instance, let us imagine that the UK Government decides that to deliver the industrial strategy there need to be significant

innovation infrastructure investments across the UK's second-tier cities. These might be in AI, quantum or semiconductor technologies, or life sciences and biomedicine. These might take the form of city innovation growth deals. Rather than simply making these investments separately in the English regions and leaving the devolved nations to set their own priorities, it is more sensible to co-ordinate these investments across the UK to ensure complementarity.

To avoid over-riding devolution, one could set up governance arrangements for these new innovation/city deals to co-determine priorities and require the UK and Scottish/Welsh/Northern Ireland governments to design shared gateways for the implementation of the deals in the devolved nations. Similar arrangements could be made too for areas of industrial and economic policy linked to net zero where allocations of investment, based upon per capita shares and at fixed points in time, are unlikely to always be appropriate for the investment profile of the key green opportunities in devolved nations.

Creating the scope for embracing the overlapping competencies would adapt devolution to the needs of a 21st century economy, where UK-wide competitive advantage considerations matter. Arguably, the recent global trade tensions triggered by the tariff policies of the US administration will require the UK Government to think across all its industrial and economic assets throughout the nations and regions of the UK. There are clear benefits too for the devolved nations – and their second-tier cities – to take advantage of UK-wide assets and programmes to further boost their own economic development ambitions.

A second important area of co-ordination that needs to be addressed is within Scotland. The Scottish 'city regions' are loose coalitions of local authorities with limited powers. They have largely developed their limited policy capacity in response to the delivery of interventions by UK Government through individual departments, or by collaborative UK-Scottish Government interventions such as City and/or Growth Deals, Investment Zones, Shared Prosperity Funding and Innovation Accelerators, rather than according to their own local priorities.

The chart (see figure 2.1)[9] illustrates how an innovation district within the City of Glasgow, co-ordinated by the University of Glasgow in the Glasgow Riverside Innovation District (GRID)[10] has

delivered these various UK Government interventions (co-funded with Scottish Government or funded solely by the UK Government and delivered by individual Whitehall departments). In essence, major universities like Glasgow have acted as anchor institutions in second-tier city regions like Glasgow, Manchester, Liverpool and the West Midlands and are at the heart of how regional economic development policies should be delivered.

Figure 2.1: Direct UK Government Interventions in Partnership with Scottish City Regions – the example of Glasgow

This raises a third area of potential co-ordination, which arises from the limited co-ordination of regional economic development capacity at city region level. Arguably in some city regions in England there has been more opportunity for institutions (Higher Education, Further Education, local government, regional economic development and business) to come together to act in a co-ordinated manner, led by the Combined Authority.

In Scottish city regions like Glasgow and Edinburgh there is no entity which co-ordinates such action where the political leadership brings together all these stakeholders around a single table. Ad hoc working groups and committees have been formed to develop plans for city deals and innovation accelerators. Arguably more joint action as happens in some of the English Combined Authorities would improve regional economic development in Scotland as well. Note that we are not arguing that this absolutely requires a 'hard' reorganization of local authorities in Scotland. This

would not be achievable in a useful time horizon to implement the outcomes of the industrial strategy and the UK Government's missions. But a 'soft' reorganisation by bringing stakeholders and leadership together to advise city region cabinets and Regional Economic Development Partnerships, whilst giving confidence to both the UK and Scottish governments that powers could be effectively discharged, could work better.

As a by-product of this better 'soft' co-ordination at city region level one would also allow second-tier city regions in Scotland which link naturally, such as Glasgow, Edinburgh, Tayside and Aberdeen, to work closer together. This is crucial in key technology sectors: for instance, linking the biomedical strengths in Glasgow, Edinburgh and Tayside; linking the strengths in semiconductors and quantum technology across the central belt; or linking the energy strengths in Aberdeen with those in Edinburgh and Glasgow (and indeed other cities in the UK).

A fourth, and related, key issue is where the capacity lies to develop regional economic development policy. Historically, much of this took place within the Scottish regional development agencies and its successor NDPBs (Non-Departmental Public Bodies) – Scottish Enterprise, Highlands and Islands Enterprise, and South of Scotland Enterprise – although the autonomy of these institutions has declined. Furthermore, in recent times, the landscape has become increasingly complex. There has been a growth in the number of strategies, working groups, action plans and advisory bodies.

This is despite much of the underlying substance of economic development remaining the same.[11] The Scottish Government has taken efforts to 'de-clutter' the landscape, but it remains fragmented at a regional and city-region level. Cuts to local authority funding have led to a significant fall in institutional capability to support effective policymaking at the regional and city region levels. At the same time, much of the activity that does take place is 'top down', with local and regional policymakers responding to the latest UK or Scottish initiative rather than having the scope to develop their own solutions on what is the right approach for an economic region.

Continued efforts to declutter the landscape are needed. Learning from the experience of 'trailblazer' deals in England, where funding is more flexible allowing city regions to work collaboratively with national government, would also better empower regional policymakers.[12]

Conclusion

Various strands of pro-productivity policies, including the UK's industrial strategy and connected investment in research and innovation, require greater co-ordination between the UK and the devolved nations. As the UK pushes forward with greater devolution in England, this will exacerbate existing co-ordination challenges in delivering effective regional economic development across the UK.

As a result, devolution needs to adapt to involve more effective co-ordination in economic development policymaking. At the same time, Scottish city regions need to be given more tools and autonomy – often available to their peer cities elsewhere in the UK – to ensure growth opportunities are not missed. This will not be easy and significant capacity building, including greater intelligence, will be needed.

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3. Rewiring the UK Central Government Machine: How to Embed Pro-Productivity Policies Through Disciplined Pluralism

Patrick Diamond

Policy Actions

1. Codified autonomy for arms-length public bodies and regulators so they are able to pursue long-term growth agendas, innovate and take risks without constant interference from the centre
2. A statutory Growth and Productivity Commission (GPC) creating strategic capacity at the heart of government to drive pro-productivity measures
3. Making civil servants personally accountable to Parliament for delivery of major infrastructure projects
4. Devolving responsibility for public services to sub-regional combined authorities
5. Enabling combined authorities to form integrated regional units to spur economic development and decentralisation

Introduction

Entrenching any consistent strategy to advance pro-productivity policies remains notoriously difficult in the UK context. In central government, silos, policy churn and short-termism are endemic. The machinery of government comprising departments, the civil service and arms-length bodies is perceived as dysfunctional.[1] The belief that 'nothing works' is widely shared by practitioners and commentators alike.[2]

In considering prospects for reform, this paper begins by examining how the UK machinery of government is structured and the context of the current policy environment. It considers criticisms of UK governance, and whether the Starmer Government's focus on 'missions' will remedy those shortcomings. The concluding section turns to recommendations for reform to embed pro-productivity policies during this Parliament.

The UK's Machinery of Government

The contemporary machinery of government reflects efforts by previous administrations to expand the role of the state to enhance the productive capacity and growth potential of the UK economy. The mid-19th century Northcote-Trevelyan reforms created a professional system of public administration to strengthen the state's administrative capability. The Haldane Convention, elaborated in the aftermath of the First World War, emphasised the partnership between civil servants and ministers operating within a government comprised of functional departments. Meanwhile, the Plowden report (1961) strengthened the powers of the Treasury to control public expenditure. The Fulton Committee (1966-68) determined how the civil service should be reformed to drive economic modernisation.

The Next Steps reforms initiated in the late 1980s are a more recent plank and created arms-length public bodies responsible for service delivery and operational management (more than three quarters of the civil service were subsequently employed in agencies). Next Steps reflected the complexity of modern government, while successive administrations retained the 'quango' model, although there have been frequent reorganisations.

Finally, public management reforms after 1979 led to alterations in the institutions and culture of government. Notably the focus on the 'citizen-consumer'; the emphasis on targets and performance measurement; the privatisation of assets and industries, including core government services; the growth of outsourcing and contracting-out to non-state providers; and the reduction of civil service numbers from 750,000 in 1979 to 400,000 by the late 2010s.

This model of government reflected the consensus of the last 30 years, a growth regime focused on supply-side liberalisation and exposure to globalisation. The approach was accompanied by efforts to curtail trade union power and deregulate key sectors of the economy, while promoting the growth of financial services.[3] The emphasis shifted from macroeconomic demand management to supply-side reform.

Give the scope and scale of the changes, it might be anticipated that UK government was well positioned to enact pro-productivity measures. Yet there is deep dissatisfaction with the performance of the British state. Some issues are longstanding, having bedevilled UK government since the end of the Second World War:

- Dysfunctional local/centre relationships reinforced by the culture of centralisation. The role of local governments has been emasculated since the early 1970s
- Accountability arrangements in Whitehall that lead to excessive micro-management yet fail to prevent numerous failures and fiascos
- Departments prone to operate in silos leading to turf wars rather than inter-departmental co-ordination
- The growing power and 'activism' of ministers encouraging short-term politicisation of policymaking
- For decades, concerns about the dominance of the Treasury

Other failings arise from post-1979 reforms:

- The 'hollowing-out' of the public sector as a result of outsourcing and contracting out. The National Audit Office (NAO) estimates that half the £187 billion that the UK Government spends on goods and services each year goes to private contractors
- The struggle to deliver major projects, especially infrastructure, as documented in various reports by the National Audit Office (NAO)
- Since 2010, fiscal austerity has cast a long shadow, storing up major problems in weakening public sector infrastructure. Local government budgets, for example, declined by 40% in real terms
- The 'hyper-active' nature of management reform leading to extraordinary churn in institutions. In economic governance, Regional Development Agencies (RDAs) were replaced by Local Enterprise Partnerships (LEPs), supplanted by investment zones and combined authorities
- The separation of policy and delivery. In many sectors, the delivery landscape is more fragmented and difficult to steer
- A deterioration in the relationship between ministers and civil servants undermining 'free and frank exchange' over policy
- Recurrent problems concerning the use of evidence and policy evaluation. Ministers are invariably reluctant to put empirical evidence before political judgements
- Finally, the slow pace of leveraging improvements by applying ICT and Artificial Intelligence (AI)

The Starmer Government has been in power for just over a year, yet Ministers are already frustrated with the civil service. The Cabinet Office ministers, Pat McFadden, unveiled plans to remove under-performing officials, while the Prime Minister believes the British state is 'flabby', slow-moving and ineffectual. He wants to cut back quangos (notably scrapping NHS England), ensuring ministers, not regulators, make decisions. The narrative of failures and blunders is invariably overdone, while it is important to remember that the UK has achieved notable public policy successes in recent decades. Yet there is little question reforms are needed to forge a more effective state.

Mission-Driven Government?

A widely canvassed solution to entrenching pro-productivity policies is to make the system of governance 'mission-driven'. Mission-based government is 'a whole new way of governing' addressing 'long-term, complex problems' that rests on four principles:

- Bringing a strategic perspective to policy development. Missions focus on long-term goals and outcomes, instead of short-term targets or milestones
- Breaking down silos across the public sector. Services and agencies work together on missions, ensuring issues do not slip between the institutional cracks
- Giving professionals working at the front line greater agency. Fewer rules and edicts ensure staff respond to pressing challenges, adapting organisations accordingly
- Incorporating ideas and insights outside the civil service, challenging the traditional monopoly over policy implementation

Yet the 'missions approach' is unlikely to resolve longstanding difficulties that characterise the central state. Mission-driven governance originates in literature on technological innovation which is not easily applicable to problems of governance.[4] The last 15 years has witnessed a cull of strategic capability. Operational management and cost-cutting have been prized over long-term strategy. Meanwhile, the Starmer administration avoided the fundamental question of the constitutional relationship between ministers and civil servants, as successive governments have done since the 1960s.

Themes for Reform

If missions alone do not provide a solution, where should pro-productivity governance reform in the British state focus? There has been much debate about improving central government highlighting the following areas:

Beefing up the capacity of the centre to shape and direct strategy

There is a view that a strong Number Ten should have capacity to impose pro-productivity strategy, overriding departmental resistance. The oddity of the British system is that the centre of government is remarkably under-powered, focused on short-term media management rather than addressing long-term challenges. The Cabinet Office has had various units and secretariats over the last 50 years, but no settled structure, while 10 Downing Street is reconfigured every time the prime minister changes. The centre is increasingly 'hollowed-out'. A radical option is to create a Prime Minister's Department, mirroring the resources available to the Chancellor of Germany or the Prime Minister of Australia.

Redefining the role of the Treasury in driving growth and productivity:

The Treasury is seen as excessively powerful. Criticisms of the Treasury include the belief that the Treasury reinforces short-termism through the cycle of budgets and fiscal statements that encourage departmental 'initiativitis'; enforcing over-centralisation where relatively inexperienced officials have too much control over spending and policy; an obsession with budgetary control that gives primacy to spending cuts over tax rises; and the Treasury's Green Book methodology for appraising investment that weakens the position of low growth regions.[5] Wilkes and Westlake aver that the Treasury's budgetary responsibilities should be transferred to a Prime Minister's Department, while growth strategy sits within an enhanced Department for Industry. Nonetheless, the dilemma is that breaking up the Treasury is highly disruptive. It may be preferable to accept the Treasury's dominance, but embed growth and industrial strategy firmly within the Treasury's remit.

Reforming the civil service and building departmental capabilities

There are unresolved questions about what politicians want from civil servants. For example, to what extent should officials be 'generalists' or 'specialists' (a pertinent issue in productivity policy given the need for sectoral expertise). The Coalition Government published a bold civil service reform plan in 2012 that challenged the monopoly of the civil service in policymaking, advocating greater outsourcing of the policy development function. Since then, reform efforts have largely stalled.

Incentivising departments to join-up and encourage improved co-ordination of policy

As the Institute for Government (IfG) remarks, "co-ordination of cross-government policy initiatives is often ineffective, and ministers and officials work in departmental silos".[6] Research demonstrates an absence of co-ordination in economic policy due to poorly developed departmental networks, despite the importance of 'whole of government' strategies.[7] No government has resolved the question of how to achieve joint working with the optimal blend of incentives, including shared budgets. More far-reaching models include dismantling the structure of departments and creating 'super-ministries' responsible for overseeing strategic policies, notably driving economic growth.

Bringing Institutions Back In: Towards 'Disciplined Pluralism'

Reforms that make the Whitehall 'model' work better can play a role in strengthening governance capacity. Yet the UK is among the most centralised of the advanced industrial economies. Changes are needed beyond the centre that build effective institutions to embed pro-productivity policies.

Institutions are required because there are distinctive tasks – delivering adult skills, providing welfare services, funding research and innovation – that entail a unique ethos and set of capabilities that generic bureaucracy does not provide.[8] Keynes was right to argue that in a market economy institutions play a vital role, acting as a buffer between the inertia of the state and the uncertainty of the private sector.[9] Acemoglu and Robinson find that differences in prosperity across nations are explained by variance in the quality of institutions.[10] Similarly, Hall observes that countries are shaped by 'growth regimes', a combination of institutions and technologies that generate productivity gains, shaping the behaviour of firms and workers.[11]

The role of institutions in stimulating improvements in productivity is pivotal and the UK has struggled to establish effective institutions in the realm of political economy. The 20th century experience of running nationalised industries proved unsatisfactory, while efforts to establish a long-term industrial strategy similarly floundered. The

historical weakness of the UK economy and polity is the inability of institutions to forge long-term partnerships and trust, resulting in weaker collaboration.[12]

To address this, reforms are needed that are informed by the principle of 'disciplined pluralism' alongside devolution and decentralisation.[13] Pluralism as a commitment to diversity of institutions and interdependent actors with a public interest remit bolstered by autonomy from the centre. Disciplined in operating within an agreed cross-government strategy.

In terms of concrete steps during this Parliament, the Government should commit to:

Codified autonomy for arms-length public bodies and regulators, so they are able to pursue long-term growth agendas, innovate and take risks without constant interference from the centre

Ministers must hold public sector agencies accountable while avoiding micro-management. Nominally independent institutions such as universities are increasingly subject to central government intervention. Central control through prescriptive targets and Key Performance Indicators (KPIs) undermines the ecosystem that underpins productivity growth. Institutions need the freedom to initiate experiments and innovations that might fail. Other Northern European countries – notably the Netherlands and Germany – ensure that universities, research institutes, training providers and funding bodies have codified autonomy from central government, arrangements that the UK should replicate.[14]

A statutory Growth and Productivity Commission (GPC)

This idea was initially proposed by Anna Valero and Bart Van Ark with the aim of co-ordinating long-term pro-productivity policy across government to avoid endemic churn and instability.[15] The GPC would create strategic capacity at the heart of government to analyse and evaluate productivity-related measures, and provide independent advice to ministers on the most appropriate course of action. The body would report to Parliament rather than central government so as to remain insulated from short-term political pressures.

Making civil servants personally accountable to Parliament for delivery of major infrastructure projects

The UK is plagued by inadequate oversight of 'mega-projects' due to ambiguous accountability arrangements. A particular area of weakness is the management of capital projects and infrastructure. Examples include the cancellations of HS2, the third runway at Heathrow, as well as delays at Hinckley Point.[16] There has been much discussion of why infrastructure costs in the UK are so high, while Winch (in the reference above) has emphasised weaknesses in the capability of project owners in the public sector to oversee detailed costs and schedules. A senior 'Responsible Officer' should be accountable for overall delivery and cost management, while required to publish their advice to ministers in order to improve transparency.

Devolving responsibility for major public services to sub-regional combined authorities

Public services play a critical role in enhancing productive capacity and growth through provision of education, skills, welfare, health, policing and so on. Yet efforts to manage public services and improve productivity directly from the centre have been ineffectual, since ministers and civil servants usually lack frontline implementation expertise and tacit knowledge.

Departments rely on target-based accountability mechanisms centred on crude output measures which are invariably counter-productive. There is insufficient focus on prevention while public service organisations are unable to collaborate because geographical boundaries are not coterminous.

The default assumption should be that combined authorities will manage public services with single budgets devolved from Whitehall, pursuing new public governance-orientated reforms that discard traditional hierarchies, emphasising cross-sectoral collaboration, participation and a networked approach to service delivery in contrast to the emphasis in New Public Management on competition and private sector incentives.[17]

Enabling combined authorities to form integrated regional units to spur economic development and decentralisation

To maximise the impact of devolution, there should be strategic capacity at the regional level. Devolution at regional scale is essential, not only for economic growth and spatial development, but in tackling problems at the 'devolution periphery' in regions that lack governance capacity.[18]

The authors of a recent Productivity Institute report note: "...the absence of an effective intermediate policy-making layer between the national and local levels. Policies like spatial planning, housing and infrastructure investment typically require a strong policy presence at this level of governance. There is often a lack of knowledge and control to effectively implement such policies at the central level. Conversely, at the local level, managing both negative and positive externalities is challenging without coordination at a higher spatial level".[19]

Many English combined authorities may not be of sufficient scale to effectively discharge their policy responsibilities for spatial economic development. As such, it will be necessary to bring several combined authorities with elected mayors into single, regional units that organise and oversee public service delivery and growth plans. The devolved powers should be comparable to Wales, Northern Ireland and Scotland, including responsibility for health and social care, education, housing, planning and transport.[20] Officials in Whitehall should be relocated from departments to devolved regions, enhancing capacity for place-based governance across England.

Conclusion

Disciplined pluralism encourages a culture of decentralised innovation and experimentation in UK governance. In advocating such reforms, it is important to acknowledge obstacles and constraints. The first is path dependency. Britain has a deep-rooted liberal economy that has eschewed government interventionism. Rebuilding state capacity in that context is not straightforward. The reform options available are inevitably shaped by past decisions.

Another issue is applying learning from elsewhere. For decades, Germany has been lauded by UK commentators for having government machinery that is more effective in building long-term partnerships, brokering corporatist bargains between labour and capital that allowed Germany's economy to remain (until relatively recently) among the most competitive in Europe. Yet as the Varieties of Capitalism literature reveals, the UK is a liberal market economy where the state's role was historically confined to enabling business competitiveness.

Rather than focusing on reforms to the central government 'machinery', the UK needs to undertake the wholesale reconstruction of state capacity. Not merely tinkering with the structures of Whitehall, but building the autonomous institutions necessary to embed pro-productivity measures and deliver a credible UK growth strategy.

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4. Dysfunctionality in UK Central Government: Understanding the Impact of Treasury Control

Diane Coyle, David Richards, Martin Smith, Samuel Warner

Policy Actions

1. A full – even if incremental – system of devolution where devolved bodies have much greater financial autonomy, including tax raising powers
2. An acceptance that power cannot continue to be centralised under the auspices of ministerial responsibility and Treasury control
3. Reform of internal Treasury processes, including the Green Book and spending control processes, to enable long-term investment and a mechanism for learning from previous outcomes to inform future policy development and implementation

Introduction

Since the 2008-09 financial crisis the UK has struggled to return to the consistent levels of productivity growth that sustained higher levels of public investment during the 2000s. This period of anaemic economic growth has been compounded by the uncertainty surrounding Brexit and, more recently, the COVID-19 pandemic. The most recent Conservative and Labour governments have emphasised unlocking economic growth as a key part of their strategy. Yet, achieving growth has proved increasingly illusive. GDP growth rates averaged 2 per cent (2010-16), falling to 1.5 per cent (2016-20). Current growth projections flatlining at 0.2-1 per cent,[1] also place pressure on the public purse.

The explanation for the poor UK performance has been primarily focused on economic factors.[2] Our argument is that to properly understand the UK's economic malaise requires a wider aperture which accounts for UK governance arrangements and how they limit economic capacity and performance. This paper draws together our research[3] which frames the UK productivity challenge as a paradox involving a highly centralised state that lacks capacity for strategic economic policymaking and is limited by the dominant role of the Treasury, short-termism, segmentation and adversarial politics.[4] The result is a repeated failure to learn from the past,[5] and while many of the issues are systemic and longstanding, the state's failure to invest has imposed a high cost in the post-2008 context in terms of poor productivity and growth performance.

The UK Governance Paradox: Centralisation and Fragmentation

Reform to the UK system of governance over recent decades has culminated in a paradoxical combination of it being both highly centralised and deeply fragmented. The UK remains one of the most highly centralised systems of government in the world. The still dominant value system of the Westminster model, organised around the principle of parliamentary sovereignty, results in a power-hoarding model of government where both policy making and financial resources are concentrated in the executive.[6] This concentration of power is reinforced by the concept of ministerial accountability which holds ministers responsible for policy

decisions made within their remit, creating a highly centralised and risk averse approach to policy making.[7]

At the same time, 40 years of reform layered on top of an already complicated system of local delivery has led to a situation where decisions are made at the centre but delivered by a complex array of overlapping authorities and types of bodies.[8] The fact that the geographical jurisdictions of police, ambulance, health agencies, education authorities and trusts, transport bodies, and local government regularly do not align means any attempt to join up policy can result in having to build a plethora of relationships to deliver services.[9] Until the recent innovation of the combined authority and mayoral model in some areas, maintaining complex interagency relations has often depended on individual leadership and initiative rather than any institutionalised relationship. This means that crosscutting networks are frequently highly personalistic and prone to break down as personnel change (as they frequently do).[10]

English devolution has been an attempt to resolve both the problems of centralisation and local fragmentation. However, the process of devolution has also been ad hoc with each regional authority given different powers and financial resources. This is set to exacerbate the existing unevenness in governance capacity.[11] Each new region negotiates its responsibilities and powers on a case-by-case basis rather than there being a coherent legal/constitutional framework for English regional devolution. The new bodies remain highly dependent on central government for funding. Indeed, much discretionary funding is controlled by Whitehall departments on behalf of the Treasury and dependent on competitive bidding processes that result in inefficiencies and wasted resources, as different authorities maintain grant writing units for funding they may not receive.[12] Many of the new devolved bodies see their role as fostering local economic development and improving transport infrastructure, but in reality they have insufficient resources to make a real impact on local economic growth.

Despite moves towards devolution and fragmentation in policy delivery over recent decades, what is referred to as the 'British Political Tradition' continues to cast a powerful shaping effect over the nature of UK governance and, in turn, how political power functions.[13] The governing class – ministers and civil servants – absorbs this tradition, reflected in a governing statecraft

predicated on preserving central power and resources and the belief that a strong central state is fundamental for effective governance.[14] It emphasises that Britain's institutional framework continues to incentivise the asymmetrical concentration of power and therefore does not comfortably accommodate decentralised or devolved governance arrangements.[15] Consequently, there has been no meaningful fiscal devolution in the UK and the Treasury continues to be a dominating and at times distorting factor in UK governance.[16]

The Dominance of the Treasury

The high concentration of power within the Westminster/Whitehall nexus is reflected in the dominance of the Treasury.[17] Whilst the Treasury acts as both an economic ministry and a finance ministry, its responsibility for macroeconomic policy remains secondary to its prioritisation of public expenditure control. This tension is currently playing out within the Starmer Labour Government, in which its strategic priority to grow the economy is being constrained by its commitment to limit borrowing in the name of competent management of the public finances.[18]

The Treasury draws its institutional authority from Gladstone's reforms in the 19th century.[19] Former Treasury Permanent Secretary, Lord Macpherson, argues: "To this day, Gladstone's influence still dominates the Treasury…at a time of austerity Gladstone…lives on".[20] The Treasury retains the reputation as the department that says 'no'. For Thain, it is "[a] far from benign, 'neutral' agent but rather is 'an institution with the most engrained 'departmental view' – guardian of the taxpayers' money, of Gladstonian fiscal rectitude and scepticism in all matters of other departments' policies and expenditure plans."[21] Consequently, the Treasury has a considerable impact on policy development, but much of this is a focus on the negative and cost control rather than a positive approach to the development of, for example, preventative public policy.[22] Its bias against long-term investment is well known.

Where the projected dynamic economic effects of future capital spend are not easily determined using Treasury cost-benefit appraisal methodologies, it is likely to object.[23] This contributes to an uneven economy and short-term mindset as long-term investment is often regarded as a second order priority to the

first order concern of managing the public finances over a five-year cycle. This tendency is exacerbated by the adversarial nature of UK politics. There are certainly shortcomings in political decision-making in addition, but these are facilitated (rather than mitigated) by these institutional tendencies. Similarly, a powerful Chancellor can steer the Treasury, but this augments concentration in the centre and in any case even the most forceful individual is constrained by the structural context of the Treasury's role within the traditional Whitehall/Westminster model.

Adversarial Politics and Hyperinnovation

The UK first-past-the-post electoral system underpins a majoritarian form of government and a limited notion of democracy where accountability is effectively applied post hoc by the electorate. The nature of the electoral system means that a relatively small number of voters are pivotal, and a change of government can occur with relatively small shifts in voting patterns. The 'winner takes all' system means that government has little incentive to build a wider consensus for policy. The consequence is frequent and rapid policy changes.

The adversarial nature of UK politics is not conducive to long-term strategic thinking. It reflects a political system unsuited to formulating coherent, joined-up and effective policy, referred to as "hyper-active-incrementalism".[24] Policy is increasingly irrational and prone to failure. Frenetic policy churn and poor institutional memory means that few lessons are learned from the past.[25] Bold transformative agendas are often stifled out by Treasury reticence and short-term exigencies. What emerges is an image of British policymaking as "muddling through" in the context of notable asymmetries in decision-making and resource allocation.[26]

Economic policy has consequently been characterised by ministerial hyperactivity, disjointed incrementalism and rapid changes in policy. In the area of regional policy – a policy of crucial importance in relation to growth – there has been continuous policy churn since the 1970s and the number of "spatial policy initiatives have increased exponentially."[27] Moreover, many of these policies are short-lived and are accompanied by rapid changes in the machinery of government and frequent increases and decreases in spending. In other words, there has never been a consistent, long-term, consensual and strategic approach to regional policy.[28]

These patterns of policy churn have hampered the effective formulation of economic policy. For several decades, the UK economy has encountered a series of fundamental challenges. Deindustrialisation followed by financialisaton has left the country regionally divided, with many areas outside of London and the South East struggling to recover lost productivity. A recent survey identified 15.7 per cent of employee jobs in the UK (4.5 million jobs) were paid below the real Living Wage,[29] whilst economic growth has become increasingly reliant on financial services based in London and the South East. Yet, successive governments and the institutions responsible for economic policy (in particular the Treasury) have been unable to develop an inclusive, long-term approach to the economy because of policy churn and the focus on cost control.

Short-termism

The Westminster system of government is renowned for its adversarial approach to politics. In the context of a Treasury mindset that has historically prioritised input control over more strategic long-term investment, this contributes towards a tendency for a short-termist approach to policymaking. This is a particularly prominent feature of the UK system during periods of fiscal consolidation, most obviously in the austerity period during the 2010s, when government instructed the Treasury to make sizable cuts not just to current spend but, as importantly, to capital budgets.[30]

Whitehall has long recognised the externalities that flow from this approach and has sought to address them through adaptations of the spending control framework. The Treasury under New Labour separated out resource and capital expenditure limits across individual departmental budgets with the express intention of placing greater emphasis on long-term strategic planning and performance through Public Service Agreements (PSAs).[31] Since 2010, and the political decision to abandon PSAs, there has been a series of iterations to the performance framework – Departmental Business Plans (2010-15), Single Departmental Plans (2015-20), the Public Value Framework (2019-onwards) and from 2020 Outcome Delivery Plans. More often than not the UK has elicited the characteristics of a 'fair weather' output controller as politicians gain little from closely monitoring performance in periods of fiscal

squeeze.[32] The ever-present focus on short-term input costs benefits politicians and the Treasury alike.

Our evidence drawn from over the last three decades[33] complements the conclusions of others, who similarly suggest that such initiatives have failed to meaningfully shift the dial regarding the pathology of financial short termism. The Treasury's approach to budgetary control and existing accountability structures produces a risk averse culture and squeezes the flexibilities required by departments and their delivery partners to innovate or build long-term public service resilience and system capacity. There remains an absence of prioritising longer-term time horizons of four or more years or multi-year timelines required for an outcomes-orientated approach.

In practical terms, this means that agencies, local authorities and practitioners are firefighting to deliver services in a semi-permanent state of crisis management. The drive for financial resilience in the 2010s has undermined capacity in key strategic areas, including financial management, procurement, data analytics and evaluation. Much of this knowledge and experience is now being retrofitted at greater expense, but now in the absence of institutional memory. Undermining governance capacity to deliver short-term savings has featured prominently in our research. The result is poor performance, low morale and high-staff turnover.

In this context, any reorientation toward a more preventive, evidence-informed approach to policymaking is challenging. This reflects an incongruity between the complex and deep-seated societal needs in most areas of government and the framework of spending reviews and annual budgets, whereby there is underinvestment in prevention and early intervention and overinvestment in the retro-reactive treatment of problems.

Rebalancing the composition of public spending is therefore critical, but a systemic failure to invest for the long-term, including in prevention, cumulatively stores up a large range of short-term pressures which then subsequently force governments to spend public money in a highly inefficient, remedial manner. There is a need to challenge not only an internally socialised Treasury culture of scepticism towards invest-to-save and innovation, but also a political tendency to side-step experimentation and the piloting of significant new programmes of reform. The fact that the machinery

of spending control is unable to learn from the past – in part the product of a rapid churn in spending team staff – helps explain the growing demand for evidence-based policy as a mechanism to lever longer-term thinking into the Treasury's decisions.

Lack of Cross-Government Working

The UK model of powerful departments organised along functional lines and the siloed nature of budget allocation has long acted as an impediment to cross-government working. The Treasury offers guidance to try and break down these barriers to inter-departmental collaboration. But there are few incentives for accounting officers to share ownership or pool resources in a system dictated by a hierarchical model of accountability. Clear lines of accountability are important, but this model appears increasingly dysfunctional and unable to cope with a fragmented governance landscape characterised by complex and confused geographies and responsibilities.

What is normatively extolled as a strength of the UK system – clarity and simplicity in terms of budgets and accountability under the Westminster model – appears increasingly unrealistic beyond Whitehall and is a significant weakness when it comes to the need for a co-ordinated response to so-called wicked issues that cut across functional responsibilities. Many have called for a more integrated, place-based approach to economic and social policy, but this has proved impossible to implement. The Treasury, acting as Parliament's ultimate custodian of the public finances, favours a model that promotes financial control instead of integrated ways of working.

Where the Treasury has sponsored initiatives to improve cross government working and innovative approaches to multi-agency delivery, such as the Shared Outcomes Fund, the level of investment is small, and scalability is always a challenge given its inherent scepticism. Lessons from such initiatives are important to overcome the longstanding pathology of cost shunting, whereby cost savings delivered in one area simply displace problems to elsewhere in the public sector. This is an area where the Treasury and Whitehall needs to develop mechanisms to better understand the dynamic consequences of public spending decisions – both cuts and investments – to improve allocative efficiency and break

down the institutional and cultural impediments to joined-up working across Whitehall and the wider public sector.

Conclusion

British government continues to be overcentralised, despite attempts at regional devolution and financial delegation. The paradox today is that it is both heavily centralised and fragmented. The fragmentation is both vertical (with the segmentation of functional departments) and horizontal (with a disconnect between the centre and periphery). Local delivery is highly fragmented with overlapping jurisdictions that lack the legal and economic resources to make autonomous decisions at the local level.

This complex system has created a situation where strategic coordination is extremely difficult. Such complexity combined with short-termism and an adversarial polity creates an incoherent, at times chaotic, system of governance with policies changing rapidly without an attempt to develop long term strategy. This chaos has allowed the Treasury to fill the vacuum at the heart of government. Its veto over all expenditure and position as the only institution within government with oversight of all areas of policy allows it to influence and at times directly control what departments and agencies do.

However, this leads to numerous problems:

- Treasury attempts at micromanagement are limited by a lack of capacity. It is impossible for the Treasury to control all government spending in an increasingly fragmented governance landscape
- Treasury coordination prioritises cost control over strategic policy-making and economic development
- The Treasury finance function supersedes its economic function (recently illustrated by Chancellor Rachel Reeves' focus on cutting public expenditure at a time of sluggish economic growth)
- The Treasury is effective at the negative policy making (stopping things happening) but ineffective in terms of positive, strategic policy development

- The Treasury focuses on short term cost saving over preventive measures that often would save much more in the longer term and improve policy outcomes and value for money
- Often the Treasury will cut capital spending to reduce annual expenditure, leading to long term problems in relation to infrastructure and economic development

Solutions to these systemic dysfunctions are difficult because system change is needed rather than ad hoc and limited reforms. However, key requirements for this will be:

- A full (even if incremental) system of devolution where devolved bodies have much greater financial autonomy, including tax raising powers. This requires an acceptance that power cannot continue to be centralised under the auspices of ministerial responsibility and Treasury control
- Reform of internal Treasury processes, including the Green Book (which is once again under review), but also spending control processes, to enable long-term investment and a mechanism for learning from previous outcomes to inform future policy development and implementation

Most of the dysfunctions described here are widely recognised by politicians and policy makers but creating the political will and space for effective reform is limited by the risk averse nature of the political system. And, of course, it requires those with current centralised power redistributing away from themselves.

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5. UK Science and Innovation: Five Years since the Missing £4bn

Tom Forth, Richard Jones

Policy Actions

1. Release more data on which companies perform R&D, where, and on what
2. Complete devolution in England and strengthen it so that English Strategic Authorities can supplement central innovation funding with money raised through local taxes
3. Use industrial strategy to more clearly define national industrial priorities, particularly in energy and defence, and ensure that R&D investments align with these
4. Ensure that new national institutions in key growth sectors are placed near to where aligned industries are strongest, and create regional institutions with an explicit mandate to develop private sector innovation capacity in lagging regions
5. Spend more on R&D in areas with a capacity and appetite for growth

Introduction

The UK's economy is one of the most regionally unequal in the rich world. While London and South East England is a leading global economy, the large cities of the Midlands and the North of England are among the least productive in the OECD. Fiscal transfers required to provide uniform national public services across the UK remove money which could be invested in productivity growth in the South East, while failing to generate investment in growth elsewhere.

In our 2020 report The Missing £4bn, we argued that past misallocation of public research and development (R&D) investment had exacerbated these regional productivity differences and that a correction could reduce them. We specifically identified Northern Ireland, North West England, and the Midlands as places where business spending on R&D is high, but public sector spending is lacking. We argued for higher public R&D spending in these places to increase growth in their economies.

Since then, the UK government has recognised the importance of regional R&D imbalances. Data collection and analysis on this issue has improved and policy changes have contributed to a decrease in the regional misallocation of R&D spending in the UK, though major data revisions mean we are unsure by how much.

The UK Government can do more. New challenges caused by Russia's invasion of Ukraine, the fiscal aftermath of Covid, Brexit, Trump's trade wars, the rapid development of AI, and the continued rise of China, means it must.

The Case for Considering Place in Allocating Public R&D

Economists agree that the fundamental driver of long-term total factor productivity growth is innovation. Firms both produce new high value products and improve their processes to produce existing products with fewer inputs. Both process innovation and product innovation often have their origins in research and development through the deployment of new technologies, the improvement of existing technologies, or the combination of existing technologies in novel ways.

There is also a consensus that, left entirely to the market, the private sector will underinvest in R&D. This is because the knowledge returned from R&D is a non-rival good with incomplete excludability – i.e. one person's consumption does not prevent another's and the full cost of invention cannot be reliably recovered from those who copy it. This is the classical justification for state support for R&D (Royal Society 2024) and cases against it are typically ones of scale not of principle.

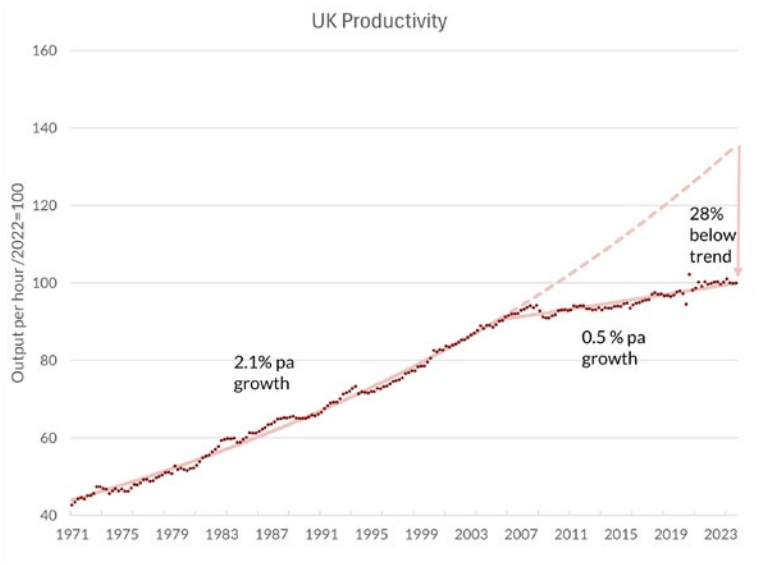
The case for the state considering the location of the R&D it supports is less well established and less widely shared. Against it is the fact that most of the published outputs of publicly funded research are available for use immediately anywhere in the world with little restriction. In this case the location of research is unimportant and the overwhelming consideration in assigning funding to research is the excellence of the likely output.

We disagree. Not because we dismiss the importance of excellence but because knowledge spillovers from publicly funded research are known to be localised, roughly defined by a commuting distance.[1] Knowledge intensive clusters arise from formal R&D collaborations, entrepreneurial activity, informal knowledge exchange,[2] and the benefits to innovation-intensive firms of having high densities of skilled workers. Physical proximity accelerates the accumulation of agglomeration benefits.

Why We Care about Regional Inequality and R&D

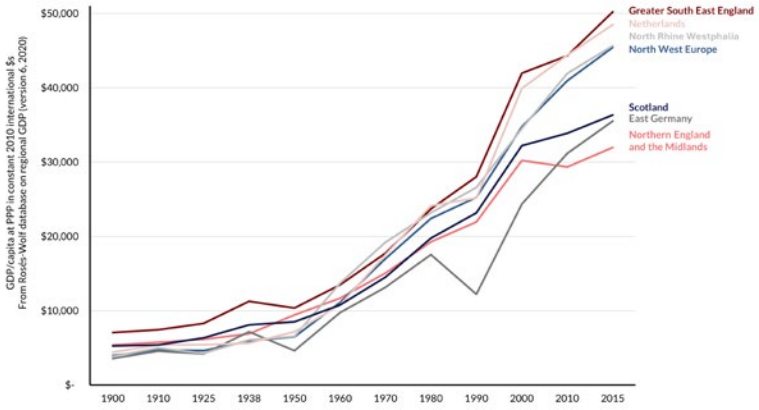
The UK's economy is weaker and its productivity lower than its Northern European neighbours. Since 2005, productivity has stagnated at this lower level with the trend rate of growth slowing substantially around 2005 and reducing to close to zero since the Covid pandemic.

Figure 5.1: UK Productivity



These productivity issues have a strong regional dimension, with the central high density urban regions of the UK — North England and the Midlands — seeing economic strength (GDP/capita) and productivity (GDP/hour worked) stagnate earlier and at a far lower level than the economy of South East England and the similar economies of North West Europe.

Figure 5.2: The economy of Northern England and the Midlands has fallen well behind Northern Europe and similar regions within Northern Europe in recent decades.

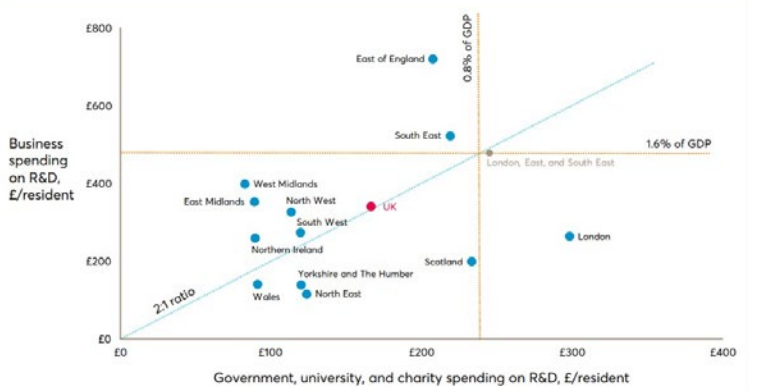


The path to renewed high productivity growth in the strongest economies in Europe, of which South East England is one, is important, unclear, and beyond the scope of this paper.

The path to high productivity growth in North England and the Midlands is clearer since there are so many proven examples to follow. Here we focus on the economy of East Germany, a region which has caught up and overtaken the economy of North England and the Midlands since the reunification of Germany, partly as a result of high public R&D spending.

In The Missing £4bn[3] we showed that while businesses in the West Midlands, East Midlands, and North West of England invested in R&D at above the UK average rate, the public sector invested substantially less.

Figure 5.3: Spending on R&D by NUTS1 region within the UK, 2016 (split by market-led (business) and non-market-led (government, university and charity))

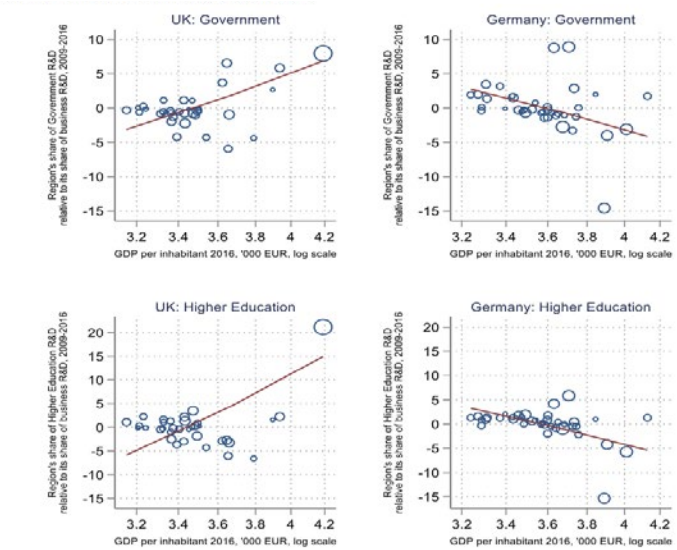


Regional distribution of UK R&D spending by NUTS1 regions, expressed per resident for the market-led and non-market-led sectors.

We showed that this geographical pattern of public R&D support was different in the UK to France and Germany. In France, public sector spending on R&D in a region was proportional to private sector spend, likely a better allocation to achieving knowledge transfer, while in Germany public sector spending on R&D in a region was inversely proportional to private sector spending.

Reproducing and building on this work in 2023, Stansbury et al.[4] showed that Germany was using R&D as a tool for levelling up poorer regions while the UK was doing the opposite – investing in R&D most disproportionately in its richest region, London.

Figure 5.4: Government and higher education R&D spend relative to business R&D spend: UK and Germany, 2009-2016

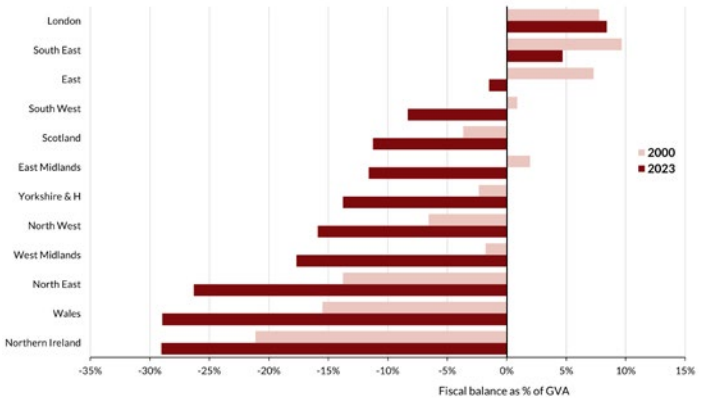


Source: Quality of Government EU Regional dataset.
Note: Each bubble is a small (OECD TL3) region, with bubble size weighed for each region's population. Inner and Outer London are combined.

While the gap between East and West Germany remains large, and the achievement of closing it is not without losers,[5] Germany's regional economies have converged since reunification in 1990.[6] This has in turn reduced very large fiscal transfers from West to East.

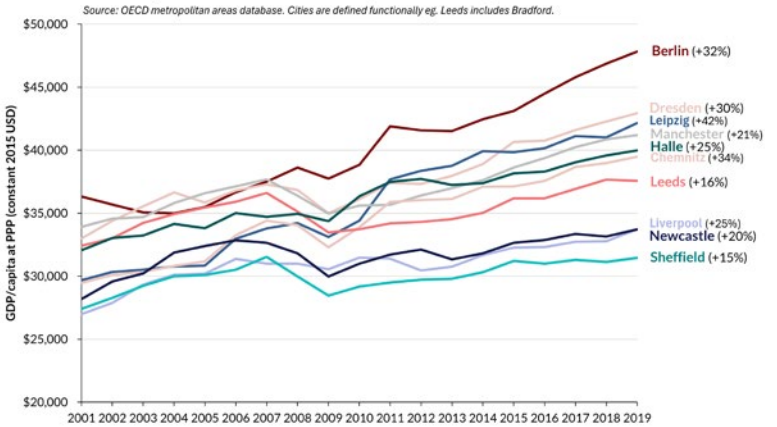
This economic underperformance of North England and the Midlands is especially pronounced in its large cities, whose economies are among the weakest 10 per cent of large cities in Europe and North America and have been weaker than those of the former East German cities for over two decades.

Figure 5.5: Taxes paid in London fund ever more of Britain's public spending



Unsurprisingly given this, and in contrast to Germany, the UK's regional economies have diverged in recent decades. Fiscal transfers, probably already as large as within Germany in 2010,[7] have grown to large percentages of regional economies.

Figure 5.6: Germany's Eastern cities have outperformed England's Northern cities



Levelling up North England and the Midlands represents an obvious target for the UK Government's attention and a chance to grow the economy of the whole country by reducing the need for fiscal transfers out of South East England.

We believe that public R&D spending, alongside other policies including improved transport and greater devolution, has a role to play in achieving this.

New Data. New Story?

In its 2017 Industrial Strategy[8] the UK government set itself a goal of increasing R&D intensity in the British economy from 1.7 per cent of GDP to 2.4 per cent of GDP by 2025. The stretch goal was to reach 3 per cent of GDP, similar to Austria and Germany.

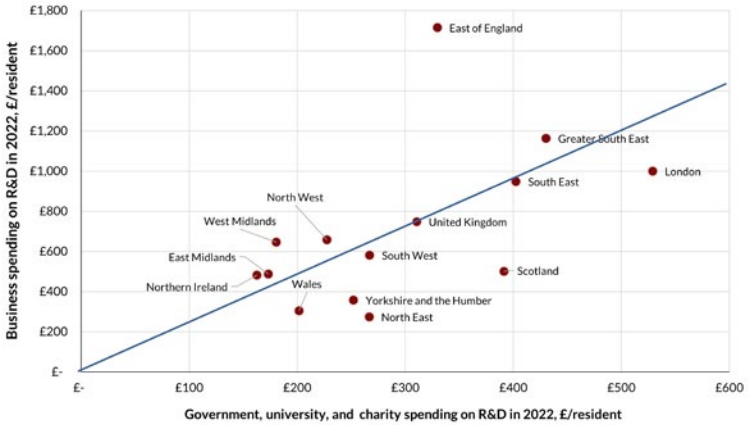
In the same year the UK's Digital Economy Act (DEA) was updated to give the Office for National Statistics (ONS) more powers to demand and use administrative data.

In early 2024, releasing data for 2022[9] and having forewarned[10] that big changes were coming,[11] the ONS announced that UK companies were spending 60 per cent more on R&D than previously estimated. The UK was estimated to be spending 2.8 per cent of GDP on R&D[12] and had been for years.

We suspect that this new data is an overestimate.[13] The UK Government's estimate for the rate of error and fraud in 2021/2 was 17.6 per cent[14] and the UK's R&D tax credit scheme being the most generous in the OECD[15] makes it likely that businesses have trained themselves into exaggerating their R&D activity. The continued low capital investment levels of UK businesses[16] backs up these suspicions.

Despite these concerns, we believe that the geographical misallocation of R&D funding within the UK is now smaller than we once thought.

Figure 5.7: Newer data on business R&D in 2022 changes the story on regional misallocation of R&D a bit. So does time.



The ONS's new R&D estimates show that London's businesses were always doing much more R&D than previously estimated. Additionally, we suspect that there has been a real increase in business R&D in London since 2016 because high investment in public sector R&D has led to increases in private sector spend, a mechanism that we hope to see happen in more of the UK.

Five Years since The Missing £4bn: UK Data and Policy

In the Missing £4bn we argued for an allocation of UK public sector spending on R&D that more closely reflected the location of business investment. This closer match would better translate the UK's world-leading basic research into business adoption, where the UK ranks much more poorly[17] and in turn increase productivity outside of South East England, where it has been nearly stagnant for two decades.

We proposed policies that would achieve this goal, such as substantially devolving a portion of national R&D funding, tweaking existing funding formulas, and being vigilant not to repeat past examples of home bias in location choices for major capital and institutional investments.

In the five years since our report:

- The UK has met and exceeded its 2.4 per cent of GDP target for R&D spending, though this was probably more due to improved data than increases in R&D spending
- Data on R&D has improved. UKRI now publish annual analysis of the geographical distribution of funding[18] and a new organisation ARIA (Advanced Research and Invention Agency) commits to "publish data on the regional distribution of its programme funding"[19]
- New national institutions with R&D steering functions such as Great British Energy, Great British Nuclear, and The Productivity Institute in Manchester have been created outside of South East England
- Consideration of place in public R&D funding allocation has been made explicit in both UK government and UKRI strategies. UK Research and Innovation's (UKRI) 2022-2027 strategy[20] breaks from a tradition of place-blind funding to "factoring place considerations into our decision-making". The UK Government's Levelling Up White Paper in 2022[21] committed to grow R&D outside of the South East by 40% and introduced a pilot programme for Innovation Accelerators,[22] with £100 million to be divided between West Midlands, Greater Manchester and Glasgow
- The 2025 Spending Review introduced a new £410 million Local Innovation Partnerships Fund, "giving local leaders a central role in co-creating R&D programmes to support local economies"

These examples represent a welcome change in direction. But we note that their size is tiny compared to the overall UK science budget. They have also occurred in a context where other less positive changes have occurred. Of which we note that:

- ARIA, a new public funder of R&D, was set up in London seemingly by default
- Large investments in existing institutions such as The British Library expansion and the UK's National Synchrotron upgrade deepen the impact of previous location choices

- Continuing higher capital investment in transport in South East England continues to increase agglomeration benefits there, while cancellations sacrifice agglomeration benefits in North England
- The UK government has continued to centralise its activities[23] and workforce[24] in London

Five Years since The Missing £4bn: Global Events.

Progress overall in the UK is welcome and should be celebrated. At the same time, five large global events beyond the UK will require our national thinking on R&D to change further.

Covid

The UK's productivity and wage stagnation has deepened in the aftermath of the global Covid pandemic, deepening the case for change. More positively the pandemic highlighted the UK's scientific excellence and commercialisation capacity with one of the first and most widely-used vaccines developed in Oxford, commercialised in Cambridge, manufactured in Oxford and Stoke-on-Trent, and packaged in Wrexham.

Russian Invasion of Ukraine

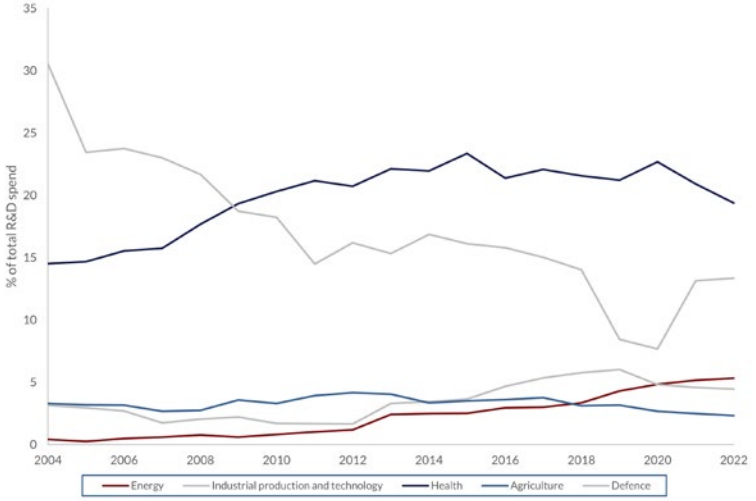
The UK has been a net importer of natural gas since 2004 and is reliant on internationally traded imported gas for around half of its supply. The Russian invasion of Ukraine led to sanctions that restricted the supply of Russian gas to Europe, increasing prices. The UK's unusually high reliance on natural gas for electricity generation has left the UK with the highest industrial electricity prices in the EU and the G7.

In the face of high energy costs and a war in Europe, the UK Government has effectively nationalised key manufacturing sectors in defence-related fields such as Sheffield Forgemasters in 2021 and British Steel in 2025, and committed to increasing expenditure on defence more broadly.

This change should, but has not yet, affect R&D investment decisions most heavily in energy, especially nuclear power and defence, where publicly funded R&D has been decreasing for four decades.[25]

Figure 5.8a: UK Government spending on Energy RD&D

Figure 5.8b: UK Government funded R&D by socio-economic objective



Rapid Advances in Artificial Intelligence

The UK holds a leading research position in AI at companies like Google DeepMind, Wayve and ARM, and at multiple universities, all at a time where the technology is improving enormously.

But low business adoption means we risk repeating previous failures where world-leading foundational research did not translate into industrial success.

Specifically in AI there are ongoing debates, similar to those in manufacturing around whether manufacturing and manufacturing R&D are beneficially collocated,[26] and about whether the UK government's support for the AI industry should restrict itself to continued funding of R&D and better regulation, or whether it should expand to subsidising or accelerating the delivery of domestic compute capability.

Brexit and Trump Tariffs

Europe's regional development funding framework has not been adequately replaced domestically and the UK remains less central to European scientific collaboration than it did as a member of the EU. In addition, a worsened trading relationship with the EU since Brexit and with the US since the election of Donald Trump for a second term remain of relevance to industrial strategy and associated R&D goals.

The Continued Rise of China and Automation in Manufacturing.

The continued rise of China as a science, technology, and manufacturing superpower poses hard questions about how much space is left for the UK to find and maintain a comparative advantage. As a medium size nation accounting for about 2 per cent of the world's high-tech economy[27] our national comparative advantage is likely to be quite narrow.

Policy Proposals for 2025

Improvements in ONS data and UK government policy changes have moved the UK's public R&D allocation system in the direction we recommended in 2020. We hope that this continues and note

that there remain opportunities to invest more in North West England, Northern Ireland, and the Midlands. Large new challenges have emerged and alongside this we hope that the UK's approach to R&D adapts.

Our updated recommendations are:

Release more data on which companies perform R&D, where, and on what

Use of R&D tax credit data by the ONS substantially improved our understanding of business R&D spending in the UK. We could improve our understanding even further by releasing better data, including by working with Companies House on where companies carry out which parts of their business and where they perform R&D activities.

Complete devolution in England and strengthen it so that English Strategic Authorities can supplement central innovation funding with money raised through local taxes

Germany's comparative success at levelling up using R&D spending shows that local units of the state can play a strong part in assigning funding more efficiently and effectively than central ones acting alone. Devolution in England has progressed well and local growth plans including innovation strategies are largely complete. Increased fiscal powers for strategic authorities in England would help to fund more investment in growth where this commanded local support.

Use industrial strategy to more clearly define national industrial priorities, particularly in energy and defence, and ensure that R&D investments align with these

We have previously argued[28] that "underlying any lasting strategy needs to be a settled, long-term view of what kind of country the UK aspires to be, what kind of economy it should have, and how it sees its place in the world".

The new security threats to Britain make it likely that we will increase R&D spending on defence. It also seems likely that we will need to invest in R&D both in modernising those industries directly and in getting energy prices down to reduce the subsidy they require. This will be especially true if we decide that the data centre and compute needs to support a domestic AI industry should be met domestically.

The UK's new industrial strategy does represent considerable progress in defining national priorities, and in establishing the principle that R&D funding should play a large role in delivering those.

Ensure that new national institutions in key growth sectors are placed near where aligned industries are strongest and create regional institutions with an explicit mandate to develop private sector innovation capacity in lagging regions

Any new national R&D institutes and agencies in defence and energy sectors should be placed where industry in those sectors is strongest. Where institutions are created in economically lagging regions they should have an explicit mandate to build regional innovation systems, with activities going beyond applied R&D to support innovation diffusion, supply chain development, and skills.[29] Spend more on R&D in areas with a capacity and appetite for growth

It seems that the UK Government has heavily pushed its 'Case for Cambridge' against limited local enthusiasm, at the same time as Leeds has much more thoroughly backed its 'Vision for Leeds'. It would encourage more places to back growth if preference for public R&D funding followed that enthusiasm and played a more active role in funding firm expansion and knowledge transfers as part of efforts like the Greater Manchester and Cambridge Innovation Partnership.[30]

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6. Raising Regional Productivity

Adrian Pabst

Policy Actions

1. Fusing Number Ten with the Cabinet Office to create a Prime Minister's Department that takes charge of overarching economic strategy with a focus on pro-productivity policies
2. Raising public investment to 4-5 per cent of GDP per year by reforming the fiscal framework
3. Creating a National Development Bank to appraise, allocate and assess the performance of public investment projects
4. Designing and implementing a place-based industrial strategy linked to increased defence spending
5. Deepening devolution by giving Mayoral Combined Authorities more decision-making powers and fiscal resources to deliver public services and growth strategies

Introduction

Weak productivity in most parts of the UK is not just a drag on the aggregate economy. It also leaves places outside London and the South East in a 'doom loop' of low economic growth and stagnant living standards.[1] The Government's ambition of boosting GDP growth and living standards in every part of the country by the end of this Parliament is at odds with some of its main policy choices to date, including insufficiently aligned investments in transport, housing and skills, as well as the lack of at-scale net public investment, which at 2.7 per cent of GDP per year is lower than in many other advanced economies and too low to shift the dial on productivity.

So far, the mission-led approach has failed to change the UK governance system. Paradoxically, it remains over-centralised yet ineffective by micromanaging from Whitehall and perpetuating a cycle of economic policymaking characterised by churn, silos and short-termism.[2] Judging by substantive outcomes, the process is not working, and regenerating the UK regions will take more than incremental reforms.

This paper examines the scale of the task involved in raising regional productivity by 2029 and proposes a series of policy and institutional reforms. These include higher public investment through an overhaul of the fiscal framework, a National Development Bank to appraise public investment projects, a place-based industrial strategy linked to higher defence spending, and deepening devolution centred on Mayoral Combined Authorities. All this requires greater leadership from Number Ten, combined with more central government capacity to embed a pro-growth, pro-productivity programme.

The Parlous State of Regional Economic Policymaking

The UK has one of the highest levels of inter- and intra-regional inequalities in economic output and productivity and one of the most centralised governance systems, with significant disparities of decision-making powers and fiscal resources across the country.[3] Over-centralised governance arrangements have led to ineffective institutions and entrenched a model of fragmented policy-making,

which further weakens the capacity of lower-tier government to implement pro-productivity policies.[4] Judging by the long-run combination of low economic growth and poor productivity performance, the governance system has failed to serve the needs of both the country as a whole and of the places neglected for 40 years or longer.[5]

The Government's English Devolution White Paper published in December 2024 recognises the scale of the task when it notes that the UK has "more regional inequality, slower wage growth and a relative decline in living standards compared to other developed countries": the UK state is "micromanaging from the centre combined with short-term, sticking-plaster politics [which] has left England's regions in a doom loop, unable to achieve their potential".[6]

To boost economic growth and living standards in every part of the UK, the Government has announced a series of specific institutional and policy reforms,[7] including:

- New fiscal rules increase public investment while ensuring stable public finances
- Local growth plans that are joined up with central government's growth mission
- An Industrial Strategy Council linked to a place-based industrial policy
- Devolution deals for English regions centred on Mayoral Combined Authorities
- Planning reform to build 1.5 million new homes over this Parliament
- Investment decisions announced in the Comprehensive Spending Review on transport connectivity in the North, housing, skills, energy and defence

Missing from these measures is a coherent strategy that embeds pro-growth and pro-productivity policies across government. One example is the October 2024 Budget. It sought to raise growth through higher public investment, while at the same time putting up employer National Insurance Contributions (NICs), which dents business confidence, dampens GDP growth and generates far less tax than the £25 billion expected by HM Treasury.[8] Another

example is the announcement of higher public investment in the Comprehensive Spending Review on 11 June 2025. The welcome investments in transport, housing, skills, energy and defence need to be synchronised rather than siloed, and there are fundamental doubts over scale and short-term gains for household living standards and the most neglected places.

A number of questions arise for the Government's approach to raising regional productivity. First, what is its theory of economic growth?[9] Does the Government's growth model focus on supply-side reforms, including deregulation and de-bureaucratisation, e.g. the abolition of Public Health England? Or on demand management, through an increase in public investment of some £70 billion in 2025-26 and a total of £113 billion over the course of this Parliament? Or both and, if so, what is the balance?

Second, how does the Government propose to kickstart economic growth and productivity in the country's second–tier cities, which lag comparable cities in other advanced economies?[10] Are the chosen public investments aligned and how much business investment will they help to unlock? Do inter-regional spillovers justify a concentration of infrastructure investments in the South, e.g. will a third runway at Heathrow have positive economic externalities for cities such as Birmingham and, if so, how is the Government measuring such spillovers?

Third, does the Government have a strategy to help regenerate small towns, rural and coastal areas and, if so, how is this linked to local and regional growth plans?

There are at least two reasons why the Government's current approach to raising regional productivity is insufficient. The first is that within the current fiscal framework, levels of public investment will remain below 3 per cent of GDP per year, which is too low for sustained regional regeneration given how deep the gaps in the regional capital stocks are (see following section).[11]

The second reason is that without a transformation of the Whitehall machine, in particular Number Ten leadership on regional policy, as well as more devolution of decision-making and revenue-raising powers, the UK state will remain too centralised and ineffective. Central government would continue to micromanage policy that is best designed and delivered at lower tiers while failing to address strategic issues such as place-based reindustrialisation.

Brief Overview of Regional Disparities and Gaps in Capital Stocks

The ambition of the previous government's Levelling Up agenda was to narrow the gap between the prosperous and poor parts of the country by lifting up 'left behind' places. Yet the opposite happened. NIESR research finds that disparities of wealth, health and well-being have worsened since 2019 in five respects.

First, productivity differences between regions have increased.[12] Productivity in London and the South East has increased in recent years and will continue to increase in the years 2025-29 whereas elsewhere it is projected to grow modestly, stagnate or even fall – as in the West Midlands due to a concentration of road haulage businesses affected by Brexit and parts of the car industry affected by the Trump Administration's tariffs, even at 10 per cent.[13] This, combined with a trend GDP growth rate of little more than 1 per cent per year, will not allow the government to meet its mission of securing the fastest sustained economic growth among the world's leading economies of the G7 or kickstarting growth across the country.

Second, disparities in living standards are also growing.[14] In 2019-20 the gap in living standards between London and the North East was on average approximately £4,600 per household. By 2023-24, that gap had widened to about £7,300 and by 2024-25 it had remained largely unchanged. For the same period, the gap between London and the North West has widened from about £2,900 to £5,400, between London and the West Midlands from £4,400 to £7,000, and between London and Yorkshire and the Humber from £2,000 to £6,000.

Third, the growing gap between regions also extends to health and well-being.[15] Inequalities in healthy life expectancy between the most and least deprived areas in Scotland is more than 23 years, up from 20 years in 2019. The Covid-19 pandemic exacerbated these disparities, placing immense strain on already under-resourced health care services. Despite overall improvements in well-being, many areas across the country still face significant challenges such as low earnings, poor mental health outcomes ageing and issues with teacher recruitment and retention – all of which adversely affects life satisfaction and a sense of meaning and purpose.

Fourth, the largest gaps between prosperous and poor areas are in primary school educational standards, housing and public transport. Of those three sectors, public transport provision has seen the sharpest decline between 2019 and 2024. Most UK regions experienced a fall, with the three devolved nations among the parts of the country worst affected. The decline can be attributed to multiple factors, notably funding cuts at local authority level and an aging infrastructure network where investment projects have been delayed or cancelled altogether.

Fifth, public infrastructure investments have been largely concentrated in more affluent regions of the country, which is more efficient but less potent for regional regeneration. Meanwhile, the 'Levelling Up' funds that attempted to redress some of this regional divergence represented a mere 3.5 per cent of total infrastructure investments and were thus much too small to promote real change.[16] Fundamentally, due to chronic underinvestment over the past few decades, UK regions exhibit deep gaps in capital stocks, which have been estimated to be about 25 per cent lower than in comparator countries. Those gaps, which amount to about £2 trillion in total, include transport connectivity, especially in the North, including housing, notably affordable housing, and skills (both STEM and vocational/technical skills).[17]

On housing, the Planning and Infrastructure Bill, introduced in Spring 2025, aims to speed up the approval of applications with a target of building about 1.5 million new homes and large infrastructure projects by 2029. According to the OBR's assessment, the Government's proposed changes to the UK planning system could permanently increase the level of real GDP by 0.2 per cent in the 2029-30 fiscal year, an additional £6.8 billion for the economy, and 0.4 per cent, or £15.1 billion, by 2030 "thanks to a boost in the productivity of residential construction and the increased flow of housing services".[18]

While the projected effect of an extra 305,000 homes per year by 2030 on aggregate economic growth and living standards is welcome, this reform raises several questions that are relevant to regional productivity. Will the increase in housebuilding include expanded homeownership, especially for the young, in those parts where access to housing has declined such as in London, other parts of the South, and also areas in the north and in Scotland?[19] Do centrally defined housebuilding targets align with local and

regional needs? How will the government's housing policy affect regional labour markets and the incentives to work, including better transport connectivity to improve access to employment? All these questions involve fundamental issues of policy silos and the need for better coordination both across central government and with city-regions and mayoralties.

Institutional and Policy Recommendations

This section sets out five fundamental reforms the Government should adopt if it wants to boost regional economic growth and productivity in the course of this Parliament.

Fusing Number Ten with the Cabinet Office to create a Prime Minister's Department taking charge of overarching economic strategy with a focus on pro-productivity policies

The Prime Minister has committed to the "complete re-wiring of the British state" in an attempt to make 'mission-led' government a success, notably faster growth and higher living standards in every part of the UK.[20] Yet the problem with mission-boards is fivefold: (i) each is focused on a particular issue and disjointed from other missions: for instance growth is separate from living standards, housing is disconnected from transport connectivity; (ii) missions are 'sponsored' by one department; (iii) while missions have the merit of being clear, they risk failing to break down departmental and policy silos; (iv) absent prime ministerial leadership, the missions are dominated by the Treasury; (v) they do not address the long-entrenched problem of fragmented central decision-making.[21]

To tackle churn, silos and short-termism, the Government needs to demonstrate clarity and strategic direction which in the UK system of governance can only come from ministerial and, particularly, prime ministerial leadership. The PM should not just chair each mission-board but also take charge of economic policy together with the Chancellor of the Exchequer, imposing a pro-productivity strategy across government against any departmental resistance.

That, in turn, requires more central capacity. By fusing the Number Ten operation with the Cabinet Office to create a Prime Minister's Department, the Prime Minister would have resources mirroring those available to the German Chancellor or the Australian Prime Minister to drive through the various missions.[22] If, as Sir Keir

Starmer said, "too many people in Whitehall are comfortable in the tepid bath of managed decline", it is also the case that civil servants respond to political direction and authority which in the first and final instance only the Prime Minister can provide.[23] Otherwise, power reverts to Treasury.

Raising public investment to 4-5 per cent of GDP per year by reforming the fiscal framework

Government needs to balance two competing objectives: long-run fiscal sustainability and reducing regional disparities in growth, productivity and living standards. NIESR has consistently argued for a strategy based on higher public investment, about 4-5 per cent of GDP per year compared with 2-3 per cent at present, to kickstart growth and unlock greater business investment.[24] The case for raising public investment by some £40-50 billion per year is that it would begin to fill the capital gaps identified above while also being consistent with long-run fiscal sustainability.

This can be achieved by a fundamental reform of the fiscal framework, not just redefining the debt rule.[25] The current fiscal rules are arbitrary and conflate instruments with objectives. Successive governments have reduced the fiscal policy debate to speculations about the available 'fiscal space', fiddling both rules and policy when targets risk being missed. The alternative is a clear focus on defining the main objectives, such as growth and living standards, and then choosing the best set of instruments to pursue them.[26]

Creating a National Development Bank to appraise, allocate and assess the performance of public investment projects

In the Autumn 2024 Budget the Government announced an increase in public investment of about £70 billion for 2025-2026 and in the Comprehensive Spending Review in June 2025 a total of £113 billion for the whole Parliament. Given the high costs of infrastructure projects and wasteful projects such as HS2, there is a strong need to ensure a better use of public resources and a credible commitment to long-term plans. One option is to create a National Development Bank that brings together the existing plethora of organisations in this space, including the National Infrastructure and Service Transformation Authority (NISTA), the National Wealth Fund and the Industrial Strategy Council.

A National Development Bank would be tasked with channelling long-term finance into industry and infrastructure in the regions, similar to the German Kreditanstalt für Wiederaufbau (KfW). By building relationships with local authorities and devolved nations to bring meaningful levels of funding with long-run commitments across the UK, a National Development Bank can be an effective tool to support industrial strategy and regional regeneration. Raising public investment to some 4-5 per cent of GDP to fill the gaps in capital stocks is only credible if it is combined with a rigorous evaluation of progress, notably the establishment of an institution of sufficient scale with operational independence to appraise, allocate and assess the performance of public investment projects.

Designing and implementing a place-based industrial strategy linked to increased defence spending

The UK has had many industrial strategies but they have neither stuck nor been scaled. An endless chopping and changing of policy has managed to make any piecemeal reform wholly ineffectual, leaving in place a lop-sided economic model over-reliant on service sectors in London and the South East. Last autumn's Green Paper on industrial strategy lacked focus and bite, with too many superstar sectors and too few policy priorities.

Security provides the pivot around which the Government could reorganise its key policies – defence, industry, energy, technology, skills and regional regeneration. As an organising principle, security can tie together the eight 'growth-driving' sectors in the Green Paper, which include defence, clean energy and advanced manufacturing. Developing the latter partly through higher defence spending is one way, while greater investment in digital and technologies will contribute to an improved defence capability.

In turn, more manufacturing and industrial capacity will require not just better statecraft – hence Number Ten's commitment to 'rewiring the British state' from dismantling NHS England to thinning the civil service – but also the channelling of capital into larger productive capacities using financial and business services. All this requires greater national energy generation, which means a mix of nuclear with renewables – particularly through small modular nuclear reactors (promised in the Comprehensive Spending Review), solar and wind energy.

Key to the success of a security-shaped industrial strategy is to link it to places and people. Advanced manufacturing and the defence industry are mostly located in less prosperous, less productive regions. That is where the increase in public and business investment needs to be concentrated.

Deepening devolution by giving Mayoral Combined Authorities more decision-making powers and fiscal resources to deliver public services and growth strategies

The English Devolution White Paper provides an important exercise in 'institutional levelling up' by creating a greater number of Mayoral Combined Authorities across England.[27] Yet local and regional decision-making remains highly fragmented, while city-regions and established mayoralties lack decision-making powers and fiscal resource to tackle low economic growth combined with stagnant productivity.

The following options should be considered:

- Devolving skills spending by giving HE and FE colleges more autonomy over designing and delivering skills programmes, in city-regions, mayoralties and deprived towns, rural and coastal areas[28]
- Giving lower tiers of government tax-raising powers, e.g. a tourist tax and, over time, a shift from Council Tax to a land value tax
- Decentralising the National Wealth Fund to address the needs and interests of neglected places

Conclusion

The UK's poor productivity performance except London and the South East leaves regions in a 'doom loop' of low economic growth and stagnant living standards. Instead of incremental reform undermined by a self-imposed fiscal straitjacket, the Government needs a bold, credible programme of economic transformation led by Number Ten. If growth and living standards are to rise in every part of the UK during this Parliament, greater central state capacity backed by higher levels of public investment will be as important as deeper devolution and a place-based industrial strategy.

'Levelling Up' failed due to vastly insufficient fiscal resources and a lack of leadership by the then Prime Minister together with the then Chancellor. So far, local/regional growth plans and institutional 'levelling up' through the creation of new Mayoral Combined Authorities across England have not reversed the trend of persistent and worsening regional inequalities.

The reforms that this paper puts forward address some of the structural problems with regional policy by helping to rebuild central government capacity and further devolving powers to city-regions and mayoralties. Together with a National Development Bank and higher public investment based on an overhaul of the fiscal framework, these reforms can contribute towards a bold, transformative programme of sustained regional regeneration.

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7. Enhancing Skills and Future of Work

Anna Vignoles

Policy Actions

1. Increasing investment in skill shortage areas, particularly vocational/technical, is a priority. All qualifications need to help students develop a broad set of essential employability skills
2. Skills England needs to ensure that people can retrain, move across qualification pathways, and that prior learning on one track is properly accredited for another track
3. Further incentives for businesses and individuals to invest in training in skill shortage areas are needed

Introduction

There are two key takeaways about the relationship between skills and productivity in the UK. An appropriately skilled labour force is necessary but not sufficient for high productivity. And a lack of education is not the most significant factor holding back productivity. Investment in human capital is central to improving productivity and stimulating more rapid economic growth, but it alone will not solve the UK productivity problem.

The UK is broadly mid-table in terms of education investment compared to other OECD countries. But education spending in the UK has decreased as a share of national income from around 5.6 per cent in 2010 to 4.4 per cent in 2023.[1] Furthermore, not all investment is equally effective, and the UK system has not ensured that individuals have sufficient opportunities to acquire the necessary skills required by the labour market.

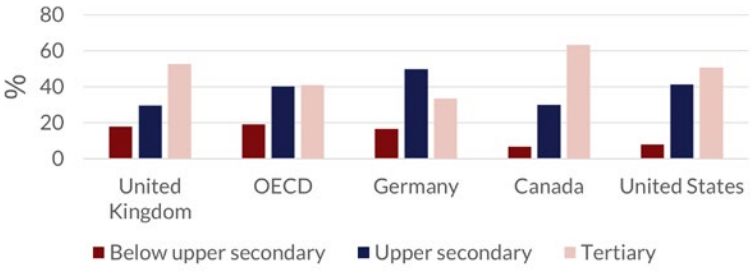
This paper examines the evidence on the supply of, and demand for, qualifications and skills in the UK (though most of the data pertains to England), the extent of labour market mismatch, and structural problems in the education system. It concludes with suggested policy directions.

Insufficient Supply of Skills?

The supply of educated workers has increased dramatically in the UK over the last 50 years. This has also been the case in most competitor countries. The proportion of UK working age people educated to lower secondary level (GCSE/ National 5 qualifications) or below has fallen from two thirds of the working age population in the 1990s to just under a third.[2]

Compared to other developed countries, this is still a relatively high proportion. The proportion with lower secondary education is nearer one in ten workers in the US, Japan and Canada. In England, Wales and Northern Ireland in particular, the high stakes GCSE examination at age 15/16 creates an early de facto pass/fail barrier. Those who fail to meet this threshold have a low probability of gaining further qualifications.[3]

Figure 7.1: Educational attainment in the UK 2023



The growth in graduates in the UK has been substantial and around 40 per cent of the population has a degree, a similar proportion compared to other developed countries (Figure 5.1). Despite the large increase in supply, the economic value of a degree has remained broadly positive,[4] particularly in some strategically important sectors.[5] Employment rates for graduates are also higher than for less educated workers.[6] These data suggest we do not have too many graduates, though I will return to the issue of graduate skills below.

Three features of the UK system are of most concern. The first is the relatively large number of workers with poor basic skills.[7] The wage premium for basic literacy and numeracy remains high in the UK labour market, suggesting some scarcity. Too many individuals leave the education system lacking such skills, irrespective of their qualification level.[8] In the OECD Survey of Adult Skills (PIAAC) England has performed consistently well in terms of average basic skill levels but the gap between the top and the bottom in both numeracy and literacy is large and increased in the latest 2023 survey.

A longstanding feature of England has been that the youngest workers, despite being more educated, are less skilled than older workers. The reverse is true in most OECD countries. There has been some improvement in this, as one would expect given the emphasis on basic skills in schools over recent decades. In the 2023 survey, younger adults (16-24 year-olds) had better basic skills compared to the same age group in the 2012 survey.[9] Nonetheless, England continues to grapple with a significant amount of unskilled labour.

The second feature is that the proportion of workers with higher level vocational qualifications has remained at one in ten over recent decades. This is lower than many competitor countries, such as France, Australia and Canada, and has been a longstanding concern.[10] Education expansion has largely been in the academic domain, particularly degrees.[11]

There are many reasons for this. Those following the higher education route have historically had access to a higher level of borrowing to enable their study. The A level to degree route is also better signposted.[12] Navigating the vocational route is difficult even though some vocational qualifications attract very good wage premia[13] particularly in some strategically important and growing sectors.[14] The net result is insufficient supply of technically qualified people.[15] The number of apprenticeship opportunities has also declined markedly except for higher/degree apprenticeships which increased threefold from a low base since 2016.[16] The decline in the number of lower-level apprenticeships is again despite evidence of large wage premia.[17]

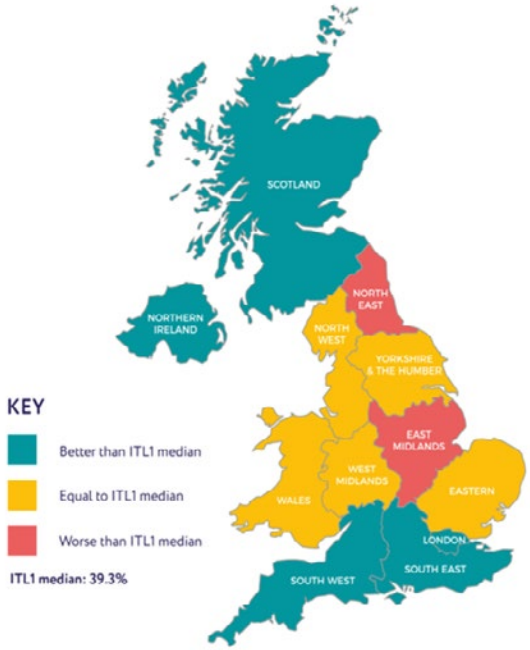
The third feature of the UK is a secular decline in firm-provided training, which has coincided with reductions in opportunities for adult education. The net result is fewer people developing their skills after leaving the education system, particularly those who have minimal initial qualifications.[18] The number of qualifications taken by adults has declined 70 per cent since the early 2000s. Spending on adult education is down about 30 per cent over that period and training has become less intensive with a 19 per cent fall in average training days per employee.[19] More educated workers on average receive more training. Low skilled workers and those not in work receive little, despite it being a potential route back to employment.[20]

In summary, the UK is characterised as a system with a strong supply of more highly academically qualified workers but with a significant proportion having low or no qualifications, poor skills and unable to find training opportunities.

The Regional Dimension

UK regional inequality in GDP per capita started increasing significantly in the 1980s, more so than in other countries.[21] The UK is now one of the most regionally unequal industrialised countries. Relatedly, there are major regional inequalities in skills, productivity and wages.[22] Skilled workers are concentrated in London and a few other high wage areas and have become more so over time. Overman and Xu[23] note that while about half of working age adults have degrees in London, it is fewer than a fifth in Doncaster, Mansfield and Grimsby. Figure 7.2 gives a high-level overview of the high/low skill regions.

Figure 7.2: Percentage of working age population with NVQL4 or above



Source: Wilson, James (2023). Infographics for the TPI UK ITL1 Scorecards. University of Manchester. Figure. https://doi.org/10.48420/24105414.v1

Regional inequalities in labour markets do not just reflect inequalities in education achievement. Graduate mobility is higher and graduates move into more buoyant labour markets.[24] Firms

which employ high skilled workers then cluster in these labour markets. Mobility is even higher for graduates from more research-intensive universities and the concentration of high skilled workers in higher productivity labour markets becomes reinforcing. By contrast, lower skilled workers tend to be immobile, not least because of the cost barriers to moving (e.g. housing). They cluster in low skill areas that support largely low productivity jobs.

One illustration of this dynamic is that Britton et al.[25] found a positive relationship between the share of graduates in a travel to work area and the graduate earnings premium. Despite the greater supply of graduates, the wage premium remains higher because of the strong localised demand, exacerbating spatial inequality. Stansbury et al.[26] concluded that a low share of university graduates in some regions was no longer a binding constraint on growth. In the 1990s a low share of graduates in some regions constrained growth. This appears to be no longer the case. The problem in low productivity regions is low demand for graduates. Simply focusing on place-based skills policies will therefore not necessarily boost average productivity.

The Wrong Skills Mix

There are a number of different ways to evaluate whether the UK labour market has the right skills mix or whether skill shortages and mismatch might be part of the problem.

First, there is considerable variation in the wage premia associated with different qualifications, suggesting differences in the relative demand for different skill sets.[27] Britton et al.[28] suggest that whilst four in five graduates are likely to gain a financial benefit from their degree, one in five might be financially better off taking the non-graduate route and the wage benefits vary considerably by degree subject.

Buscha et al.[29] find a range of analytical, quantitative and vocational based degree subjects that attract higher wage premia (e.g. economics, medicine, physics, law) with some subjects not attracting a positive wage premium on average (social care or creative arts). Stansbury et al.,[30] using a more aggregated subject classification, find that the wage premium for STEM (Science, Technology, Engineering and Maths) degrees is now higher than for law, finance and management, suggesting a relative shortage of the former. This work uses the UK Labour Force Survey which

has methodological problems[31] but their findings seem consistent with work by Even et al.[32] using a different methodology and data from the OECD Adult Skills Survey, who find STEM premia to be particularly high in the UK and the US for graduates and even higher for non-graduates.

There is also variation in the wage premia associated with vocational qualifications, again varying by level, subject and sector.[33] Level 3 vocational qualifications (equivalent to A level) appear to be the minimum needed to attract a decent wage premium. In terms of subject/sector, there are higher returns to engineering and construction, as compared to service sector qualifications. Cavaglia et al.[34] find a positive wage benefit from apprenticeships, but more so for men. This reflects that sectors with a preponderance of women offer low returns (nursing, childcare) and sectors with a preponderance of men offer higher benefits (engineering, transportation).

The wage premium associated with so called 'soft' skills is high and has increased since the 1980s, particularly when combined with good technical skills.[35] This points to another area of relative skill scarcity. Deming et al.[36] found that the number of US jobs requiring a combination of strong social skills and mathematics skills grew during the 1980s/1990s and that workers in such jobs had more rapid earnings growth. This appears to be mirrored in the UK. Aghion et al.[37] find workers in jobs that require good team and communication skills have better prospects than those in jobs that do not require such skills. Low educated workers in jobs which need good communication skills experience more rapid wage growth and get better wage progression with tenure. There is consensus that such skills are becoming more important, though much less evidence on how to develop them.[38]

There is a related literature on 'overeducation' and 'over-skilling'. A recent survey suggests that 20-30 per cent of adult workers in the UK might be viewed as overeducated for their jobs.[39] Some workers have high qualification levels but lack the skills demanded in the labour market. However, the same survey indicated around one in five adult workers in the UK are both overeducated and over-skilled, indicating insufficient demand for skills in some areas. This is consistent with firms adopting low skill-low productivity ways of working.

Being overeducated and/or over-skilled comes with a wage penalty. Vecchi et al.[40] find that just under a third of graduates are in non-graduate jobs, with a significant 40 per cent wage reduction for being mismatched. A significant proportion of graduates also appear not to actually have graduate level skills (particularly those from less research-intensive universities and with a lower degree class). Less problematically, they find that about a third of graduates work in fields unrelated to their degree but the wage penalty for this is minor (2 per cent).

Meanwhile, there is a growing body of work that has attempted to model future demand for skills, prompted by concerns that AI will lead to job destruction, particularly in white collar jobs, and raising questions about whether qualifications will become redundant and how we should prepare workers for this new world.

Most studies use predictions of expected trends in occupations to determine future skill demand.[41] These suggest a range of skills currently in short supply and likely to be more in demand in the future, namely communication, collaboration, problem-solving, organising, planning and prioritising work, creative thinking and information literacy - so called Essential Employment Skills (ESS).[42] Such skills are in addition to, not in place of, literacy, numeracy, analytical and technical skills. Even among professional, managerial and associate professional workers, they found one in five had deficiencies of ESS.[43]

The different literatures point in the same direction. Increasing qualification levels will not guarantee that workers have the types of human capital most in demand in the labour market. This has implications for the worker (lower wages) and for the economy (lower productivity than with a good match). More workers are likely to need a broader set of skills, including 'soft skills', and we need to address shortages (including of high level technical/vocational skills, mathematical, analytical and some scientific skills). Further, many firms and local labour markets do not actually have high demand for skills and there are signs of oversupply of some skills.

Policy Options

Poverty plays a major role in contributing to the low skill levels in the UK, with lack of resources during childhood, poor child health, low parental education, and inadequate information being key contributors.[44] There exists a reinforcing cycle where low-skilled individuals, working in low-wage jobs, often in areas with high levels of poverty and low-wage firms, tend to have children who are low-skilled themselves, perpetuating the cycle. While skills policies are important, we need efforts to tackle poverty to break this cycle. That said, there is still much that can be improved in the education and skills system.

Funding

Adequate public investment is critical to ensure individuals acquire necessary skills. Over recent decades, funding for parts of the education system in England has fallen in real terms and become less progressive. In the late 2000s, pupils in the poorest quintile of the population were funded at a level around 1.35 times higher than those in the most advantaged quintile.[45] This has declined to just over 1.2 times. Funding for Further Education (FE) colleges in 2024/25 was approximately 10 per cent lower than in 2010.[46] Students from poorer households are more likely to study in FE, reinforcing the cycle mentioned above.

Furthermore, FE lecturers have been paid less than schoolteachers over decades,[47] affecting both the supply and quality.[48] Consequently, lower-income students receive poorer quality teaching on average due to a depleted and underpaid FE workforce. This particularly affects the supply of vocationally trained workers and results in too many low-skilled workers.[49]

We should try to reduce skill mismatches. Funding mechanisms should not encourage institutions to recruit students for options unsuitable for them. They should incentivise institutions and students to consider the skills needed in the labour market and not require students to make all their training decisions at a young age. It is clear that the existing workforce will need to reskill. We cannot solely rely on new labour market entrants having the required skills. A funding and accreditation system enabling people to move across different qualification paths and retrain is needed to reverse the decades-long decline in adult learning.

How we fund institutions also matters. Currently, the financial health of providers depends on recruiting more students, yet some institutions struggling to recruit are located in low-skill areas. Leaving the market to determine the fate of universities or colleges risks creating cold spots lacking adequate provision, entrenching low productivity. Moreover, international student demand currently determines where universities can sustain national research capability due to the cross-subsidy between fee income and research. Vital national research capacity and innovation may be lost due to under-recruitment of students in some institutions. Reform of funding mechanisms and system shaping is needed to avoid this.

Curriculum

We need clearer pathways and better financial support for vocational routes, which have not received the recognition or support that the higher education route has benefited from. Workers need a broad range of skills for employability, including 'soft skills'. Finding ways to develop and accredit such skills is urgent.

In England the curriculum beyond age 16 is narrow, for both academic and vocational routes. A broader curriculum that encourages students to progress beyond age 16, irrespective of their GCSE grades, is likely to reduce the number of individuals with low or narrow skills.

Our university offerings are also narrow by international standards. Stronger incentives to help students develop broader skills are needed. Degrees, regardless of discipline could, as many do, offer a core of mathematical, data, digital, interpersonal and critical thinking skills. University education is not just about acquiring work-related skills, and a skills agenda must not reduce the academic rigour of UK degrees, but the risk of graduates having an insufficiently broad skill set is a concern.

The Labour Market

The supply and demand for skills varies by region. Firms differ in their ability to innovate and transition to more productive, high-skill ways of working. Policies focused on increasing the supply of skills alone will not generate high-productivity high-wage jobs, though increasing the supply of management skills, which are in

short supply in the UK, may well help.[50] Other inputs, including private and public sector investment, will be needed. An industrial strategy that focuses on strategic high productivity/high wage sectors (finance, life-sciences, clean-technologies) will stimulate skills demand in these areas and provision needs to respond. Skills England should facilitate regional and sector planning in collaboration with firms and providers.

How Skills England incentivises FE and HE providers to collaborate and meet local skills demand will be critical. This must be done carefully to avoid an excessively narrow offer in areas with limited demand. Good technical training is also costly and relies on strong firm engagement, both areas where the UK must do better. Firm provided training is inadequate and adults find it difficult to retrain outside of work and are reluctant to take loans to do so. We therefore need to use the tax system to stimulate greater firm and individual investment in human capital.

Conclusion

Low productivity in the UK is not solely due to poor skills. In some areas employers only offer low-skilled jobs, leading to weak demand for skills. To increase the demand for skills, other factors need to come into play including investment. Simply upskilling the population will not have the desired effect.

That said, the UK does need a resilient and adaptable workforce ready to meet the demands of a changing economy. This requires sustained public investment across the life-course, a funding system that supports diverse pathways, and a robust accreditation system to enable these paths. More workers in the UK need higher levels of skills, including 'soft skills'. Finally, policy needs to shape the system rather than leave it to the market, with local, regional, and national differentiation, avoiding cold spots where access to effective skill development is limited.

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8. Prioritising Skills for Regional and National Growth

Athene Donald, Joe Peck and Andy Westwood

Policy Actions

1. The Departments for Education, and Science, Innovation & Technology, together with Skills England, the Office for Students and UK Research & Innovation, should prioritise missions, sectors and clusters in industrial strategy in all their funding and regulatory systems in order to better incentivise local and national growth
2. Where required, ministers and agencies should create new funds, incentives and regulatory levers to prioritise skills needed in places and sectors (adopting more of a market shaping role) – for example through the student loan system and growth and skills levy reforms
3. Improve structures to match supply and demand for higher level technical skills (sub degree level). For example, via the Growth and Skills Levy and Higher Education/Further Eduction reforms – including the Lifelong Learning Entitlement – and in coming post 16 strategy
4. Improve relationships with mayoral strategic authorities, testing and expanding powers and resources held at city region level, especially those with most growth potential and capacity

Introduction

Prime Minister Keir Starmer has frequently described Labour's plans to create Skills England (SE) as a key priority for both its 'opportunity' and 'economic growth' missions. He has tasked it with taking currently fragmented sectors and programmes and making them coherent, noting that 'the skills system is in a mess' and 'bringing (it) together' is a key challenge for the Government.[1]

As research from The Productivity Institute has shown,[2] fragmentation has long been a problem in England with multiple organisations, regulators and different – often competing – forms of accountability and funding (all of which frequently change, leading to messy policy and institutional churn).

Creating coherence will be a big job, even more so if it includes higher education. But it will be vital in order to create an education and skills system which works both to provide the training the post-16 cohort needs, and which aligns with the Government's plans for growth in the sectors it is prioritising.

A broad and ambitious approach is necessary, encompassing all of further and higher education, technical skills and apprenticeships, if the Government's promise of a comprehensive post-16 strategy, supporting an active industrial strategy, is to be realised. But achieving it, and at the same time tackling some longstanding areas of weakness, will help to shift the dial on productivity overall.

In a difficult Spending Review, there have been challenges for the Treasury and the Department for Education (DfE) to work out where to spend their scarce 'marginal pound' – on what types of skills, for whom, covering which age groups and factoring in regional differences. This situation is being made worse by swiftly changing geopolitics in which the skills and sectors valued most are continuing to evolve.

There has been a longstanding and strong case for improving our supply of higher technical skills,[3] especially in the key sectors and locations of the UK economy that the Government has identified in its industrial strategy.[4] Furthermore, there is a need to coordinate this growth in higher technical skills more effectively with policies seeking to improve the utilisation of these skills in particular workplaces.[5]

Comprehensive join-up is required, coordinated by SE, to ensure

individual colleges and universities provide appropriate courses for local populations (noting sub-degree-qualified individuals are less likely to relocate) and reduced competition over students between providers. Improved co-ordination with other government departments beyond DfE is also critical such as with the Department of Science, Industry and Technology (DSIT) and its investment in R&D, with the Ministry for Housing, Communities and Local Government (MHCLG) and elected mayors on growth, devolution and housebuilding, and with the Department for Business and Trade (DBT) on industrial strategy as highlighted specifically in a recent report from the National Audit Office.[6]

Increasingly we should also include the Ministry of Defence (MoD) on this list as we seek to rapidly ramp up defence and national security spending and our immediate capabilities in several related areas.

Broadly this joined-up approach is needed to facilitate priorities and activities right across government. If we don't have sufficient construction workers, plumbers or electricians, for instance, MHCLG's ambitious plans for housing cannot happen.[7]

But SE and the DfE will need to do more than just point out what the priority sectors in the industrial strategy are, and what their skills needs might be. They will need to drive the system – whether through universities, colleges or apprenticeship providers – to enable appropriate prioritisation of these subjects and programmes.[8] Part of this has to be associated with reform of the Apprenticeship Levy and, as Alison Wolf has recently pointed out, differentiating funding between young adults first entering the job market from existing employees essentially carrying out continuing professional development.[9]

None of this is easy with the series of largely separated 'quasi markets' that currently make up the skills system, where provision is mainly led by the demands of individual learners or levy paying employers.[10]

We also know that employers are investing less into training as a whole and specifically at these lower levels,[11] with the existing Apprenticeship Levy creating perverse incentives, shifting expenditure to those already in employment.[12] So, this is more than just a technical exercise in institutional or supply side reform. Increasing employer investment must be a goal. Getting the

alignment of skills, local economies and sectors right will help and also be crucial to building 1.5 million homes, making the NHS fit for the future or – perhaps now most clearly of all – contributing fully to defence and national security. If we are going to spend upwards of 2.5 per cent of GDP on defence, then we will need to prioritise scaling up the workforce in the right parts of the country with the right skills. And do so urgently.

Finding Ways to Prioritise Specific Skills

Ministers, SE and other bodies – most notably the Office for Students (OfS) – need to find ways to prioritise certain types of provision in order to support key sectors in the industrial strategy, as well as for the public services in the Government's other missions.

At the Spring Statement Chancellor Rachel Reeves showed one way of doing so by announcing some £600 million over the next four years for additional training places in construction. This followed her previous speech in February and support for growth in the OxCam corridor, as well as building new runways at Heathrow and Gatwick together with the Lower Thames Crossing.

Finding sufficiently skilled workers for building this infrastructure and for housing more broadly cannot reliably be left to existing market mechanisms that typically depend on the choices of individual learners and firms.

Instead, it will require a different way of organising the broader skills system, including higher education. It will involve incentivising both institutions and individuals to prioritise particular subjects and types of provision in ways that meet both local needs and emerging policy priorities, reallocating funding across different providers and qualification levels where necessary.

In the case of both defence and housebuilding that prioritisation may need to be as much for adults wishing to retrain quickly as for young people applying to and progressing through the system from school. We will need to find new ways of doing so. And rather than trying just to add a new programme or pot of money here and there, we will need to rethink how existing systems operate as a coherent whole.

Given wider spending constraints it looks unlikely that the Government will be able to replicate the additional resources found

for construction across multiple sectors, subjects and clusters. But even if this were possible, it will be challenging to dictate strategic priorities at the same time as running what, up to now, have been predominantly market driven systems. Firstly, because it sends mixed signals and incentives when priorities need to be clear. And secondly, because this will translate into confusion and uncertainty on the ground for individuals, institutions and employers alike.

That means we are going to have to think harder about ways to reform the existing systems and to scale back, limit or disincentivise some of the things that don't match priority sectors or places, as well as strengthening those that do. If we don't, we will jeopardise the supply of appropriately skilled people to the things that the Government thinks really matter.

Understanding and Tackling Regional Inequality

A critical dimension to the overall growth agenda will be how the Government addresses geographical inequalities and economic differences across the country. As already discussed, that will include the processes through which appropriately skilled people are supplied in growth areas, such as the OxCam Corridor, and for other large infrastructure projects. It will also matter to geographical clusters serving key sectors in the industrial strategy, whether for additional skilled workers in defence industries or for building new generation nuclear power stations. In addition, it will mean improving the supply of the most appropriate skills in our second-tier cities – an objective also highlighted in the industrial strategy green paper as well as in influential reports such as the Resolution Foundation's 'Stagnation Nation'[13] – so that their productivity rises.

Furthermore, it will require an approach that actively helps people and places beyond these locations. Namely the wider regions, towns and cities where educational achievement, progression and economic performance all tend to lag national averages – a challenge for the Government's opportunity as well as its growth mission.

Ministers still insist that improvements in growth and living standards will be felt everywhere. As Rachel Reeves said just before her Autumn Budget, "revitalising the country's industrial heartlands and creating decent, well-paid jobs is at the heart of our mission." And for the economy as a whole she is clear that

it is greater investment that must "reignite Britain's industrial heartlands to create good jobs in the industries of the future". [14]

That will be wishful thinking unless there are more concrete plans for how the Government is going to achieve it. Alongside others, education and skills policy must play their part. And alongside the wider decline in private investment in training, there are specific challenges outside London and the Greater South East where greater deficits and poorer economic performance mean that it is harder to raise private as well as public sector funding (or potential borrowing on the markets) on the scale that many cities and regions need.[15] It means that addressing these education and economic inequalities will likely require different types of intervention from those in more affluent, higher skilled parts of the country.

Political scientists Will Jennings and Gerry Stoker have described the emergence of 'two Englands' and the growing social as well as economic differences between the South East and the rest of the country.[16] Half of the population of the UK, according to Philip McCann, live in places poorer than Mississippi.[17]

Janan Ganesh, writing in the Financial Times,[18] described the "long run threat to nationhood from productive, outward facing regions that look at their domestic stragglers and feel – to steal a phrase – shackled to a corpse". As he went on to warn, "the material gap between cities and deindustrialised heartlands has grown over decades to become the most troublesome fault-line in western democracies". So as Jen Williams recently put it, the Labour Government really does need a theory of growth for the North (and for most parts of the UK outside of the Greater South East).[19]

Each of these spatial challenges will require policy co-ordination between different levels of government as well as between different Whitehall departments. In particular, it will require clear roles and responsibilities for different levels of government. So far this has come with a focus on completing the map of devolution, the building of new mayoral combined authorities, and wider local government reform so that more councils are operating at greater scale – either through new combined (now strategic) authorities, Mayoral Strategic Authorities (MSAs) and/or via unitary status.[20]

As yet there has been no dramatic extension of powers for the most advanced city regions (i.e. those deemed most important to driving our national economy). Neither have these mayors and

authorities found the co-ordination with Whitehall departments as straightforward as they might have hoped – a sense echoed in the Productivity Institute's Regional Forums.[21]

So far then, this is inconsistent with an industrial strategy that identifies tackling the underperformance of the eight largest cities outside London as 'key to raising economic growth and reducing inequality' with a total gap – or potential contribution – of some £47 billion (DBT, 2024). Of course, this is why Treasury led devolution, up to now at least, has been concentrated on the places with most potential to make such contributions.

But it's not yet clear how either the industrial strategy or devolved institutions might better deliver or co-ordinate R&D, skills or infrastructure policy in sufficient detail to get new investment or specific projects off the ground, including ambitious plans such as those in Investment Zones, Freeports and AI Zones. So, there's a need for different approaches to deliver growth throughout the country. Put simply, what might work in Oxford, Cambridge or London is not the same as in Liverpool or Leeds. As the Government concludes the Spending Review and implements a series of strategies, it's not obvious that arrangements are working optimally for supporting local or national growth.

As Andy Burnham, the Greater Manchester Mayor, recently said in a speech to the Institute for Government:

"Different regions of England have different economies and therefore need to develop their own solutions to an issue this country has never prioritised and never fixed. For these reasons, the Department for Education's long-running resistance to devolution is unjustifiable and becoming a significant barrier to growth. When I speak to potential business investors in Greater Manchester, the most important ask they have is whether we can guarantee access to the talent they need. We need to be able to give them better answers." [22]

Burnham is frustrated that the new Labour Government hasn't yet embraced his proposals for a vocational 'Mbacc' or agreed to continue the Conservative Government's promise in its 'trailblazer deals', agreed with Greater Manchester and the West Midlands, for 'joint governance' over 16-18 skills policies. Instead, there is a promise set out in the recent devolution white paper where mayors including Burnham will have joint oversight of Local Skills Improvement Plans (LSIPs).

This disagreement highlights two problems that the wider skills system needs to acknowledge and address if it is to contribute better to improving productivity and growth throughout the country. The first is to better tailor local and regional systems to different needs, and the second is to be able to better identify and then prioritise training for those skills in most demand in different places.

Currently there are few incentives for colleges and universities to engage with local growth. This needs to change so they can work more effectively and more flexibly with local firms, communities and learners as well as with MSAs. This will also apply to particular clusters and projects associated with the industrial strategy as well as to the Government's missions and the need to improve public services.

For the former, the increased supply of tailored higher technical skills will be critical to the workforce, whether to life science labs in the OxCam Corridor or to defence and advanced manufacturing in the North West. That should involve improved incentives and better co-ordination across colleges, universities and the private sector. For defence industries in particular it will need to be at speed and scale.

For some sectors and clusters these skills may be beyond undergraduate degree level and involve advanced degrees as well as higher technical training. Firms and their workforces will need to develop both if they are to improve the 'absorptive capacity' to deploy and diffuse new technologies and ways of working critical to improving productivity and regional growth.[23] Often this will involve a skills system working much more closely with DSIT and its agencies as well as with sector specific departments such as health, defence and energy/net zero.

Conclusion

Overall, the Government is clear about its priorities and how important a coherent skills system will be to achieving them. Making it happen is now the task that sits before DfE as well as other departments and agencies, and specifically for SE as it comes into existence. All will need to find ways to prioritise the skills and programmes that will be most important in all regions if the country is to achieve its missions, implement a successful industrial strategy, fix public services and grow the economy.

There is neither the time nor resource to pull everything up by their roots. Rather, in this Parliament ministers will have to focus on what is achieveable and what can best support the Government's main objectives. That means finding the most effective ways to bend current systems towards its missions and to supporting growth sectors and clusters in the industrial strategy. It also means creating the right incentives – both regulatory and financial – for institutions to help drive economic growth and opportunity in their localities and across the country as a whole.

A major challenge everywhere will be improving the supply and utilisation of higher technical qualifications in the workforce so that firms and organisations in key sectors and clusters can deploy new processes and technologies and better drive productivity growth. Too often this type of provision has fallen in the cracks between further education and higher education and/or between state led provision and private investment from firms and individuals. It should become a priority for policy and particularly for the Lifelong Learning Entitlement policy as it is finalised.

Alongside improved coherence between different parts of the education and research systems across Whitehall, a new approach will need to work more effectively across different levels of government. Given England's deep and long-term spatial inequalities, national and local organisations will need to work together more effectively to build the right provision for driving growth in all parts of the country. That means better understanding of skills needs, improved co-ordination and shared governance with effective mechanisms for prioritisation everywhere.

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9. Attracting Transformational FDI to Boost Productivity

Nigel Driffield and Xiaocan Yuan

Policy Actions

Our main recommendations centre around what we term "transformational FDI". That is, foreign investment that is not simply "more of same" for a place, but has the capacity to change the pace of development in a region and more importantly shift the dial on productivity. In order to achieve this, we argue that policy at a local or regional level, aligned with national efforts of FDI attraction, needs to do three things:

1. **Seek to attract FDI that offers new opportunities rather than simply replicating the past.** This means that locations, for example Mayoral Combined Authorities (MCAs) in the UK need to be honest with themselves about the scope for attracting these new types of activities
2. **Ensure that inward investment promotion is linked to local policy on skills, business support, and supply chain development**, to provide a strong base of skills and local inputs to support inward investors
3. **Align FDI attraction with wider sets of policies,** through the use of investment incentives such as innovation zones or devolved support for innovation, and ensure that travel-to-work areas are large enough to capture the agglomeration effects

Introduction

Inward foreign direct investment (FDI) is a significant driver of economic growth, offering capital, knowledge, and technological advancement that can improve productivity. However, its impact on productivity is not equal across regions. The purpose of this paper is to synthesise three related phenomena. The first concerns the unequal nature of economic development and productivity across the UK.

As The Productivity Institute (TPI) has detailed elsewhere, the UK exhibits high levels of regional inequality.[1] Also, addressing this is multifaceted, complex and context specific, such that in order to address this one needs targeted interventions at a local level. This disparity exists both within sectors, suggesting that there are large variations in productivity within the same activities across locations, and in the sectoral composition of different regions. As a result, the UK effectively has a dual equilibrium, with some regions exhibiting high levels of innovation, skills, productivity and investment, while others experience the opposite.

Secondly, building on this, it is necessary to understand how inward investment can play a role in stimulating productivity growth. However, given the disparities mentioned in the first point, this requires a nuanced understanding.

The third is that resulting from the nature of the challenge, policy interventions for inward investment should recognise the distinction between the need to generate productivity growth in lagging regions and avoid the risk of overheating high productivity regions which already suffer from skilled labour shortages.

From a policy perspective, one of the challenges is that inward investment policy is typically framed as though the problem that one is seeking to solve is unemployment. However, we argue that the real issue is low productivity, and we subsequently develop a framework to address this actual problem.

In common with any area of industrial strategy, there are three fundamental questions regarding the attraction of inward investment:

- Do local or regional strategies prioritise areas of strength with above average productivity, or seek to catalyse new, potentially high growth areas by leveraging research and frontier

technologies? If the former, we might expect place-based innovation policy to encourage more general interactions between businesses and universities, potentially strengthening sites that are already internationally competitive. If the latter, then the challenges are likely to be around scaling-up nascent activity.

- Does local policy seek to crowd in new investment, or seek to nurture existing investment? While prioritising new investment is likely to meet the Government's short-term objectives for increased direct investment, well-designed interventions that nurture existing investment could enhance resilience, and potentially lead to productivity gains and other innovations over the medium to longer term.
- Should local policy seek to generate employment by attracting new activities or by supporting traditional sectors? If the goal is to build on existing strengths, then the emphasis needs to be on working with existing businesses and addressing the market failure that has hitherto prevented better cooperation between business and research at the local level. What is the nature of the trade-off involved in seeking to attract new activities, which may take longer to become embedded but may generate productivity growth in the long term?

Inward Investment and Productivity

The literature concerning the role that inward investment can play in boosting productivity is discussed in detail by Driffield et al. (2021).[2] There are essentially two mechanisms by which inward investment is assumed to improve productivity (or innovation) in a given location. The first is simply the direct 'batting average' effect, that new (foreign) investors are typically more capital and skill intensive, more innovative, and therefore more productive than the average incumbent firms. The second, known as the indirect effects, refers to the transfer of knowledge embedded in the investment to local firms, either through innovation spillovers, labour mobility, or formal mechanisms such as buyer-supplier relationships.

At the most basic level, one could argue that typically inward investment strategy is concerned with attracting firms with greater proprietary knowledge arising from technology, marketing,

brand name, capital, access to financing, process efficiencies, size (economy of scale and scope), and managerial expertise, as highlighted in the traditional international business literature.[3] Such assets in turn will generate not only higher productivity but also greater productivity spillovers.

This raises the question of what a region's value proposition is for those investments – whether they are simply 'more of the same' for the region, or a game-changer. The key message is that one needs to assess a location's capacity to attract investments and subsequently maximise the benefits of such investments, focusing on spillovers into the wider economy. While this offers a useful framework, with which we largely agree, current policies both at the national and local level tend to focus on boosting or supporting existing sectors and generating employment in sectors with which the region identifies, with locations concentrating on sectors believed to be local strengths.

We argue that a more nuanced, targeted activity-based or even firm-level approach may be necessary at the local level. An activity-based approach considers the specific types of value-added tasks that foreign investors bring, while a firm-level approach recognises the heterogeneity among investing businesses. This needs to recognise local opportunities for investment that have the potential to be transformative in driving productivity and therefore earnings growth in each location.

However, if low levels of productivity are viewed as a symptom of low levels of innovation, then this perspective helps refine the definition of transformational foreign direct investment. We assert therefore that for FDI to be transformational, it needs to achieve two objectives—one on the demand side and one on the supply side:

- Increase demand for skilled labour in the location
- Interact with other stakeholders to amplify opportunities available to local people, or improve the returns to the individual on acquiring skills

How Can Inward Investment Boost Productivity in Lagging Regions?

Analysis done by TPI has highlighted the sheer scale of regional productivity (and earnings) inequalities in the UK.[4] Whether one uses the term 'levelling up', 'inclusive growth', or 'rebalancing the economy', the challenge remains the same: how can we address the problem of a low skill low productivity equilibrium in certain locations? This issue can be viewed through the lens of supply and demand in the labour market. On the one hand, as individuals become more skilled, they gain access to higher productivity jobs. However, at the same time, the demand for those skills, in terms of the availability of such jobs, also increases (in turn increasing the incentives to attain skills and raise aspirations). It is clear to see therefore how inward investment can play a crucial role in increasing the returns to skills and, consequently, the motivation to acquire them.

This challenge has long been recognised, but addressing it needs a correct diagnosis. Typically, a lag in local or regional economic development has been associated with higher levels of unemployment, with then the solution often focusing on attracting jobs to these locations, while the type of investment or the jobs created is viewed as a secondary concern. This has led to what one may call a two-speed economy, characterised by two types of equilibria:[5] lagging regions tend to attract investment requiring larger amounts of relatively unskilled labour, but lower levels of new technology,[6] while high-tech investment is concentrated in a limited number of locations already struggling with skill shortages.[7] Therefore, to help lagging regions in the UK to recover, potential policy interventions need to focus on how inward investment can be leveraged to 'move the dial' in the lagging regions of the UK, rather than simply offering more of the same in terms of output, productivity and employment opportunities.

The Trade-Off: The Challenge of a Two-Speed Economy

While inward investment has the potential to drive productivity growth, several challenges need to be addressed, with the trade-off between employment growth and productivity growth being

a notable one. With only a very few exceptions, employment and technological development are generally mutually exclusive—one either has high-tech investment that generates some well-paid jobs or has lower-value investment which creates larger numbers of more basic jobs. One can consider, for example, biotech and logistics as standing at the opposite end of that continuum. To further illustrate the points, we categorise different types of investments based on absorptive capacity (low versus high) and FDI features (introducing new knowledge versus attracted by existing resources).

As Driffield et al. (2024)[8] explore in detail, this implies that locations face a trade-off when seeking to attract FDI. Do they, for example, prioritise FDI that will deliver employment creation (or protect existing jobs) or that which will deliver improvement in innovation rates?. This is by no means trivial. At both local and national levels, it can be influenced by democratic processes, balancing the protection of current jobs with the trade-off between immediate job creation and long-term innovation.

The Necessary Conditions for FDI to Boost Productivity

For FDI to boost productivity, three necessary conditions need to be met:

- The FDI introduces new knowledge, which increases the demand for skilled labour
- The local economy has the capacity to supply such skilled labour
- The local economy has the absorptive capacity to maximise the wider benefits

Thus, transformative FDI can be understood as the ideal interaction between the type of FDI a region can attract, the ability to absorb the new knowledge it brings, and the capacity to foster linkages.

It is also important however to emphasise that this transformative effect is unlikely to occur in isolation from other policies. One important element is that the investment is also what one may call 'aspirational', suggesting that people in the location can perceive the benefits of acquiring the skills that are in greater demand.

Achieving this will involve aligning inward investment with local higher or further education provision for example. Similarly, to maximise these benefits, policy needs to foster linkages, with local investment promotion agencies (IPAs) or 'growth companies' facilitating relationships between inward investors and local suppliers. This entails aligning business support, supply chain development and inward investment attraction around key activities or value chains. Equally, it places the emphasis on the importance of enlarging travel-to-work areas in the UK, such that firms can access a wider pool of available labour.

Strategy Implementation for Transformational FDI

In order to deliver this agenda, IPAs at both national and regional levels must work with local partners to develop and co-ordinate a range of tailored local investment promotion strategies aimed at attracting transformational FDI that:

- builds on the existing strengths of regions; or
- facilitates regions to move up value chains. This involves identifying areas where local capabilities cannot fill gaps in supply chains, potentially due to technology gaps or lack of access to finance and then seeking inward investment to address these gaps. It also involves working with planning authorities on site selection and infrastructure development

This necessitates an improvement in a location's provisions for inward investors by linking UK IPAs' investment promotion strategies with investor feedback, and national and local/delegated innovation and skills policies. This includes facilitating collaboration between local higher education, further education, and national private sector to fill local skills gaps, including through labour mobility between different sectors. As an aside, delivering this at the level of a county, rather than at the level of an MCA is problematic, as counties are likely to face significant capacity constraints.

In turn, once this investment has been landed, policy responses should focus on how to maximise the impact of such transformational FDI. This means ensuring for example that host regions also benefit from spillovers in productivity and employment.

For example, links between inward investors and local businesses can be strengthened by:

- increasing connections, promoting relationships with local suppliers, and making use of local supply chains
- supporting local businesses to reposition themselves to fill supply chain gaps. This is very much in the spirit of what is proposed by TPI's Investment in Places campaign, seeking to align different levels of interventions, across a range of activities, within the context of a given local setting

A key element of this is the need to identify domestic businesses that can engage with foreign businesses and help them benefit from FDI through linkages, spin-offs, and labour mobility. For example, draw on local knowledge developed through business support, export promotion and supply chain development programmes to identify and support productive companies in sectors that align with the supply chains of FDI companies. Or help these companies internationalise, through exporting, cross-border joint ventures or other forms of FDI, to increase their visibility to foreign investors.

Such knowledge transfer and coordination of activity cannot happen without people. Delivering this requires an improvement of infrastructure to expand Travel to Work Areas, particularly in the North and Midlands. This can improve access to employment for local workers, facilitate greater agglomeration economies, and expand the pool of labour available to overseas companies.

Conclusion

Success needs to be evaluated. This requires the development and monitoring of metrics to assess the contribution of FDI to levelling up. These indicators should focus on regional productivity levels, the links between FDI and the local economy, and the impact of FDI on productivity growth, innovation, skills, wages, and exports. Only then can one develop an approach to understand the value of investment promotion incentives. Large scale incentives should therefore be limited to cases where the proposition for long-term investment is strongest, and where the investment will be transformational and accompanied by support for local businesses and skills interventions.

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10. Reimagining Trade as a UK Productivity and Growth Strategy

Jun Du

Policy Actions

I. Strengthen the domestic core – trade for productivity and innovation

- Integrate trade into a national productivity strategy by embedding trade within industrial, skills, and innovation policies. Prioritise high-productivity sectors and foster SME participation in competitive ecosystems
- Enable firm capabilities and resilient supply chains by establishing a national supply chain observatory, expanding digital export tools, and aligning export support with innovation, skills, and net zero goals
- Expand SME access to global markets by scaling tailored export support, simplify compliance, and building capacity through localised trade and innovation hubs

II. Create strategic external conditions – trade for growth and resilience

- Consolidate the UK–EU trade reset by delivering the 2025 Summit roadmap: reducing non-tariff frictions, restoring mutual recognition, and reintegrating SMEs into EU value chains
- Diversify global trade partnerships by leveraging the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) and the India Free Trade Agreement (FTA), deepening links with South Korea and the Global South, and pursuing co-investment in green tech, digital infrastructure, and strategic inputs
- Position the UK in key global value chains through engaging pragmatically with the US and China to secure green tech partnerships and critical inputs. Use trade policy to reinforce UK's role in advanced services and manufacturing

Introduction

UK trade policy remains constrained by a post-Brexit management mindset, focused on mitigating frictions with the European Union through technical fixes such as customs modernisation and regulatory alignment. While necessary, these actions risk becoming the ceiling of ambition rather than the foundation of a strategic trade vision.

Recent agreements with India and the US suggest a pivot towards a more outward-looking stance. Yet such deals must be integrated into a coherent strategy that treats trade not merely as diplomacy or damage control, but as a lever for addressing the longstanding UK productivity problem.

Amid global disruptions—rising geopolitical tensions, fragmented supply chains, and renewed industrial policy—trade is being redefined. The UK must adapt by repositioning trade policy to support competitiveness, resilience, and structural transformation. This involves not only restoring EU market access but also diversifying partnerships, embedding services and technologies in global value chains, and aligning trade with industrial and climate goals.

This paper sets out a forward-looking agenda, reimagining trade as a platform for national renewal. Trade must become central to efforts to rebuild firm capabilities, accelerate the green transition, and secure the UK's economic position in a shifting global order.

The Trade-Productivity Relationship: Foundations and Fractures

Trade and productivity are mutually reinforcing. Productive firms are more likely to export,[1] while trade enhances productivity through scale, competition, and learning. But these benefits depend on market access, firm capabilities, and supportive institutions—all of which have weakened in the UK over time, with Brexit compounding the strain.

Exporting boosts productivity by enlarging firms' economies of scale and exposing them to innovation,[2] especially in high-income markets,[3] and when exporting persistently.[4] UK small- and medium-sized enterprises (SMEs) often export intermittently and

are vulnerable to exit, leading to permanent productivity losses.[5] Post-Brexit frictions have raised entry costs,[6] eroding participation and learning-by-exporting. Supporting persistent, re-engaging exporters is vital.

Imports – especially intermediates – cut costs, raise quality, and fuel innovation.[7] Firms that both import and export show the highest productivity,[8] yet Brexit has disrupted input access and added trade costs.[9] A strategic import policy focused on efficiency and resilience is needed to revive competitiveness.

Services – logistics, R&D, finance – are central to productivity, both as tradable outputs and inputs into manufacturing.[10] Smart technologies and digital services strengthen manufacturing resilience and competitiveness.[11] Liberalising trade in services can boost productivity, but the gains depend on service quality, regulatory clarity, institutional strength,[12] and sectoral context.[13] The UK's comparative advantage in high-value services is underutilised.[14] Barriers to mobility and regulatory divergence post-Brexit have constrained growth. Unlocking services trade must be prioritised.

Trade gains depend on workforce adaptability and digital infrastructure. Regional immobility, skills shortages,[15] and uneven digital readiness constrain firm participation in global markets.[16] Trade policy must be coordinated with national skills and digital strategies, investing in re/upskilling and access to trade-enabling technologies.

Unequal Gains and Limited Spillovers

Trade benefits remain concentrated among large firms and prosperous regions. Spillovers to SMEs and lagging areas are weak[17] due to fragmented innovation systems and supply chains. Regional trade support and ecosystem-building are critical for inclusive growth.

The UK trade–productivity system is fragmented.[18] The challenges outlined above can be summarised in a matrix that links structural weaknesses to their productivity implications and associated policy levers.

Table 10.1

Policy Box: Trade–productivity diagnostics		
Challenge	**What's broken**	**Why it hurts productivity**
Fragile exporter base	Shrinks market access, weakens learning	SME support, re-entry, market diversification
Learning loss post-EU exit	Reduced exposure to innovation and standards	Innovation-linked export incentives
Import frictions	Higher costs, disrupted production	Customs reform, input access
GVC retreat	Loss of high-value roles and spillovers	Support strategic reintegration
Services underused	Limits growth in high-productivity sectors	Services-focused FTAs, digital and mobility agreements
Skills/digital gaps	Constrains firm adaptability and market reach	Align trade with skills, invest in digital capacity
Uneven gains	Benefits concentrated in regions/firms	Build regional ecosystems, connect SMEs to value chains

UK-EU Trade: Resetting the Core

The EU remains the UK's largest trading partner, accounting for 42 per cent of exports.[19] For decades, this relationship drove productivity through integrated supply chains and regulatory alignment. The EU-UK Trade and Cooperation Agreement (TCA) introduced non-tariff barriers, reducing exports by 17 per cent and imports by 23 per cent by 2023, with export variety down 33 per cent.[20] These shifts have disproportionately affected SMEs[21] and disrupted previously integrated EU–UK value chains.[22] Sectors like agri-food face the heaviest losses, weakening the learning, input access, and scale effects that trade can provide.

The May 2025 UK–EU Summit marked a cautious but significant shift from passive damage limitation to more strategic re-engagement. Agreements on agri-food alignment, emissions trading, and energy integration demonstrate renewed political will. However, these outcomes form a foundation, not an endpoint. Much remains to be done to reduce frictions, restore regulatory cooperation, and support the reintegration of UK firms into European value chains.

The challenge is to embed the outcomes of the Summit into a broader strategy that links UK–EU trade to national productivity objectives. Table 2 outlines key priorities—ranging from customs simplification and mutual recognition to services integration and SME support. These levers are not just technically important but strategically essential to rebuilding the UK trade–productivity nexus. The reset must be pursued through structured dialogue, institutional coordination, and a firm focus on restoring the learning and upgrading potential of UK–EU trade.

Table 10.2: UK-EU reset trade policy priorities

Strategic priority	Key action	Progress	Productivity lever (from Section 2)
1. Reducing trade frictions			
1.1 SPS and veterinary alignment (agri-food)	Implement dynamic regulatory alignment to eliminate most border checks. Enhances SME competitiveness and NI-GB trade efficiency.	✔	Strengthen export base, restores input access, supports SMEs and GVCs (2.1, 2.2)
1.2 ETS linkage	Link UK and EU emissions trading systems to avoid CBAM charges and enhance green policy coherence.	✔	Supports manufacturing and green industry competitiveness (2.1, 2.2, 2.5)
1.3 Streamline customs	Simplify procedures, expand trusted trader schemes, explore access to EU's customs IT systems.	⏳	Reduces cost and delays for importers/exporters (2.1, 2.2)
2. Re-anchor in EU value chains			
2.1 Simplify rules of origin via PEM convention	Support UK accession to Pan-Euro-Med Convention to ease compliance complexity and aid SME participation.	✘	Reconnect UK firms to EU value chains, enables SME GVC participation (2.1, 2.2, 2.5)
2.2 Sectoral mini deals	Negotiate targeted deals in automotive, life sciences, creative industries, and green technology.	⏳	Promotes strategic GVC integration (2.1, 2.5)
3. Reinvigorate regulatory cooperation			
3.1 Strategic dynamic alignment	Pursue alignment in high-productivity sectors where mutual interest exists.	⏳	Reduces regulatory duplication, enables tech diffusion (2.1, 2.2, 2.5)
3.2 Mutual recognition of conformity assessment	Enable UK-accredited bodies to certify for EU markets. Expand MRAs beyond automotive. [23]	✘	Cuts costs without requiring full alignment (2.1, 2.5)
4. Services trade integration			
4.1 Financial, professional, and digital services.	Restore recognition of qualifications, data adequacy, and regulatory coherence. Enable digital infrastructure interoperability.	✘	Unlocks high-productivity services trade (2.3)

Strategic priority	Key action	Progress	Productivity lever (from Section 2)
5. Restore SME export capacity			
5.1 Targeted SME re-entry support	Support certification, compliance, and re-entry to EU markets.	✘	Builds persistent exporters, rebuilds learning channels (2.1)
5.2 Regional export linages	Integrate export support into regional innovation strategies.	✘	Enables spillovers to lagging regions (2.5)
6. Expand labour and talent mobility			
6.1 Business mobility	Facilitate short-term skilled professional mobility under the TCA.	⏳	Supports human capital and mobility (2.4)
6.2 Youth mobility	Develop capped mobility agreements and rejoin Erasmus+.	⏳	Facilitates service delivery and skills circulation (2.4)
7. Sectoral growth cooperation			
7.1 Energy and Climate	Deepen electricity market integration and collaborate on green investment and carbon capture.	✔ (partial)	Bolsters green tech value chains and investment (2.2, 2.5)
8. Long-term collaboration			
8.1 Revitalise TCA Institutions	Use committees and working groups to drive technical resolution and cooperation.	✔	Enables agile policy coordination and barrier resolution (2.6)
8.2 Structured Dialogue Mechanism	Establish a formal mechanism with scope, timelines, and milestones for ongoing cooperation.	✔	Supports dynamic resolution of regulatory and institutional barriers (2.6)

Note: Progress status (✔ = agreement reached at May 2025 summit; ⏳ = ongoing/negotiation; ✘ = missing/needed). Source: The Author compiled from various public accessible sources.[24]

Trade Policy for Productivity and Growth

Trade policy must be repositioned as a central lever for advancing productivity and long-term economic growth. Beyond market access, it should build firm capabilities, support innovation, and strategically embed the UK in high-value segments of global value chains.

In high-productivity sectors such as advanced manufacturing, life sciences, and clean technologies competitiveness relies not on individual firms alone, but on entire ecosystems of suppliers, innovators, and support institutions. Globally competitive firms are anchored by deep, collaborative supply chains and depend on the dynamism of domestic SMEs.

UK trade policy should prioritise sectors with real or latent comparative advantage. Strategic investment can generate spillovers, consolidate clusters, and deepen global integration. Regional export accelerators embedded within innovation ecosystems can also boost local absorptive capacity and support inclusive productivity growth.

Enabling Firm Capabilities and SME Participation

Trade should not only generate revenue but enable firms to upgrade, learn, and grow. Yet opportunities remain unequally distributed, and policy support often fails to reach smaller businesses.

A national supply chain observatory should track dependencies, monitor disruptions, and identify strategic trade and investment opportunities. SMEs can benefit from global markets directly or indirectly through value chains, provided they are equipped with the right tools. SME engagement—whether through direct exports or value chain participation—must be strengthened to deepen the UK productive base and enhance resilience.

Productivity gains require better alignment between trade, industrial, and innovation strategies. Fragmented policymaking limits systemic upgrading. Reducing regulatory frictions, improving digital interoperability, and promoting mutual recognition of standards can lower costs and enable firm growth.

Trade must also support capability-building investment and deeper domestic supply chains. Export promotion should be linked to co-investment strategies that connect international expansion with R&D and workforce development. Coordinated trade, innovation, and skills policy can transform UK trade from a transactional tool into a structural growth strategy.

The UK's dual strengths in high-value services such as R&D, digital, and legal infrastructure, and in specialised manufactured inputs in sectors such as aerospace and pharmaceuticals, should be reinforced through strategic trade policy. This includes coordinated investment, skills development, and regulatory leadership that sustain the UK's position in premium segments of global value chains.

Headline trade figures are insufficient. Success must be measured by outcomes – firm-level productivity, green transition acceleration, strategic sector development, and national economic resilience.

These metrics should guide coordination across trade, innovation, skills, and investment bodies.

Strategic Trade in a Fragmented Global Order

In an era of geopolitical tension and industrial policy competition, UK trade must shift from a reactive to a strategic posture—focused on resilience, competitiveness, and long-term missions. This involves securing critical inputs, embedding UK firms in global value chains, and aligning trade policy with investment, innovation, and diplomatic strategy.

Trade diversification is essential to reduce risk and sustain competitiveness. As global trade fragments, the UK must avoid marginalisation by building strategic agility – mapping supply chain vulnerabilities, reshoring selectively in sectors like semiconductors and clean energy, and modernising import and origin systems to ensure reliable access to inputs. Resilience is not a retreat—it underpins productivity in a volatile world.

Deepening the UK global trade presence is equally vital—not only for market access, but to shape the architecture of next-generation value chains. Engagement with Asia-Pacific, India, and the Global South should prioritise co-investment in green tech, digital infrastructure, and skills. Agreements like CPTPP (Comprehensive and Progressive agreement for Trans-Pacific Partnership) should serve not only as market-access vehicles but as platforms for embedding UK firms in global networks and contributing to international rules on data, climate, and digital trade.

The UK must manage its relationships with the US and China through a productivity-focused lens. The US remains a vital partner in shaping the future of green tech, digital services, and critical minerals. The UK should collaborate to co-develop standards and investment frameworks that deliver domestic gains in innovation and supply chain capacity.

With China, the UK must pursue managed interdependence. While strategic risks exist, China's role in global green and electronics supply chains makes continued engagement essential. Diversifying sourcing and investing in domestic alternatives are necessary, but constructive cooperation can unlock economic opportunities and,

crucially, enhance the UK's standing as a credible global leader capable of balancing strategic interests and economic pragmatism.

In both cases, the UK should aim to contribute actively to value chains, leveraging strengths in advanced services, regulation, and innovation.

Conclusion

The UK stands at a strategic crossroads. Trade policy must move beyond post-Brexit damage control to become a central lever for national renewal, supporting productivity, innovation, and resilience. Addressing longstanding challenges – such as a narrow exporter base, disrupted supply chains, and underused services trade – requires coordinated, systemic action.

Resetting the UK–EU relationship is a necessary foundation. Yet sustainable gains will only come from aligning trade with national missions in skills, net zero, and innovation. Globally, the UK must pursue strategic engagement with the US and China, while expanding ties with fast-growing economies. These relationships should strengthen the UK's role in high-value, rules-shaping global value chains.

This demands stronger institutional capacity and policy integration. Trade must be embedded across industrial, regional, and investment strategies. New tools such as a national supply chain observatory, and new success metrics focused on firm-level productivity and resilience, will be essential.

If reimagined with purpose, UK trade policy can be a catalyst for economic transformation and global influence in an increasingly fractured world.

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11. Productivity: Transport and Housing

Tim Leunig

Policy Actions

1. To raise agglomeration effects and improve productivity towards US levels, the UK should copy the US and build more roads, especially motorways as part of its long-term infrastructure strategy. Initial priorities should include connections between the Midlands and key ports such as Felixstowe, Southampton and Hull, and links between large cities – particularly trans-Pennine routes
2. To maximise the agglomeration and productivity benefits of roads, the UK should reduce road user costs on the US model. Specifically, electric vehicle costs should remain low, rather than devising new taxes to replace lost income from fuel duty
3. To maximise the agglomeration and productivity benefits of trains as in Europe, the UK should relocate rail subsidies towards lower fares in and into principal cities (reducing off service at off peak times) and on lesser used routes
4. The UK should copy higher productivity European cities and create a tram network in Leeds and cities of similar sizes
5. The UK should increase agglomeration economies and raise urban productivity by allowing far more housing, at high densities, in our principal cities

Introduction

The UK has not been the world's most productive country for some time and has in fact fallen behind a remarkable number of countries. That has only one advantage, namely we are better placed to learn from others.

Based on work by Feenstra and the Penn World Tables, Our World in Data reports that the UK ranks 20th for productivity per hour worked, at $54.[1] Other methodologies will give slightly different results, but there is no doubt that many countries now exhibit considerably higher labour productivity than the UK.

The countries with higher productivity than the UK vary greatly. They include several large nations, including the US ($74), France and Germany ($69 each), Italy and Spain ($56 each). Many smaller nations, such as the three Benelux countries outrank the UK (Belgium $66, Netherlands $70 and Luxembourg $80), as well as all five Nordic countries (Norway, $100, Denmark $76, Sweden $66, Iceland $64, and Finland $58). Australia, Canada and Singapore are also above the UK ($61, $57 and $55), although Japan and Korea remain considerably below ($42, $41).

This chapter draws plausible policy conclusions by considering Britain's transport and housing experience relative to some of these nations which are considered in the light of the transport economics literature.

Melo, Graham and Brage-Ardao's survey article, The productivity of transport infrastructure investment: a meta-analysis of empirical evidence, uses 563 estimates from 33 studies to derive three conclusions.

First, returns to investment in roads are 6.5x the returns for rail.[2] Second, productivity effect estimates of transport infrastructure are higher for the US than for Europe. And third, returns are much greater in the long run. We shall consider each in turn.

Roads: Quantity

Since Melo et al. find that investment in roads has the highest returns, a good starting point is the quality and quantity of roads in more productive nations. We can proxy this by looking at motorways, the backbone of any strategic road network.

Comparing roads across countries is not straightforward. A physically larger country needs more roads to offer the same level of connectivity as a smaller country. Similarly, a country with more people will need more roads to avoid congestion. Miles of motorway per square mile of land, and miles of motorway per person, are each better than simple motorway miles. Even these are not perfect. A country with an uninhabited region will need fewer roads as another with a more evenly spread population. Despite the limitations, this measure will suffice to show that the UK performs poorly.

The table (11.1) below is based on UN data on countries' motorway network length,[3] physical size[4] and population.[5] Countries are ranked by the average of kilometres of motorway per sq km and per person. The ratio relative to the UK is also given.

Table 11.1

		Motorway km / 1000 sq km	Motorway km / m population	Relative to the UK
1.	Netherlands	83	154	4.0
2.	Spain	32	330	3.9
3.	Portugal	34	296	3.7
4.	United States	12	315	3.2
5.	Belgium	58	151	3.2
6.	Denmark	34	228	3.1
7.	Switzerland	39	174	2.8
8.	Germany	38	156	2.6
9.	Austria	21	192	2.4
10.	France	21	176	2.2
11.	Republic of Ireland	14	191	2.2
12.	Sweden	5	207	2.0
13.	Italy	25	124	1.9
14.	Finland	3	168	1.6
15.	Norway	2	108	1.0
16.	United Kingdom	16	56	1.0
17.	Iceland	*0*	*0*	0.0

The table (11.1) shows that the Netherlands has over five times as many motorways relative to its land mass as the UK, and almost three times as many relative to population. On the composite measure it has four times as many motorways. Overall, the UK ranks 16th out of 17, beating only Iceland, which has no motorways at all.

As remarked, no measure of road connectivity is perfect, but the difference between the values for the UK (1), France (2.2), Germany (2.6), the US (3.2) etc are so stark that it seems reasonable to conclude that Britain's productivity would be higher if our motorway network were doubled.

Two supporting facts bolster this analysis. First, while the UK has all but stopped building new motorways, other countries continue to do so. The Financial Times report that in the last 35 years the UK has built 422 new miles of motorways, Germany 1,400, France over 3,000, and Spain almost 7,000.[6] The UK's low levels and low growth rates for motorways is striking. *(see also Chapter 12)*

Second, emerging European economies – with whom the UK is increasingly competing for foreign direct investment – are building motorways rapidly. Bulgaria, Czechia, Slovakia and Hungary have all more than doubled their motorway networks in the last 20 years and all would outrank the UK if included in the table.

A map of the UK suggests many plausible motorways. For instance, one of our principal ports for goods imports and exports, Felixstowe, is far from the motorway network. There is no continuous motorway between England and Scotland, while Wales has only a token amount of motorways. A motorway from Southampton port to the Midlands and North is obvious, as is extending the M27 to Dover and Exeter, the M62 to Hull, making the A66 and A69 trans-Pennine roads into motorways, and upgrading the A1 which has roundabouts on it at both ends.

Roads: Costs

Melo et al. note that US productivity gains from roads are higher than elsewhere. The most obvious difference between driving in the US and in Europe is fuel costs, caused by tax differences. At the time of writing, UK petrol duty and VAT are 75p per litre or around 7.5p per mile. The US federal 'gas tax' is 4p a litre. State taxes vary

significantly, but average about 6p a litre, with almost all states exempting gasoline from sales taxes.[7] Given that the average US car does mid-20s to the US gallon,[8] taxes are 1.5p per mile, about a fifth the rate prevalent in the UK and most of Europe.

This price advantage applies to freight as well as passenger cars. It is cheaper to truck goods in the US than in the UK. This allows the US to use more efficient warehouse systems and to reduce the level of inventories. This is compounded by the quantity of roads. With more roads per person and per mile, US journey times are typically more predictable and congestion is generally lower, again improving logistics productivity.

The conclusion is obvious. More roads, and lower road user costs, would raise UK productivity. As well as benefits for freight, warehousing and logistics, this would also increase people's willingness to travel for work. Increasing travel to work areas increases agglomeration benefits, which we know raise productivity, particularly in high skill services.

Larger commuting areas also allow people to change jobs more easily, supporting career and earnings development. This would increase individual and national productivity. More generally lower transport costs improve knowledge transfer rates, as people travel more frequently and meet and interact more often. Finally, it would increase competitive pressure, since traders would increase the areas they would be willing to work in. Competitive pressure is a well-known spur to productivity.

It is widely held that the UK will need to replace petrol and diesel duty revenues from electric cars. This analysis suggests that would be a mistake. At present government charges on electric cars (green levies on electricity plus VAT) range from 1.3p a mile if a car is charged at home on a cheap overnight tariff, to around 5p a mile if using a fast motorway charger. These rates are similar to, and certainly not lower than, US levels of taxes per mile. Leaving the current EV taxes as they are seems a plausible strategy for maximising the productivity potential for transport.

This taxation proposal has caveats. First, it only makes sense combined with a significant road building programme. Without that congestion will rise, directly and causally, reducing logistics and other productivity rates.

Second, road travel has significant externalities, especially in urban areas. EVs have no engine air pollution, and reduced brake pad emissions thanks to battery regeneration. Against that EV tyre and road wear is greater, since the car is heavier. The case for urban road pricing – per mile, not flat rate – is strong on both health and congestion grounds. A sensible approach would involve very cheap driving outside of urban areas, with much higher costs for driving within them.

There are many other ways for the UK government to raise revenue. Loopholes – such as the exemption from capital gains tax on death – are distorting and could usefully be abolished. Beyond that, even the staunchest advocate of most VAT exemptions cannot claim growth effects from these exemptions. It is better to exempt from taxation items that cause growth, rather than those that do not.

Public Transport: Quantity

Public transport is well used in London, and less so elsewhere. Londoners have both unique transport carrots and sticks. Public transport on routes into the city is frequent and moderately quick, although expensive. In contrast, car travel is both slow and expensive. Indeed, London is slow, one of the world's most congested cities.[9] It also has both a congestion charge and very high parking charges. For instance, to commute to HM Treasury in London by car involves paying £15 for the congestion charge, and £44 a day for parking.[10] Commuting to HM Treasury's office in Darlington requires no congestion charge, and parking for a similar time is £4 a day. [11]

Virtually no-one commutes by car in London, while public transport is not heavily used outside London. Sheffield, for example, has a four-line tram system, used by an average of fewer than 3,000 people per line per day.[12] By contrast, the same number of people use the Elizabeth line in London every 16 days as use the Sheffield Supertram every year. The provision of public transport is no guarantee that it will be used extensively, nor that it will be able to cover its costs.

We should learn from other countries. As the Leeds Data Institute CEO Tom Forth points out, Leeds is Western Europe's largest city without a tram or similar. When every other European comparator city has a tram network, when they have higher productivity,

and when there is a plausible causal link between trams and productivity via agglomeration economies, the UK should build a tram system in Leeds. Its design must avoid the Sheffield errors though. Broadly speaking tram lines need to be straight and radial, connecting suburbs to the centre quickly. The Elizabeth Line is a good example. Otherwise, as Sheffield shows, the bus can still be faster, and a car certainly will be. In those circumstances tram usage will be too low to generate meaningful agglomeration economies.

Public Transport: Costs

Some arguments in favour of lower road travel costs – agglomeration economies and travel to work areas – also apply to public transport. Others do not. For instance, lowering bus or train fares will not improve logistics. Unlike road transport, both bus and rail travel are already highly subsidised. According to the Office for Road and Rail (ORR), for every £1 paid in rail fares, the Government adds a further £1.14 in subsidy.[13] Taxpayers currently subsidise our trains by £12.5 billion a year. It is hard to make a case that this number should be larger still.

Despite this, fares are higher than in the past. The peak single on a top ten commuter route, such as Surbiton to Waterloo, is currently £8.50, whereas it was (in real terms) just £3.80 back in 1940.[14] The agglomeration benefits of halving rail fares are plausibly large, and with rail usage lower post-Covid, the capacity implications of lower fares and more passengers are more manageable.

There is a good case to reallocate subsidy within the network. Much subsidy currently goes on little used routes, rather than supporting productivity in areas with plausible agglomeration economies. The ORR does not break down subsidy data into small areas, but while the overall subsidy to fares ratio is roughly 1:1 for the UK as a whole, it is almost 3:1 in Wales and over 2:1 in Scotland. Significant variation in the ratio is likely within all areas. It seems plausible that running fewer off-peak trains (as is usual in other countries), reducing services on some lines, or even closing some lines altogether would allow much lower fares on heavily used services for the same level of subsidy. Lower fares into all our principal cities would support agglomeration economies within them, which is particularly important for high skill service sectors.

Interim Conclusion

Building more roads, reducing the cost of inter-city road travel, and cutting the cost of using the railway on core routes, would bring the UK more in line with other, higher productivity nations. We should, however, note Melo's third conclusion: productivity gains are greater in the long term. Firms need time to relocate production and restructure distribution, people need time to move house and job. There are no short cuts here.

Housing

The location of housing, particularly relative to employment centres, needs to be considered together with transport networks. Broadly speaking, the closer houses are to work places, the less need for transport infrastructure. In that sense the location of buildings is an alternative to transport and can be considered analytically in the same way.

Reasonably dense cities, in which people can walk and cycle between places, are tremendously efficient in three senses. First, they lower the costs of building infrastructure to facilitate necessary journeys. Pavements and cycle lanes, particularly over short distances, are very cheap. Second, they lower the costs of travel itself. It is literally free to walk places and almost free to cycle. More generally, a shorter journey is always cheaper in time and money than a longer one, no matter the type of transport used. Third, walking and cycling require far less space than trains, buses or particularly cars (which need to be parked). That too is efficient. Finally, walking and cycling have more predictable journey times, which is also an efficiency gain as people do not need to set out gratuitously early 'in case of traffic' or 'in case the train is late'.

For all of these reasons there is a strong case for supporting relatively dense city centres, characterised by mixed residential and office use. Tom Forth has helpfully gathered urban density data from around the world. His website[15] allows us to see the number of people estimated to live within 3km of any given point in the world. There are places in Barcelona that have 900,000 people living in an area of that size. Madrid, New York and Seoul have 600,000, Tokyo 500,000. London is – inevitably – the UK's densest place but has only 420,000.

Brussels, Lyon, Turin and Vienna are around 400,000, and Amsterdam, Copenhagen, Frankfurt, Milan, Munich, Stockholm and Warsaw are all over 300,000. Manchester, Birmingham and Leeds are all around 200,000. As well as being less dense than many places around the world, they are also less dense than London suburbs such as Chiswick, Harrow and Wimbledon.

The case for much higher densities in both inner London and in our other principal cities is clear. More people in the centre would be efficient in transport terms and would directly increase agglomeration economies. The fact that central house prices and rents are typically (considerably) higher shows that this is also – very conveniently – where people would like to live.

This is not a call for tower blocks. On the contrary, tower blocks are rarely efficient ways to provide residential space.[16] (They are better suited to offices, where people are willing to be much further away from a window). That classic London urban form, the Victorian 'mansion block', remains popular with those who live in them. We can see that from the prices and rents that they command. They are also very high density – typically 200 dwellings per hectare. At that rate we would have 550,000 homes within 3km of a given point, and perhaps a million people. In short, it would look rather like Barcelona, or Paris.

Allowing anything that is not listed or a conservation area to be demolished and rebuilt as mansion blocks would plausibly give us an additional 2.5 million people living in central London, broadly defined.[17] The same is true for other places, although much lower existing densities means that only a relatively small area would need to be at these densities to meaningfully raise agglomeration economies. For example, if around one tenth of Leeds was built to these densities, population within 5km of the centre would roughly double.

Outside of our cities, places where house prices are high should expand their footprint. It would, for instance, be bizarre for Cambridge to grow only upwards. Much better to move outwards, at reasonably high densities, connected to the centre by both bike lanes and a tram network. Leunig and Overman argued for one million more houses in Cambridge in 2008 and that remains a plausible number.[18] Such an outcome cannot be achieved overnight, but cities around the world have shown that rapid growth is commonplace. Phoenix had 220,000 people in 1950, rising to 874,000 20 years later.[19] At a

larger scale, Seoul also increased its population rapidly in 20 years, rising from one million to over five million residents.[20] It is perfectly sensible to think of Cambridge doing the same.

As well as increasing agglomeration economies, more housing – particularly in London – would spread opportunity and ensure that skills can be better used. Institute for Fiscal Studies (IFS) researchers Levell, Nesheim and Vyas have shown that London is now so expensive that living standards – measured by after housing costs consumption levels – are now lower than in most other places, albeit with huge local heterogeneity.[21] What this means for young people is that unless your parents or another relative live in London and allow you to live with them rent free, it is simply not worth moving to London. That in turn means that at least some skill formation is underused as people who would be more productive in London will not be able to live there, or near there. This is inefficient and also unfair.

Conclusion

The UK has much to learn from other, higher productivity countries. These are typically characterised by much higher levels of transport infrastructure. They are also characterised either by lower road transport costs (US) or higher levels of density (Europe). Finally, they are all characterised by doing stuff – building the roads and houses that cause prosperity. Britain should learn from them.

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17 The 10km diameter radius centred on the Productivity Institute's London office in Aldwych contains around 3.75m people. https://www.tomforth.co.uk/circlepopulations/ The same area, at 200 dph, would contain 6.3m homes. Of course, not all the land can be used for homes - we need parks, the river, offices and so on. If half the area can be used for homes, and each home has 2 people, there will be 6.3m people, a rise of about 2.5m residents.
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12. Reforming Infrastructure, Housing and Land Use Planning to Enhance Productivity

Philip McCann and Raquel Ortega-Argilés

Policy Actions

1. Ensure that the industrial strategy, devolution and local growth agenda, and UK infrastructure and housing-provision strategies all dovetail
2. Ensure that infrastructure-led and housing-led national growth strategies are inclusive of all UK regions, unlocking potential well beyond London and its surrounding areas
3. Focus on rebuilding the diffusion, dissemination and transmission linkages between London and the rest of the country and the role that infrastructure and housing play in these transmission mechanisms

Introduction

In this paper we argue that the current UK Government's thinking regarding the role played by infrastructure and housing in fostering national productivity growth has not grasped the realities of today's economy. In particular, the UK lacks the diffusion and dissemination processes to translate growth from London outwards. National growth depends on rebuilding these mechanisms and infrastructure provision and housing can play a crucial role in this regard, as long as we move beyond the London and hinterland-centric view of UK growth.

We discuss the capacity, quality and location of the UK infrastructure and housing stock, and then we examine how this relates to the economic geography of UK growth. We conclude that industrial strategy, the devolution agenda, local growth plans, and infrastructure and housing strategies all need to be dovetailed to succeed.

The Productive Capacity of Infrastructure and Housing

Infrastructure and housing, broadly defined, are understood as physical capital assets and systems which contribute to the productivity potential of the wider economy. Key common aspects of all forms of infrastructure are that they exhibit system – or network – features which involve significant planning, significant up-front capital stock investments, and major legal challenges. They display substantial public good, externality and spillover features.

Infrastructure cannot be provided simply by the market, but by interactions between market processes, and the governance and institutional set-up of the central and sub-central state, which also shapes the infrastructure ownership structures.

In terms of ownership, infrastructure can be public, private, or public-private in nature, so the concept of infrastructure is not defined in terms of the ownership or the beneficiaries of the income streams associated with the infrastructure, but rather by the role played by these capital assets in underpinning, facilitating and shaping the wider economy. As a form of infrastructure, housing has distinct multi-dimensional characteristics in that while it can be considered

primarily in terms of being a consumption factor, it can also be considered as a production factor, or also as a financial asset.

The key issue we will focus on is that housing is an explicitly location-specific factor, allowing households to work in the broad commuting arena accessible from that particular location. As such, the geography and pricing of housing tell us something about the supply-side capacity of the local economy, in terms of how the local supply of housing relates to the demand for local housing, which itself is a derived demand depending on expectations regarding the performance of local commercial and industrial activities.

However, when discussing the links between infrastructure, planning, housing and productivity growth, it is essential to consider the nature and functioning of the overall economic system in which these features appear. Infrastructure collectively comprises systems of capital assets which typically have strong place-specific features, and this raises the question of how the capacity, quality and location of these infrastructure assets shape, or are shaped by, the productivity growth of the regions in which the infrastructure is located.

The Capacity and Quality of UK Infrastructure

The UK infrastructure system is heavily under-resourced on many levels, and it is also very expensive to expand or upgrade. In terms of intra-urban mobility, UK cities outside of London typically have much smaller and less dense transport infrastructures than their European comparators, and therefore they also have much smaller catchment area potential.[1] This limits both their productivity growth performance and their energy efficiency[2] relative to their comparator and competitor cities.

Meanwhile, in terms of inter-city mobility, the UK has the smallest high-speed road network *(see Chapter 11)* and also the smallest overall road infrastructure of any western European economy per head of population, with levels typical of eastern European economies. This limits the effective urban system-wide scale which is currently achievable by linking cities.[3]

The severe lack of UK infrastructure investments, however, is not simply a result of the post-crisis productivity slowdown. At

the time of the global financial crisis, after two decades of strong UK economic growth, the UK had still only added 157 miles of motorways between 1995 and 2009, giving a total network size per capita of just 36 per cent of the Western European average.[4] Since then, the situation has deteriorated further.[5] Between 2014 and 2024, the UK added just 65 miles to its high-speed road infrastructure.[6]

Overall, the fact that mobility transport infrastructure investment was so low during both high growth and stagnation periods means that between 1990 and 2025, the UK has added only 422 miles of motorways, while during the same 35-year period Spain built 6,917 miles, France 3,057 miles, Germany 1,440 miles, Turkey 2,082 miles and Poland 1,545 miles.[7]

The share of the UK rail network which is electrified is less than two-thirds of the EU average,[8] and the UK also has the slowest inter-city train speeds in Western Europe and the largest number of non-connected cities within 90-minute timeframes, even though UK population densities are amongst the highest in Europe.[9] At the time of the Brexit vote, the total length of the UK rail network which was genuinely a high-speed network, was smaller than that of the Netherlands, half that of Belgium or Poland, 12 per cent of Italy, 7 per cent of Germany, 5 per cent of France, and 4 per cent of Spain. [10]

As well as the smallest high-speed road and rail systems in Western Europe relative to population or GDP, the UK also has the highest costs of upgrading and expanding its transport infrastructure system amongst its comparator peer group of countries.[11]

Not surprisingly, the combination of limited capacity and high construction costs means that the costs of UK intercity rail journeys are far higher than for any other European country.[12] While Spain and Poland were major beneficiaries of EU funding,[13] with Spain alone accounting for almost half of all EU transport funding, it still remains the case that the paucity of UK high-quality and high-speed infrastructure is a longstanding problem in comparison to most comparator countries.[14] While in the past using a high-capacity utilisation of infrastructure might have been argued to be efficient and good value for money, nowadays in the UK it is perceived to have created major underlying structural problems for the whole economy.

The Capacity and Quality of Housing

Regarding housing, the UK clearly has a housing supply problem, with fewer homes per capita than most of our peer countries[15] and far fewer homes being built over the last three decades than is needed to cope with demographic trends. The Government's housing target is 300,000 new homes per year, but England has not built 300,000 homes a year since 1969.[16] The house price problem is most acute in London.[17]

However, housing across the UK is expensive by international standards, and the role of the land-use planning system, and in particular the green belt, has been seen as a key determinant of this. Green belt restrictions limit supply, but brownfield development is also complex and expensive.[18] The rapid appreciation of house prices and housing wealth over the last three decades is highly regressive inter-generationally,[19] with young people the most adversely affected and with little or no prospect of getting on the housing ladder.[20]

In terms of responses, the discussions have been almost entirely supply-side focused. The building of new towns clustered around transport hubs has been proposed[21] as a way of addressing the problem. However, there are also major disincentives to building housing beyond simply space or planning reform. The private sector and housing associations together have been building homes at a broadly stable rate since the late 1960s,[22] with the major shortfall in housing construction arising from the collapse in public housing. Today, fewer homes are built than receive planning permission and new home approvals in England have declined, while the share granted permission is largely stable.[23] As such, fundamental planning reforms, if realised, are forecast to slightly lower house price growth and improve overall GDP in the long run, but not by much.[24]

On the demand side, the challenges of addressing the UK housing stock differ markedly between regions. In the economically weaker regions of the UK poor quality housing, dereliction and urban blight are still major problems,[25] with land markets failing to work effectively. Insufficient demand rather than insufficient space is the major challenge, with a paucity of investors willing to enter the market even when land prices are zero.

Overcoming negative blight-related externalities spanning large areas is the key housing-related challenge in many cities and regions. The New Towns, agenda currently underway appears to have little to say in this regard, and the history of the post-war new towns programme itself demonstrates that the success or otherwise of a town depends not only on its location and connectivity but also its long-term institutional set-up, financial and legal support.[26]

The UK Problem of the Geography of Productivity Growth

While the scale and capacity of the UK infrastructure system is a major constraint on productivity growth when considering the functioning of the whole UK economy, its spatial structure is also nowadays a major concern. If we consider local productivity-enhancing infrastructure investments in regions as being those related to transport, research, heritage, and education, rather than more generic investments related to energy and water provision, in the UK during the last four decades there has been a clear bias favouring productivity-enhancing public infrastructure investments in the London region.[27] This raises the question as to why this is the case and whether this has best served the country as a whole.

Many commentators have argued that the reason for this spatial concentration of public investment in London and its close hinterland is that the logic of the Green Book, the HM Treasury framework for the appraisal of public policy investments, overly favours the most prosperous regions of the UK.[28]

Over the last couple of decades, defenders of the Green Book logic have traditionally argued that it provides a rigorous framework for ensuring that broadly the 'right' decisions are made regarding the efficient and effective use of public funds, with public investment crowding in maximum private investment.[29] As such, the fact that London and its immediate hinterland have received the lion's share of public investment is simply due to the productivity-enhancing agglomeration-related advantages of the London economy, which provide a greater return to public investment and are, therefore, in the national interest.

However, fundamental doubts have arisen regarding how central government has interfered with the links between public investment appraisal processes and any decisions made based on those appraisal processes.[30] Specifically, public investments in the London region which have been backed on an ex ante Green Book appraisal process have not necessarily produced ex post outcomes that were expected from the framework.

Similarly, investment proposals from other regions which were not accepted ex ante on the basis of the Green Book process, could have been accepted and permitted on the basis of these ex post comparisons, and even on the basis of ex ante comparisons in some cases of public investments in the wider London region.[31] As such, the role that the application of the Green Book principles has played in actual public policy decisions appears to have been much less rigorous, independent, or logical than the standard defence might imply, and high-level political concerns have been decisive.

Similarly, regarding the expansion of housing supply around London via new towns, the thinking is that this will allow larger numbers of people to work in London or to remain working in London, rather than being forced out due to cost reasons. It is argued that this will therefore also increase national income and HM Treasury revenues with more people working on higher salaries in London.[32] However, what this type of thinking fails to consider is whether there are any adverse externalities on other UK regions. The national productivity outcomes of these types of policies depend not only on the positive agglomeration-related externalities within the wider London economy, but also on the negative externalities experienced by other regions due to the further concentration in London.

Underlying this is a more fundamental discussion regarding the whole nature of how the UK inter-regional economic system operates. During the postwar period of the 20th century, mainstream analytical thinking about the geography of economic growth pointed to inter-regional convergence processes as being the key driver of national growth, whereby productivity in economically weaker regions was catching up with productivity in the more prosperous regions.[33] Factor mobility was seen as being the main driver of these regional convergence and national growth processes, and the empirical evidence broadly supported these frameworks.

Between the 1950s and the late 1980s, all industrialised economies exhibited national growth which was underpinned by regional convergence processes,[34] and many OECD economies continued to enjoy convergence processes up to the eve of the 2008 global financial crisis. The only twist on these lines of thinking concerned the role played by large cities in these growth processes, with the major insights from new economic geography,[35] new urban economics[36] and management strategy[37] all pointing to cities as being drivers of both national, local and hinterland growth.

The literature, so dominated as it was by the experience of the US,[38] still worked on the assumption that while cities drive economic growth across their hinterlands, and especially in knowledge-intensive and new technologies, factor mobility between key cities still drives inter-regional convergence processes.

These lines of thinking dominated UK policy thinking from the 1980s onwards, as reflected in prevailing Treasury documents.[39] It was assumed, or even asserted, that as long as the UK regulatory environment allowed for competitive processes, knowledge and best practice would naturally diffuse throughout the economy. The prioritisation of productivity-enhancing public infrastructure investments in and around the London region was therefore assumed to lift the performance of the whole UK economy because the resulting productivity gains in London would be transmitted across all regions via convergence-driving diffusion and dissemination effects.[40] If inequality arose between London and elsewhere, this would not generally be seen as a problem, because all UK regions would benefit. A rising tide lifts all boats.

The problem is that over four decades since the 1980s, this simply did not happen. Instead, from the late 1980s onwards the UK economy changed from being a convergence economy to a core-periphery divergence economy, whereby London and its hinterland decoupled from the rest of the UK on numerous economic and socio-economic dimensions[41] of which productivity was the most notable, leaving a 'hub no spokes' economy[42] with limited diffusion mechanisms.[43] The economy is also nowadays largely partitioned into two more or less equal population halves, comprising an economic core centred on London and an economic periphery outside of the wider South and South East.

The core regions outperformed European and OECD averages by almost exactly the same degree as the peripheral regions underperformed those same averages,[44] such that in real terms UK growth proved to be at a standstill in comparison to other European and OECD countries. As such, instead of a 'rising tide lifts all boats', the economic growth features of the UK regional economic system appear to have been closer to a zero-sum process.

One of the key factors driving this zero-sum divergence[45] is the overwhelming concentration of productivity-enhancing infrastructure investments in the London region.[46] Numerous large-scale public infrastructure investments concentrated in one region have acted as de-risking features to private investors, who are confident that central government will not let these investments fail. The result of this is a capital market partitioning of the UK regional economic system, with core-periphery spreads in investment risk premia and yields of some 250-300 basis points.[47] These inter-regional risk premia spreads are greater than for any other similar industrialised country[48] and imply that the financial markets do not view the UK as a single highly integrated economy but as two fundamentally different core and periphery economies.

Conclusion

The UK appears to have given little priority to city linking over the last four decades, either in terms of intra-urban linking or intra-city linking, except for the case of London, where the priority has been to enhance both London's intra-urban and inter-urban connectivity on a global scale.

The constraints posed by the land use planning system are frequently blamed for the lack of development, including housing. Yet, the fact that London has received an overwhelming share of investment in publicly-funded productivity and growth-enhancing infrastructure and assets implies that the planning system cannot be entirely to blame. Rather, a longstanding and widely held, but ultimately mistaken, view of UK national economic growth being naturally driven primarily by London and its golden triangle hinterland, is a key component here.

Indeed, the recent announcements by Chancellor Rachel Reeves[49] regarding major public investments in the 'London plus its hinterland' region of a third runway at Heathrow, expansions at Gatwick and

Luton, a new Thames crossing, expansion of the OxCam Arc, and new towns with housing for over 10,000 in each case, located especially on transport corridors in and around London,[50] all reflect a view of UK national economic growth which is anchored in HM Treasury thinking from more than two decades ago.

The underlying convergence-divergence shift from the late 1980s meant that even by then these lines of thinking were already nearly two decades out of date, and long before we were aware of the nature or scale of the UK regional-national growth problem.[51] This approach to growth will not make any noticeable difference outside of the wider South East.[52]

The question therefore raised by these narratives is why is it that more new and upgraded infrastructure investment is not being targeted to other regions[53] to build up the diffusion and dissemination processes which are essential for UK national growth? The lack of high-quality and high-capacity infrastructure investments throughout the UK reflects a longstanding lack of consideration of the importance of rebuilding the linkages between London and the rest of the country, and of rebuilding spokes, not just the hub.[54,55] National growth requires an extensive and coherent linking between the industrial strategy, the devolution and local growth agenda, and the UK infrastructure and housing-provision strategies, in a manner that does not rely just on London and the South East.[56]

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13. Is Baumol's Cost Disease Still Haunting Public Services Productivity?

Bart van Ark*

Policy Actions

1. Support the Office for National Statistics in continuing the Public Services Productivity Review in developing broader productivity metrics that reflect outcomes and public value
2. Invest in organisational and workforce capabilities through skills and leadership programmes by sector, such as the College of Policing, focusing on digital literacy, change management, and collaborative governance
3. Build on the Government's performance review of digital spend to establish a dedicated innovation fund to support AI and digital experimentation in the public sector
4. Empower public sector managers with flexible budgeting and greater autonomy, for example by accelerating devolution of fiscal powers to combined authorities
5. Replace across-the-board budget cuts with targeted efficiency reviews and outcome-based funding models
6. Promote adaptive governance by expanding devolution deals and integrated local models that align services like health, education, and transport—guided by New Public Governance principles to improve responsiveness and collaboration

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Introduction

Improving productivity is vital to maintaining both the volume and quality of public services that citizens depend on. Yet achieving this is far from straightforward.

As demand and costs for public services continue to rise—a trend long recognised as Baumol's Cost Disease[1] —the pressure to achieve efficiency gains keeps mounting. Successive UK governments have pursued various reform strategies, from New Public Management in the 1990s and 2000s to more recent digital and AI-driven initiatives. However, tight fiscal constraints—now compounded by growing demands for defence spending—further limit the scope for broad-based investment in public services.

This essay explores how Baumol's Cost Disease (BCD) is playing out for public services productivity and how it has influenced the response by policymakers and managers. I argue that while improvements in cost efficiencies matter, it is critical to think about public sector productivity more broadly as the ability to convert limited resources into better outcomes for people and places.

While digital transformation is a key enabler to achieve this broader goal,[2] it is hindered by organisation- and governance-related bottlenecks that obstruct effective implementation and performance. Government needs to adopt a holistic approach to facilitating more adaptive organisations and agile responses to real-time events.

I will first discuss in what way public services productivity matters, and the extent to which slow growth in the public sector has contributed to BCD. Next, I will explore other aspects of the BCD hypothesis, in particular how the persistent rise in demand and costs is shaping the way policymakers think and respond. Finally, I will explore strategies to address the BCD, even if it cannot be entirely eliminated.

Why does Public Services Productivity Matter?

Productivity in public services goes beyond traditional definitions like labour productivity (output per hour worked) or total factor productivity (efficiency of all inputs). These measures often fall short in capturing the true value of public services. A more meaningful approach considers how outputs lead to better outcomes for users and how barriers—such as budget constraints or limited access to inputs—can be reduced to improve effectiveness.

With this broader view, public service productivity growth plays three key roles:[3]

- **Improving service delivery** by increasing volume, quality, and cost-effectiveness
- **Supporting private sector productivity** through essential services like infrastructure, regulation, and fiscal support
- **Managing public finances** by controlling or reducing spending growth

Policy efforts to boost public sector productivity have often focused primarily on the third goal, fiscal control, frequently at the expense of improving outcomes or service quality.

Our previous work emphasises the need for a wider focus to uncover sustainable productivity improvements across the entire delivery chain of public services:[4]

- **Budget efficiency** through using financial resources wisely to maintain services quality at the lowest possible cost
- **Organisational productivity** through technology, internal performance and operational capacity to convert inputs into outputs
- **Effectiveness** through achieving the right outcomes by ensuring that services meet societal needs and deliver public value

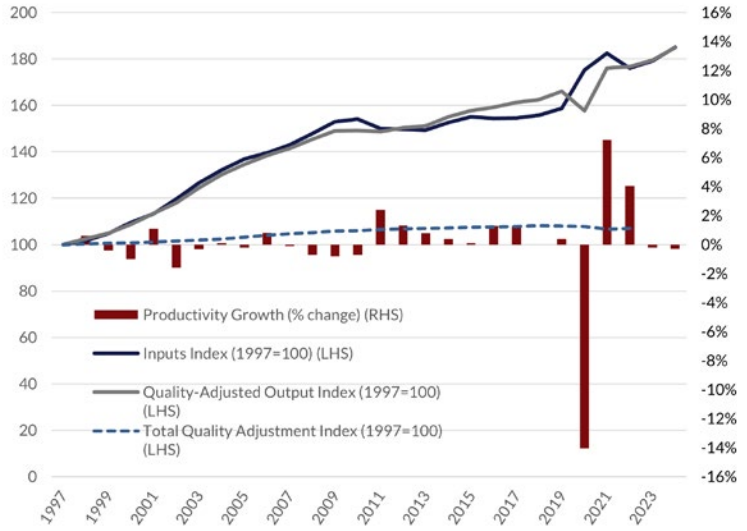
We also conducted sector-specific studies in policing and social care which show that gains in both efficiency and improved outcomes are possible. These include smarter procurement, digital tools for intake and processing, and more targeted interventions—delivered at the right time, place, and to the right individuals.[5]

What do the Public Sector Productivity Figures Tell Us?

Contrary to common belief, public sector productivity is not uniformly stagnant. While the Office for National Statistics (ONS) reports that productivity in 2022 was nearly unchanged from 1997, trends have varied significantly over time and across sectors. While the ONS measure of productivity isn't as broad as outlined above, it does adjust output for quality where possible. For instance, healthcare output includes weighted hospital and GP services, adjusted for survival rates, health gains, waiting times, and patient experience surveys to better reflect outcome effectiveness.[6]

Between 1997 and 2010, productivity in public services declined slightly at an average annual rate of -0.2 per cent. This reversed between 2010 and 2019, with productivity growing by 0.9% annually. However, the Covid-19 pandemic caused a sharp 14% drop in 2020. Although there was some recovery in 2021 and 2022, productivity remained about 5 per cent below its 2019 level by 2024, as input growth outpaced output (see Figure 13.1).

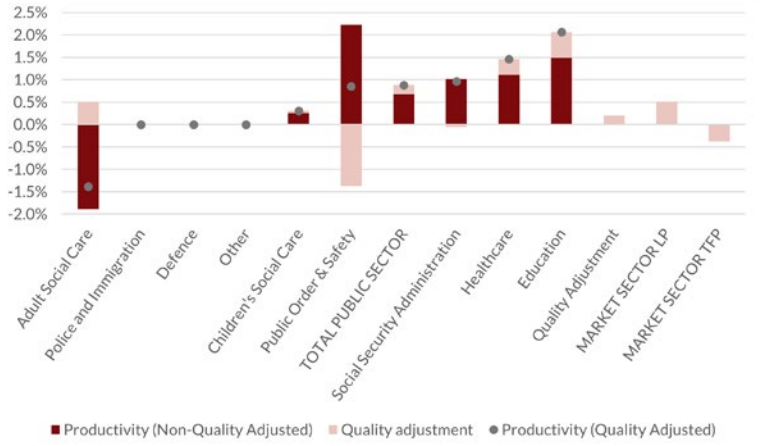
Figure 13.1: Public Sector Quality-Adjusted Output and Inputs (1997=100) and Productivity (average annual % change), 1997-2024



Note: The ONS measure of public services productivity measures the ratio of the total output of public services (where possible adjusted for quality improvements) to the total inputs (labour, goods and services, and capital consumption used to produce them). See also footnote 8. The 2023 and 2024 figures are unadjusted for quality change.
Source: Office for National Statistics (2025b), Public service productivity: Total, UK, 2022 (27-3-2025); updated to 2024 with ONS (2025d), Public service productivity, quarterly, UK: October to December 2024 (8-5-25), which are unadjusted for quality change.

Between 2010 and 2019, public service productivity outperformed the private sector (excluding health, education, and government).[7] Quality adjustments contributed 0.2 percentage points to the 0.9 per cent annual productivity growth. The largest positive quality adjustments were seen in education and health care, which already exhibited relatively strong growth in non-quality adjusted productivity. Education and health care saw the largest quality improvements, suggesting a link between innovation and productivity. However, the quality improvement in education and health care was offset by a decline in quality in public order and safety, despite the fastest rise in activity measures in that sector over this period.

Figure 13.2: Productivity Growth (annual average) in Public Services (including quality adjustments) compared to Market Sector LP and TFP Growth, 2010-2019



Note: See figure 13.1. Note that public sector productivity is not strictly comparable to measures of labour productivity and TFP in the market sector. See also footnote 8.
Source: Office for National Statistics (2025b), Public service productivity: Total, UK, 2022 (27-3-2025); excluding tax administration.

Productivity also varies significantly within sectors. For example, residential and non-residential social care show different performance levels, as do local authority-run versus private care homes.[8] In policing, productivity differs across the eight main activity types (ranging from emergency response and crime investigation to crime prevention and neighbourhood policing) and among the 43 territorial police forces in England and Wales.[9]

Despite the long-term flat trend, these variations highlight untapped potential for improvement. This raises a key question: does BCD continue to limit the impact of productivity initiatives in the public sector? And, if so, how should policy respond?

How Persistent is the Baumol Cost Disease?

Nearly sixty years ago, economist William Baumol introduced the concept of "cost disease" to explain why certain labour-intensive services experience rising costs without corresponding productivity gains.[10] He distinguished between a progressive sector (for example, manufacturing), characterised by high labour

productivity growth and corresponding real wage growth, and a non-progressive sector, and a non-progressive sector, where productivity growth is inherently slow (for example, performing arts, healthcare, education). As wages in the non-progressive sector must keep pace with those in the progressive sector to attract workers, prices rise despite stagnant productivity which leads to a growing share of spending on less productive services.

The BCD hypothesis was initially formulated for private sector personal and social services, including his famous example of a quintet playing Mozart that cannot simply play faster or reduce the number of musicians to raise productivity. Baumol later argued that the same dynamics apply to public services, particularly healthcare.[11] If this holds true, it implies persistent upward pressure on public spending, making it increasingly difficult to improve service quality or expand access without significantly increasing taxation.

To assess the prevalence of BCD in today's public sector, three key indicators are useful to monitor:

- **Relative price** and cost trends in public services
- **Budgetary pressures** from rising demand
- **Wage and productivity trends**

Direct price comparisons for public services in the UK are limited, as most are not sold in markets. However, private sector equivalents offer useful proxies. For example, in the US from 1990 to 2020, prices for healthcare and education services rose significantly faster than the overall Consumer Price Index (CPI), highlighting a persistent inflationary trend in these sectors.[12] In the UK, the consumer price index (CPI) for private healthcare rose by 10% between 2015 and 2019, and by another 22 per cent from 2020 to 2024. Private education prices increased by 15 per cent and 19 per cent over the same periods, respectively. In contrast, the overall CPI rose by just 7.8 per cent from 2015 to 2019, though it surged by 23 per cent between 2020 and 2024 due to post-pandemic inflation.[13] As an indicator of rising costs, trends in total government expenditure per person (in current prices) reveal significant shifts over time. During the austerity period (2010–2015) government spending per person rose modestly by 3 per cent, then accelerated to 10 per cent from 2015–2019, and jumped by 36 per cent between 2019 and 2024. Final government

consumption per person (excluding investment) increased by 28 per cent from 2019, driven largely by healthcare, where per capita spending rose from 15 per cent pre-pandemic to 35 per cent post-pandemic. Education spending showed a more mixed pattern: a 5 per cent decline during austerity, followed by a 7 per cent increase (2015–2019) and a 19 per cent rise (2020–2024). In contrast, overall consumer spending per person rose by only 14 per cent pre-pandemic and 20 per cent post-pandemic.[14]

Rising demand for public services is absorbing a growing share of national resources, consistent with BCD dynamics. From the early 2000s until the pandemic, UK public spending remained relatively stable (except for the global financial crises) at around 40 per cent of GDP. However, it spiked to 53 per cent in 2020 due to Covid-19 and has since stabilised at a higher level of 42–44 per cent. Similarly, final government consumption—covering most NHS and education spending—rose from 22–24 per cent of total expenditure pre-pandemic to 25 per cent in the years since.[15]

The relationship between wages, productivity, and service delivery is complex. In 2022, the Institute for Fiscal Studies reported that NHS staffing levels had increased by 10–15 per cent compared to pre-pandemic levels, yet the number of patients treated had not fully recovered.[16] Although patient volumes have recently rebounded, the gap between inputs and outputs remains notable.

A Dutch study examining hospital labour demand from 2000 to 2021 found that weak productivity growth was the primary driver of increased staffing levels. Other factors—such as shifts in service delivery (e.g., outsourcing diagnostics and training) and rising wage premiums—played a role but were secondary. The Dutch findings don't directly apply to the UK, where hospital wage growth has lagged that of the wider economy since the early 2010s. While the Dutch productivity measures lack quality adjustments, UK healthcare shows significant positive quality effects (see figure 1). Nevertheless, as these two effects work in opposite directions, the Baumol effect likely influences labour demand in both systems similarly.

Overall, evidence suggests that BCD continues to exert pressure on public services. While the extent varies by sector, the combination of rising costs, stagnant productivity, and growing demand presents a persistent challenge. The pandemic has intensified these pressures, making it harder to deliver high-quality services without significant fiscal trade-offs.

Digital Transformation Matters but isn't the Whole Solution

Digital transformation, especially the rise of AI, has sparked optimism about easing the productivity pressures linked to BCD. While there is growing evidence of its benefits the overall impact remains an empirical question.[17]

Policymakers often overestimate the short-term gains from emerging technologies. For example, the UK government's recent AI Opportunities Action Plan acknowledges uncertainty around AI's trajectory but maintains that "even if AI progress slows, we will see substantial benefits from deploying today's frontier capabilities and investing in our infrastructure and talent base".[18] Yet, outside of select sectors and time periods, productivity growth in public services remains modest.

The core challenge is that the structural barriers to long-term productivity gains are frequently overlooked. Research consistently shows that technology alone is not enough. Realising its full potential requires complementary investments in human capital, digital infrastructure, and intangible assets like data governance and organisational capability. This aligns with the Productivity J-curve hypothesis, which suggests that productivity gains from new technologies often lag behind their adoption. In other words, while digital tools may be rapidly deployed, the institutional and cultural changes needed to unlock their full value take time.[19]

Lessons for Public Sector Management

Beyond digital transformation, two key organisational drivers are critical for improving public sector productivity.[20] First, organisational adaptability reflects the ability to respond effectively to real-time challenges. The Covid-19 pandemic exposed critical weaknesses in preparedness, particularly in healthcare. Yet it also demonstrated the potential for rapid de-bureaucratisation during crises, suggesting the need for more flexible, responsive systems. Emerging ideas, such as adopting a social infrastructure perspective, which emphasises investment in human capital to build resilience and manage peak demand, offer promising avenues for strengthening public service delivery in the face of future shocks.[21]

Second, an agile and skilled workforce is essential, which combines technical and organisational skills, supported by modern management practices and strong consultative processes. A recent UK survey found public sector management practices broadly comparable to the private sector, though with variation—stronger in emergency services, weaker in education.[22] Cross-national research also shows that performance management tools, such as goal setting, monitoring, and incentives, can improve outcomes, for example in schools.[23]

However, reform is often hindered by persistent "conservative subcultures" and weak incentives.[24] Barriers include professional and bureaucratic attitudes that resist innovation, fear among workers and unions of job losses or altered conditions, insufficient funding for retraining, reluctance from service users to accept new processes, and broader public and political resistance due to concerns about disruption or failure. Addressing these challenges requires not only investment in technology and skills but also cultural change and leadership committed to long-term transformation.

Better Governance must be Prioritised

Government can enhance public sector productivity by equipping leaders with the analytical, financial, and legal capabilities needed to improve service delivery and ensure accountability. However, public sector organisations often operate under rigid annual

budgets, face intense scrutiny, and lack the autonomy to adjust inputs and outputs in response to changing needs. Additionally, they frequently find themselves balancing the benefits of centralisation, such as efficiency and specialisation, with those of decentralisation, which offers greater local responsiveness and reduced coordination costs.[25] For instance, the UK Government's recent decision to abolish NHS England aims to streamline bureaucracy, though it remains to be seen whether giving civil servants greater control over healthcare service delivery will lead to better outcomes.[26]

These constraints can lead to counterproductive responses to BCD. Economist Jos Blank has extended the metaphor to describe three "policy illnesses": [27]

- **Policy obesity,** where good intentions together with lack of market discipline lead to overspending rather than reform
- **Quality syndrome,** the mistaken belief that quality improvements must come at the expense of productivity
- **Scale disease,** the assumption that bigger is always better, leading to inefficient organisational expansion

While the medicine of across-the-board budget cuts are now a routine feature of budgets, they are a blunt instrument and fail to address the root causes of underperformance. Instead, government should leverage benchmarking tools and performance monitoring to identify and replicate best practices. Our earlier work has highlighted the importance of improved measurement systems—not just for accountability, but to support continuous improvement and reduce avoidable productivity losses.

To build adaptive public sector organisations, a shift toward New Public Governance (NPG) is needed.[28] Unlike the efficiency-focused New Public Management (NPM) model, NPG emphasises collaboration, outcomes, and network-based governance.[29] Various examples show this approach in action.[30] The UK's devolution deal with Greater Manchester enables integrated governance across health, transport, and economic development. In Seoul, participatory budgeting allows citizens to vote on public spending, enhancing transparency and trust. These models demonstrate how NPG can deliver more flexible, responsive, and outcome-focused public services.

Conclusion

Baumol's Cost Disease remains a relevant and persistent force in public service delivery. While innovation and reform can mitigate some of its effects, the structural nature of the problem means that cost pressures are likely to endure. Policymakers must therefore strike a balance by pursuing efficiency while also adopting broader strategies that focus on delivering better outcomes more effectively and sustainably. Various concrete recommendations are made at the beginning of this essay.

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14. Public Sector Productivity: Using Digital Technology to Deliver Better Outcomes

Tera Allas

Policy Actions

Digital transformation is not a side project—it is the essential enabler of a modern, effective, and fiscally sustainable public sector. Despite decades of well-meaning reports, much of its potential remains unrealised.

To shift the status quo, government must treat digital transformation as a top priority. These policy provocations are designed to spark the kind of bold, non-incremental debate required:

1. Require all senior public sector appointees to pass a digital transformation test
2. Ban any new policy, law, or regulation that is not digitally enabled
3. Enshrine in law a universal right to digital public services
4. Sunset legacy systems through mandatory digital expiry clauses
5. Make user satisfaction a core daily KPI for ministers and public sector leaders

Introduction

At a time of highly constrained public finances and growing dissatisfaction with public services, a sharp focus on delivering 'better for less' is imperative. The key ingredients of productivity are broadly the same across sectors: the quality of capital and labour and the effectiveness with which they are combined. Improving productivity dynamically over time further requires innovation and reallocation of resources.

In theory, the smart application of digital technology across public services could provide an enormous productivity boost. In practice, capturing any such dividend would require big changes. Attempts to use technology to drive improvements are not new. The National Audit Office (NAO) reported in 2023 that the Government had launched 11 digital strategies in the past 25 years.[1] However, time and again, across healthcare, welfare, taxation, criminal justice, and education, digital initiatives have failed to deliver their potential.

This essay examines both the opportunities and the challenges of improving public sector productivity, focusing on service delivery (rather than central policymaking) and on digital technology (rather than other productivity drivers). However, because different types of capital (e.g., software and organisational capital) and labour can be either complementary or mismatched, technology is only a small part of the story. Ultimately, every transformation is powered by people.

Defining Public Sector Productivity

Productivity — output per unit of input — is a multi-faceted phenomenon.[2] There are many appropriate ways to define the outputs and inputs. For the public sector, we care about outcomes that matter to society,[3] so this is a natural choice for the numerator. As for the denominator, using a monetary measure of cost helps compare productivity across different inputs. Hence, a good measure of productivity is the public value derived divided by the relevant expenditure.[4]

An established simple but useful framework for thinking about the components of productivity is the public sector "delivery chain"[5] *(see Chapter 11).* It separates out three key factors (the three "Es"): economy, efficiency, and effectiveness.[6] Each has a distinct role in

explaining how public services create the most value at the lowest possible cost.

'Economy' refers to minimising the costs of inputs (materials, labour, capital, services) relative to their value. It is different from the lowest possible unit cost, but the lowest net cost over the lifetime of a purchase, like the concept of 'total cost of ownership'. For example, purchasing a low-cost software system that later requires expensive fixes, or which takes up excessive user time, is not 'economical'.

'Efficiency' refers to delivering more outputs with the same resources. Typically, this might mean reducing waste, either of materials (e.g., drugs in hospitals or electricity in schools) or of time, for example through automation. Often, the biggest efficiency gains come from better calibrating processes and making sure expensive equipment (such as MRI machines) or professionals (such as judges) are not sitting idle.

'Effectiveness' is about delivering the right outcomes, not just more activity. It often depends on the quality of outputs and targeting of interventions. For instance, an A&E department may appear efficient (e.g. treating more patients per hour) but if speed comes at the cost of clinical accuracy, it can lead to poorer outcomes and, through complications or readmissions, higher costs overall.

The Promise of Digital Technology

Global estimates of the productivity potential of digital technologies—including automation, data analytics, and AI—are typically economy-wide. However, the public sector is a major contributor to this opportunity. McKinsey has estimated that digital transformation could generate over $1 trillion annually across OECD governments alone.[7] These gains are not theoretical. They reflect potential savings and service improvements from digitising high-volume transactions, automating routine tasks, and using data to target interventions more effectively.

In the UK the current Government estimates that savings and productivity benefits of over £45 billion per year, representing 4-7 per cent of public sector spend, could be achieved through full digitisation.[8] The Social Market Foundation finds that HMRC and DWP (Department of Work and Pensions) could save more than

4,300 working years annually by automating calls using AI.[9] The Public Sector Fraud Authority expects an investment of £34 million into counter-fraud tools to save taxpayers £100 million over the next spending review.[10]

These are big numbers and reflect the applicability of digital technology across all government services, from health and education to defence and environmental protection.[11] They also reflect the power of digital technology to transform the tenets of government productivity: economy, efficiency, and effectiveness.

'Economy': Using Digital Tools to Improve Procurement and Stock Management

Digital tools have enabled many parts of the UK public services to purchase their inputs at lower cost. NHS England estimates that NHS Supply Chain, which uses e-procurement platforms and its aggregated purchasing power, has delivered savings of £1.7-3.3 billion from 2016–17 to 2022–23.[12] One Trust saved £150,000 in the first month alone by spotting that other Trusts were paying less for the same product (implanted cardiac defibrillators).[13] The Ministry of Defence's (MoD) digitally enabled, outsourced, Team Leidos procurement, warehousing, inventory management, and distribution system is forecast to lead to £403 million of savings, and the NAO confirms that it is delivering well against its contract.[14]

'Efficiency': Automation and Optimisation to Reduce Waste, Time, and Rework

McKinsey & Company estimates that, at a task level, more than 50 per cent of all the hours worked in the UK public sector could be automated using existing technology.[15]

The Home Office's EU Settlement Scheme showed how a digital-first approach could automate residency verification at record pace.[16] As of September 2022, only 3 per cent of the 6.9 million completed applications (received between 30 March 2019 and 31 June 2021) were outstanding.[17] The government's GOV.UK One Login, which provides a single access point for 50 central government services, has streamlined processes and is expected to yield £1.75 billion in benefits over five years.[18]

In local government, Hillingdon Council has implemented an AI-powered voice and web chat solution to handle citizen enquiries at scale, providing residents with 24/7 contact while saving £5 for every £1 spent.[19] Brent Council used robotic process automation for its rent change service, reducing processing time from four minutes per case to seconds, saving £32,000 in overtime and achieving 100 per cent data accuracy.[20]

Across the public sector, one of the most promising use cases for digital analytics is fraud prevention. For example, the Department for Transport used advanced image recognition to flag fraudulent submissions to its Electric Vehicle Homecharge Scheme. This innovation saved over 100 years of manual verification work and recovered tens of thousands of pounds in fraudulent claims. On a national level,[21] the National Fraud Initiative is a service that compares datasets to identify inconsistencies that are indicators of potential fraud. The results are released securely to 1,100 public and private sector organisations for further investigation. Between April 2022 and March 2024, £510 million of fraud was prevented or recovered across the UK.[22]

'Effectiveness': Data-Driven Decisions and Better Targeting to Improve Outcomes

With better analytics, existing interventions can be aimed at individuals for whom they are most likely to work. Increasingly, such interventions seek to be preventative.[23] Maidstone Borough Council has implemented a multi-agency system to identify households at risk of homelessness and to offer targeted support. An initial assessment found that it is accurate in identifying imminent homelessness in 84 per cent of cases.[24] NHS teams in Wolverhampton created a system to recognise high intensity users of A&E. The service led to a reduction in hospital attendance by almost three fifths (58 per cent).[25]

Better data can also improve the choice of intervention once an individual is already interacting with public services. Via its Low Income Family Tracker (LIFT) data platform, Islington Council was able to identify financially vulnerable families, boosting Pension Credit take-up by 39 per cent.[26] In education, GenAI tools have enabled teachers to personalise resources, such as worksheets for students with special educational needs and disabilities (SEND) or translations for learners with English as an Additional Language (EAL).[27]

Advanced analytics are increasingly used to predict demand for public services, enabling the relevant authorities to shift resources to where and when they are needed the most. The Surrey and Borders Partnership NHS Foundation Trust is using machine learning to predict patient flow and length of stay.[28] The Department for Environment, Food and Rural Affairs (Defra) has used satellite data to analyse signs of tree stress, deploying ground-team resources to specific geographic areas for remedial action.[29] The London Fire Brigade employs predictive analytics to identify areas at the highest risk of accidental dwelling fires, ensuring that local fire stations are as prepared as possible.[30]

Finally, better data enables higher-quality evaluations and appraisals to inform broader policy decisions.[31]

The Barriers to Successful Digital Transformations in Government

As the above discussion demonstrates, there is both enormous potential and enormous progress in how the UK government—centrally, locally, and its many public services—can use digital technology to drive economy, efficiency, and effectiveness. A survey of the evidence highlights three patterns. There does seem to be an acceleration in public sector digital adoption, but much of the potential remains undelivered to date, and much of the progress has been highly fragmented.

It is therefore important to reflect on what stands in the way of faster or broader progress. Many documents by the Government, the NAO, think tanks, and consultancies delve into the root causes, which I would synthesise as follows.[32]

- **Leadership, governance, and cultural barriers:** Successful digital transformation requires strong leadership commitment and digital fluency at senior levels, which is often lacking in the public sector. Accountability is often delegated to more junior staff, who may not have strong experience in digital transformation or may not have sufficient say in key decisions. This is compounded by a risk-averse culture, organisational silos with conflicting priorities, and insufficient incentives for leaders to prioritise long-term transformation

- **Short-term focus and inadequate planning:** Digital projects often suffer from weak early-stage planning, unrealistic scopes or timelines, mid-cycle policy changes, and underestimation of the complexity of the changes required. There can be a focus on tactical fixes rather than addressing systemic inefficiencies and a tendency to repeat 'discovery' phases without effective scaling.
- **Inadequate funding models and procurement practices:** Funding often prioritises new initiatives over essential maintenance and modernisation, in part because capital is easier to secure than ongoing resource funding. Traditional budgeting and business case processes can be too rigid for iterative digital projects. Procurement processes are frequently ill-suited to digital delivery, lacking technical expertise and effective market engagement.
- **Significant digital, data, commercial, and change management skills gaps:** There is a persistent shortage of skilled personnel across the public sector— experienced digital leaders, technical experts (developers, data scientists), commercial staff able to manage complex procurement, and change leaders who can ensure successful implementation. Uncompetitive salaries make it difficult to attract and retain talent, contributing to over-reliance on contractors.
- **Structural fragmentation and lack of standards:** The devolved nature of government and public bodies leads to inconsistent approaches, reducing economies of scale and interoperability. This fragmentation often impedes the delivery of seamless, user-centred services. That said, aiming for full integration across systems would introduce costly complexity—so some degree of fragmentation and bottom-up delivery may be a necessary trade-off.
- **Data fragmentation, quality, and sharing obstacles:** Data is often siloed within departments, lacks common standards, and varies in quality—making it difficult to build a unified view, deliver joined-up services, or harness data and AI effectively. Cultural and legal (or perceived legal) barriers combine with technical and trust issues to block data sharing.

- **Pervasive legacy systems and technical debt:** A substantial portion of government IT relies on outdated technology. Around 28 per cent of the systems in central government, and 10 per cent to 60-70 per cent in broader public services, are classed as 'legacy' systems.[33] For example, the Police National Computer, still used by frontline police forces, was introduced in 1974.[34] Legacy systems are expensive to maintain, pose cybersecurity risks, and hinder the adoption of modern tools like AI

Interestingly, no-one suggests that 'lack of appropriate technology' is a barrier.

Prioritising Digital Transformation is Required

Depressingly, a recent (February 2024) NAO report states that: "The same themes have been repeated in government's [digital] transformation strategies over the last 25 years".[35] The implication is sobering. The core challenge is not a lack of insightful diagnoses or sound recommendations, but a persistent failure to act decisively and genuinely prioritise digital transformation.

One response is quiet resignation. Accepting that in another decade, similar reports will repeat the same diagnoses and recommendations. The other is to confront the task head-on, treating digital transformation not as a 'nice to have' but as a core priority, on a par with policymaking and fiscal stewardship. That would mean mobilising serious political capital, leadership bandwidth, and financial resources, as well as challenging deeply embedded structures, incentives, and norms.[36]

In short, it requires leadership that aspires to better outcomes, makes hard choices, stays the course, and brings people with it in the face of resistance and constraints.

Knowledgeable Leadership at the Heart of Digital Transformation

Because the changes required are systemic, and often unpopular, they must be driven by leaders with authority, insight, and

conviction – politicians, central government, and senior public servants. But transformation also depends on empowered, knowledgeable leadership within individual organisations, on leaders who understand the costs, benefits, and risks of change. Top-level leaders must enable and embed this distributed leadership across the system.[37]

What makes a good transformation leader? A report by the McKinsey Center for Government highlights five traits: long-term commitment; clarity on priorities grounded in organisational knowledge; coordinated time-bound programme management; compelling communication and staff engagement; and the ability to manage change.[38] Crucially, strong leaders deliver against these principles not because they face no constraints, but because they find ways to navigate or shift them.

Saying 'no' is an important part of such leadership. If a digital programme is over-ambitious, under-resourced, conflicting with other priorities, or hampered by outdated legislation or weak evidence, good leaders say so. They are willing to be unpopular, refusing to pretend that ministers and colleagues can have their cake and eat it.

Such individuals are rare and can be difficult to entice to work in the public sector. Therefore, government must go out of its way to attract, develop, nurture, listen to, empower, reward and promote them. The Government's own 'A Blueprint for Modern Digital Government' highlights the importance of elevating leadership and investing in talent and summarises its key components nicely: "Elevating digital leadership to the centre of public sector decision-making, investing in the digital and data profession, competing for talent, and raising the digital skills baseline for all public servants."[39]

Potential Provocative but Practical Policy Thought Experiments

The preceding discussion leads to a clear conclusion – improving government productivity is not primarily about technology. It is about structures, incentives, skills, funding, and priorities—in other words, people and processes. Official documents set out how government could better organise and manage itself (see Annex A). But are there other policies that could accelerate productivity-enhancing digital adoption?

Certainly there is room for edgier policies because jolts to the system are necessary, given inherent inertia. The following thought experiments should provoke non-incremental debate required to shift the status quo:

- **Require all senior public sector appointees to pass a test on digital transformation.** This should not be a test of experience, as that would be unfair and overly restrictive. But nothing stops candidates from acquiring digital technology and change management knowledge. Appointment panels should probe candidates' genuine curiosity about and commitment to how digital technology can be used to improve people's lives.
- **Impose a moratorium on any policy, legislation, or regulation that is not digitally enabled.** This would no doubt cause short-term frustration, but that is precisely the point. It would compel departments to reconsider priorities, involve digital experts in every key policy, and channel funding toward policies for the digital age. Crucially, it would reduce the accumulation of technical debt.
- **Enshrine in law a universal right to digital public services.** Today, 47 per cent of central government and 45 per cent of NHS services lack a digital pathway.[40] Establishing a statutory right would place service design obligations on departments and give users a route for redress. Often, pressure from outside the system is needed to trigger and sustain internal change.
- **Establish a digital sunset clause for legacy systems.** Require that every government IT system over a certain age—say, 15 years—has a publicly disclosed sunset date and replacement plan. Exceptions would require Cabinet Office approval. This would force departments to grapple with long-postponed upgrades and ensure new systems are future-proof.
- **Make user satisfaction a core, daily KPI for ministers and public sector leaders.** In the private sector, a relentless focus on customer experience has been pivotal to delivering better products and services. In the public sector, holding leaders accountable for user satisfaction would be uncomfortable but transformative. It would require careful measurement, frequent tracking, contextual interpretation, and safeguards against gaming. But it is both feasible and necessary if citizen experience is to improve meaningfully.

Conclusion

Digital transformation is not a side project but the core enabler of a modern, effective, and fiscally sustainable public sector. If the UK Government is serious about delivering better outcomes, it must treat digital capability not as an add-on, but as a top priority.

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