

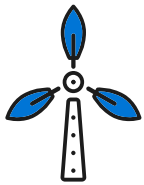
Investing in our future: UK university spinouts reach inflection point

Why should institutional investors back UK university innovation?



Alastair Stewart
Head of Healthcare & Life Sciences

Executive summary



We believe the UK University Spinout sector is a highly impactful asset class that can offer exposure to growth businesses across key industries such as healthcare, clean energy and advanced computing. As a result of maturing ecosystems around key university hubs and supportive government policies, we are now

seeing the UK spinout market enter its next phase of evolution. This unique combination has fostered an environment conducive to the growth of innovative businesses, where companies are now being built to scale and take products directly to market, as opposed to developing products for earlier acquisition by tech giants or large corporates.

As the sector enters the next phase in its evolution, we expect to see a UK spinout market which we believe will better facilitate the creation of global industry champions of the future, putting it on the cusp of significant growth. We believe there are three key themes, listed below, that could make this an attractive investment opportunity for institutional investors as they increasingly look to diversify their portfolios and potentially benefit from the growth of this sector.

1) University spinouts now display the key attributes of an institutional asset class

We are seeing increasing activity and evidence that the UK university spinout market is reaching maturity, with increasingly consistent activity across the whole investment lifecycle. This includes a growing quantity of spinouts emerging from the UK's top research universities, increasing capital invested in the sector, evolving investment models, and continuing examples of successful companies exiting via mergers and acquisitions and the international public markets.



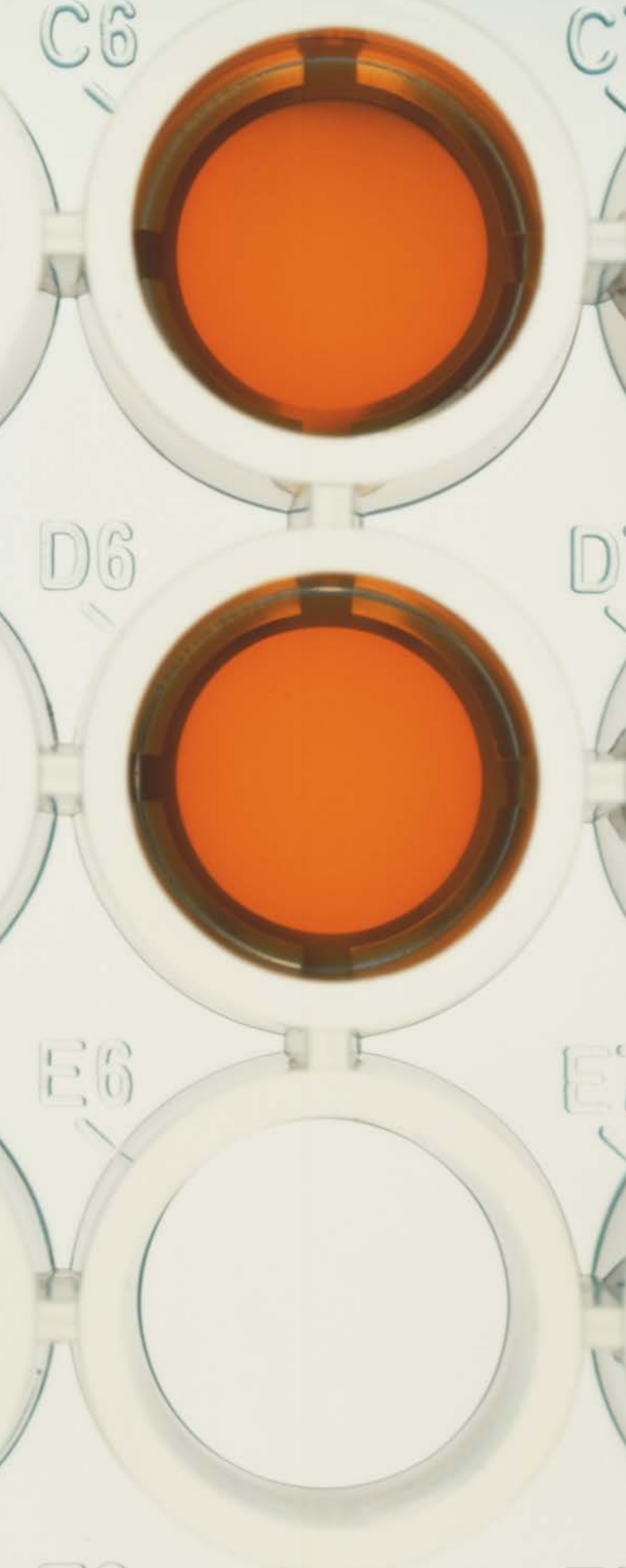
2) Ability to access the sector via emerging ecosystems built around key university hubs

The highest volume of spinouts and most successful exits have originated from universities centred around Oxford, Cambridge, London and key universities in the North of England. These areas have become innovation ecosystems in their own right and include some of the most established university investment platforms with increasingly proven approaches to early-stage business building.

3) A gap in the market offers a potentially attractive entry point

Maturing portfolios at university-linked investment platforms have led to a growing number of scaling companies that are now seeking funding. This is alongside normalising market valuations and supportive government policy for science and technology. Capital exists at the early stages, via the established ecosystem of VCs and university-linked investment platforms, and at the later stages, via generalist institutions looking to invest against traditional financial metrics. There remains a gap, however, between these two stages. This is represented by companies scaling-up through early-commercialisation and before they can be viewed as generalist investments applicable to the broader capital markets.

We believe this market gap is likely to persist as fundraising for new managers looking to solve this problem continues to be subdued and the ability for most large generalist investors to access companies at this stage remains operationally difficult. However, we believe it represents an attractive and less competitive point in the market to access the best companies and then use this access to support them with longer-term investment as the companies de-risk and scale. In our view, this model can be especially powerful when access is combined with strong partnerships across the universities and their early-stage investment platforms.



Market opportunity

University spinouts now display the key attributes of an institutional asset class



Science and innovation are driving a global technology revolution, with research and development spending in OECD¹ countries continuing to demonstrate year-on-year growth².

Major events, such as the Covid-19 pandemic and the rapid development of vaccines in response, have demonstrated the crucial, positive impact that the translation of foundational science can have on our world.

The latest statistical release by the Office for National Statistics (August 2024) shows that expenditure on research and development (R&D) performed in the UK was £70.7 billion in 2022 (in current prices), an increase of £4.4 billion since 2021. The higher education sector, at £16.3 billion, accounted for 23% of the UK total³. This investment is likely to shore up the UK's enviable position as a key international centre for university research.

A government report published in 2022 showed UK universities had the third-largest share of highly cited publications, generally regarded as an indicator of research quality, smaller only than that of the US and China⁴. The Universities of Oxford and Cambridge are both in the top 5 global institutions as ranked by academic research reputation⁵.

Universities are also highly impactful on society as a whole: a recent Universities UK report found that these institutions generate close to £100 billion a year for the UK economy, support nearly a million jobs, and contribute £22 billion to the nation's annual gross domestic product⁶.

From gene sequencing to quantum computing to nuclear fusion, technology's bleeding edge lies in university research departments. When they eventually mature, technologies like these have the potential to disrupt multiple large global industries.

National expenditure on UK research and development is increasing and stood at **£70.7 billion** in 2022

Source: ONS, 2023

1. The Organisation for Economic Co-operation and Development
 2. OECD Main Science and Technology Indicators. R&D and related highlights, March 2024.
 3. 'Gross domestic expenditure on research and development, UK: 2021', Office for National Statistics, 2023
 4. Source: International comparison of the UK research base, 2022 - GOV.UK
 5. QS World University Rankings 2025: Top Global Universities
 6. Universities UK, 'The impact of the higher education sector on the UK economy'; September 2023

Top 5 Academic reputation of the top 5 UK universities by volume of spinouts

University	# of spinouts 2011-2024	Global Academic Reputation ranking
1. University of Oxford	210	2
2. University of Cambridge	149	3
3. Imperial College London	124	22
4. University College London	93	14
5. The University of Manchester	86	33

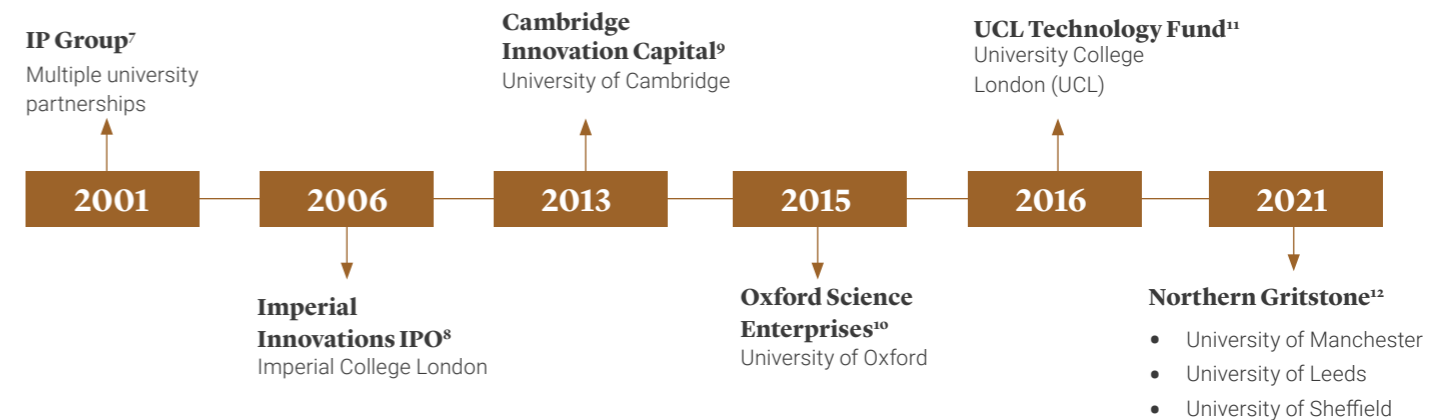
Source: Beauhurst Spotlight on Spinouts 2024, QS World University Ranking 2025.

The UK's university spinout industry began in earnest with a set of tech-transfer collaboration deals struck in the early 2000s, including with the University of Oxford and Imperial College London. This led to the creation of a small number of dedicated university spinout investors, including IP Group, Imperial Innovations, Cambridge Innovation Capital, Oxford Science Enterprises, UCL Technology Fund and, more recently, Northern Gritstone*.

University spinout companies can take a long time to mature, so most of these platforms were originally set up as evergreen corporate vehicles, raising and investing from their balance sheets. This was to facilitate long-term relationships with both their portfolios and the universities with which they collaborate.

Over time, we have seen these models evolve and form hybrid connections with later-stage GP/LP side-car or co-investment funds, and evergreen structures that incorporate drawdown or buyback mechanisms that aims to improve liquidity management for institutional investors.

This allows these platforms to adopt longer investment horizons but makes co-investment critical to the viability of their business models as successful spinouts' capital requirements in these companies often scale rapidly. Access to these vehicles and their portfolio companies can be constrained, and long-term strategic partnerships with institutional backers are therefore likely to continue to be critical to the success of the ecosystem.



7. IP Group: [Our story – IP Group plc](#)
 8. Imperial: [Imperial Innovations floats on AIM in £163.259mm IPO :: Scrip \(citeline.com\)](#)
 9. CIC: [Sister organisation Cambridge Innovation Capital completes £150m funding round – Cambridge Enterprise](#)
 10. OSE: [We found, fund and build for tomorrow's challenges, today - Oxford Science Enterprises](#)
 11. UCL Tech Fund: [UCL launches £50 million technology investment fund | UCL News - UCL – University College London](#)
 12. [Northern Gritstone secures first close of £215m ahead of making its first investments – Northern Gritstone \(northern-gritstone.com\)](#)

*For illustrative purposes only. Reference to a particular security is on a historic basis and does not mean that the security is currently held or will be held within an LGIM portfolio. The above information does not constitute a recommendation to buy or sell any security.



A maturing sector

More than £14.5 billion has been invested in over 1,800 UK university spinouts over the last 10 years, with over £6.7 billion in the last three years¹³. This prolonged period of a growing amount of capital invested in the sector has, in our view, created an increasingly attractive pipeline of later-stage scale-up companies that require large amounts of funding.

We are also seeing a broader set of investor types participating in the UK ecosystem, including an increasing number of overseas investors, with more than 30% of deals seeing foreign investor participation in the first half of 2023¹⁴.

Importantly, from a liquidity perspective, we are also observing a greater number of exits for these types of companies, both in the public markets and via M&A, where these technologies are often strategically valuable to large corporates looking to strengthen their product offerings. Since 2014 there have been 188 exits by university spinouts, with 27 in 2022/2023 alone. In recent years, during a very active IPO market, we saw a number of life sciences companies listing on the NASDAQ and additionally a number of meaningful acquisitions. A few examples include: Zylo (acquired by Novo Nordisk), Vaccitech (NASDAQ - now Barinthus Biotherapeutics), Yasa Motors (acquired by Mercedes), NaturalMotion (acquired by Zynga), MiroBio (acquired by Gilead Sciences), Gyroscope Therapeutics (acquired by Novartis), Exscientia (NASDAQ), and Bicycle Therapeutics (NASDAQ)¹⁵.

13. 'Spotlight on Spinouts: UK academic spinout trends', Beauhurst data, April 2024; last three years is 2021-2023 inclusive

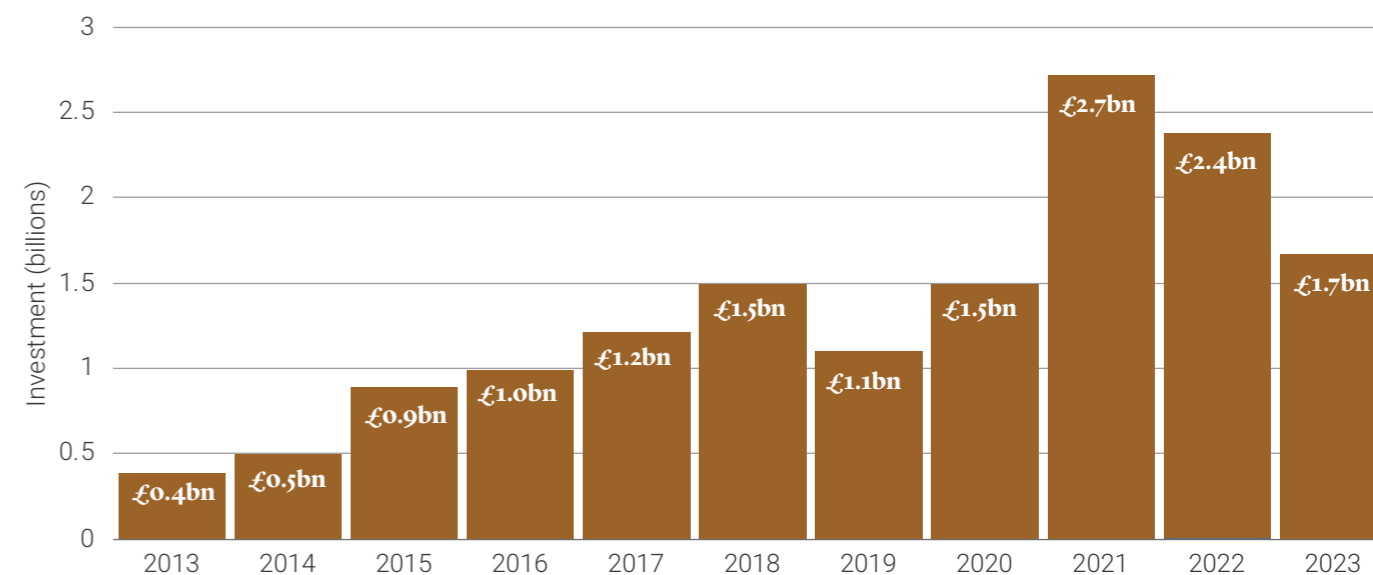
14. 'Equity investment into spinouts', Beauhurst data, 2023

15. 'Spotlight on Spinouts: UK academic spinout trends', Beauhurst data, April 2024; last three years is 2021-2023 inclusive.

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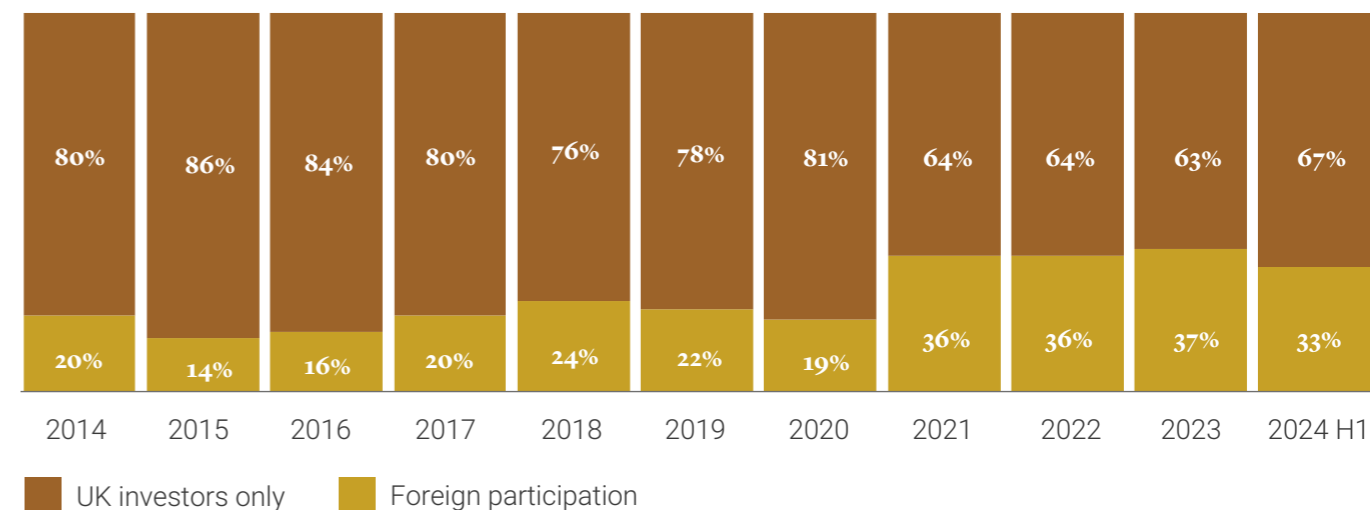
Key risks: The value of an investment and any income taken from it is not guaranteed and can go down as well as up, and the investor may get back less than the original amount invested.

Total equity investment into UK spinouts



Source: Beauhurst data, as of April 2024.

Foreign investor participation in UK spinout equity deals



Source: Beauhurst data, 2023

Key risks: The value of an investment and any income taken from it is not guaranteed and can go down as well as up, and the investor may get back less than the original amount invested.

Targeted access

Supportive ecosystems across key university hubs



In our experience, companies based on breakthrough technologies and developing disruptive solutions to major challenges typically appreciate based on technical milestones until they reach material revenues. They also tend to operate in markets where demand is less correlated to the economic cycle. The need for long-term solutions to healthcare and clean energy, for example, far outweighs short-term variations in consumer behaviour and public financial markets. As a result of these sector-specific attributes, we have seen the emergence of established hubs around key universities, bringing together people, capital and innovation.

Over the two decades to 2021, £7.5 billion was raised by spinouts from a small group of leading universities including Oxford, Cambridge, UCL, and Imperial. By the end of this period, these spinouts had a combined value of around £15 billion¹⁶.

The most successful companies have historically emerged from this group of universities, with 14 of the 20 top-valued UK university spinouts between 1998-2018 originating from Oxford, Cambridge, UCL, Imperial and Manchester¹⁷.

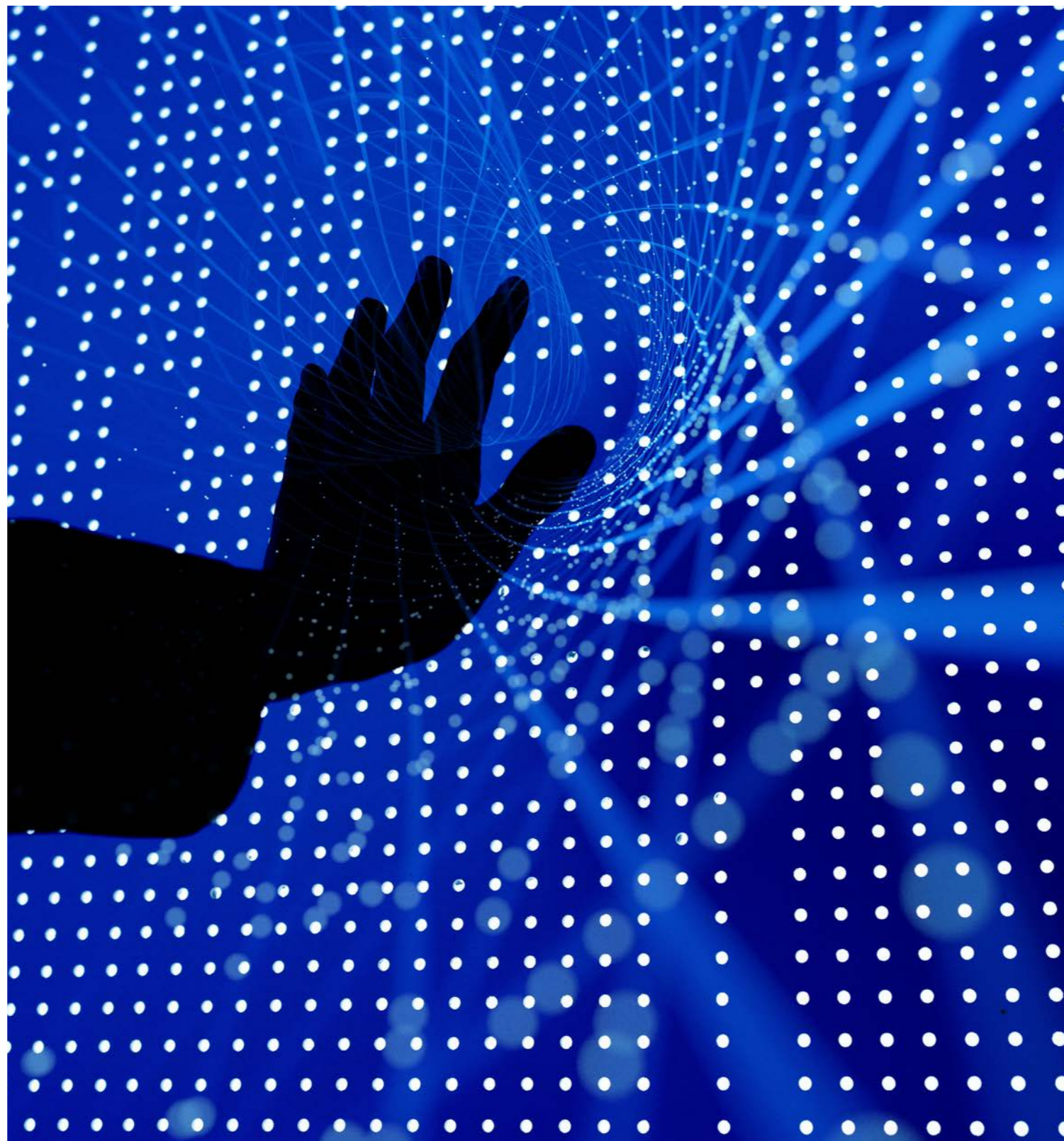
The top universities have been raising, or are looking to raise, dedicated capital to promote spinouts from their respective ecosystems. The largest of these is currently Oxford Science Enterprises, which has raised over £850 million from a wide variety of institutional investors, including L&G¹⁸.

Top academic institutions by total number of spinouts tracked since 2011 (January 2024)

University of Oxford	210
University of Cambridge	149
Imperial College London	124
University College London	93
University of Manchester	86

Source: Beauhurst Spotlight on Spinouts, April 2024.

Key risks: The value of an investment and any income taken from it is not guaranteed and can go down as well as up, and the investor may get back less than the original amount invested.



16. 'The university spinout report 2021: which UK universities top the rankings for turning innovation into commercial success?'; Source Advisors, 2021
 17. 'The university spinout report 2021: which UK universities top the rankings for turning innovation into commercial success?'; Source Advisors, 2021
 18. 'Oxford Science Enterprises raises £250 million' ,Oxford Science Enterprises, 17 July 2022

Examples of university investment platforms



>£700m¹⁹
Annual research income

>1,800
Academic staff²²

>50²²
Nobel Prize winners

#2
globally for academic reputation²⁴

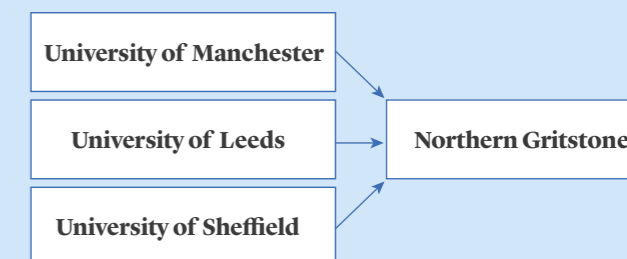


>£500m²⁰
Annual research income

>1,700
Academic staff²³

>120¹⁹
Nobel Prize winners

#3
globally for academic reputation²⁴



>£500m²¹
Annual research income

>12,000
Academic staff²¹

>35²¹
Nobel Prize winners

#33
#91
#132
globally for academic reputation²⁴

19. Research income on page 2 of University of Oxford Financial Statements 2022/23.
 20. Research income on page 23 of University of Cambridge Financial Statements 2022/23.
 21. Northern Gritstone/Lazards - 2nd Close Q1 2023 Investment Presentation.
 22. OSE Introduction Presentation - February 2023.
 23. Facts and Figures January2022 | University of Cambridge.
 24. QS World University Rankings 2025

Investor opportunity

A potential gap in the market



Although the amount of capital invested in the sector is increasing, it is not evenly distributed across the stages of company development. We believe the market is now bifurcating between early-stage investment, funded by well capitalised university-linked

investment platforms or VCs, and later-stage investment, largely coming from generalist institutional investors looking for more traditional financial profiles that are often closer to liquidity events. The result is a gap in the middle that's likely to persist as many large institutions lack the expertise or operational capability to make direct investments at this stage, compounded by a subdued fundraising market that inhibits the supply of new fund managers able to tackle the problem.

This has an impact on investor interest at the Series B/C stages, when companies may have early commercial traction, but have not yet scaled into meaningful revenues. The effects are most clearly seen in the comparison of early and late-stage valuations, where the later stages have recently seen a marked upshift.

Therefore, we believe there is a positive investment thesis for firms capable of making an investment at the early scale-up stages while aiming to gain access to the best companies in which to follow-on and deploy capital as they de-risk. This could attract potentially better valuations and avoid the competition that can occur in the later stages, where a greater number of capital providers are available and where it may not be possible to access the best companies and/or achieve attractive returns, in our view.

The broader market valuations for high-growth technology companies have also now dropped from all-time highs. The market has started putting normalising pressure on valuations, indicating the coming years may be an opportune time to make new investments in the sector.

However, the UK's technology market remains at significantly lower valuations in comparison to US peers as evidenced in deal data from Pitchbook where the median UK pre-money valuation across all early/late stage venture in 2024 is c.18% lower than that of the US²⁵. Historically, this has led to companies pursuing development in the UK and then later-stage financing or seeking exits at premium valuations in the US.

25. Pitchbook Data, Inc, as at 08/2024.



Policy tailwinds: growing support for a national ecosystem

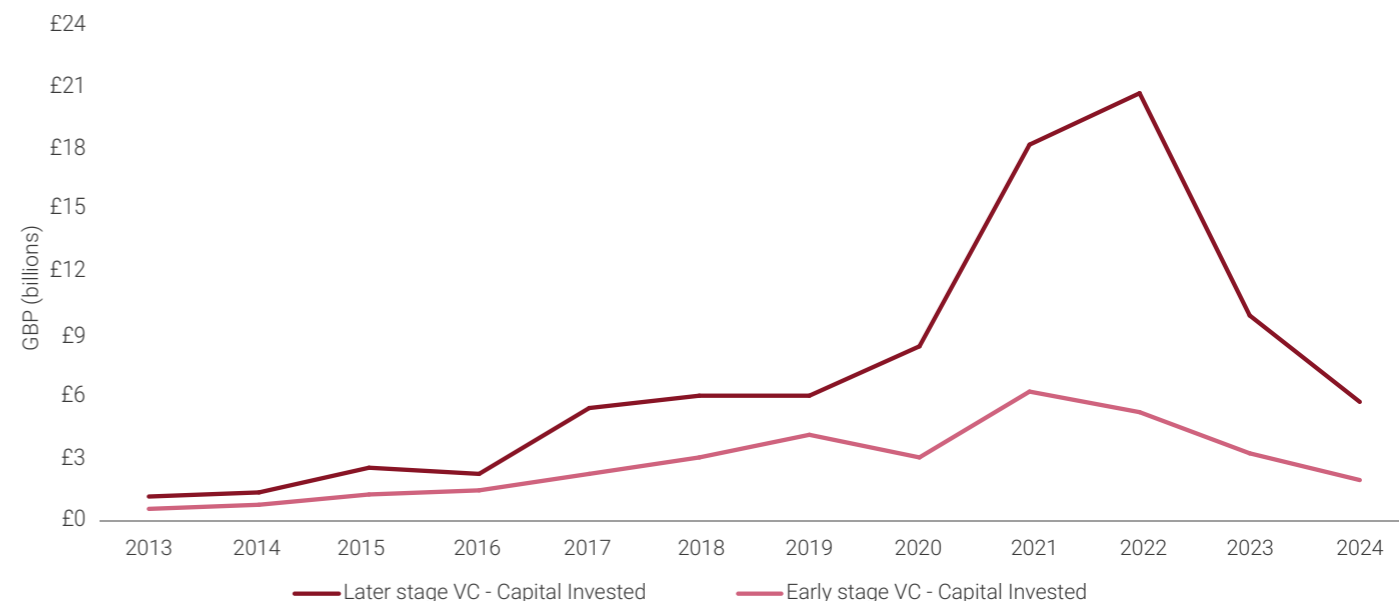
The newly elected UK Government has directly referenced the importance of both the science and technology sectors as drivers of future economic growth. On 17 July, the King's Speech set out the Government's legislative priorities, and highlighted the importance of working with universities to support spinouts, and the importance of infrastructure in key industry segments such as laboratories and data centres for AI.

This builds upon the previous administration's review of the university spinout sector, which compared the hubs that developed across the UK with some of the leading international ecosystems. The report made a number of policy recommendations, including improving policies on data, terms, collaborations and funding.

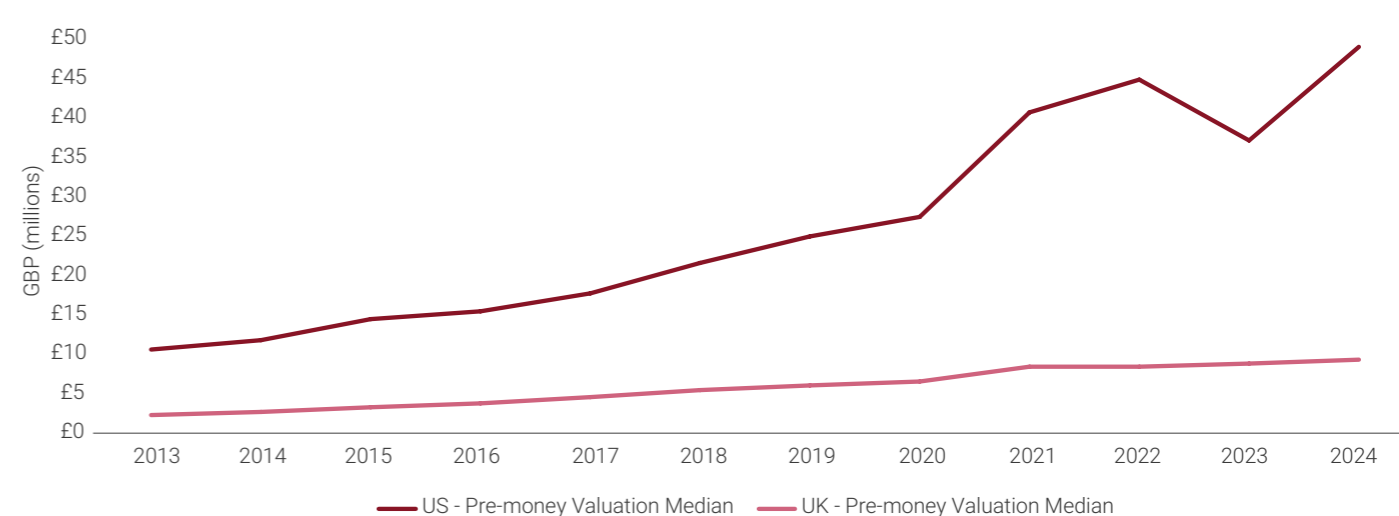
Meanwhile, the new Solvency UK regulatory framework for the British insurance market and the Mansion House reforms to pension funds together aim to unlock higher net returns to long-term savers by making it more efficient to invest in venture capital and productive assets. They have real potential to catalyse further investment in high-growth sectors such as science and technology, in the process offering potential opportunities to help boost the UK economy, drive greater prosperity and growth, and create prospective value for millions saving for their retirement.

There **remains a funding gap** at the commercial scale-up stage

Total UK venture capital invested by stage



Pre-money valuation median: US vs UK



Source: Pitchbook Data, Inc, as at 08/2024. Median Pre-money Valuation UK Headquartered Start-ups by Series as at 30 June 2024.

Past performance is not a guide to the future. The value of an investment and any income taken from it is not guaranteed and can go down as well as up, you may not get back the amount you originally invested.

Positive change

Scaling companies with the potential for real-world impact



Public markets are not the only arena where ESG²⁶ engagement is on the rise. Private equity has also seen an uptick in the application of ESG criteria in search of value. We believe by focusing on their ESG profile, portfolio companies are increasingly considering and mitigating

their negative impacts on the environment and society and aligning with sustainability-related rules and regulations. With IPO markets continuing to run cold, we believe private market exit opportunities can provide an increasing incentive for university spinouts to consider and embed sustainable practices at earlier stages.

Historically, venture capital as an asset class has lagged its peers in its consideration of ESG issues, but ESG is now gaining traction across institutional investors. Venture LPs and GPs are clear that ESG is here to stay. Rather than becoming yet another form of corporate reporting, investors understand that ESG seeks to offer an opportunity to add value, aims to help mitigate against risks, and differentiate novel products and services from those of their peers.

It has been argued that companies with stronger sustainability credentials can benefit from a lower weighted average cost of capital (WACC) – the discount rate applied to future earnings – and therefore higher valuation multiples²⁷. As university spinouts mature, embedding ESG considerations into their processes can help them for future fundraising rounds, create value, and signal to the market that they are ready to seek exit opportunities, in our view.

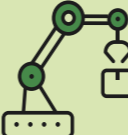





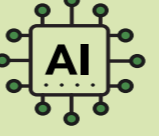


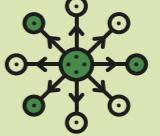


Aligning with large-scale trends

University spinouts targeting positive outcomes for people and the planet are increasingly aligning themselves with structural growth trends. These include an ageing society, the climate crisis and low productivity. It is becoming increasingly apparent to limited partners and general partners that driving and delivering impactful ventures to market is no longer considered “doing the right thing”, but a sensible financial and economic strategy for investors and policymakers alike. Many of the university-linked investment platforms are aligned with areas in which science and innovation can have a positive impact on the world, often including key sectors such as healthcare, deeptech²⁸ and cleantech²⁹, as shown opposite.

Investing for impact can be easily explained; the company needs to have a tangibly positive impact on society. This is increasingly important for many areas of institutional capital, including endowments, local government pension schemes and DC pension schemes both in the UK and their international equivalents. We are seeing increasing levels of commitment from both university-linked spinout platforms and the companies in their portfolios to work together to leverage the emerging frameworks and develop approaches to how they can be applied to the sector.

Health, Wellbeing, and Quality of Life

Enabling people to live longer, healthier lives

Health, Wellbeing, and Quality of Life		Climate and Nature		Inclusive Economy	
Enabling people to live longer, healthier lives		Supporting climate and environmental innovations		Driving breakthrough innovation in technology and computing	
Medical robotics 	Genomic screening 	Energy storage 	Electric aeronautical engines 	Cyber security 	Quantum computing 
AI diagnostics 	Drug discovery 	Novel herbicides/genetic crops 	Novel semiconductor materials & technologies 	Autonomous vehicles / drones 	Photonics 

For illustrative purposes only.



26. Environment, Social, Governance

27. 'Companies see sustainability as integral to long-term value creation', Morgan Stanley, 21 May 2024

28. 'Deep technology' refers to those startups whose business models are based on high-tech innovation in engineering, or significant scientific advances.

29. 'Clean technology' refers to avoiding environmental damage at the source through use of materials, processes, or practices to eliminate or reduce the creation of pollutants or wastes.

Key takeaways



Maturing sector

Companies and capital are scaling in highly impactful global investment themes:

- More than £14.5 billion has been invested in more than 1,800 UK university spinouts over the last 10 years, with over £6.7 billion in the last three years³⁰.
- We believe many of these companies are addressing large societal problems and have the potential to create significant positive impacts on our future by disrupting key industries such as healthcare, cleantech and technology sectors such as next-generation computing.



Targeted access

Key hubs are emerging to improve systematic access across a growing national ecosystem:

- Several top universities generate the most successful companies, with 14 of the 20 top-valued UK university spinouts between 1998-2018 originating from Oxford, Cambridge, UCL, Imperial and Manchester³¹.
- University-linked investment platforms have now established large portfolios of early-stage companies that are progressing into later-stage funding rounds and looking to raise meaningful scale-up capital.



Investor opportunity

In our view, there is a gap in the market combined with investment models that are evolving and aligning to institutional capital:

- We believe UK technology is globally competitive in quality and remains attractively priced compared to the US market.
- There is an increasing amount of capital being invested in the sector, but there remains an underfunded segment of the market in companies raising at the early commercial scale-up stages.
- We see potential opportunities for obtaining preferential access and valuations for those capable of investing at this stage.

30. 'Spotlight on Spinouts: UK academic spinout trends', Beauhurst data, April 2024; last three years is 2021-2023 inclusive

31. 'The university spinout report 2021: which UK universities top the rankings for turning innovation into commercial success?'; Source Advisors, 2021

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Key risks

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