

Our Economy 2023

Wednesday 15 November | 9.30am - 4.00pm

The Catalyst, Newcastle



Lucy Winskell OBE

Chair,
North East Local Enterprise Partnership



Dr Marianne Sensier

Place-Based Productivity Lead,
Productivity Institute



WHY PRODUCTIVITY MATTERS

INSIGHTS FOR ECONOMY, BUSINESS AND PLACE

THE PRODUCTIVITY INSTITUTE AT A GLANCE

ESTABLISHED
1ST SEPT
2020

200 INDIVIDUALS
INVOLVED
IN OUR REGIONAL
PRODUCTIVITY FORUMS

5 YEAR
GRANT

10 INSTITUTIONAL
PARTNERS

62 PAPERS & REPORTS
PUBLISHED

8 REGIONAL
PRODUCTIVITY
FORUMS

9,000+
DOWNLOADS OF
RESEARCH PAPERS

140+
AFFILIATED RESEARCHERS



Human capital



Organisational capital



Knowledge capital



Geography and place



Macroeconomic trends and policy



Institutions and governance



Measurement and methods

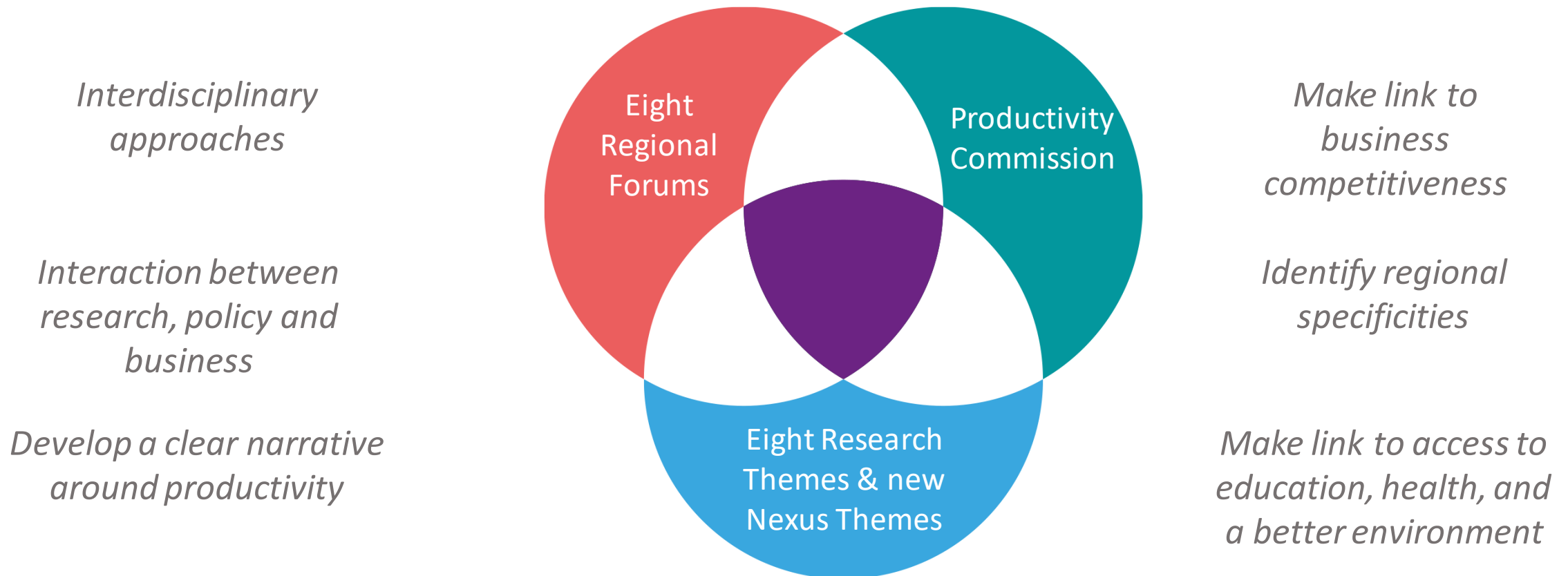


Social, environmental and technological transitions

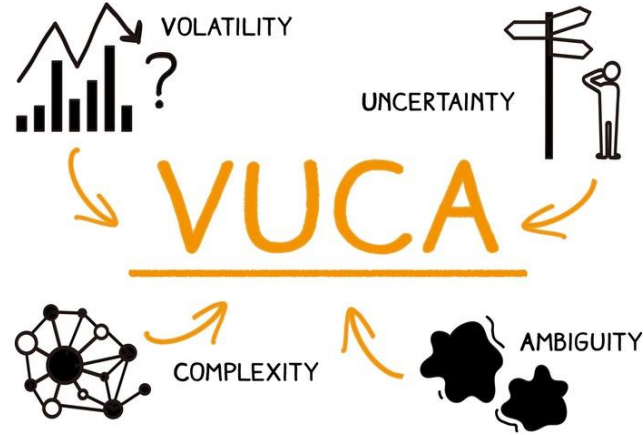


THE PRODUCTIVITY INSTITUTE'S MISSION AND HOW WE ARE GOING TO ACHIEVE THIS

*Lay the foundations for an era of **sustained and inclusive productivity growth** and help **policy makers and business leaders** across the UK understand how to **improve productivity** and **raise living standards***



WHAT IS PRODUCTIVITY? THE POPULAR VIEW



- More “sweat”
- Budget cuts and efficiency drives
- Squeezing more out of what we have
 - The end of my job
 - The end of the environment
 - Stress and burnouts



WHY PRODUCTIVITY MATTERS

- Productivity is about how we turn our resources into outcomes for firms, people and places.
- The resources are associated with workers and worker hours but also include investments in skills, machines, infrastructure, digital capabilities, and organizational knowledge.
- If we use our resources more efficiently and effectively to create better outcomes, organisations will be more successful in what they do, people will experience higher living standards and well-being, and places will become more attractive to live, work and do business in, and create inclusive growth.

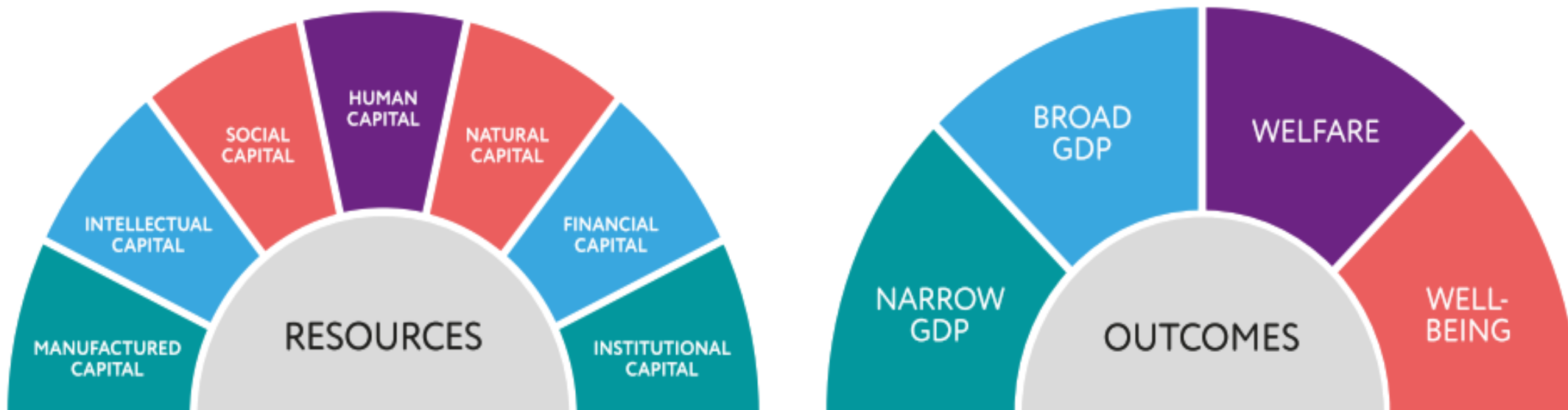
WE CARE ABOUT ECONOMIC PRODUCTIVITY



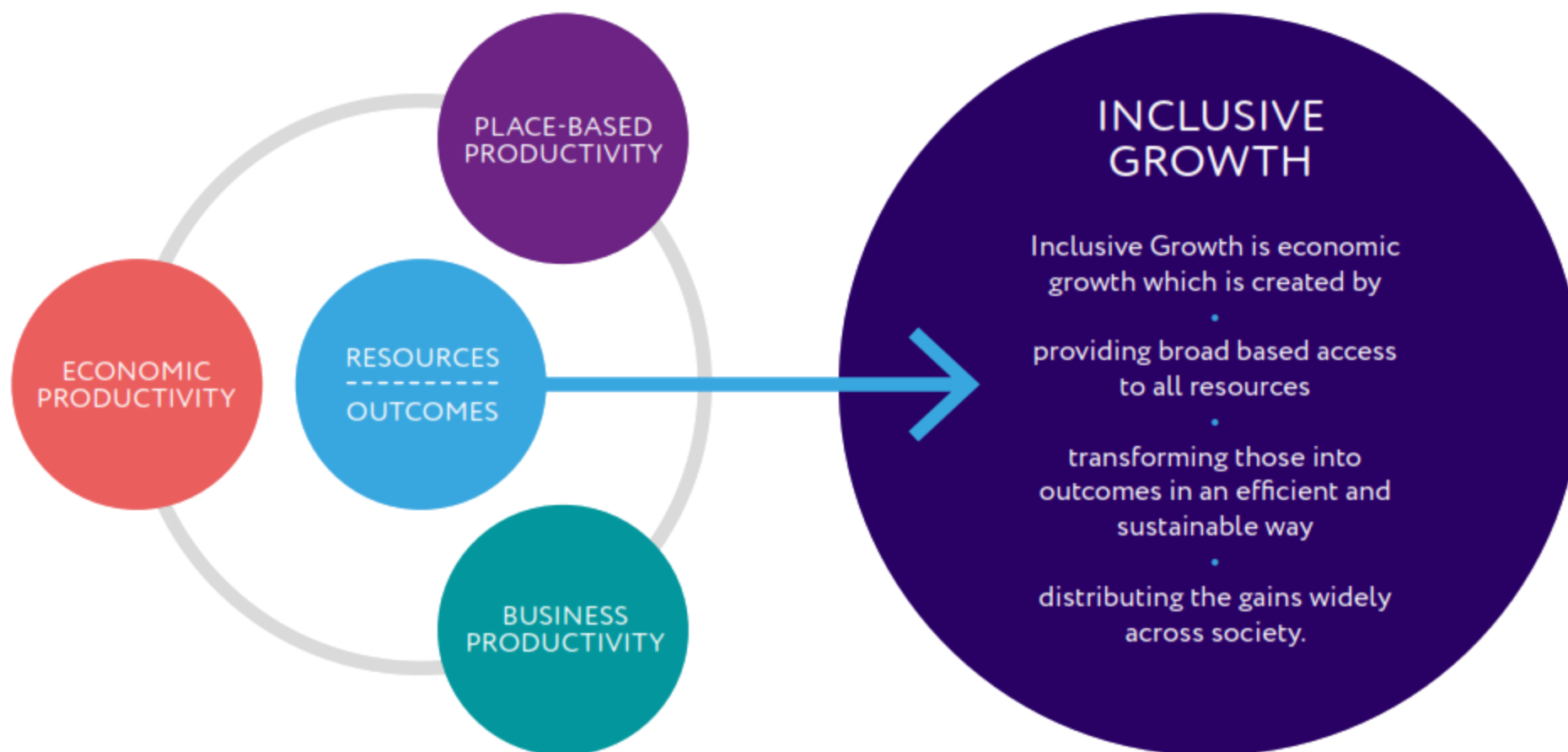
¹ GDP - value of all outputs minus intermediate inputs, and adjusted for inflation ² Labour productivity - Increase in real GDP per worker or per worker hour
³ Increase in contribution of physical capital - machinery, equipment and structures ⁴ Increase in contribution of human capital - formal school qualifications
⁵ Total Factor Productivity - Residual growth in real GDP after adjusting for labour and capital input

... ABOUT BUSINESS PRODUCTIVITY



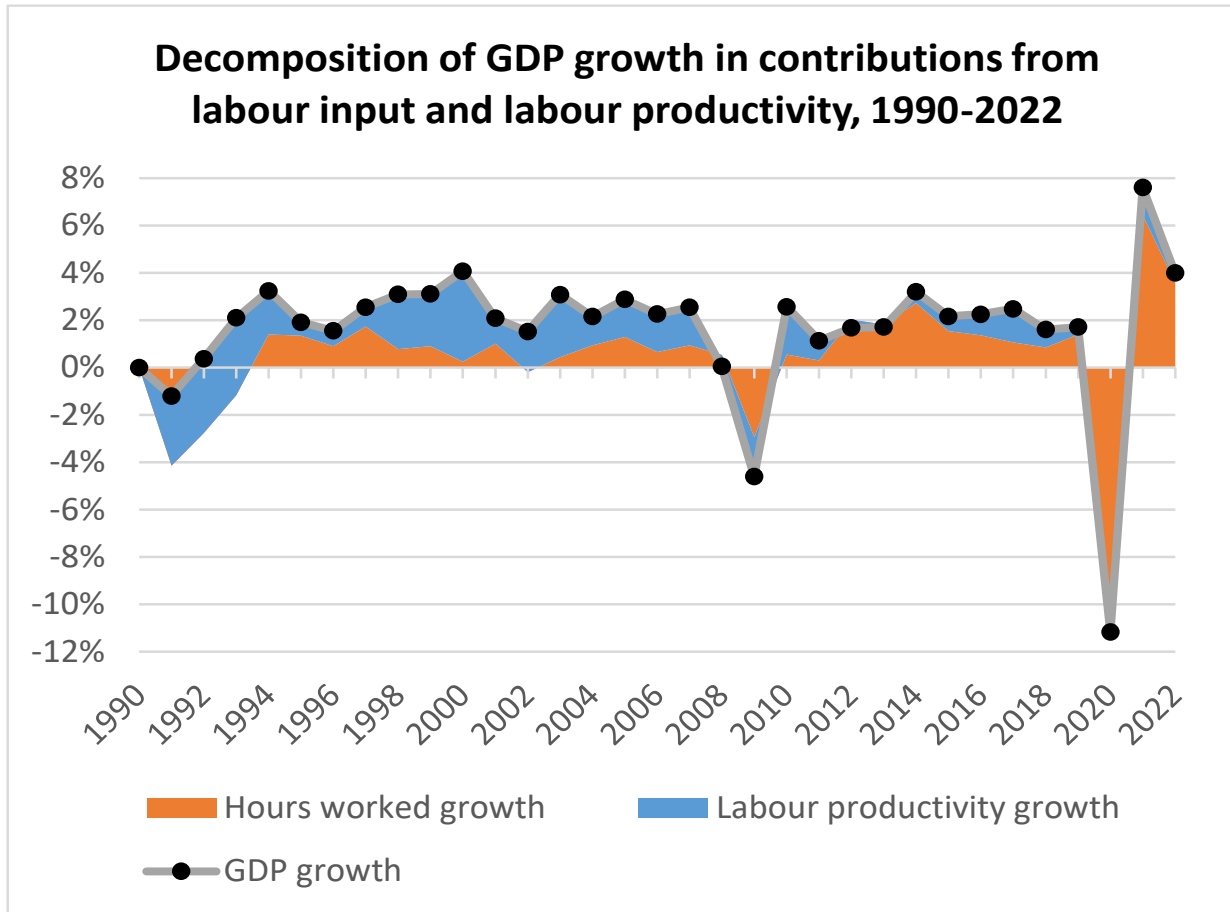


... WHICH TOGETHER GENERATE INCLUSIVE GROWTH



THE UK ECONOMY HAS BECOME “PRODUCTIVITY-POOR”

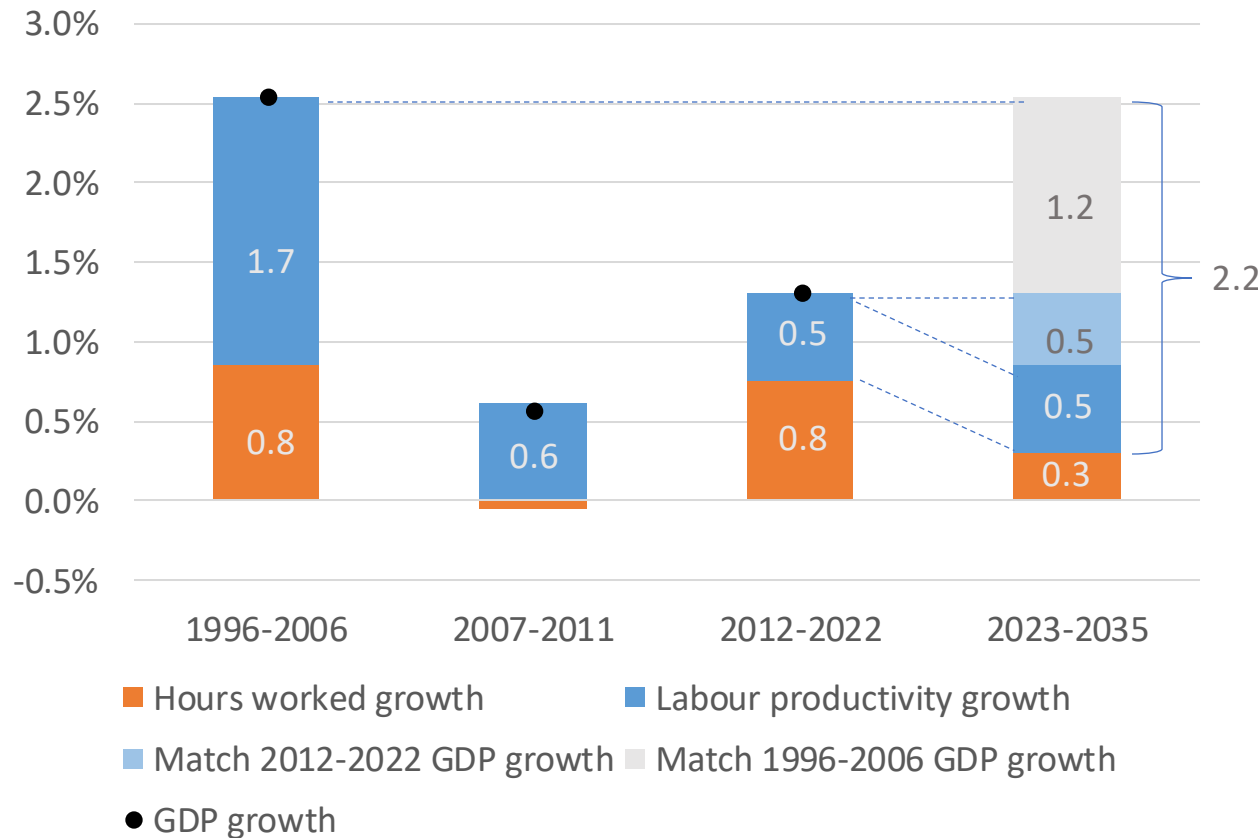
UK has become more labour intensive but productivity poor



- Over the past 15 years labour growth (total working hours) has contributed more to GDP growth than productivity (output per hour).
- Many sectors and firms have followed a low wage, low investment, low productivity route.
- This is not sustainable as labour shortages are a long-term constraint due to ageing, changes in migration patterns, etc.

IT WILL NOT BE POSSIBLE TO REVIVE THE ECONOMY WITHOUT A STRONG IMPROVEMENT IN PRODUCTIVITY

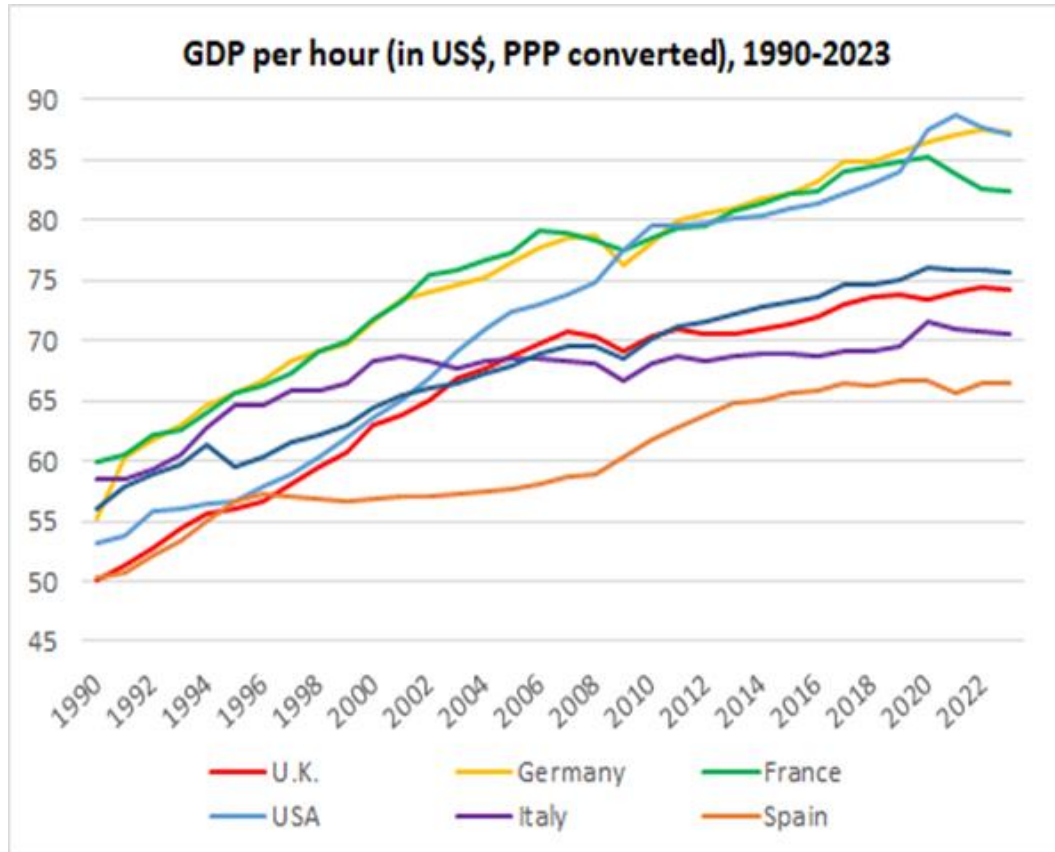
GDP growth Decomposed to Hours and Labour Productivity, UK (%), 2006-2035



- Over the past 15 years labour growth (total working hours) has contributed more to GDP growth than productivity (output per hour).
- As labour input growth is projected to slow to 0.3% from 2023-2035, productivity will be critical for future growth.
- Staying at the average productivity performance of the past 10 years (2012-2022) would leave 2023-2035 GDP growth at just 0.8% per year.
- If we want to achieve the same GDP growth rate as in past 10 years (1.3%), we need to double productivity growth to 1.0% productivity growth per year.
- If we want to achieve the same GDP growth rate as from 1996-2006 (2.5%), we need 2.2% productivity growth per year – more than quadruple the current rate.
- *Note:* Policies regarding older workers and migration may help to somewhat mitigate slowdown in labour input growth but it will not be an alternative to raising productivity.

MANY COUNTRIES HAVE SEEN PRODUCTIVITY GROWTH SLOWING, BUT THE UK GAP TO LEADERS IS WIDENING

Labour productivity level has flattened across most advanced economies with UK in the middle of the pack



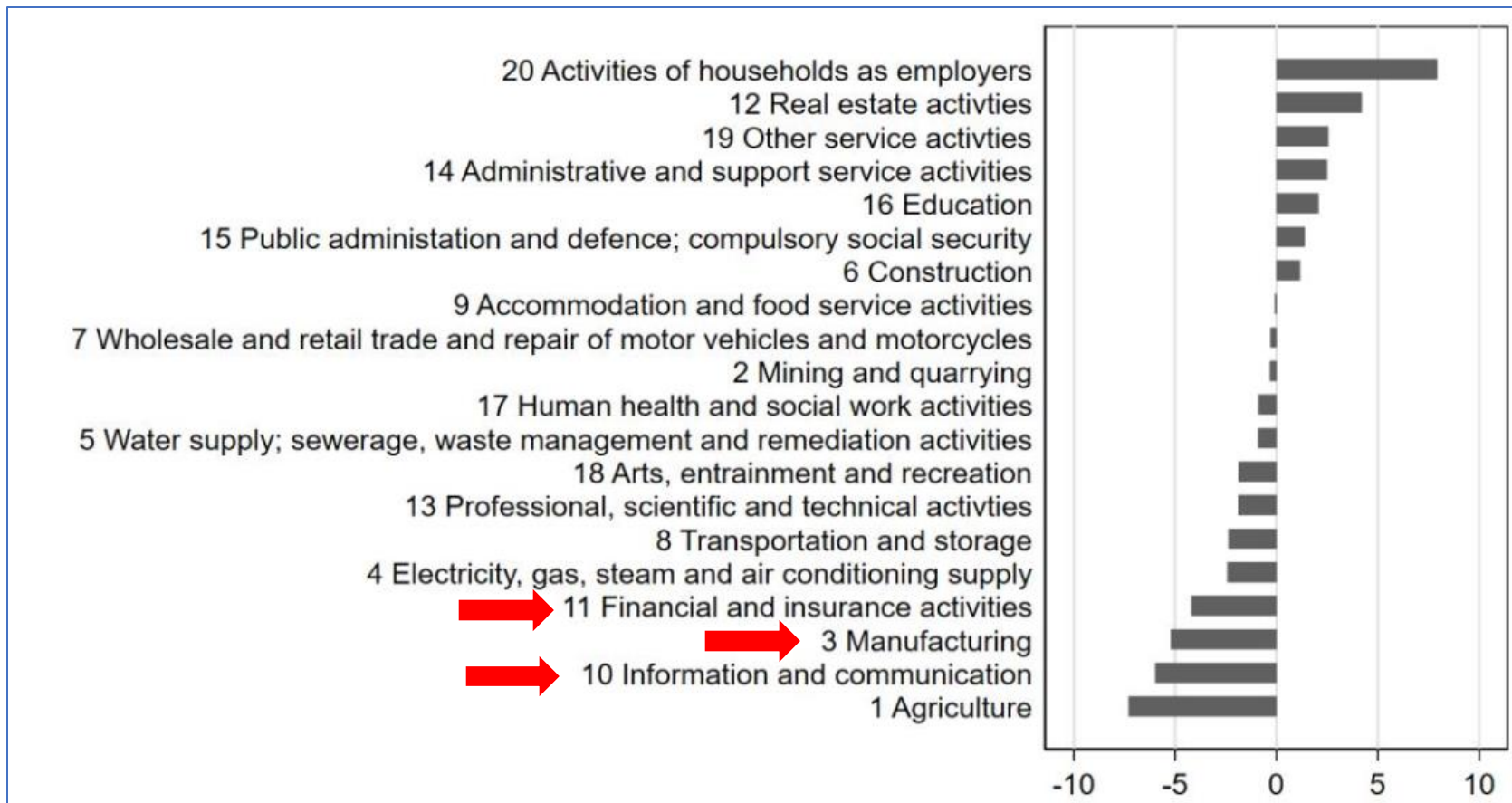
- Productivity growth has slowed across advanced economies for many reasons, e.g.:
 - Rise of low productivity services
 - Weak investment since global financial crisis
 - Time lag in adoption of new technologies
- The pandemic seems to have little long-term impact on productivity growth: the slowing trend appears to continue
- The UK is in the middle of the pack, and has seen its performance weakening relative to productivity leaders.

Source: The Conference Board, 2023

Note: GDP per hour and GDP per capita are expressed in US\$ using purchasing power parities (adjusted for differences in relative price levels)

SOME OF THE LEADING PRODUCTIVITY SECTORS HAVE SEEN A LARGE SLOWDOWN IN THE PAST DECADE

Industry Labour Productivity Slowdown, 2008-2019 relative to 1998-2008, in %





CHRONIC AND BROAD-BASED UNDER-INVESTMENT

- Weak investment in physical, human and intangible capital- public and private
- Exacerbated by austerity of 2010s and Brexit



LACK OF KNOWLEDGE DIFFUSION

- Leading in critical but narrow science areas
- Adoption and commercialisation across economy is challenging



INSTITUTIONAL FRAGMENTATION

- Policy design is highly centralised
- Institutional landscape to diffuse and implement policies is fragmented and lacks scale

WHAT DOES THIS MEAN FOR THE UK?

PEOPLE



SKILLS, JOBS AND WELL-BEING

- Mismatches of skills and competencies across industries, occupations and regions
- Large pool of workers in low skill, low wage, low productivity trap
- Breakdown in link between productivity, health and well-being due to rise in precarious employment
- Productivity from hybrid working depends on skills, technology and organisational strategies

FIRMS



WEAKENING AT TOP OF THE PRODUCTIVITY PYRAMID

- Sectors previously excelling have weakened
- Technological leadership amongst top firms is relative narrow



PRODUCTIVITY SLOWDOWN IN THE MIDDLE OF THE PYRAMID

- Weak linkages between top performing sectors and firms and the rest of the economy
- Ill-designed institutions and policies to support technology diffusion, innovation and absorption capacity



LACK OF SCALE UP POTENTIAL AT BOTTOM OF THE PYRAMID

- 50% of lowest productivity firms contribute very little to aggregate productivity growth
- Many weak firms are located in underperforming regions, lacking resilience and capacity to escape low productivity trap

- Lack of mobility of firms across the productivity pyramid

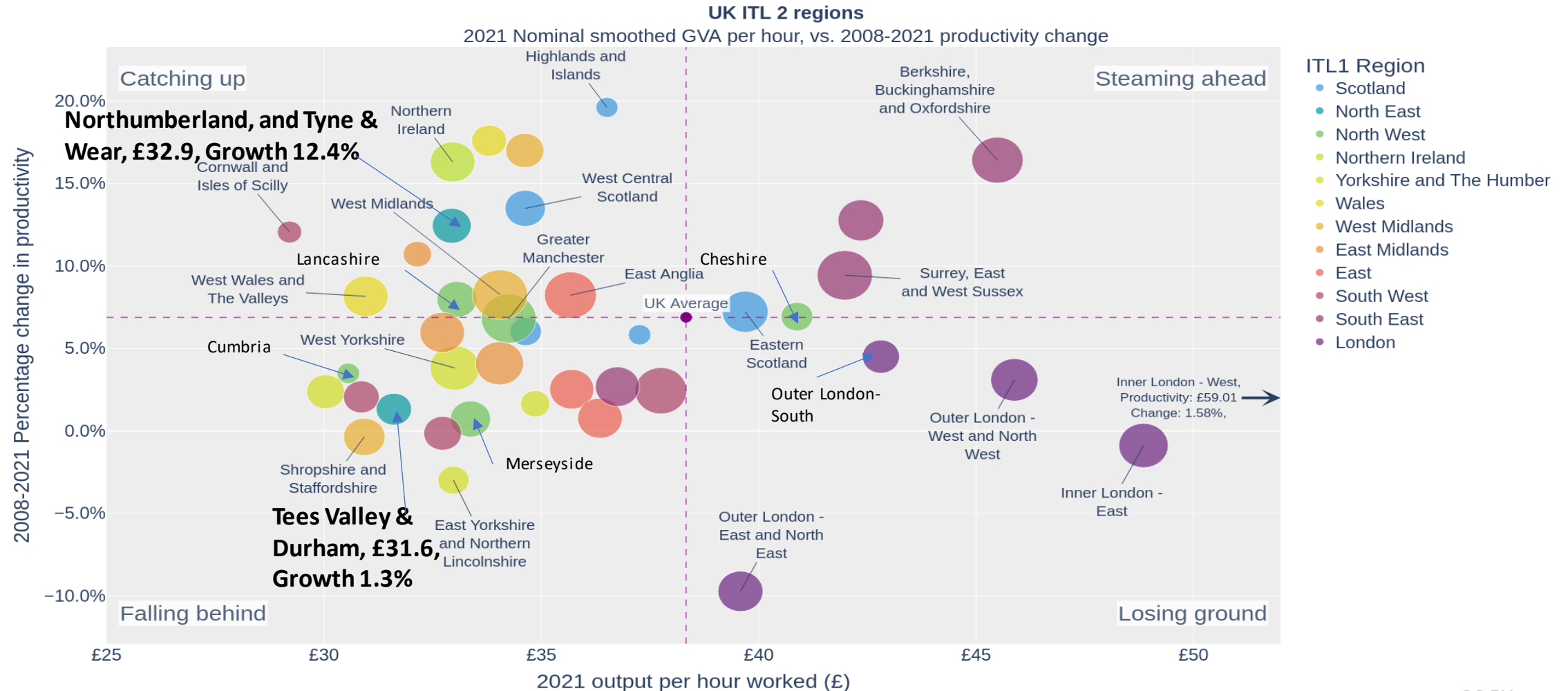
PLACES



REGIONAL DIMENSIONS

- Underperforming regions outside London and South East
- Productivity shortfall of major second-tier cities
- Overcentralised policy making; lack of devolution
- Lack of capacity in places to implement policies in absence of tax and spending power

PRODUCTIVITY DIFFERS IN LEVELS AND GROWTH RATES BETWEEN UK REGIONS



Notes: Marker size indicates total 2021 population. Inner London West removed as an outlier.

TPI ITL3 SCORECARDS DRIVERS: NORTH EAST, 2019

<https://www.productivity.ac.uk/the-productivity-lab/>

North East ITL3 Scorecards 2019

ITL Classification	itl	TLC	TLC23	TLC11	TLC22	TLC13	TLC14	TLC21	TLC12
	itlname	North East	Sunderland	Hartlepool and Stockton-on-Tees	Tyneside	Darlington	Durham	Northumber-land	South Teesside
Productivity	Taxonomy relative to the UK	Catching up	Catching up	Catching up	Catching up	Catching up	Falling behind	Catching up	Falling behind
	Taxonomy relative to ITL1		Steaming ahead	Losing ground	Catching up	Catching up	Falling behind	Falling behind	Falling behind
	GVA per hour worked	£31.30	£36.19	£34.94	£31.08	£30.58	£29.77	£28.88	£28.53
Business performance & characteristics	Export Intensity	31.2%	59.4%	60.0%	20.0%	18.6%	31.6%	18.3%	19.2%
	New Businesses	12.5%	13.4%	12.7%	13.3%	12.6%	11.8%	10.0%	13.2%
Skills	Low Skilled*	20.6%	21.4%	20.7%	18.9%	19.0%	19.1%	22.8%	26.6%
	High Skilled	31.9%	27.3%	31.8%	35.2%	31.4%	31.6%	32.2%	26.3%
Health & wellbeing	Active working population	75.0%	74.5%	75.1%	75.2%	79.4%	75.5%	77.0%	69.6%
	Inactive due to illness*	28.4%	37.5%	31.7%	24.5%	23.7%	30.7%	26.6%	27.3%
	Working Age	61.3%	62.8%	60.8%	63.2%	59.5%	61.2%	56.9%	60.7%
Investment, infrastructure & connectivity	4G connectivity	83.4%	90.4%	73.1%	90.4%	86.9%	76.2%	76.8%	85.4%
	Fibre connectivity	3.0%	4.8%	1.9%	2.8%	1.4%	4.4%	3.3%	0.7%
	GFCF per job	£9,596	£8,753	£13,060	£7,158	£17,873	£10,676	£10,629	£9,281
	ICT per job	£385	£545	£643	£260	£852	£225	£336	£533
	Intangibles per job	£1,437	£2,966	£1,386	£963	£2,698	£1,071	£1,705	£1,391

Key

	Better: higher than 105% of UK ITL1 median
	Equal: within 95% - 105% of UK ITL1 median
	Worse: lower than 95% of UK ITL1 median

Cite as Gouma, F.R.; Menukhin, O.; Ortega-Argiles, R. (2023), TPI UK ITL3 Scorecards, TPI

<https://doi.org/10.48420/23791680>

[Annex: Methods and Sources](#)

HOW FIRMS CAN HELP WITH INCLUSIVE GROWTH?

- Pay staff the Real Living Wage.
- Sign up for the local authority Good Employment Charter (e.g. GMCA).
- Encourage measures to help staff well-being (flexible working).
- Allow staff to volunteer in company time for a charity.
- Increase budget for training and development so staff can upgrade skills and progress on the pay scale.
- Sign up for a business support programme like Made Smarter to help staff develop digital skills and give students placement opportunities.

TPI ITL3 SCORECARDS DRIVERS: NORTH EAST, 2021

North East ITL3 Scorecards 2021

ITL Classification	itl	TLC	TLC11	TLC23	TLC22	TLC14	TLC21	TLC12	TLC13
	itlname	North East	Hartlepool and Stockton-on-Tees	Sunderland	Tyneside	Durham	Northumberland	South Teesside	Darlington
Productivity	Taxonomy relative to the UK	Catching up	Catching up	Falling behind	Catching up	Falling behind	Catching up	Falling behind	Catching up
	Taxonomy relative to ITL1		Steaming ahead	Losing ground	Steaming ahead	Falling behind	Catching up	Falling behind	Catching up
	GVA per hour worked	£32.37	£37.11	£35.79	£32.81	£30.64	£30.43	£29.08	£28.56
Business performance & characteristics	Export Intensity	28.6%	58.2%	45.0%	19.8%	28.6%			
	New Businesses	13.0%	12.8%	15.8%	13.5%	12.2%	10.2%	12.7%	15.6%
Skills	Low Skilled*	18.1%	17.6%	22.1%	19.0%	15.5%	16.6%	18.8%	15.3%
	High Skilled	34.5%	33.9%	24.6%	39.3%	32.5%	35.5%	30.8%	38.6%
Health & wellbeing	Active working population	74.7%	75.6%	72.5%	76.1%	74.1%	74.2%	71.0%	81.0%
	Inactive due to illness*	30.1%	32.8%	38.1%	28.6%	30.0%	23.4%	30.7%	27.5%
	Working Age	61.3%	60.9%	63.4%	63.4%	61.8%	56.1%	59.3%	58.4%
Investment, infrastructure & connectivity	4G connectivity	84.7%	75.3%	89.6%	93.3%	79.5%	76.0%	81.8%	88.4%
	Fibre connectivity	18.6%	7.0%	11.4%	22.8%	37.6%	10.2%	4.6%	3.7%
	GFCF per job								
	ICT per job								
	Intangibles per job								

Key

	Better: higher than 105% of UK ITL1 median
	Equal: within 95% - 105% of UK ITL1 median
	Worse: lower than 95% of UK ITL1 median
	No data available

Cite as Gouma, F.R.; Menukhin, O.; Ortega-Argiles, R. (2023), TPI UK ITL3 Scorecards, TPI

<https://doi.org/10.48420/23791680>

[Annex: Methods and Sources](#)

[CC BY 4.0](#)

North of Tyne CA: <https://goodworkpledge.co.uk/>

ABOUT THE GOOD WORK PLEDGE

WE VALUE OUR REGIONS EMPLOYERS, THE VAST NETWORK OF BUSINESSES LARGE AND SMALL THAT PROVIDE JOBS FOR OUR PEOPLE.

The Good Work Pledge helps employers identify what 'good work' looks like, get recognised or make improvements.

The pledge is set out around its FIVE pillars of criteria with the main themes being:



**VALUING AND
REWARDING YOUR
WORKFORCE**



**PROMOTING HEALTH
AND WELLBEING**



**EFFECTIVE
COMMUNICATIONS
AND
REPRESENTATION**



**DEVELOPING A
BALANCED
WORKFORCE**



**A SOCIAL
RESPONSIBILITY**



Annabel Smith

Head of Place and Practice,
Centre for Progressive Policy





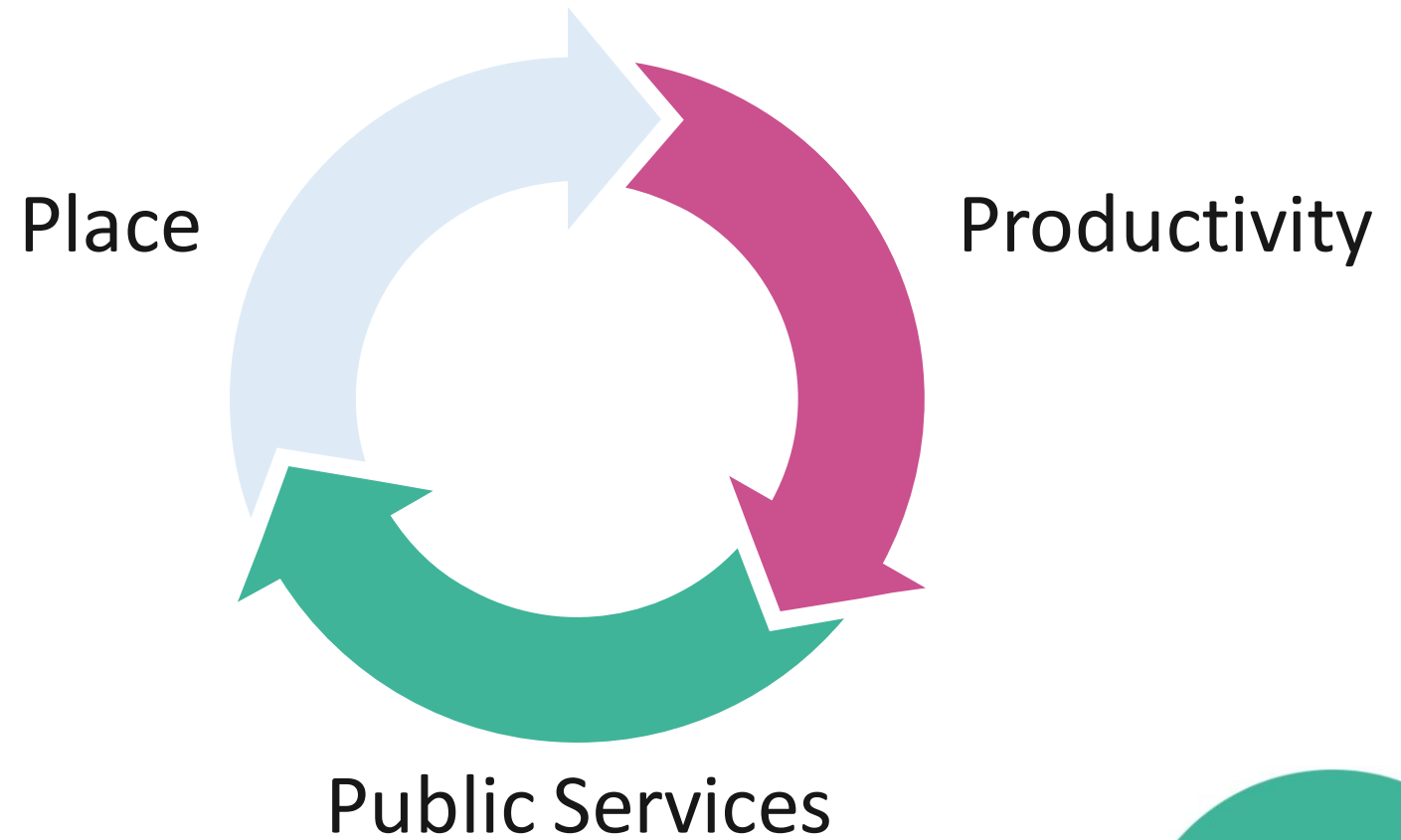
Why a new model for growth?

“For decades we have been trying to approach the problem in the wrong way, treating efforts to tackle inequality and deprivation as though they were disconnected from efforts to drive up productivity and grow the economy.”

Inclusive Growth Commission, 2017

- Rekindling productivity remains the critical economic priority for the UK.
- But ‘grow now, distribute later’ model not working. Created a divided society, with too many people and places left behind.
- This compounds UK’s poor productivity, holding down real wages and living standards.

What do we mean by inclusive growth?





Inclusive growth and productivity

- By **bringing skills levels and life expectancy in lagging areas up to the national average** while closing the gender employment gap, the UK could generate an additional **£160bn in economic output** – approximately **7% of GDP**.
- Bringing these areas up to the national average and removing the gender employment gap across the North East would boost GVA by **12% (£5.7bn)**.
- Of this uplift, **health** accounts for nearly **4%**, **skills** for **7.3%** and closing the **gender employment gap** for **0.8%**.



The devolution opportunity

- ✓ Longer term priorities and investment
- ✓ Alignment of social and economic policy
- ✓ Strong, cohesive voice for the region nationally and internationally
- ✓ Convening role within region - ensuring the whole is greater than its sum of parts



Inclusive Growth Network

Working with places across the UK to deliver inclusive growth in practice

Host

centre for
**progressive
policy**



Funder

JRF JOSEPH
ROWNTREE
FOUNDATION

Core partners

RSA **M-D**



Key principles for delivering inclusive growth

- ✓ Good jobs, not just any jobs
- ✓ A focus on health, not just healthcare
- ✓ Further education, not just higher education
- ✓ Accessible, high-quality childcare

Our Economy 2023

Frank Millar

Chief Executive,
CPI





A 20-year journey supporting Inclusive Productivity in the North East

- **Frank Millar**

- CEO





2004

OneNorthEast strategy
for success published

Our original business plan

A market focused approach to the development of applied research and technology for the process industries and related fields.

Support for emergent businesses through to full scale manufacture.

Increasing awareness among process companies of relevant new technologies.

To become financially self-sustaining.

Close collaboration with selected world-class research universities... to provide the science and engineering base needed by the Centre.

Technical and business training, in co-operation with universities [...] and other service providers.



CPI is...

A Social Enterprise and an independent, deep-tech innovation centre addressing global societal, environmental and industrial challenges and opportunities

We help companies to develop, prove, scale-up and commercialise disruptive and transformative innovations

Integrated innovation services

Industry relevant expertise and assets

Delivering product development, proof of concept, and scale-up services.



Expertise in securing funding for partners and clients

Enabling the right partnerships, connections, and funding routes at the right time.

Knowledge and application of innovation processes

Business services and consultancy to reduce risk and speed up time to market.

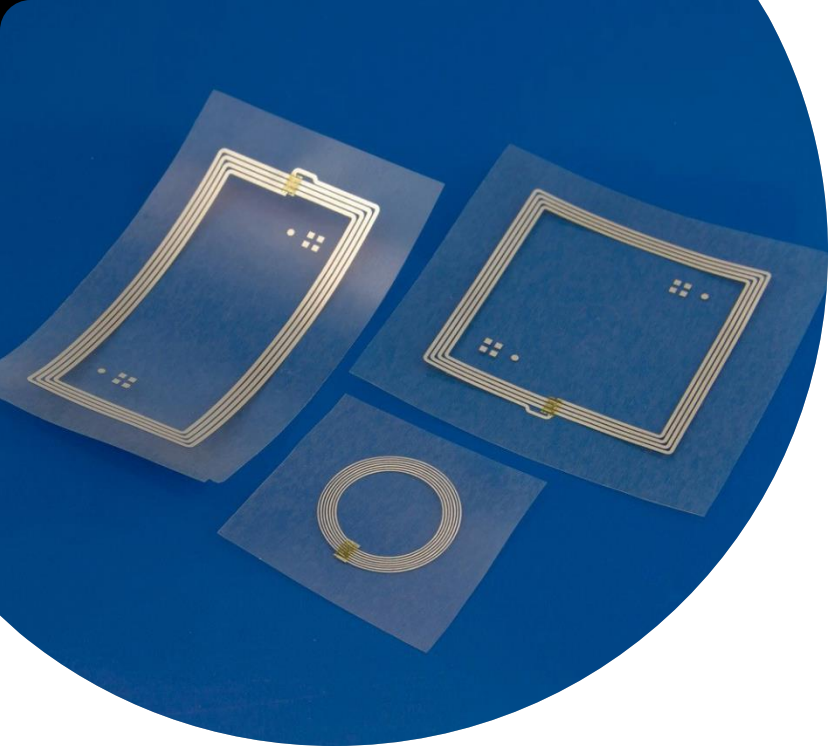
700+ staff

450+ Scientists and Engineers

£200 million of innovation facilities
(~25000 m²)

Founding member of UK's High Value
Manufacturing Catapult





CASE STUDY

PragmatlC®

PragmatlC to deliver electronics in everyday

Objects

- PragmatlC started working with CPI in 2012 on a proof-of-concept process for making flexible integrated circuits (FlexICs). As a result of ongoing collaboration and development work, Pragmatic has established its first FlexLoglC® fab-in-a-box manufacturing facility in County Durham and launched its ConnectlC® product family and FlexlC Foundry® service. PragmatlC continues to build its North East presence through its large-scale manufacturing facility Pragmatic Park based in County Durham.

"CPI has supported PragmatlC through a mix of infrastructure, technical resources and business services. CPI's flexible approach has helped us adapt at each stage as we progressed from lab-scale R&D through to production using our automated FlexLoglC system. Our relationship with CPI has been crucial to PragmatlC's development and remains a key part of our strategy for the coming years."

• I N P U T S

- CPI Printable Electronics Facilities, Incubation Space & Infrastructure.
- Expertise & Consultancy.
- Signposting & Consortia Building.
- Bid Writing.

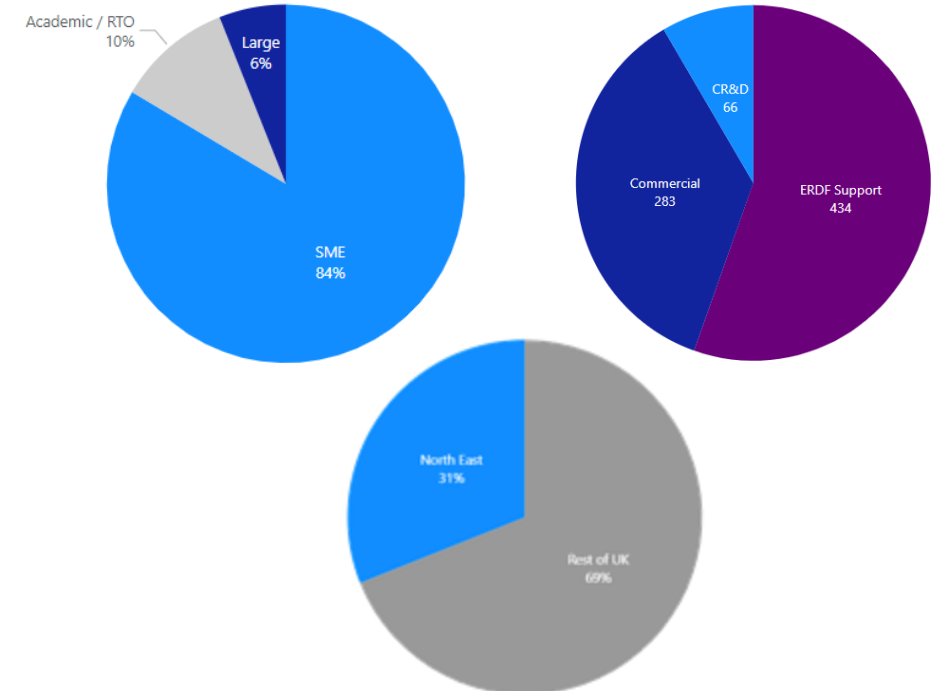
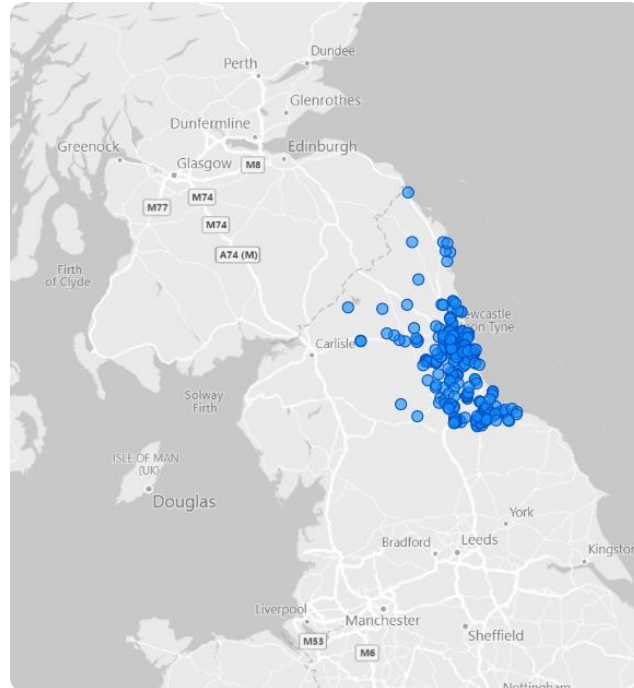
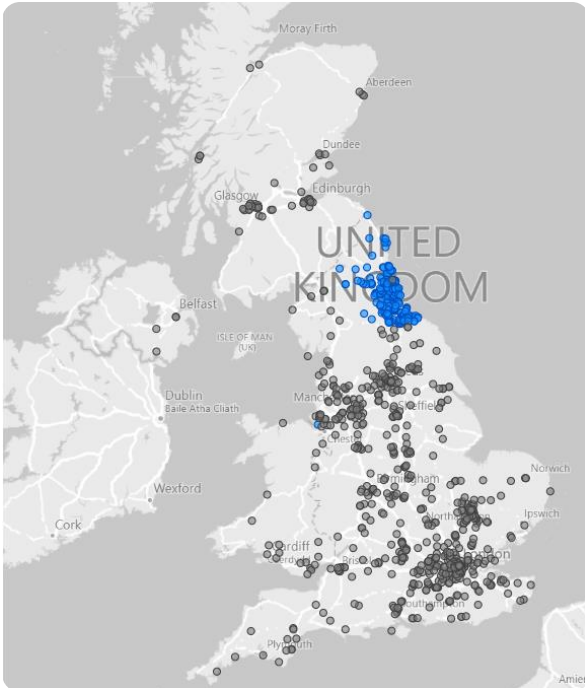
• O U T P U T S

- Feasibility studies completed.
- Scale up achieved.
- Capital expenditure reduced.
- Public funding secured.
- Formation of supply chain relationships.
- Accelerated technology development.

• O U T C O M E S

- Over £143M private investment.
- 170 jobs retained/created.
- Value created from IP>200 patents.
- Enabled rapid growth of PragmatlC's North East manufacturing team.
- Expedited the launch of the FlexLoglC fab-in-a-box for mass production.

North East clients



CPI has actively collaborated with
to deliver over

North East based clients
projects

Impact – line numbers

2018 - 2023



Business support
activities



Engagements



Leveraged match
funding



Commercial
projects



CR&D projects

Projects 2018 - 2023



Commercial projects

947
SME
(60%)

628
Non-SME
(40%)



CR&D projects

61
With SME
partners only

69
With Non-SME
partners only

158
With SME and
Non-SME
partners

107
Industry,
Academia, and
CPI

of our projects included an SME partner
of our projects spanned the innovation ecosystem:
Academia Catapult Industry

The background is a solid blue color. In the top right corner, there is a light blue geometric pattern consisting of a line segment and a circle. In the bottom right corner, there is another light blue geometric pattern consisting of a line segment and a circle. The text is centered in the middle of the slide.

The fundamental influence of “Place”

NETPark story





CASE STUDY

CASE STUDY

Supporting NetPark businesses to deliver impact

- NetPark is home to numerous Science and Engineering companies, spanning a range of sectors from Pharmaceuticals to Smart-tech and Consumer Goods to Packaging.
- NetPark hosts 3 CPI sites, the National Formulation Centre, the National Printable Electronics Centre, and the National Healthcare Photonics Centre which brings a blend of infrastructure, industry-leading expertise and collaborative networks to the region.
- CPI has collaborated with over 40 of these businesses to deliver £72m in R&D activities. 15 of those companies have previously been incubated or rented space within our facilities.
- Our work with these companies has either generated or has the potential to generate significant economic, societal and environmental impacts, now and in the future.

• I N P U T S

- CPI Facilities, Incubation Space & Infrastructure
- £72m R&D Projects
- Expertise & Consultancy
- Network & Consortia Building
- Public & Private Investment advice

• O U T P U T S

- Proof of Concept Achieved
- Prototype development
- Scale up achieved
- Capital expenditure reduced
- Public funding secured
- Formation of collaborative relationships
- Accelerated technology to market

• O U T C O M E S

- Over £285M private investment secured
- Business floated onto AIM
- Over 500 highly skilled jobs
- North East facility and infrastructure expansion
- New products launched into the market
- Value created from IP patents
- Product entering Clinical Trials

National Formulation Centre

Throughout 2021 CPI coordinated an Economic Impact Evaluation with Urban Foresight on behalf of the NELEP.

The National Formulation Centre project is anticipated to deliver over 150% ROI to our funders and will have a significant economic impact upon the businesses CPI has and will collaborate with.

of businesses launched 'new to market' products

of businesses started manufacturing

- Products and processes are in different industrial sectors

of companies report they have or will increase turnover

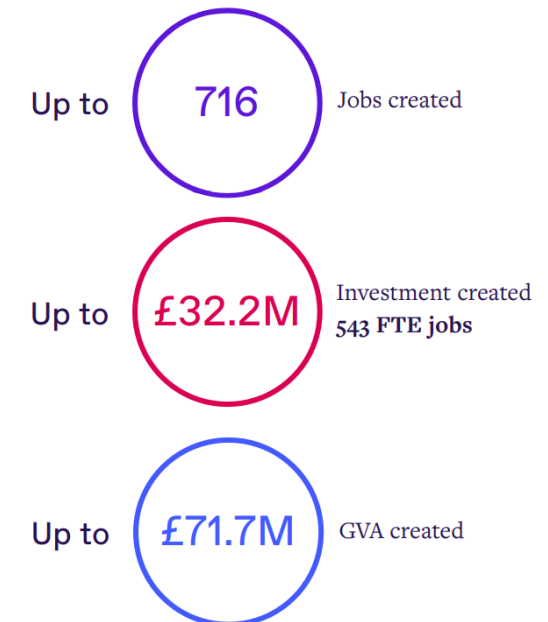
- One SME grew turnover by following an ERDF support project with CPI

- Another SME reported a increase in turnover following a small commercial project

of additional funding was leveraged



Economic impact of the National Formulation Centre to date





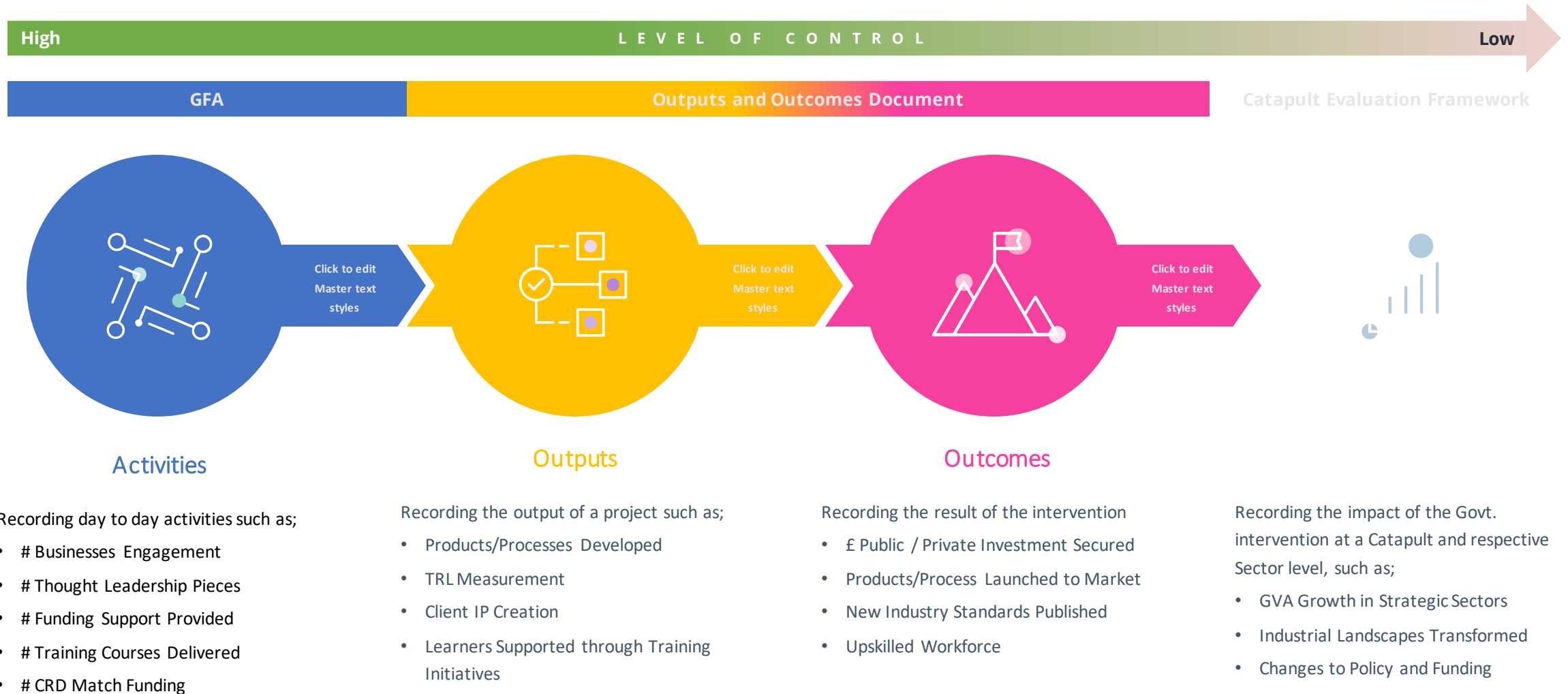
Delivering Impact with the High Value Manufacturing Catapult

High Value Manufacturing Catapult

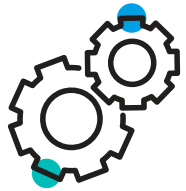
Working through our **seven** centres of industrial innovation across **21** UK locations, we help **thousands** of businesses to achieve commercial success each year.



Performance and impact measurement



Delivery model 2023-28 (5 core KPIs)



Products/
Processes/ Services
Developed



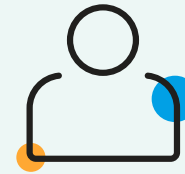
Industrial
Landscapes
Transformed



Learners on
skills pathways



KPI 4a
Non-SMEs
Supported (excl.
Engagements)



KPI 4b
SMEs
Supported (excl.
Engagements)



£ Non-core
Income

CASE STUDY

Cross-Catapult Collaboration North East Battery Alliance

The North East Battery Alliance (NEBA) is a collective of the regions Universities and CPI, focused on furthering the North East's strength as a national hub for the growing battery industry.

In collaboration with fellow HVMC Centre WMG, CPI is working at the translational interface between fundamental battery research undertaken by University partners, and the commercialisation of these innovative technologies by Industry. With a specific focus on lithium-ion battery technologies CPI and WMG are leveraging assets and

expertise from across the UK battery innovation ecosystem to develop scalable processes for existing and next generation batteries.

NEBA continues to explore all aspects of battery production from raw materials to recycling, to enable safer, cheaper and more sustainable battery options to be developed. NEBA is delivering on its ultimate aim of creating jobs and attracting inward investment into the North East as the UK epicentre of battery manufacturing.

INPUTS

Catapult Expertise & Infrastructure
Proof of Concept & Scale Up
CR&D Projects (Faraday Challenge)
£90k NELEP funding
Convening of Academia and Industry

EMERGING OUTPUTS

Proof of Concepts Developed
Supply Chain Development
Scale up progress
Public funding secured
Formation of collaborative relationships
Accelerated technology to market

EXPECTED OUTCOMES

Private investment secured for the North East
1000s highly skilled jobs
North East infrastructure expansions
New products launched into the market
Increased sustainability of battery technologies

Rob Hamilton

Chief Economist,
North of Tyne Combined Authority
and Devolution Transition Team



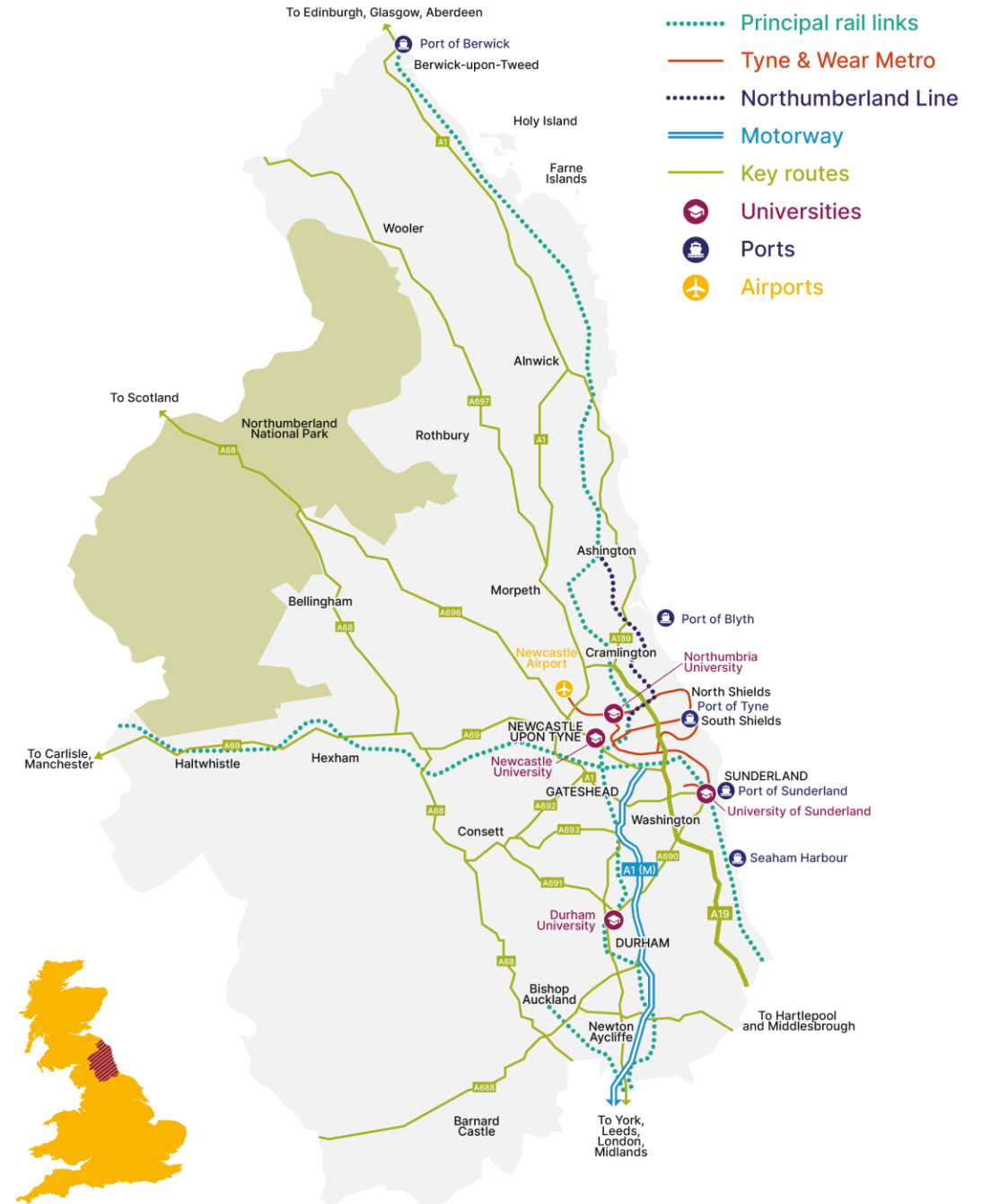
An Evidence Base for the New Combined Authority

Rob Hamilton

North of Tyne Combined Authority

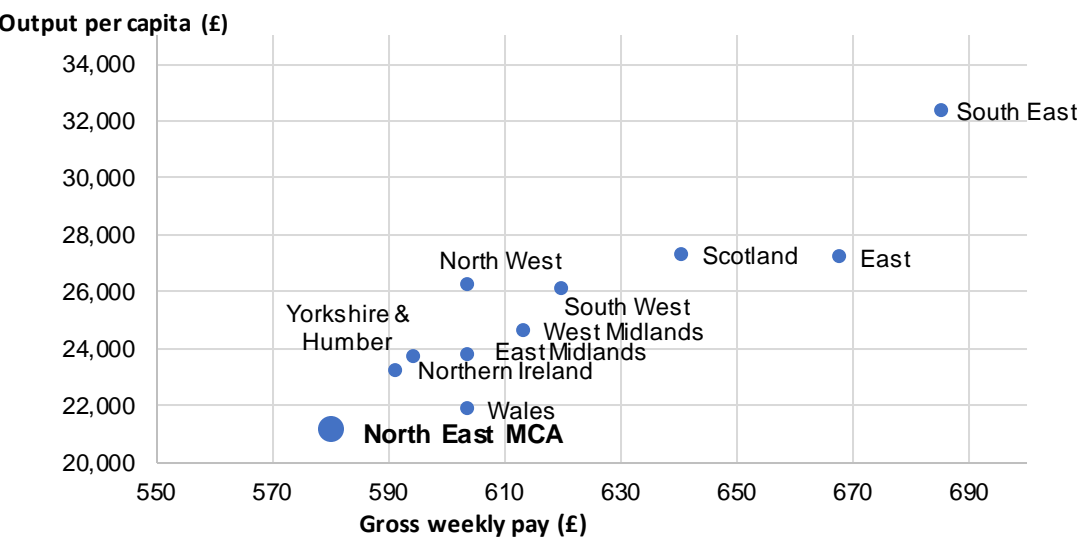
Context

- The NEMCA will be the second largest MCA by area and covers a diverse geography
- Three cities, many vibrant towns and extensive rural and coastal communities
- Two million inhabitants
- 55,340 businesses who provide 820,000 jobs
- An extensive range of assets including:
 - Four universities, with the region a net importer of students, and nine FE colleges
 - Strong representation from catapult network – including Offshore Renewable Energy, Digital Catapult NE&TV, NE Satellite Applications Centre of Excellence, High Value Manufacturing Catapult
 - International airport
 - Deep-water ports and riverside assets and infrastructure
 - Strategic transport connections including the East Coast mainline, rail links to Carlisle and Teesside; trunk roads including A1, A19 and A69; and Tyne and Wear Metro

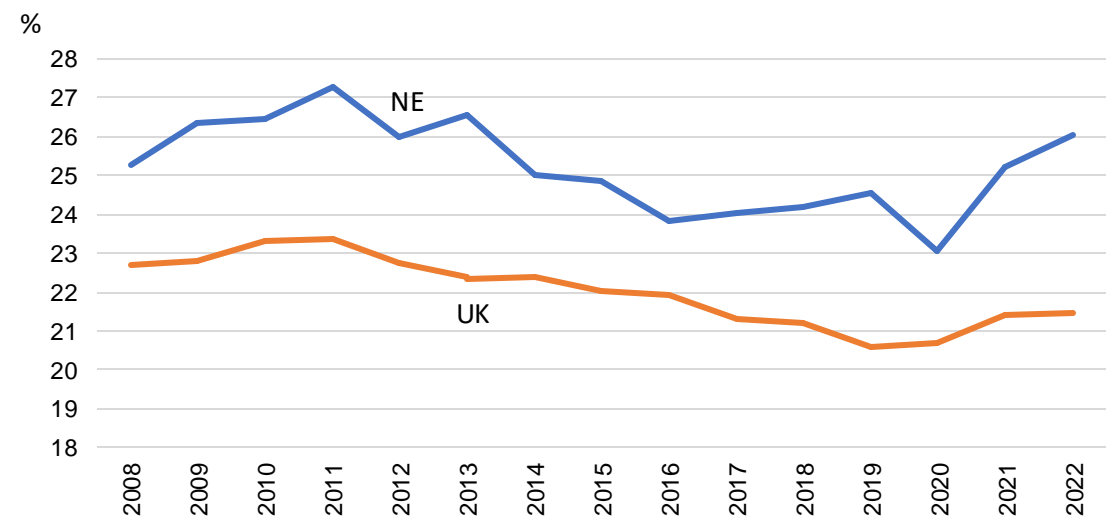


Our Economic Challenges

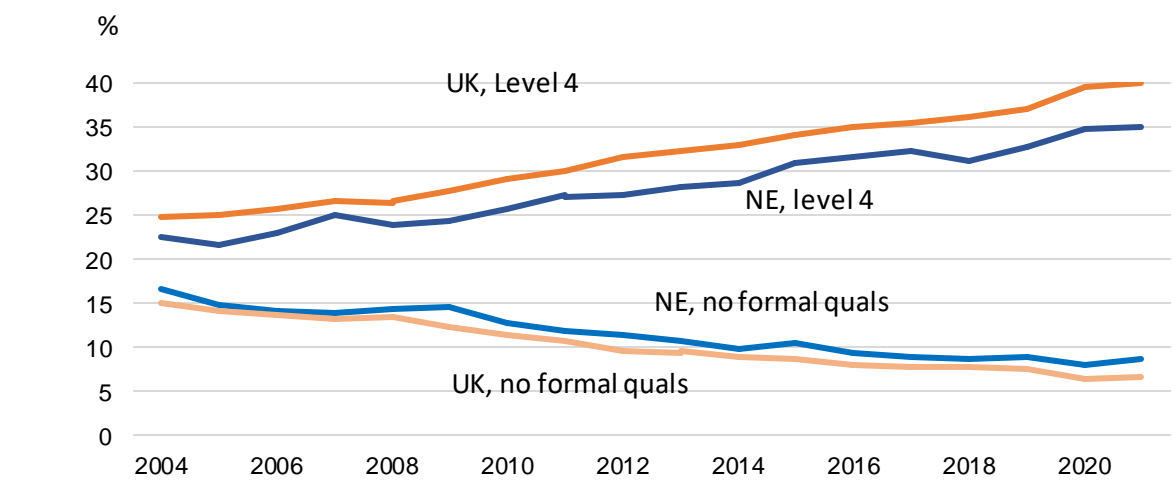
Below national rates of GVA per capita and pay



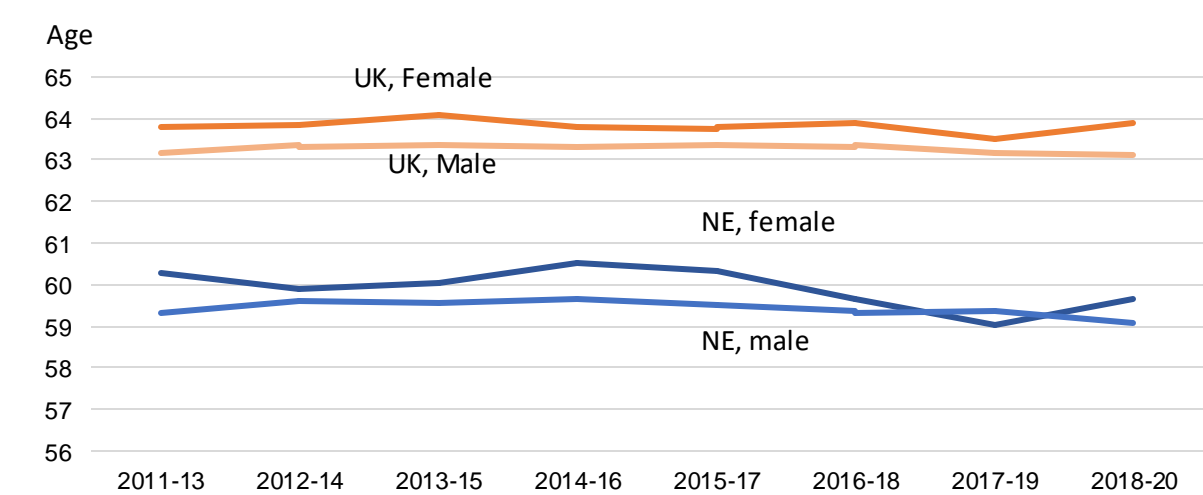
Higher inactivity and deprivation



Lower skills



Lower healthy life expectancy rates



But also major economic opportunities

- A large, advanced manufacturing sector centred around Nissan;
- An increasingly important low-carbon economy, including offshore wind technologies, electrification/batteries and onshore wind and geothermal;
- A thriving tech sector - including Sage, Atom Bank, consultancy, games etc – and growing opportunities around screen industries;
- A major leisure and tourism sector - including urban and rural assets, two World Heritage Sites, a National Park and the Gateshead Quays development;
- A professional services sector which is a large employer;
- Internationally-recognised healthcare and education assets;
- A national hub for public services, including significant HMRC and DWP assets;
- Large rural and coastal economy, ranging from upland hill farming to niche fishing industries.





Panel discussion

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Thank you

✂ @northeastlep
#OurEconomy2023
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