

Innovation foundations





Innovation Foundations

The economic potential for financing the UK's innovation infrastructure.

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Foreword

Unlocking the UK's innovation potential



Amanda Murphy
CEO of Business and
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Lloyds Banking Group

Economic growth is often described in terms of ideas and innovation. The UK is not short of either. We have world-class universities, deep talent and globally recognised research excellence.

But ideas on their own are not enough.

Turning that potential into meaningful outcomes – whether that is businesses that scale, jobs that last, investment that stays in the UK or regional economies that genuinely thrive – depends on something more fundamental. It depends on the environments where innovation takes shape.

From laboratories and research facilities to science parks and innovation districts, these are the places where ideas are tested, developed and brought to life. They enable collaboration between academia, business and investors, and create the conditions for ideas to move from concept into commercial reality.

When these environments are in place, the impact is clear. We see stronger partnerships between universities and industry, greater levels of private investment and more successful translation of research into real economic value.

Universities play an increasingly important role at the heart of this. As anchor institutions, they bring together talent, research, business and civic leadership in a way few others can.

Where these come together effectively, the results are powerful. New sectors begin to take shape, high-value jobs are created and regions benefit from sustained growth.

There is, however, more to do.

Despite the strength of these foundations, there remains a significant gap in the investment needed to fully realise this opportunity. This is not because the value is uncertain, but because the returns are long term and widely shared. As a result, they are often harder to support through traditional financing approaches.

Closing that gap will require a different mindset. It means recognising innovation infrastructure as core economic infrastructure, alongside transport and energy. It means developing financing models that reflect long-term value, and strengthening collaboration between government, universities, investors and financial institutions to unlock capital at scale.

There is real momentum to build on, but we need to move with greater pace and consistency if we are to realise the full opportunity.

At Lloyds Banking Group, we see both the scale of the opportunity and the importance of getting this right. Through our partnerships across higher education and regional economies, we are committed to supporting the infrastructure that enables innovation and long-term growth.

Ultimately, the UK's ability to lead in the industries of the future will not be determined by the strength of its ideas alone, but by its ability to create the conditions for those ideas to flourish.

If we can do that, the prize is significant. Stronger growth, more resilient regions and a more balanced, inclusive economy for the long term.

Executive summary

The role of innovation infrastructure

In 2024, Lloyds Banking Group and PwC published *Drivers of Growth*, demonstrating that when universities act as civic anchors, they catalyse regional growth through partnerships, skills, ecosystems, innovation districts, and industry-facing collaboration.

[Click to find out more](#)

Drivers for Growth revealed universities not only as centres of teaching and research but as conveners of innovation clusters, attractors of investment, and creators of applied innovation capacity.

The thread running through **Drivers of Growth** is the importance of physical presence, innovation quarters, shared spaces, translational centres, and high-value facilities which become the platforms upon which partnerships form, firms co-locate, and regional growth strategies take shape. Yet the role of the infrastructure that enables their success, both within campuses and in the surrounding urban fabric, is not always fully recognised as a driver of economic and social value.

Innovation Foundations sets out the case that the physical estate is a very strong predictor of innovation outcomes, eclipsing other measurable infrastructure factors.

This is a complex time to be making the case: the financial challenges of the sector means estate pressure and footprint reduction for a large minority of universities. The macro-economic climate is uncertain. However, the centrality of innovation infrastructure to create economic value in the longer-term is very clear.

A world leading sector

Universities and the wider innovation ecosystem across the UK are the engines of the UK's Innovation Economy. Yet one of their most powerful contributions – their physical infrastructure – can be underplayed as being foundational to its success.



Executive summary continued

Drawing from new analysis and insights across higher education institutions in England, this report finds:

**1**

There is a sizeable economic opportunity

Improving infrastructure of research-focussed universities could boost annual private R&D activity by 25%, amounting to over £150 million per year. This level of additional private R&D activity would generate wider economic value to the tune of c.£0.9bn–£1.9bn over a decade.

~£2bn

**of economic value would be created
by investing in our innovation infrastructure**

**2**

Infrastructure matters

It is not a passive backdrop but an active part of the innovation system. Universities with greater physical estates consistently generate more research income, more commercial partnerships, more spinouts, and higher levels of innovation activity. The top 25% research-focused universities have three times as much teaching and research space per FTE as bottom 25% institutions. This gap is associated with a sixteen-fold difference in private R&D income (£24.9m vs. £1.5m), a more than hundred-fold difference in IP income (£9m vs. £66k), and a nearly fifty-fold difference in spinout turnover (£706m vs. £15m)¹.

1. Two filters were applied before this analysis: (1) we removed all teaching-focused universities (the bottom 25% ranked by research income as a share of total income), and (2) for the regression and size-of-prize, we further restricted to institutions with meaningful private R&D engagement. The 'bottom quartile' here refers to the least well-resourced among research-active universities, institutions that are engaged in research but operating with significantly constrained estates. These are precisely the institutions where infrastructure investment could make the biggest difference.

**3**

Science parks and innovation districts contribute to economic opportunity

Where universities anchor these districts, they attract greater private R&D investment. The presence of a nearby science park is associated with 57% higher private R&D income, even after controlling for other relevant factors². Innovation districts specifically, through their intermediating role across sectors, can be a key delivery mechanism across universities, investors and place-based growth.

2. Based on multivariate analysis



Executive summary continued



5

Wider place-based conditions
shape how effectively
infrastructure translates
into innovation outcomes

Transport, digital connectivity, housing and local networks shape whether estate investments convert into real-world outcomes. Estate investment is necessary but not sufficient, suggesting that those combined authorities who integrate innovation and R&D activity as part of wider economic growth and infrastructure strategies are more likely to yield higher innovation outcomes.



6

Two interdependent systems
shape innovation outcomes

National system enablers

Funding frameworks, regulatory environments, and shared infrastructure that determine the overall scale and direction of investment.

Place-based delivery systems

Local combinations of infrastructure, institutions and partnerships which determine how effectively that investment translates into innovation, growth and social value.

Both working in concert are critical to success, with national systems supporting capacity and incentives and places determining outcomes.

This evidence supports a credible, place-based investment case for innovation infrastructure, particularly where research strength is high but estate capacity is constrained, and where public co-investment can de-risk long-dated capital.





Executive summary continued

Bank on Lloyds



Lloyds has its origins firmly rooted in the regions and nations of the UK. Whether that's through our support for local businesses, charity partnerships, charitable Foundations or our regional investment – we're proud to be Helping Britain Prosper. This means playing our role in ensuring every region and nation of the UK thrives.



Long-term private investment can be unlocked most effectively through strong collaboration across all parties – regional leaders setting the strategic direction, Combined Authorities building the capability to partner effectively, and private investors engaging proactively. When these groups work together in a coordinated and committed way, regions can create the confidence, clarity and momentum needed to attract sustained private capital.

There is clear strategic direction from government in the form of its industrial and infrastructure strategies. The next decade will see ~£725bn in investment in infrastructure. If the infrastructure pipeline can help identify the best opportunities for private-public collaboration, these points in tandem present a real opportunity for every region to drive UK growth.

We at Lloyds have relationships across the UK's Higher Education sector, with a strong appetite to developing long-term strategic partnerships with universities (and university clusters). The partnership between academia and industry is key to unlocking sustainable long-term growth. There is a real opportunity for universities to collaborate in new, meaningful ways with businesses in their region, enabling us to be fit for the future.

£500m

financing for universities to retrofit and decarbonise their estate – in partnership with the National Wealth Fund



If the infrastructure pipeline can help identify the best opportunities for private-public collaboration, these points in tandem present a real opportunity for every region to drive UK growth.



Executive summary continued



Bank on Lloyds

Our MTC partnership

Manufacturing Technology Centre (MTC) is supporting the future of engineering talent, pioneering advanced manufacturing and new technologies, and enabling SMEs to invest in these skills and capabilities with huge potentials for productivity gains and growth. We have recently announced an extension of our partnership with MTC. The launch of MTC Tyneside extends the 15-year strategic partnership from £15 million to over £18.5 million of Lloyds sponsorship through to the end of 2029.

Supporting future talent

Demonstrating our commitment across all parts of the Innovation Economy, we were also pleased to be anchoring Lansdowne's \$150m VC fund alongside partners British Business Bank and Aviva Investors for scaling businesses that emerge from our world class universities.

SMEs, including those that are critical to a successful innovation economy, are also supported by Lloyds. In 2026, we are making more than £35 billion of new finance available to businesses operating and investing in the UK, with nearly a third – £9.5 billion – dedicated to SMEs. This reflects both our confidence in the UK economy and our long-term commitment to backing the businesses that anchor local prosperity.

£35bn+

of new finance will be available
in 2026 to companies operating
and investing in the UK

27%

of that dedicated
to SMEs



Introduction

The right foundations

The UK's innovation economy is often assumed to be synonymous with start-ups and scale ups. While a strong pipeline of commercialisable R&D and ventures is essential and requires significant investment and support, successful R&D and innovation is enabled by a much wider system of organisations, institutions, networks, capital markets, and policy frameworks that work together to transform knowledge into scalable commercial, social, and environmental value.

Despite financial headwinds, the UK has one of the world's leading university sectors, with four institutions in the global top ten and fifteen in the top one hundred. Universities have a substantial physical and economic presence across UK regions and nations and their contribution is well documented. But a successful innovation economy depends on having the right physical foundations in place. This includes the buildings, parks, quarters, and districts that provide facilities, expertise, networks, access to markets, and the density of talent and infrastructure needed for innovation to flourish.

Research for Universities UK estimates that teaching, research, and innovation activities generated more than £158 billion of economic impact in 2021/22. Within this, research activity contributed over **£54 billion**, while knowledge exchange including contract research, consultancy, and commercialisation generated a further **£8.7 billion**.

For every £1 of public research funding, the sector generates **£9.90** through research and knowledge exchange³. These figures underline both the scale of the economic infrastructure that university estates support and the returns that flow from investment in it. Government policy reflects this importance. The Modern Industrial Strategy emphasises focusing

public R&D in areas of existing and emerging regional strength, supporting place based clusters, and ensuring innovation funding translates into firm formation, scale up, and skilled employment across the UK.

Significant public and private capital is already being invested in university estates and surrounding developments. However, innovation outcomes vary sharply across places: similar investments can generate very different economic and social returns. Evidence from innovation ecosystem research shows that outcomes depend not only on physical assets, but on wider conditions—industry density, venture capital availability, transport and digital connectivity, housing affordability, and strong local networks. For example, UCL's research shows that such connective infrastructure is also critical for economic development outside the immediate investment region. Their Public First study⁴ shows that development in KQ Life Sciences creates significant economic spillovers outside London, but in places specifically connected by train lines to Euston/Kings Cross. Highlighting that rail connectivity may be a first-order determinant, and treating laboratories, science parks, and campuses in isolation risks overlooking these wider place based and inter-regional dynamics that can drive success.

This raises three critical questions.

- **Which combinations of infrastructure matter most?**
- **How does university and innovation real estate investment translate into economic and social value?**
- **What does this imply for place-based public and private investment in the UK?**

3. London Economics (2024)

4. Public First (for UCL) (2026)



1

The infrastructure gap

While the UK Government has committed to record levels of R&D funding, there is growing consensus across policy, property, university and finance communities that capital investment in innovation infrastructure is not keeping pace with demand.





The infrastructure gap continued

When evidence from multiple sources is brought together, estimates consistently point to a £10bn–£20bn gap in new innovation enabling infrastructure investment over the next decade if the UK is to maintain international competitiveness in R&D and innovation districts. Closing this gap will be critical to translating record R&D funding into physical capacity, competitive innovation districts and sustained economic growth.

£10– 20bn

estimated gap in new
innovation enabling
infrastructure investment

Analysis from Frontier Economics in this report⁵ considers the variation in the physical estate, estate investment and a range of measures of external infrastructure across English research universities. It looks at the link between these measures of infrastructure and a key measure of innovation outcomes. Private Research and Development income (the amount that private firms pay universities to conduct research on their behalf) is the key measure of innovation in this analysis.

Private R&D is a directly monetisable factor and it allows for the impact at a university level to be mapped to economy-wide outcomes. Furthermore, this measure reflects a market-based assessment of a university's research capability and capacity, making it a particularly direct indicator of how physical infrastructure supports commercially valuable research. It also allows the 'size-of the prize' estimates to draw on to the well-established evidence base on the rates of return to privately funded R&D⁶, which provides robust and widely used parameters for translating R&D expenditure into economic value.

5. The analysis excludes 'teaching' universities – defined as those in the bottom 25% of income from research grants and funding. Data limitations means that only English universities are considered, except for unconditional correlation analysis in figures 3 and 4. These are divided into four groups ('quartiles') based on their ranking of estate capacity

6. Frontier Economics (2023)



At Leeds, through Nexus, we see first-hand how innovation hubs are critical to unlocking the full potential of regional innovation. These spaces are far more than buildings; they are engines of collaboration that strengthen local ecosystems and attract investment. When aligned with regional strengths, they become powerful platforms for translating knowledge and research into commercial, social and economic value at both regional and national scale. They should be recognised for their distinctive role and prioritised within regional growth strategies.

Dr Martin W Stow
Exec Director, Business Engagement and Enterprise



Size of the gap



There is a clear and substantial infrastructure gap. Universities with larger, more modern estates and higher levels of teaching and research space per student generate significantly more private R&D income than those with lower investment, all else equal.



The most important driver is space per student: top quartile research-focused universities provide around 20 m² per full time equivalent student, compared with just 7 m² in the bottom quartile – a three fold difference.

Science parks and incubators also play a critical role. Universities located in local authorities with a science park generate **57% more private R&D income** than those without, after controlling for other factors. This aligns with existing evidence that science parks are associated with higher rates of spin outs, staff start ups, and greater firm level research productivity.

Investment patterns mirror these disparities. Top quartile research-focused universities have invested an average of £71m per year in estate capital expenditure over the past decade, compared with £19m for bottom quartile research-focused institutions. Universities that invest least in their physical infrastructure are least able to realise their innovation potential.

External measures of infrastructure, such as transport access, digital connectivity and local innovation ecosystems, also tend to be greater for universities in the top quartile of physical estate. Transport infrastructure investment is significantly associated with GDP growth and productivity improvements in the UK⁷ and digital connectivity is an increasingly important enabler of innovation ecosystems⁸.

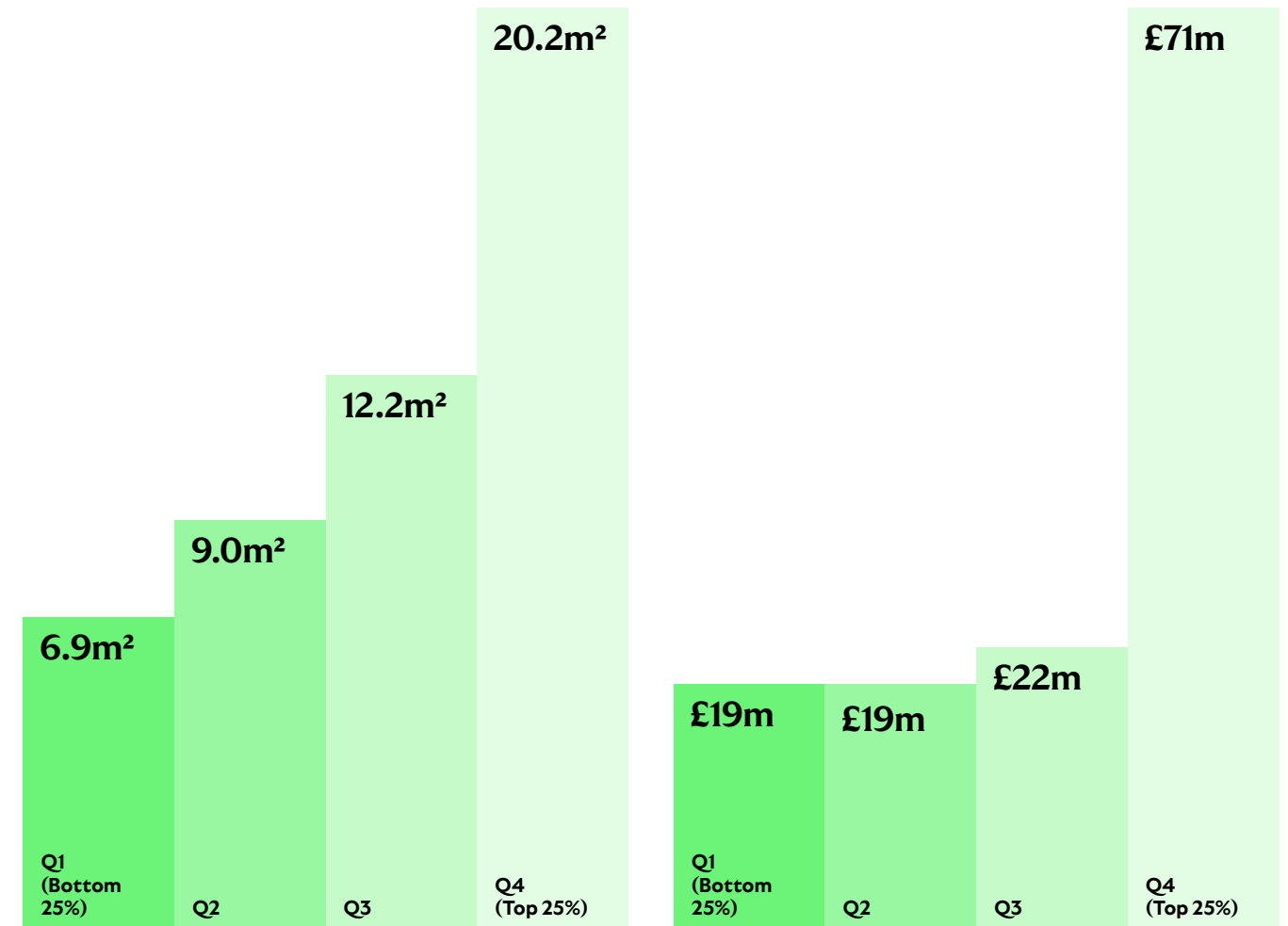
7. Zhang and Cheng (2023)

8. DSIT (2021)

Figure 1: Average teaching/research space per FTE and capital expenditure on teaching/research space by teaching/research space quartile (England only)

Teaching and research space (m² per FTE)

Capital expenditure (£m)



Capital expenditure is calculated as an average across 2015/16 to 2023/24 based on HESA data. It includes spending on buildings and equipment in non-residential and non-catering operations.



Implications for the innovation economy



This infrastructure gap creates a self-perpetuating cycle. Universities with greater estate capacity generate higher incomes, which can be reinvested in infrastructure.



This presents an opportunity: universities with lower levels of real estate could benefit significantly from targeted investment in their physical capacity, creating a virtuous cycle of improved facilities, stronger research engagement, and growing income. Research-focused universities with lower levels of estate capacity than their peers lose out on significant benefits related to the innovation economy, including:



Private R&D income

Research focused universities in the bottom quarter of estate capacity average £1.5 million per year of private R&D income, compared to £24.9 million for those in the top quarter – a sixteen-fold difference.

x16

less private R&D income



IP income

Average IP income⁹ is just £66,000 for bottom-quarter research-focused universities, compared with £9 million for those at the top – a difference of more than a hundred-fold.

x100

less IP income

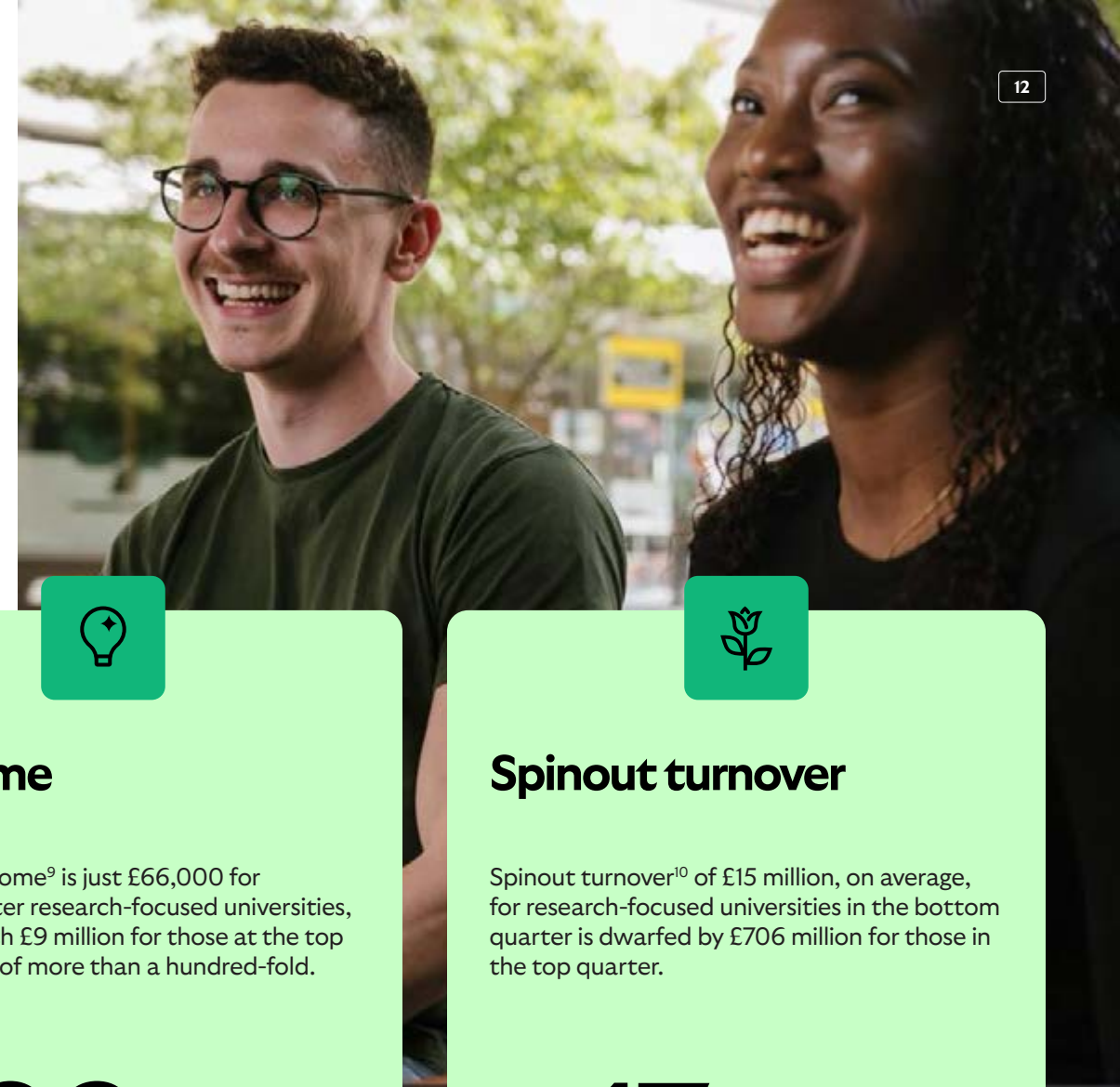


Spinout turnover

Spinout turnover¹⁰ of £15 million, on average, for research-focused universities in the bottom quarter is dwarfed by £706 million for those in the top quarter.

x47

lower spinout turnover



9. Intellectual Property (IP) income is revenue from licensing intellectual property, patents, and other commercialisation of research.

10. Spinout turnover is the total revenue generated by companies spun out of universities.



Implications for the innovation economy continued



Regional variations

Regional variation in infrastructure and innovation outcomes is pronounced, with performance unsurprisingly skewed towards the South East. These four maps highlight where infrastructure investment and innovation outcomes align and, critically, where they diverge.

The **South East** emerges as the strongest overall performer, combining high estate capacity with high private R&D income, strong REF performance, and substantial spin out turnover. This pattern is heavily shaped by the University of Oxford, which ranks among the highest performing institutions across all four measures. The East of England shows a similar concentration of strength in spin out turnover, driven largely by the University of Cambridge, although average estate capacity in the region is more moderate.

The **North East and Yorkshire and the Humber** provide a useful contrast. Both regions exhibit relatively strong estate capacity, and Yorkshire and the Humber also shows above average private R&D income alongside reasonable REF performance. By contrast, the North East combines good estate capacity with more modest outcomes across private R&D, REF scores, and spin outs. This underscores the view that physical infrastructure alone is not translating into proportionate commercial returns, potentially reflecting lower industry density, more limited venture capital availability, or where long-term R&D investment in the region is yet to be realised.

The **East Midlands** presents a more balanced profile, with above average estate capacity and relatively strong private R&D income, likely reflecting the research strengths of Loughborough University and the University of Nottingham. This region appears to demonstrate closer alignment between estate investment and innovation outcomes.

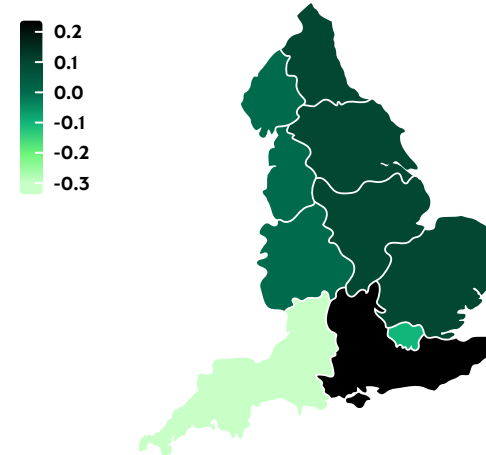
London shows the most striking mismatch. Despite having among the lowest average estate capacity – reflecting the constraints of a dense, high cost urban environment – it delivers strong private R&D income, REF performance, and spin out turnover. This indicates that London’s universities are compensating through ecosystem advantages, including proximity to finance and professional services, deep venture capital markets, strong agglomeration effects, and international connectivity. This could imply that easing estate constraints could unlock further gains. However, it also infers that London’s innovation productivity is an agglomeration and talent effect rather than an estate effect, opening the question of whether the necessity of innovation infrastructure as a key enabler of innovation outcomes is uniform across all geographies.

The **South West and West Midlands** show below average estate capacity. With large numbers of universities but less strong infrastructure–ecosystem alignment, these regions may represent the greatest unrealised potential and therefore stand to benefit most from coordinated investment in both campus estates and the wider innovation environment.

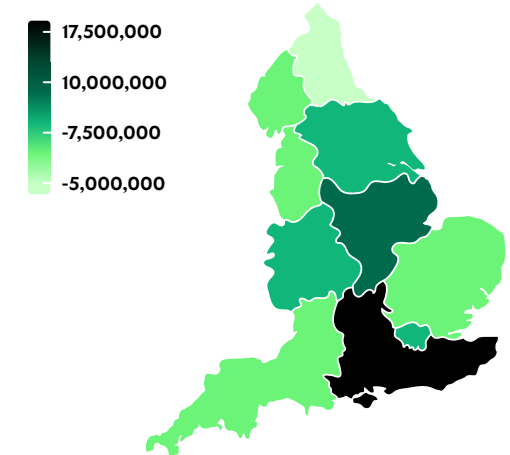
However, regional averages mask significant institutional variation. A small number of high performing universities materially influence regional outcomes. These findings should therefore be read as indicative of broad regional patterns rather than definitive judgements on individual institutions.

Figure 2: Regional geography of university infrastructure and performance (England only)

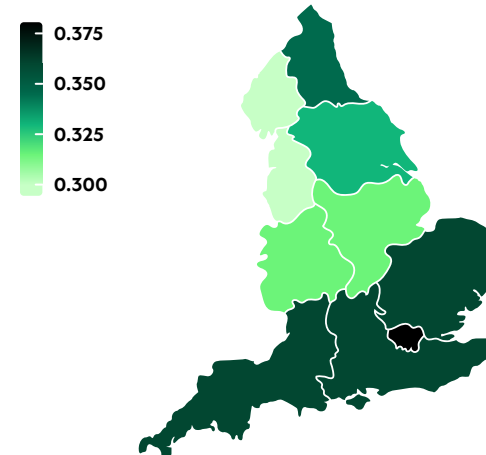
Average Internal Estate Capacity (Teaching/Research)



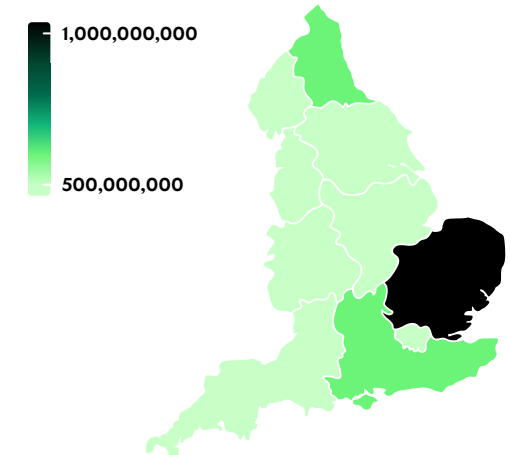
Average Private R&D (£)



Average REF Score



Average turnover from spinouts (£)



Source: Frontier Economics¹¹

11. Internal estate capacity, private R&D and turnover from spinouts is sourced from HESA. Private R&D is defined as contract research from private organisations. Average REF score is defined as percentage of departments within a university receiving the top score (4*) for overall research quality, weighted by the department size, sourced from Research Excellence Framework (2021).



Implications for the innovation economy continued



Regional variations continued

The relationship between estate capacity and innovation outcomes holds across the distribution, but comparable estates do not guarantee comparable outcomes. Figure 3 plots each research-active university's teaching and research space per FTE against its private R&D income. The positive relationship is clear: universities with more space per student tend to attract substantially more private research funding, confirming the quartile-level findings at the level of individual institutions.

However, the chart also reveals significant variation among universities with similar estate capacity, reinforcing the role of wider ecosystem conditions. These comparisons underscore that estate capacity is a necessary condition for strong innovation performance, but the broader ecosystem in which a university operates determines how much of that capacity translates into results. This is both a caution and an opportunity: it means that infrastructure investment, combined with attention to surrounding conditions, has the potential to shift universities from the lower end of what their physical estate would predict to the upper end.

Figure 4 presents the same relationship excluding the University of Oxford and the University of Cambridge. The positive association remains consistent.

Figure 3: Relationship between teaching and research space per FTE student (m²) and private R&D income

All UK, research active universities only¹²

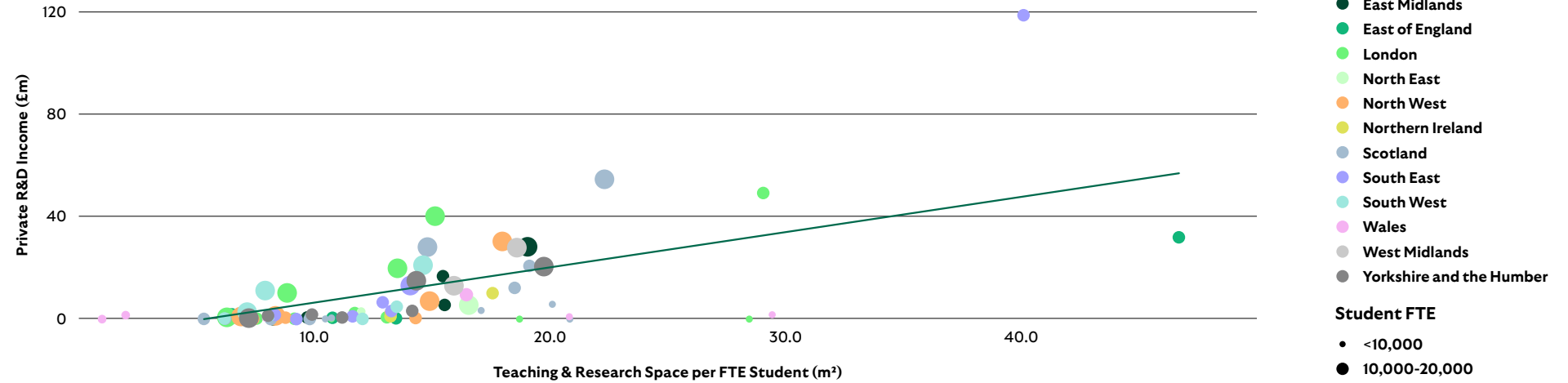
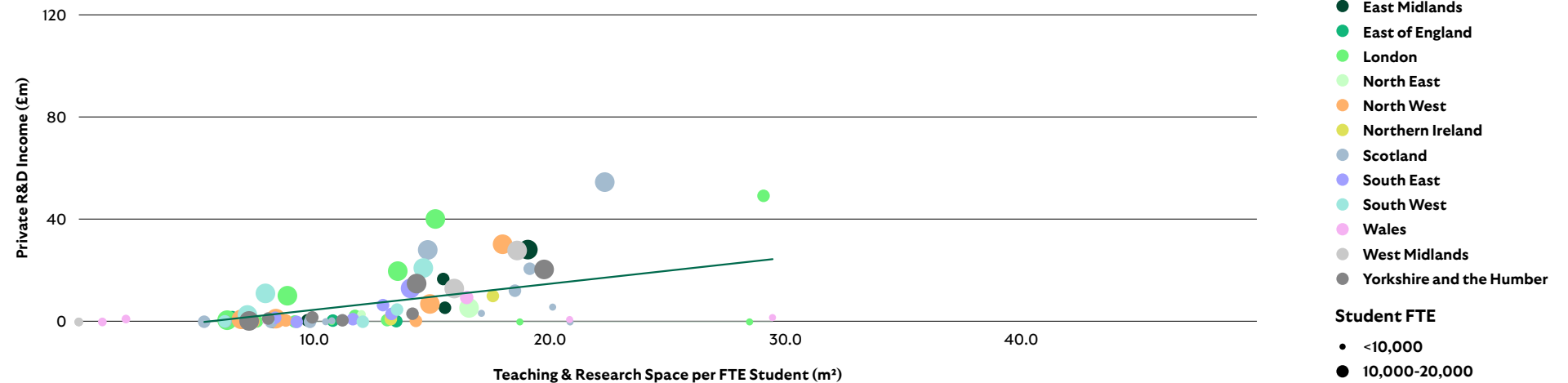


Figure 4: Relationship between teaching and research space per FTE student (m²) and private R&D income

All UK excluding Oxford and Cambridge, research active universities only



12. The analysis excludes 'teaching' universities – defined as those in the bottom 25% of income from research grants and funding.



Implications for the innovation economy continued



Pan regional innovation

Universities can sometimes expand their innovation infrastructure across regions to meet needs rather than relying solely on assets located on their own campuses.

Imperial College London’s collaboration with the University of Sheffield’s Advanced Manufacturing Research Centre (AMRC) provides a strong illustration. The AMRC is a large scale, capital intensive translational research environment, part of the High Value Manufacturing Catapult, explicitly designed to de-risk industrial R&D through shared facilities and close industry engagement. By operating within the AMRC ecosystem, Imperial researchers and collaborators gain access to manufacturing laboratories, pilot scale facilities and applied R&D capabilities that would be impractical to site in central London, given land, cost and planning constraints.

This enables research originating in a globally leading but estate constrained institution to translate into industrial application within a regional cluster purpose built for scale manufacturing and commercialisation.

A similar dynamic is evident in collaborations between London and South East universities and Warwick

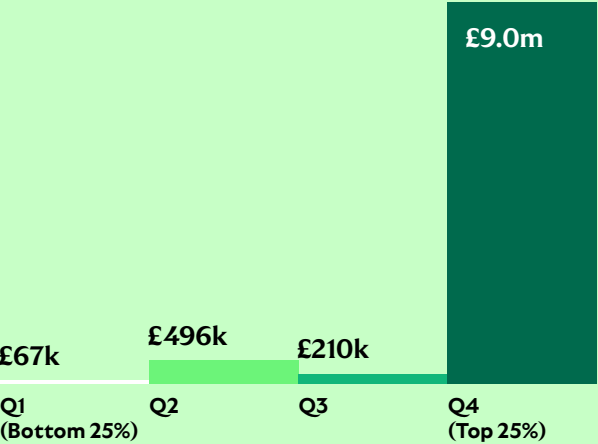
Manufacturing Group (WMG) in the West Midlands. WMG operates as a national translational research platform, bringing together applied R&D, testbeds and innovation space across advanced manufacturing, energy systems and digital technologies. Its facilities allow partner institutions to engage in full scale experimentation and industrial collaboration without duplicating highly capital intensive estates in already constrained regions. In effect, WMG extends the innovation capacity of universities beyond their physical footprint.

Where physical constraints exist, access to shared assets can unlock innovation that would otherwise remain latent. This underlines the importance of coordinated, regionally distributed investment in the foundations of the UK’s innovation infrastructure. For example, public funding of facilities like AMRC and WMG are part of the High Value Manufacturing Catapult, receiving long-term public funding to maintain **national, shared infrastructure** rather than institution-specific assets.

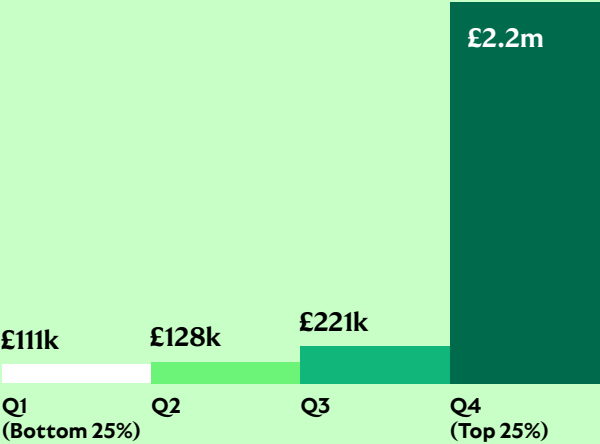
Note: Average IP income, private R&D and turnover from spinouts sourced from HESA. Private R&D is defined as contract research from private organisations. Average IP income is defined as intellectual property income from all commercial organisations. Average REF score is defined as percentage of departments within a university receiving the top score (4*) for overall research quality, weighted by the department size, sourced from Research Excellence Framework 2021.

Figure 5: Average university performance by estate capacity tier (England only)

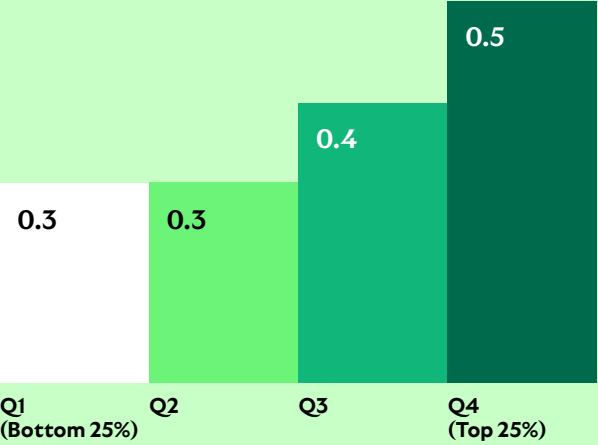
Average IP income



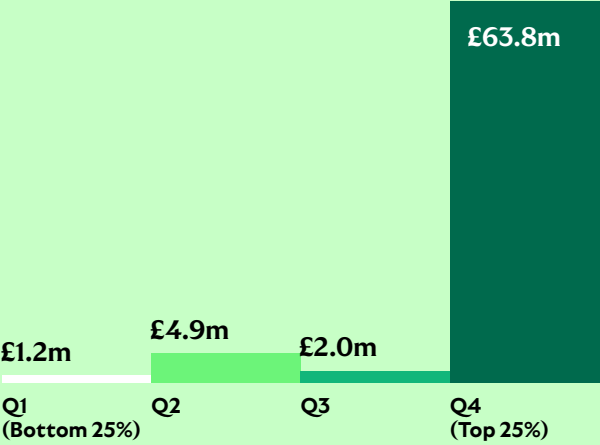
Average Private R&D (£)



Average REF Score



Average turnover from spinouts (£)



Source: Frontier Economics



2

The economic opportunity

This analysis estimates that upgrading real estate capacity at the UK's most constrained research-active universities could unlock significant returns for universities, communities and public and private investors.





These estimates are based on the observed relationships between estate capacity and private R&D income, controlling for university size, prestige, capital expenditure, and external infrastructure.

They are deliberately conservative. By restricting the sample to research-active institutions, we narrow the estate gap and raise the baseline level of R&D income, both of which produce a smaller estimate than a full-sample analysis would yield.

These are associative estimates that capture the difference in outcomes between universities with constrained and well-resourced estates, after controlling for other observable factors. They do not imply that adding square metres alone would deliver these gains. In practice, returns are moderated by how effectively new space is used, how quickly research partnerships develop, and critically, whether the broader ecosystem supports commercialisation. But they do indicate the scale of the economic opportunity currently being left on the table.

The wider economic value estimates draw on established parameters for the returns to R&D investment¹⁵ (Frontier Economics, 2023), which synthesise economy-wide evidence from a large body of international research. These parameters are not spatially disaggregated: they capture the average return to R&D across the economy as a whole, including knowledge spillovers that benefit firms and industries beyond those directly involved. The underlying evidence base does not currently allow a robust assessment of where those spillovers flow geographically.

However, existing spatial research suggests that knowledge spillovers from university research have a significant local component. Kantor and Whalley (2014) provide causal evidence that research university activity generates local agglomeration spillovers that grow over time, and Abramovsky and Simpson (2011) find that firms in knowledge-intensive sectors locate R&D activities near frontier university research departments. This is consistent with the place-based framing of this report: the benefits of university R&D are not entirely dissipated to distant regions, and investment in local research infrastructure can be expected to generate returns that are at least partly captured within the surrounding area.

c.£155m

in additional private R&D per year (more than 25% uplift from current total of £554 million¹³)



c.£31m-£62m

per year in direct economic returns from that research

The lower bound reflects private returns to the firms and universities directly involved (at an estimated 20% rate of return); the upper bound incorporates knowledge spillovers, where discoveries at one institution benefit firms and industries elsewhere in the economy, at an estimated 40% social rate of return¹⁴.

c.£0.9bn-£1.9bn

in cumulative economic value over a decade

13. The £554 million in private R&D income represents funding that businesses pay directly to English research-active universities to conduct research on their behalf. This is a subset of the approximately £7 billion in total research income that flows into English universities annually from all sources, including public research councils, charities and government bodies.

14. Frontier Economics (2023)

15. Frontier Economics (2023)



An enabling policy environment

Despite economic challenges, policy context for acting on this opportunity remains favourable.

The UK's recent Industrial Strategy and National Infrastructure Strategy set out a clear direction of travel: approximately £725 billion in infrastructure investment is planned over the next decade¹⁶, with an emphasis on private-public collaboration to drive growth in every region.

The Industrial Strategy's Infrastructure Plan and Local Growth Plans emphasise place-based economic growth, growth in key regional sectors, expanding R&D activity outside the South East and supporting innovation clusters.

Public R&D funding is increasingly being directed through place-sensitive mechanisms – including Innovation Accelerators, Investment Zones, and the UK Research Partnership Investment Fund (UKRPIF) designed to crowd in private investment and strengthen regional research capacity. The Higher Education Innovation Fund (HEIF) provides flexible, formula-based funding that enables universities to build knowledge exchange capacity, with every £1 invested generating an estimated £14.80 in return¹⁷. University infrastructure sits at the heart of these ambitions and provides an opportunity for sizeable returns to be generated for the wider innovation economy.

For private lenders and investors, the alignment between government infrastructure priorities and the university estate investment opportunity is significant: public funding mechanisms are actively designed to de-risk and leverage private capital into exactly the kinds of research and innovation infrastructure this report identifies as most consequential.

By way of example, Lloyds partners with the National Wealth Fund (NWF) through a public private financing model in which NWF provides government backed guarantees that enable Lloyds to deploy large scale, lower cost private capital into priority sectors, most clearly demonstrated in social housing retrofit programmes, and, more recently, to decarbonise Higher Education real estate.



~£725bn

in infrastructure investment is planned over the next decade by the UK's recent Industrial Strategy and National Infrastructure Strategy

16. HM Treasury (2025)

17. UK Research and Innovation (2026)



Innovation doesn't happen in isolation – it depends on the right places, spaces, investment and partnerships. The scale of the university estate-to-private R&D ratio evidenced in this report is striking, and it underlines the opportunity for Lloyds, UK IDG and place leaders to work together to turn innovation potential into good growth.

Emma Frost

Chair of UK Innovation Districts Group

The place-based infrastructure system



Figures 3 and 4 earlier in this report show that some universities generate substantially more private R&D income than their estate capacity alone would predict – they sit well above the regression line. These are institutions where research quality already exceeds what the physical infrastructure would suggest, potentially indicating that the estate is the binding constraint rather than the quality of the research itself. For such institutions, targeted estate investment may offer particularly strong returns, precisely because the research capability is already in place and waiting to be more fully realised.

However, identifying whether the constraint at any individual institution is genuinely physical – rather than compensated for by unmeasured ecosystem advantages such as proximity to venture capital or industry density – requires more granular, institution-level assessment than a cross-sectional analysis can provide. This represents a promising direction for future work and for investors seeking to refine their targeting. The economic value from investing in university-related real estate is clear. However, this investment is less likely to meet its full potential without a supportive place-based infrastructure system. Universities with the best facilities in the country will be more likely to maximise their innovation outcomes when combined with conditions that attract and retain talent, firms, and investment.

A good example of this in practice is Greater Manchester's Good Growth Fund. The £1bn fund, launched by the Greater Manchester Combined Authority, is designed to “pump prime” projects that combine innovation led growth such as new laboratory space, science and innovation districts, and support for high growth sectors including digital, life sciences, advanced manufacturing and green technologies, with place based regeneration across the whole city region.

Early investment is used to unlock private capital and de-risk projects that might otherwise stall,

while returns generated in the city core are recycled to support development in town centres and less developed districts. In doing so, the fund links innovation investment directly to jobs, housing, skills, transport and low-carbon infrastructure, embedding innovation within a broader strategy of inclusive, region-wide growth rather than treating it as a standalone economic activity.

A substantial body of research supports the view that innovation outcomes depend on the combination of physical infrastructure and wider ecosystem conditions, not on either alone. The OECD's synthesis work on universities and regional development emphasises that higher education institutions contribute to local economies not only through education and research, but through active roles in economic, social and cultural development, and that these contributions are shaped by the quality of the broader local environment¹⁸.

The Connected Places Catapult and the UK Innovation Districts Group also highlight that successful innovation districts combine academic and research institutions with transport accessibility, co-working spaces, housing, retail and cultural amenities in dense, mixed-use environments, and that these elements work together to attract talent and foster collaboration¹⁹.

This suggests that the infrastructure immediately surrounding a university, not just what is on campus, plays a role in facilitating knowledge transfer and private research investment.

The data in this report also reveals a complementary perspective for investors.

18. Arbo and Benneworth (2007)

19. Connected Places Catapult (2023)

Case study

Bristol's Temple Quarter Enterprise Zone

Bristol's Temple Quarter Enterprise Zone is an example of bringing innovation ecosystems to life through the built environment. The Temple Quarter anchors Bristol's innovation economy by clustering university research, start-ups and firms around new innovation infrastructure. This enables collaboration, skills development and knowledge transfer, particularly via the University's Enterprise Campus, driving productivity, attracting investment and supporting high growth sectors such as digital, AI and low carbon industries.





Wider social value to local people and communities



The economic case for university infrastructure investment extends well beyond R&D income and commercialisation metrics.



Universities generate substantial social value in their local communities. Value that is not captured in the headline estimates presented in this report but that represent a significant additional dimension of the case for investment.

Universities often play a much more engaged role in their communities combining the economic impacts of procurement, employment, and knowledge transfer with civic engagement and co-production with local residents.

Research in Birmingham found that coordinated anchor institution networks can build social resilience in deprived areas, and that universities are well-placed to facilitate the inclusion of marginalised communities in knowledge production and decision-making. This evidence suggests that the value of university and innovation infrastructure extends to the social fabric of the communities in which they are embedded, where there is a deliberate civic strategy to do so²⁰.

Analysis for Universities UK²¹ notes that the wider benefits of university education include increased work productivity for graduates and their co-workers, improved health outcomes, and a reduced likelihood of involvement in crime – benefits that are not monetised in their headline impact figures.

These social returns further strengthen the case for investing in the physical infrastructure that supports universities' core activities. Generally, universities are more likely to reduce deprivation when growth and innovation benefits are coupled with inclusive local procurement, local hiring and progression pathways, targeted widening participation and lifelong learning, and co-designed community engagement. As **Drivers of Growth** highlighted, there is an increased "civic" framing resulting in Civic University Agreements as a mechanism to align university activity with local needs and aspirations.

Taken together, this evidence suggests that estate investment is the most actionable lever available, but that realising its full potential requires attention to the wider conditions in which universities operate. Investing in estates without attending to these broader conditions risks building physical capacity that remains underexploited. Equally, relying on ecosystem advantages without addressing estate constraints limits how far those advantages can translate into research commercialisation and social value.

20. O'Farrell, Hassan and Hoole (2022)

21. London Economics (2024)

“**Generally, universities are more likely to reduce deprivation when growth and innovation benefits are coupled with inclusive local procurement, local hiring and progression pathways, targeted widening participation and lifelong learning, and co-designed community engagement.**”



3

Closing the gap

If the returns to university infrastructure investment are as substantial as the evidence suggests, a natural question is why the infrastructure gap persists?

The answer lies in a set of well-understood market challenges that inhibit socially valuable investment.





① University infrastructure has long payback periods.

The mismatch between the time horizon of infrastructure investment and the shorter-term cycles of both public funding settlements and private lending makes it difficult to finance at the scale required.

② The benefits of university infrastructure are dispersed across multiple actors.

The university itself captures only a portion of the value; local firms benefit from knowledge spillovers and access to talent, local authorities benefit from employment and economic activity, and the wider economy benefits from innovation and productivity growth. This creates a coordination problem: no single party captures enough of the return to justify the full investment alone, and the mechanisms for sharing costs and benefits across stakeholders are underdeveloped.

These twin challenges are compounded by the current financial pressures facing the higher education sector and the UK economy more broadly. With some universities operating at or near deficit, the capacity to fund major estate expansion from internal resources can be highly limited. The self-perpetuating cycle identified in this report, where under-resourced universities generate less income, which constrains further investment, is itself a manifestation of these market challenges.

These pressures are compounded by the economics of research itself. Most UK universities recover less than the full economic cost of their research activity, relying on cross-subsidies from teaching income to sustain their research programmes. As tuition fee income comes under increasing pressure, this cross-subsidy is narrowing, further constraining the capacity of research-active institutions to invest in the physical infrastructure that underpins their commercial research engagement. This reinforces the case for external capital, both public and private, to support estate investment at institutions where the research foundations are strong but the financial capacity for self-funded expansion is limited.



Investment in innovation infrastructure is essential to the UK's growth ambitions. Universities anchor these systems, but buildings alone do not create value. Success depends on how capital, capability and partnerships align in place. The real opportunity lies in coordinated ecosystems that turn research strength into firms, jobs and societal benefit

Professor Geraint Rees FMedSci
UCL Vice Provost (Research,
Innovation & Global Engagement)





Implications for place-based investment



The findings of this report point to a clear investment case, but one that requires coordinated action across multiple actors to realise.

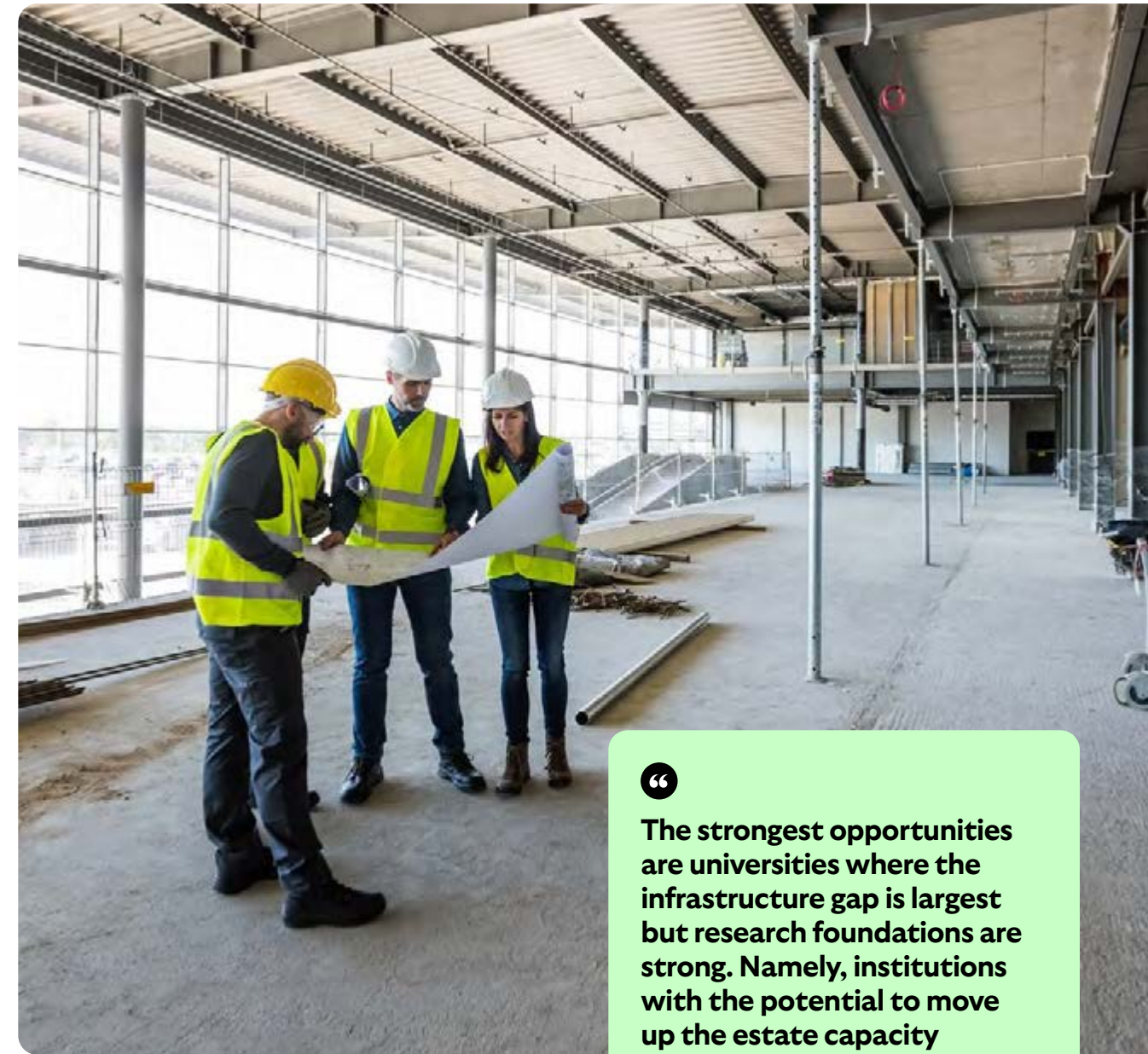


For universities, the evidence supports making estate capacity central to institutional strategy as a core determinant of research competitiveness and commercial income. Aligning estates planning with research strengths and regional economic priorities is a prerequisite for reaping the local research, innovation and benefits described in this report.

For local and combined authorities, the evidence on the wider ecosystem suggests that the conditions surrounding a university matter for how effectively estate investment translates into outcomes. Planning decisions on transport connectivity, housing development, and the designation of innovation districts and enterprise zones can either support or undermine the returns to campus investment. Local authorities are well placed to coordinate these complementary investments, particularly through devolution deals and local growth plans.

For private finance and lenders such as Lloyds, university estate investment represents a category of infrastructure lending with strong underlying demand, long asset lives, and as this report documents, a demonstrable association with economic returns.

However, for all actors, the central lesson is that infrastructure investment works best when it is coordinated rather than siloed. A new laboratory building will generate stronger returns if it is accompanied by good transport links, affordable housing for researchers, and an active innovation district nearby. The most effective investment strategies will be those that treat university infrastructure not as a standalone asset class but as part of a broader place-based system.



The strongest opportunities are universities where the infrastructure gap is largest but research foundations are strong. Namely, institutions with the potential to move up the estate capacity distribution if the physical constraints are relieved.



Who, where and how to act?



The analysis in this report identifies a substantial economic opportunity, but one that will not be captured by any single actor working alone.



The model of investment needs to match the intended model on the ground. In other words, funding ecosystems means funders must act as an ecosystem too.

Realising the potential of university infrastructure investment requires coordinated action across universities, private finance, and national and regional government. This section sets out what each can do, drawing on the evidence presented in this report and on models that have demonstrated success.

For universities: Building investable research capacity

Estate capacity, specifically teaching and research space per student, is a strong predictor of research and innovation performance. But expanding square metres is not sufficient on its own. Several guiding principles underpin effective estate investment:

Alignment of estates planning with research strengths and regional economic priorities

Universities that have successfully translated estate investment into commercial returns have typically concentrated investment in areas of existing disciplinary strength where there is demonstrable industry demand.

Invest in adaptable, multi-use research facilities

The pace of technological change means that today's specialist laboratory may not serve tomorrow's research needs. Investing in flexible and adaptable spaces and equipment which are future proofed is more likely to sustain its value over time and attract a broader range of industry partners.

Anchor estate investment in innovation districts and science parks where possible

The presence of a nearby science park is associated with higher private R&D income, even after controlling for other factors. On-campus science parks and incubators are also found to enhance entrepreneurship outcomes. The implication is that locating new research space within or adjacent to innovation districts where industry partners, co-working spaces, and business support services create a critical mass of innovation activity works.

Use estate investment as a platform for civic engagement, not just commercial returns

The evidence on universities as anchor institutions²² and as social and cultural infrastructure²³ demonstrates that campus investment generates value for local communities through employment, public space, and civic participation – value that strengthens the case for public co-investment and planning support.

22. O'Farrell et al., 2022

23. British Academy, 2024





Who, where and how to act? continued

For private finance: A distinctive infrastructure lending opportunity

University estate investment has characteristics that make it a distinctive and attractive category of infrastructure lending. Unlike commercial property, university estates are anchored to institutions that do not readily or often relocate, providing greater geographic certainty. And the association between estate capacity and commercial research income means that well-targeted estate investment has a demonstrable link to the borrower's revenue-generating capacity.

Several features of the current landscape make this an opportune moment for private lenders:

Public funding mechanisms are designed to leverage private capital

Programmes such as UKRPIF provide matched public funding for university capital projects, directly de-risking private lending. HEIF provides flexible funding for knowledge exchange capacity that supports the commercial pipeline from which loan repayments ultimately flow. Innovation Accelerators and Investment Zones create place-based frameworks within which private and public investment can be coordinated.

The strongest opportunities are at universities with constrained estates but strong research foundations

The analysis identifies research-active, bottom-quartile universities (by estate capacity) as the institutions with the greatest unrealised potential. These are institutions already engaged in meaningful private-sector research but potentially constrained in terms of infrastructure. Targeted lending to expand their estates therefore has the potential to unlock higher than average returns.

Science park and innovation district development offers a complementary asset class

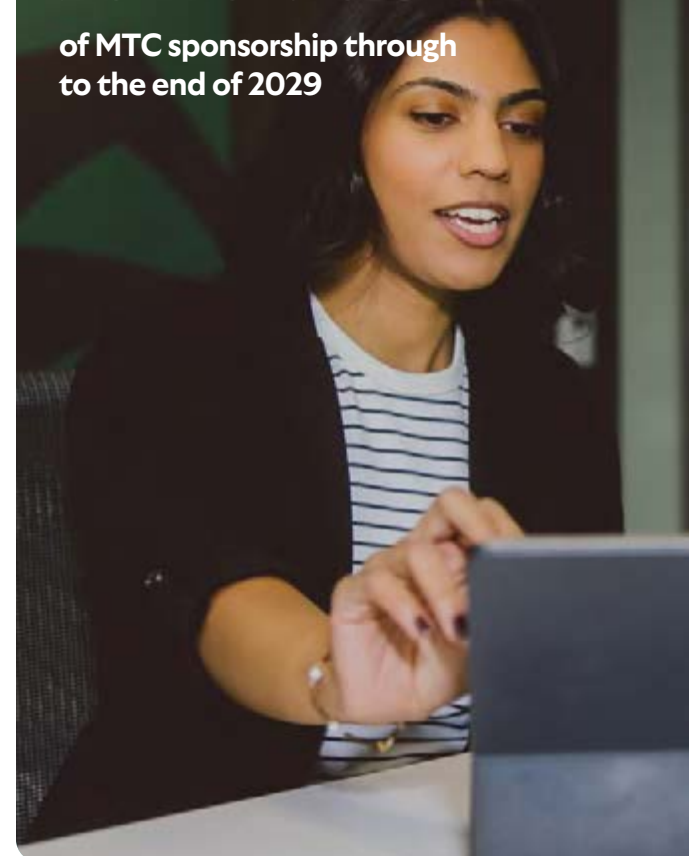
Beyond lending to universities directly, the evidence on science parks suggests that investment in purpose-built innovation infrastructure adjacent to research-active universities can generate strong commercial returns while supporting the wider ecosystem that makes university estate investment more productive.

70%

of UK higher education institutions have relationships with Lloyds

£18.5m

of MTC sponsorship through to the end of 2029



Bank on Lloyds

Lloyds' own activity in this space illustrates the model well. We have relationships with over 70% of UK higher education institutions and have recently extended our partnership with the Manufacturing Technology Centre (MTC) to over £18.5 million of sponsorship through to the end of 2029, including the launch of MTC Tyneside, supporting advanced manufacturing skills, SME productivity, and regional innovation in the North East.

Lloyds' new £500m decarbonisation fund, delivered in partnership with the National Wealth Fund, is enabling universities to accelerate the sustainable retrofit of their estates at scale. It reinforces our broader commitment to infrastructure lending—supporting universities as anchor institutions by financing the physical assets that underpin research, innovation and regional growth.



Creating the conditions for coordinated investment



The market challenges identified in this report (long payback periods, dispersed benefits and positive externalities) mean that public policy and funding has a crucial role in creating the conditions under which private investment in university infrastructure can be effective.



Continue and expand matched-funding programmes for university capital investment

UKRPIF has a strong track record of leveraging private and philanthropic capital into university research infrastructure. The evidence in this report supports expanding such programmes, with particular attention to universities outside the South East where the infrastructure gap and unrealised potential are greatest.

Use devolution and local growth plans to coordinate infrastructure investment around university anchors

The regional analysis in this report shows that estate capacity alone does not determine outcomes. The surrounding ecosystem matters. Combined authorities and local authorities are well placed to coordinate complementary investments in transport, housing, digital connectivity, and innovation district designation around university campuses. Devolution deals provide a mechanism for this coordination, where universities are treated as core partners in local economic and industrial strategies.

Improve the evidence based on what works

Future public investment in university infrastructure would benefit from built-in evaluation. For example, exploiting the before-and-after variation created by UKRPIF awards to assess causal impacts on research income, spinout activity, and local economic outcomes. This would strengthen the evidence base for future rounds of investment and help target resources where they will generate the greatest returns.



Conclusion

The UK's universities are central to national economic strength

Their infrastructure, teaching and research estates, science parks, laboratories, digital systems and innovation districts, are the physical foundation upon which the growth of the innovation economy depends. The size of the prize for the UK is substantial but will not be fully realised without higher levels of strategic co-ordination of financing across all sectors.



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