The role of universities in driving overseas investment into UK Research and Development

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About the author

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Ministerial Foreword

In the global race for leadership and investment in science, research, technology and innovation, the UK faces increasingly fierce competition, but we also have some unique strengths: an outstanding heritage of scientific discovery and industrial innovation from the steam engine to the human genome, world-class research universities, a vibrant enterprise and tech venture innovation ecosystem, and one of the world's leading hubs of capital investment in the City of London.

It is on these core strengths that we have built our mission (set out in the *Integrated Review*) to be a Science Superpower and Innovation Nation, coordinated by the National Council for Science and Technology and led by the new Departments for Science, Technology and Innovation and Business and Trade.

As the respective Ministers of State for Science, Research and Innovation and Investment, we are delighted to welcome this important report that highlights the role of our higher education institutions, their fundamental contribution to UK science and technology and how they can leverage their reputations and expertise to attract further inward investment for the benefit of themselves, their communities and the whole of the UK.

Right across the country, our universities are laying the foundations for a new era of UK innovation and prosperity. Investing in the ingenuity and productive capacity of the next generation is the best investment of all. Our universities are on the frontline: inspiring excellence, nurturing the next crop of startups and spinouts, and supporting cutting-edge industries to be more ambitious in scaling-up global impact.

Our universities operate in a global race for talent and research, developing research partnerships overseas while competing with other universities to attract the best international talent. They are also deeply intertwined with their local innovation ecosystems.

Connecting international talent and expertise to local R&D clusters will be key to their success and is a fundamental part of the Government's *International Education Strategy* and *Innovation Strategy*.

Strengthening these local ecosystems – the R&D clusters in which people take risks in pursuit of opportunities – is one of our top priorities in building an Innovation Nation. We cannot become a Science Superpower without being an Innovation Nation, which means mainstreaming innovation across our economy and society, private and public sectors, from the Golden Triangle (Cambridge, Oxford, London) to the excellent research universities in Southampton, Bristol, Swansea, Cardiff, Manchester, Liverpool, Glasgow, Belfast, Dundee, Edinburgh, Newcastle, Leeds and Norwich and many more. We must bring universities, businesses, investors and others together to ensure everyone in the UK can benefit from the opportunities, careers and prosperity that innovation can deliver.

The case studies in this report are a testament to the extent universities are already doing this, while the recommendations serve as a roadmap for where further progress can be made. To put it simply: universities and government, working together and with industry, need to critically assess what it is we're really good at, where we're good at it, and who should know so that we can do more of it.

The truth is that the UK is growing the technologies, sectors and industries of tomorrow through these clusters: from the compound semiconductor corridor in South Wales to the Cornish space and coding cluster; from satellite manufacturing in 'space city' Glasgow to digital health in Leeds; from robotics in Warwick to material science in Manchester; and from AgriTech in Norwich to much, much more.

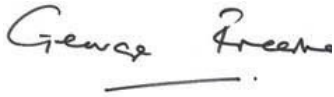
Universities are at the heart of this quiet Fourth industrial Revolution. As we look to grow these clusters, we need to make it much easier for international and domestic investors hungry for opportunities to invest in world-class research, infrastructure, science parks,

incubators, spinouts and funds to find and access opportunities.

As Ministers, we want to be able to go around and signpost investors to investment opportunities across our UK science, research, higher education, technology and innovation ecosystem.

To that end, we are very pleased to see this report has been developed by partners right across the higher education sector, building on a regional pilot in the Midlands with Government support. Our goal is to ensure more places in the UK host world-leading and globally connected innovation clusters, creating more jobs, productivity and growth. Universities are fundamental to this mission.

It is in this spirit that we welcome this report and thank those involved for their valuable contributions.



George Freeman MP

Minister of State for Science Innovation and Technology

Lord Dominic Johnson CBE

Minister of State for Investment

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Methodology

This report is based on 26 interviews with university leaders in innovation, senior officials in what was then the Business Energy and Industrial Strategy (BEIS) Department and the Department for International Trade, R&D investment specialists and HESA data analysis of overseas R&D funding. It incorporates insights from a Midlands Innovation / UKRI roundtable on FDI and R&D held in Birmingham in July 2022 and a similar discussion convened by the Scottish Government and the University of Strathclyde in Glasgow in late August 2022. Chapter four includes insights from data analysis and investor interviews which were commissioned by the Midlands Engine Partnership and carried out by trade and investment specialists, OCO Global as part of the Midlands Pilot.

Executive Summary

While universities already play an important role in attracting Foreign Direct Investment (FDI) to the UK, there is a clear opportunity for this role to be expanded and enhanced through better collaboration between universities, local partners and government. The purpose of this report is to begin a conversation – within universities and across local economic organisations and national government – about what this role looks like, how it can be developed for mutual gain and what benefits this could create for local innovation-led growth and the UK's global competitiveness.

This report argues that a more intentional and coordinated approach could create many additional benefits for universities, local economies and the country as a whole, including:

- helping to overcome ongoing growth and productivity challenges;
- attracting lasting, high-quality inward investment to help 'level-up' local economies beyond London and the South-East;
- supporting the expansion of innovation clusters that have universities at their heart;
- increasing private sector investment into UK R&D, improving the UK's global competitiveness;
- funding an array of university research and knowledge exchange activities, commercialisation and spin-outs; and
- enabling universities to leverage their global connections for greater civic economic benefit in ways that address both local challenges and government priorities

Within a constellation of factors that include industry presence, robust infrastructure and access to human capital, universities provide the foundation for the research ecosystem that attracts investment and offer a pipeline of skilled graduates for industry collaboration and spin-outs. For universities, this source of investment supports

institutions' research and knowledge exchange work, in addition to offering a means of connecting their civic and global missions.

According to HESA data, FDI in university R&D has historically centred in London and the South-East, with health and life sciences constituting the dominant areas for FDI in university R&D. In 2021/22, 29.6% of FDI was concentrated in Clinical Medicine and 9.2% in Biosciences, though investment in Chemistry and General Engineering is a growing proportion of overall university R&D FDI.[1]

FDI is already a significant source of private sector funding into university R&D activities. For example, across the 15 universities in the Midlands, it represented an average of 37% of all industry income in 2019/20 (with 9 percentage points coming from the EU and 28 percentage points coming from the rest of the world).[2] While the UK continues to be an attractive destination for overseas R&D investment, this sort of level of investment cannot be taken for granted – overseas investment in university R&D declined by 6% between 2020 and 2021. This was the first decline in over two decades following year-on-year increases since 1999.[3]

The mix of different policy initiatives and funding mechanisms that, to varying degrees, involve universities in FDI, such as High Potential Opportunity areas, Life Science Opportunity Zones, and Food Enterprise Zones, mean there is a complex policy landscape. In England in particular, the task of navigating this patchwork of initiatives and agencies is made trickier by a fragmented and fluctuating landscape of organisations and resources responsible for trade and investment support, including from regional and sub-regional teams, combined authorities, growth / development Companies, Local Enterprise Partnerships, local authorities, pan-regional partnerships and investment promotion agencies – all of which have some ownership of the trade and investment agenda in different contexts. This patchwork has not yet been brought together or driven by a national policy framework or agency and so attracting FDI remains largely an *ad hoc* or incidental activity, as

opposed to a systematic and strategic priority for supporting local economic growth.

Universities can be complex and sometimes unfamiliar institutions for local partners and overseas investors to navigate and therefore serendipity has sometimes played a larger role than either strategy or structure in developing and delivering inward investment opportunities. An effective incentive structure coupled with a clear approach within universities is crucial to securing FDI, as is working in partnership with local economic growth players. As the case studies in this report show, such partnerships are not only opportunities but necessities, as universities do not have the resources or remit to undertake local inward investment activity in isolation. These coalitions of universities and local partners would also benefit from greater support and clarity about routes-to-market for their propositions. Interviewees highlighted uncertainty about how universities were sometimes meant to engage with an array of local and regional actors to identify, aggregate and articulate their propositions to overseas investors.

Rather than imagining FDI as an end in itself, FDI should instead be reimagined as a means of strengthening regional economies, which then in turn reinforces these locations as desirable for investment. In order to take full advantage of what FDI has to offer both university R&D and regional economies, a coordinated approach across the higher education sector, local, regional and national government and research funders is required. This approach should seek to capitalise on the strengths already present in the UK R&D system, articulate the mutual benefits of FDI into R&D to all partners and engage the higher education sector as a partner in this endeavour.

This scope of this report includes both R&D activity taking place within universities themselves, as well as R&D activity taking place beyond campuses in the wider economy. It includes recommendations and suggestions for how the sector, local growth partners and government might work together to further bolster that role.

Recommendations for government

1. **Government should clearly articulate the importance of increasing FDI into R&D as a driver of both its 'science superpower' and 'levelling up' ambitions.** It should lead the development of an ambitious, innovative and practical set of interventions and incentives in partnership with universities and local economic growth organisations.

2. **Government should ensure this approach is underpinned by a dynamic and up-to-date evidence base.** This needs to help all partners readily identify and effectively promote R&D opportunities to international investors, including through piloting 'what works' activity.

3. **Government should target the world's top 200 R&D investors.** Building upon the cross-Whitehall approach to account management for major industrial partners, organisations should be targeted with a view to securing longer term strategic investment in UK R&D and innovation priorities.

4. **Government should work with universities and local organisations to better develop, aggregate and promote R&D investment propositions.** By creating a clearer route-to-market for R&D-related propositions, a national 'FDI into R&D' concierge service could help both investors and universities navigate the current complex and fragmented landscape of organisations and initiatives.

5. **Government should incorporate FDI into R&D in its ambitious new plans to forge bilateral international research and innovation bridges with partner nations.** It should explicitly seek to encourage more bilateral exchanges, visits and delegations with partner nations that include a focus on FDI into R&D opportunities.

6. **Government should consider how existing, planned and new funding streams might support the FDI into R&D agenda**. This should include the Department for Science, Innovation and Technology, UKRI, Research England and Innovate UK discussing how the Higher Education Innovation Fund (HEIF), the UK Research Partnership Investment Fund (UKRPIF) and the recently announced International Science Partnership Fund (ISPF) might better work together to support this agenda.

Recommendations for universities

7. **Universities should take a more strategically intentional approach to FDI.** This should include the role they play in helping local partners attract FDI into local economies as well as how they incorporate FDI into their own R&D activities – supporting the civic, knowledge exchange and global engagement missions of institutions.

8. **Universities should continue to develop and streamline their research and innovation offers to investors, working collaboratively to develop more ambitious and attractive spin-out portfolios.** This includes considering how they might work together to aggregate their spin-out portfolios in ways that could encourage further investment.

9. **Universities and data agencies should develop a more sophisticated and granular understanding of the full spectrum of FDI into university R&D activity**. Elements of this work are also likely to be a necessary part of the sector's ongoing approach to the Trusted Research agenda.

10. **Universities should aggregate their investment propositions with other higher education institutions, showcasing their complementary strengths to hunt in packs and attract more significant inward investment.**

They should seek to develop more structured partnerships with local economic growth partners and government agencies / initiatives, aligning these propositions with local economic priorities wherever possible.

Recommendations for local economic growth organisations

11. **A more systematic approach should be taken by local economic growth organisations to introduce universities to firms who may potentially or have recently invested in a local area**. This will enable the exploration for opportunities for R&D collaboration, introductions to talent and so on.

12. **Local economic growth organisations should look to work with universities on longer term strategies to secure strategically significant inward investment.** These strategies should reflect existing local economic and innovation strengths, including university research strengths.

1. Foreign Direct Investment into UK R&D

Foreign Direct Investment (FDI) presents significant opportunities for bolstering innovation, creating growth and generating employment across organisations, regions and economies.[4] In particular, such foreign investment holds the potential to bolster substantial UK regional growth.[5]

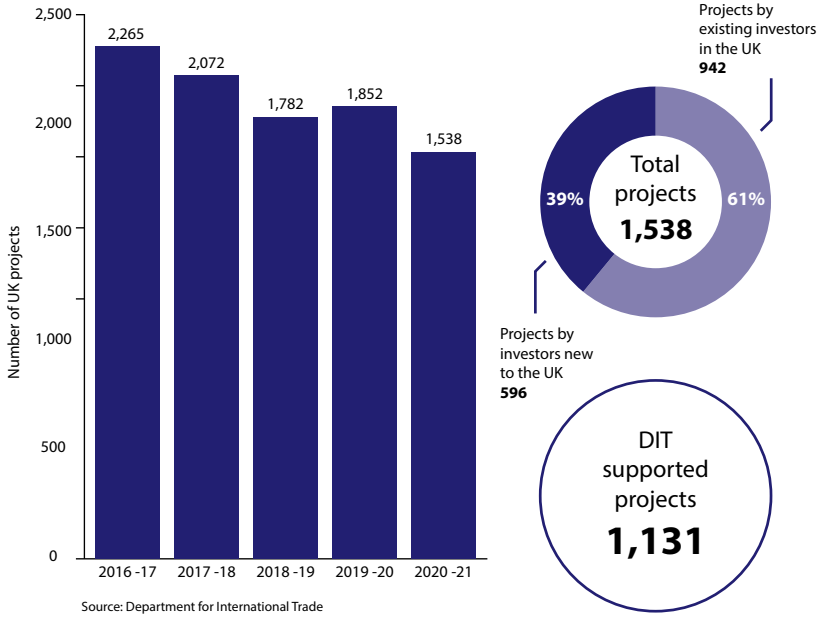
However, global competition for this investment is fierce and research suggests that regional, national and international factors must all work in concert in order to attract FDI to specific regions in smaller advanced industrial countries such as the UK. Within this matrix of factors, policymakers at the national and regional levels have an important role to play in creating an environment that will attract targeted FDI inflows to the UK regions.[6]

With this in mind, the questions this report seeks to address are as follows:

- What does the UK policy landscape look like in terms of attracting FDI and securing long-term investment?
- How are universities currently incentivised to pursue this type of investment?
- What best practice exists?
- How can universities be supported to refine their offer and engage productively with local and global actors to secure investment?
- How do universities feature in what investors look for when deciding where to invest in R&D?
- What policy and funding mechanisms would support long-term FDI into universities and their surrounding areas?

Support from policymakers is crucial to capture the benefits of foreign investment, especially given the lingering effects of COVID-19 on overseas investment, which declined 13% across Europe in 2020. As Figure 1 shows, FDI into the UK has also not yet recovered from the impact of the Brexit referendum. While it is now beginning to recover – according to the *2022 EY Attractiveness Survey*, the number of overall UK FDI projects grew from 975 to 993 from 2020 – the UK still has only 16.9% of FDI projects in Europe, well below its 2015 high of 21%.[7]

Figure 1: FDI projects supported by the Department for International Trade in the UK, 2016/17 to 2020/21



Source: Department for International Trade

Even though the UK's share of European projects has been falling, the opportunity for FDI job creation in the UK remains strong and higher than in many European counterparts. In 2021, UK jobs

created through FDI numbered 60,372 – the highest in Europe. FDI in the UK also created an average of 68 jobs per project, compared to 38 in France and 48 in Germany. London remains the leading destination for FDI in Europe as well, attracting 394 FDI projects in 2021, in contrast to 133 in Paris and 140 in Madrid.[8]

This is not to say investors are only interested in investing in London, however. EY found that 61% of investors surveyed had heard of the 'levelling up' agenda, and 59% said policy related to levelling-up would influence their location decisions, including aiming to invest where government support is available.[9] But converting this interest into actual investment outside of London and the South-East remains a significant challenge.

Crucial among the factors that attract FDI is the presence of universities.[10] The *2022 EY Attractiveness Survey* highlights the continued primacy of 'talent' as the main motivating factor for investors. Firms also emphasise the importance of education, technology and innovation in making decisions. The *EY Survey* also shows the UK's capacity in these areas is increasingly perceived as a reason for investment. For example, 50.2% of investors rated the UK's education system as 'very attractive' in the 2022 survey, while 28.5% found UK research and innovation capacity very attractive (as opposed to only 17% in the year previously). The percentage of firms interested in investing in UK R&D has also doubled since the previous survey, from 8% to 16.2%.[11] This presents an opportunity for the UK to capitalise on growing interest in its capacity for foreign R&D investment.

What does FDI into university R&D look like?

Foreign Direct Investment (FDI) into universities has long been a part of the UK's research funding infrastructure. In the UK, the Midlands Pilot developed three broad categories that university FDI tends to fall into:

- **physical space:** this includes companies taking space in science, innovation and enterprise parks or in proximity to industry-focussed/ research labs;
- **direct investment into the research base:** for example, through business investment in equipment or a particular research activity, or major research facilities; and
- **commercialisation:** including equity investment and patient capital, such as the purchase of intangible assets, shares in spin-out portfolios or licenses.

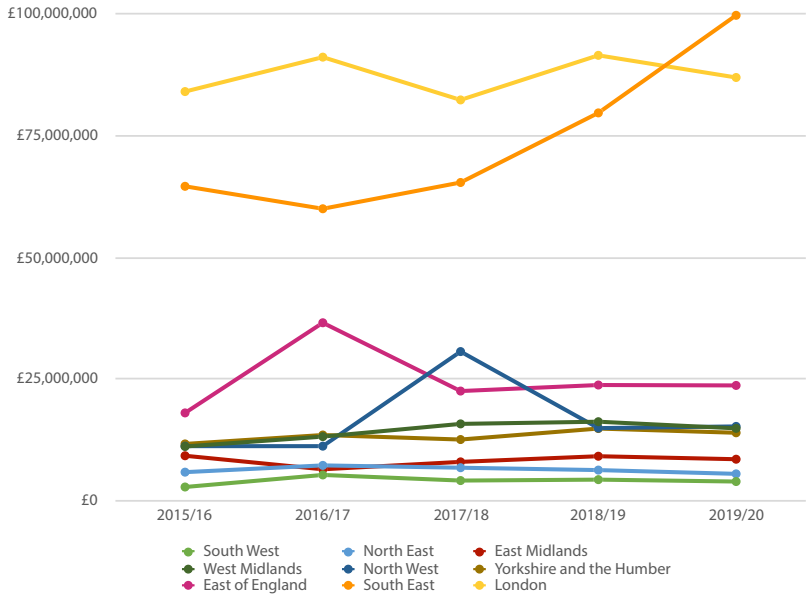
There are also examples of universities seeking investment into their own capital expansion plans (for example, science and innovation parks) and, beyond, R&D some institutions have secured inward investment for educational provision (for example, operating a London campus and course portfolio). FDI makes up a significant proportion of UK R&D funding, amounting to £1.47 billion – or around 16% – of UK R&D funding in 2019/20.[12] But though this funding has grown in recent years, it cannot be taken for granted; overseas investment in university R&D declined by 6% between 2020 and 2021.[13]

Table 1: Overseas funding by nation[14]

England and Devolved Administrations	2019/2020 Foreign Funding Total (£000s)	% of Funding for 2019/2020 Period
England	£1,231,025	83.5%
Northern Ireland	£23,688	1.6%
Scotland	£163,008	11.1%
Wales	£56,397	3.8%
Total	**£1,474,118**	**100%**

England makes up the largest proportion of FDI capture in the UK by far, accounting for 83.5% in 2019/20, with Northern Ireland on the other end of the spectrum at 1.6% of the total. Wales and Scotland accounted for 3.8% and 11.1% respectively.[15]

Chart 1: R&D FDI Investment into English Universities Regions Change Over Time[16]



The level of detail in the available data on the nature of FDI in the UK is limited. For example, cost-centre data related to FDI is only available for 2019/20 and 2020/21, which poses challenges in tracking how FDI has varied by subject area over time. The granularity of this data also poses challenges; for instance, the Higher Education Statistics Agency (HESA) data only tracks ' Overseas (EU)' and 'Overseas (Other)' as income sources, meaning institutions are not asked to report country-specific data. In addition, the type of funder – such as 'Charity', or 'Industry' and so on – lacks detail, leaving other characteristics of investors (for example, the size and sector of firms) unclear.

While the HESA data largely capture recovery of indirect costs associated with research, capital grants, and intellectual property (IP) purchases, the numbers do not account for FDI that universities

play a part in capturing (such as for local businesses), where their presence is a key factor in a decision to invest but the money does not flow directly into university finances. More broadly, inconsistency in how FDI data is recorded across various sources creates challenges in capturing what the national picture looks like – for example, the EY investment monitor does not capture mergers and acquisitions or retail activities, while the government's data track the number of FDI projects in a given geography and the Office for National Statistics (ONS) tracks 'flows' of investment.

Nonetheless, some trends can be seen in the HESA data.[17] By subject area, Clinical Medicine far outstrips other disciplines in terms of investment, accounting for 29.6% of all UK investment in 2020/21. This is followed by a significant (and growing) proportion of FDI focussed in the Biosciences (9.2%), Physics (7.8%), General Engineering (5.1%) and Chemistry (5.1%). The Clinical Medicine income is concentrated in London (12.6%) and the rest of the South East (6.9%) while other subject areas are more evenly distributed – for example, Scotland leads in the Biosciences and Chemistry investment is broadly distributed between London (0.5%) and the rest of the South-East (1.0%), the East of England (0.6%), Scotland (0.8%) and the North-West (0.7%).[18]

Universities, clusters and the innovation ecosystem

Research has been undertaken to explore the extent to which industrial clusters influence and attract FDI. Defined by Michael Porter as 'geographic concentrations of interconnected companies and institutions in a particular field,' clusters can consist of suppliers of specialised inputs (such as components, machinery and services) and providers of specialised infrastructure, as well as governmental institutions and universities.[19] Within discourse around regional regeneration, research suggests the presence of such clusters in a particular sector can be a crucial component to regional competitiveness.[20]

In the UK, especially, historical areas of manufacturing – such as steel in Sheffield or ceramics in Stoke on Trent – have tended to demonstrate the positive agglomeration effects created by clusters. While much of clustered R&D activity has been concentrated in London and the South East, there are also significant areas of R&D activity on machinery, motor vehicles, transport and aerospace in the West Midlands while firms conducting R&D in chemicals and pharmaceuticals have a strong presence in the North-West.[21]

Research has shown a strong correlation between higher concentrations of FDI and increased productivity, though the precise causal role of FDI in driving cluster development remains less established.[22] Some research suggests a mutually reinforcing relationship between FDI and clusters of skills, infrastructure and talent, and then further FDI. For example, in the US:

> *High quality investors seek out the skilled workforce, quality infrastructure, robust supply chains and the innovative ferment associated with strong clusters, which themselves are usually found in metropolitan regions. In that sense, clusters signal to other companies in the same industry that a particular location is an advantageous one.*[23]

Rather than imagining FDI as an end in itself, FDI should be thought of as a means of strengthening regional economies, which in turn reinforces these locations as desirable for investment in a virtuous circle.

Symbiotic relationship between universities, industrial clusters, and FDI

Research suggests cultivating industry clusters is important to attracting FDI.[24] Rather than attempting to create brand new clusters, however, a more effective strategy lies in cultivating and consolidating regional strengths that have already been established. Lisa De Propris and Nigel Driffield, for example, note that while clusters can generate significant productivity spillovers from FDI,

this tends to occurs in pre-existing clusters.[25] Other research has explicitly warned against trying to create new clusters, as the 'pre-existence of a cluster means that an industry hotspot has passed the market test' and 'efforts at wholesale invention will likely be fraught with selection issues, inefficiency, and probable failure and waste'.[26] Mapping existing R&D strengths that attract FDI on a regional scale is challenging for a variety of reasons, however, and HESA data can prove only modestly helpful in this respect, given the multi-year lag time in publication and limited description of what FDI looks like and where it goes.

The specific role of universities in attracting FDI remains an underexplored element in the literature. Universities – particularly a geographical concentration of them – have the potential to contribute to the attractiveness of a region on several levels, from producing a pipeline of highly skilled workers to providing the underlying infrastructure needed for research and development.

Arkadiusz Michał Kowalski has argued for the key role that clusters can play in facilitating university innovation generally: 'Cluster structures differ from traditional local production systems because they bring together not only enterprises, but also scientific and research centers such as universities and laboratories.' This structure in turn 'facilitate[s] cooperation between R&D and educational units and industry' and places 'this cooperation in the context of innovation, creating new enterprises and promoting knowledge transfer.' If clusters help facilitate innovation for universities, however, they also help these clusters in turn attract FDI. As these clusters then become internationalised, the knowledge environment created in part by universities becomes a key element of attractiveness: 'One of the most important sources of clusters' attractiveness for FDI is the knowledge environment, understood as an ecosystem conducive for knowledge production,

dissemination, development and accumulation.'[27] Mary Gotz further argues that the 'knowledge environment' provided by universities offers not only the skilled labour force that attracts FDI, but also the 'necessary elements for facilitating the dissemination and accumulation of knowledge, such as social networks, spillovers, etc.' Comparing the Danish and Polish contexts, however, Gotz finds that not all knowledge environments are created equal, and the reputation of those environments – including that of its universities – plays a significant role in their attractiveness to investors.[28]

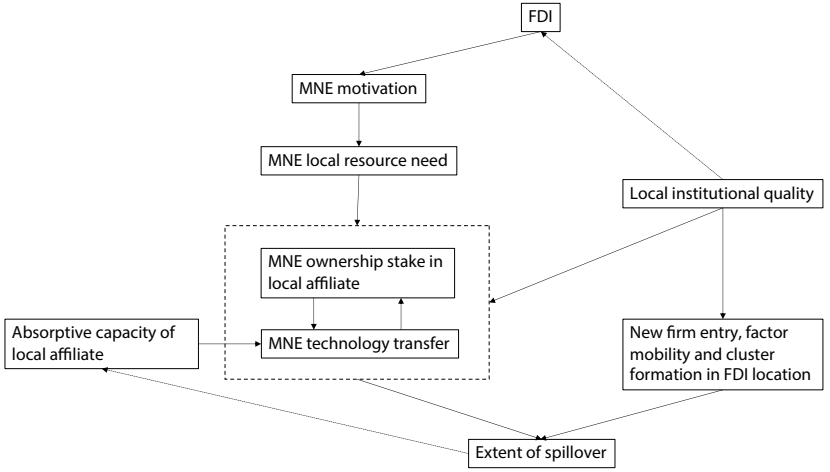
Some research does point to the importance of universities to local economic growth through their role in innovation ecosystems. The recently published Centre for Cities report *At the frontier: The Geography of the UK's New Economy* concludes:

> *There are a number of research papers using international evidence that suggest universities have a local innovation impact. Many of these find that the impact tends to play out in sectors that are related to the university's specialisms, and is more evident where they are research-intensive institutions and in higher-skilled areas. … What is less clear is what the mechanism is to make this happen and what the impact of universities is on wider innovation, because most studies use patent rates as their measure of innovation.*[29]

Emerging from this literature, then, is a mutually reinforcing relationship between clusters, universities and FDI, the symbiotic presence of which is consistent across sector contexts, albeit in different forms. The clustering of industry and universities within a regional ecosystem creates relationships that aid university innovation and, likewise, the presence of robust universities in turn then helps attract investment.

The role of universities in retaining FDI into R&D and local economic spillovers

Understanding the best ways of 'attracting' foreign investment cannot be the sole focus of universities, local partners and government when considering FDI. Just as important is understanding what makes it 'stick' once it has been secured, and there is a distinction to be made between what some might call 'high-quality' FDI and that which leeches away after a few years and ceases to contribute to the local economy. There is extensive academic literature on the contribution inward investment can make to economic growth, particularly through impacting on both productivity and the number of high skilled jobs.[30] The relationship by which this is typically expressed can be illustrated with reference to the following diagram (in which MNE stands for Multi-National Enterprise):[31]



This illustrates the nature of the relationship between inward investment, and the secondary, or spillover benefits that occur as a result of the investment. While in the aggregate, most of the evidence points to a positive effect on productivity from a region

attracting inward investment, the evidence also is this varies a good deal (largely based on the factors illustrated above).[32]

Taking this underlying research, data and case studies as its premise, this report first explores the key opportunities for and challenges to attracting and retaining FDI, before moving on to case studies that demonstrate examples of how universities have attracted FDI in partnerships across the country. It will then examine investors' perceptions of UK R&D environments via interviews, before concluding with policy recommendations on how to support UK universities better in attracting FDI and acting as drivers of trade and investment.

2. What is the role of universities in attracting and retaining FDI into R&D? Barriers and incentives

The benefits to be gained regionally from FDI are clear, and yet universities face significant barriers to attracting this type of investment, largely through 1) the incentive structure in place for universities to pursue this investment; 2) the process of refining and communicating the offer to investors; and 3) a lack of coherent national FDI policy context.

Incentivising and enabling universities

FDI can contribute to universities' research and innovation goals as well as the wider civic university agenda.[33] However, the fundamentally competitive nature of universities means they are not always incentivised to collaborate in creating clusters or investable propositions with surrounding institutions. This difficulty was mentioned frequently in stakeholder roundtables and individual interviews with university leaders as they contemplated how to create buy-in for clusters and joint propositions that could mean funding – at least initially – goes to a nearby competing institution, rather than their own.

As the case studies detailed in the next chapter demonstrate, these challenges to competition demand a flexible, long-term collaborative culture in order to pursue FDI. This challenge of competition has played out in industry clusters more generally, and research suggests the spillover effects from the increased FDI associated with clusters more than compensates for the impact of increased competition between firms.[34] This trend has not yet been empirically proven to occur with universities; however, anecdotally, the effects of attracting investment to an area, even if not immediately to a particular university, have the potential to leverage funding for surrounding institutions in the long term.

The evolving geopolitical environment has also made universities wary of some forms of international engagement. The recent National Security and Investment Act (2021), for example, created a new notification regime for firms and universities during acquisitions.[35] While the sector has responded positively to the Trusted Research Agenda and has been generally supportive of the Act and its aims, the legislation creates an additional administrative burden, which demands resources that might otherwise be used for attracting investment. The reputational risk posed by engaging in a collaboration that is later blocked has also raised concerns over a 'chilling effect' that the Act may impose on attracting foreign investment.[36]

Refining and communicating the offer

Universities are only one part of an investable proposition. Innovation ecosystems consist of university, industry and local government actors, which all must be working in concert to attract investment. This involves aligning strategic priorities and building relationships with local industry as well as local authorities. While, as Tomas Coates Ulrichsen notes, universities' internal support structures for building these types of partnerships have improved in recent years, creating and maintaining these relationships can still be resource intensive, to the point where there may be a limit to the number of strategic partnerships a single university can host.[37]

Once the regional offer has been refined, there is the challenge of communicating that offer to relevant investors. For this communication to be effective, the right knowledge exchange processes must be in place so that complex research is presented in ways that are accessible to investors while retaining the necessary technological detail. The last Science and Innovation Audit took place in 2016 and there is a need for this evidence-base to be refreshed. Whilst some local economic growth organisations have worked with universities to develop R&D focused 'pitchbooks' (for example, the West Midlands Growth Company includes R&D and

university assets in their sector prospectuses), this seems to be sporadic rather than systematic or strategic.

The need for coherent national policy

Coordination is not only needed between universities and local government. On a national scale, policy responsibility for FDI into R&D is fragmented, falling somewhere between the new Department for Science, Innovation and Technology (DSIT), the Department for Business and Trade (DBT) and the Department for Levelling Up, Housing and Communities (DLUHC) in addition to a range of arms-length and local bodies. While the precise nature of some of this responsibility remains uncertain following the restructuring of BEIS and DIT and the creation of DSIT and DBT in the February 2023 reshuffle, Table 2 below offers an approximation of how those responsibilities are likely to fall within the new departmental remits.

Table 2: Collation of bodies related to FDI in the UK

Relevant Body		Relation to FDI
Government departments	Department for Science, Innovation and Technology (DSIT)	• The Science and Innovation Network (SIN) has responsibility for creating international research partnerships and promoting growth and prosperity for the UK research sector; • Catapult network aims to support innovation and bridges the gap between research and industry;[38] • The Office for Life Sciences supports the Life Science Opportunity Zones, which have a focus on securing FDI into university R&D; • Home of the Innovation and International Research Strategies; • The Office for Science and Technology, moved from Cabinet Office in February 2023; and • The Research Collaboration Advice Teams provide advice to universities. • *Host UKRI – see below*.

Government departments	Department for Business and Trade (DBT)	• Responsible for marketing the UK as a host country for inward investment (such as through trade delegations) and creating measures that enable overseas investment; • DBT in-country representatives allocated to support investment into sector; • DBT supports the High Priority Opportunities Areas (HPOAs) programme, which promotes major place-based investment opportunities across the UK, to potential investors; • DBT supports the Freeports Programme; • DBT hosts and promotes the UK investment Atlas;[39] • DBT have regional offices and teams, albeit these have different structures and geographical focuses dependent on whether they are for trade or investment; • The Office for Investment was created under DIT to provide a sharper focus on significant investor relationships and major projects (£100 million+). They have recently appointed a Director of Levelling Up; and • Jointly host the Prime Minister's International Education Champion and his team.
	Cabinet Office / Number 10	• The GREAT Campaign promotes the UK's offer across trade, visitor economy and inward investment and has a focus on particular sectors. This includes a focus on the new 'Talent' Visa (the Office for Talent seems to no longer exist in its previous form); • As of February 2023, the Cabinet Office houses the Investment Security Unit (ISU) which screens potential foreign research investments as legislated through the National Security and Investment Act (2021).

Government departments	Department for Levelling Up, Housing and Communities (DLUHC)	• Levelling Up White paper promised to more evenly distribute research funding around the country;[40] • DLUHC oversee the UK Shared Prosperity Fund and Levelling-Up Funds which include the opportunity to bid for activity that supports inward investment; • DLUHC support England's Pan Regional Partnerships; • DLUHC co-host with DSIT the Cities and Local Growth Units across England; and • DLUHC will fund the new 'Investment Zones' which will be refocused on universities and innovation clusters.
	Foreign, Commonwealth and Development Office (FCDO)	• Jointly fund and support the Science and Innovation Network (SIN); and • Senior diplomats support outbound FDI attraction efforts.
	Department for Education (DfE)	• Jointly host (with DBT) the Prime Minister's International Education Champion and his team; • Hosts 'Global Britain Unit' focused on multi-lateral international education policy and exchange; and
	Department for Culture, Media and Sport	• The government's response to the De Bois Review of Destination Management Organisations (DMOs) recommends funding for 'licensed' local organisations – many of whom combined visitor economy with inward investment promotion.
Arms-length bodies	UK Research and Innovation (including Research England, Innovate UK)	• Higher Education Innovation Fund (HEIF); • UK Research Partnership Investment Fund (UKRPIF); • Innovate UK fund and manage the three new Innovation Accelerators to bolster regional R&D strengths;[41] • Innovate UK Secured significant funding for 'levelling-up' activities in the most recent CSR.

Arms-length bodies	British Council	• Going Global Partnerships programme provides seed funding to enable new research partnerships and Alumni UK network will create professional network of former UK international students.
	Scottish Development International	• Scotland's trade and foreign direct investment agency. Offices in 30 countries around the world; and • Has successfully worked with Scottish universities on FDI into R&D promotion for many years.
	Scottish Enterprise	• Global Scot Programme uses Scottish University Alumni around the world as 'B2B' mentoring for Scottish businesses looking to export internationally.
	Trade & Invest Wales	• Trade & Invest Wales is the official Welsh Government Foreign Direct Investment marketing initiative for Wales.
	Invest Northern Ireland	• Investment agency for Northern Ireland, part of the NI's Department for the Economy; and • Runs the national 'Graduate to Export' programme. Graduates will spend six months in Northern Ireland familiarising themselves with the business before moving to an export market for up to 12 months to complete a market research project aligned to the company's strategic plan.
Local actors	Combined Authorities (various iterations)	• Mayor-led local organisations. Well established CAs (West Midlands, Greater Manchester, West Yorkshire, Teesside) all seem to have a clear focus on securing inward investment; and • 'Trailblazer' Devolution Deals currently being negotiated in the West Midlands and Manchester may include some element of devolved responsibility and funding for trade and investment.

Local actors	Pan-Regional Partnerships (PRPs)	• Supported by a mixture of government and local partners – with a remit to help promote global investment.
	Local Enterprise Partnerships (LEPs)	• Inherited the investor key account management role from RDA; • Distributor of ERDF/ ESIF funding for innovation driven local growth; • Have sometimes acted as bridge between universities, businesses, DIT, and local trade delegations from abroad; and • Future of LEPs continues to be uncertain following Levelling-Up White Paper – different capabilities and focus in different places.
	Local Authorities	• Have the primary legislative responsibility for economic growth; • Fund Investment Promotion Agencies/ Growth Companies in many parts of the UK; • LAs in most Core Cities maintain focus on inward investment due to role as planning authority; and • Often have strong relationships with universities.
	Local Growth Companies / Investment Promotion Agencies	• Promotes local growth and investment, including for example through prospectuses; and • Patchwork of organisations, resources and funding sources across the UK.

Coordinating approaches between institutions and government departments presents a challenge, compounded by the coordination that must then take place with local government, industry and universities.

Research has shown that attracting R&D-intensive FDI demands government making connections between policy areas usually thought of separately – most especially, for example, innovation policy and inward investment promotion.[42] But to fix this requires robust departmental coordination that is currently in nascent form.

UKRI funding mechanisms have not explicitly prioritised the capture of international investment, although some have nonetheless been utilised to pursue these aims. In the English context, the Higher Education Innovation Fund (HEIF) wields a £260 million budget to support knowledge exchange activities between academia and industry, with an impressive return on investment, having been shown to generate £8.30 for every £1 of funding.[43] The Research Partnership Investment Fund (RPIF) incentivises industry partnerships to unlock private investment in R&D, with a requirement for projects to leverage double match funding.[44] Similarly to HEIF, universities have leveraged this fund in some instances to attract FDI – for example, with the University of Sheffield's Advanced Manufacturing Research Centre (AMRC) 2050, which partnered with Boeing.[45]

UUK International's 2020 report *Future international partnerships: putting the UK at the heart of global research and innovation collaboration* recommended these funding streams should have new strands as well as international calls specifically dedicated to support universities in taking risks and expanding their networks to collaborate with businesses around the world.[46] These dedicated funding streams and calls could go a significant way to facilitating this investment.

There are a number of practical ideas that could incentivise greater pursuit of FDI across the university sector, including:

- dedicated increases to the Higher Education Innovation Funding (HEIF) scheme that enable universities to work with local partners to target FDI into R&D;
- a new Global Collaboration Fund launched as part of the UK's 'Plan B' for non-Association with Horizon Europe;[47]
- an internationally-focused UK Research Partnership Investment Fund (UKRPIF); and

- a regional scheme that places international graduates with small-to-medium sized enterprises (SMEs) to support international trade and investment, building on a legacy of similar schemes across the UK and the highly successful Invest Northern Ireland 'Graduate to Export' scheme.[48]

However, these incentives must be complemented by greater clarity and ownership of the FDI into R&D policy agenda across Whitehall. As the new departments created through the February 2023 machinery of government changes develop their plans, this clarity will be even more needed.

3. Approaches to attracting FDI: university case studies from across the UK

Part of the challenge in understanding and identifying best practice in FDI attraction is the sheer variation in approaches and political and economic contexts in which this investment takes place. Regional strategies and activities should reflect their unique regional context, from the available infrastructure and physical assets to existing patterns of investment and trade.[49] Several themes emerge from our case studies in terms of what constitutes a successful 'pathway to FDI', including:

- long-term relationship-building with local government, industry and, often, other universities in the region;
- robust knowledge exchange processes within universities and with external partners; and
- support from local and national government and funding bodies to build relationships with potential investors.

These case studies explore further how these themes play out within specific regional contexts.

Quantum computing in Scotland

Scotland's innovation ecosystem is a fundamental part of the UK National Quantum Technologies Programme (NQTP), driven by collaboration between national and local government, academia and agencies that promote investment. In relation to the growing quantum computing sector in Scotland, for example, Julian Taylor (Executive Head of International Business Engagement at the University of Strathclyde) said the approach that his university and the Universities of Edinburgh and Glasgow has taken includes:

- collaboration between academics at Edinburgh, Glasgow and Strathclyde Universities that enables the development of a highly-differentiated world-class proposition;

- direct engagement with the Scottish Funding Council, Scottish Government and Scottish International, building an 'ecosystem' mindset;
- procuring funding from the Scottish Government to engage in active prospecting, which allows universities to move outside of existing relationships to seek investment and to work with professional prospectors to identify relevant companies on the US west coast, where the majority of investment activity in this sector resides;
- training Scottish Development International – Scotland's trade and inward investment agency – in the basics of quantum computing, to better enable them to open doors; and
- university staff working directly alongside FDI specialists when meeting prospective investors, bringing deep subject matter expertise to the fore.

Through this engagement, Taylor said, it became clear that Scotland was not on the radar in the same way that competitors in Germany and Ireland were in this field. This engagement therefore offered an opportunity to put not only Strathclyde but also the whole of Scotland on the map.

Taylor also described the importance of building confidence with senior leadership for an initiative that could, by virtue of involving multiple universities, generate income for other universities as well as his own. He countered these concerns by encouraging a longer-term mentality:

> *The first project might end up in Edinburgh, and Glasgow – but the second or the third and the fourth one will come here, and the collaborative spirit will mean that our academics are likely to contribute to all relevant projects. If we focus on the micro from the start, we'll get nothing. So, let's get a reasonable piece of something big instead of a big piece of nothing.*

Jim Ashe, Director of Innovation, at the Bayes Centre at the University of Edinburgh, notes the process of attracting investment is a 'double-sale', in that attracting investment means not only selling the proposition to investors but also to academics, who have other priorities outside of potential commercial opportunities. From his perspective, a crucial element in FDI attraction involves 'building organically' on the existing interests of academics, as well as the relationships they have already established through their research.

Ashe also pushes back against the usefulness of conceptualising FDI capture through geographical clusters when it comes to certain technical fields and emerging technologies such as quantum computing. His University's partners range as far as the University of Oxford-led Quantum Computing and Simulation hub (QCS), for instance, and Rigetti Computing based in California. In this sense, the field is 'a world-wide playing field' that cannot be limited to a single region, even where regional collaboration is taking place.

Links, however, with government are crucial. For example, the Scottish Government is integrating strategies to attract FDI into its new Innovation Strategy, building on the input of key stakeholders across academia, local councils and research funders.

Life sciences opportunities in the West Midlands

FDI into universities in the West Midlands is supported by the Midlands Engine, the local pan-regional partnerships, local government structures (including the Combined Authority), and the West Midlands Growth Company.

The West Midlands Growth Company has a public-facing website that works as a point of entry and subsequent triage service for potential investors, offering to connect investors with the right networks, advise on locations and provide sector-specific market research. It describes the target sector strengths for the region, such as advanced manufacturing, low carbon, life sciences and

digital and creative technologies. Alongside each of these sector offers is an investment prospectus that describes the economic and geographical strengths of the region – for example, in the life sciences emphasising its four leading medical schools, 87,000 STEM students and its place as a home to the largest genomics lab hub in the UK.[50]

The relationship between the University of Birmingham and the West Midlands Growth Company has been one of 'mutually important partners when it comes to driving opportunities for FDI into the region', according to Steve Taylor, Head of Strategic Research Development at the University of Birmingham. The success of this partnership has been predicated on strong relationships that exist at the operational, delivery and strategic levels in both organisations. Taylor also draws attention to the importance of culture and tourism in building the relationships that lead to FDI – for example, the Commonwealth Games held in Birmingham in the summer of 2022 helped promote the region to potential investors abroad.

Taylor further notes how the process of mapping and developing regional strengths has evolved in recent years to redirect resources into emerging areas. Where previous mapping exercises have largely focussed on capturing what industry already exists in a region – such as automotive manufacturing in the Midlands – more forward-looking approaches have now sought to understand where opportunities for growth and future needs might lie. The new Innovation Accelerator – one of three announced in the 2022 *Levelling Up* white paper – will aim to capitalise on the emerging strengths identified in the West Midlands *Plan for Growth*.[51] These more recent mapping approaches have identified the life sciences as a significant area of emerging opportunity, not only because of the academic expertise found at local universities, but also because of geographical elements such as a large and diverse population well-suited for running clinical trials. Reflecting this

potential, Birmingham Health Partners (BHP) was named one of the six government Life Science Opportunity Zones in 2021 to recognise the sector-leading innovation and opportunities in the area.[52]

Medical innovation in the Oxford-Cambridge supercluster

The Oxford-Cambridge region is a longstanding area of strategic interest for the UK – though the development of this cluster has faced uneven and inconsistent support.[53] When the National Infrastructure commission launched the original Oxford-Cambridge Arc plan in 2017, it faced significant opposition over the housebuilding that was assumed. Then Prime Minister Boris Johnson shelved the plans for the Arc in 2022, citing priority for levelling up projects in the North of England. However, in January 2023, signalling an attitude shift in Whitehall, Michael Gove committed £2.5 million to a new regional partnership board to help the region's brand 'compete for investment on the global stage.'[54] Bookended on either side by Oxford and Cambridge, the area hosts nine universities that form a pan-regional partnership: Buckinghamshire New University; the University of Oxford; Oxford Brookes University; the Open University; Cranfield University; the University of Northampton; the University of Bedfordshire; the University of Cambridge; and Anglia Ruskin University.

Phil Clare, former Director of Innovation & Engagement at the University of Oxford, describes the journey of engaging his university in wider regional activities and endeavours. His first step was calling up other universities in the region to discuss how they might work together, and coming out of these discussions was the eventual formation of the Arc Universities Group.[55] Through conversations with other universities in the Arc, it became clear that while each had different strengths, these strengths could be complementary; for example, while R&D might be concentrated in Oxford and Cambridge, the skills needed to support foreign investment – and the capacity to build those skills – were more likely to be found elsewhere in region. 'When you look at the number of jobs the space

sector aspires to create in Oxfordshire in the next 20 years', he says, 'where are they going to come from? Oxford and Cambridge cannot suddenly create capacity for 1,000 Engineering graduates.'

In the Oxfordshire area, Clare says that Oxford Science Enterprises (OSE) – a university-affiliated investment company – has played a crucial role in investing in and incubating spin outs from the University of Oxford. For example, in October 2020, OSE announced the sale of MiroBio, which specialises in therapeutics for inflammatory diseases, for £332 million (USD$405 million).[56]

Sebastian Johnson of the Oxfordshire Local Enterprise Partnership (OxLEP) also spoke of the importance that universities play in the development of a local industrial strategy, the most recent iteration of which was written in partnership with universities in the region. According to Johnson, 'Universities are incredibly important' in promoting the local ecosystem:

> *Life sciences companies, for example, if they're looking at Oxfordshire as an investment opportunity, invariably they'll ask what the links into the University are. We can then use that context to get them in front of the University's business development teams.*

Likewise, OxLEP can provide university staff with spinout opportunities, account management and support to engage with government.

Healthy Ageing in the North-East

The North East of England topped the list of UK regions for new job creation from inward investment, according to annual statistics from the old Department for International Trade (DIT).[57] Analysis carried out by Northern Powerhouse Partnership revealed that the value of FDI into the North of England rose by almost three quarters in the past five years.[58] The North increased its share of the UK's FDI projects from 19% to 33% over the same period.[59]

Newcastle University works closely with the inward investment agency, Invest Newcastle, to attract companies looking to locate and invest in the North-East. The University's Pro-Vice-Chancellor for Engagement and Place, Professor Jane Robinson, says this partnership approach is key to the region's success in attracting FDI:

> *It is the attraction of access to the University's research and innovation expertise, and critically, to the pool of highly-skilled graduates, that makes the difference when the investment agency attends annual events like MIPIM [Le Marché International des Professionnels de L'immobilier] and UK REiiF [Real Estate Investment and Infrastructure Forum], the forum aiming to drive economic growth and inclusive investment across the UK.*

QuantuMDx was encouraged to move to Newcastle as an early start-up in 2008 by Professor Sir John Burn and was supported by Newcastle University as it grew to become a successful biotech company based in the city, with an international reach. More recent arrivals, include global digital solutions company, Monstarlab, and US-based cybersecurity company, Arctic Wolf.

Professor Robinson also points to the landmark £350 million innovation district, Newcastle Helix, a public-private sector partnership between the University, Newcastle City Council and Legal and General, as playing a key role in their future FDI attraction. The University purchased the 24-acre site in 2005 with the City Council and the then Regional Development Agency One North East. Professor Robinson says:

> *The vision for Helix was to regenerate this area of the city, creating a sustainable innovation zone that combined commercial and residential space with the University's cutting-edge research and education facilities. Helix is a great example of how critical mass is starting to attract more businesses. Access to talent is a key issue for companies who have recently*

located on the site, such as WombleBondDickinson and biotechnology company, Iksuda.

Invest Newcastle has also sought to capitalise on the University's global connections. In collaboration with the City Council and Newcastle-upon-Tyne Hospitals NHS Foundation Trust, they are leading the development of a campus for ageing and vitality to the west of the city centre. Alongside these partners, they secured HPO (High Potential Opportunity) status with the Department for International Trade (DIT) for Healthy Ageing, to position Newcastle as a global leader in longevity and health ageing across the whole lifecycle.

November 2022 saw the launch of Newcastle University's investment prospectus, promoting a range of investment opportunities aligned with these innovation clusters, coordinating with other universities and partners across the North-East.

Net Zero in London

Imperial receives around 15% of its research funding from industry, and recently launched a joint centre with Hitachi Europe Ltd and Hitachi Ltd to advance decarbonisation and climate repair.

Drawing on Imperial and Hitachi's expertise in a range of engineering and business disciplines, the Hitachi and Imperial Centre for Decarbonisation and Natural Climate Solutions aims to accelerate the development and commercialisation of new technologies and nature-based solutions in tandem with new thinking in social and economic policy. Initial research projects, which focus on carbon management, the decarbonisation of energy and transport, carbon dioxide removal and biodiversity, aim to accelerate the transition to zero pollution in the UK, Japan and worldwide.

The Centre's launch in 2022 marked the progression of a partnership that began through an early collaboration between Imperial and Hitachi Energy on a digital energy demonstrator. Dr Francesca

Pietra, Director of Industry Partnerships in Imperial's Faculty of Engineering, says:

> *Hitachi Energy's leadership were interested in helping us establish a broader relationship, and to ensure the parent group would also be involved. To plant the seed, we used examples of Imperial's existing strategic industrial partnerships to demonstrate our track record of developing sustainability solutions in a range of disciplines and applications. We pitched the opportunity for a wider partnership not only as a platform for research and training but also for accessing our innovation and policy ecosystem – our start-up community, the Imperial Business Partners membership network, the Imperial Policy Forum and our entrepreneurship hub the Enterprise Lab.*

When senior managers from Hitachi came to London at the invitation of what was then BEIS, they invited Imperial to meet to discuss research strategy. Professor Mary Ryan, Vice-Provost (Research and Enterprise), ascribes Imperial's success in winning the investment from Hitachi Ltd in Japan in large part to the shared values they uncovered in that meeting. 'I have never had a meeting like this. Usually you do a "show and tell" about current research,' she says. 'But in this case we talked about our mission, values, thought leadership in the sustainability space, what we wanted to achieve, and what they did – and it became clear that we had very similar values and ideas around systems thinking.' An alignment of values, she says, 'has allowed us to be ambitious. Because we're institutionally aligned, we've been able to partner on an institutional level and then go on to pull individual academics in.' This example is then in contrast to the model in which FDI arises out of individual relationships between academics; by partnering on the level of values and institution, Imperial's approach has allowed academics to be drawn in to the partnership.

The partnership, Professor Ryan says, has potential to continue to grow. 'While we are very focused on solutions, they [Hitachi]

are thinking more generally about the company and its place in a changing society. In view of our shared ambition, it has potential to grow into an even larger scale partnership in the years and decades ahead.' This shared long-term mindset proves the ideal ground for FDI to remain and grow in London.

Graphene research in Greater Manchester

The University of Manchester's research into graphene – which resulted in the Graphene Engineering Innovation Centre (GEIC) and a Nobel prize – shows how long-term relationship-building between local councils, universities, and foreign investors can facilitate significant investment. After the success of the National Graphene Institute (NGI), the University was exploring options for the £60 million in funding needed to create the Graphene Engineering Innovation Centre (GEIC) to enhance the commercialisation of its graphene research.

Funding arose from an unexpected source. The Abu Dhabi United Group had acquired a majority share in Manchester City Football Club in 2008, and through the close links this created with Manchester City Council, had begun expanding this engagement into a partnership with the Council to build 6,000 affordable houses in the area as part of £1 billion deal. Howard Bernstein, then Chief Executive of Manchester City Council, suggested to Nancy Rothwell, President and Vice-Chancellor at the University of Manchester, that the University engage with the Group, as during this period they were currently on a national tour with the UK DTI (Department of Trade and Industry) to explore avenues of investment for their sovereign wealth fund.

Through conversations with the Abu Dhabi United Group, the University developed plans for the GEIC and procured £30 million in funding from its new partner Masdar, the Abu Dhabi-based renewable energy company owned by the Mubadala Investment Company. With this foundational funding in place, the Centre also

secured £15 million from Research England's UKRPIF fund, £5 million from Innovate UK, £5 million from European Regional Development Fund and £5 million from the Greater Manchester Combined Authority.

The GEIC's development has in turn generated further funding from a range of international and domestic partners, including the Australian-based supplier of graphene products First Graphene, the Brazilian steel giant Gerdau, surface-functionalised graphene specialists Haydale and advanced engineering materials group Versarien. GEIC will also form a cornerstone element of the new £1.5 billion Manchester Innovation District, alongside the University's Manchester Institute of Biotechnology, which focuses on industrial biotechnology and industry-facing biomanufacturing, all within close proximity to Manchester's Piccadilly station.

The University is also working with the Greater Manchester Combined Authority to explore a large-scale manufacturing centre outside the city centre, which will attract a wider diversity of firms. The Local Industrial Strategy has further established a specialist leadership group called the Graphene, Advanced Materials and Manufacturing Alliance (GAMMA), chaired by Jürgen Maier, the former Chief Executive of Siemens UK. GAMMA's role will be to identify opportunities to apply graphene and advanced materials technologies in ways that address the UK's strategic industrial challenges.[60]

Agri-food technology in Lincolnshire

The University of Lincoln has a history of working with overseas industry and stands out among universities as having specifically prioritised FDI capture within their strategy. For example, in 2010, the German energy company Siemens partnered with the University to create a new Engineering School, the first such new school in the UK in 20 years. Through joint coursework taught by university and Siemens staff, retention of graduates into the business has grown

from 50% after five years to 98%, and Siemens has described the joint programme as 'a great three- or four-year interview process'.[61]

Agri-food technology in particular offered the University the opportunity to connect the local with the global in a way that would directly support their community. Building on an established reputation for Lincolnshire being a rural county doing significant innovation in agri-food technology, robotics and food automation, the University has been able to leverage its research strengths, local government relationships and industry partnerships to collaborate on a number of regional initiatives, such as the Centre for National Food Manufacturing near Seaford.[62] They have further collaborated with the local council to form the Food Enterprise Zone, an industrial park for food companies and particularly to attract high-tech food companies to meet the need for increased automation.[63] These collaborations have been predicated on close working relationships with local government; previous Vice-Chancellor Mary Stuart, for example, was a founding member of the Lincolnshire LEP.

However, Deputy Vice-Chancellor (Research and Innovation) Andrew Hunter notes that their ability to expand in this instance was in some ways hindered by a lack of resources and coordination:

> *We certainly don't have a specialised office to go out and find industrial partners across the world – but I think that would be really interesting. We work successfully with the LEP and Team Lincolnshire, but if we could work with government and local organisations in a more systematic fashion to say: come to Lincolnshire because there are these industries and this university will offer this package of support, then I think that'd be a very powerful thing.*

This more joined-up approach between regional activity and a national framework that connects global businesses with local strengths would bolster these innovations further.

Broadly, these case studies from around the UK demonstrate that successful approaches to attracting FDI into R&D involving universities require:

- strong and long-standing relationships between university leaders and local economic growth partners (almost always large, well-established and resourced growth companies or national agencies in the Devolved Administrations);
- the creation of an explicit strategy to work in partnership across both the university and local economic growth partner in a way that aligns local inward investment priorities with research and knowledge exchange strengths; and
- a long-term approach, allowing for the interplay between the intentional and the serendipitous to yield clear positive outcomes.

However, universities should not be seen as institutions with the resources or remit to undertake local inward investment activity in isolation from these partners. Coordinated engagement and collaboration at the local, regional and national levels must be integral to any strategy for FDI R&D capture.

4. Insights from investors

Any strategies to increase the UK's share of global R&D investment must take into account the perspectives of investors – what motivates their investment, what factors influence their investment decisions and what their long-term priorities are. As part of the Midlands Pilot, in September 2022, OCO Global undertook a review of the motivations of investors captured by the annual *FDI Insights Survey* run by the *Financial Times* for 121 FDI into R&D projects in the UK between 2017 and 2021. While it was not possible to determine how many of these projects were FDI into university R&D specifically, OCO concluded that it was not likely to be many. The primary cited motives and determinants for these investors were:

1. skilled workforce availability (36% of projects cited this as a motive/ determinant);
2. technology and innovation (15%);
3. industry clusters (14%);
4. universities and research hubs (12%); and
5. proximity to markets or customers (10%).

OCO then conducted a series of in-depth interviews with a small number of experts and potential investors into UK R&D to explore the relevance of various drivers of FDI in the sector. These investors hailed from Germany, South Korea, Australia and Singapore – all markets identified by the Midlands Pilot as having transferable interest for its coalition of university and government partners in developing a longer-term global strategic approach.

Investors were asked to rate the importance of seven factors when choosing to invest in an R&D system. Among these factors, the 'research ecosystem' ranks first in importance with investors, while 'quality of life' ranks last (see Figure 2). 'Our main attraction is our

university landscape, the research centres, the university of applied sciences,' and so on, one investor says. 'All of them are very focused on R&D with companies, to the extent that a large percentage of R&D funding is private.' Interviews further reveal that while clusters of universities are considered valuable, the absence of them does not discount an area from consideration: 'It is good to know if a large university is close to another large university, but even if our partner is not part of a cluster we would not rule it out.'

Ranking second in importance is infrastructure in the surrounding area to support R&D activity, such as laboratories and offices, transport and access to specific instruments. The relatively small geographical space of the UK made it attractive in this sense, given that short distances in the United Kingdom facilitate access to specific infrastructure and instruments – though compared to Germany and France, the UK is still perceived as a less R&D equipped country. Investors also realise the connection between universities and local government, with one paving the way to collaboration with the other: 'If you already cooperate with the university,' one investor says, 'then it is easier to cooperate with the city government and test the product there.'

Nearby connections to industry also are crucial to investors' decision-making processes. The presence of industry makes investors feel that potential suppliers and partners with relevant knowledge in their field are readily available. For example, one investor notes, 'We want our product to work, but we also want to communicate how well our product works. Being close to the industry, our suppliers and potential customers makes it easier.' Collaboration with industry also has the added benefit of increasing visibility for universities to investors. Investors also believe the presence of industry encourages some degree of commercial mindset within universities nearby: 'It is easy for academic researchers to get off track. Being close to industry and cooperating with it ensures a certain level of guidance.'

Figure 2: Results of interview analysis of the main drivers of FDI in R&D and University R&D[64]

Average Score (1-6)		FDI in University R&D and R&D Drivers	Needs/expectations of potential investors
Very important	5	Research Ecosystem	High quality universities (not necessarily a cluster); academic reputation; access to funding
Important	4,3	Infrastructure	Availability of laboratories and offices; means of transport; specific research instruments
Important	4,1	Industry Presence	Technological know-how; potential suppliers, partners and customers
Somewhat important	3,3	Access to Human Capital	High level of human capital; understanding of the commercial purpose of the research
Somewhat important	3,2	Start-up Ecosystem	Easy access to start-up community and acquisition opportunities
Somewhat important	2,7	Regulatory Environment	Business-friendly policies and R&D tax incentives
Low importance	2	Quality of Life	Means of transport, access to nature; recreational areas for children

Access to human capital ranks as 'somewhat important', though this definition excluded the human capital held within research teams (included instead under 'research ecosystem'). Investors are attracted by the prospect of students forming a high-skilled pool of potential employees and there is much that universities could do to facilitate this prospective employment as well. For example, collaboration and co-design of course curriculum with employers can help make a university and region more attractive for investment.

The importance of starts-ups in the area depends largely on the size and developmental stage of the investing company involved.

One investor notes, 'For large companies the start-up ecosystem is not really important, may be just for acquisition purposes, but for a start-up it can be a good indicator of a good source of funding and potential cooperation.' While infrastructure and research capacity is more attractive to established companies, start-ups seeking to invest in an area are reassured by the presence of a strong start-up ecosystem. Another notes the risk inherent when investing in start-ups and says this affects whether the start-up environment is factored into decision-making:

> *For Korean companies it seems a bit risky to go to the UK to cooperate or work with a start-up. They prefer to work with established companies that are more mature and can be more reliable. In this sense, the start-up ecosystem is not a deciding factor when choosing a location.*

Similarly, the regulatory environment is only somewhat important to these investors, perhaps dictated in part by their field. One investor working in the agricultural sector mentions, 'Particularly in the agricultural sector, one does not come across big difficulties with regulations. Unless they are very bad, they are not very important when evaluating where to invest'. Another argues that while the regulations themselves were not usually an issue or deciding factor in choosing where to invest, 'it would help to have some guidance to better understand the regulatory system, the main taxes, tax benefits'.

Other investors working in the British context argue that the motives driving R&D investment tended to be quite simple. 'Investors want to know when they're going to make a return on an investment', Angus Horner, Director of Harwell Science & Innovation Campus says. 'How much money is that IP going to make? When does it go post-revenue? When is it a product? There needs to be a clear roadmap from investment to profit for them to be interested.' This purely commercial perspective – which was not necessarily intuitive for academic and government stakeholders, given their other priorities –

was nonetheless crucial to take on board when considering how to capture investment.

Andy Williams, senior consultant at AstraZeneca and chair of the Ox-Cam supercluster board, further describes what attracted the multi-national biopharmaceutical business to Cambridge. 'People attract people', in short, he says, and building on existing relationships is crucial to attracting FDI. He also describes the difficulty of intellectual property (IP) issues when setting up burgeoning collaborations between academics and potential partners: '99% of IP doesn't get commercialised, and can become a barrier to collaboration.' A more flexible approach to IP could be beneficial to commercialisation routes, he suggests. In his work in Cambridge, for example, IP agreements contain some description of how IP would be attributed in the future, but without veering into the overly prescriptive.

Finally, Williams recognises the environment needed to create the ideal R&D ecosystem for investors is predicated on stability and security for the researchers involved. 'Researchers need to feel secure; in Cambridge, many researchers have a lot of stability. They have long term funding grants, equipment, and industry connections,' he says. All of these factors contribute to an environment in which academics feel able to innovate, and 'you need your academics to feel as though they can take the risk'. Even if elements of 'quality of life' did not necessarily rank highly in investors' priorities, then, the environment in which innovation thrives among academics nonetheless often correlates with the security they experience professionally.

5. Conclusions and policy recommendations

The opportunities for UK universities to attract FDI into R&D – and thereby act as drivers of investment for their local areas – remain a largely untapped source of potential in many parts of the UK. Coordinated efforts across the higher education sector, local and national government, and research funders would help galvanise the strengths already present in the UK R&D system to achieve both sector ambitions and national priorities to capitalise on the UK's scientific excellence.

Recommendations for government

1. **Government should clearly articulate the importance of increasing FDI into R&D as a driver of both its 'science superpower' and 'levelling up' ambitions.** It should lead the development of an ambitious, innovative and practical set of interventions and incentives in partnership with universities and local economic growth organisations. This framework should focus on supporting a clearer role for universities in supporting the attraction of FDI into R&D beyond campuses and into their local and regional economies, in particular innovation clusters, as well supporting FDI directly into university R&D activity.

2. **Government should ensure this approach is underpinned by a dynamic and up-to-date evidence base.** This needs to help all partners readily identify and effectively promote R&D opportunities to international investors. There is broad recognition that an intentional approach to securing FDI into R&D represents a new area of activity for many partners. While some international examples exist, there is a need for better data, more analysis and 'what works' piloting of activity that can rapidly build an evidence-base for the UK and disseminate best practice.

3. **Government should target the world's top 200 R&D investors.** Building upon the cross-Whitehall approach to account management for major industrial partners, organisations should be targeted with a view to securing longer term strategic investment in UK R&D and innovation priorities. Government and universities should work together to leverage global alumni connections, international industry partnerships and UK research and innovation strengths to attract and retain a greater proportion of globally mobile R&D investment.

4. **Government should work with universities and local organisations to better develop, aggregate and promote R&D investment propositions.** By creating a clearer route-to-market for R&D-related propositions, a national 'FDI into R&D' concierge service could help both investors and universities navigate the current complex and fragmented landscape of organisations and initiatives. Expanding the role and resources of the Science and Innovation Network to include a UK regional 'in-reach' model and better connect R&D and university opportunities to in-country teams was endorsed by many universities. Comparisons were drawn to the regional Research Collaboration Advice Team (RCAT) offices – and interviewees saw value of a similar approach that would better link government into universities and local partners. The role of these experts would be to help the UK identify and articulate FDI into R&D propositions and address the routes-to-market issue. Several interviewees expressed a desire for greater understanding between Business and Trade officials and the R&D capabilities that universities have to offer. One option for bolstering this understanding could involve placements between investment officials and higher education faculties and knowledge exchange offices, similar to the model that, for example, the Parliamentary Office of Science and Technology (POST) uses to facilitate early career researchers gaining policy experience in government departments.[65] It would also make

sense to establish placements in SMEs to support trade: a regional scheme that places international graduates with SMEs to support international trade and investment (building on a legacy of similar schemes across the UK that had to close due to the end of EU funding and the highly successful Invest Northern Ireland 'Graduate to Export' scheme).[66]

5. **Government should incorporate FDI into R&D in its ambitious new plans to forge bilateral international research and innovation bridges with partner nations.** It should explicitly seek to encourage more bilateral exchanges, visits and delegations with partner nations that include a focus on FDI into R&D opportunities. This could align with whatever arrangements emerge as a result of ongoing negotiations around the UK's Association with Horizon Europe. It should encourage and take advantage of sub-national relationships between UK and international regions; learning from partner nations which have successfully driven economic regeneration through investment into innovation clusters. It should also develop internal KPIs for the newly formed departments that incentivise FDI R&D capture.

6. **Government should consider how existing, planned and new funding streams might support the FDI into R&D agenda.** This should include the Department for Science, Innovation and Technology, UKRI, Research England and Innovate UK discussing how the Higher Education Innovation Fund (HEIF), the UK Research Partnership Investment Fund (UKRPIF) and the recently announced International Science Partnership Fund (ISPF) might better work together to support this agenda. Universities across the country say UKRI funding – specifically HEIF and UKRPIF funds – have been crucial to their work in attracting FDI. These funding streams should be maintained and could be revised to include specific calls that require international business collaboration, as well as

collaboration between universities to incentivise FDI capture. UKRI may also wish to explore whether a smaller scale version of RPIF might be useful to encourage smaller scale collaborations and also review current funding functions more generally to explore how they might facilitate FDI attraction.

Recommendations for universities

7. **Universities should take a more strategically intentional approach to FDI.** This should include the role they play in helping local partners attract FDI into local economies as well as how they incorporate FDI into their own R&D activities – supporting the civic, knowledge exchange and global engagement missions of institutions. Consciously embedding plans for attracting foreign investment into existing research and university-wide strategies will help ensure that FDI capture remains integrated into university priorities. This long-term strategic work involves a detailed awareness of not only an individual institution's research strengths but also where that may complement industry needs and other strengths in the region. A degree of ruthlessness in winnowing down those areas of strengths may be required – but without losing sight of the need to capitalise on the existing research interests and relationships that academics hold already.

   The global reach afforded by alumni networks could be better used to attract FDI, as could coordination with the visitor and tourism economies in many regions. Alumni offices should work with their institutional knowledge exchange functions to integrate investment considerations into their existing portfolios of activities. There may also be space for the new Alumni UK network run by the British Council to facilitate connections between global alumni and the UK in ways that could support the development of investment opportunities. Several universities (such as the University of Lincoln) also point to the joint courses they have offered in collaboration with

industry as a crucial element in the offer to foreign business partners. Openness to creating shared courses with industry – including short courses to upskill employees – can only help ensure the 'stickiness' of FDI in a university and region.

8. **Universities should continue to develop and streamline their research and innovation offers to investors, working collaboratively to develop more ambitious and attractive spin-out portfolios.** UK universities have made great strides in their approach to research commercialisation over the last two decades and should consider how they might work together to aggregate their spin-out portfolios and thereby attract more significant investment. They should also work with government to identify scale-up and acceleration incentives to help the UK retain more highly innovative companies that will shape the future of local innovation economies.

9. **Universities and data agencies should develop a more sophisticated and granular understanding of the full spectrum of FDI into university R&D activity**. Elements of this work are also likely to be a necessary part of the sector's ongoing approach to the Trusted Research agenda. For example, agencies should allow for more detailed reporting of sources of international industry investment (currently only 'EU' and 'other') in order to allow policymakers and universities to discover where they may want to take a more active approach to attracting international investment into knowledge exchange. Elements of this work are likely to be a necessary part of the sector's ongoing approach to the Trusted Research agenda, and Universities UK's existing guidance to members on managing risk in internationalisation already emphasises the importance of robust due diligence, data collection and risk management. Interviewees also noted the need for robust knowledge exchange mechanisms within universities to facilitate the translation of complex technical content, from

academic to university investment specialist to investor. To facilitate this process, universities may wish to nominate trade and investment champions to work directly at the interface of academics, investors and government. Join up between those responsible for the civic elements of a university's mission and its investment portfolio would also aid in this.

10. **Universities should aggregate their investment propositions with other higher education institutions, showcasing their complementary strengths to hunt in packs and attract more significant inward investment.** They should seek to develop more structured partnerships with local economic growth partners and government agencies / initiatives, aligning these propositions with local economic priorities wherever possible. Creating a regional offer means universities must set aside competitive tendencies to focus on the longer-term outcomes that can be generated from the collaborative pursuit of FDI. Universities engaging in cluster development may find it helpful to coordinate this work through more formal means – for example, through taking advantage of existing pan-regional university groups. Groups such as N8, Midlands Innovation and Midlands Enterprise, Yorkshire Universities, GW4 and the Arc Universities Group have helped universities coordinate their efforts and find complementary strengths.

Recommendations for local economic growth organisations

11. **A more systematic approach should be taken by local economic growth organisations to introduce universities to firms who may potentially or have recently invested in a local area.** This will enable the exploration for opportunities for R&D collaboration, introductions to talent and so on. This increases the likelihood of FDI 'sticking' in an area and is likely to maximise the medium-long term impact of FDI on local economies.

12. **Local economic growth organisations should look to work with universities on longer term strategies to secure strategically significant inward investment.** These strategies should reflect existing local economic and innovation strengths, including university research strengths, but also seek to identify and accelerate sectors of high-growth potential. The partnerships and strategies might underpin the development of the Government's recalibrated Investment Zones linked to universities and innovation clusters. Local government plays a crucial role in connecting universities with both national government structures and potential investors. Many interviewees noted that their FDI success would not have been possible without close collaboration with LEPs, local councils and combined authorities, which often included a university representative sitting on innovation working groups and so on. These kinds of relationships must be encouraged and formalised. Aligning international activities and delegations from both LEPs and local universities, for example, can be a helpful way to build links and amplify the efforts of each party. Growth companies (such as the West Midlands Growth Company) can also play this role in terms of acting as a point of entry that is visible and externally engaged, while also deeply embedded within their local universities and economic context.

The purpose of this report is to begin a conversation – within universities, regional bodies and national government – about what FDI is, how it can be captured for UK R&D and what that capture can mean for local and national economies. A robust plan of action and engagement can ensure that conversation continues and bears fruit.

Endnotes

1 HESA Data Table 5: Research grants and contracts – breakdown by source of income and HESA cost centre 2015/16 to 2021/22, excluding public funding https://www.hesa.ac.uk/data-and-analysis/finances/table-5#note

2 Data collected as part of Midlands universities as drivers of trade and investment pilot.

3 National Centre for Universities and Business (NCUB), *Key findings from the State of the Relationship 2021 report,* 2021 https://www.ncub.co.uk/wp-content/uploads/2021/07/Key-findings-SoR-21.pdf

4 Ram Mudambi and Susuan Mudambi, 'Multinational Enterprise Knowledge Flows: The Effect of Government Inward Investment Policy', *Management International Review*, 2005, pp.155-178

5 Lisa De Propris and Nigel Driffield, 'The importance of clusters for spillovers from foreign direct investment and technology sourcing', *Cambridge Journal of Economics*, 2006, pp.277-291

6 Grahame Fallon and Mark Cook, Exploring the Regional Distribution of Inbound Foreign Direct Investment in the UK in Theory and Practice: Evidence from a Five-Region Study, *Regional Studies*, 44:3, 2010, pp.337-353

7 EY, *Adapting to a changing world: 2022 EY Attractiveness Survey*, June 2022 https://assets.ey.com/content/dam/ey-sites/ey-com/en_uk/resources/ey-uk-attractivenss-survey-report-2022.pdf

8 EY, *Adapting to a changing world: 2022 EY Attractiveness Survey*, June 2022 https://assets.ey.com/content/dam/ey-sites/ey-com/en_uk/resources/ey-uk-attractivenss-survey-report-2022.pdf

9 EY, *Adapting to a changing world: 2022 EY Attractiveness Survey*, June 2022 https://assets.ey.com/content/dam/ey-sites/ey-com/en_uk/resources/ey-uk-attractivenss-survey-report-2022.pdf

10 Rene Belderbos, Vincent Van Roy, Bart Leten, and Bart Thijs, 'Academic research strengths and multinational firms' foreign R&D location decisions: evidence from R&D investments in European regions.' *Environment and planning*, 46(4), 2014, pp.920-942

11 EY, *Adapting to a changing world: 2022 EY Attractiveness Survey*, June 2022 https://assets.ey.com/content/dam/ey-sites/ey-com/en_uk/resources/ey-uk-attractivenss-survey-report-2022.pdf

12 Office for National Statistics, *Gross domestic expenditure on research and development*, 2019 https://www.ons.gov.uk/economy/governmentpublicsectorandtaxes/researchanddevelopmentexpenditure/bulletins/ukgrossdomesticexpenditureonresearchanddevelopment/2019

13 National Centre for Universities and Business (NCUB*), Key findings from the State of the Relationship 2021 report*, https://www.ncub.co.uk/wp-content/uploads/2021/07/Key-findings-SoR-21.pdf

14 HESA Data Table 5: Research grants and contracts – breakdown by source of income and HESA cost centre 2015/16 to 2021/22, excluding public funding https://www.hesa.ac.uk/data-and-analysis/finances/table-5#note

15 HESA Data Table 5: Research grants and contracts – breakdown by source of income and HESA cost centre 2015/16 to 2021/22, excluding public funding https://www.hesa.ac.uk/data-and-analysis/finances/table-5#note

16 HESA Data Table 5: Research grants and contracts – breakdown by source of income and HESA cost centre 2015/16 to 2021/22, excluding public funding https://www.hesa.ac.uk/data-and-analysis/finances/table-5#note

17 HESA Data Table 5: Research grants and contracts – breakdown by source of income and HESA cost centre 2015/16 to 2021/22, excluding charity-related income and public funding https://www.hesa.ac.uk/data-and-analysis/finances/table-5#note

18 HESA Data Table 5: Research grants and contracts – breakdown by source of income and HESA cost centre 2015/16 to 2021/22, excluding charity-related income and public funding https://www.hesa.ac.uk/data-and-analysis/finances/table-5#note

19 Michael Porter, 'Clusters and the New Economics of Competition' *Harvard Business Review*, November-December, 1998 https://hbr.org/1998/11/clusters-and-the-new-economics-of-competition

20 Lisa De Propris and Nigel Driffield, 'The importance of clusters for spillovers from foreign direct investment and technology sourcing', *Cambridge Journal of Economics*, 2006, pp.277-291

21 Helen Simpson, *An Analysis of Industrial Clustering in Great Britain*, April 2007 https://webarchive.nationalarchives.gov.uk/ukgwa/20090609003228/http:/www.berr.gov.uk/files/file40271.pdf

22 Richard Harris, 'Spillover and backward linkage effects of FDI: Empirical evidence for the UK', *2008 European Regional Science Association Congress*. Liverpool, UK, 25-28 August 2008 https://cep.lse.ac.uk/seminarpapers/14-11-08-HAR.pdf

23 Devashree Saha, Kenan Fikri, and Nick Marchio, 'FDI in U.S. Metro Areas: The Geography of Jobs in Foreign-Owned Establishment', Brookings Institute, 20 July 2014 https://www.brookings.edu/research/fdi-in-u-s-metro-areas-the-geography-of-jobs-in-foreign-owned-establishments/

24 Devashree Saha and Kenan Fikri, 'Cultivate Clusters as a Tool for an Effective FDI Strategy,' Brookings Institution, 7 August 2014 https://www.brookings.edu/blog/the-avenue/2014/08/07/cultivate-clusters-as-a-tool-for-an-effective-fdi-strategy/

25 Lisa De Propris and Nigel Driffield, 'The importance of clusters for spillovers from foreign direct investment and technology sourcing', *Cambridge Journal of Economics*, 30(2), 2006, pp.277-291

26 Mark Muro and Bruce Katz, 'The New "Cluster Moment": How Regional Innovation Clusters Can Foster the Next Economy', Brookings Institution, 21 September 2010 https://www.brookings.edu/research/the-new-cluster-moment-how-regional-innovation-clusters-can-foster-the-next-economy/

27 Arkadiusz Michał Kowalski, 'The Role of Innovative Clusters in the Process of Internationalization of Firms', *Journal of Economics, Business and Management*, 2014

28 Mary Gotz, 'Knowledge Environment in Clusters – Warsaw Agglomeration And Norcom', *Economics and Organization of Enterprise* 3 (2009), pp.35-44

29 Guilherme Rodrigues, Olivia Vera, and Paul Swinney, 'At the frontier: The geography of the UK's new economy', Centre for Cities, December 2022 https://www.centreforcities.org/wp-content/uploads/2022/12/Centre-for-Cities-At-the-frontier-The-geography-of-the-UKs-new-economy-December-2022.pdf

30 Nigel Driffield and M.C. Munday, 'Industrial performance, agglomeration, and foreign manufacturing investment in the UK,' *Journal of International Business Studies*, 2000, pp.21-37; Nigel Driffield, M.C. Munday, and A. Roberts 'Inward investment, transactions linkages, and productivity spillovers.' *Papers in Regional Science*, 2004, pp.699-722; Nigel Driffield, 'The impact on domestic productivity of inward investment in the UK,' *The Manchester School*, 2001, pp.103-119

31 Sumon Kumar Bhaumik, Nigel Driffield, Meng Song, and Priit Vahter, 'Spillovers from FDI in emerging market economies', in *The Oxford Handbook of Management in Emerging Markets*, ed. Robert Grosse, Klaus E. Meyer, Oxford University Press, 2018

32 Lisa De Propris and Nigel Driffield, 'The importance of clusters for spillovers from foreign direct investment and technology sourcing', *Cambridge Journal of Economics*, 2006, pp.277-291

33 See the Civic University Network: https://civicuniversitynetwork.co.uk/

34 Lisa De Propris and Nigel Driffield, 'The importance of clusters for spillovers from foreign direct investment and technology sourcing', *Cambridge Journal of Economics*, 2006, pp.277-291

35 National Security and Investment Act: prepare for new rules about acquisitions, 20 July 2021 https://www.gov.uk/guidance/national-security-and-investment-act-guidance-onacquisitions

36 Ben Moore, 'The Russell Group responds to new HEPI report, "What's next for national security and research"?', HEPI Blog, 17 February 2021 https://www.hepi.ac.uk/2022/02/17/the-russell-group-responds-to-new-hepi-report-whats-next-for-national-security-and-research/

37 Tomas Coates Ulrichsen, *Commercialising University Research: Building Multi-Focus Knowledge Hubs and the Rise of Strategic Partnerships*, Stimulus paper for the British Council Global Education Dialogue, 2015

38 BEIS, Catapult Network Review: How the UK's Catapults can strengthen research and development capacity, April 2021 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/975595/catapult-network-review-april-2021.pdf

39 Great Campaign, I*nvestment Atlas* https://www.great.gov.uk/international/investment/

40 Press release, 'UK Government sets out blueprint to transform UK', 2 February 2022 https://www.gov.uk/government/news/uk-government-sets-out-blueprint-to-transform-uk

41 Press release, 'UK Government sets out blueprint to transform UK', 2 February 2022 https://www.gov.uk/government/news/uk-government-sets-out-blueprint-to-transform-uk

42 Jose Guimon, 'Government strategies to attract R&D-intensive FDI', *The Journal of Technology Transfer*, 2009, pp.364-379

43 NCUB, The role of the Higher Education Innovation Fund (HEIF), 14 October 2021 https://www.ncub.co.uk/insight/the-role-of-the-higher-education-innovation-fund-heif/#:~:text=Every%20penny%20of%20public%20sector,1%20of%20public%20sector%20investment

44 https://www.ukri.org/blog/new-funding-for-the-uk-research-partnership-investment-fund/

45 https://www.ukri.org/wp-content/uploads/2021/10/RE-160521-UKPRIFFunded-ProjectsSummaries.pdf

46 UUKi, *Future international partnerships: putting the UK at the heart of global research and innovation collaboration,* October 2020 https://www.universitiesuk.ac.uk/sites/default/files/uploads/UUKi%20reports/Future-international-partnerships.pdf

47 NCUB, *Develop and deliver a comprehensive foreign direct investment strategy for R&D* https://www.ncub.co.uk/solutions/campaigns/develop-and-deliver-a-comprehensive-foreign-direct-investment-strategy-for-rd/

48 Invest Northern Ireland, *Graduate to Export* https://www.investni.com/support-for-business/graduate-to-export-programme

49 Yorkshire Universities, *Universities and 'Place Promotion' in West Yorkshire*, October 2021 https://yorkshireuniversities.ac.uk/wp-content/uploads/sites/15/2021/10/YU_Place-Promotion.pdf

50 West Midlands Growth Company, *Data-Driven Healthcare Prospectus* https://www.investwestmidlands.com/wp-content/uploads/2022/07/West-Midlands-Data-Driven-Healthcare-Investment-Prospectus.pdf

51 West Midlands Combined Authority, West Midlands Innovation Accelerator https://www.wmca.org.uk/what-we-do/economy-and-innovation/west-midlands-innovation-accelerator/

52 Midlands Engine, 'Two Life Science Opportunity Zones in the Midlands encourage collaboration and investment,' 18 November 2021 https://www.midlandsengine.org/news-events/two-life-science-opportunity-zones-in-the-midlands-encourage-collaboration-and-investment/

53 See Ministry of Housing, Communities and Local Government, *The Oxford-Cambridge Arc: Government ambition and joint declaration between Government and local partners*, March 2019 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/799993/OxCam_Arc_Ambition.pdf

54 Peter Foster, 'Oxford-Cambridge Arc revived via new British regional partnership', *Financial Times*, 25 January 2023 https://www.ft.com/content/07de-1a5b-f8ab-4661-9614-189cdcf5720f?sharetype=blocked

55 Oxford Cambridge Arc Universities Group https://arcuniversities.co.uk/about/

56 'Oxford spin-out MiroBio bought by biopharma leader for £0.3 billion', *Laboratory News*, 5 August 2022 https://www.labnews.co.uk/article/2091846/oxford-spin-out-mirobio-bought-by-biopharma-leader-for-0-3-billion

57 DIT, *Department for International Trade inward investment results 2021 to 2022,* 29 June 2022 https://www.gov.uk/government/statistics/department-for-international-trade-inward-investment-results-2021-to-2022/department-for-international-trade-inward-investment-results-2021-to-2022-html-version#:~:text=Of%20the%201%2C589%20FDI%20projects,existing%20investors%20in%20the%20UK

58 'The Internationalisation of the Northern Powerhouse', 26 September 2022 https://www.northernpowerhousepartnership.co.uk/news/foreign-direct-investment-into-the-north-soars%EF%BF%BC/

59 Jennifer Williams, 'Foreign investment grows in north of England but falls in rest of UK', *Financial Times*, 25 September 2022 https://www.ft.com/content/a8ae0664-4654-4646-910e-5b63d38631e7

60 James Baker and James Tallentire, *Graphene: The Route to Commercialisation*, 2022

61 Mary Stuart and Liz Shutt, *Catching the wave: harnessing regional research and development to level up*, HEPI Report 144, p.25 https://www.hepi.ac.uk/wp-content/uploads/2021/10/Catching-the-wave-harnessing-regional-research-and-development-to-level-up.pdf

62 See National Centre for Food Manufacturing. https://www.lincoln.ac.uk/holbeach/

63 See the South Lincoln Food Enterprise Zone https://www.southlincolnshirefez.co.uk/#:~:text=The%20South%20Lincolnshire%20Food%20Enterprise%20Zone%20%28FEZ%29%20is,project%20which%20will%20also%20include%20900%20new%20homes

64 OCO Global report for Midlands Pilot, September 2022

65 See POST's Parliamentary Academic Fellowship Scheme. https://www.parliament.uk/get-involved/research-impact-at-the-uk-parliament/academic-fellowships/

66 Invest Northern Ireland, Graduate to Export https://www.investni.com/support-for-business/graduate-to-export-programme

While universities already play an important role in attracting Foreign Direct Investment (FDI) to the UK, there is a clear opportunity to expand and enhance this role through better collaboration between universities, local growth partners and government.

This HEPI Report intends to begin a conversation – within universities and across local economic organisations and national government – about what this role currently looks like, how it can be co-developed for mutual gain and what benefits this could create for local innovation-led growth and the UK's global competitiveness.

A more intentional and coordinated approach could create an array of additional benefits for universities, local economies and the whole UK, including: helping to overcome growth and productivity challenges; supporting the expansion of innovation clusters with universities at their heart; and enabling universities to leverage their global connections for greater economic benefit.

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