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Levelling Up Research and Development

Richard Jones

Professor of Materials Physics & Innovation Policy &
VP for Regional Innovation & Civic Engagement
University of Manchester

Scientific Advisor, Innovation Greater Manchester

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- Research and development, productivity and regional growth
  - Why it's important to level up R&D
- Levelling up R&D in the White Paper
  - What government has committed to – and what remains to be done
- Levelling up R&D in practice in a city region
  - Innovation Greater Manchester and the Innovation Accelerator pilot

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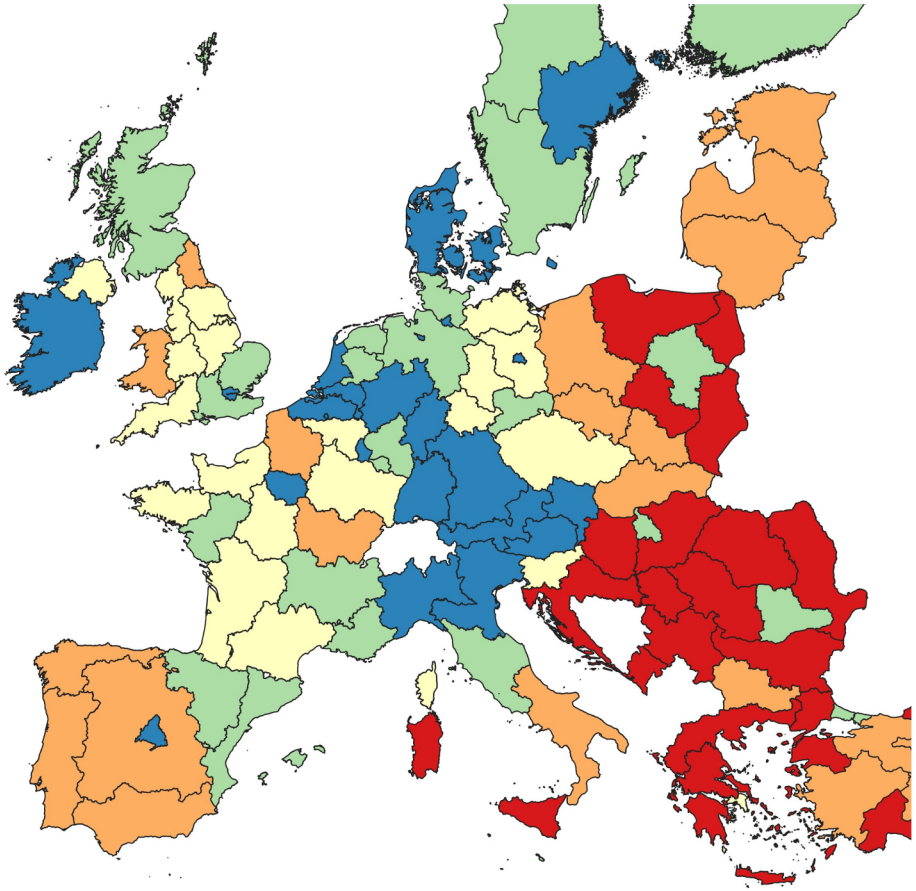
Most of the UK is is below the North European average in economic strength.



Outside the SE, productivity levels are comparable with E. Germany or S. Italy

GDP/capita at PPS, NUTS1 regions of the EU in 2017.

(Republic of Ireland figures are not comparable)

Tom Forth

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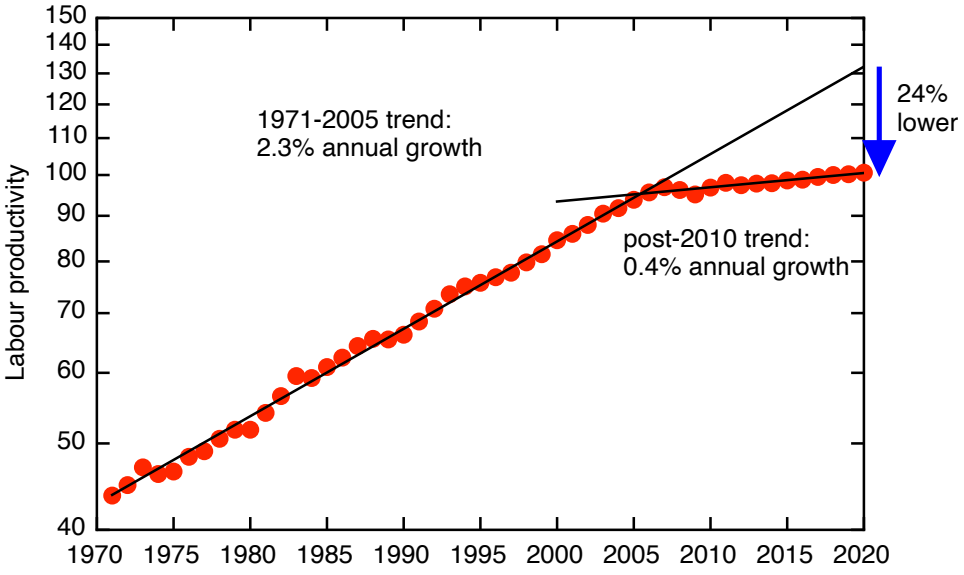
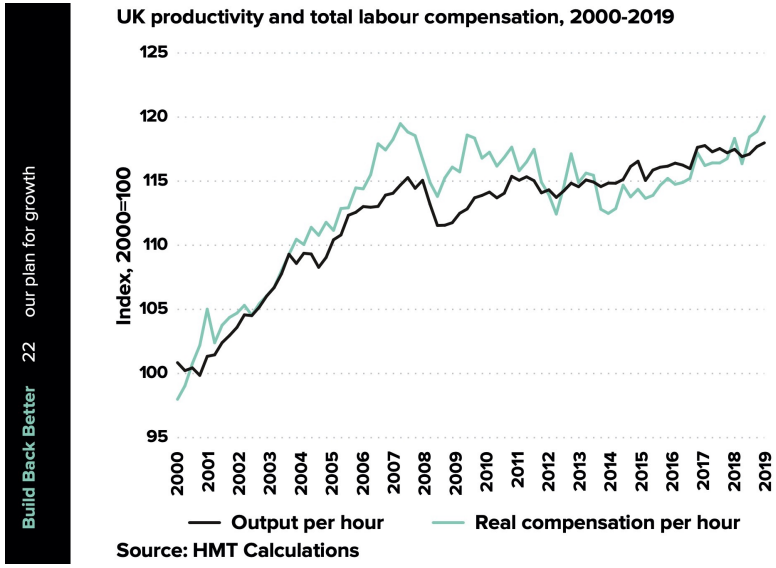
Why productivity matters

Following the global financial crisis, both the level and rate of growth of labour productivity have fallen substantially.

The productivity slowdown has resulted in a decade of wage stagnation



UK Labour productivity since 1971. ONS data (after 2021 revisions).



From: ***Build back better: our plan for growth***
HM Treasury, March 2021

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Regional dispersion in productivity

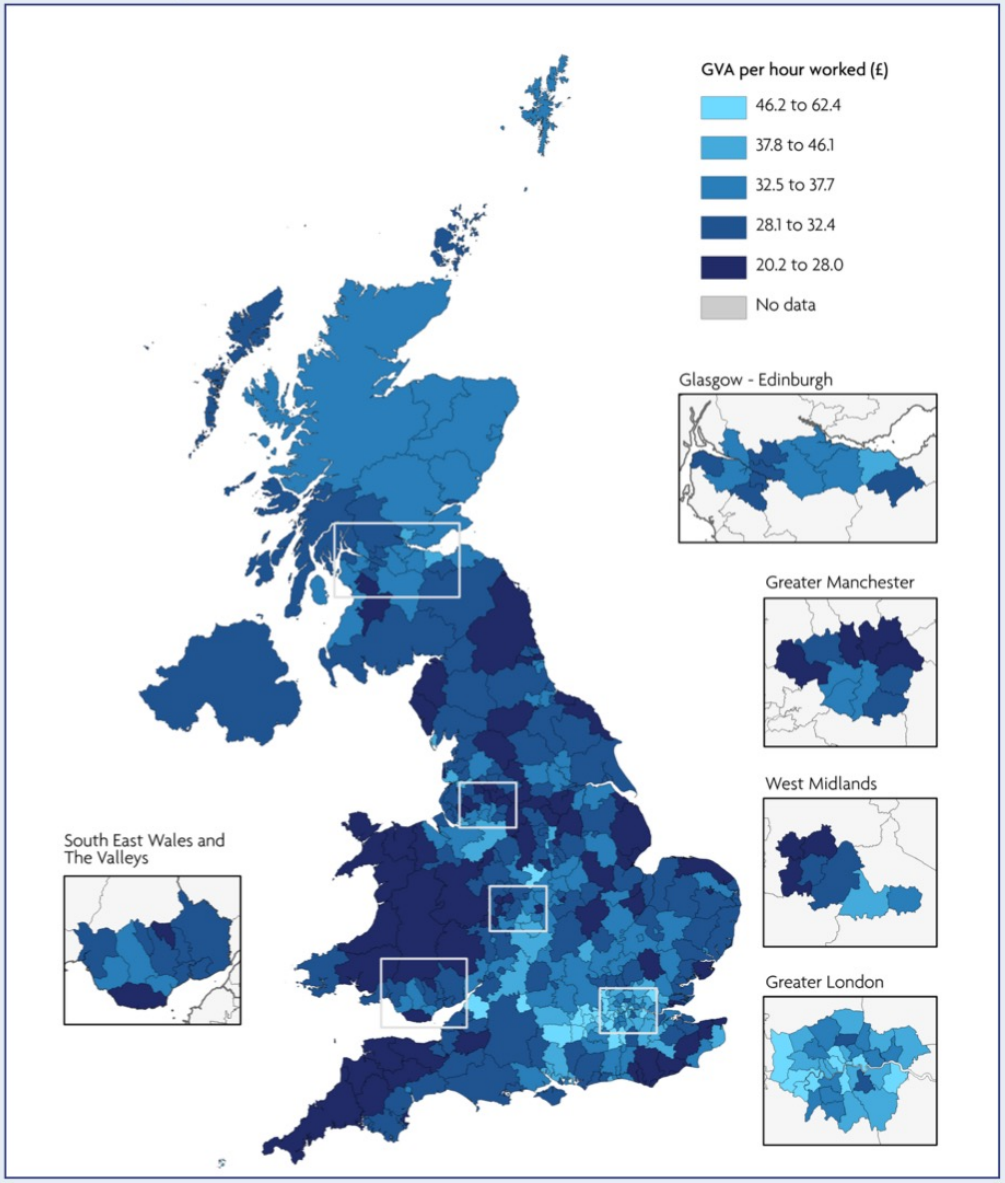
Most of the country – including all its major cities in the Midlands and North – have below average productivity

Levelling Up White Paper

Productivity

Productivity varies substantially across and within regions. Although London and the South East are the only regions above the UK average, they also host some of the UK's least productive local authorities. Local authorities in Scotland, the Midlands and the North West are also some of the most productive.

Figure 1.3 Nominal (smoothed) GVA per hour worked (£), GB local authorities and Northern Ireland, 2019



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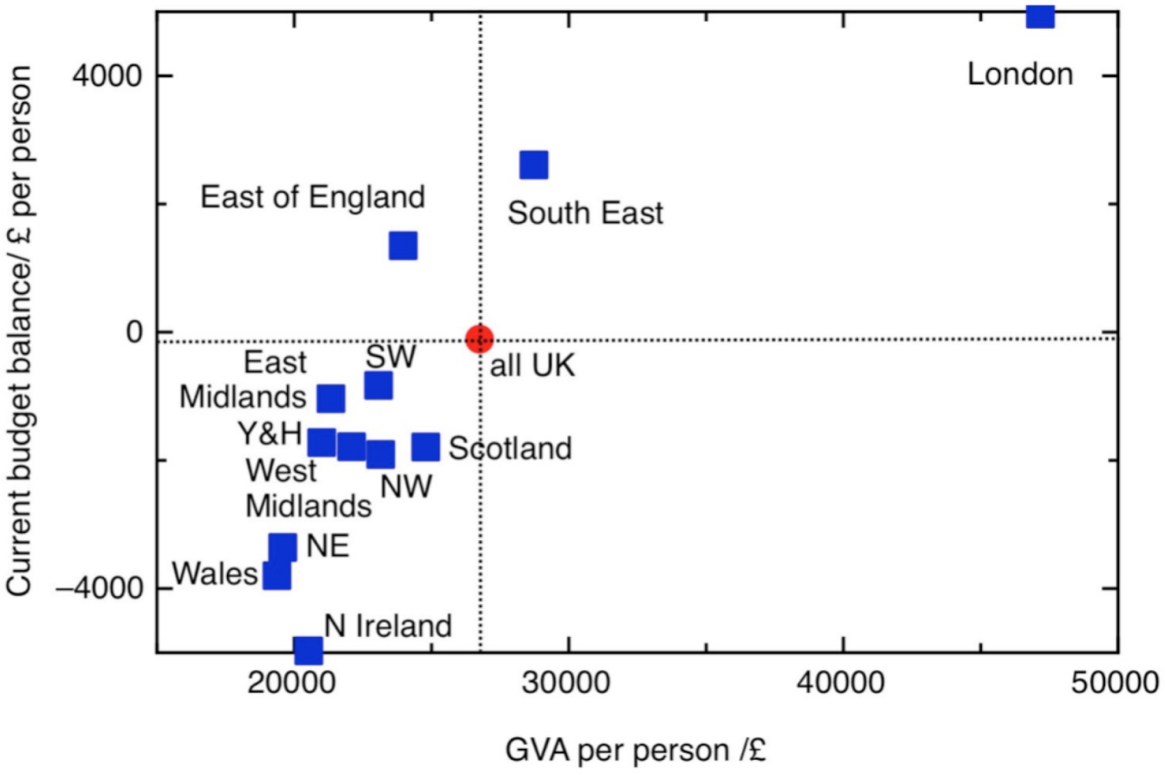
Only three regions of the UK contribute to government more than they receive.



The difference between government revenue and current expenditure for NUTS1 regions, plotted against their regional productivity (GVA per person), both expressed per head of population. ONS data.

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Why does R&D matter?

- Private sector R&D is the route by which firms create new high value products and improve their processes to reduce cost
- Formal R&D not the only way firms innovate – but accounts for more than half their innovation expenditure
- But economics tells us that firms by themselves will invest less in R&D than socially optimal, because they can't capture all their benefits
- Hence need government to fund R&D, with public sector R&D "crowding in" more private sector R&D leading to higher productivity growth

The econometric evidence

- Substantial spillovers from public & private R&D
- Estimated rate of return on public R&D of 20% pa
- Spillovers from public R&D to private sector depend on industry absorptive capacity
- A 10% rise in public R&D would raise private TPF growth by 0.03 ppa

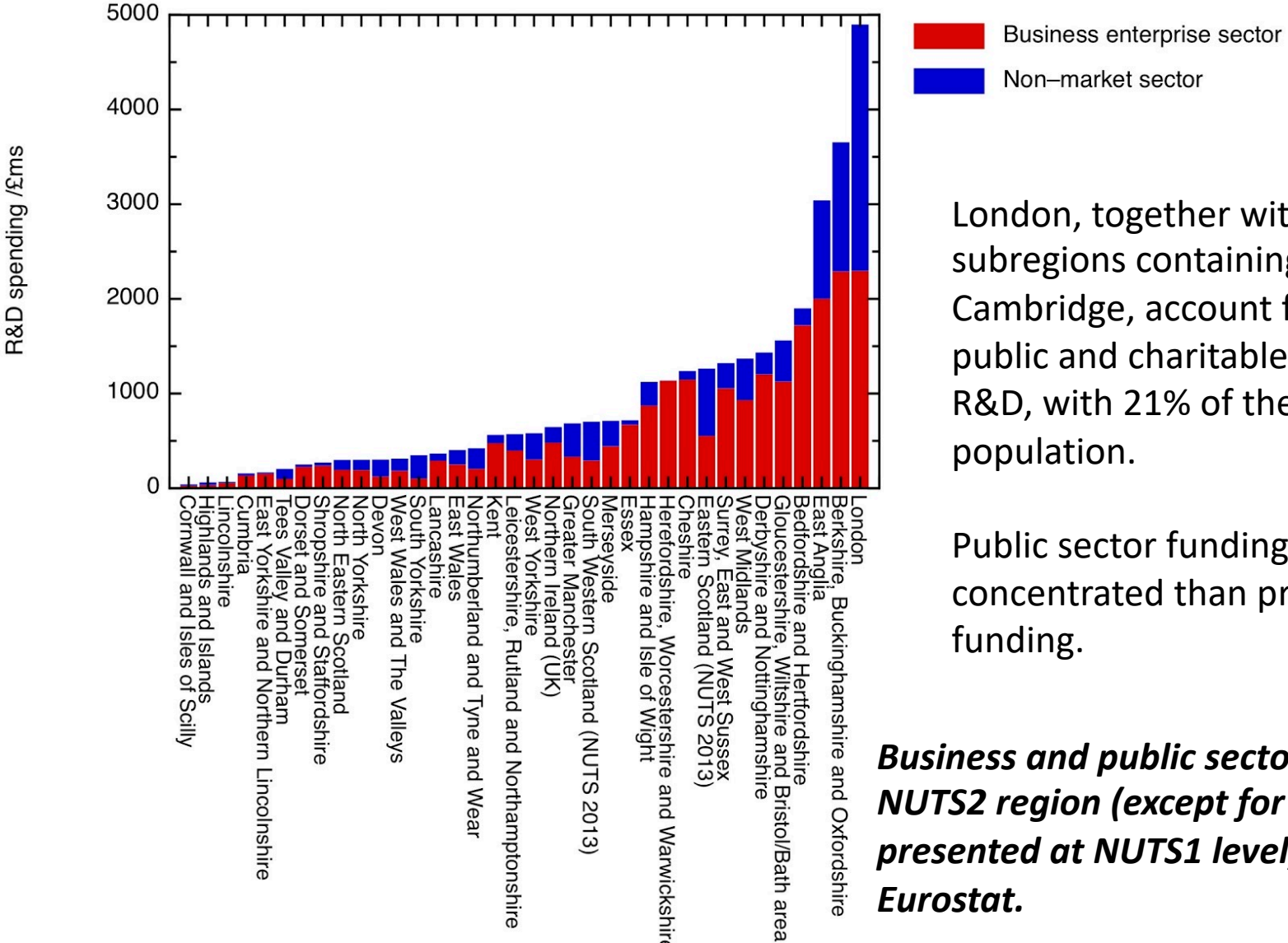
Imperial College London
BUSINESS SCHOOL

The contribution of public and private R&D to UK productivity growth

Peter Goodridge, Jonathan Haskel, Alan Hughes, Gavin Wallis

Discussion Paper 2015/03
March 2015

R&D spending is highly concentrated in London, E & SE



London, together with the two subregions containing Oxford and Cambridge, account for 46% of all public and charitable spending on R&D, with 21% of the UK's population.

Public sector funding is more concentrated than private sector funding.

Business and public sector R&D by NUTS2 region (except for London, presented at NUTS1 level). 2016 data, Eurostat.

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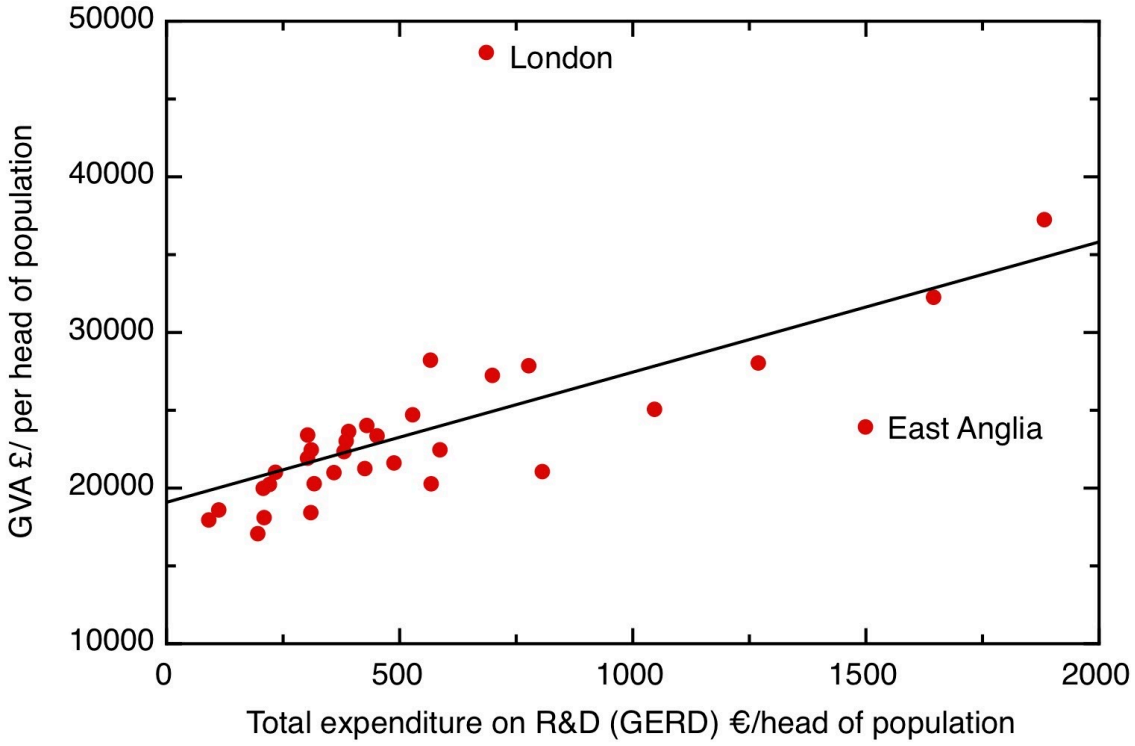
Poorer, less productive regions do less R&D



GVA per head plotted against total R&D spending per head, by NUTS2 region (except London and Scotland, represented at NUTS1 level). GERD data from Eurostat, GVA from ONS.

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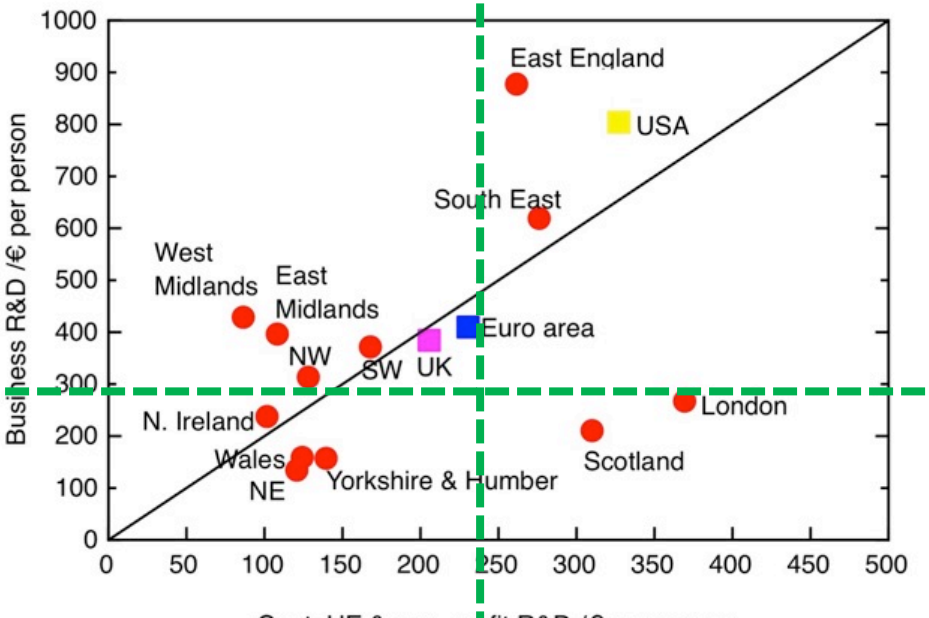
The mismatch between public sector and private sector R&D spending

Low public R&D, high business R&D

High public R&D, high business R&D: *Knowledge intensive economies to be emulated*



Low public R&D, low business R&D

High public R&D, low business R&D

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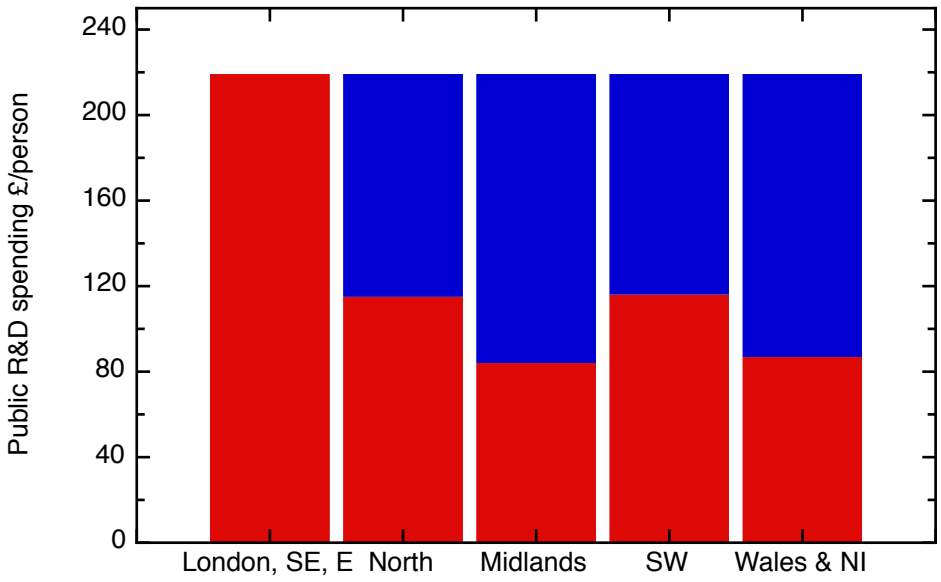
Levelling up R&D – the scale of the problem



Extra annual revenue spending to "level up" per capita spending to London/SE/E average.

North - £1.6 billion /pa

Midlands - £1.4 billion /pa

Southwest - £570 million /pa

Wales and Northern Ireland - £660 million /pa

Total: £4.2 billion

Planned increase in government spending in CSR period £5 billion/pa
Total spending on innovation by the English RDAs 2005-2008: £323 million

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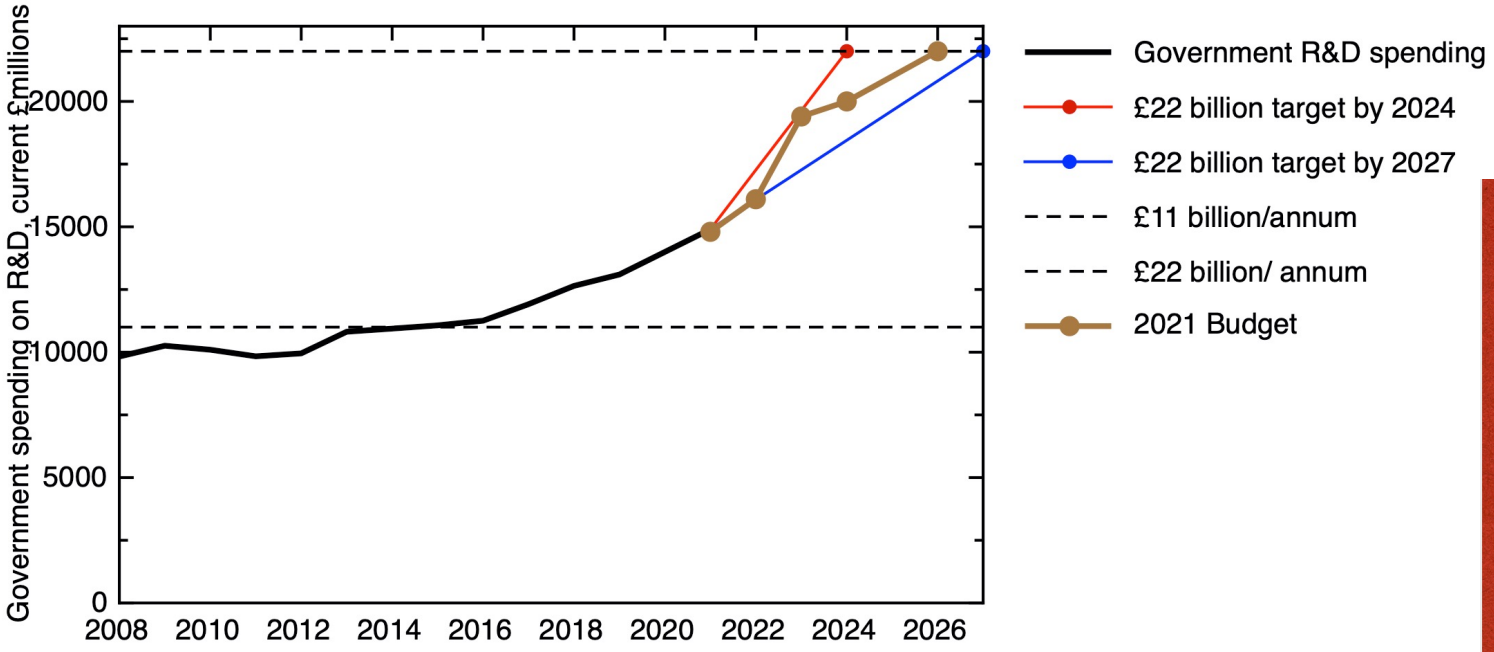
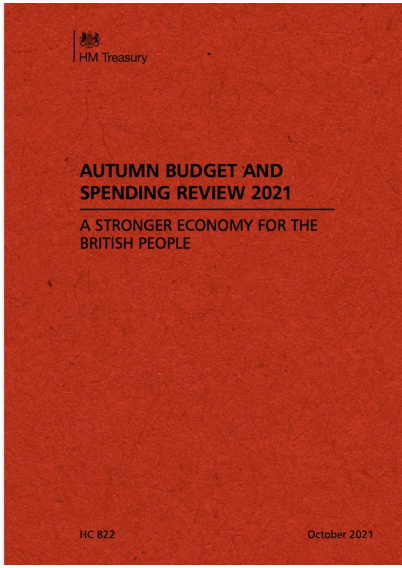
Comprehensive Spending Review Oct 2021





3.7 SR21 invests a record £20 billion by 2024-25 in Research and Development (R&D).[5] The government will ensure that an increased share of the record increase in government spending on R&D over the SR21 period is invested outside the Greater South East, and will set out the plan for doing this in the forthcoming Levelling Up White Paper. The investment will build on the support provided throughout the UK via current programmes such as the Strength in Places Fund and the Catapult network.

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R&D in the Levelling Up White Paper

- Some welcome high level principles
- Open questions on implementation
- ”Innovation Accelerators” – a route to locally-informed innovation policy

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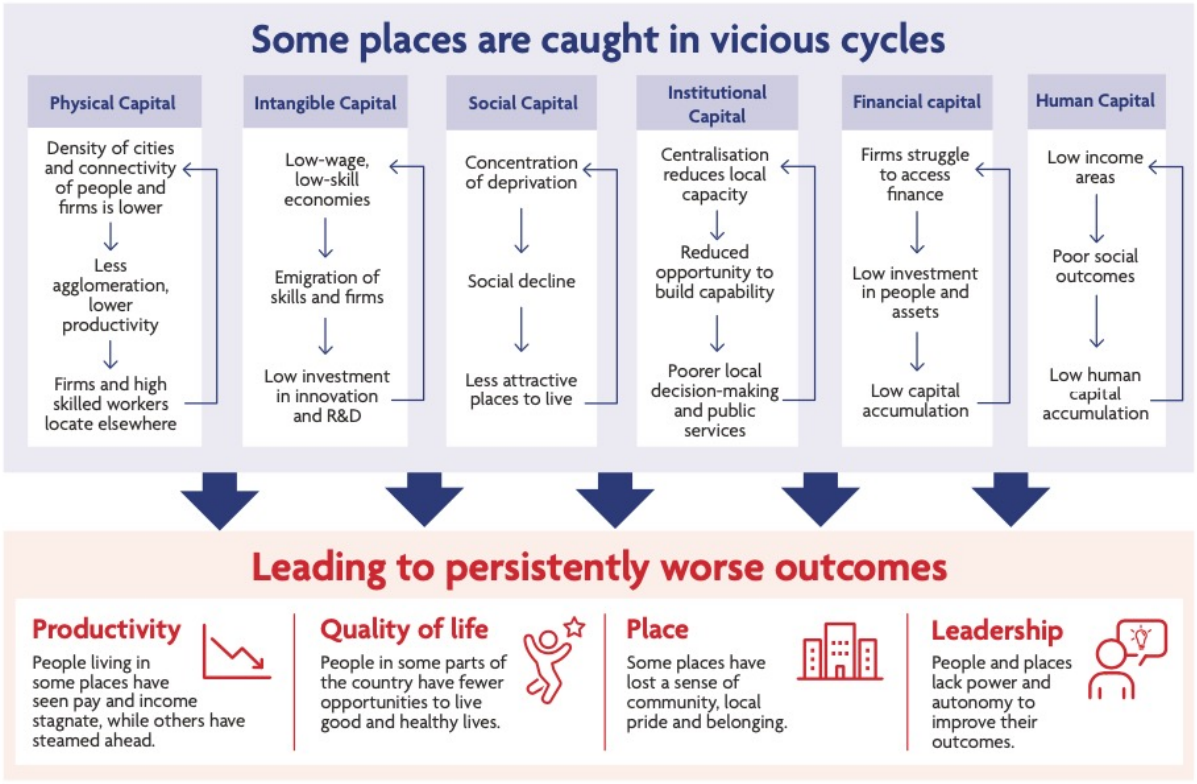
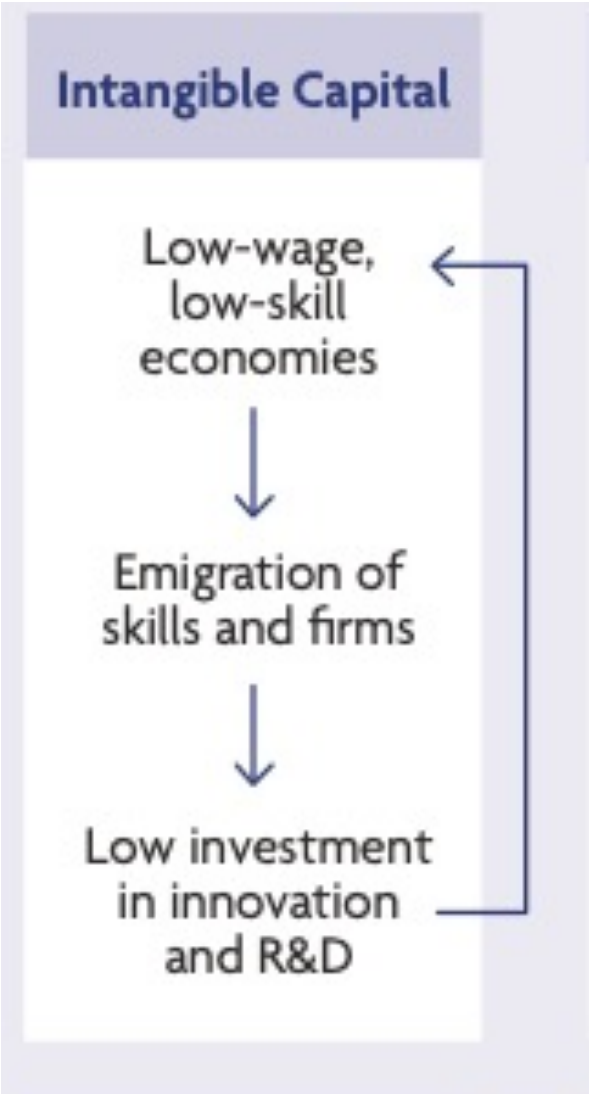
The conceptual framework

Figure 1.62 Levelling Up Capitals Framework





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Levelling Up Missions

Focus Area	Mission
Boost productivity, pay, jobs and living standards by growing the private sector, especially in those places where they are lagging	
Living Standards	By 2030, pay, employment and productivity will have risen in every area of the UK, with each area containing a globally competitive city, and the gap between the top performing and other areas closing.
Research & Development (R&D)	By 2030, domestic public investment in R&D outside the Greater South East will increase by at least 40%, and over the Spending Review period by at least one third. This additional government funding will seek to leverage at least twice as much private sector investment over the long term to stimulate innovation and productivity growth.

Goal

Overarching, outcomes based mission

Intermediate, inputs based mission: means to the end

+ missions on transport and digital connectivity

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Rebalancing R&D - some issues

- How to preserve “excellence”?
  - Excellence is important, for some value of excellence
- Where to focus on spectrum from basic research to applied & development work?
- What’s the right kind of R&D to support existing regional industrial/innovation ecosystems?
  - Regional absorptive capacity
- Who/what organization has the right information to make good decisions?
  - The need for national/regional/city devolution/co-creation

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Where are the R&D uplifts?

- UKRI – supports basic research in universities and institutes
  - Innovate UK – business led R&D and innovation
- Other departmental R&D investment in support of govt goals
  - Business, Energy and Industrial Strategy
    - Net zero, sector support, national R&D infrastructure
  - National Institute of Health Research
  - Ministry of Defense

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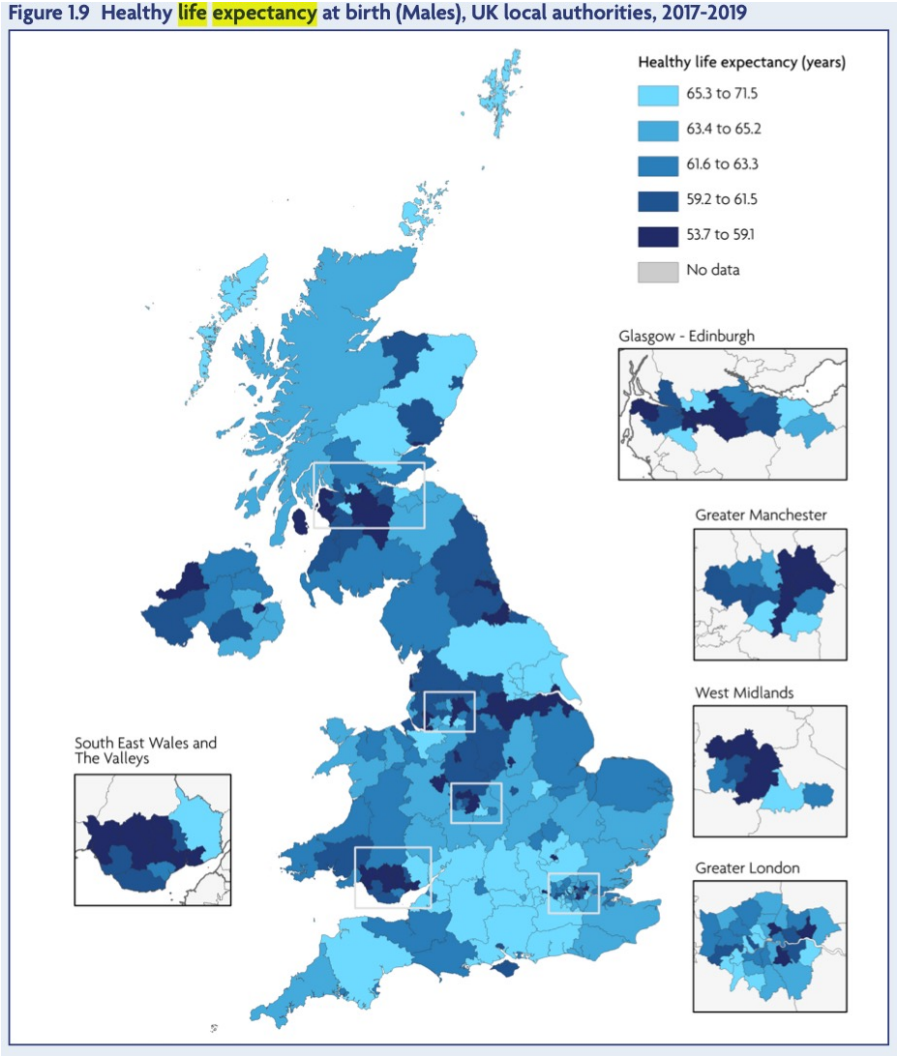
The need for culture change in UKRI and Innovate UK

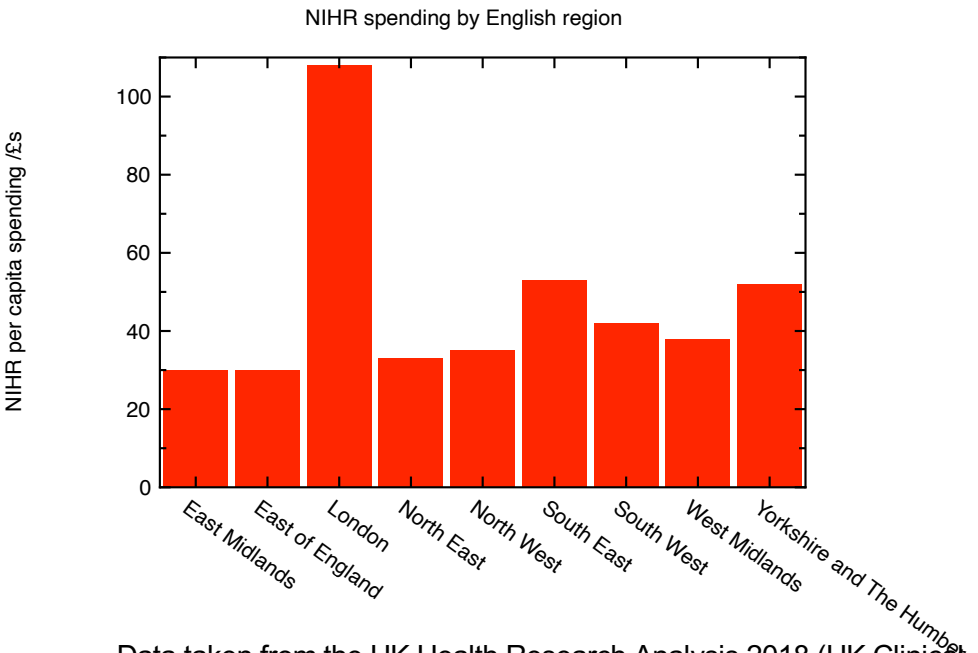
"We don't do regional strategy" – Levelling Up Paper promises change:

- *BEIS will aim to invest at least 55% of its R&D funding outside the Greater South East by 2024-25. This covers domestic R&D funding including UKRI funding, other BEIS R&D funding competitions, industry R&D programmes and R&D infrastructure expenditure.*
- *Factor levelling up into investment decisions for R&D infrastructure and facilities.*
- *Give UKRI a new organisational objective to "Deliver economic, social, and cultural benefits from research and innovation to all of our citizens, including by developing research and innovation strengths across the UK in support of levelling up", and increase consideration of local growth criteria and impact in R&D fund design.*
- But – details lacking, and disappointing that there's no commitment to extend UKRI's successful **"Strength in Places Fund"** scheme.

Mobilising the National Institute for Health Research to level up health inequalities



Spread opportunities and improve public services, especially in those places where they are weakest	
Health	By 2030, the gap in Healthy Life Expectancy (HLE) between local areas where it is highest and lowest will have narrowed, and by 2035 HLE will rise by five years.
Well-being	By 2030, well-being will have improved in every area of the UK, with the gap between top performing and other areas closing.



Data taken from the UK Health Research Analysis 2018 (UK Clinical Research Collaboration, 2020) ISBN 978-0-903730-29-7 https://hrcsonline.net/reports/analysis-reports/uk-health-research-analysis-2018/

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Mobilising the National Institute for Health Research to level up health inequalities

Some welcome commitments in White Paper, including

- *The National Institute for Health Research (NIHR) will bring clinical and applied research to under-served areas and communities in England with major health needs to reduce health disparities.*
- *commit that the new contractual period for NIHR Biomedical Research centres see increased levels of investment outside London, Oxford and Cambridge*

But faster progress needed!

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Innovation Accelerators

> **BEIS will invest £100m between 2022-23 and 2024-25 to pilot three new Innovation Accelerators**

BEIS will invest £100m between 2022-23 and 2024-25 to pilot **three new Innovation Accelerators, in** Greater Manchester, the West Midlands, and Glasgow City-Region, building on existing R&D strengths and strong local governance.

Innovation Accelerators will develop UK innovation clusters, boosting economic growth by investing in high-quality projects

- to grow R&D strengths,
- attract private investment,
- boost innovation diffusion,
- maximise the combined economic impact of R&D institutions.

They will empower local areas by bringing together national and local government, industry and R&D institutions in a long-term partnership.

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Greater Manchester's response

- Offer to government to partner in an "Innovation Deal", through a new organisation, Innovation GM
- Innovation GM
  - Private sector led (Chair Chris Oglesby, Bruntwood)
  - Closely connected to GM Combined Authority
  - Strongly endorsed by GM political leadership
  - Involving all 5 GM Universities (GM-wide Civic University Agreement will go public next week), & FE Colleges
  - Scientific Advisor: Richard Jones
- Developing a pipeline of rigorously tested investment opportunities aimed at driving productivity across the whole of GM
- Outward looking & keen to develop alliances with other cities & regions on a sector by sector basis

Economy | Work and Skills

Innovation Greater Manchester provides blueprint for boosting R&D investment and levelling up North

Related News

- Innovation Greater Manchester provides blueprint for collaboration with government to create £7bn economic benefit, 100,000 jobs, boost R&D investment and level up the North
- Innovation leaders across business, science, academia and local government back Greater Manchester's inclusive plan for UK economic growth and international trade

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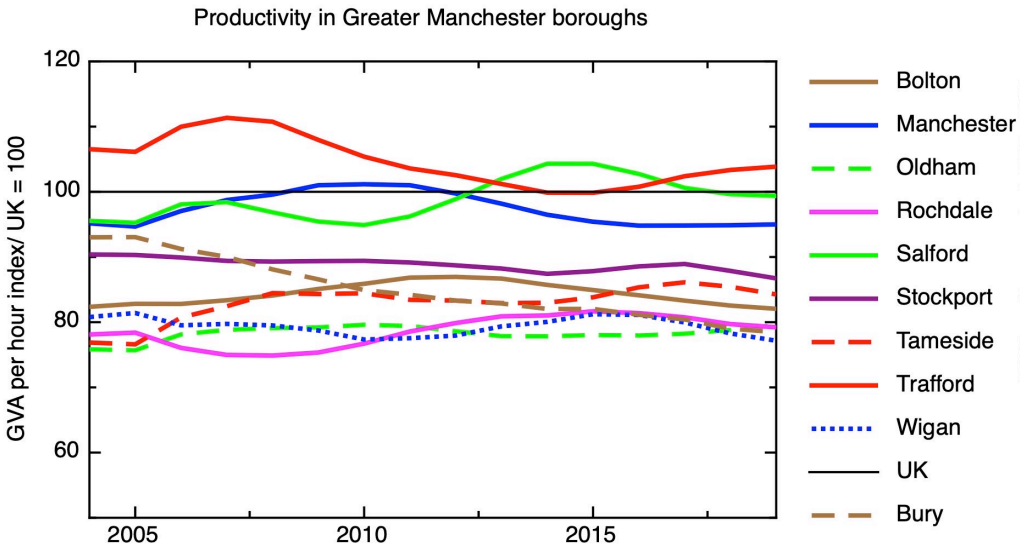
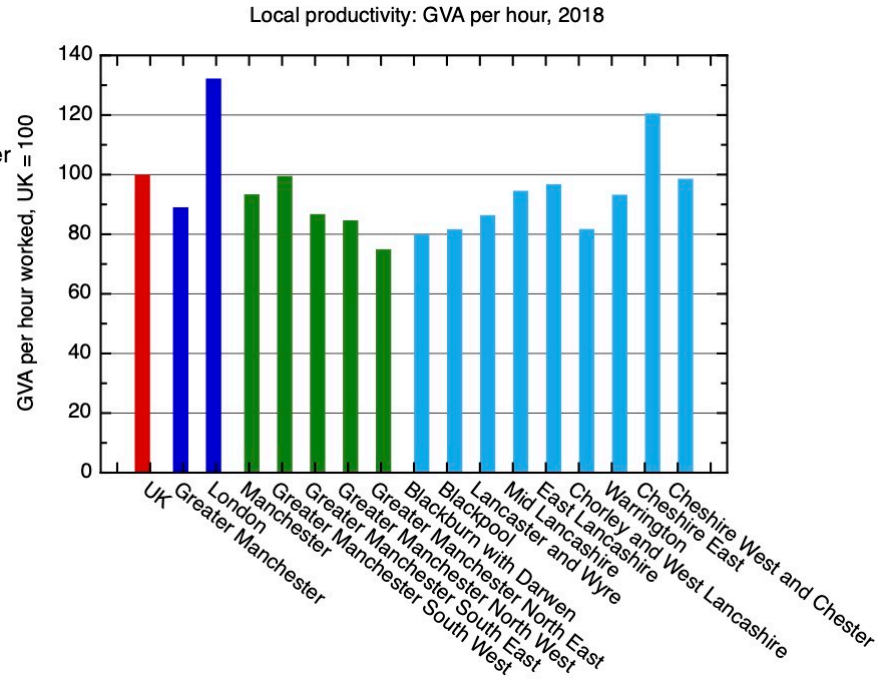
Levelling Greater Manchester up – and levelling up across GM





GVA per hour worked, relative to the UK average (=100). Data: ONS Subregional Productivity, July 2021 release.

Local productivity, expressed as GVA per hour worked, by NUTS regions, relative to UK average (indexed to 100). ONS data

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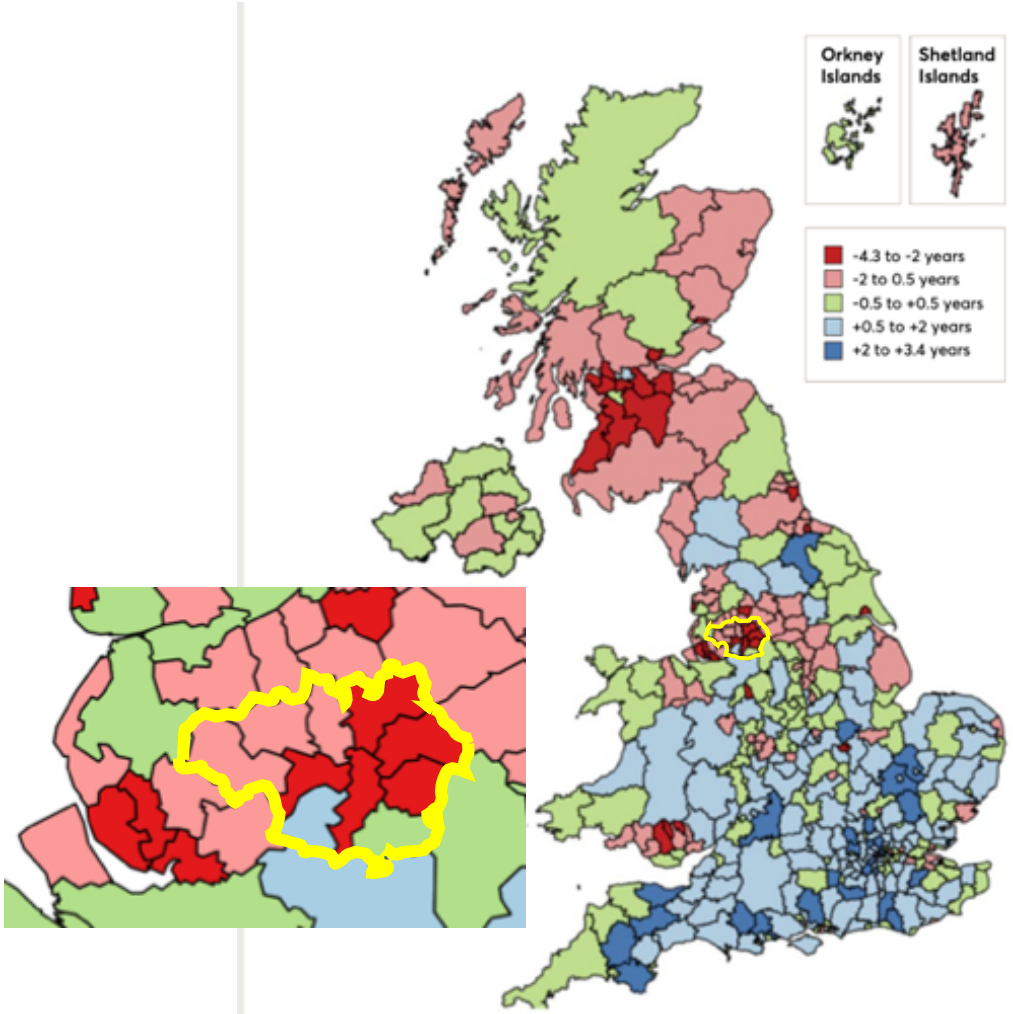
Levelling up isn't just about money…

Health inequalities map onto economic imbalances…

- People in poor places have bad health
- An unhealthy population is a drag on productivity

Public health & regional economic development need to go together



Regional variations in life expectancy across the UK, by local authority district. Life expectancies at birth, females, 2012-2014. Data: ONS.

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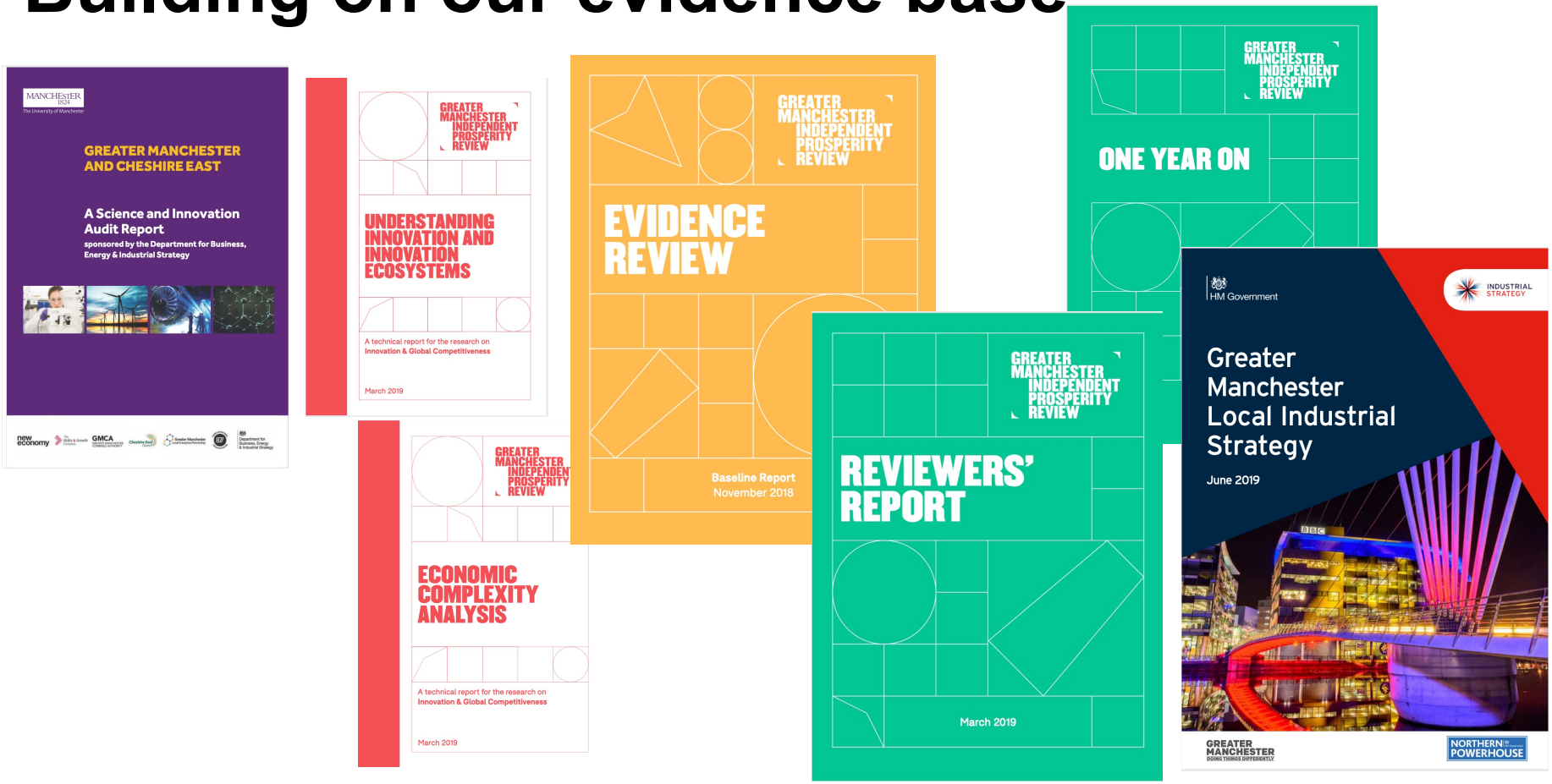
Building on our evidence base



Ten different boroughs, different economies…

Mapping the sector specialisms and industry relationships in the ten boroughs through economic complexity analysis

Figure 6: Manchester's position in the UK Industry Space

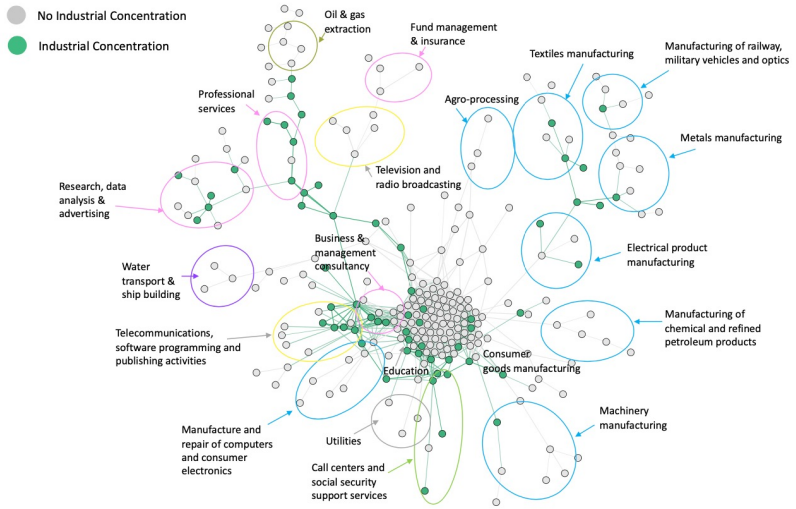
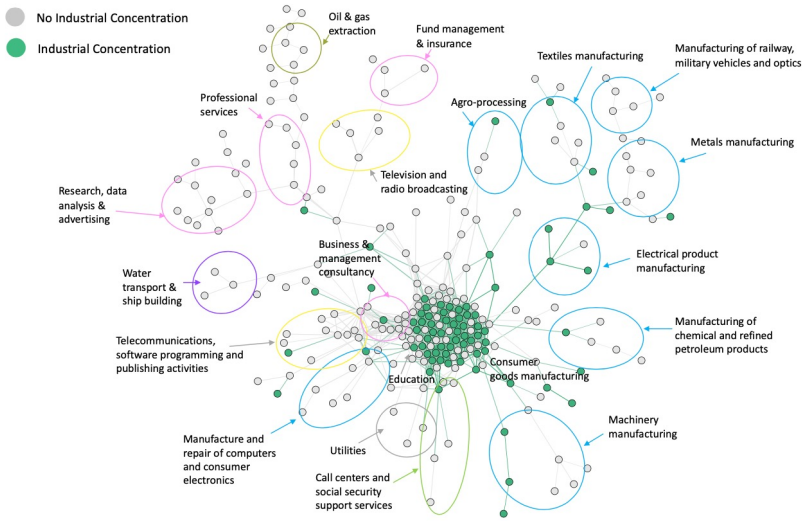


Figure 7: Wigan's position in the UK Industry Space



Manchester:
research and professional services. telecommunications, computer programming and management consultancy services

Wigan:
construction, warehousing and storage, Manufacturing: textiles, chemicals, plastics and machinery

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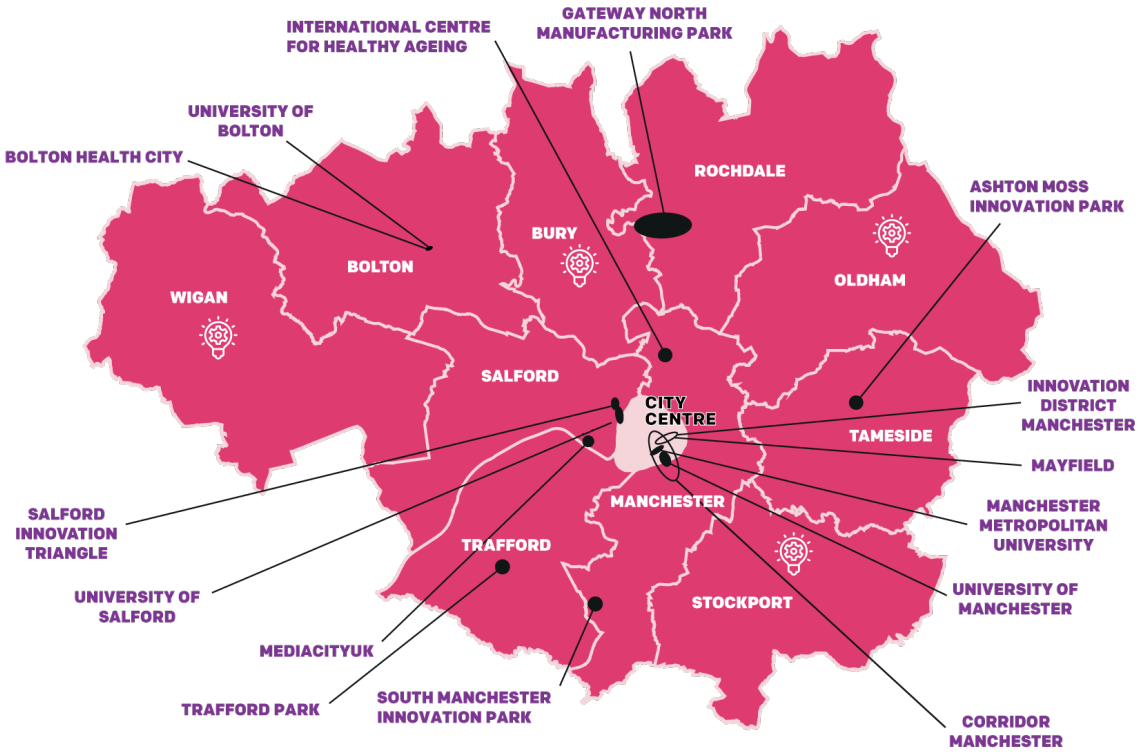
Investing in places

- City centre Innovation Districts based around research university assets
- Manufacturing innovation parks & institutions for innovation diffusion, rebuilding “Industrial Commons” (e.g. Rochdale’s Advanced Machinery and Productivity Institute, with NPL)
- Innovation & skills in centres of outlying towns



Manchester Evening News
BLACK HISTORY IS OUR HISTORY

The quest to define Oldham's future

'I'm not going to sit back and wait for things to happen to us': How Oldham is trying to solve the economic conundrum of a generation

By **Jennifer Williams**

17:33, 10 OCT 2021 | **UPDATED** 21:41, 10 OCT 2021

More than 20 years after its last cotton mill closed, the hard reality of what that quietly spelt out for a town like Oldham is now loudly front and centre of the national political stage.

In 2021, both main parties are now vying to be the go-to choice for places that were economically battered through the 1980s and the 1990s, before being walloped in 2008 and never really making it out the other side.

Michael Gove spoke of the town at Conservative Party conference in Manchester this week, stressing that he wanted to look at 'specific solutions' tailored to the decline Oldham has experienced.

"It's part of my mission to better understand which towns around Manchester are succeeding and why," he added of his new 'levelling up' brief.

Looking to the future with Oldham's Economic Review Board

Published: Friday, 08th October 2021

Oldham's brand-new Economic Review Board met for the first time on 7 October 2021.

The Board has been created with the purpose of exploring how we drive forward Oldham's economy, create new jobs and attract people to live and work here.

They will also consider how we tackle the challenges the town faces in areas such as education, skills, and health; challenges also faced by many other former industrial towns across the country.

Cllr Arooj Shah, Leader of Oldham Council, said: "I am ambitious for Oldham and am determined to make our town an even better place in which to live and work. But I am also well aware of the issues we face, and know that the Council alone does not have all the answers.

"That's why I've set up this new Oldham Economic Review Board; an independent group of experts in their respective fields, who will contribute their incredible knowledge and skills and explore what we can do to ensure Oldham su

Screenshot

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Levelling Up R&D

- R&D is an important element of the productivity-enhancing investments that should be at the centre of the levelling-up agenda
- The White Paper rightly sets this as one of its missions
- Work remains to be done to translate high-level commitments into changes in how depts and agencies spend their R&D budgets
- Co-creation – and ultimately devolution – of R&D programmes with city-regions with capacity is important to incorporate local knowledge and local responsibility. Innovation Accelerators a good first step
- ***Find out who is doing the innovating, and help them do more of it!***