

Investing in regional equality – lessons from four cities:

Metrics and a framework for designing effective policies

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Metrics and a framework for designing effective policies



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Metrics are highly important in the allocation of limited resources to policy and funding mechanisms, as well as the evaluation of the delivery and impact of such initiatives. Metrics, therefore, play a key role in the development and implementation of strategies aimed at addressing regional inequalities. They require thorough investigation and debate to ensure those used are the most appropriate and effective. This report discusses possible metrics that can be used, and in some cases are used, to justify, monitor and evaluate the delivery of strategies aimed at addressing regional inequalities.

The limited availability and validity of data at regional and local levels can be an impediment to monitoring and measuring regional outcomes. For example, the inability to adjust income data for regional price differences can obscure measurements of household income, living costs and the number of people situated or at risk of income poverty between regions. Limitations in the availability, control and representation of data can significantly alter the understanding and relative suitability of measurements at subnational levels, which is often the scale at which strategies aimed at addressing regional inequalities operate.

What we measure tends to reflect the availability and validity of data. Metrics that receive less attention in policy framing and debates can be overlooked. However, a relative lack of measurement does not necessarily indicate that a metric is unsuitable but rather that it may require further investigation. In the case of less-quantifiable indicators that may not allow for easy measurement – such as life satisfaction or support networks – a more detailed exploration may provide crucial insights into the health and prosperity of communities. A parallel aim of this report is to contribute to a discussion of forward-looking metrics aimed at evaluating and monitoring the delivery of regional economic development initiatives.

The World Bank, the Organisation for Economic Co-operation and Development (OECD) and the European Commission are identified throughout this report as sources of internationally comparable data. These organisations generally provide annually recorded data dating back at least a decade. Other data sources include the United Nations, the World Happiness Report and the International Institute for Democracy and Electoral Assistance.

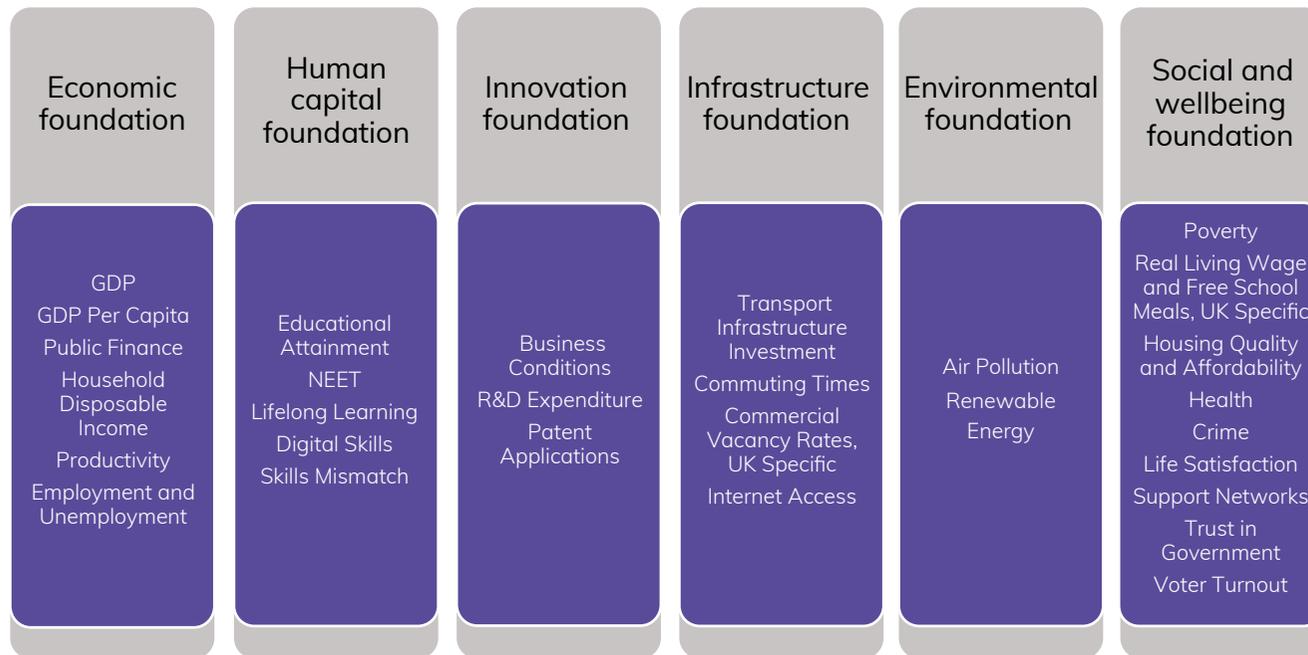
The report also includes measurements of public finance, fiscal decentralisation and devolution in relation to local authority powers to address regional inequalities.

Outlining the metrics

The metrics presented below are not a fully comprehensive list of possible indicators but are identified as frequently used and/or are identified as valuable to addressing regional inequalities.¹ They are justified in relation to their:

- **Suitability** – how appropriate the selected metrics are for monitoring and evaluation
- **Measurement** – the validity and replicability of the methods of calculation
- **Comparability** – the ease with which the metrics can be compared across time periods and geographical scales, both internationally and nationally
- **Timeliness** – the periodicity, frequency of collection and consistency of data

Figure 1: Foundations and metrics



The metrics have been structured into broader foundations that build on those featured within the UK Industrial Strategy Council's [Success Metrics](#).² They play a central role in economic development and respond to current and anticipated challenges relating to regional inequalities. Such challenges include:

- those posed by COVID-19 and featured within socioeconomic recovery strategies,
- the projected shortfalls in digital skills and how to achieve the identified productivity potential of addressing skills mismatches, and
- the optimal distribution of research and development expenditure.

This framework for delivering more equitably distributed growth can be applied to a broad range of country experiences. Crucially, the foundations move beyond traditional economic metrics of success to allow for more holistic accounts of community prosperity, sustainability and improvements in people's everyday lives.

¹ While a large debate exists over the scale at which 'levelling up' should be addressed (Green et al., 2021; Davenport and Zaranko, 2020), the emphasis here is mainly at the regional (and city-region) scale.

² See the full research paper, *Measuring the Success of the Industrial Strategy* (Industrial Strategy Council, 2019a), and the list of metrics in the *Schedule of Success Metrics* (Industrial Strategy Council, 2019b).

Economic foundation³

This foundation analyses metrics commonly used to monitor economic growth, activity and efficiency.

Gross domestic product

Gross domestic product (GDP) represents the value added through the production of goods and services in a country. The expression of GDP in current market prices and a single currency unit can aid in eliminating price disparities between countries and enable international comparisons.

The universal use of GDP as a measure of prosperity can be inadequate and inappropriate, as it obscures broader measures of human wellbeing. GDP has also been criticised for its exclusionary methods of measurement, which highlight certain economic activities over others. Indeed, GDP does not allow for financial externalities, fluctuations in the value of assets, or the unpaid work of individuals or households. Additionally GDP's focus on monetary transactions does not capture traditional systems of bartering and reciprocal trading that are common within developing countries. As such, the suitability of GDP as an internationally comparable economic indicator can be questioned.

The World Bank provides annual [GDP data at national levels](#) from 1960 to 2020. The richness of this data enables significant time comparisons; however, its national focus may obscure regional disparities in GDP. The OECD and Eurostat annually record GDP at [regional levels](#) from 2001 to 2018, and at [EU local levels](#) from 2010 to 2019, respectively. These levels of granularity may aid in capturing inter- and intra-

regional disparities and trends in GDP. However, the Eurostat database does inhibit broader international comparisons, due to its European scope.

GDP per capita

GDP per capita is calculated by dividing an area's total GDP by its population. This equalises economies and regions that are significantly different in size, easing comparison. GDP per capita is used within the [Rebuilding Britain Index](#), which aims to track social and economic progress within the UK.

Purchasing power parities (PPPs) are used to eliminate price disparities between countries in the calculation of GDP and GDP per capita and are measured at national levels. This measure takes account of current market prices but can obscure regional disparities in prices. This is particularly important to consider when analysing GDP-related measures at regional and local levels, as the current market prices accounted for may not align with market prices experienced by the communities in those areas. Moreover, GDP per capita does not include taxes or transfers on income, which may affect its ability to capture differences in living standards.

Public finance

Public finance represents the management of a nation's revenue, expenditure and debt through government and quasi-government institutions. Measures of public finance can also indicate the level of fiscal decentralisation within a country.

The OECD [Regional Government Finance and Investment Database](#) provides data on expenditure, investment, revenue and debt at a generalised, regional government level from 2010 to 2016. Within this database, records of total tax revenue and total grants and subsidies revenue as a percentage of general government revenue can be used to analyse the extent and distribution of fiscal decentralisation within OECD countries. This data could be used to monitor the delivery and distribution of finances that relate to addressing regional inequalities. Unfortunately, the lag in reporting the data may hinder the timely evaluation of policy initiatives.

In the UK, the Office for National Statistics (ONS) provides a detailed account of [public sector finances at regional levels](#) from 1990 to 2020. This data set could facilitate significant regional and time series comparisons of public sector revenue within the UK and form the basis for suitable monitoring of the UK's policies to address regional inequalities and fiscal decentralisation.

Household disposable income

Household disposable income (HDI) measures the total income of households after accounting for net interest, dividends received, taxes and social contributions. HDI includes income streams such as salaries, social benefits and self-employed earnings.

HDI is applied within the OECD [Better Life Index](#), the OECD [Regional Wellbeing Framework](#), and the prioritisation of places for the [UK Community Renewal Fund](#). The Salvation

³ The Gini index can be used to measure the degree to which income distribution among individuals and households within an area deviates from a perfectly equal distribution. This can provide a succinct representation of income inequality within a chosen area at a chosen time. Measures of public finance have been used to indicate fiscal decentralisation and distribution instead of the Gini index, due to the greater availability and robustness of the data.

Army and Institute for Employment Studies also adopt HDI per capita as an economic indicator in the UK. HDI can be adjusted for regional housing costs to more accurately reflect the disposable income available to households.

Eurostat publishes annual data on the disposable income of private households at EU regional levels from 2008 to 2019. Notably, this measurement of HDI uses the 'purchasing power standard' as a unit of measure, based on PPPs, which can limit regional nuances in market prices. Meanwhile, the OECD offers an alternative measurement of the growth rate of HDI, comparing the previous period with data for 2021 or the latest available year. This variation in data availability, ranging from 2017 to 2020, may challenge comparability due to asynchronous economic and financial cycles across countries.

Productivity

Productivity can be calculated by dividing the total income of an area by the total number of worker hours within it. As different regions may use different methods to calculate productivity, care will need to be taken when conducting geographical comparisons.

Disparities in productivity rates should be expected due to the differing roles that different economies play. Differences in productivity may be ascribed to differences in productive assets and infrastructure; local geography and institutions; and the composition of economic activity. There is currently no comprehensive data set that allows for the comparison and control of price differences across UK regions. As productivity cannot be adjusted for regional prices, this limits the indicator's utility in overall policy evaluation. However, by

adjusting income for local consumer prices or the prices of goods and services produced, it may be possible to measure 'real' productivity in a way that can be used to represent regional price differences.

The ONS provides annual data on the productivity of the G7 countries from 1995 to 2020. Alternatively, Eurostat records annual labour productivity at EU national levels from 2005 to 2020. This data set provides further opportunities for European comparisons, but still fails to offer significant insights into regional levels of productivity.

It is important to note that the limited availability of regional data could inhibit the suitability and validity of productivity as a monitor for addressing regional inequalities.

Employment and unemployment

People in employment can be defined as all those of working age who engage in activities for pay or profit. The International Labour Organization defines people in unemployment as all those of working age who are not in employment, are undertaking activities to seek employment during a specified recent period and are currently available to take up employment. Measurements of employment are typically used within studies of growth⁴ and can signal how efficiently an economy provides jobs.

Measures of employment are applied within the OECD Better Life Index, the OECD Regional Wellbeing Framework, and the Industrial Strategy Council Success Metrics. In the UK, the unemployment rate is one of the metrics used to develop indices of priority places for both the Levelling Up Fund and the UK Community Renewal Fund. Although valuable statistics, employment measures do not offer significant

insights into the quality and conditions of employment that individuals experience or the impact that employment has on overall household incomes.⁵

The World Bank offers annual employment-to-population ratios at a national level from 1960 to 2020. These ratios include all those aged 15+ years and use national or modelled estimates; the unemployment-to-total-labour-force ratio is similarly calculated using these estimates. The OECD provides annual data for the economic participation rate of those from 15 to 64 years of age at OECD small regional levels from 2001 to 2019, with unemployment rates recorded at OECD large regional levels from 2001 to 2020. Eurostat measures annual economic activity rates at EU local levels for those aged 15 to 74 years from 2016 to 2020, and unemployment rates from 2011 to 2020. The disparities in the definition and measurement of employment and unemployment rates between and within these databases should be appreciated in their analysis and may inhibit comparisons using different sources.

⁴ Green et al., 2017.

⁵ Green et al., 2017 and The Salvation Army and The Institute for Employment Studies, 2021.

Human capital foundation

This foundation outlines measures of skills that can be used to evaluate regional economic development. The foundation builds upon the OECD's [definition of skills](#) that emphasises the development of knowledge and abilities that aid in the completion of tasks.

Educational attainment

Educational attainment is measured as the proportion of the population that has reached a certain level of education.⁶ Educational attainment is commonly used as an indicator of human capital and skills within an area, with higher levels of educational attainment associated with positive social and economic outcomes.⁷

Educational attainment is featured within the OECD's [Better Life Index](#), the Legatum Institute's [UK Prosperity Index](#) and the Industrial Strategy Council's [Success Metrics](#). Other studies apply educational attainment within the identification of left-behind areas in need of policy intervention.⁸

The provision of quality local education may prove insignificant if a city or town cannot retain its talent.⁹ Places with lower levels of educational attainment may not indicate lower quality educational provisions but rather the outward migration of talent. This out-migration can result in areas seeing limited productivity benefits from

their educational investments, despite producing skilled workers and graduates.¹⁰ This underscores the importance of skills retention, particularly in relation to the proportion of graduates moving into regional priority sectors, when assessing the efficacy of policies designed to address regional inequalities.

The [World Bank](#), the [OECD](#) and [Eurostat](#) publish annual population statistics by educational attainment levels, categorised by primary, secondary and tertiary education. There can be time lags when reporting internationally comparable figures, with the OECD having just recorded this data for the years 2016 and 2017. Meanwhile, the World Bank and Eurostat maintain longer time series data. The limited availability and the age of the OECD data could reduce its validity, in comparison to that of the other sources.

NEET

This measure represents the share of young people “neither in employment nor education or training”.¹¹ NEET is used within the Legatum Institute's [UK Prosperity Index](#) to indicate labour force engagement within an area. More broadly, NEET could also indicate the level of opportunities and progression for individuals within a geographic area, and it could therefore be a useful monitor of the human capital impacts relating to regional inequalities.

Different databases define 'young population' in different ways. For example, [Eurostat](#) and the [World Bank](#) define this group as those aged between 15 and 24 years, whereas the [OECD](#) records it as those aged between 18 and 24 years. Such variations require attention when analysing and comparing data sets.

Lifelong learning

To track lifelong learning, Eurostat [measures the participation rate](#) of 25-to-64-year-olds in education or training in the last four weeks. This annually measured data is available at the EU regional level from 2016 to 2020 and offers the most comprehensive and comparable study of lifelong learning to date. Meanwhile, the UK Industrial Strategy Council has identified the retraining and in-work progression of individuals as a significant data gap,¹² which may explain the limited availability of data on lifelong learning. According to the OECD, the definition and assessment of skills varies between countries, resulting in limited and incomparable studies.¹³ Therefore, lifelong learning, although pertinent to addressing regional inequalities, may prove an unsuitable monitor due to its restricted availability and scope.

⁶ OECD, 2020b.

⁷ OECD, 2020b.

⁸ Davenport and Zaranko, 2020.

⁹ Matsu and Pitt, 2021

¹⁰ Zymek and Jones, 2020.

¹¹ Eurostat, 2021h.

¹² Industrial Strategy Council, 2019a.

¹³ OECD, 2017.

Digital skills

Digital knowledge and skills are areas of increased demand, with the availability of such workers constrained in many industries and sectors. The acceleration in remote or online delivery of public services in response to COVID-19 has amplified these pressures in a very short space of time. Employers across a range of sectors are now competing for technologically competent, if not savvy, workers that thrive on this rapid pace of change. In the UK, Legal & General Group's [Rebuilding Britain Index](#) emphasises the development of digital skills and digital infrastructure as central to the future prosperity of communities. Those that struggle to use new technology are at risk of being left behind.

Digital skills can be measured through the performance of activities related to internet or software use, with a composite indicator given to reflect the level of digital skills that an individual possesses. According to [Eurostat research](#), this measurement is a highly accurate predictor of a total population's level of digital skills. However, the completion of such activities is assumed to reflect digital skill competencies, which may not always be the case.

The OECD's [Adult Skills Survey](#) provides a comprehensive data set on digital skills reported across the OECD and six non-OECD countries for the most recent year, 2018. This survey is administered every ten years, with the next iteration due to be published in 2024. The infrequency of this data set may hinder its use in analysing digital skills and trends, particularly those that have occurred in online learning and working since the emergence of COVID-19. Meanwhile, Eurostat publishes an [annual database on digital skills](#) at EU national levels from 2015 to 2019. The more frequent reporting of this data could promote its use in monitoring the effectiveness of policies aimed at reducing inequalities; however, the national level of this data set could obscure regional disparities in digital skills.

Skills mismatch

Skills mismatch represents the suboptimal utilisation of an individual's skills in their occupation and can form as a result of a disconnect between the supply and demand of labour.¹⁴ A skills mismatch may indicate both under- and over-skilling.¹⁵ This manifests as a hidden tax and 'qualification trap', with the costly retraining of underqualified employees and limited cost-effectiveness of overqualified employees who cannot fulfil their potential within their current roles.¹⁶

Skills mismatch can also affect an economy's productivity. According to the OECD, the UK could enhance its productivity by at least 5% if it reduced its level of skills mismatch to that of best-practice nations.¹⁷ Indeed, addressing skills mismatch, particularly in areas of 'low skills equilibrium', has been identified as a key challenge for reducing regional inequalities,¹⁸ and could prove a useful indicator to monitor policy traction.

Skills mismatch data is currently applied within the Legatum Institute's [UK Prosperity Index](#) to analyse skills gaps and shortages in the UK economy. Meanwhile, the OECD provides a succinct snapshot of [field of study and qualification mismatches](#) at OECD national levels in 2016. Admittedly, the evaluation of skills using occupational and field-of-study data can obscure the wider bundle of skills that an individual possesses, which in turn may deviate from the actual requirements of their job role.¹⁹ Furthermore, the timeliness and national level of the reporting of this data set could limit its effectiveness in monitoring the regional impacts of policies and initiatives.

¹⁴ Brun-Schammé and Rey, 2021.

¹⁵ Industrial Strategy Council, 2019c.

¹⁶ Puckett et al, 2020.

¹⁷ OECD, 2015.

¹⁸ Seaford et al., 2020.

¹⁹ Industrial Strategy Council, 2019c.

Innovation foundation

Alongside skills, innovation is a significant investment area aimed at spurring economic growth across geographic regions. This foundation contains metrics that measure current and potential innovation, which can be used to assess the successful delivery of regional development strategies.

Business conditions

An area's business conditions can be measured by how conducive its regulations are to business operations. This can be represented within an ease of doing business framework, which positions an economy relative to other national economies.²⁰ This measure can be used to indicate the level of comparative advantages and business opportunities within an area and may form a suitable monitor for the distribution of economic opportunities beyond traditional priority areas. Although the World Bank's *Doing Business* report was suspended in 2021 due to data irregularities, the idea of a standardised ranking that is widely reported on may prompt reforms and influence the way that governments behave. At the very least, this offers an example of why data transparency and ethics are also important.

The World Bank's rankings are based on a country's largest city. The data may therefore obscure inter- and intra-regional disparities in business conditions, which are central to addressing regional inequalities. Although the World Bank lists a number of subnational business ranking studies, these do not currently cover all countries. Further monitoring of regional and local business conditions will be required if this type of indicator is to adequately inform policy formation.

Another example includes the Legatum Institute's UK Prosperity Index, which assesses local government restrictions to monitor regional enterprise conditions. Such conditions include the level of business opportunities and comparative advantages within an area, and how these affect the distribution of economic opportunities beyond traditional business hubs.

Research and development expenditure

Research and development (R&D) expenditure can be measured through the total funding given to a sector as a proportion of GDP. The OECD publishes this expenditure, with the ratio of private to public sector funding typically estimated at 2:1.²¹ Internationally comparable databases provide annually recorded R&D expenditure, with the World Bank reporting from the national accounts, the OECD reporting from the regional accounts and Eurostat publishing the EU regional accounts. The OECD and Eurostat produce the most up-to-date data, but with the latest being for 2019 this is unlikely to reflect more recent trends in how funding is apportioned.

There have been calls for caution in determining how funding is allocated, with commentators noting that not all cities and towns have the same ability to foster and grow their innovative capacities to maximise the benefits of this funding.²² In response, policies that work to upskill the workforces of low-capacity areas have also been supported by the public sector.²³ To address regional inequalities, the allocation of R&D funding in foundational policies and

initiatives should account for these kinds of differences in capacity.

Patent applications

The World Bank defines patent applications as those that are filed through the Patent Cooperation Treaty procedure or with a national patent office for exclusive rights for an invention.²⁴ The World Bank provides annual data on the number of patent applications completed by a nation's residents from 1980 to 2019. The OECD annually records the number of patent applications per million residents at OECD regional levels from 2001 to 2015, and Eurostat annually measures patent applications made to the European patent office at EU regional levels from 2001 to 2012. Notably, the more limited date range of the OECD and Eurostat databases could reduce their suitability as monitors of regional inequalities; however, they do provide insights into patent applications trends at a greater level of granularity than that of the World Bank.

The number of patent applications made features in the Good Country Index as well as the Legatum Institute's UK Prosperity Index as an indicator of economic dynamism. Patent applications may prove an important measure of economic strength within and across areas, and thus could be used to help monitor innovation.

²⁰ World Bank, 2020d.

²¹ Forth and Jones, 2020.

²² Enenkel, 2020.

²³ Enenkel, 2020; Forth and Jones, 2020.

²⁴ World Bank, 2019a.

Infrastructure foundation

Infrastructure has played a central role in the industrial policies of many countries. The large, often longer-term, capital investments have been viewed as particularly effective counter-cyclical responses to economic downturns and a means by which to regenerate left-behind regions. High quality infrastructure can enable sustainable economic growth, productivity and competitiveness alongside community prosperity. A key risk is that projects are often impacted by an optimism bias during the planning stage with regard to budgeting and completion times.

Transport infrastructure investment

Transport infrastructure investment measures the total expenditure on new transport construction and improvements to existing networks.²⁵ Transport infrastructure is regarded as a foundation for reducing regional inequalities, with its ability to attract new investment and employment opportunities to an area.²⁶

The World Bank measures the annual gross value of public private partnership investment in transport at a national level from 1984 to 2020. Similarly, the OECD publishes annual data on infrastructure investment from 2016 to 2019, breaking down this expenditure into road, rail and air. Moreover, it provides an annually recorded data set by country on inland transport infrastructure investment from 2000 to 2019. The extended time series could increase its validity and suitability as a monitor for addressing inequalities. That said, comprehensive regional data on transport infrastructure investment is lacking.

²⁵ OECD, 2021j.

²⁶ Taylor et al., 2021.

²⁷ Sanders and Scanlon, 2021.

Commuting times

Eurostat has published data on the mean duration of commuting between work and home in EU nations for 2005, 2010 and 2015. The ONS provides a similar data set that measures the average commuting time of UK local authority populations from October to December 2018. Unfortunately, the age and timeliness of updates to these data sets may reduce their validity as monitors of regional economic development, particularly with the changes in working patterns that COVID-19 has spurred. The data does, however, provide a general sense of commuting patterns and the location of economic centres.

In the UK, commuting time – measured as the average duration of a journey to an employment centre – is used to determine an area’s need for improved transport connectivity within the prioritisation of places for the Levelling Up Fund. Commuting times are also included in the Industrial Strategy Council’s Success Metrics as a monitor of transport infrastructure efficiency.

Commercial vacancy rates (UK-specific indicator)

Commercial vacancy rates can be measured through the proportion of retail, industrial, office and leisure units that are vacant within an area. These rates can be used to determine an area’s need for regeneration and prioritisation.

The Levelling Up Index, recently published by WPI Strategy, applies commercial vacancy rates in its assessment of the UK

areas most in need of policy support to address inequalities. Moreover, the Department for Levelling Up, Housing and Communities and the Ministry of Housing, Communities and Local Government publish live tables on dwelling stock that can be analysed by local authority districts. This allows for the comparison and evaluation of regional economic growth across geography and time, with annual data available from 2004 to 2020.

Internet access

Internet access is an indicator of digital connectivity. This can be measured as the percentage of households in which any member of the household is able to access the internet from home. The OECD publishes annual data showing the share of households with internet broadband access at the OECD large regional level from 2000 to 2019. Similarly, Eurostat provides household internet access data at the EU regional level from 2009 to 2020. The limitation in geographic coverage, due to their focus on OECD and European countries, may limit broader international comparisons, though.

It is important to note that broadband availability does not necessarily equate to broadband adoption. Broadband adoption is found to be heavily influenced by an individual’s level of digital literacy and skills,²⁷ not to mention the affordability of access and hardware. Therefore, a digitisation agenda and the distributional impacts of any related public policies should seek to address such issues as internet availability, adoption and literacy in a holistic manner.

Environmental foundation

This foundation focuses on green growth and metrics that can be used to monitor regional economic development. Interest in sustainability and net zero targets has accelerated in recent years, leading to a raft of definitions, standards and taxonomies at both national and international scales. Demand from consumers and private investors has started to influence ambitions for public sector reporting, so the number and type of measures is expected to grow.

Air pollution

The World Bank defines air pollution as the proportion of a population that is exposed to concentrations of fine particulate matter (PM_{2.5}) greater than the World Health Organization's guidelines; [national data is published](#) from 1990 to 2017. Eurostat [reports national pollution exposure](#) by particulate matter during the period 2000 to 2019. Meanwhile, the OECD [produces data on the average level of PM_{2.5}](#) by OECD large regional areas from 2000 to 2019. The greater granularity of this data set may allow for more nuanced geographical comparisons and the evaluation of regional patterns in air pollution.

Measures of air pollution are used within the OECD's [Better Life Index](#), Legal & General Group's [Rebuilding Britain Index](#) and the OECD's [Regional Wellbeing Framework](#). The Legatum Institute's [UK Prosperity Index](#) also applies measures of air pollution in its natural environment pillar. Such measures of air pollution, particularly the proportion of populations exposed to dangerously high levels, could provide an important monitor of green growth and the wider impacts of air pollution on regional inequalities.

The World Bank notes that the monitoring of pollutants [varies between sites and locations](#), and that such data should be treated as a general indicator of air quality – to inform discussions of the health risks associated with pollutants. As such, measures of air pollution should be used alongside other environmental measures and weighted accordingly in any evaluation.

Renewable energy

Measured as the share of renewable energy in final energy consumption, this metric represents the extent to which

renewable energy is used and replaces fossil and/or nuclear fuels within an economy.²⁸

The World Bank and Eurostat publish annual data on renewable energy as a percentage of total final energy consumption from [1990 to 2015](#) and from [2004 to 2020](#), respectively. The timeliness and date range of these data sets allow for insightful time series comparisons; however, their national scope could obscure regional disparities in renewable energy uptake.

Renewable energy as a share of total final consumption is used within the [Good Country Index](#) to measure a nation's contribution to the planet and climate. In the UK, the Industrial Strategy Council's [Success Metrics](#) and Legal & General Group's [Rebuilding Britain Index](#) apply renewable energy in terms of electricity generation, rather than final consumption. This discrepancy between energy generation and consumption should be recognised when comparing data sets.

²⁸ See Eurostat, 2021r.

Social and wellbeing foundation

This foundation promotes indicators of social capital and wellbeing that can be used to monitor the prosperity of local communities. A holistic approach that moves beyond traditional economic measures to those of human, natural and social capital is required to reduce regional inequalities.

Poverty

The prevalence of poverty can be measured by calculating the proportion of a population that has an income below the national poverty line. For example, the OECD provides poverty data for both a 50% and 60% threshold of the national median income while Eurostat applies an at-risk-of-poverty threshold of 60% of the national median equivalised disposable income. Meanwhile, the Legatum Institute's UK Prosperity Index adopts the poverty rate as defined by the Social Metrics Commission, which classifies an individual as in poverty if their resources accumulate to less than 54% of the median total resources available.

Discrepancies between poverty thresholds and the use of income, disposable income and other resources to measure poverty should be accounted for when using and comparing data sets. Indeed, recent evidence highlights cases where cities focus upon making poverty matter less through the accessibility of city services.²⁹ This experience of poverty, mitigated by the provision of public services, can be obscured in poverty rates that centre on material wealth rather than degrees of access and opportunity. Furthermore, the inability to adjust data for regional price differences, as discussed in relation to economic metrics, can hide the differences in living costs that households bear, which may place some individuals in poverty.

²⁹ Green et al., 2017.

³⁰ Green et al., 2017.

The World Bank provides annual data on the proportion of those living in poverty at national levels from 1985 to 2019. Similarly, Eurostat publishes annual data at the EU regional level from 2009 to 2020, and the OECD provides data by OECD region at variable points in time based on the availability of national poverty data. Such variations may hinder geographical comparisons, thus making it hard to evaluate one region's experiences and outcomes with that of another's.

Real Living Wage and free school meals (UK-specific indicators)

For additional insights into those living in poverty or at risk of poverty, the ONS publishes estimates of the number and proportion of employees in the UK who receive hourly pay that is below the real Living Wage, as defined by the Living Wage Foundation. These estimates are ordered by work geographies, local authorities and parliamentary constituencies to allow for different geographical comparisons within the UK. The data provides a point-in-time snapshot, with the latest data available being for the 2019/2020 tax year. However, variations of this data set are available from 2012 to allow for comparisons with those who received pay that was less than the Living Wage.

In addition, the Department for Education collates data on the number of pupils eligible for free school meals within England. This data, structured by English regions, is typically published annually in the wider Schools, Pupils and Their Characteristics study. Data on the number of pupils eligible for free school meals within Wales, Scotland and Northern Ireland are published in separate accounts.

There is a lack of internationally recorded and comparable data on the real Living Wage and free school meal eligibility, which hinders their use in monitoring and comparing the UK's initiatives with those of other countries.

Housing quality and affordability

Housing is regarded as an important contributor to overall wellbeing³⁰ and can be measured in a variety of ways. The OECD's Better Life Index includes measures of the number of dwellings without basic facilities, housing expenditure and rooms per person, while Legal & General Group's Rebuilding Britain Index adopts metrics on the availability of affordable and social housing. Alternatively, the proportion of houses with a category 1 hazard, defined as a hazard that causes a serious or immediate risk to a person's health and safety, is applied in the Legatum Institute's UK Prosperity Index as a measure of shelter quality and empowered communities.

This diversity of measurement is mirrored in the available databases, with Eurostat offering annual, national data on the total population living within unsuitable housing conditions from 2009 to 2020. Meanwhile, the OECD records the average number of rooms per capita and the share of housing cost as a percentage of disposable income at OECD large regional levels on an annual basis from 2000 to 2019 and 2000 to 2018, respectively.

The varied methods of measuring housing quality and affordability highlight the need for more standardised data on housing that can facilitate comparisons across local communities.

Health

The health of an area's population can be measured through its average life expectancy. Life expectancy at birth is adopted in the OECD's [Better Life Index](#), Legal & General Group's [Rebuilding Britain Index](#), the OECD's [Regional Wellbeing Framework](#), and WPI Strategy's [Levelling Up Index](#). Notably, the Legatum Institute's [UK Prosperity Index](#) utilises life expectancy at 65 as an indicator of longevity, alongside mortality rates at different age brackets. This more detailed measure of longevity may allow for generational disparities in health outcomes.

The World Bank, the OECD and Eurostat all publish data on life expectancy at birth. This data is produced at a [national level of detail](#) from 1960 to 2019, [OECD large and small regional levels](#) from 2001 to 2019, and [EU regional levels](#) from 2008 to 2019, respectively. The depth of these data sets could promote their validity and suitability to support the monitoring of regional inequalities and their impacts on health outcomes.

Crime

Rates of intentional homicide can be used as a proxy measure for crime. Rates of intentional homicide are used within the OECD's [Better Life Index](#), the OECD's [Regional Wellbeing Framework](#) and the Legatum Institute's [UK Prosperity Index](#). WPI Strategy's [Levelling Up Index](#) also applies crime data more generally in its assessment of areas most in need.

The United Nations Office on Drugs and Crime publishes data on [intentional homicide counts and rates](#) per 100,000 population at national levels from 1990 to 2018. Similarly, Eurostat produces data on the number of intentional homicide cases recorded by the police at [EU smaller regional levels](#) from 2008 to 2010. The periods covered in these data sets will invariably reduce their ability to reflect more recent trends in crime. Moreover, Eurostat advises against using this data for international comparisons due to not-insignificant differences in national legal and criminal justice systems, recording and reporting rates, and the documentation and inclusion of crimes in crime figures.³¹

Life satisfaction

Life satisfaction can be monitored through self-reported ratings on a scale of 'not satisfied at all' to 'fully satisfied'. Commonly referred to as the 'Cantril Ladder',³² these scores are used within the OECD's [Better Life Index](#) and [Regional Wellbeing Framework](#). While the OECD publishes [more detailed data](#) for OECD large regional levels, it is only available for the year 2014. Similarly, Eurostat reports [EU national rates of life satisfaction](#) for 2018, but only for those over the age of 16. Indeed, the timeliness, periods covered and range of these data sets limit their comparability and suitability as monitors of regional inequalities.

The ONS has produced more recent data on [personal wellbeing in the UK](#) at local authority district level from April 2019 to March 2020. Indeed, the UK Industrial Strategy Council has used life satisfaction scoring as a [Success Metric](#) to represent wider wellbeing within an area.

Meanwhile, the annual [World Happiness Report](#) provides a national snapshot of self-reported life satisfaction rates for as recently as 2021.

It should be noted that the measurement of self-reported life satisfaction is susceptible to bias, being affected by the societal desirability and expectation of certain answers and the norms or ideals of what it means to be satisfied with one's life.³³ As this subjectivity is fundamental to the process of self-evaluation and cannot be entirely neutralised from the recorded observations, care must be taken in its interpretation.

³¹ Eurostat, 2014.

³² Ortiz-Ospina and Roser, 2013, revised 2017.

³³ Eurostat, 2019.

Support networks

Self-reported perceptions of the support an individual receives from relatives and friends can be used to measure the level of support networks in an area. Akin to life satisfaction, this indicator is used within the OECD's [Better Life Index](#) and [Regional Wellbeing Framework](#). In the UK, the Legatum Institute's [UK Prosperity Index](#) monitors perceptions of familial support and neighbourly help in its assessment of social networks in an area.

The OECD publishes cross-sectional data on the [perceived social network support](#) within OECD large regions for the year 2014. Although relatively outdated, this is currently the most comprehensive international data set available. Increased demand for data to inform measures such as social value may spur the design of studies that better identify, and more regularly report, support networks as a key indicator of community prosperity, activity and kinship.

The perception of support networks may experience the same limitations as self-reported life satisfaction, due to the subjective recording of individuals' experiences and emotions. However, this subjectivity is core to the measure and cannot be easily disentangled from it.

Trust in government

The effectiveness of public policy relies heavily on the trust that citizens have in their elected leaders. Although trust in governments rose appreciably at the start of the COVID-19 pandemic, this reversed course once the emergency response phase had subsided. According to international surveys such as the [Edelman Trust Barometer](#), governments are now viewed as the least ethical and least competent stakeholder in society. There is a broad recognition, however, that governments are needed to help solve fundamental problems such as widening inequalities.

To measure trust in government, Eurostat has recorded the average rating of [trust in the police, legal system and political system](#) at EU national levels in 2013. Similarly, the OECD measured [perceptions of corruption](#) at OECD large regional levels in 2014. Admittedly, the limited data collection by these multilateral organisations challenges our ability to understand current trends, particularly with the scope and frequency of parliamentary changes that have occurred since these dates. Absent official data, there may be more reliance on other sources of data such as the annual Edelman survey.

Meanwhile, the Legatum Institute's [UK Prosperity Index](#) uses measures of trust in Members of Parliament, the Parliament at Westminster and the national government to monitor institutional trust within the UK. The Industrial Strategy Council applies dimensions of trust generally and in people vs institutions as indicators of social capital and in its [Success Metrics](#).

Voter turnout

Citizen engagement ensures that policy formation is informed by a diverse range of views and experiences. Societies that rely heavily on the voices of a disproportionate few may find that decisions are skewed to favour certain geographic regions or socioeconomic demographics. To counter these tendencies, elected leaders must have a clear mandate from as wide a cross-section of society as possible to inform how the limited public funds are dispersed. This is critical to achieving outcomes that level the playing field for everyone.

Voter turnout can be calculated as the ratio of voters to the total number of people with voting rights. This indicator is used as an indicator of civic engagement in the OECD's [Regional Wellbeing Framework](#) and to monitor local governance in the Legatum Institute's [UK Prosperity Index](#).

The International Institute for Democracy and Electoral Assistance publishes extensive data on [voter turnout by country](#), recorded from 1945 to 2019. The depth of this database allows scope for significant global comparisons across time. In the UK, the Electoral Commission collates regional data on [voter turnout at local elections](#) for England, Wales, Scotland and Northern Ireland. Data is currently available for the last local elections in England (2018), Scotland (2017) and Wales (2017). No data is currently listed for the latest elections to the Northern Ireland Assembly (2017), but new reports are due to be added shortly. This could allow for more nuanced analysis of voter turnout and how policies designed to address regional inequalities may impact on civic engagement levels within and between regions.

Conclusion

Addressing regional inequalities and their impacts on local communities will require decision makers to strike a balance in the use of the types of metrics and foundations identified in this report. While there is no single approach that works in all situations, a policy design and evaluation framework that is transparent, open to scrutiny and which acknowledges the diversity of stakeholders and desired outcomes is likelier to succeed.

In the **economic foundation**, a suitable mix of metrics might include household disposable income, productivity, measures of public finance, and employment and unemployment rates. These measures capture trends, disparities and progress in relation to income, economic quality, fiscal decentralisation and labour market efficiency. A focus on raising productivity and encouraging growth in higher-skilled, higher-paying jobs will be crucial to improving standards of living that can help to reduce regional inequalities.

From the **human capital foundation**, tracking metrics on educational attainment, NEET rates and digital skills is recommended. These metrics provide significant and comparable insights into the level of education, skills and participation in learning within a geographic area. Meanwhile,

the increased demand for tech expertise across a range of industries and sectors can attract or retain higher value economic activity, thereby contributing to community prosperity. Although lifelong learning and skills mismatch data would be highly useful in monitoring human capital development, the current availability of data is insufficient to justify their inclusion.

In the **innovation foundation**, metrics such as R&D expenditure and patent applications could highlight the level of innovation, knowledge economy and outputs within an area. To enable regional comparisons in a more timely way, there is a need for greater subnational data – surveys of local business conditions are increasingly common but could benefit from standardisation.

As part of the **infrastructure foundation**, measures of transport infrastructure investment and internet access are recommended. These measures would highlight the extent, distribution and quality of infrastructure investment within an area. Measures of commuting times and commercial vacancy rates have been omitted from this recommendation, due to the limited availability of timely and internationally comparable data.

In the **environmental foundation**, air pollution and renewable energy are examples of metrics that could monitor green growth while tracking how policies designed to reduce regional inequalities impact the environment. Additional metrics such as the adoption of electric vehicles and investment in more carbon neutral public transport systems could be useful to develop further in the future.

Finally, measures of poverty, housing quality and affordability, health, crime, and voter turnout from the **social and wellbeing foundation** can provide valuable insights into the role that public policies play in enabling fairer and more inclusive opportunities across local communities. Standardised data may also help to facilitate the comparison of outcomes across regional economic development strategies that target inequalities. Supplementary metrics including life satisfaction, support networks and trust in government can currently only be utilised in a more localised context due to the limited availability of data sources. The costs and associated benefits of collating internationally comparable data sets in the areas of the social and wellbeing foundation warrant further consideration.

Table 1: Framework for monitoring and evaluation

Foundation	Recommended metrics	Metrics to develop further
Economic	Household disposable income, productivity, measures of public finance, and employment and unemployment rates	GDP, GDP per capita, regional prices
Human capital	Educational attainment, NEET rates and digital skills	Lifelong learning, skills mismatch
Innovation	R&D expenditure, patent applications	Business conditions
Infrastructure	Transport infrastructure investment and internet access	Commuting times, commercial vacancy rates
Environmental	Air pollution and renewable energy	Electric vehicles adoption, investment in carbon neutral public transport systems
Social and wellbeing	Poverty, housing quality and affordability, health, crime, and voter turnout	Life satisfaction, support networks and trust in government

The robustness of policy design, implementation and evaluation hinges on the identification of both quantitative and qualitative metrics that align to a common framework. This report recommends six foundations that collectively address the complex issues surrounding regional inequalities. The experiences of other jurisdictions, whether they are national or international, can help to illuminate policy successes and the time horizons that can potentially be involved.

Above all else, there is an imperative that decision makers be open and transparent about the criteria by which programmes and initiatives are to be funded. A focus on outcomes that are clearly defined will help to ensure that resources are allocated where they are needed most. This can then inform when it is most appropriate to scale up or exit a strategy based on evidence rather than ideology.

Appendices



Appendix A:

Popular indices

Table A1 outlines recently published and popular indices, as referenced throughout this report. These indices have been assessed according to their scope, content and rationale.

Table A1: Indices used in report

Index	Scope	Content	Rationale
Better Life Index , OECD	Aims to involve citizens in the debate on measuring the wellbeing of communities and empower them to become engaged in the policy-making process.	<p>Topics include housing, income, jobs, community, education, environment, civic engagement, health, life satisfaction, safety and work-life balance.</p> <p>Each topic is based on one to three indicators, which are equally weighted to reflect individuals' differing perceptions of wellbeing.</p>	<p>The topics and indicators are chosen based on their relevance and data quality, in consultation with OECD member countries.</p> <p>The OECD also launched an interactive online tool, Your Better Life Index, which allows individuals to assign weights and compare wellbeing measures for the included OECD countries.</p>
Regional Wellbeing Framework , OECD	<p>Provides a way of measuring wellbeing across regions and cities and a set of common indicators for international comparisons.</p> <p>The framework can also serve as a reference for regions when developing their own metrics of wellbeing.</p>	<p>Key topics include income, jobs, housing, health, education, environment, safety, civic engagement, accessibility of services, community and life satisfaction.</p> <p>For each topic, one or two indicators have been selected. The Regional Wellbeing Framework uses the same topics and similar indicators as the Better Life Index at the national level. However, applying the Better Life Index at the regional level has required certain adjustments to reflect regional policy-makers' priorities.</p>	<p>The OECD proposes a multi-dimensional approach to measuring wellbeing, building from a conceptual framework that details how individuals' and places' characteristics interact to shape people's wellbeing.³⁴</p> <p>The framework also cites the OECD Regions at a Glance series, which highlights intra- and inter-regional disparities in jobs, quality of life and sustainability, as an inspiration.</p> <p>The framework measures wellbeing where people experience it, concentrates on wellbeing outcomes and their distributions, and accounts for the temporal dynamics of wellbeing.</p>

³⁴ OECD, 2014.

Index	Scope	Content	Rationale
Good Country Index , The Good Country	<p>Aims to measure what each country contributes to the good of humanity and what it takes away, relative to its size.</p> <p>The index solely looks at each country's external impact, positive and negative, outside its own borders.</p>	<p>Categories include contributions to science and technology, culture, international peace and security, world order, planet and climate, prosperity and equality, and health and wellbeing.</p> <p>Category ranks are based on the mean rank of the five indicators per category. A country's overall rank is based on the average of the category ranks.</p>	<p>Notes that today's challenges are global and borderless and, therefore, require global solutions. The Good Country Index looks at how much countries are doing, rather than how well they are doing, in tackling these challenges.</p>
Success Metrics , Industrial Strategy Council ³⁵	<p>Used to measure the success of the Industrial Strategy within the UK.</p> <p>The metrics are expected to continuously develop over time to reflect the changing priorities and impacts of the UK agenda to address regional inequalities.</p>	<p>Headline outcomes include earnings, productivity, labour market, wellbeing, social capital and environment.</p> <p>Further foundations: ideas, people, infrastructure, business environment.</p> <p>Identified "Grand Challenges" of AI and data, ageing society, clean growth, future of mobility, and sector deals.</p>	<p>The Industrial Strategy Council notes the need to look beyond traditional measures. To achieve this holistic view, the metrics include measures of social and natural capital, wellbeing impacts, and the distribution of wealth.</p> <p>The metrics are underpinned by economic theory, which is used to outline drivers of earnings and productivity growth. The metrics are further selected to facilitate distributional and international comparisons.</p>
Prioritisation of places for the UK Community Renewal Fund , Department for Levelling Up, Housing and Communities and the Ministry of Housing, Communities and Local Government	<p>The index is used to identify priority places for the UK Community Renewal Fund.</p>	<p>A place's index score is based on its productivity, skills, unemployment rate, population density and household income.</p> <p>Productivity has a greater weighting than the other metrics, due to its correlation with household income and greater perceived relevance to economic resilience.</p>	<p>The metrics were selected due to their influence on an area's economic resilience.</p> <p>The metrics provide insights into an area's economy, human capital, economic resilience and the efficiency of its labour market.</p>

³⁵ See Industrial Strategy Council, 2019a and 2019b.

Index	Scope	Content	Rationale
<p>Prioritisation of places for the Levelling Up Fund, Department for Levelling Up, Housing and Communities; Department for Transport; HM Treasury; and Ministry of Housing, Communities and Local Government</p>	<p>The index is used to identify priority places for the Levelling Up Fund and to aid in the delivery of the fund's core objective of improving local communities by investing in local infrastructure that impacts local people.</p>	<p>Productivity, 16+ unemployment rate and skills are used to measure the “need for economic recovery and growth” indicator. The average journey times to employment centres are used to measure the “need for improved transport connectivity” indicator. Commercial and dwelling vacancy rates for England and Wales and dwelling vacancy rates for Scotland are used to measure the “need for regeneration” indicator.</p> <p>The “need for economic recovery and growth” is weighted at 50%, with the “need for improved transport connectivity” and “need for regeneration” both weighted at 25%. This weighting was chosen to best align with the objectives of the fund.</p>	<p>The guidance states that selected metrics should be chosen in support of targeting places in need of economic recovery and growth, improved transport connectivity, and regeneration.</p> <p>The data should also be publicly available to aid transparency, and comparisons should be made using a common set of “GB-wide metrics”.</p>
<p>Levelling Up Index, WPI Strategy</p>	<p>The Levelling Up Index offers the first comprehensive socioeconomic analysis of each parliamentary constituency in England and Wales, highlighting the constituencies most in need of policies to address inequalities.</p>	<p>The index measures spending power, financial dependency, crime, deprivation, health and empty commercial properties.</p> <p>The indicators are scored in relation to the English and Welsh averages, with each constituency given an overall composite ranking based on these scores.</p>	<p>The Levelling Up Index aims to provide a clear set of metrics and definitions by which levelling up can be assessed.</p> <p>The index also aims to outline the specific needs of each constituency.</p>

Index	Scope	Content	Rationale
UK Prosperity Index , ³⁶ Legatum Institute	<p>Serves as a practical tool to aid in the identification of the action needed to unlock prosperity in the UK.</p> <p>The tool is designed for organisations, agencies and people to use to further inform their work.</p>	<p>The index has three domains: inclusive societies, open economies and empowered people.</p> <p>Underneath these domains, there are pillars of safety and security, personal freedom, governance, social capital, investment environment, enterprise conditions, infrastructure, economic quality, living conditions, health, education and natural environment.</p> <p>Each pillar has three to five elements, and each element then feeds in to the selected indicators. In total, there are 256 indicators. Each indicator is weighted based on the importance it has for its element. Similarly, each element is weighted based on its importance for its pillar.</p>	<p>Indicators were chosen based on their ability to act as proxies for the selected elements, with conceptual and statistical reasoning used to decide this relevance.</p> <p>Academic literature, independent research and expert panels were used to assess each indicator's relationship to wealth and wellbeing. The geographical coverage, at the UK local authority level, and the timeliness, age and frequency of each indicator, were also important to their selection.</p>
Rebuilding Britain Index , Legal & General Group	<p>Aims to track socioeconomic progress across the UK.</p> <p>The index is described as community-led, with the capacity for local communities to use the index to identify their investment priorities.</p>	<p>Key areas include jobs and economic prosperity, housing, education, environment and energy, transport, health and social care, and digital.</p> <p>The index utilises secondary statistical data alongside a primary household survey, undertaken quarterly.</p> <p>The index up-weights and down-weights certain factors based on their influence on quality of life and economic wellbeing, as found in preliminary household survey results.</p>	<p>Legal & General Group states that the built environment shapes our social and economic interactions. Therefore, a measure of how and where building infrastructure meets the needs of local communities is required, particularly as the UK begins to undertake a national programme of rebuilding. The Rebuilding Britain Index serves to provide this measure.</p> <p>The first instalment is focused on analysing the findings at a regional level, with comparisons between the UK's largest urban areas. Later instalments will analyse findings at increasingly local levels to allow for more granular comparisons.</p>

³⁶ Legatum Institute, 2019a and 2019b.

Appendix B:

Taxonomy and data availability

Tables B1–B6 show metrics that can be used, and in some cases are used, to justify, monitor and evaluate the delivery of strategies aimed at addressing regional inequalities. The indicators are justified in relation to their suitability, measurement, temporality and spatial granularity. They are split into six foundations: economic, human capital, innovation, infrastructure, environmental, and social and wellbeing. Tables B1–B6 relate to internationally comparable metrics; Table B7 indicates UK-specific metrics.

Table B1: Economic foundation

Metric	Calculation	Source	Temporality	Spatial granularity
GDP	GDP (current US\$)	World Bank	Annually, 1960–2020	National
	GDP (current US\$, current PPP)	OECD	Annually, 2001–2018	Small regions, TL3
	GDP euro (current market prices)	Eurostat	Annually, 2010–2019	EU NUTS 3 regions
GDP per capita	GDP per capita (current US\$)	World Bank	Annually, 1960–2020	National
	Regional GDP (PPS per inhabitant)	Eurostat	Annually, 2008–2019	EU NUTS 2 regions
Public finance	Regional government total revenue, % of general government	OECD	Annually, 2010–2016	Regional
	Regional government total tax revenue, % of general government	OECD	Annually, 2010–2016	Regional
	Regional government total grants and subsidies revenue, % of general government	OECD	Annually, 2010–2016	Regional
Household disposable income	Household disposable income, net growth rate %	OECD	Snapshot, 2020 or latest available data	National
	Disposable income of private households (PPS)	Eurostat	Annually, 2008–2019	EU NUTS 2 regions
Productivity	Constant price GDP per hour worked	ONS	Annually, 1995–2016	National, G7 countries
	Labour productivity per person employed and hour worked	Eurostat	Annually, 2005–2020	National, EU countries
Employment	Employment to population ratio, 15+ years (national estimate)	World Bank	Annually, 1960–2020	National
	Participation rate, 15–64 years	OECD	Annually, 2001–2019	Small regions, TL3
	Economic activity rates, 15–74 years	Eurostat	Annually, 2016–2020	EU NUTS 2 regions
Unemployment	Unemployment, % of total labour force (national estimate)	World Bank	Annually, 1960–2020	National
	Unemployment rate, 15–64 years	OECD	Annually, 2001–2020	Large regions, TL2
	Unemployment rate, 15–74 years	Eurostat	Annually, 2011–2020	EU NUTS 2 regions

Table B2: Human capital foundation

Metric	Calculation	Source	Temporality	Spatial granularity
Educational attainment	Population by educational attainment level, 25+ years	World Bank	Annually, 1970–2019	National
	Share of 25-to-64-year-olds by educational attainment type	OECD	Snapshot, 2016 and 2017	Large regions, TL2
	Population by educational attainment level, 25 to 64 years	Eurostat	Annually, 2016–2020	EU NUTS 2 regions
NEET	Share of youth not in education, employment or training	World Bank	Annually, 1976–2020	National
	Share of 18-to-24-year-old population not in education and unemployed or inactive	OECD	Annually, 2009–2020	Large regions, TL2
	Young people neither in employment nor in education and training, 15–24 years	Eurostat	Annually, 2016–2020	EU NUTS 2 regions
Lifelong learning	Participation rate in education and training (last 4 weeks), 25–64 years	Eurostat	Annually, 2016–2020	EU NUTS 2 regions
Digital skills	Percentage of adults scoring at Level 1 in problem solving in technology-rich environments in the Survey of Adult Skills (PIAAC)	OECD	Snapshot, 2018	OECD national, Ecuador, Kazakhstan, Peru, Russian Federation and Singapore
	Individuals who have basic or above basic overall digital skills	Eurostat	Annually, 2015–2019	National, EU countries
Skills mismatch	Field of study and qualification mismatch, 15–64 years	OECD	Snapshot, 2016	National

Table B3: Innovation foundation

Metric	Calculation	Source	Temporality	Spatial granularity
Business conditions	Ease of doing business rank	World Bank	Snapshot, 2020	National
R&D expenditure	R&D expenditure, % of GDP	World Bank	Annually, 1996–2018	National
	R&D expenditure, % of GDP	OECD	Annually, 2000–2018	Large regions, TL2
	Intramural R&D expenditure, % of GDP	Eurostat	Annually, 2007–2019	EU NUTS 2 regions
Patent applications	Patent applications, residents	World Bank	Annually, 1980–2019	National
	Patent applications per million residents	OECD	Annually, 2001–2015	Large regions, TL2
	Patent applications to the European patent office by priority year	Eurostat	Annually, 2001–2012	EU NUTS 2 regions

Table B4: Infrastructure foundation

Metric	Calculation	Source	Temporality	Spatial granularity
Transport infrastructure investment	Public private partnerships investment in transport (current US\$)	World Bank	Annually, 1984–2020	National
	Infrastructure investment, road/rail/air (euro)	OECD	Annually, 2016–2019	National, OECD
	Total inland transport infrastructure investment (euro)	OECD	Annually, 2000–2019	National, EU
Commuting times	Mean duration of commuting time one-way between work and home	Eurostat	Snapshot, 2005, 2010 and 2015	National, EU
Internet access	Share of households with internet broadband access	OECD	Annually, 2000–2019	Large regions, TL2
	Households that have internet access at home	Eurostat	Annually, 2009–2020	EU NUTS 2 regions

Table B5: Environmental foundation

Metric	Calculation	Source	Temporality	Spatial granularity
Air pollution	PM _{2.5} air pollution, population exposed to levels exceeding WHO guideline value	World Bank	Annually, 1990–2017	National
	Exposure to air pollution by particulate matter	Eurostat	Annually, 2000–2019	National, EU
	Air pollution in PM _{2.5} , average level in µg/m ³ experienced by the population	OECD	Annually, 2000–2019	Large regions, TL2
Renewable energy	Renewable energy consumption, % of total final energy consumption	World Bank	Annually, 1990–2015	National
	Share of renewable energy in gross final energy consumption	Eurostat	Annually, 2004–2020	National, EU

Table B6: Social and wellbeing foundation

Metrics	Calculation	Source	Temporality	Spatial granularity
Poverty	Poverty headcount ratio at national poverty lines, % of total population	World Bank	Annually, 1985–2019	National
	Poverty rate after taxes and transfers, poverty line at 50% and 60% of the national median income	OECD	Snapshot, variable dates	Large regions, TL2
	Persons with an equivalised disposable income below the at-risk-of-poverty threshold, at 60% of the national median equivalised disposable income	Eurostat	Annually, 2009–2020	EU NUTS 2 regions
Housing quality and affordability	Total population living in a dwelling with a leaking roof, damp walls, floors or foundation, or rot in window frames or floor	Eurostat	Annually, 2009–2020	National, EU
	Average number of rooms per inhabitant	OECD	Annually, 2000–2019	Large regions, TL2
	Share of housing cost, in % of disposable income	OECD	Annually, 2000–2018	Large regions, TL2
Health	Life expectancy at birth, years	World Bank	Annually, 1960–2019	National
	Life expectancy at birth, years	OECD	Annually, 2001–2019	Large and small regions, TL2, TL3

Metrics	Calculation	Source	Temporality	Spatial granularity
	Life expectancy at birth, years	Eurostat	Annually, 2008–2019	EU NUTS 2 regions
Crime	Victims of intentional homicide, counts and rates per 100,000 population	United Nations Office on Drugs and Crime	Annually, 1990–2018	National
	Crimes recorded by the police, intentional homicide	Eurostat	Annually, 2008–2010	EU NUTS 3 regions
Life satisfaction	Self-reported life satisfaction	World Happiness Report	Snapshot, 2021	National
	Average rating of life satisfaction, 16+	Eurostat	Snapshot, 2018	National, EU
	Self-evaluation of life satisfaction	OECD	Snapshot, 2014	Large regions, TL2
Support networks	Perceived social network support	OECD	Snapshot, 2014	Large regions, TL2
Trust in government	Average rating of trust in the police, legal system and political system	Eurostat	Snapshot, 2013	National, EU
	Perception of corruption	OECD	Snapshot, 2014	Large regions, TL2
Voter turnout	Voter turnout, parliamentary data	International Institute for Democracy and Electoral Assistance	Annually, 1945–2019	National

Table B7: UK-specific metrics

Metric	Calculation	Source	Temporality	Spatial granularity
Commuting times	Average home-to-work travel time, 16+	ONS	Snapshot, October–December 2018	Local authority, UK
Crime	Police-recorded crime in England and Wales	ONS	Snapshot, May 2020–March 2021	National, England and Wales
	Perceptions of changing crime levels	ONS	Annually, 1996–2020	National, England and Wales
Free school meals	Number of free school meal eligible pupils	ONS	Annual terms, Spring 2016–Autumn 2020	Local authority districts, England
Personal wellbeing	Personal wellbeing in the UK	ONS	Snapshot, April 2019–March 2020	Local authority districts, UK
Public finance	Country and regional public sector finances revenue tables	ONS	Annually, 1990–2020	Regions, UK
Real Living Wage	Estimates of the number and proportion of employee jobs with hourly pay below the Living Wage	ONS	Snapshot, April 2019–April 2020	Local authority, UK
Commercial vacancy rates	All vacant dwellings by local authority districts	Council Tax Base (CTB)	Annually, 2004–2020	Local authority districts, England
Voter turnout	Results and turnout at local elections for England, Wales, Scotland and Northern Ireland	The Electoral Commission	Snapshot, 2018 (England), 2017 (Scotland and Wales)	Local authority districts, England
			Data for last elections to the Northern Ireland Assembly due to be added shortly	

Appendix C:

Definitions relating to spatial scales

Table C1 indicates how the main data sets referred to in Appendix 2 are geographically disaggregated to a range of spatial scales.

Table C1: Spatial scale of main data sets

Institutional terminology	Administrative tier	Definition
OECD regions	OECD large regions, TL2	Correspond to the first administrative tier of subnational government.
	OECD small regions, TL3	Correspond to administrative regions, with the exception of Australia, Canada and the US. TL3 regions are contained within a TL2 region, except for the US.
EU NUTS regions (nomenclature of territorial units for statistics)	EU NUTS 1 regions	Correspond to major socioeconomic regions.
	EU NUTS 2 regions	Correspond to basic regions for the application of regional development policies.
NUTS classifications generally align with administrative regions. This is due to the greater availability of data and implementation capacity of policies at these levels	EU NUTS 3 regions	Correspond to small regions for specific diagnosis.

Source: Eurostat, 2020; OECD, 2021s

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