Industry in Focus

PwC's Framework for Growth

Exploring priorities for a renewed UK industrial strategy

July 2024

Contents

Foreword

Securing economic growth will inevitably be a priority focus for the new Government, and we welcome its renewed focus on industrial strategy. In our view, establishing a clear, long-term industrial policy for the UK is of crucial importance. Global markets for investment, skills and supply chains have never been more competitive, and the UK increasingly finds itself competing with countries where governments take a more active role in supporting the private sector. We believe that the UK Government has an opportunity to develop an industrial policy that helps establish a new model of inclusive growth. A model that balances productivity, the environment, and community outcomes, and which measures success by how well growth is shared across a place and its people, rather than simply by its size and pace.

A clear prioritisation of industries, combined with an understanding, through local industrial strategies, of where in the UK investment would have the greatest impact in terms of inclusive growth, will be fundamental to focusing any approach. However, the strategy should also be horizontal, identifying how national policy can support businesses in addressing the cross-cutting challenges that limit growth across sectors.

The development of this approach will likely require a new form of enhanced, ongoing and evolving collaboration between policy makers, businesses, academics, community leaders and others.

We accept that to achieve this aim may require a significant reshaping of the roles of central and local government, business, and communities, including how they operate and how they engage. This process must begin by understanding what challenges UK businesses are facing, where they see their opportunities for growth, and what impact different government interventions might have.

PwC has launched our Framework for Growth initiative to support this conversation at a national and regional level. We hope that this report provides a starting point for ongoing discussions across different industries and communities, as we work together to both define the priorities, and design the interventions that will most effectively unleash the UK's potential.

We welcome anyone with an interest in the areas covered in this report register to join in the debate.

1 Introduction

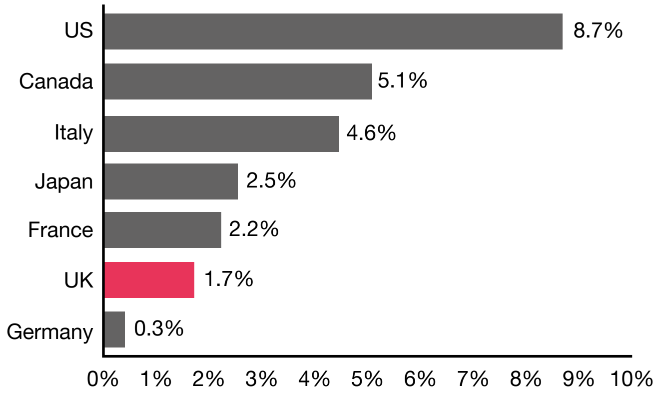
Introduction

Addressing UK's economic growth challenge

It is no secret that the UK has an economic growth problem. Compared to other G7 economies, growth has broadly flatlined since the pandemic and is struggling to return to its historical trend. The UK is lagging behind all but Germany, and this prolonged period of flattened growth is set against the backdrop of the UK's long-term challenge to improve productivity.

Sluggish real UK GDP growth since the pandemic

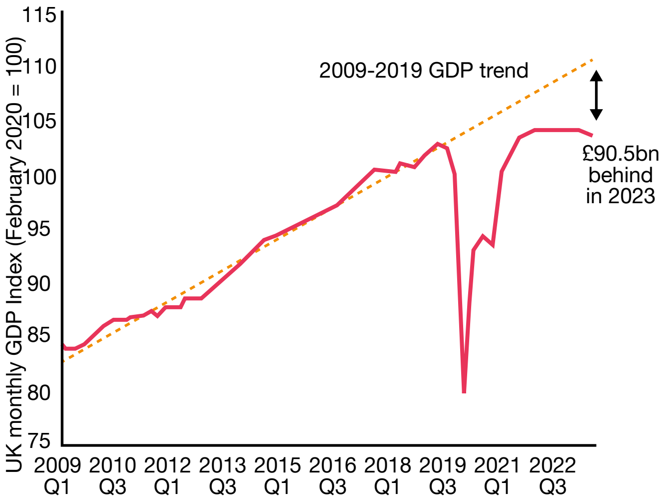
Real GDP% growth between Q4 2019 and Q1 2024



The critical need to jumpstart growth is self-evident. In 2023, the UK economy lost approximately £90 billion as a result of not returning to the 2009-2019 growth trend. If the UK continues to grow at its post Covid-19 trend rate (2022 to 2023 growth), our estimates show that the UK will miss out on £2.1 trillion of GVA over the 12 year period up to 2035 (compared to the 2009-2019 trend rate of growth continuing into the future).

This has led to an increasing number of business voices across the UK calling for the urgent reestablishment of a joined-up approach to industrial strategy, to support them in breaking down the barriers to growth and productivity that they face.

Historical real GDP growth trend



However, addressing the systemic challenges that continue to hold back UK businesses is not simple. There are overlapping factors that currently impede UK businesses' growth and productivity.

As finances remain constrained, tough decisions will need to be taken about the challenges that business leaders and the Government should prioritise. An important part of informing these decisions will be understanding which issues UK business leaders believe are most important for the growth of their businesses and of their sectors. Another will be understanding which interventions could have the biggest positive impact on the UK economy as a whole, and how that increased growth can be shared across the different sectors.

Introducing PwC's Framework for Growth

We believe that a national conversation on how best to prioritise the policies, partnerships and investments to unlock economic growth is critical to ensure the success of any future industrial strategy. To help contribute to this debate, PwC has launched the Framework for Growth. The Framework breaks down various key areas that influence UK growth and productivity into ten key components.

These components for growth have formed the basis of fresh research, which combines the voice of UK businesses with new economic modelling.

Our aim is to use the Framework to better understand how different interventions can impact the UK's sectors and regions. We hope it provides a helpful basis for continued discussions between businesses, policymakers, trade bodies and academics, and sets the right foundation for a renewed, long-term industrial strategy for the UK economy.

The framework has been designed based on 10 components

	Component	Description
1	**Skills, education and talent**	The infrastructure for developing and enhancing the skills and knowledge of the UK's population, encompassing: formal education, vocational training, apprenticeships and lifelong learning.
2	**Innovation ecosystem**	The network and environment that fosters and supports the development of new ideas, technologies and processes. Includes: research, entrepreneurship, collaboration and funding.
3	**Sustainability and environmental considerations**	Practices and policies that promote the resources, minimise environmental impact, and address climate change. Includes initiatives to: reduce carbon emissions, conserve energy, promote renewable energy sources and protect ecosystems.
4	**Regional development and social inclusivity**	Initiatives that promote balanced growth and equal opportunities across regions and communities, addressing regional disparities and ensuring evenly distributed access to resources and opportunities.
5	**Infrastructure and planning**	The development and management of physical structures, services and systems to support the needs of businesses and communities. Includes: transportation networks, utilities, buildings and public spaces.
6	**Trade policy and promotion**	The strategies and activities aimed at aiding international trade and encouraging growth. Includes the formulation of policies and agreements to support exports, attract investment and enhance market access.
7	**Cyber security and resilience**	Protection against and responses to cyber threats and ensure the continuity of digital systems. Includes approaches to safeguard information, networks and infrastructure from unauthorised access, data breaches and disruptions.
8	**Digital transformation**	The process of adopting and integrating technologies and strategies to enhance business operations, improve efficiency and deliver better services.
9	**Private sector investment**	The allocation of funds into various business ventures. It includes investments in startups, established businesses and infrastructure. The aim is to generate financial returns, stimulate growth and/or productivity, and create employment opportunities.
10	**Tax and regulation competitiveness**	Policies and measures implemented by governments to create favourable conditions that attract private sector investment and encourage economic growth.

Framework for Growth research

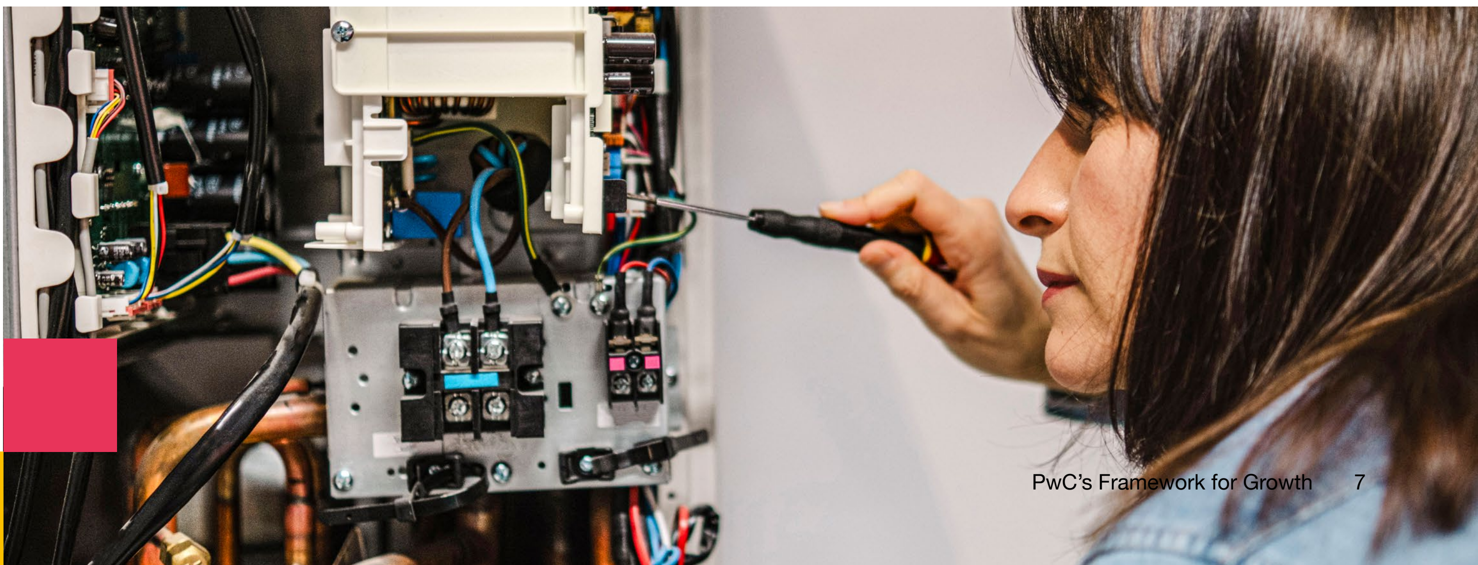
The research that underpins PwC's Framework for Growth has been conducted using two distinct but interconnected approaches. The first, run in partnership with the independent research agency **Thinks Insight & Strategy**, included a programme of in-depth interviews, with more than 60 business leaders and advisors, about the components for growth they believed would most support their business and wider sector. This was followed by a nationwide survey of 1,200 senior UK business decision makers about their priority components, how improving the UK's performance in these areas could impact their businesses, and more broadly, their perspectives on the future of industrial strategy.

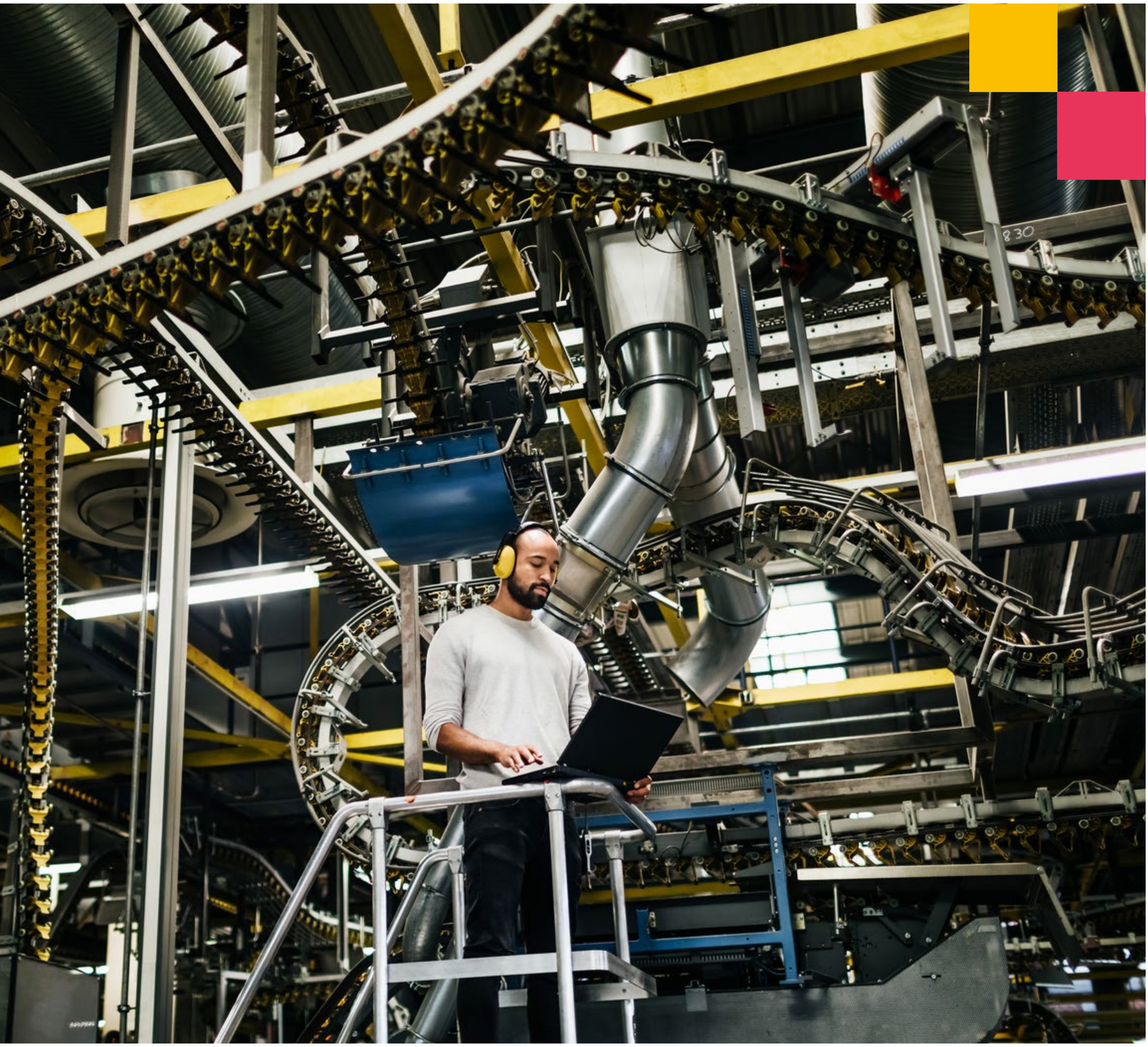
The second approach has sought to demonstrate the potential economic impact of improving the UK's performance in certain areas related to six out of the ten components, where appropriate data and metrics were available. Using a general equilibrium model, we have combined the survey findings with historical data for the UK and comparator countries to estimate the potential economic gains of different policies, calculating the possible economic uplift at both the national and sectoral level. This analysis is designed to serve as an indication of what impact improving the UK's performance in these areas might have, so as to help contribute to the broader discussion on the potential prioritisation of a renewed industrial strategy.

Framework for Growth component	% of survey respondents' who selected the component in their top three	Potential GVA uplift, by 2035, of improving the UK's performance in the component*
Skills, education and talent	53%	£230bn
Digital transformation	34%	£65bn
Cyber security and resilience	34%	-
Infrastructure and planning	34%	£354bn
Private sector investment	28%	-
Tax and regulation competitiveness	26%	-
Sustainability and environmental considerations	26%	£6bn
Regional development and social inclusivity	24%	-
Trade policy and promotion	21%	£184bn
Innovation ecosystem	20%	£85bn

*Gross Value Added

The main focus of this report is the Framework for Growth components identified, through our research, as business leaders' highest priorities. For each of these components we share, in depth: what we have heard from business leaders; the opportunities for change identified; PwC's perspectives on how these opportunities could be grasped; and a detailed explanation of the methodology underpinning the economic analysis undertaken. Insights for the remaining Framework for Growth components are summarised at the end of the report.





2 Business leaders' views on a renewed industrial strategy

Business leaders' views on a renewed industrial strategy

Through our programme of in-depth interviews, and a nationwide survey, we asked business leaders from across the breadth of the UK's regions and sectors what they wanted to see from a renewed industrial strategy. While business leaders see growth as their own responsibility to drive, and are acutely focused on how to achieve it, they need and want the Government to do more to provide the economy-wide conditions to support them. We have heard clear recommendations from business for what a refreshed industrial strategy should seek to achieve:

1. An industrial strategy needs to be economy-wide, rather than sector-specific

While business leaders are focussed on how they can drive growth themselves – grasping new opportunities, improving efficiency, and investing to scale, **81% of those surveyed view an industrial strategy as essential for promoting economic growth across the UK**. However, few have a clear 'wishlist' of changes that would benefit their sector. Business leaders are more likely to prioritise wider shifts that they feel would benefit the economy as a whole, such as reform of the planning regime, improving the 'work readiness' of school leavers and graduates, or investment in key national infrastructure. A clear vision, directed action, and certainty in these priority areas is often seen as missing, constraining their ability to grow.

73%

of business leaders believe that any future changes should be focussed on improving the general business environment, rather than the specific needs of individual sectors.

"The Government need stability and policies that will attract investment, and they haven't been doing that. Everyone talks about wanting to do that, but there's been no policies indicating that they will do that."

Real Estate business

2. An industrial strategy needs to be trusted by business as enduring and for the long-term

There is widespread agreement amongst business leaders that a clear, long-term industrial strategy can unlock investment and growth. However, the levels of trust that this can be delivered are currently low, with past strategies seen to have been short-lived and subject to frequent change.

For the business leaders we spoke to, stability and predictability are consistently prioritised. Given this starting point, a renewed industrial strategy in and of itself will not be enough. Business leaders are unlikely to respond to new policies and interventions without clear signs from the Government that the strategy offers certainty against which they can take decisions and invest. There is an appreciation amongst the business leaders we spoke to that any long-term strategy will at times need to reprioritise and evolve, but they feel clarity of objectives, as well as the logic that underpins the chosen areas of intervention and investment, would allow for greater certainty and confidence.

"Anything around tax or policy… has all been too near-term – to invest, you need that guarantee that you won't hit a wall just because someone changes their mind."

Infrastructure provider

"There's been so much chop and change and lack of consistency in Government onus. We struggle to get continuity and consistency in terms of understanding what an organisation like us needs in order to fuel growth."

Transport and logistics business

3. An industrial strategy needs to encompass the public sector

Through our research we spoke to senior leaders, in both the public and private sector, who questioned the exclusion of a plan for the public sector from past industrial strategies. For these leaders, any strategy that focuses on the private sector, to the exclusion of the public sector, is only looking at half of the picture. A well-functioning public sector is viewed as essential to providing the healthy, skilled and connected population necessary for businesses to thrive. Improved productivity within the public sector is also highlighted as a catalyst for wider economic growth, as it would enable a greater number of more productive partnerships, and increased collaboration with the private sector.

The public sector is also seen as offering considerable opportunities to attract investment and support growth – examples cited included using the NHS's international renown to attract investment in health sciences, or using public sector bodies as anchor institutions to help stimulate growth in a region. Business leaders feel that while these opportunities are undoubtedly being explored, a new approach to industrial strategy would offer an opportunity to integrate this fully across sectors and services, underpinning growth across the economy.

"While the private sector creates growth, it depends on the public sector."

Transport and logistics business

"I think we need a much more open conversation about public services in the round. Previously we've done industrial strategy without getting all the necessary partners onto the page. It should be joined up and it's not."

Health and social care provider

4. An industrial strategy needs to be informed by business

There was an appreciation from the business leaders we spoke to that building a successful long-term industrial strategy will be complex. One of the core challenges will be establishing a deep understanding of the opportunities for, and challenges faced by, different sectors and regions. This knowledge can only stem from close collaboration between the Government, business leaders, trade unions, local leaders and other stakeholders who can influence and inform decision making.

Despite this clear need, only **just over half (53%) of the business leaders we surveyed feel that past governments have listened to businesses when designing policies to promote economic growth**. Many of the business leaders we spoke to are sceptical as to whether the needs of their sectors will be considered in any future industrial strategy, and felt that, historically, government engagement with businesses has been perceived more as a 'tick box' exercise. In part, this scepticism is also driving low levels of business engagement with the business groups who represent the views of their industries to policymakers. The results of our survey demonstrated that the level of engagement between businesses and their representative organisations (such as business groups and industry bodies) was low, particularly amongst what are defined as micro businesses (0-9 employees) and smaller businesses (10-49 employees).

We also heard concerns from several business leaders that, when seeking to influence the Government's approach on certain policies, business groups can often appear too narrow in their outlook, and lack a cross-sector perspective that could, in turn, help the civil service become less siloed in its outlook. We heard strong calls for any new approach to industrial strategy to more closely involve business leaders in the early stages of policy development, and a desire to ensure that smaller businesses have a better way of feeding into the main business groups and industry bodies.

Over

40%

of business leaders we surveyed are neither members of, nor regularly engaged with, industry bodies which seek to inform Government policy.

Beyond the perceived low levels of engagement with the Government, business leaders also identify the work that they themselves need to do in order to bridge the knowledge gaps that they believe can often stymie effective policy making. Whether it is the complexity of predicting what skills will be most critical, or what technological investments would be most beneficial, business leaders highlighted to us the difficulty they face in determining how their needs are likely to change. Increasing the amount of time and effort business leaders spend on planning for future risks and opportunities, and improving the level of collaboration at a sector level, were viewed as fundamental to enhancing the shared understanding of business leaders' evolving priorities, which in turn would help shape both national and local strategies that sought to support them.

"Engagement is the only way they'll understand what's needed and what's lacking. At the moment the outcomes and follow-up are less visible, it feels like it goes into a black hole. You might find yourself having a similar conversation with someone else in the Government later on, but you don't see anything that's introduced that makes a difference."

Professional services business

"The ability to collaborate is huge and I don't think we do it particularly well. The Government's power to bring people together to convene is huge."

Financial Services business

5. An industrial strategy needs to include local strategies, especially in critical areas such as skills, planning and infrastructure:

While the business leaders who contributed to our research understand the role of government policy in helping to tackle the UK's barriers to growth, they highlight that the changes most critical for their businesses – including the skills system, planning system, and infrastructure investment, as well as the overall support made available to smaller businesses – were best driven at a local level. Companies feel that local planning and collaboration would be crucial in determining the right priorities and developing the most effective ways to accelerate growth. However, business leaders told us that, to be successful, these efforts will need to be properly funded, resourced, developed in partnership with local businesses, and backed-up with sufficient powers. They also feel that businesses will have their own, important role to play in local development.

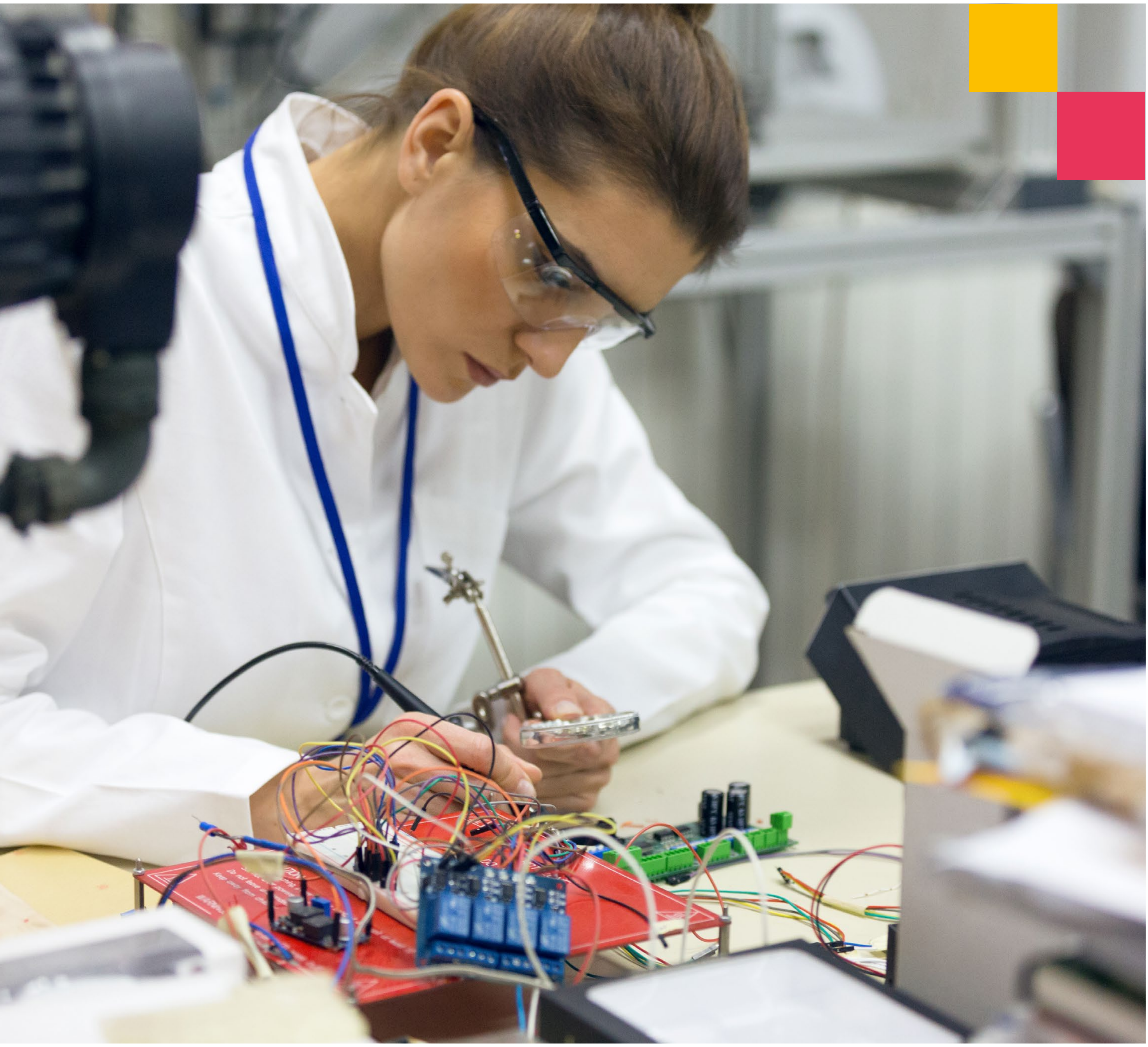
74%

of business leaders surveyed feel that regional development will require action and/or investment from the Government, but 65% also believe that there is a lot businesses can do to improve regional development in their sector.

"There's an absolute appetite for localised decision-making, and for more power for cities in terms of their policies. The role of central government is to direct policy and make sure it's well funded, but more decision making with local government is important too."

Infrastructure provider

From our perspective, the success of a renewed industrial strategy will depend on close collaboration between national, regional, and local governments to ensure that local provisions of, for example: transportation; housing; labour supply; training; and grid capacity are all strategically focused on supporting local growth priorities. As we have highlighted in our Good Growth for Cities research, this type of approach would require further devolution of appropriate governance and powers to a regional and local level. By devolution we mean the effective distribution of accountabilities and responsibilities to the best placed decision makers, whether they be local politicians, regionally based civil servants or executive and non-executive directors in a range of locally based institutions, or indeed community leaders.



3 In depth: Skills, education and talent

In depth: Skills, education and talent

The UK's skills challenge

The UK's 'productivity puzzle' has persisted since the 2008 global financial crisis, with UK productivity trailing behind key competitors including the US, Germany, and France. A key foundation of UK productivity lies within its skills base, exerting influence both directly and indirectly. A previous government study found that around 20% of pre-crisis productivity growth was attributed to workforce up-skilling. More widely, higher skills facilitate broader investment and innovation across sectors, such as providing the skilled workforce to build modern infrastructure, and fostering technological diffusion across businesses and between sectors.

Business leaders are acutely aware of the importance of skills across the economy. Employers from all sectors highlighted an improved UK skills base as the single biggest lever for improving economic growth. And this tallies with consistent evidence from PwC's Annual CEO survey in which the majority of UK CEOs (78%) report some extent of skills shortage within their organisation, and 68% specify a lack of tech capabilities inhibiting their ability to transform.

A series of labour market challenges threaten to exacerbate this brake on growth. The combination of technological change, the transition to net zero, an ageing population, immigration policy and the ongoing labour market participation impact of Covid-19 are transforming the UK job market. As new jobs emerge, and others are displaced, the skills required within the workforce are changing. The scale and pace of this change is driving a series of challenges for both business leaders and policy makers. These include increased labour market inequalities and inefficiencies, high levels of economic inactivity, and the heightened competition for scarce technical skills leading to a war for talent.

What we heard from businesses about the importance of skills to their sectors' growth

Within both the quantitative research and qualitative interviews, senior business decision makers consistently selected 'skills, education and talent' as the most important component for growth in their sectors.

More than half of business leaders surveyed (53%) ranked skills within their top three most important components for growth in their sector, with over a quarter (27%) ranking it as the most important.

In total, 68% of business leaders surveyed believe that when it comes to skills, the UK is lagging behind competitor economies, with an acceptance from the business leaders we heard from that their sectors were not investing enough on training and skills development.

Key insights

- At a sector level, skills is most important for health and social care (72% select it in their top three components), followed by information and communication (60%), and professional services (56%).
- Smaller businesses are more likely to rank skills as one of the top three components impacting on growth in their sector (61%) than larger businesses (46%).
- All regions prioritise this component, but Wales considerably more so than others (77% of business leaders in Wales rank in the top three compared to 52% of English businesses).

What business leaders currently see as the biggest challenges within the UK skills system

While the specific challenges that businesses are facing varied slightly between sectors, five core themes emerged from our research as being at the forefront of businesses leaders' concerns about how the UK skills system impacts on the growth of their sectors.

1. A perceived under-supply of the 'right' skills in the UK economy

Technical skills: Overall the UK is not perceived by business leaders as promoting and prioritising technical education, leading to a shortage of skills that are in demand. This is particularly acute for the 'missing middle', i.e. those acquiring higher technical qualifications (HTQs), rather than degree or school level attainment, where the UK lags behind almost all of its competitor countries, with adults in the United States more than four times more likely to complete a HTQ equivalent.

Workplace skills: Business leaders also believe that the current education system does not produce young people who are sufficiently 'ready for work'. Specifically, a large number of the business leaders we spoke to talked about a lack of softer skills in the younger workforce, such as communication and problem solving, and highlighted an expectation that the education system should do more to prepare young people for the workforce.

"Younger staff aren't necessarily employment ready – it's supporting them with that transition to employment but also them being mature enough and having some skills around that."

Retail business

2. A belief that the UK is not well equipped to respond to changes in skills demand when the 'make-up' of the economy changes

This concern is specifically targeted at changes in technology, which has forced a change in the demand of skill types required. There is further demand for technical skills, whilst other skills are being made redundant. In some ways this can be viewed as an opportunity for the economy, through new job creation. However, business leaders claim the opportunities can only be realised if the workforce adapts quickly. The transition to a green economy is seen to be an important example of this.

"We're not matching education with jobs that are going to be needed. I'm very concerned about whether we are skilling people for the transition."

Business advisor

3. An inability to attract and retain talent into their sector

Some sectors, including manufacturing, retail and energy, are concerned that young people are not considering starting, or staying in, careers in their industries, creating a significant barrier for attracting and retaining talent. Those that can are now looking for more diverse pathways to attract and develop talent with practical workplace skills, for example job placement, apprenticeships and/or internships where individuals can acquire practical skills in a real working environment.

"There are manufacturing technology centres like in Coventry which are doing lots to grow manufacturing, but the skills piece is falling behind. How do we excite people about manufacturing?"

Manufacturing business

4. Equally, business leaders who feel they can currently attract the best global talent are worried about their ability to do so in the longer term

Those employing a higher skilled workforce report that rising living costs, a lack of affordable housing (especially in London), and a perception of comparatively higher taxes could be making the UK less attractive to global talent.

"We are a large company, so our offer is robust to attract people. But smaller companies don't have the resources to do this and future proof their businesses."

Professional services business

5. Regional disparity is cited as a core challenge to accessing and attracting talent

In part, this is because London and the South East are seen to attract top UK talent, making it harder for those outside of these areas to hire the best people. But this challenge is not just a London and South East monopoly problem. Business leaders also note that being located outside of cities, or in smaller towns or cities, can prevent them from accessing talent pools.

Options for responding to the UK's skills challenge

Our research has highlighted the disruption that the UK labour market is currently facing, and the impact these various challenges pose to every sector's growth potential. Addressing these challenges will require business leaders to work alongside policy makers, academia, and other stakeholders to develop and deliver innovative interventions that can have an impact at a local and national level. A number of potential areas of focus were highlighted to us by the business leaders we spoke to, and others identified through our own work in this area.

1. Enhancing strategic workforce planning

Business leaders must understand the impact of disruptions, such as technological change, on their business model and develop their strategic workforce planning capabilities in response. This will allow them to better identify business changes and rapidly translate these into their future skills requirements. The Government can support this by enhancing its collaboration with businesses, trade associations and trade unions, at both a national and local level, to help deliver a pipeline of talent trained in the skills needed by employers.

2. Increasing investment in training and retraining

Research by the Learning & Work Institute found that training spend per employee fell by 28% in real terms between 2005 and 2022, from £2,139 to £1,530 per year, which is less than half the EU average. The proportion of people getting training at work fell by 14% during the same period. Employers have provided a range of reasons for this – and these often differ between the sector and size of organisation. A challenging economic climate is one factor, with cuts to training budgets a relatively rapid route to cost savings. More widely, a flexible labour market with significant inflow from migration has meant it has been relatively easy for employers to turn to recruitment rather than upskilling to address skills gaps.

Given that over 80% of the 2030 workforce are already in the labour market, upskilling and retraining will be the main levers for equipping these people with the skills that businesses need. This, and the speed with which skills requirements are changing, suggests that business leaders need to develop and implement workforce upskilling strategies as an urgent priority.

Research from PwC and the Financial Services Skills Commission (FSSC) shows reskilling saves businesses up to £49,100 per reskilled worker to fill the roles that would otherwise have required external hires. Upskilling and reskilling can not only meet an employer's evolving skills needs, but can also provide a more cost effective approach for organisations to retain a capable workforce that remains relevant and valuable for the business.

> We need to see better clusters of business outside London, and collaborative partnerships might help that, but that requires regional Governments to have some cash to spend."

Business advisor

3. Implementing holistic place-based solutions:

There are significant variations in productivity across the UK. The ONS reported that London observed levels of output per job that were more than 30% above the average for the rest of the UK, while the North East was 17% below the average. Investment in automation and technology to accelerate the transition to net zero provides one way to boost productivity across the UK, but this will depend on having the right skills available in the labour market. Left unchecked, future employment will grow in the more productive regions, but not necessarily where it is needed most to level-up the UK economy. Our research indicates that unless there is targeted investment, regional and local disparities will continue to grow.

One of the key recommendations from our Good Growth for Cities report was to deliver productivity through specific place-based strategies. Using local leaders, and their understanding of the local context, to engage with their communities will lead to more effective strategies for economic and skills development. Regional partnerships between businesses, training providers and local/regional government will be key to improving the alignment of skills development with businesses' needs. Previous governments have introduced policies aimed at delivering this, with Local Skills Improvement Plans (LSIPs) the most recent of these. Indeed, research by the Institute for Government found that since 1978 there have been 30 different policies or programmes relating to skills introduced by successive governments. The regular churn of policies has led to a fragmented landscape for regional skills development. Regional partnerships need to be strongly embedded as a core part of the skills system, with long term investment in their institutional capacity to create the conditions for sustainable economic growth.

4. Building the STEM talent pipeline to supply skills for growth sectors

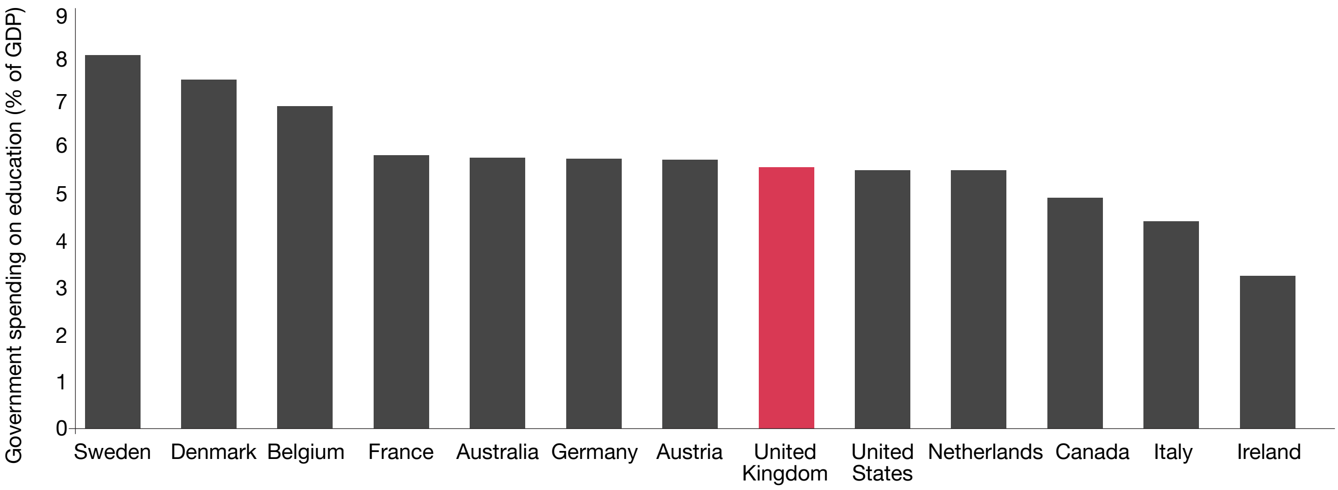
Employers from disparate sectors of the economy are increasingly in competition for scarce technical skills, driving a war for talent. As business leaders across the UK transform their business models to take advantage of technological innovation, they are increasingly seeking out a similar set of science, technology, engineering and maths (STEM) skills. The Government should consider further incentives, both for individuals and employers, to support young people and mid-career workers investing in building STEM skills to equip themselves for job roles for which demand is growing.

The increasing focus on lifelong learning is a positive step. Success will, in part, be dependent on successfully catalysing the supplier market and individual's interest in making use of the lifelong learning investment. Training providers will need to significantly scale up the availability of high quality modular provision, employers will need to provide a clear demand signal of the qualifications they value, and further marketing will be needed to promote the benefits to individuals.

The economic impact of increasing levels of tertiary education and on the job training in the UK

As we've set out, there are several different aspects of the skills component that business leaders and policy makers could address in order to accelerate economic growth. A number of the potential solutions we've outlined would require significant increases in both the levels of tertiary education (post-secondary education received at universities or colleges), upper secondary education or post-secondary non-tertiary education, as well as on the job training.

5.5% of the UK's GDP is spent on education, eighth of the selected countries, trailing significantly behind Sweden where almost 7.9% of their GDP is government spending on education.



Currently, when comparing the UK against a selection of comparator economies, it sits behind both Canada and Ireland in the proportion of population having received tertiary education. Out of these same 13 comparator countries, the UK ranks seventh for the percentage of workers receiving on-the-job training, eight percentage points below the leading economy, Denmark.

To provide an indication of the potential economic gains we have modelled the potential impact of improving the UK's performance in these areas to align with the leading comparator countries.

Our economic modelling predicts that, were the UK to catch up with the levels of tertiary education attainment in Canada by 2035, this could add £100 billion in GVA to the UK economy, and an additional £35.9 billion in tax revenue for the Government.

If the UK were to catch up to Germany's levels of upper-secondary and post-secondary non-tertiary education by 2035, this could add £125 billion in GVA to the UK economy, and an additional £45.2 billion in taxes.

Similarly, matching Demark's performance for on-the-job training would add £4.6 billion in GVA by 2035, accounting for an extra £1.7 billion in taxes.

The potential impact on the growth trajectory of different sectors

Industry (Tertiary education)	Addition to UK GVA up to 2035 as a % of 2022 GVA
Construction	8.47% (£11.8bn)
Accommodation and food service activities	7.36% (£5.2bn)
Information and communication	6.24% (£9.1bn
Arts, entertainment and recreation	5.32% (£3.8bn)
Manufacturing	5.21% (£11.0bn)
Electricity, gas, steam and air conditioning supply	4.41% (£1.0bn)
Public administration and defence	4.38% (£5.1bn)
Human health and social work activities	4.38% (£7.7bn)
Professional Services	4.30% (£12.8bn)
Real estate activities	4.20% (£11.8bn)
Education	4.10% (£5.5bn)
Wholesale and retail trade	3.33% (£7.8bn)
Water supply; sewerage and waste management	3.06% (£0.9bn)
Transportation and storage	2.94% (£2.3bn)
Financial and insurance activities	1.81% (£3.7bn)
Agriculture, forestry and fishing	0.50% (£0.1bn)
Mining and quarrying	0.06% (£0.0bn)

Industry (Upper/post-secondary non-tertiary education)	Addition to UK GVA up to 2035 as a % of 2022 GVA
Construction	10.68% (£14.9bn)
Accommodation and food service activities	9.28% (£6.6bn)
Information and communication	7.86% (£11.5bn)
Arts, entertainment and recreation	6.71% (£4.8bn)
Manufacturing	6.55% (£13.8bn)
Electricity, gas, steam and air conditioning supply	5.55% (£1.2bn)
Public administration and defence	5.53% (£6.4bn)
Human health and social work activities	5.52% (£9.7bn)
Professional Services	5.42% (£16.1bn)
Real estate activities	5.30% (£14.9bn)
Education	5.16% (£6.9bn)
Wholesale and retail trade	4.19% (£9.8bn)
Water supply; sewerage and waste management	3.85% (£1.1bn)
Transportation and storage	3.70% (£2.9bn)
Financial and insurance activities	2.28% (£4.6bn)
Agriculture, forestry and fishing	0.63% (£0.1bn)
Mining and quarrying	0.07% (£0.0bn)

Industry (On-the-job training)	Addition to UK GVA up to 2035 as a % of 2022 GVA
Construction	0.39% (£0.5bn)
Accommodation and food service activities	0.34% (£0.2bn)
Information and communication	0.29% (£0.4bn)
Arts, entertainment and recreation	0.24% (£0.2bn)
Manufacturing	0.24% (£0.5bn)
Electricity, gas, steam and air conditioning supply	0.20% (£0.4bn)
Public administration and defence	0.20% (£0.2bn)
Human health and social work activities	0.20% (£0.4bn)
Professional Services	0.20% (£0.6bn)
Real estate activities	0.19% (£0.5bn)
Education	0.19% (£0.3bn)
Wholesale and retail trade	0.15% (£0.4bn)
Water supply; sewerage and waste management	0.14% (£0.0bn)
Transportation and storage	0.14% (£0.1bn)
Financial and insurance activities	0.08% (£0.2bn)
Agriculture, forestry and fishing	0.02% (£0.0bn)
Mining and quarrying	0.0% (£0.0bn)

The distribution of GVA gains by sector is mostly determined by the size and positioning of each sector within the economy. For example, manufacturing is a relatively large sector, but most importantly, is strategically situated at the heart of the economic production network. It has interlinkages with numerous sectors both upstream and downstream in the supply chain. Another factor is the reliance of each sector on skilled labour. Sectors like professional services and information and communication (ICT) benefit more from an influx of skilled workers compared to their size, mainly due to their reliance on such expertise.

4

In depth: Resilient digital transformation

In depth: Resilient digital transformation

The need to drive resilient digital transformation in the UK

Digital transformation has the potential to contribute to significant economic growth through enhanced productivity, innovation, and demand for new skills and jobs. However, the business leaders who took part in our research felt that a significant amount of the UK's economic potential from digital transformation is currently untapped, with a number of issues seen as barriers, including the pace of adoption of technology, behavioural change, and the initial costs of investment.

In the minds of many business leaders, cyber security and resilience are inextricably linked to maximising the benefits of digital transformation. Our Framework for Growth insights for these two components have therefore been combined with a focus on the UK's resilient digital transformation. We know technology is evolving at an extraordinary pace, and combined with a volatile geopolitical backdrop, businesses have never been more aware of the potential threats they may face. The increasing costs of cyber attacks in the UK as a result of business disruption, operational downtime, and direct financial losses are all seen as having a negative impact on potential economic growth.

What we heard from businesses about the importance of resilient digital transformation

Across both the quantitative and qualitative research, investment in digital transformation and cyber security were among the components most businesses selected as important for stimulating growth across the economy.

"The more digital we are, the more vulnerable we are to cyber criminals."

Energy business

Key insights

Digital transformation

One third (34%) of business leaders select 'digital transformation' in their top three most important components for growth within their sector.

While digital transformation remains among the top three priorities for business leaders across sectors, those most likely to prioritise it include:

- health and social care (47%); and
- information and communication (47%).

59% of business leaders believe the UK is currently trailing behind other key competitor countries in terms of digital transformation.

Cyber security

A third of business leaders (34%) rank cyber security and resilience in their top three most important components for growth in their sector. One in ten (11%) rank it as their most important component.

Sectors more likely than others to rank cyber security and resilience in their top three include:

- power and utilities (44%);
- wholesale and retail trade (48%); and
- financial services (44%).

76% of business leaders believe that improvements would require Government action, while at the same time 70% of business leaders believe they can have more impact than the Government when it comes to improving cyber security.

"We're going to need change at an Industrial Revolution type scale, and the Government's just sitting on the sidelines. It'll happen, but not at the rate and with the energy that it happens in other countries."

Telecommunications business

What businesses see as the biggest challenges to accelerating the UK's resilient digital transformation

When the business leaders we spoke to reflected on the current state of the UK's digital infrastructure, both in the public and private sector, a mixed picture emerged. On the one hand, the UK is often seen as among the forerunners to developing new innovation, and playing an important role in current conversations around AI. On the other hand, some business leaders believe that, compared to other developed economies, the UK can be constrained by its legacy systems, or the lack of a mature digital infrastructure in some sectors.

When it comes to cyber security, business leaders told us that they were especially worried about a number of increasing complexities including the impact of new technologies such as AI; increasing capabilities of hostile actors; and the need for increasingly complex mitigations.

Those businesses which focused on the challenges of driving resilient digital transformation, to enable economic growth, highlighted the following:

1. High cost of investment to adopt new technologies or replace legacy systems

Across sectors, the upfront cost of investment is seen as the primary challenge for business. Both due to the absolute cost of investment (particularly in a high interest rate environment), and that certain investments to replace legacy systems can be difficult to prioritise when an existing, though less efficient, system is in place. While this challenge was raised across the sectors, those contending with critical infrastructure (telecoms and energy and utilities) face a particular challenge.

"Technology investments are expensive, and the market doesn't necessarily thank you for it because you're swapping out old stuff and new stuff that does broadly the same thing."

Telecommunications business

2. The costs and missed opportunities of living with legacy systems

The lack of ability to upgrade fast enough is seen by business leaders as being an impediment to their productivity, and means that they may not be on a sufficiently secure footing to take advantage of some of the opportunities offered by the latest developments, for example AI. While this issue is felt by those in the private sector, many also comment about the impact of legacy systems in the public sector, and what this could mean for the wider economy as well as cyber resilience.

"In the Nordics, data is all integrated from primary care to secondary care. That allows people to move around the health system, easier to spot early warning signs etc."

Health and social care business

3. Keeping pace with customer expectations

Business leaders state that rising customer expectations stem from increased sophistication amongst consumers, and that this is something they can struggle to meet. Enhanced consumer experience, aided by technological advancement, has presented an "arms race" for businesses to win customers. Sectors that found this challenge particularly prominent were retail and telecoms, and telecommunications businesses.

"Delivering that pace of innovation, to meet the shifting customer need, is a challenge."

Telecommunications business

4. Difficulty finding the right skills in the UK

Many saw that the capabilities to deliver large scale digital transformation, and combat the ever changing cyber security threat, meant often relying on recruiting talent from outside the UK.

"There's a skills shortage in real digital capability, businesses don't always know what they want."

Retail business

Options for accelerating a resilient digital transformation in the UK

As highlighted by the research findings, the business leaders we heard from understand that digitally transforming and securing their systems from external threats is their responsibility. Their expectation is that the Government will create an environment where these initiatives are more likely to succeed.

"Given we've gone for a high corporation tax route, some sort of offset around investment in the digital space could be a good way of mitigating that and ending up with a sensible corporate tax burden."

Telecommunications business

With this in mind, examples of potential interventions and considerations for business leaders include the following:

1. Embrace cloud data and AI tooling

In today's digital landscape, these capabilities are becoming mainstream, and there is a need to keep pace in order to compete. Leveraging cloud-based data solutions enables businesses to streamline and scale their operations, adapt to changing market demands, enhance strategic decision-making, and detect cyber threats. Transitioning doesn't have to represent a significant upfront cost either; often these platforms offer a pay-as-you-go model, freeing up budget for other growth initiatives such as research and development, marketing, and talent acquisition.

2. Link resilient digital transformation to skills strategy

Business leaders need to assess capability gaps at all levels of their organisation, and project changes to future skills demand from both digital transformation and the increasing need for protection against cyber threats. Strategic workforce planning will be key to helping businesses be ready to adapt to change and quickly recover when attacks inevitably occur. Demonstrating a commitment to digital transformation and cyber security skills development will also enable businesses to attract top talent and gain a competitive edge in the market.

3. See the bigger risk picture

The modern business landscape is a convergence point where geopolitical tensions, technological advancements, and cyber security concerns are becoming increasingly interwoven. CEOs are acutely aware of this reality. Nearly half of the CEOs surveyed in PwC's 26th Annual Global CEO Survey indicated they are investing in cyber security measures as a response to global instability. Businesses need to monitor wider macro risks and threats actively, and dynamically model these into scenarios to determine how, and where to invest. Successful cyber security transformation depends not only on having the appropriate cyber security infrastructure, but also on building a 'cyber first' culture. Cyber security must be seen as a fundamental aspect of business operations, not just the remit of the IT department, and all employees should be actively engaged in protecting the organisation from cyber threats. Investing in both people and technology is key to bolstering cyber security defences and enabling a secure digital transformation.

Case study: Supporting Hillingdon Council's AI transformation

PwC supported Hillingdon Council to become the first UK local authority to deploy an AI-powered voice and web chat solution at scale to improve how it serves its citizens.

The AI-powered solution increased operational efficiency dramatically, with automated calls costing just 5% of the cost when handled by human operators. The solution has helped to achieve a return on investment that saves Hillingdon Council £5 for every £1 spent.

Hillingdon Council can now handle 40% of all calls through its AI system, manage high call volumes effortlessly, and track metrics such as call success rates and call completion times. This digital transformation has also instilled a culture of innovation within the Council, equipping it to continue improving its services for citizens.

"It's all about digital skills, equipping our workforce with what we need, and the rest falls quite naturally."

Technology business

Government action is also key to unlocking growth through digital transformation. As highlighted in the research findings, perceptions of the level of digitisation in the UK may underestimate the great progress that has been made, and the Government has a role in celebrating this positively, and providing incentives that will promote further growth. Key areas of focus include the following.

4. Focus on supporting SMEs

SMEs are a significant part of the economy, but face substantial barriers to digital adoption, even though there are considerable productivity gains to be made. Increasing transparency around the costs of digital transformation, and helping SMEs understand the range of payment options for the improvements they need can not only give businesses more control and flexibility but also contribute to more equitable access at a national level.
A major part of the challenge for the Government is ensuring that any support schemes are designed to be as friction-free as possible, and are marketed well in order to drive take-up amongst the target population.

5. Use carrots not sticks

The 2022 Cyber Security Incentives and Regulation Review found that a lack of commercial rationale, such as being unable to justify the cost of cyber security investments, is a significant barrier that prevents organisations from prioritising cyber security.[2] Legacy operational technology (OT) is particularly vulnerable to cyber attacks, with OT systems more likely to be 20 to 30 years old, or using software that is no longer supported or not secure by today's standards. The Government can help businesses see the value in investing in cyber security and resilience and in replacing the legacy technologies that may be putting them at risk. Alongside fines for failure to comply with security and resilience regulations, the Government could develop an incentive regime where measurable risk improvement can lead to an organisation benefiting from tax incentives, such as those seen for research and development expenditure. This is particularly necessary for SMEs which need help to access approved vendors, guidance and affordable cyber security solutions.

Case study: Made Smarter Adoption Programme

An £8 million pilot scheme in the North West of England to help SMEs in the manufacturing sector adopt digital technologies, offering support such as:

- impartial advice and guidance from digital technology specialists;
- a digital transformation workshop and bespoke digital roadmap for each business;
- advice on ensuring the business is ready for digital transformation in terms of people, culture and organisation;
- match-funded grants of up to £20,000 for purchasing hardware and software; and
- digital leadership development programmes.

The programme has been a huge success; 90% of firms that participated adopted digital technologies, and it has already delivered substantial benefits, with the North West pilot expected to add up to £68 million GVA and 800 new jobs in the region.

Case Study: Australia's "Technology Investment Boost"

The Australian Government supported Australian businesses in combating the growing threat from cyber criminals in the 2022–23 Federal Budget's Technology Investment Boost. 3.6 million businesses with an annual turnover of less than AU$50 million will be able to claim 120% of the cost of business expenses that support digital adoption, such as portable payment devices, cyber security systems, or subscriptions to cloud-based services. The boost will cost the government AU$1.6 billion in tax revenue, and businesses spending up to AU$100,000 a year will be eligible for the bonus deduction and will also be able to claim the tax advantage on purchases made.

To maximise the benefits of schemes such as this, the UK Government needs to make sure that the administrative burden for businesses, particularly SMEs, is low and the fund's design aligns to the policy intent, learning from the Help to Grow Digital evaluation.

"Given we've gone for a high corporation tax route, some sort of offset around investment in the digital space could be a good way of mitigating that and ending up with a sensible corporate tax burden."

Telecommunications business

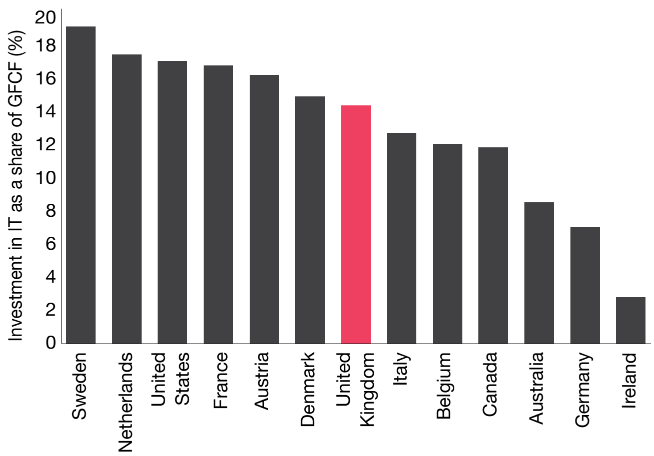
[2] https://www.gov.uk/government/publications/2022-cyber-security-incentives-and-regulation-review/2022-cyber-security-incentives-and-regulation-review

The economic impact of increased investment into the UK's resilient digital transformation

It is clear from our research that unlocking greater levels of business investment into the UK's resilient digital transformation is perceived to offer a significant contribution to economic growth.

Currently, out of the 13 selected comparator economies, the UK ranks 7th when measuring IT investment as a share of all investment, with technology investment in the leading country, Sweden, at 19%.

IT investment in 2019 as a share of gross fixed capital formation (GCFC)



Catching up with Sweden's level of IT investment as a share of all investment could add £65 billion to the UK economy by 2035 and account for £23 billion in additional tax revenue for the Government.

The potential impact on the growth trajectory of different sectors

Industry	Addition to UK GVA up to 2035 as a % of 2022 GVA
Construction	6.11% (£8.5bn)
Information and communication	4.54% (£6.7bn)
Accommodation and food service activities	4.37% (£3.1bn)
Arts, entertainment and recreation	3.25% (£2.3bn)
Electricity, gas, steam and air conditioning supply	2.96% (£0.6bn)
Public administration and defence	2.90% (£3.4bn)
Real estate activities	2.89% (£8.1bn)
Manufacturing	2.87% (£6.0bn)
Professional Services	2.83% (£8.4bn)
Human health and social work activities	2.55% (£4.5bn)
Education	2.29% (£3.1bn)
Wholesale and retail trade; repair of motor vehicles	2.16% (£5.1bn)
Water supply, sewerage and waste management	2.07% (£0.6bn)
Transport and storage	1.58% (£1.2bn)
Financial and insurance activities	1.41% (£2.9bn)
Mining and quarrying	1.18% (£0.2bn)
Agriculture, forestry and fishing	0.64% (£0.1bn)

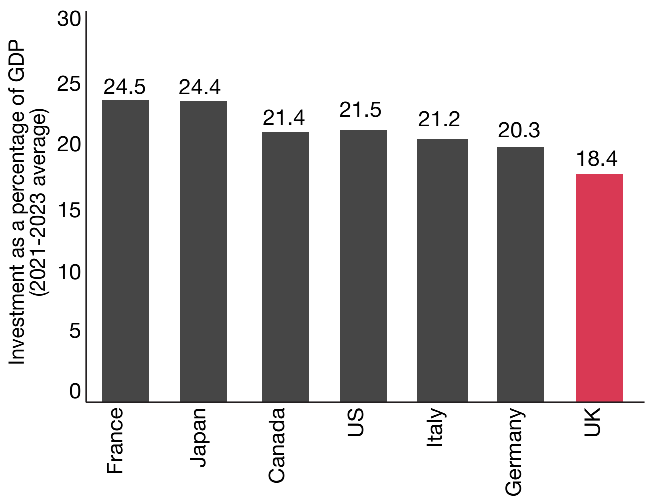
Sectoral gains are determined by the size and positioning of each sector within the economy. For example, manufacturing is a relatively large sector, but it is also strategically situated at the heart of the economic production network. It interlinks with numerous sectors both upstream and downstream in the supply chain. Another important aspect is the significance of digital transformation within each sector, as highlighted in the survey findings. Sectors such as professional services and ICT indicate a higher importance of digital transformation for their growth (39% and 48% respectively), and they gain more from enhanced digital initiatives relative to their size. Conversely, sectors such as real estate derive relatively lesser benefits from digital transformation, with only 9% of survey respondents identifying it as a crucial factor for sectoral growth.

5 In depth: Infrastructure and planning

In depth: Infrastructure and planning

Addressing the UK's longstanding challenges with infrastructure and planning

The UK's combined public and private sector investment expenditure, as a share of GDP (2021-23 average), is the lowest of the G7 economies at 18%.[3] These low levels of investment have a knock-on impact on infrastructure funding, making it more challenging for the UK to meet its net zero emissions targets, perpetuating regional inequalities and reducing the country's resilience to external shocks like extreme weather events and labour shortages. Successful infrastructure delivery requires alignment and collaboration among a wide range of stakeholders, each with their own interests and goals.



The growing population means that infrastructure and urban services are facing increasing pressures to deliver cities that are sustainable, efficient and offer citizens a good quality of life. There is a need to bring infrastructure up-to-date both digitally (e.g. broadband internet access, digital inclusion, and embracing AI and advanced analytics), as well as in terms of sustainability and climate change resilience.

The infrastructure problem is not a new one, and well-established solutions are put forward regularly including building more houses, increasing confidence in businesses to invest in physical infrastructure, enhancing the political stability around policies related to planning and sticking to long-term investment plans. But technological advancements seen in the last 20 years, and the rate at which technology continues to evolve, means we have the opportunity to design infrastructure in a way that could not have been imagined previously. It's clear that we need to try to answer these issues from different perspectives and inject some new thinking into the infrastructure challenge.

What we heard from business leaders about the importance of addressing these challenges to unlock growth

It was evident, throughout our research, how significant an impact business leaders perceive infrastructure and planning as having on the growth potential of their sectors.

Key insights

- 66% of business leaders believe the UK is currently trailing behind other key competitor countries in terms of infrastructure and planning.
- At a sector level, infrastructure and planning was identified as the most important component for:
  - real estate (59% selecting it in their top three);
  - transport and storage (54%); and
  - agriculture, forestry and fishing (45%).

"I'd like to see a proper infrastructure development plan – we need to up our investment in rail and roads, there's key infrastructure for the future and that will generate growth."

Retail business

[3] PwC Productivity Tracker

What business leaders perceive to be the biggest barriers to investment and growth

The business leaders we heard from highlighted a broad range of barriers to investment in infrastructure.

1. Current conditions make it more challenging for businesses to invest in their own infrastructure

The increased cost of capital, combined with recent financial pressures, are making it more difficult to justify the business case for longer term investments in physical infrastructure such as buildings and warehousing. Several business leaders also cited their perception that the UK lacks a long-term strategy for infrastructure development, which has impacted negatively on business confidence and created an additional barrier for investment.

> "We get bogged down in planning – the Government needs to take a stronger view of what can and what cannot be objected to."

Manufacturing business

2. The slow rate at which the UK is building houses was highlighted most frequently compared to other infrastructure challenges

Low rates of housebuilding are seen to prohibit job creation, stunting growth around key 'hubs' of innovation and economic development. Business leaders identify the following key barriers to house building in the UK:

- the planning system is criticised for being archaic and bureaucratic, reducing investment from the private sector;
- local councils not having the right skills in planning departments to respond to investment and perceptions that planning decisions often fall foul to 'nimbyism';
- housebuilding is perceived to focus too much on locations that are attractive for housebuilders, rather than being aligned to regional strategies and requirements; and
- the need for housing not being taken seriously enough, as evidenced by a run of changing housing ministers or short-term plans for place building (e.g. the 'levelling up' agenda).

> "At local Government, we don't have enough people going into planning and at a good calibre."

Manufacturing business

3. Investment in transport infrastructure being concentrated to London and the South East makes it harder for businesses to create jobs outside of these areas

Business leaders see a lack of transport infrastructure as a key reason why the UK's cities outside London (e.g. Manchester, Birmingham, Leeds) are not providing as much economic growth as some of their European equivalents. They perceive the key drivers to this problem to be a combination of the return on investment always being higher in London and the South East and, despite greater levels of regional devolution, most decision making being concentrated in central government.

Options for unlocking the growth potential of UK infrastructure

Whilst our research indicates that business leaders perceive the Government's role to be critical in unlocking infrastructure growth, we suggest that, of the priority components, it is in this area where the most opportunity exists for business and government to work together to find solutions.

1. Long-term strategies: decoupling politics from planning

Employers strongly support the need for an enduring strategy for infrastructure to enable growth in the UK economy. Strategic infrastructure, like power, water and transport takes decades to transform and can be funded by both public and private capital. But to be successful in delivering infrastructure to meet the UK's future demand (addressing both maintenance as well as new build infrastructure), both funders and suppliers need confidence in the long term to support investment over many years. Categorising certain large-scale, long-term infrastructure projects as 'country strategic' and giving a new national body more direct control could help. In a similar fashion to the Bank of England having independence from the Government on fiscal policy including interest rates, we believe a body with similar independence and long term vision needs to be created to strategically plan and oversee the development, financing and delivery of UK infrastructure of national importance.

Such an organisation would also need to be able to set a long term strategy for the key projects, align regulations with relevant bodies and set the financing parameters, in consultation with the Government and the private sector. The primary objective would be to provide confidence to the market and investors to take a long term view, and allow the supply chain to fully mobilise behind the requirements for the scale of infrastructure change required within the UK. This will provide confidence in future build programmes, reduce the risk of projects being changed at short notice, and allow the supply chain to fully mobilise behind the requirements.

If a new independent body were introduced to oversee long term planning, it would impact the Government's accountability for ensuring the wider system is able to respond to the demand. The Government would need to work closely with such a body to establish clear procurement and skills strategies to enable investment in training, undertake early market engagement and public consultation to mobilise industry and build public support, and implement wider planning reforms to improve the overall system.

"The Government should take a view that there's a certain level of infrastructure that needs to be built and that shouldn't be up for debate.."

Manufacturing business

2. Channelling investment

Business leaders shared with us a clear message that they have high expectations for Government action on infrastructure investment, particularly around housing. There is certainly work to be done, firstly in regulatory reforms to streamline planning processes, removing bureaucratic barriers, and simplifying approval procedures in order to attract private investment. The Government could also provide financial incentives, including through dedicated funds and tax incentives, to attract domestic and foreign investment in infrastructure development. The renewables market in the UK is a good success story where attractive regulation has sought to de-risk and attract capital to support the build out of low carbon power.

Business leaders must also work with the Government to drive growth in this area; better collaboration can help target funds effectively and will have mutual benefits in terms of efficient resource allocation, long term planning, knowledge sharing (especially around less familiar or unproven investments), and risk management. One example would be to build on the historic success of the UK REIT (Real Estate Investment Trust) regime by replicating a similar investor-level taxation model to supercharge future investment into UK infrastructure. Another would be rethinking more generally how the Government could collaborate with private entities. A new structure for Public-Private Partnerships (PPPs) could help to finance, develop, and operate infrastructure while maintaining public oversight and accountability.

3. Prioritise maintenance alongside new infrastructure

Neglected or outdated infrastructure can hinder economic growth and lead to higher costs in the long run. The Government and industry must therefore allocate sufficient resources for the maintenance of, and upgrades to, existing infrastructure.

The National Infrastructure Commission's Second National Infrastructure Assessment calls for sustaining around £30 billion per year in public infrastructure investment until 2040.[4] It also estimates that private sector investment must increase from £30-40 billion over the last decade to £40-50 billion in the 2030s and 2040s in order to address the investment gap. Investment is particularly needed in improving maintenance of existing national road and rail networks, which will likely be more expensive in the future due to climate change, ageing assets and increased demand.[5] Improving existing housing stock (e.g. through energy efficient upgrades), rather than just focusing on building new homes, is a good example of where efforts need to be more targeted.

[4] / [5] https://nic.org.uk/studies-reports/national-infrastructure-assessment/second-nia/

4. Adopting a 'going local' mindset shift

Regional disparities in the provision of critical infrastructure and planned investment mean that stakeholders, and decision makers, aren't always able to collaborate at a level of local power that is capable of driving real progress and change. Local government and regional mayors need to work with their local communities, and businesses, to develop infrastructure strategies that are tailored to their specific needs and priorities. This in turn can facilitate partnerships between the Government and business to initiate targeted projects which drive regional growth, for example improving rural transport. A 'going local' mindset can inspire the development of schemes to support community infrastructure projects, such as schools, healthcare facilities, or public spaces, which contribute to local economic development and improve quality of life.

> "We invest in infrastructure in the UK, but part of the solution lies with central government helping convene local authorities to help themselves effectively."

Financial services business

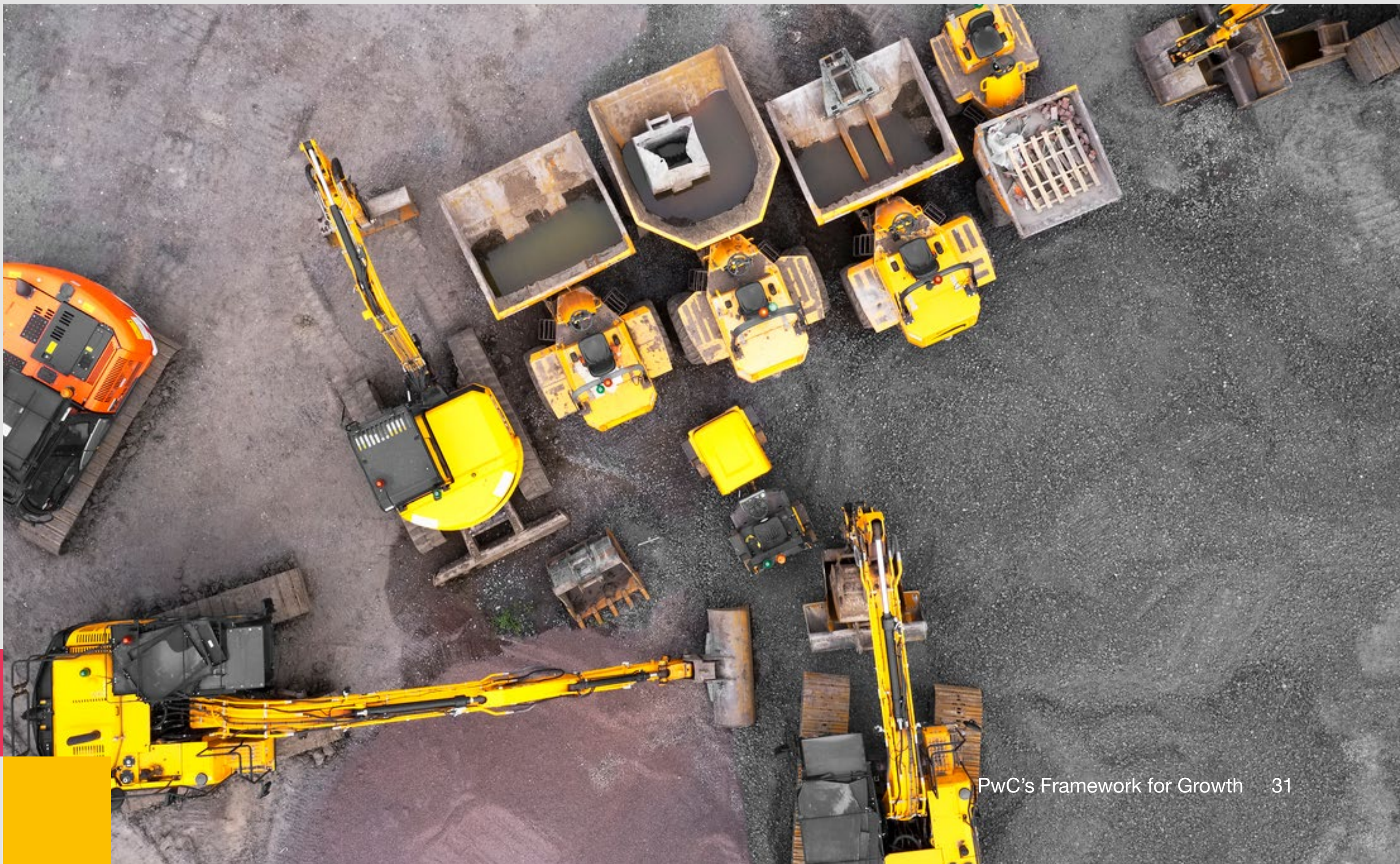
[6] UK Productivity Tracker: Regional

Case Study: The Humber 2030 Vision

The Humber area is one of the most carbon intensive regions in the UK, producing roughly 40% of our industrial emissions. But businesses in the Humber are now working together to develop shared decarbonisation infrastructure, with the aim of leading the UK's transition to net zero. The regional partnership leverages the Humber's unique assets such as access to 80% of the UK's licenced carbon dioxide storage capacity, and proximity to eight offshore wind farms including the world's largest.

The Humber Industrial Cluster Plan provides a model for other industrial regions around the world, demonstrating how industries can work together to reduce their carbon emissions and contribute to achieving net zero by 2030. The plan sets out a series of decarbonisation projects, all aligned to the overall vision, and each building on the benefits generated by the others. Alongside economic and environmental benefits, the partnership also has a strong people focus, with an ambition to safeguard 10% of regional jobs, and investments by industry to build a regional talent pipeline.

The collaboration between regional industry, Government and other stakeholders has given a clear signal to the market, with £15 billion of private investment lined up for Humber-based energy transition.



The potential economic gain of increasing investment in UK infrastructure

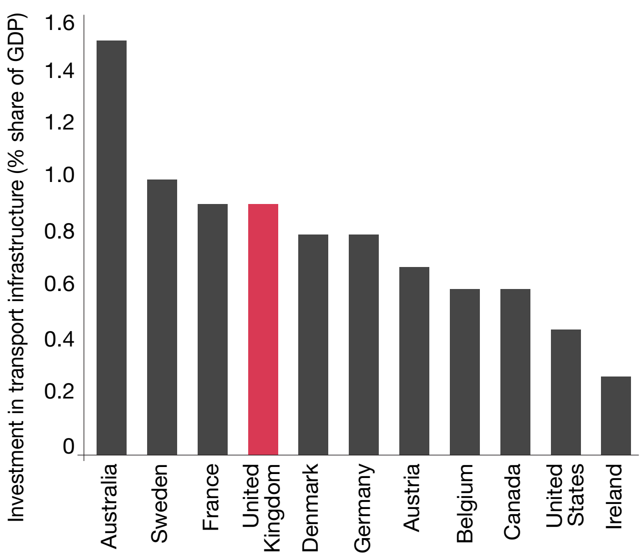
As highlighted by our research, business leaders perceive there to be a considerable economic benefit to investing more in UK infrastructure, and see it as an opportunity to drive growth across sectors.

To give an indication of the level of economic growth that could be achieved, we have modelled how investments in both transport and utilities infrastructure could impact UK GVA, using the planned pipeline investment from the National Infrastructure and Construction Pipeline 2023. While it is unlikely all of these projects will ultimately be pursued, or required, our analysis is based on the complete pipeline so as to provide some measure of the potential economic impact of investment.

Transport investment

Of the eleven comparator countries that we're measuring the UK against, we are currently 4th in terms of the level of GDP currently invested in transport infrastructure, significantly behind the leading country, Australia.

Investment in transport infrastructure as a share of GDP (%)



Transport plays a crucial role in boosting productivity across various industries and we have used the planned pipeline investment to estimate the impact of these investments on the UK economy. Our modelling suggests that by 2035 the planned and projected investments could add £90 billion to the UK economy, and account for £32.8 billion in additional tax revenue.

Utilities investment

Utilities play a crucial role in boosting productivity across various industries and we have used the planned pipeline investment to estimate the impact of these utility investments on the UK economy. Our modelling suggests that by 2035 the planned and projected investments could add £263 billion to the UK economy, and account for an additional £96 billion in additional tax revenue.

The potential impact on the growth trajectory of different sectors

Industry (Transport investment)	Addition to UK GVA up to 2035 as a % of 2022 GVA
Construction	7.33% (£10.2bn)
Accommodation and food service activities	6.17% (£4.4bn)
Real estate activities	5.64% (£15.8bn)
Manufacturing	5.20% (£10.9bn)
Information and communication	5.04% (£7.4bn)
Electricity, gas, steam and air conditioning supply	4.51% (£1.0bn)
Arts, entertainment and recreation	4.26% (£3.1bn)
Public administration and defence	3.83% (£4.4bn)
Professional Services	3.08% (£9.2bn)
Education	3.03% (£4.1bn)
Wholesale and retail trade	2.98% (£7.0bn)
Transport and storage	2.93% (£2.3bn)
Water supply, sewerage and waste management	2.90% (£0.8bn)
Human health and social work activities	2.88% (£5.1bn)
Agriculture, forestry and fishing	2.04% (£0.4bn)
Mining and quarrying	2.00% (£0.4bn)
Financial and insurance activities	1.87% (£3.8bn)

Industry (Utilities investment)	12 year gain as a % of 2022 GVA
Construction	21.93% (£30.5bn)
Accommodation and food service activities	18.25% (£12.9bn)
Real estate activities	16.98% (£47.6bn)
Manufacturing	15.07% (£31.7bn)
Information and communication	14.85% (£21.8bn)
Electricity, gas, steam and air conditioning supply	13.25% (£2.9bn)
Public admin and defence	11.43% (£13.3bn)
Professional services	9.01% (£26.8bn)
Education	9.01% (£12.1bn)
Wholesale and retail trade	8.84% (£20.7bn)
Transport and storage	8.58% (£6.8bn)
Water supply; sewerage and waste management	8.58% (£2.4bn)
Human health and social work activities	8.57% (£15.1bn)
Arts, entertainment and recreation	7.65% (£5.5bn)
Agriculture, forestry and fishing	5.90% (£1.1bn)
Mining and quarrying	5.88% (£1.1bn)
Financial and insurance activities	5.49% (£11.1bn)

Sectoral gains are determined by the size and positioning of each sector within the economy. Another important factor is the significance of infrastructure tailored to each sector, as highlighted in the survey findings. Sectors such as real estate and transportation indicate a higher importance of infrastructure for their growth (58% and 54% respectively), and they gain more from enhanced infrastructure relative to their size. Conversely, for sectors like professional services and ICT the gains from improved infrastructure are relatively smaller, which was reflected in our survey results with only 25% and 29% of respondents from those sectors respectively identifying it as a critical factor for their sectoral growth.

6 The remaining components from PwC's Framework for Growth

The remaining components from PwC's Framework for Growth

Though the 'in depth' sections of this report focus on the Framework for Growth components identified through our research as business leaders' highest priorities, the additional six areas were also identified as critical for supporting the UK's growth and competitiveness. Included in this section are summaries of the insights we gathered through our research, PwC's perspectives on some of the options for improving the UK's performance and, where available, explanations of the methodology underpinning the economic analysis we've undertaken.

Private sector investment

Business leaders recognise that measures to stimulate private sector investment are essential for economic growth, with around 28% ranking it in their top three most important components for their sector. Of these, 8% rank it as their number one priority.

Business leaders believe that private sector investment in the economy is hindered by several factors. Some of these barriers are shared with "innovation ecosystems" (below), given that private sector investment is seen as core to developing these ecosystems. The critical barriers identified by business leaders include the following:

- A lack of long-term policy stability reducing firms' confidence to invest. This consideration is often mentioned by the business leaders we spoke to as a barrier to growth for other areas that require large investment, for example the changing policies and targets related to the net zero transition.
- Current economic conditions of low growth, combined with current high cost of borrowing, reducing return on investment.
- Differing perceptions about the nature of private equity and debt, combined with low levels of understanding in terms of the benefits, leads businesses to be less open to third party investment than in other economies.

Options for boosting economic growth through private sector investment include:

- Explicitly recognise, within the formation of a new industrial strategy, that investment capital is globally mobile, that the UK needs to be seen as a competitive destination, and acknowledge that government policies have a direct impact on perceptions of the UK internationally.
- Build certainty and confidence, through increased tax and regulatory stability, so that businesses can plan effectively, and raise awareness of available products to boost capital markets.
- Support banks to play their role in driving economic growth, particularly for the subsectors of society currently underserved, through balancing the regulatory and government agenda with banks' strategic intent and risk appetite.
- Ensure a specific focus on private capital and how the Government can help facilitate or 'crowd-in' investment from these sources into strategic areas, for example to drive growth in green technologies.
- Provide clarity and greater certainty over financial incentives such as grants and tax breaks, particularly targeting areas where the UK has interests or competitive advantages.
- Develop platforms for deploying more capital from primary sources (pension funds, sovereign investment funds) into UK businesses and infrastructure.

"Private sector investment is the only place that money is going to come from for growth. We need to reduce uncertainty."

Telecommunications business

Innovation ecosystem

One fifth of businesses surveyed (20%) rank 'innovation ecosystems' in their top three most important components for growth in their sector, and 6% rank it as their number one priority.

While business leaders view the UK as being home to exceptional universities which conduct world leading research, they do not believe this effectively translates to having strong innovation ecosystems.

Core barriers to building these ecosystems are perceived by business leaders to be:

- A disconnect between universities and businesses, sometimes limiting the relevance or commercial impact of innovation.
- The UK being less entrepreneurial than other markets – specifically the USA.
- A lack of regional hubs outside of London and the South East.

"We're entering a huge shift with AI. The UK is well equipped culturally, language-wise, to become a leader in this space. The danger is that we allow other countries who invest more methodically in this space to steal an advantage."

Technology business

Options for strengthening the UK's innovation ecosystem overlap with other components for growth and include the following:

- Enhance diffusion of innovative technology across sectors, and regions, through more strategic partnerships between companies, research institutions, and government agencies (e.g. developing the UK university ecosystem with regional science parks).
- Support university 'spinouts' to bring innovative technologies or products to market with effective incentives, and education, to ensure the UK is sufficiently attractive to retain these new businesses.
- Consider industry-wide standards for new technologies which ensure compatibility and systems interoperability, but do not hinder innovation.
- Provide continuous education and training to help employees at all levels understand and utilise new technologies effectively.
- Encourage investment through both the long-term stability and international competitiveness of the UK capital incentive environment.
- Develop a clear strategy for targeted increases in tax generosity (e.g. R&D tax credits) and access for certain sectors and innovative businesses with the highest potential for growth.

Overall, of the 13 selected advanced economies, the UK currently ranks 6th in R&D investment as a share of GDP at 2.9%, 0.6 percentage points behind the leading country, the US. Our economic analysis estimates that, were the UK able to catch-up to the US level of R&D investment, it could add £85 billion to the UK economy by 2035, which equates to £30.2 billion in additional tax revenue.

Trade policy and promotion

A fifth of business leaders surveyed (21%) rank 'trade policy and promotion' in their top three most important components for growth in their sector, and 7% rank it as their number one priority.

Those business leaders who prioritise trade policy and promotion perceive the current challenges for the UK to be as follows:

- Businesses are concerned that, in certain sectors, there exists a mismatch in the regulatory burden faced by the UK in comparison to some competitor economies, which can increase costs and reduce competitiveness.
- Concern that UK businesses experience unfair tax burdens compared with firms based in other countries, which can make it challenging to compete.
- The absence of a strategy to yield the opportunities presented by having exited from the EU, which limits businesses' willingness to invest and take on risk.

"UK businesses incur new hidden costs from trade policy meaning extra admin to trade with the EU, but not the full access to other markets that I'd hoped we would've had by now."

Retail business

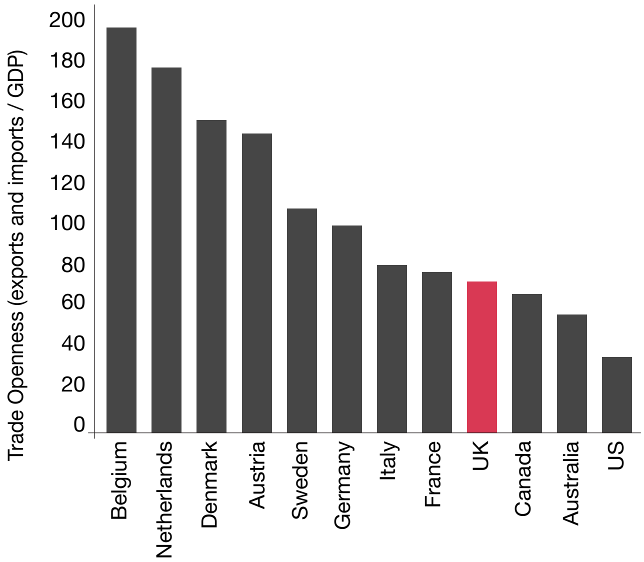
Options for enhancing the trade policy and promotion system to better support UK exports include the following:

- A more active stance in championing UK businesses in overseas markets, for example enhancing the use of government overseas visits to advocate for UK companies.
- A trade policy and promotion strategy that sets out the strategic direction for UK trade, the opportunities presented by having left the EU, and what support businesses can expect from the Government.
- Continue to work on reducing barriers and complexities for businesses operating internationally (and to engage with business on what these are).
- Better utilise the UK's strengths in advertising, marketing and creative industries to enhance a distinctive reputation for UK products and services in selected export markets.

Of the 11 comparator economies, the UK ranks 5th in terms of flows for foreign direct investment (FDI) as a share of GDP at 1.97%, 2.9 percentage points behind the leading country Belgium. Our economic analysis estimates that a higher FDI could add £15 billion of GVA to the UK economy by 2035, which equates to £5.5 billion in additional tax revenue.

Of the same 11 comparator economies, the UK ranks low in terms of trade openness – typically measured by the ratio of a country's total trade (exports plus imports) to its GDP – standing at just under 70%.

UK trails behind comparator countries in trade as a % of GDP



Our economic analysis estimates that trade policy improvements, in the form of trade openness, that brings the UK in line with France, the most comparable country in terms of size and international trade profile, could add £169 billion of GVA to the UK economy by 2035, and account for an additional £60bn in tax revenue.

Regional development and social inclusivity

24% of business leaders place 'regional development and social inclusivity' in their top three most important components for growth in their sector. Only 6% choose it as their most important component.

Companies across the UK feel that the lack of regional development is holding the economy back at a macro level. While they think London's financial pull can be an advantage, its dominance in comparison to other cities is also a challenge, attracting resources, investment and talent away from other regions. Many feel the UK trails behind competitor countries as a result of London's dominance, and other cities' relative lack of economic power. Micro and small businesses are more likely to choose regional development as one of their top three components than very large businesses.

Business leaders identified the following factors related to regional development as most significantly impacting on the growth of their businesses:

- A strategic over-focus on London that neglects the rest of the UK.
- The poor quality of transport infrastructure linking the UK's other main cities.
- The complication of the planning system, and the inability to build new housing quickly, is serving as a blocker of economic development in areas of the UK in need of investment.
- Policy efforts lacking the funding and vision required to make them successful.
- Regional authorities and mayors not having the requisite powers or control over funding to help drive economic growth.

As we highlighted in our Regional Productivity Tracker, local investment in skills, technology and decarbonisation are important factors in driving regional productivity and sustainable economic growth. The key question is how to target the funding where it can have the greatest impact. Our analysis indicates that, with the right investment and strategic planning, productivity improvements can help to narrow regional divides.

"The budgets need to be given to the local communities to deal with. I don't think you can design locally at a national level. You've got to support local government in developing a blueprint, then providing them with the funds and the talent to implement it. Rather than creating national opportunities and getting people to come forward and bid for money."

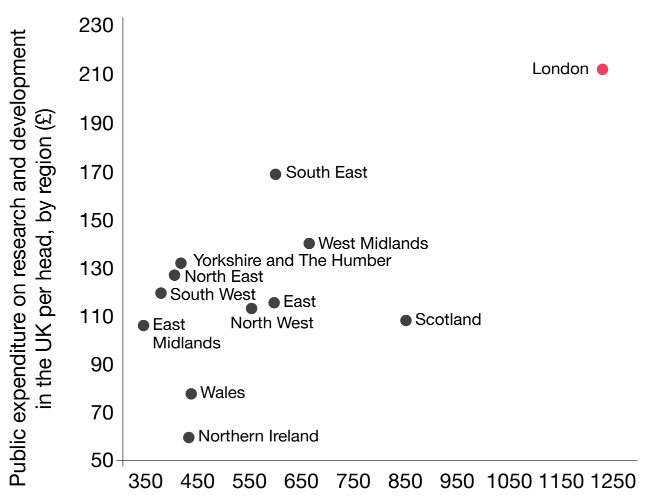
Retail business

There are already examples of local governments and regional mayors collaborating with communities, businesses and educators to develop place-based strategic plans and initiatives, which can help to establish what an area aims to be known for and what it expects to be its sources of economic growth. Options for promoting regional development and social inclusivity to rebalance the distribution of economic power include the following:

- Grant enhanced decision-making powers to local government and regional authorities in setting their own industrial strategies, and support them to do so in close collaboration with local businesses, academics and community groups.
- Develop place-based strategic plans and initiatives to target local investment in skills, technology and decarbonisation according to what an area expects its sources of economic growth to be.
- Ensure an interconnected system of governance to ensure close collaboration between national, regional, and local governments, aligning local provision of resources (e.g. transportation, housing, labour supply/ skills, grid capacity) with local growth priorities.
- Incentivise business relocation or expansion outside of London and support local entrepreneurship through tax breaks, grants, subsidies or mentorship programmes.

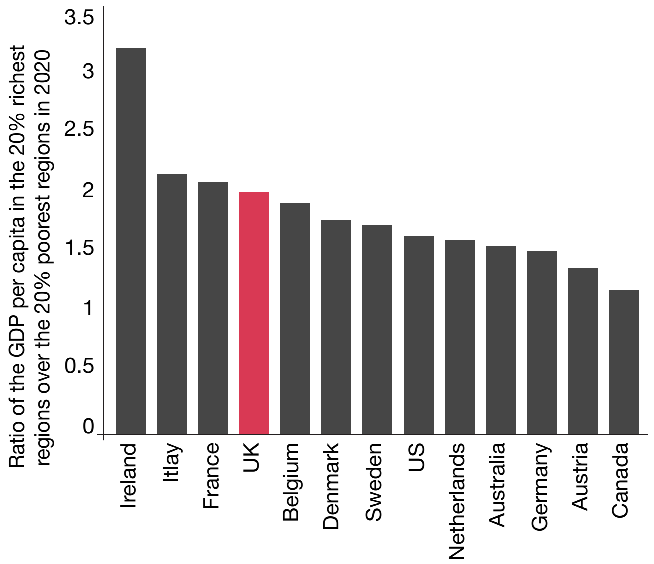
Our economic analysis highlights how London has significantly higher growth rates in Gross Disposable Household Income (GDHI) than other regions. This disparity is exacerbated by higher public expenditure, for example on R&D and transport.

Public expenditure on R&D and transport by region



This discrepancy extends persistent regional inequalities that exceed most international comparators. Concentrating investments in London exacerbates the economic divide, leaving other regions with limited opportunities for growth and development which undermines the overall potential of the UK, as it neglects the unique strengths and capabilities of other regions.

Regional inequality in 2020 (ratio of regional GDP)*



Sustainability and environmental considerations

Over a quarter (26%) of the business leaders surveyed selected sustainability and environmental considerations in their top three most important components for growth.

Business leaders perceive sustainability and environmental issues as a wider societal challenge, as well as an economic one, and expressed concern about the serious consequences of not decarbonising fast enough. However, many of the businesses who prioritised this component feel that this is an area of the UK economy that has done well in recent years, and therefore should be viewed as an opportunity for growth.

More so than most of the other components tested, the business leaders we surveyed look to the UK Government to lead the way in sustainability and environmental considerations. 75% of respondents believe improving performance in this area will require action or investment from the Government.

Business leaders identified the following factors as having the most significant impact on progress:

- A lack of clear government direction and investment has caused the UK's drive towards net zero to stall.
- The UK being overtaken in areas, such as renewable energy, where it was previously leading.
- For businesses, becoming more sustainable is expensive and does not offer short term returns.

"Alternative fuels and electric, or whether it be hydrogen or other, those are areas that absolutely need government leadership and investment. It's mid to long term in terms of planning, but this is challenging because lots of organisations are just surviving right now, not necessarily thriving."

Transportation business

The transition to net zero presents a significant opportunity to attract investment, increase competitiveness and drive prosperity. The global investment community is raising and deploying capital at record levels; however this capital is internationally mobile, and will go to jurisdictions that offer the best balance of risk and return. Options for bringing sustainability and environmental considerations to the forefront of the UK's industrial strategy include:

- Prioritise green industries and green jobs in a way that promotes inclusive growth, balancing awareness of costs and risks with a focus on skills and investment to ensure that long-standing inequalities are tackled rather than exacerbated.
- Identify key sectors and technologies for investment in R&D and scale up funds, as well as investments with high social returns but low or no financial returns, such as retrofit measures.
- Address the balance between risk and return for green industries (e.g. energy transition) to mobilise private sector capital at scale and develop the required skills and supply chains.
- Capitalise on where the UK has a competitive advantage (e.g. wind and tidal potential, depleted oil fields for carbon capture, extensive gas transmission network) whilst retaining intellectual property and manufacturing capability required to drive the wider economic benefits from the transition to net zero.

In attempting to identify the potential economic impact of intensifying the UK's focus on sustainability and environmental issues, our economic analysis reviewed internationally-comparable measures of the stringency of environmental policy, and identified that the UK ranks 5th out of 13 comparator economies. When considering the potential productivity increases associated with environmental standards, our analysis estimates that introducing stronger standards in the UK, to align with the leading country, France, could add £6 billion to the economy by 2035, and would account for an additional £2bn in tax revenue. To note, this figure does not capture the broader potential benefits of incentivising the growth of emerging green industries in the UK.

*OECD Regions at a Glance 2022

Regulatory and tax competitiveness

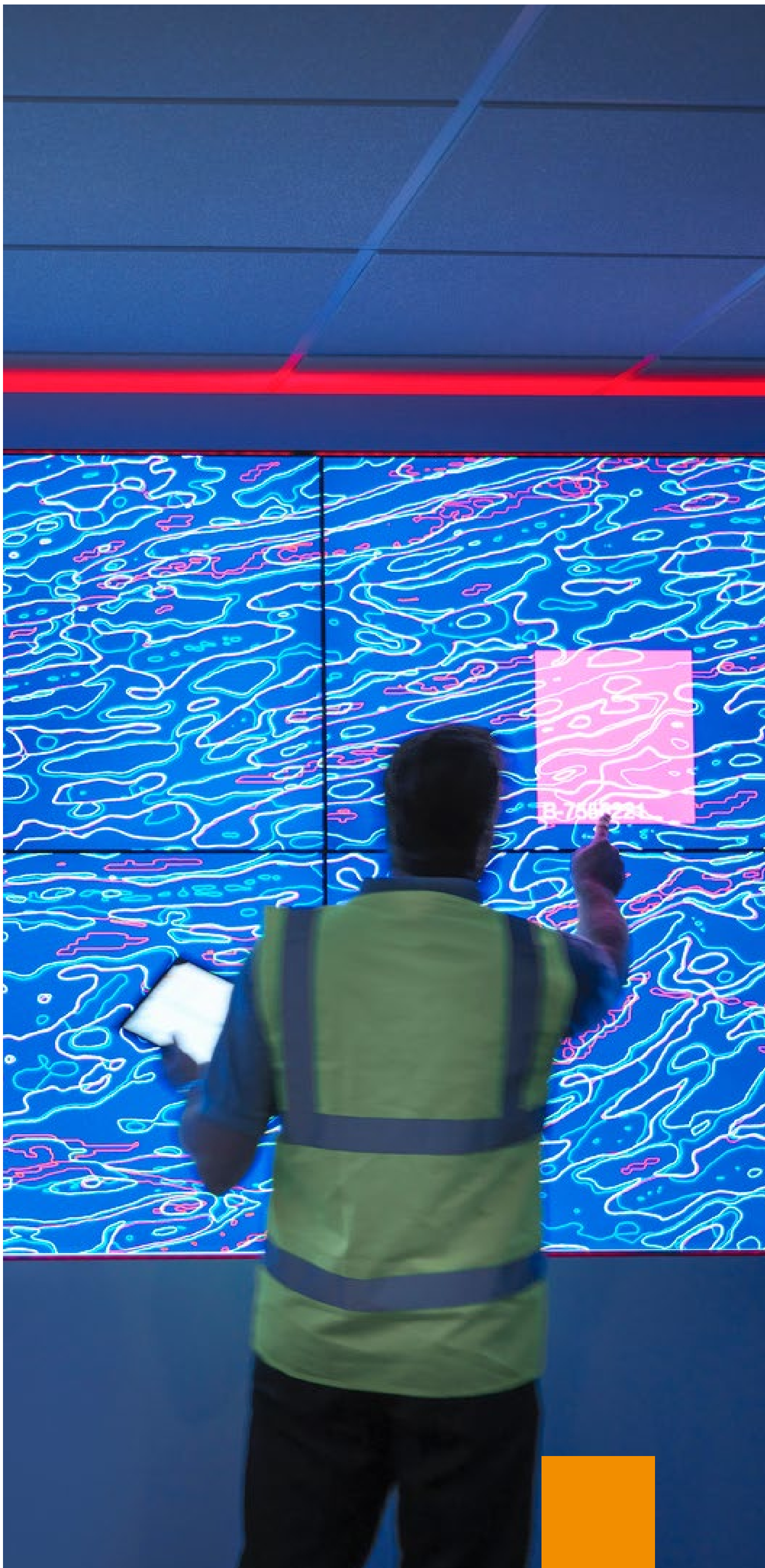
Over a quarter (26%) of business leaders surveyed rank 'regulatory and tax competitiveness' in their top three most important components for growth in their sector. 8% rank it as number one.

Business leaders believe that growth in their sectors is, in part, constrained by overcomplication in the tax system, and regulation that doesn't get the balance right between consumer protection and business innovation. As already referenced across the insights shared in this report, the UK's approach to tax and regulation is crucial to driving business confidence, investment and competitiveness within most of the components for growth. Some of the specific challenges that were frequently raised by business leaders included:

- The UK having not done enough to differentiate itself from other markets around regulation and tax.
- The complex tax system resulting in increased costs to businesses through legal fees, and the resource required to interpret rules. This is believed to reduce the attractiveness of the UK as a place to do business.
- Personal tax thresholds reducing the UK's ability to attract global talent.
- Current definitions of consumer protection being too rigid and focused on short term benefits to consumers.

Options for strengthening regulatory and tax competitiveness include:

- In building on insights from the Harrington Review, there is a need to commit to a consistent, long-term, proportional approach to tax policy that reduces complexity and volatility, particularly for corporation tax, to improve stability and create a more predictable and attractive environment for investment.
- Ensure regulators prioritise supporting UK economic competitiveness through an explicit growth duty, to ensure regulation is consistent and protective but doesn't act as a barrier to growth.
- Clearer, more salient guidance and enhanced certainty around available incentives (e.g. R&D credits) to help businesses make use of these and factor them into budgeting decisions.
- Ensure that trade and investment policy is supported by tax policy, to provide support and clarity through simplified, integrated, timely and consistent processes.



*OECD Regions at a Glance 2022

Key contacts

Quentin Cole
Sponsoring Partner for
PwC's Framework for Growth

Rachel Taylor
UK Government and
Health Industries Leader

Simon Oates
UK Economics Leader

Key contributors

Andy Haldane
Advisor to PwC

pwc.co.uk

RITM16456384