

Productivity Research Briefing

November 2025



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Productivity

Research Briefing

November 2025

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The **only way** a country can improve its standard of living is to increase its productivity. But since the Global Financial Crisis, the **UK's productivity growth has slowed** and productivity in parts of Wales is currently **among the lowest in the UK**, as shown by the **Office for National Statistics' annual regional productivity statistics**.

On **20 November 2025**, the **Finance Committee is holding sessions about productivity** as part of its scrutiny of the **Welsh Government Draft Budget 2026-27**. This briefing sets out relevant background information.



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1. What is productivity

What is productivity?

In its paper, '**The outlook for public sector productivity**' (September 2025), the Institute for Fiscal Studies ('IFS') said:

Productivity captures the relationship between the outputs or outcomes of a system and the inputs that system uses... Broadly, a system becomes more productive if it can produce more or better output or outcomes from the same level of inputs or if the same level of outputs or outcomes can be produced with a lower level of inputs.

Why productivity growth is important

In 1994, the economist Paul Krugman said:

Productivity isn't everything, but in the long run it is almost everything. A country's ability to improve its standard of living over time depends almost entirely on its ability to raise its output per worker.

In its paper, '**Wales' Productivity Challenge: A Focus on the Future**' (January 2025), the Wales Productivity Forum said:

Productivity growth means increasing the value of goods and services produced with the same inputs. It is critical to real wage growth: it raises profits, enables increased employment and investment; supports increased tax revenues and improved public service delivery. It is thus a fundamental driver of the long-term welfare of the population and vital to achieving the aims of the Well-being of Future Generations (Wales) Act 2015.

Productivity growth also has an impact on public sector debt. In its report, '**Fiscal risks and sustainability**' (September 2024), the Office for Budget Responsibility ('OBR') said a full percentage point increase in UK productivity growth, which it noted is equivalent to a return to pre-financial crisis rates of productivity growth, could keep debt below 100 per cent of GDP throughout the next 50 years.

How is productivity measured?

Labour productivity

In 2018, **Silvana Tenreyro** (former External Monetary Policy Committee Member at the Bank of England) noted there are **different measures of productivity** but “most have focused on aggregate labour productivity, defined as the total value added of the UK economy divided by the total number of hours worked. In other words, it tells us how much a typical worker in the UK economy produces each hour”.

For the purpose of regional and subregional labour productivity statistics, the ONS defines **labour productivity** as **output divided by labour input**. Where:

Output is measured on a gross value added (‘GVA’) basis, which is an “estimate of the volume of goods and services produced by an industry within a geographic area, and in aggregate across industries for a geographic area”.

Labour inputs are measured in terms of workers, jobs (“productivity jobs”) and hours worked (“productivity hours”) for an industry within a geographic area.

The Welsh Government uses GVA per hour relative to the UK average as one of its **National Well-being Indicators (number 9)**.

Total Factor Productivity

An alternative measure, **Total factor productivity (or ‘TFP’)**, “takes into account that outputs are produced using a combination of labour and capital inputs. To measure TFP, the total volume of outputs is divided by the volume of inputs. This is usually based on an index that enables changes over time to be measured. Increases in TFP reflect gains in output that are not due to rising inputs, e.g. technological improvements, more efficient financial systems etc”.

2. Productivity data

Productivity trends: UK and advanced economies

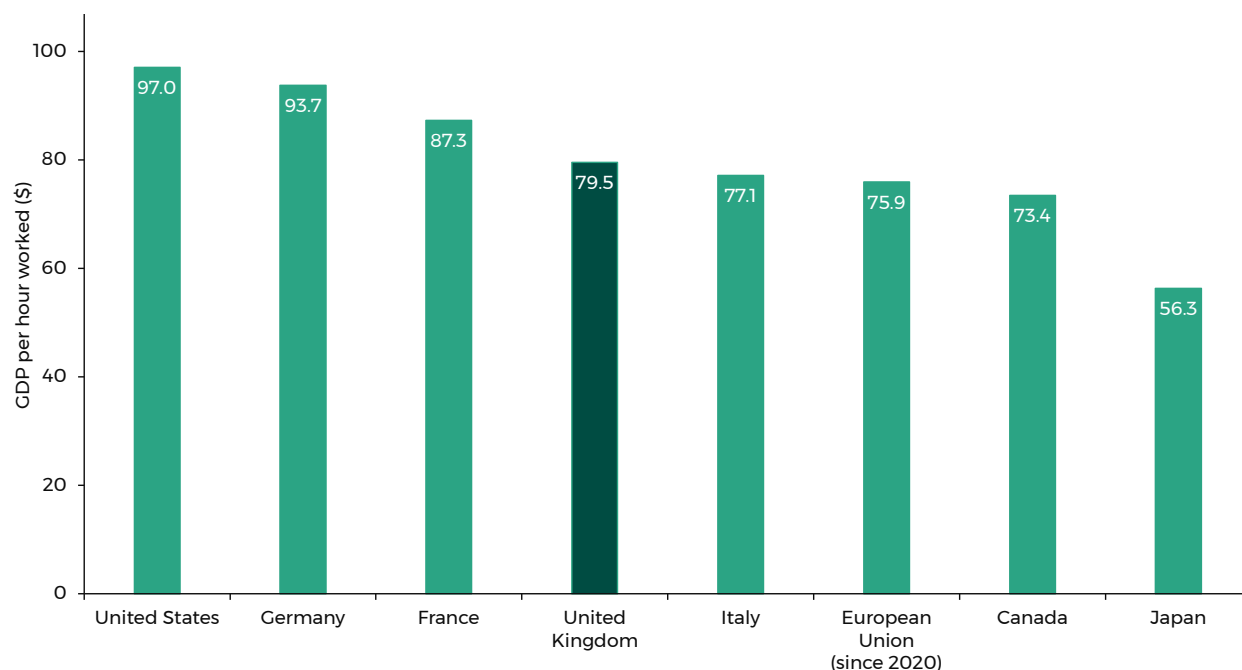
Productivity in the UK **fell significantly** at the peak of the Global Financial Crisis ('GFC') in 2008 and 2009.

In 2018, Silvana Tenreyro **noted** since the GFC "productivity has been growing [in the UK as measured by GDP per hour worked], but at a rate significantly lower than its pre-crisis trend rate... And though this growth slowdown has been experienced by other advanced economies, it appears to be more accentuated in the UK".

This is commonly referred to as the "productivity puzzle".

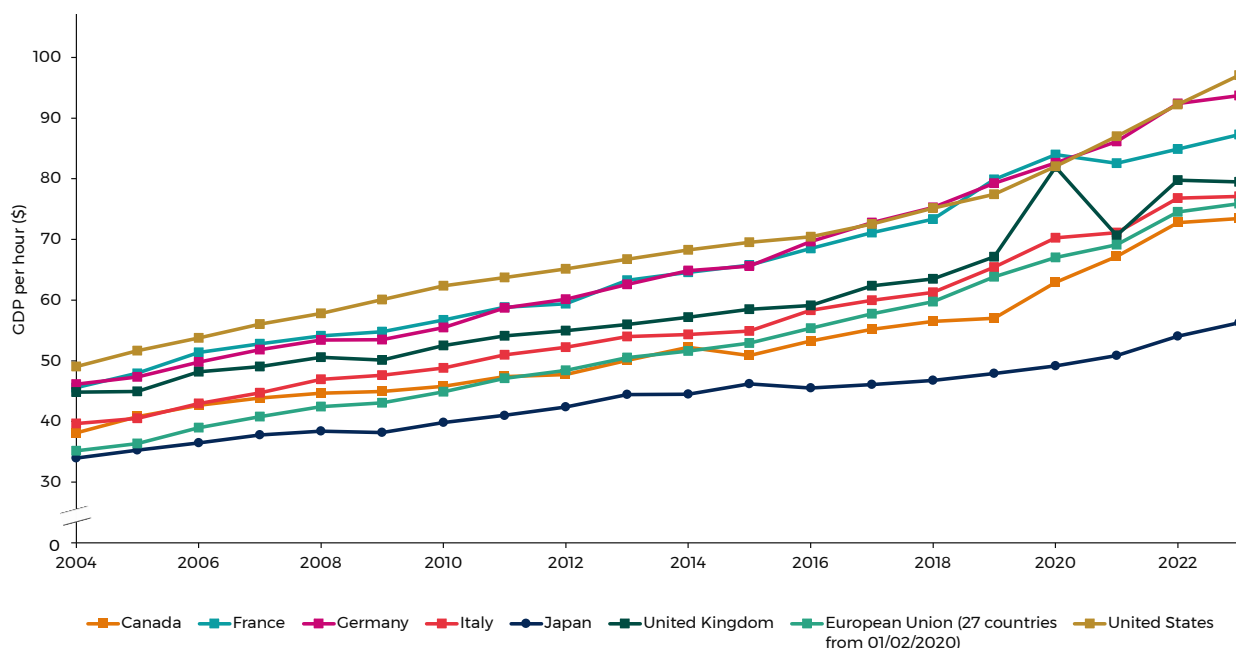
Figures 1 and 2 show the annual output per hour worked for the G7 countries and the European Union (27 countries from 1 February 2020), as measured by 'GDP worked measures labour productivity', expressed as the amount of gross domestic product (GDP) in US dollars generated per hour of labour. Figure 1 shows GDP per hour in 2023 while Figure 2 shows GDP per hour for 2004 to 2023, both in US dollars.

Figure 1: GDP per hour G7 countries and European Union, 2023 (\$)



Source: **OECD, GDP per hour worked (\$)** (accessed 7 October 2025)

Figure 2: GDP per hour G7 countries and European Union, 2004 to 2023 current prices (\$)



Source: **OECD, GDP per hour worked (\$)** (accessed 7 October 2025)

In the **Autumn Budget 2024**, HM Treasury ('HMT') noted, in the decade prior to the GFC, the UK's average productivity growth rate exceeded that of Germany and France, and was only slightly lower than that of the US.

The **UK's average rate of productivity growth** in the decade after the GFC (0.6%), was slower than in France (0.9%), Germany (1.2%), and the US (0.9%). Productivity slowdown can be **broken down into three components**:

- capital deepening (which the **ONS describes** as increases in the intensity of capital per worker);
- labour composition (characteristics of those employed, such as industry, age, and education); and
- Total Factor Productivity ('TFP' – a measure of the efficiency with which labour and capital are combined in the production process).

HM Treasury added:

Slower growth in capital deepening has played a larger role in the UK's slowdown compared to other countries.

Business investment, a key component of capital deepening, has been particularly weak in the UK relative to other countries over the past few decades. Since Q2 2010, real business investment in the UK has averaged 9.6%

of GDP, the lowest level in the G7.

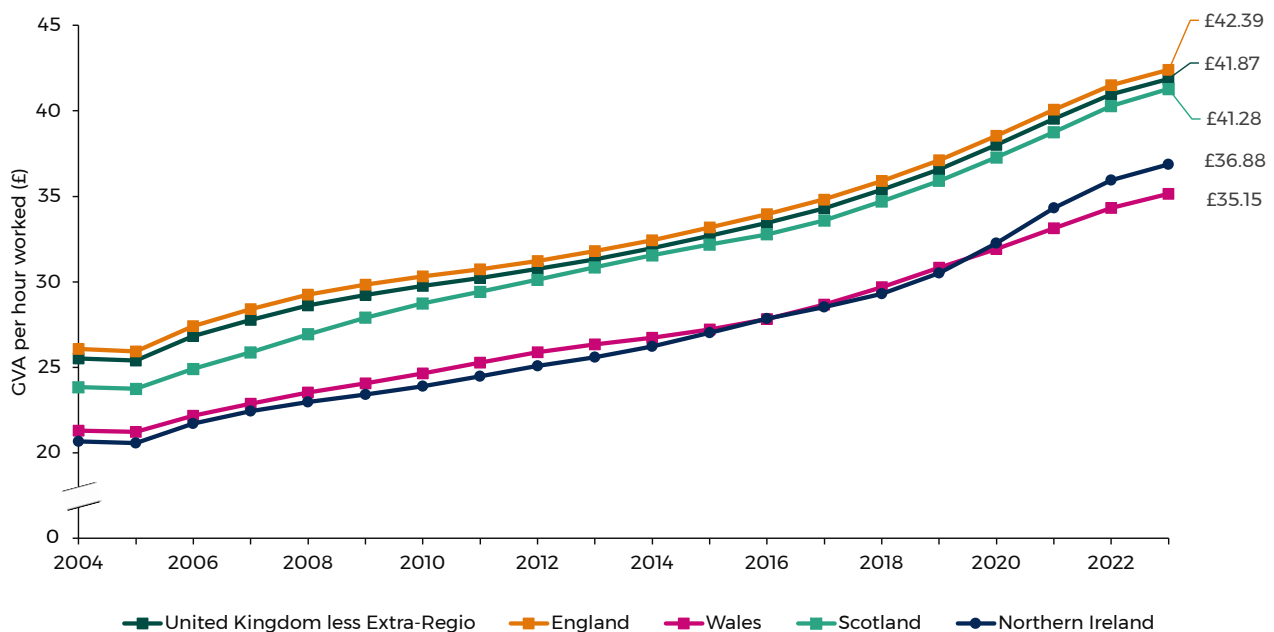
HMT noted there are **several reasons for this** “but it is likely that elevated levels of economic policy uncertainty in recent years have been a major contributor ... and public investment has been low historically with frequent changes to planned spending”.

Regional and subregional labour productivity statistics

Productivity trends: UK and its regions

Figure 3 shows the ONS measure for labour productivity, GVA per hour worked in current prices, for the UK and its regions from 2004 to 2023. It shows the GVA per hour worked for Wales and Northern Ireland has been consistently below that for the UK, England and Scotland. From 2020 to 2023, the GVA per hour worked in Wales was the lowest of the UK regions.

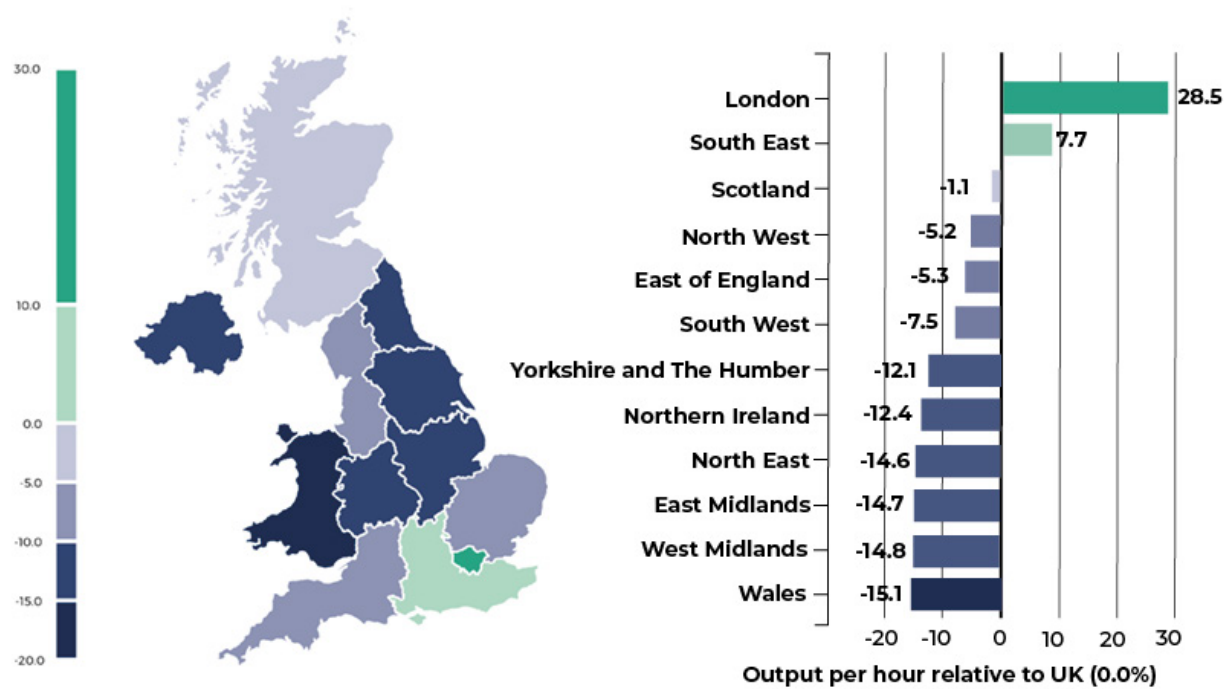
Figure 3: GVA per hour worked, 2004 – 2023, current prices (£)



Source: Office for National Statistics, **Subregional productivity: labour productivity indices by UK ITL2 and ITL3 subregions**, Current Price (smoothed) GVA (B) per hour worked (£); ITL2 and ITL3 subregions, 2004 - 2023 (June 2025)

The ONS Regional and subregional labour productivity data for 2023 (published June 2025) showed output per hour relative to the UK was the lowest in Wales, at 15.1% below the UK average. This is shown at Figure 4.

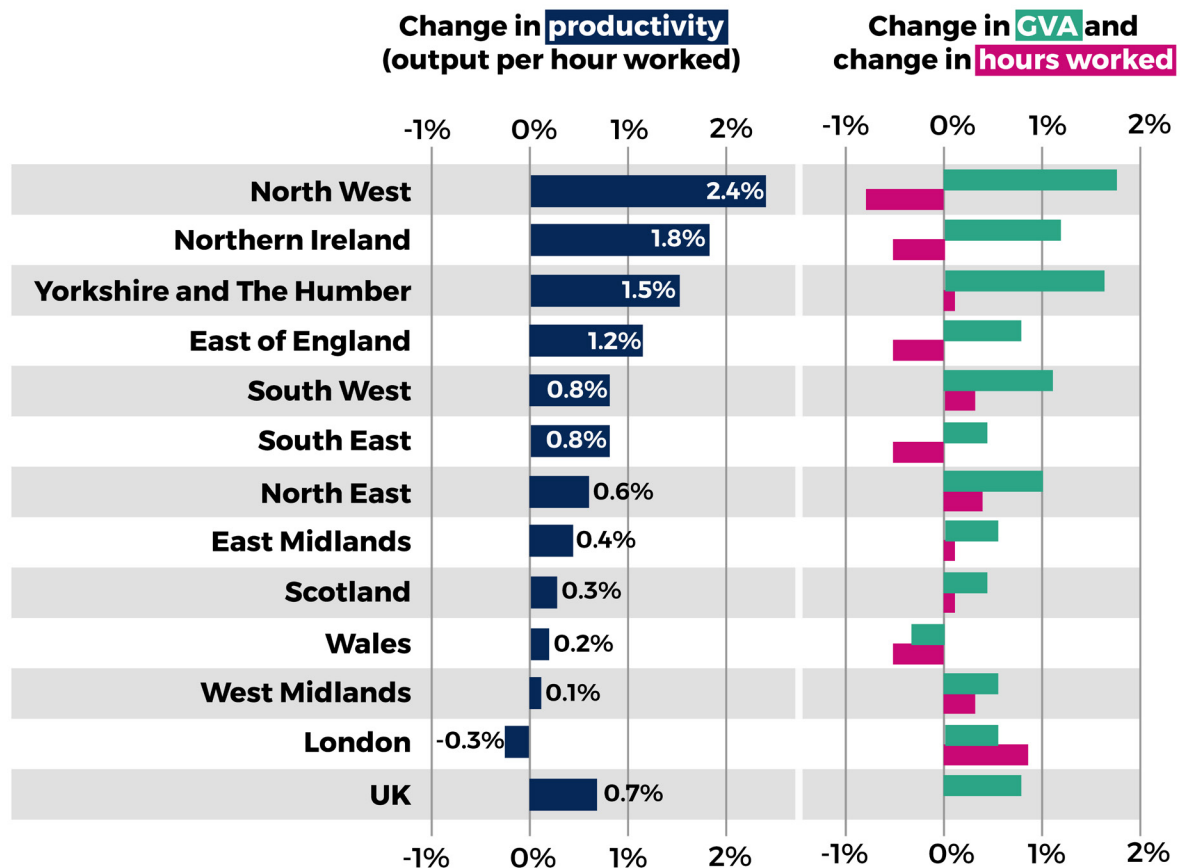
Figure 4: Output per hour worked relative to the UK average, UK, 2023



Source: Office for National Statistics' Regional and subregional labour productivity, UK: 2023, (published June 2025) [Accessed 4 November 2025]

Wales showed a cumulative average change in productivity of 0.2% from 2019 to 2023, compared to 2.4% for the North West (the largest for any region), 1.8% for Northern Ireland and 0.3% for Scotland. The UK's average productivity increased by 0.7% over that period. This is shown in Figure 5.

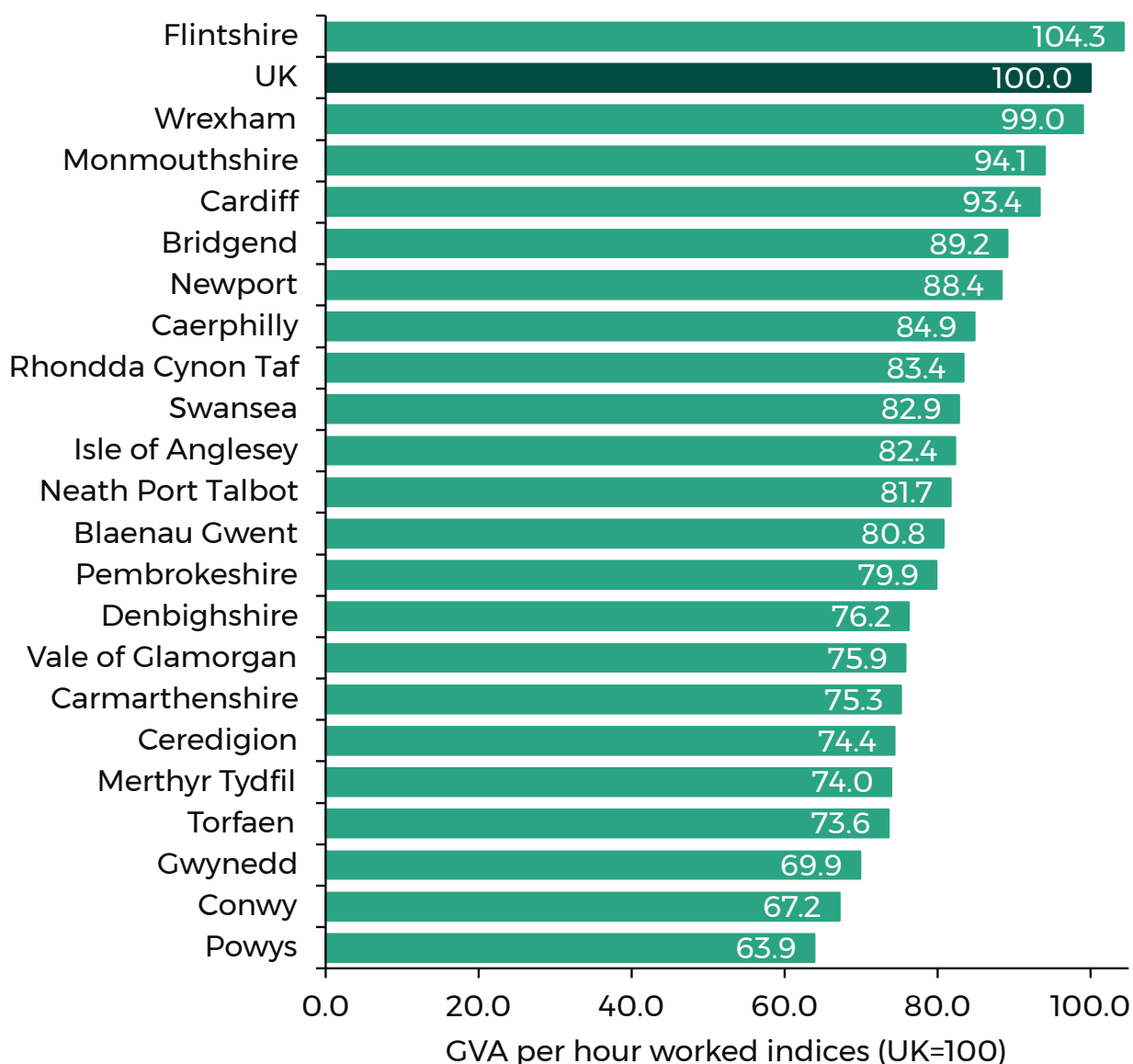
Figure 5: Cumulative average change in productivity between 2019 and 2023, UK and UK regions (%)



Source: **Office for National Statistics' Regional and subregional labour productivity, UK: 2023**, (published June 2025)

Figure 6 sets out the **labour productivity indices for GVA per hour worked for 2023** by local authority districts in Wales (published June 2025). This shows Flintshire is the only local authority district where productivity exceeded the UK average (at 104.3% compared with the UK average of 100) in 2023.

Figure 6: Labour productivity indices GVA per hour worked by local authority districts, Wales (% , UK=100)



Source: **Office for National Statistics' Regional and subregional labour productivity (Table A1), UK: 2023**, (published June 2025), Senedd Research analysis

Issues with the data

The ONS notes **issues with the data**. It states users should note that **volatility in the data** will tend to increase as the geography gets smaller. It also **says**:

An additional caution for this year's release is that the data use input from the Annual Population Survey (APS). Because of issues with declining sample sizes, data from the 2023 APS were of reduced quality compared with other years. It should be noted that the APS is not the main input to the labour market inputs used in this publication. Nevertheless, because the APS is used for some

selected aspects of the productivity jobs and productivity hours calculations then this means users should anticipate higher volatility than usual in the 2023 data.

Additionally, users should be aware that the APS is currently awaiting a re-weighting to match to Census 2021 population. This re-weighting is due to take place in the year ahead and will mean that in next year's release some small revisions to the subregional productivity jobs and hours published in today's release are likely. [Emphasis added]

The Office for Statistics Regulation ('OSR') has **suspended the accredited official statistics status** for the estimates ONS produces from the Annual Population Survey ('APS').

However, the ONS notes the **APS is not the main source** for the labour inputs used in its annual regional productivity data. Labour inputs come from the **Labour Force Survey ('LFS')**.

In October 2025, the **Resolution Foundation noted**:

...the official data on the growth in hours worked are wrong. They come from the Labour Force Survey (LFS), which has been plagued with a small and biased sample, especially since the pandemic. Happily, those problems are being fixed, and we think that the LFS is now broadly accurate when it comes to the number of people in work ... But the data wasn't right a year ago, and this means we can't trust the LFS when it says that employment has been rising strongly over the past year.

"Correcting for mismeasured labour inputs," **says the Resolution Foundation**, "recent [UK] productivity growth has been strong".

The Productivity Institute

What is the Productivity Institute?

The Productivity Institute ('TPI') is a UK-wide research organisation, which began in September 2020 and is funded by the Economic Social Research Council in the UK and supported by partner institutions.

Headquartered at the Alliance Manchester Business School, the **TPI** is a "UK-wide research organisation dedicated to understanding and addressing the country's longstanding productivity challenges".

Productivity Scorecards

The **TPI's Productivity Scorecard** rates the UK's subregional productivity performance through a range of productivity indicators (GVA per hour work, Taxonomy relative to the UK and Taxonomy relative to the International Territorial Levels ('ITL')) and 12 drivers of productivity across the following four categories:

- business performance;
- skills and training;
- health and well-being; and
- investment, infrastructure and connectivity.

Taxonomy relative to the UK and Taxonomy relative to the International Territorial Levels ('ITL'). This indicator of productivity reflects how well the ITL3 region is doing in terms of its productivity performance relative to the UK national average. This is measured along two dimensions. First, labour productivity in the current scorecard year, measured as Gross Value Added (GVA) per hour worked, is compared to that of the UK average. Second, the growth in productivity from 2008 up to the current year 2023 (corrected for price changes) is compared to that of the UK average. By comparing the region's productivity along these two dimensions, a Taxonomy of relative productivity performance can be constructed.

Further information about the productivity indicators and drivers is at Annex A to this paper.

Data is taken from the latest year available for the indicator, which range from 2020-2025.

The TPI uses colour codes to indicate whether the region is performing:

- better (green): performance is higher than 105% of the comparator
- equal to (amber): performance is within 95% and 105% of the comparator
- worse (red): performance is lower than 95% of the comparator

Productivity Scorecard: UK regions

Figure 7 shows the 2025 scorecard with assessment for the UK and its regions.

In terms of the measures of productivity, **GVA per hour worked in Wales is less than 95% of that in the UK** (Wales £35.15; UK: £41.87). The TPI assesses Wales is 'catching up' in terms of its productivity performance relative to the UK national

average.

Figure 7 also shows **the data for Wales is lower than the UK average for all but three drivers of productivity**, the data for which either equals or exceeds the UK average:

- **Business performance – export intensity**, where Wales scores higher than the UK (Wales 34.1% against UK national average of 32.2%)
- **Health and well-being – 77.0% of the working-age population** (aged 16-64) were active in employment in Wales, which is assessed as equal to the UK (78.7%).
- **Health and well-being – 60.6% of the total population in Wales of working age** (aged 16-64), which is assessed as equal to the UK (61.1%).

Figure 7: 2025 TPI Regional Productivity Scorecards: United Kingdom

Category	Driver of Productivity	UKX	TLI	TLJ	TLM	TLH	TLD	TLK	TLN	TLE	TLG	TLC	TLF	TLL
	Taxonomy relative to the UK	United Kingdom	London	South East	Scotland	East	North West	South West	Northern Ireland	Yorkshire and the Humber	West Midlands	North East	East Midlands	Wales
		Losing ground	Steaming ahead	Catching up	Falling behind	Catching up	Falling behind	Falling behind	Catching up	Falling behind	Falling behind	Catching up	Falling behind	Catching up
Productivity	GVA per hour worked	£41.87	£45.22	£41.28	£39.69	£39.31	£38.75	£36.88	£36.82	£36.02	£35.82	£35.61	£35.15	
Business Performance	Export Intensity	32.2%	26.1%	32.9%	28.4%	25.3%	23.3%	30.1%	21.7%	29.5%	28.5%	27.0%	34.1%	
	New Businesses	11.0%	9.9%	10.6%	10.6%	11.6%	9.8%	8.3%	11.0%	11.3%	11.6%	10.8%	10.3%	
Skills and Training	Low Skilled*	9.0%	7.7%	9.0%	8.1%	9.7%	8.2%	13.8%	10.3%	10.5%	11.6%	10.8%	11.2%	
	High Skilled	47.1%	49.2%	55.1%	42.8%	44.4%	43.8%	39.7%	41.2%	42.5%	39.6%	40.2%	43.2%	
Health and Wellbeing	Active	78.7%	81.7%	77.5%	80.6%	76.7%	80.9%	75.3%	76.8%	78.8%	75.8%	78.4%	77.0%	
	Inactive due to Illness	27.5%	24.3%	31.6%	25.9%	30.0%	26.2%	37.8%	29.3%	29.3%	33.0%	26.8%	33.4%	
	Working Age	61.1%	59.4%	62.9%	59.0%	59.4%	57.8%	61.1%	60.7%	59.9%	60.3%	59.4%	60.6%	
Investment, Infrastructure and Connectivity	5G Connectivity	50.6%	65.4%	25.4%	70.6%	62.3%	56.9%	63.4%	66.2%	72.5%	48.3%	75.1%	43.9%	
	Gigabit Connectivity	84.4%	81.5%	77.8%	82.3%	88.1%	77.0%	94.2%	89.5%	88.2%	86.2%	85.8%	76.4%	
	GFCF per job	£10,935	£11,983	£10,472	£12,097	£9,335	£10,095	£10,581	£9,801	£9,114	£8,726	£10,095	£7,969	
	ICT per job	£430	£458	£475	£368	£397	£411	£271	£339	£380	£361	£365	£397	
	Intangibles per job	£2,670	£3,653	£1,979	£4,004	£1,872	£2,323	£2,185	£1,645	£2,399	£1,694	£2,411	£1,532	
Key														
	Better: higher than 105% of UK													
	Equal: within 95% - 105% of UK													
	Worse: lower than 95% of UK													
	No data available													

Source: TPI UK ITL3 Productivity Scorecards and Dashboards 2025 Edition

Productivity Scorecard: Wales and its regions

Figure 8 sets out the assessment for 12 regions in Wales compared with the Wales average, but it also compares the taxonomy of the Wales regions with the UK average.

Figure 8: 2025 TPI Regional Productivity Scorecards: Wales

Category	Driver of Productivity	TLL	TLL34	TLL52	TLL54	TLL51	TLL43	TLL31	TLL44	TLL53	TLL42	TLL33	TLL32	TLL41
Productivity	Taxonomy relative to the UK	Catching up	Flintshire and Wrexham	Cardiff and Vale of Glamorgan	Monmouthshire and Newport	Central Valleys and Bridgend	Swansea	Isle of Anglesy	Neath Port Talbot	Gwent Valleys	South Wales West	Conwy & Denbighshire	Cwynedd	Mid Wales
	Taxonomy relative to the ITL1		Steaming ahead	Catching up	Catching up	Falling behind	Falling behind	Catching up	Falling behind	Catching up	Catching up	Catching up	Falling behind	Catching up
	GVA per hour worked	£35.15	£42.68	£37.93	£37.78	£35.24	£34.69	£34.48	£34.21	£33.70	£32.30	£30.00	£29.27	£28.27
Business performance	Export Intensity	34.1%	42.9%	23.2%	29.6%	54.5%	29.4%	19.6%	49.5%	33.5%	54.4%	11.6%	13.3%	23.4%
	New Businesses	10.3%	9.3%	11.1%	10.7%	11.3%	11.4%	8.9%	11.3%	13.9%	8.9%	8.5%	7.9%	7.9%
Skills and Training	Low Skilled*	11.2%	12.8%		10.6%	11.8%	10.5%	7.2%	13.7%	12.7%	10.4%	16.4%	7.2%	
	High Skilled	43.2%	42.7%	50.8%	49.0%	35.4%	47.7%	39.8%	36.4%	39.1%	42.1%	40.5%	45.2%	43.5%
Health and Wellbeing	Active	77.0%	81.6%	78.8%	77.9%	72.4%	75.8%	81.6%	76.6%	77.6%	76.2%	76.1%	77.4%	76.0%
	Inactive due to illness	33.4%	36.1%	22.5%	22.7%	43.0%	34.4%	26.4%	45.4%	39.1%	33.1%	37.2%	22.8%	29.1%
Investment, Infrastructure and connectivity	Working Age	60.6%	61.6%	63.2%	57.1%	61.3%	63.6%	57.0%	60.7%	62.6%	56.7%	56.6%	62.4%	58.2%
	5G Connectivity	43.9%	43.9%	87.8%	59.8%	72.9%	66.3%	51.0%	64.8%	85.5%	55.5%	29.7%	38.8%	28.3%
	Gigabit Connectivity	76.4%	78.5%	91.1%	82.9%	77.9%	88.5%	48.1%	79.3%	78.3%	63.8%	80.2%	57.2%	50.5%
	GFCF per job	£7,969	£7,015	£9,647	£6,735		£8,012	£8,025	£14,671	£10,285	£9,891	£6,272	£5,543	
	ICT per job	£397	£597	£449	£359		£323	£341	£924	£371	£394	£344	£252	
Investment, Infrastructure and connectivity	Intangibles per job	£1,532	£1,565	£1,948	£1,375		£1,008	£1,260	£2,875	£2,095	£1,063	£975	£746	

Key	
	Better: higher than 105% of ITL1 parent region
	Equal: within 95% - 105% of ITL1 parent region
	Worse: less than 95% of ITL1 parent region
	Data release suppressed
	Data unavailable due to change of ITL3 codes

Figure 8 shows GVA per hour worked is highest in Flintshire and Wrexham (£42.68), followed by Cardiff and Vale (£37.93) and Monmouthshire and Newport (£37.78). It is lowest in Mid Wales (£28.27) and Gwynedd (£29.27).

In terms of the **productivity taxonomy relative to the UK average**, Flintshire and Wrexham is assessed as “steaming ahead”, with both the region’s current year productivity and its productivity growth being above the UK average. However, most regions (including Cardiff and Vale, Monmouthshire and Newport, and the Gwent Valleys) are “catching up”. This means the regions’ current year productivity is below the UK average, but their productivity growth is above the UK average. The Central Valleys and Bridgend, Swansea, Neath Port Talbot and Gwynedd are “falling behind”, defined by both the regions’ current year productivity and their productivity growth being below the UK average.

In terms of the **productivity taxonomy relative to Wales**, Flintshire and Wrexham and Monmouthshire and Newport are “steaming ahead”, while Cardiff and Vale and Central Valleys and Bridgend are “losing ground”, defined by the regions’ current year productivity being above the Wales average, but their productivity growth is below the Wales average. Mid Wales and Conwy and Denbighshire are “catching up”, but the rest of the regions are “falling behind”.

Data for the 12 drivers of productivity varies across the regions in Wales. All are better than the Wales national average in one or more driver of productivity. Conwy and Denbighshire and Mid Wales have the joint fewest (one) and Cardiff the Vale the most (nine) where this is the case.

3. Public Sector Productivity

Why is public sector productivity important in Wales?

In Wales, the public sector is an important contributor to the economy. It employs a significant percentage of the workforce. According to StatsWales, 30.5% of the **total people employed in Wales** in the year to 31 March 2025 worked in the public sector, compared to 23.6% across the UK.

In its report '**A Productive Approach: Finance Professionals Improving Productivity In the Public Sector**' (November 2024), the Association of Chartered Certified Accountants ('ACCA') said:

Effective public services are essential in supporting the growth of the wider economy. Governments and the public sector can create conditions for productivity gains across the economy through efforts to improve the economic environment – and shape the public realm in which the private sector operates. The public sector delivers a wide range of essential responsibilities, including the provision of education, healthcare, infrastructure and regulatory frameworks. It also plays an important part in the economy in its own right. The level of public spending varies across the world, but, in most countries, represents a significant share of the economy, measured as gross domestic product (GDP). In member countries of the Organisation for Economic Co-operation and Development (OECD), public spending amounted to almost half of GDP (46.3% on average) in 2021 (OECD, 2023).

TPI partnered with Capita Public Service to “find practical ways to accelerate productivity and create a pathway to improve efficiency, opportunities and outcomes for all”.

In their joint report, '**Making Public Sector Productivity Practical**', they said:

Over the past decade, tighter spending controls have largely contributed to improvements in productivity, which essentially means doing more with less, for example, through pay reductions and maximising on existing resources.

However, they referred to claims in the **Health Foundation's report, 'Agility: the missing ingredient for NHS productivity'** (2021), that cost savings to generate productivity gains are not sustainable.

They also **noted** a report by the **Chartered Institute of Public Finance and Accounting and the Institute for Government, 'Performance Tracker 2019: A**

data-driven analysis of the performance of public services' (November 2019), which they said had argued limiting staff pay increases and prompting workers to be more productive is "approaching – or has already reached – its limit." They **added**:

The budgeted spending by government and local authorities was deemed just enough to meet demand while maintaining standards. Further expansion of those services or additional quality improvements would have been challenging even with a significant increase in budget.

TPI and Capita Public Service noted the "impact of the pandemic and the government's ambitious plans of levelling up the weaker regions across the UK has put even more pressure on the demand for resources in the public sector".

Measuring public sector productivity

Measures and data

ACCA says:

The difficulty in measuring output in the public sector has meant that, historically, statisticians' approach was to assume expenditure on inputs was equal in value to the outputs. More sophisticated measures have been developed in recent decades, although the challenge of measuring outputs remains for collective services, such as defence and environmental protection.

ONS measure of public sector productivity

The ONS produces a **measure of public sector productivity**. The **IFS notes**:

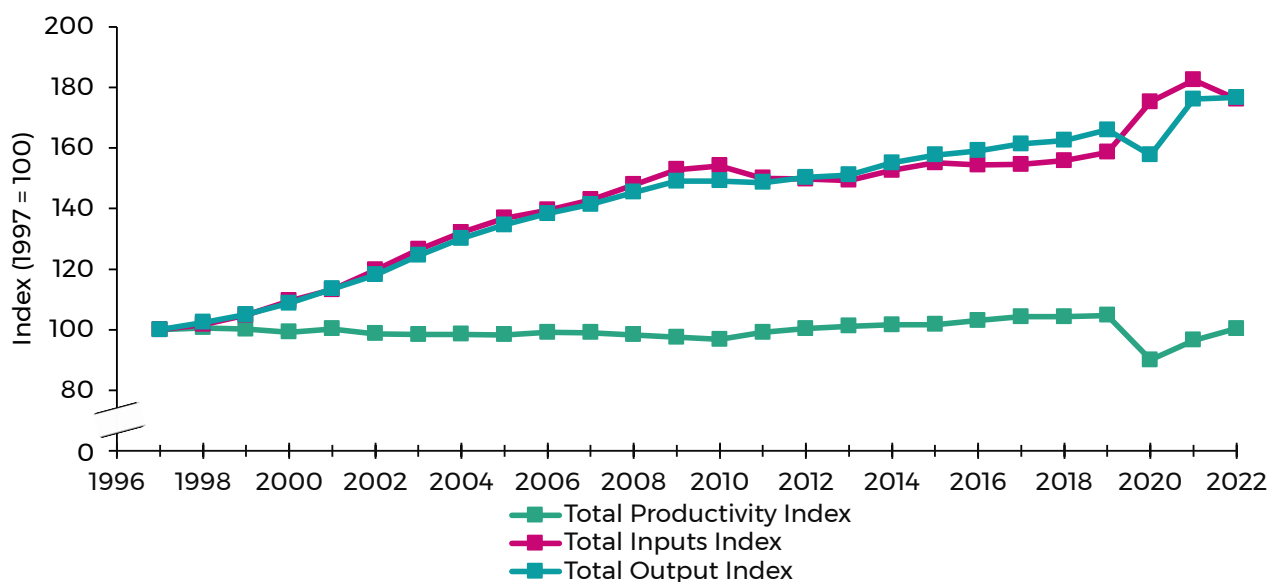
... this is an input productivity measure – the ONS measures the quantity of workforce, intermediate goods and services and capital services used by public services and compares this with a measure of the output of services. For some services, the ONS uses quality-adjusted output measures (such as GCSE grades or waiting times for operations); for others, it uses the quantity of outputs; and in some cases where outputs are difficult to define or measure, the quantity of outputs is measured as equal to the inputs used (allowing for no changes to productivity).

For the **2022 measure of public sector productivity**, 49% of output was measured in quantities with some quality adjustment, 11% was measured in quantities without quality adjustment, and 40% was measured as equal to inputs (9 percentage points of which is still subsequently quality adjusted).

What does the ONS data show?

In its annual **data for UK public service productivity for 2022** (published March 2025), the ONS reported **annual UK public service productivity** increased by 4.0% in 2022, following a revised increase of 7.3% in 2021 and a decline of 14.1% in 2020. However, total **public service productivity** was estimated to be around 4.1% lower in 2022 than its pre-coronavirus (COVID-19) peak in 2019. This is shown in Figure 9.

Figure 9: ONS measure of Total UK public sector productivity, 1997 to 2022



Source: [Office for National Statistics, Public service productivity: total, UK, 2022](#).

The ONS reports growth in **UK public sector productivity in 2022** was primarily caused by a fall of inputs of 3.5%, which it says is the first decline since 2016 and the largest percentage decrease in inputs since the series began in 1997. The ONS **notes** this was because “some aspects of additional spending related to the response to the coronavirus pandemic were phased out, and higher input cost inflation reduced input volumes”.

Positive output growth of 0.4% was mainly (0.3 percentage points) because of improvements in the quality of services provided to citizens.

The ONS notes healthcare and education continued to be the **two largest contributors to productivity growth**, being the first and third largest areas by expenditure-weight. However, the ONS reports several other service areas saw an **increase in their contributions to growth in 2022**.

The updated annual estimates of quality-adjusted (QA) output, which the ONS **describes as a “more complete measure”**, grew by 0.4% while non-quality-adjusted (NQA) output grew by 0.1% in 2022. The ONS **says** this “implies that public services have been able to increase their level and quality of output, even as inputs have fallen. However, this growth is below the levels seen in the years leading up to 2020”.

The **IFS notes**:

Despite some ‘bounceback’ in 2021 and 2022, initial estimates for 2023 and 2024 suggest that public sector productivity is stagnating and has not yet recovered to its 2019 level.

The ONS does not publish public service productivity data for Wales only.

Issues with the data

While the IFS **says** the ONS measure of public service productivity gives the “most comprehensive available picture of changes in the recent past”, it **notes** the measures are “far from perfect”. It **refers** to over 100 recommendations made following the **ONS’ review of the measurement of public service productivity** at the request, in 2023, by the then Chancellor of the Exchequer. The IFS notes the ONS has started to implement the changes, **adding**:

It is therefore possible that productivity might have increased faster over time than the ONS estimates ... suggest, if there are growing or improving public services that are currently poorly measured. It is also possible that productivity growth has been slower than estimated, if falls in service quality since the start of the COVID-19 pandemic are not fully captured, for example.

The **ONS also notes:**

While most of the statistics ... are **accredited official statistics**, the estimates presented for Social Security Administration and Tax Administration are labelled as **official statistics in development** because they are new and undergoing further development with suppliers and users.

In considering these estimates and associated revisions over time, users should be aware that these have been affected by development work on public service productivity measurement for the whole public sector, carried out by the **Public Services Productivity Review**.

The ONS **sets out** information about specific improvements it has made to the data.

4. NHS

Previous evidence to the Committee

In relation to productivity in the NHS, in January 2025 the IFS told the Finance Committee:

NHS productivity is still well down on pre-COVID levels. I'm being a bit controversial here, but I think, to me at least, it's clear that the Welsh NHS is performing worse on several key metrics than England, for example, which, of course, already is performing pretty poorly.

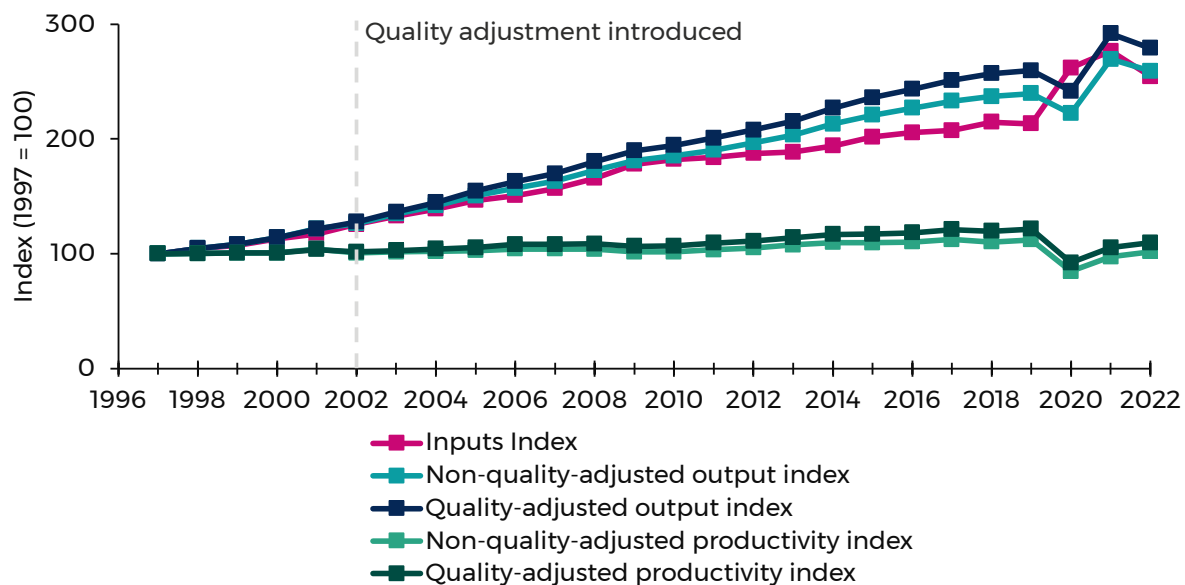
ONS public sector productivity statistics - healthcare

The ONS' official statistics under development for public sector productivity showed public service healthcare productivity in the UK increased by 3.9% in 2022. This was because the fall in inputs (8%) was larger than the fall in output (4.4%). The ONS notes the increase in productivity, which it described as the “**second largest since the series began in 1997**”, follows growth of 14.5% in 2021. This is shown in Figure 10.

The ONS explains:

Although **Healthcare productivity has increased in both 2021 and 2022, productivity remains around 9.9% below 2019 levels, following a record fall of 24.2% in 2020 after the coronavirus (COVID-19) pandemic**. During the pandemic many services were delivered in a different way than previous and following years, with additional inputs necessary and mandatory restriction limiting output for certain services. Importantly, while output increased by 7.5% between 2019 and 2022, hitting an all-time peak in 2021, inputs saw a much larger rise (19.3%), which led to a fall in productivity.[Emphasis added]

Figure 10: Indices for Healthcare inputs, outputs and productivity, UK, 1997 to 2022 (1997=100)



Note:

The **UK Healthcare productivity estimates** have been based on output growth in England, Wales and Scotland only since 2020, because data have not been available to calculate output volumes for Northern Ireland. However, the ONS notes, given Northern Ireland accounts for a small proportion of the UK total (around 3% in 2019), this is not expected to have skewed the resulting aggregate measures.

Source: **Office for National Statistics, Public service productivity: total, UK, 2022.**

The ONS does not publish data for Wales only. However, it **publishes productivity data for healthcare in England.**

Ministerial Advisory Group Report on NHS Wales Performance and Productivity

Findings and recommendations

The **report from the Ministerial Advisory Group on NHS Wales Performance and Productivity (April 2025)** said:

While there are multiple lenses on performance and clear progress on productivity in the five work streams of the Value & Sustainability Board (VSB) there is currently no single national measurement of the overall productivity of NHS Wales.

Given this, it **added:**

... it is not possible to make an evidence-based assessment of the relative productivity, or the extent of improvement in productivity over time, or to set clearer expectations on productivity improvement to ensure maximum value for the Welsh taxpayer.

It **proposed a national model to track productivity** should be produced ahead of the “**next national budget**” to help inform spending decisions and productivity requirements. It **said this should track national Total Factor Productivity as a minimum** and allow for health board level productivity metrics and targets across primary, community, acute and mental health services.

It suggested the model, established by the ONS for the UK and England, may be a **useful starting point for consideration**. It **recommended:**

... total factor productivity model and workforce productivity model should be developed for NHS Wales and implemented in advance of the next budget. Timescale – within 12 months. [**Recommendation 22**].

The Ministerial Advisory Group on NHS Wales Performance and Productivity also noted the **increase in NHS Wales average staff numbers and salaries:**

- The number of staff employed within the Health Boards across Wales increased by 15.14% between 2019 and 2024.
- The annual spending on workforce by the Welsh NHS in 2023-24 was £5.9 billion, 58% of the total budget.

While workforce is one of the priority work streams of the Value and Sustainability

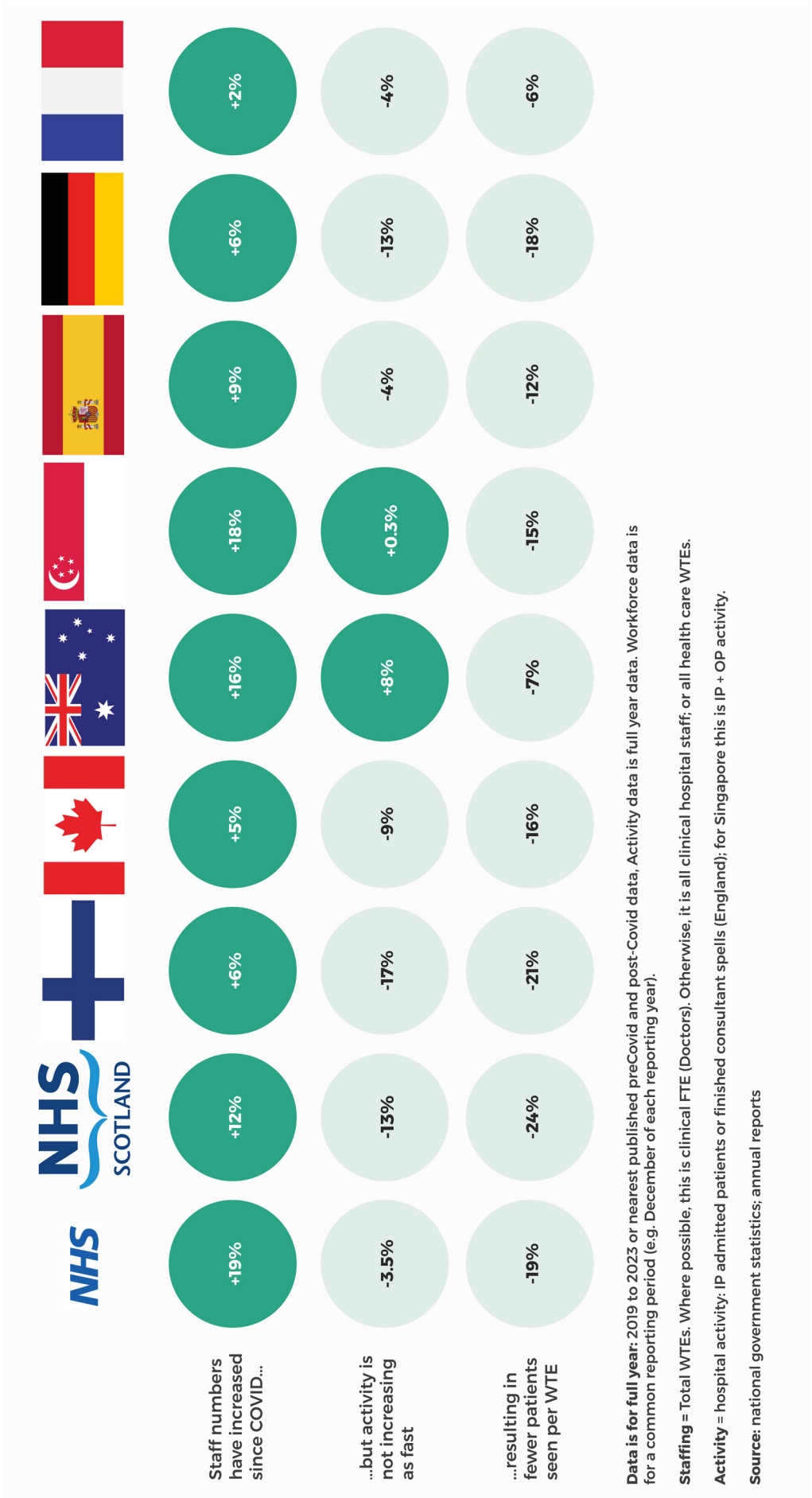
Board, it noted it had **received less attention** than the other five priority areas. The Ministerial Advisory Group on NHS Wales Performance and Productivity **said** the “notable exception is the excellent work on developing and implementing an agency control framework and international recruitment strategy to support a reduction in the reliance on agency workforce”. It added this had **reduced agency expenditure** from £325m to £173m over the period 2022-23 to 2024-25.

It noted:

This overall increase in staffing levels across the Welsh NHS is mirrored in health care systems elsewhere. However, these health care systems are also performing proportionally less work and attending to fewer patients per staff member than they did five years ago.

This is shown in an infographic, which is reproduced at Figure 11.

Figure 11: International comparisons of NHS staff numbers and activity



Source: 'A report from the Ministerial Advisory Group on NHS Wales Performance and Productivity' (April 2025)

The Ministerial Advisory Group on NHS Wales Performance and Productivity **noted:**

It would be surprising if Wales did not exhibit a similar pattern, although a detailed analysis has yet to be published. It is recommended that this analysis should be completed with 3 months of the receipt of this report. This should subsequently be reported quarterly as trend data in the monthly standardised health board performance report.

While not clear, this suggests the data in Figure 11 for the 'NHS' refers to 'NHS England'.

The Ministerial Advisory Group on NHS Wales Performance and Productivity **recommended:**

From the June health board meeting cycle of the 2025/26 annual year going forward workforce head count, full time equivalent staffing and productivity data should be reported to the monthly public meeting of each Health Board. This should include data on both directly employed and the GMS and other independent contractor workforce. Timescale – within 3 months. **[Recommendation 23]**

Welsh Government response

The Welsh Government accepted the Ministerial Advisory Group's recommendation to produce and implement a total factor productivity model and workforce productivity model for NHS Wales before the next budget (Recommendation 22). However, while it "recognised that there would be a benefit in developing a strengthened system-wide measurement of productivity, alongside the detailed actions being taken", it **noted:**

Over the next 12 months the Welsh Government will develop this work, considering the model and methodology to deploy, and whether to develop that in-house, or utilise external models.

On 16 October, the Cabinet Secretary for Finance and Welsh Language, Mark Drakeford MS, told the Finance Committee the **work would be completed by the start of April 2026** and the Welsh Government would have "in the health field, certainly, a more sophisticated measure that we can use across Wales that will allow us to track the productivity issues that are the right ones, rather than, if you're not careful, the wrong ones".

The Welsh Government also accepted the Ministerial Advisory Group's

recommendation about Local Health Boards reporting headcount data at each public meeting of the Health Board (Recommendation 23). However, it linked its actions to its response to the recommendation about producing and implementing a total factor productivity model and workforce productivity model for NHS Wales (Recommendation 22). It said:

In order to take forward this recommendation, we propose that following the development of the workforce productivity or total productivity model in Recommendation 22, that this be used as the basis for reporting at a health board level. In the meantime, NHS bodies should explore and consider this recommendation and adopt a local approach if data allows and as a minimum should report to monthly public board meetings on the implementation of the enabling actions in the 2025/28 Planning Framework which relate to productivity enhancement.

5. Annex A: The Productivity Institute - Productivity Scorecard, Data and Measures

Source: **TPI UK ITL3 Productivity Scorecards and Dashboards 2025 Edition, Sources and Methods (August 2025), The Productivity Institute**

Productivity

This category shows 3 indicators which gauge the relative performance of labour productivity across the ITL3 regions, comparing it to other ITL3 regions, the ITL1 parent region, and the UK as a whole. These indicators take into account both the level of labour productivity in the current year and productivity growth for the period from 2008 up to the current year. The data for this category stems from the ONS Subregional productivity data set, released in June 2025.

Taxonomy relative to the UK

This indicator of productivity reflects how well the ITL3 region is doing in terms of its productivity performance relative to the UK national average. This is measured along two dimensions. First, labour productivity in the current scorecard year, measured as Gross Value Added (GVA) per hour worked, is compared to that of the UK average. Second, the growth in productivity from 2008 up to the current year 2023 (corrected for price changes) is compared to that of the UK average. By comparing the region's productivity along these two dimensions, a Taxonomy of relative productivity performance can be constructed as follows:

- Falling behind: Both the region's current year productivity and its productivity growth are below the UK average.
- Catching up: The region's current year productivity is below the UK average, but its productivity growth is above the UK average.
- Losing ground: The region's current year productivity is above the UK average, but its productivity growth is below the UK average.
- Steaming ahead: Both the region's current year productivity and its productivity growth are above the UK average.

Taxonomy relative to the ITL1 region (Wales)

This indicator of productivity reflects how well the ITL3 region is doing in terms of its productivity performance relative to the average of the ITL1 parent region. The taxonomy is determined using the same methodology as above.

Gross Value Added per hour worked

This is the standard indicator of labour productivity, measured as output per unit of labour, where output is measured as Gross Value Added, and the unit of labour is an hour worked.

Drivers of productivity

Business performance

This category illustrates business performance as a driving force of regional productivity. The literature extensively considers business export activity and its dynamicity as the two most important determinants of business performance in a given location. Understanding the dynamics of export activities is essential, as they play a significant role in shaping not only the economic landscape but also the competitive edge of businesses operating in that area.

Export Intensity

Regional export intensity is an important productivity driver since firms competing in international markets tend to increase their productivity through process efficiencies and cost reduction, and therefore, higher export performance by local firms leads to higher regional productivity. It is calculated by adding the nominal values of trade in goods and of trade in services and dividing by the ITL region's nominal value of GDP. Subnational trade and GDP data are taken from ONS and available at the ITL3 geographical level. Since this metric is constructed from separate estimates of exports in goods and services, confidentiality issues can arise at the detailed ITL3 regional level, resulting in missing values in the data set. This indicator uses the same data as the previous scorecard edition, as no new release has been published.

New Businesses

The rate at which new enterprises are being created indicates the level of entrepreneurial activity in the local economy. Entrepreneurship, firm dynamicity and firm creation have been reported by many studies as important drivers for regional productivity and local economic prosperity. The ONS data set on Business demography in the UK presents annual data on total active firms and new firms in the UK by geographical areas, according to postal codes. These codes have been mapped to the ITL3 geographies, and the data has been aggregated according to this mapping. The data has been checked for consistency with reported totals at

the ITL1 level. This driver of productivity is then calculated as the ratio of new firms over total active firms.

Skills & Training

This category presents the composition of the local labour force as another key driver of regional productivity. This data is taken directly from the ONS Annual Population Survey (APS) at the NUTS 1 and Local Authority level. The Local Authority data is then aggregated to the ITL3 level. This method is new for this edition of the scorecard since NOMIS data has not been updated for the modified ITL 3 codes. It is important to acknowledge that the APS is currently under revision and being reweighted, however, this doesn't impact the drivers used in these scorecards. As data for Northern Ireland is not available from the ONS APS, it has been obtained from the **Northern Ireland Statistics and Research Agency** ('NISRA'). The NVQ skill level definitions are available from [Gov.uk](#). For 2023 data, NVQ levels have been replaced with RQF levels. These definitions are available [here](#).

Low Skilled

This driver of productivity presents the percentage of the working-age population (aged 16-64) with NVQ1(RQF1) or 'no qualifications'. From the ONS APS, data can be obtained on the number of workers with 'no qualifications', 'NVQ1(RQF1)' qualifications, and all working-age persons. The Low Skilled driver is calculated for each ITL3 region by adding the number of workers with 'no qualifications' and 'NVQ1(RQF1)' qualifications and dividing by the working age population. For Northern Ireland, only the percentages of the workforce with NVQ2(RQF2)+ level, NVQ4+(RQF4+) level, and 'No qualifications' are available from two different data releases at the detailed ITL3 level. The Low Skilled regional population percentage has been calculated as a residual using the total working age population by ITL3 regions for Northern Ireland. For this driver, higher values inhibit rather than stimulate productivity. This is reflected in the scorecard tables by applying the colour scheme in reverse.

High Skilled

This driver presents the percentage of the working-age population (aged 16-64) with qualification at NVQ4+(RQF4+) level. We use the same sources and methodology as for the Low-Skilled indicator.

Health & Well-being

This category reflects the impact of health and general wellbeing of people in the workforce on productivity. It is measured by the activity rates, illness rates, and the age composition of the working-age population. As with the data on Skills & Training, this data is collected from the ONS Annual Population Survey (APS) at the NUTS 1 and Local Authority levels, and the ITL3 data is calculated by aggregating the Local Authority data. Again, data for Northern Ireland is not available from the ONS APS; it was obtained from the Northern Ireland Statistics and Research Agency (NISRA).

Active Population

Represents the percentage of the working-age population (aged 16-64) in the current year that were active in employment. It is calculated by dividing the number of workers active in employment by the total working-age population.

Inactive due to illness

Represents the percentage of the inactive working age population (aged 16-64) that were inactive due to ill health. Note that there is a small inconsistency in the definitions used by the ONS APS, which uses the definition 'Long-term sick', and the NISRA LFS definitions, which uses 'Health reasons'. For this driver, higher values inhibit rather than stimulate productivity. This is reflected in the scorecard tables by applying the colour scheme in reverse. As of the time of this release, NISRA has not published 2023 data for reasons of inactivity at the ITL3 level so has been left as blank in the scorecards.

Working age

Represents the percentage of the total population of working age (aged 16-64) in the current year. Numbers for the population aged 16-64 are taken from the ONS APS and NISRA LFS data. However, neither the ONS APS or the NISRA LFS population data include residents under the age of 16. Therefore, total resident population numbers by ITL3 region were taken from the ONS data set on Regional gross domestic product to calculate the working-age population percentages for the ITL3 and ITL1 regions. As of the time of this release, NISRA has not yet released their mid-year year population estimates at the Local Authority level for 2023 so ITL3 population data for Northern Ireland has not been included in the ONS Regional gross domestic product release. Therefore, it is not possible to calculate the working age percentage for ITL3 regions in Northern Ireland for 2023 and has thus been left as blank in the scorecards.

Investment, Infrastructure & Connectivity

This category reflects the importance of investments in infrastructure for connectivity as a driver of productivity. 5G connectivity and access to Gigabit-capable services data for 2025 is collected from the Ofcom Connected Nations and infrastructure reports. In addition, investments in machinery and equipment for production are a key factor in facilitating and strengthening productivity. Investments in intangible assets are also included in this category, as this covers organisational capital, such as management skills and patents, that can help improve productive capacity and overall efficiency. Data on regional investments is taken from the Experimental ONS data set on regional gross fixed capital formation by asset type. Unfortunately, this data set does not yet include data for the year 2021.

5G connectivity

Represents the percentage of outdoor areas where at least one operator provides very high 5G coverage. Mobile coverage information at local and unitary authority levels are collected from the four mobile network operators and analysed by Ofcom. For each area, we have divided the geographical area of 5G connectivity, also reported in the Ofcom data, by the total geographic area of a region. The data is collected at the Local Authority level and aggregated to ITL3 level data and then the percentage is calculated.

Access to Gigabit-capable internet services

Represents the percentage of premises with a gigabit connection. It can be viewed as a measure of the availability of connectivity infrastructure. This is calculated by dividing the number of premises with a gigabit connection by the total number of premises in a region. The data is collected at the Local Authority level and aggregated to ITL3 level data and then the percentage is calculated.

Gross fixed capital formation ('GFCF') per job

Another type of business investment is the total amount of investment in tangible and intangible assets, such as buildings, structures, roads, transport equipment, machinery, ICT equipment, and intellectual property products per job basis. The 2022 ONS data set on Experimental regional gross fixed capital formation (GFCF) estimates by asset type provides data for all ITL levels of geography. The number of jobs for each ITL region is taken from the ONS Subregional Productivity, June 2025 release. This indicator uses the same data as the previous scorecard edition, as no

new release has been published.

ICT investment per job

Using the same sources as for the Gross fixed capital formation per job indicator, the ICT investment per job indicator measures the total amount of investment in ICT equipment per-job basis for the current scorecard year. This indicator uses the same data as the previous scorecard edition as no new release has been published.

Intangibles investment per job

Using the same sources as for the Gross fixed capital formation per job indicator, the Intangibles investment per job indicator measures the total amount of investment in intangible capital on a per-job basis for 2020. This indicator uses the same data as the previous scorecard edition as no new release has been published.

Summary - Data

Indicator	calculation
GVA/Hours current	$\text{GVA} / \text{hours} * 1\text{e}6 / 52$
Export Intensity	$\text{Exports} / \text{GDP}$
New Businesses	$\text{New Businesses} / \text{Active Businesses}$
Low Skilled	$(\text{No Qualification} + \text{Low Qualification}) / \text{Working Age}$
Economically Active	$\text{Active} / \text{Working Ages}$
Inactive Due to Illness	$\text{Sick} / (\text{Working Age} - \text{Active})$
Working Age	$\text{Working Age} / \text{Population}$
5G Connectivity	$\text{5G Geographic Area} / \text{Pixel Count}$
Access to Gigabit-capable internet services	$\text{Gigabit Premises} / \text{All Premises}$
GFCF per Job	$\text{GFCF} / \text{Jobs} * 1\text{e}6$
ICT per Job	$\text{ICT} / \text{Jobs} * 1\text{e}6$
Intangibles per Job	$\text{Intangibles} / \text{Jobs} * 1\text{e}6$