Government Office for Science

Foresight

Trend Deck

Climate Change

Demographics

Economics

Health

Infrastructure

Natural Resources

Governance + Law

Skills

Technology

Urbanisation

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Spring 2021

Welcome to the Trend Deck

The Trend Deck sets out an evidence base of long-term change for UK government officials and others to use in thinking about how to create long-term benefits for society. It covers ten themes, developed through discussion with the UK cross-government futures community.

The Trend Deck contains 118 data-based trends. Its purpose is to start conversations about how issues have changed and evolved over time and where they might be headed in the future. We encourage users of this resource to build on the information contained in the trends with a wider range of evidence and more in-depth analysis.

How the Government Office for Science supports strategic long-term thinking

The Government Office for Science is led by the Government Chief Scientific Adviser who provides advice to the Prime Minister and members of the Cabinet, ensuring that government policies and decisions are informed by the best scientific evidence and strategic long-term thinking.

One of our priorities is supporting the Civil Service to develop its futures capability. We provide a suite of products and services (see diagram below) on futures and emerging technologies. Click on each resource for more information or contact details.

Where a link is not available, please contact us at futures@go-science.gov.uk.

Structure of the trend cards

Government Office for Science

Demographic Trends

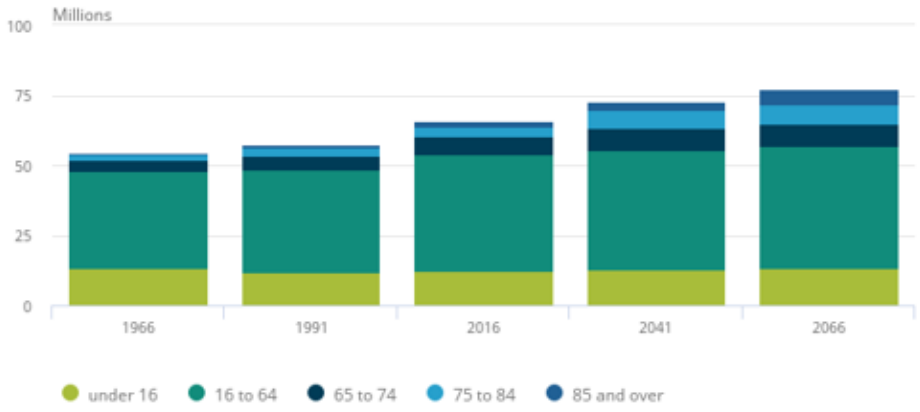
Foresight

Increase in over 65s to more than a quarter of the UK population by 2066

By 2066 there is projected to be a further 8.6 million UK residents aged 65 years and over. The total number in this group could be 20.4 million, up to 26% of the total population. The fastest increase will be seen in the 85 years and over age group.

Within the UK, the older population is not equally spread across local areas, with older people making up higher proportions of the populations of rural and coastal areas than urban areas. Five of the 10 local authorities with the highest percentage of the population aged 65 years and over are in the South West of England.

Population by age group, selected years, UK



Source: Population estimates, Principal population projections, 2016-based, Office for National Statistics

Source: Living longer: how our population is changing and why it matters, Office for National Statistics, August 2018

D4

- Each of the ten sections is colour coded.
- The contents page for each section lists the relevant trends with hyperlinks to each card.
- The trend card has a headline title, an evidence-based narrative of what is changing, supporting graphic and unique identifier (e.g.D4).
- The sources contain hyperlinks back to the original reference material.

Trend Deck – foresight resource

The Trend Deck is part of a suite of foresight resources developed by the Government Office for Science.

Our publication A brief guide to futures thinking and foresight introduces what futures thinking is, the benefits, where to start, networks and capability development.

Our Futures Toolkit is a set of tools and techniques to help government officials use long-term strategic thinking in policy making. The Toolkit shows how to use trends in foresight exercises.

Contents of Trend Deck

The Trend Deck does not cover specific trends in depth and is not comprehensive. It introduces those using it to a breadth of trends to provoke thought about how they may be relevant to a range of policy issues.

The future outlook for the trends remains uncertain, and this document does not provide official forecasts or the authoritative source of the latest data.

The Trend Deck is subject to revision and update - if you have suggestions for future content, please contact us at futures@go-science.gov.uk

The Trend Deck is…

- an introductory guide to trends;
- designed to start conversations;
- ideal as workshop material;
- useful for signposting to evidence sources;
- a ‘snapshot’ of policy-relevant trends.

The Trend Deck is not…

- government policy;
- the view of any part of government;
- primary research or official forecasts;
- a basis for policy or investment decisions;
- a comprehensive list of all priority trends.

Themes

Climate Change
Climate Change and Environmental Trends

Demographics
Population, Migration and Societal Trends

Economics
Economies, Trade and Employment Trends

Health
Physical Health, Mental Health and Wellbeing Trends

Infrastructure
Transport and Housing Trends

Natural Resources
Energy, Materials, Water, Waste and Nature Trends

Governance + Law
Democracy, Security and Crime Trends

Skills
Education, Labour and Employment Trends

Technology
Internet, Emerging Technology and Space Trends

Urbanisation
Cities and Land Use Trends

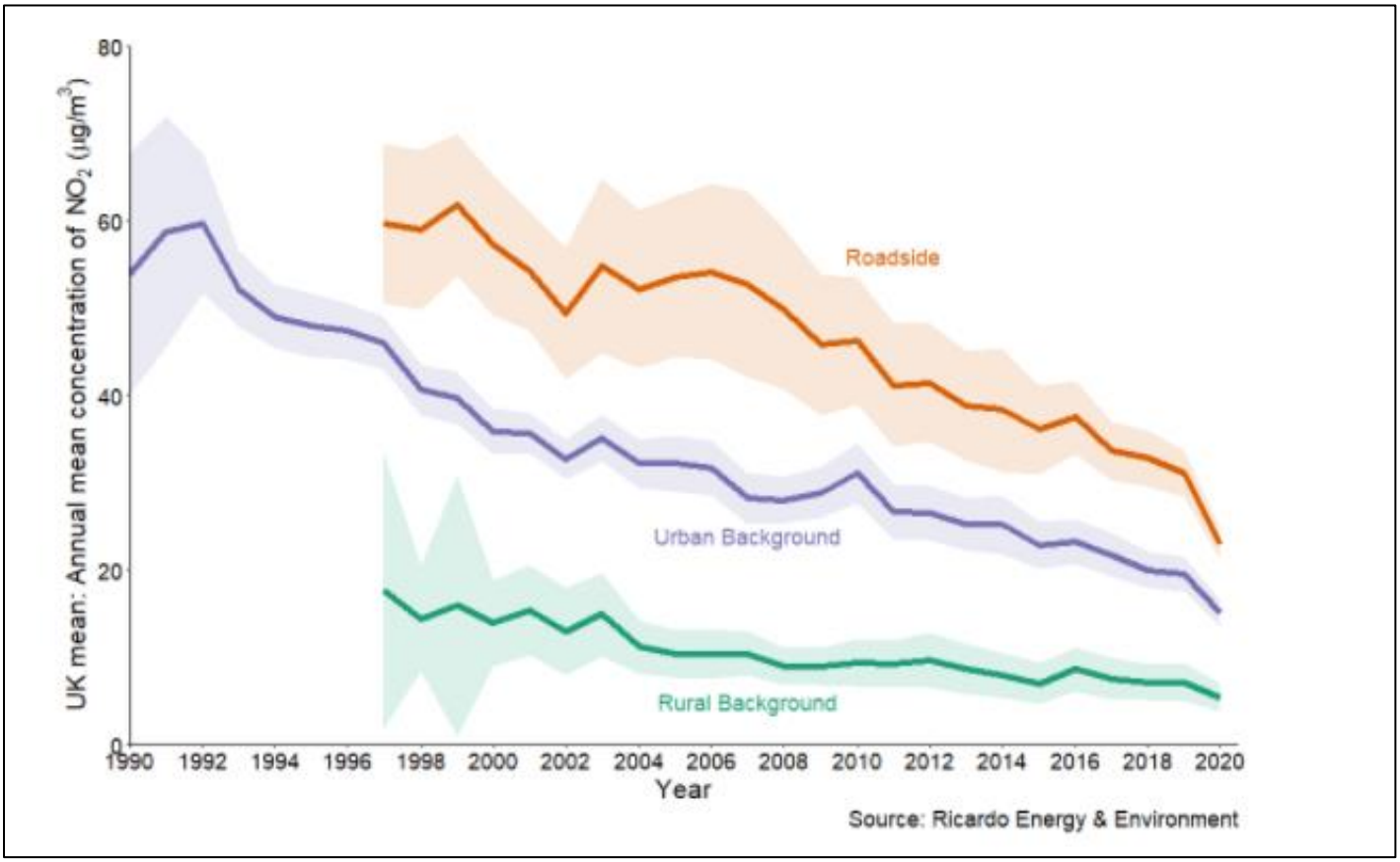
Contents

Long term improvements in UK urban air quality

Urban background and roadside nitrogen dioxide (NO2) pollution has shown long-term improvements. In 2020, the lowest average annual mean concentrations since the start of the time series for both roadside and urban background monitoring sites were recorded. The time series began in 1987. Particulate matter (PM10 and PM2.5) show similar long-term improvements.

Urban background ozone pollution has an overall long-term increasing trend. There was, on average, no difference in the number of days of 'moderate' or higher pollution (including SO2) at urban pollution monitoring sites in 2020 compared with 2019. This goes against the recent trend (2015 to 2019) of an increase in days of 'moderate' or higher pollution at urban sites.

Annual mean concentrations of NO_2 in the UK, 1990 to 2020



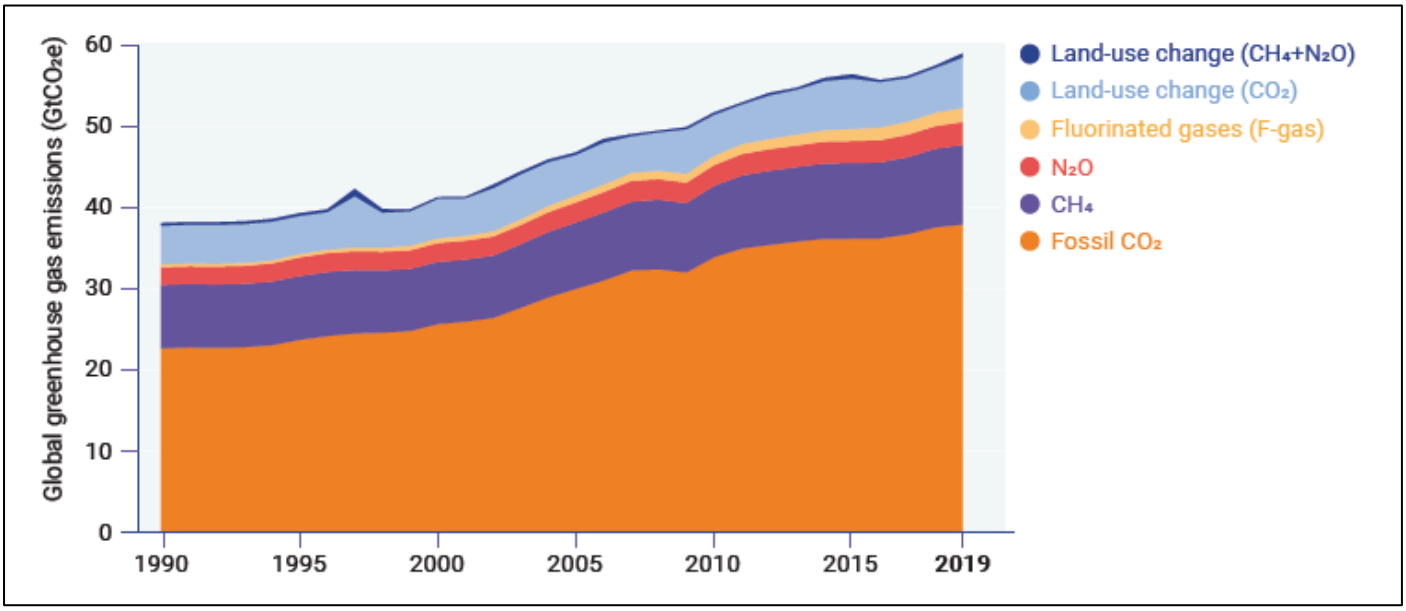
Source:
1. Air Quality Statistics Department for Environment, Food and Rural Affairs, April 2021

Increase in global greenhouse gas emissions

Since 2010, global greenhouse gas emissions (GHG) without land use change have grown at 1.3% per year on average, with preliminary data suggesting a 1.1% increase in 2019. When including the more uncertain and variable land use change emissions, global GHG emissions have grown 1.4% per year since 2010 on average, with a more rapid increase of 2.6% in 2019 due to a large increase in vegetation forest fires.

CO_2 emissions were expected to decrease by about 7% in 2020 (range: 2–12%) compared with 2019 emission levels due to coronavirus (COVID-19), with a smaller drop expected in GHG emissions as non-CO_2 is likely to be less affected. Despite this drop atmospheric concentrations of GHGs continue to rise.

Global GHG emissions from all sources – methane (CH_4), nitrogen dioxide (N_2O) and fossil carbon dioxide (CO_2).



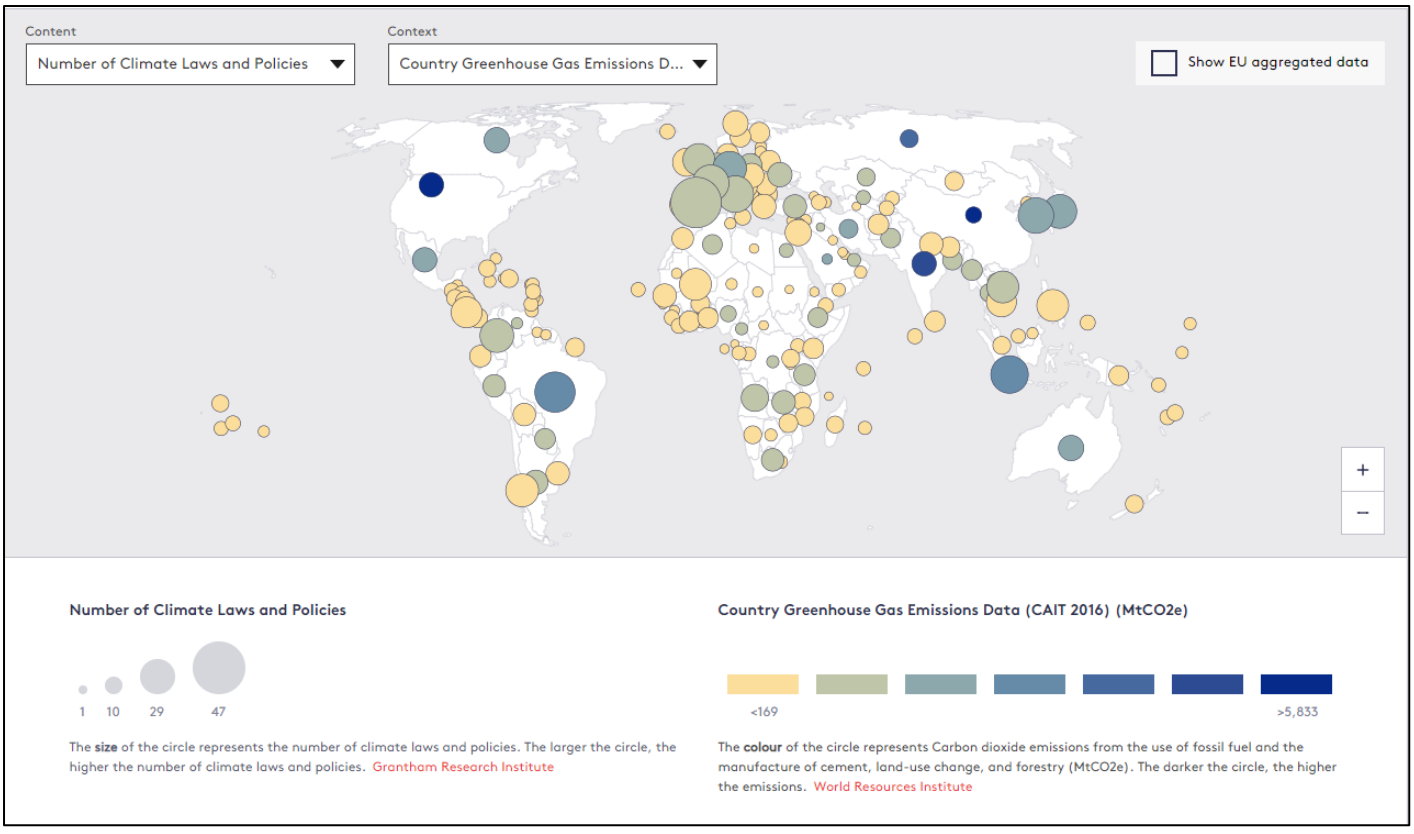
Greenhouse gases are measured in gigatonnes of carbon dioxide-equivalents ($GtCO_2e$).

Sources:
1. United Nations Environment Programme (2020). *Emissions Gap Report 2020*. Nairobi.
2. 2019 UK greenhouse gas emissions national statistics: final summary Department for Business, Energy and Industrial Strategy

Increasing number of global climate change policies and laws

There is no country in the world that does not have at least one law or policy dealing with climate change. The most prolific countries have well over 20, and globally there are 1,800 such laws. Some of them are executive orders or policies issued by governments, others are legislative acts passed by parliament. Accounting for government effectiveness and the length of time laws have been in effect, the UK and South Korea are the most comprehensive legislators among the international forum of the G20 and Spain within the Organisation for Economic Co-operation and Development.

The ‘Climate Change Laws of the World database’ covers national level climate change legislation and policies globally.

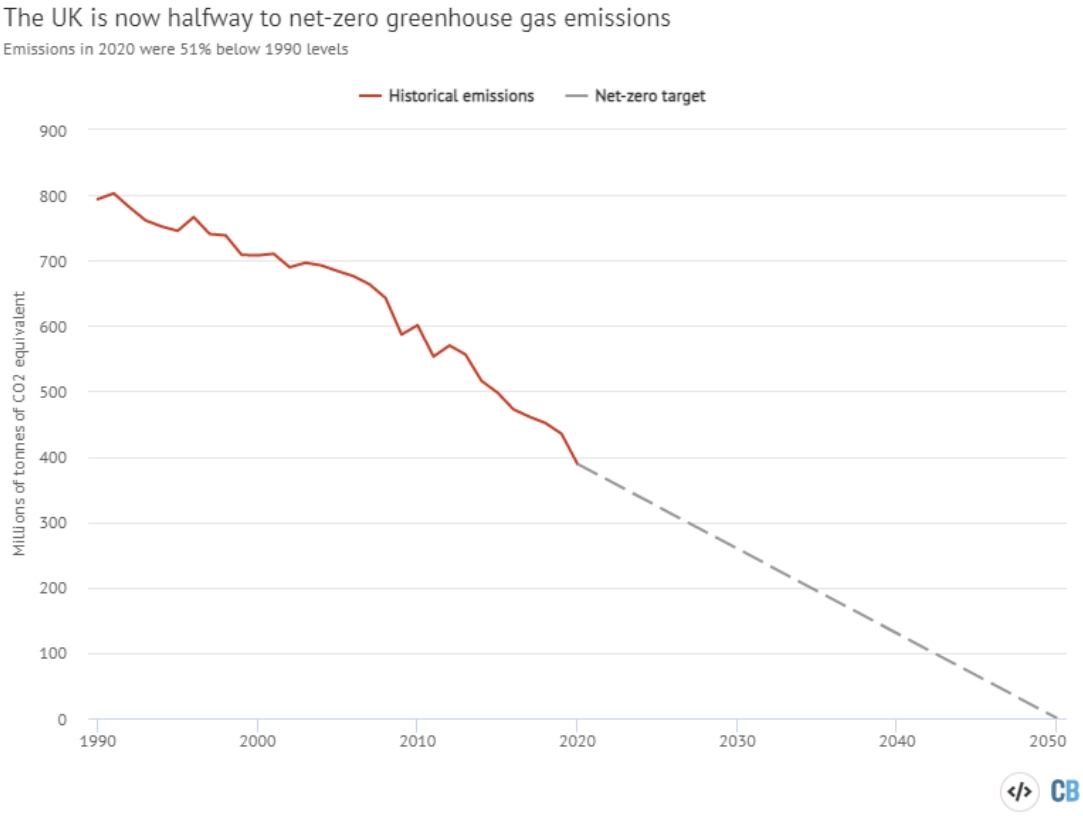


Sources:
1. Global Lessons from Climate Change Legislation and Litigation Shaikh M. Eskander, Sam Fankhauser & Joana Setzer, US National Bureau of Economic Reseach working paper. June 2020.
2. Climate Change Laws of the World database, Grantham Research Institute on Climate Change and the Environment and Sabin Center for Climate Change Law. Available at climate-laws.org

More countries are passing net zero legislation

Sweden was the first country to pass a net zero law in 2017; in June 2019, the UK passed its net zero emissions law; France, Denmark, New Zealand and Hungary also have laws to achieve net zero emissions for 2050 and China by 2060.

The UK's greenhouse gas emissions in 2020 were 51% below 1990 levels. This means the UK is now halfway to meeting its target of net zero emissions by 2050.



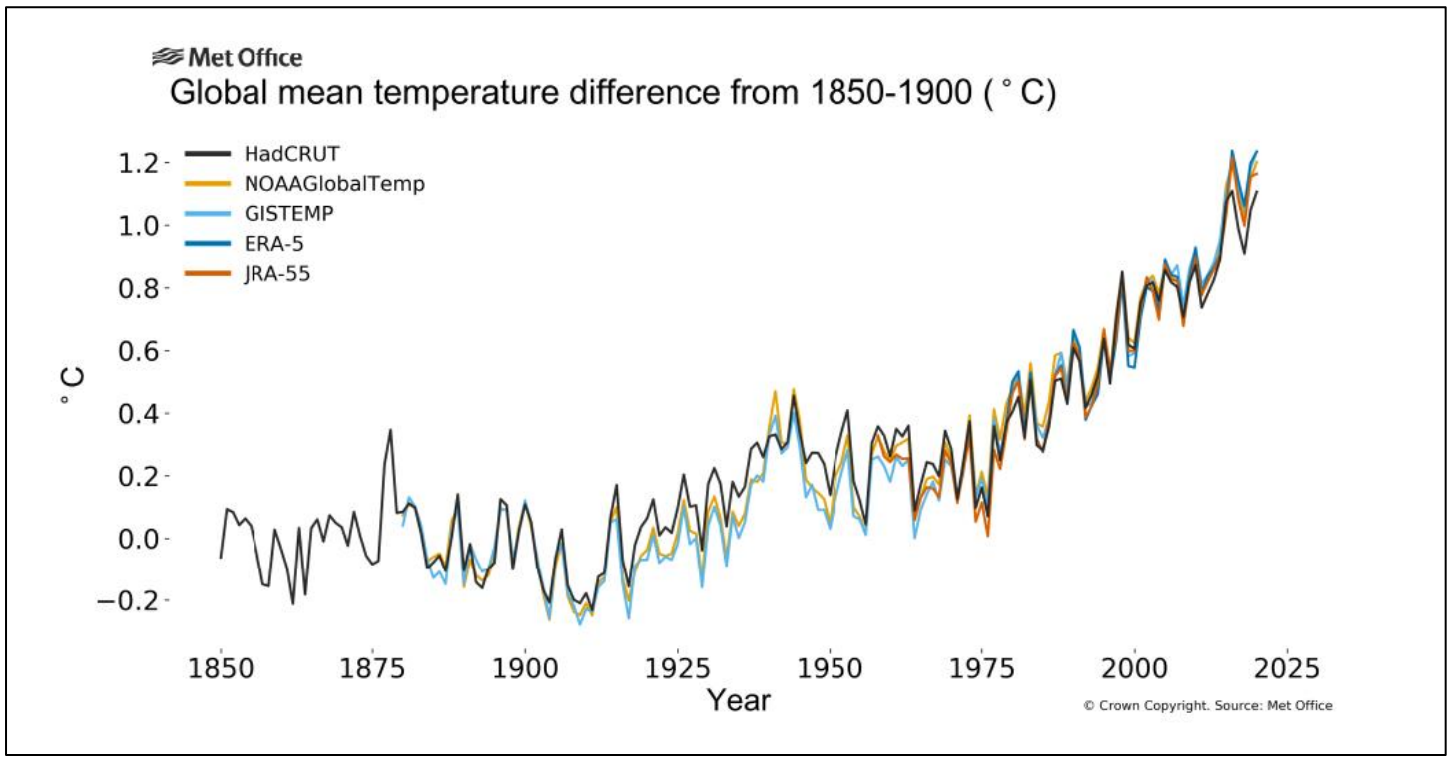
UK territorial greenhouse gas emissions 1990-2020, millions of tonnes of CO2 equivalent, as measured in the national inventory, and the net-zero target for 2050. The inventory excludes international aviation and shipping, which the Climate Change Committee recommends should be included in the UK's target. The inventory also excludes emissions associated with the consumption of goods and services made overseas, but imported into the UK. Source: Emissions data from the UK Department for Business, Energy and Industrial Strategy (BEIS) and Carbon Brief analysis. Chart by Carbon Brief using Highcharts.

Source:
1. CarbonBrief Analysis: UK is now halfway to meeting its 'net zero emissions' target March 2021

Global mean temperatures have risen

Global mean temperature in 2020 was the second warmest on record. The past six years, including 2020, are likely to be the six warmest years. The global mean temperature for 2020 (January to October) was 1.2 ± 0.1°C above the 1850–1900 baseline, used as an approximation of pre-industrial levels.

Global annual mean temperature difference from pre-industrial conditions (1850–1900). The World Meteorological Organization assessment is based on five global temperature datasets. All five of those data sets place 2020 as second warmest for the year to date when compared to equivalent periods in the past (January to October).

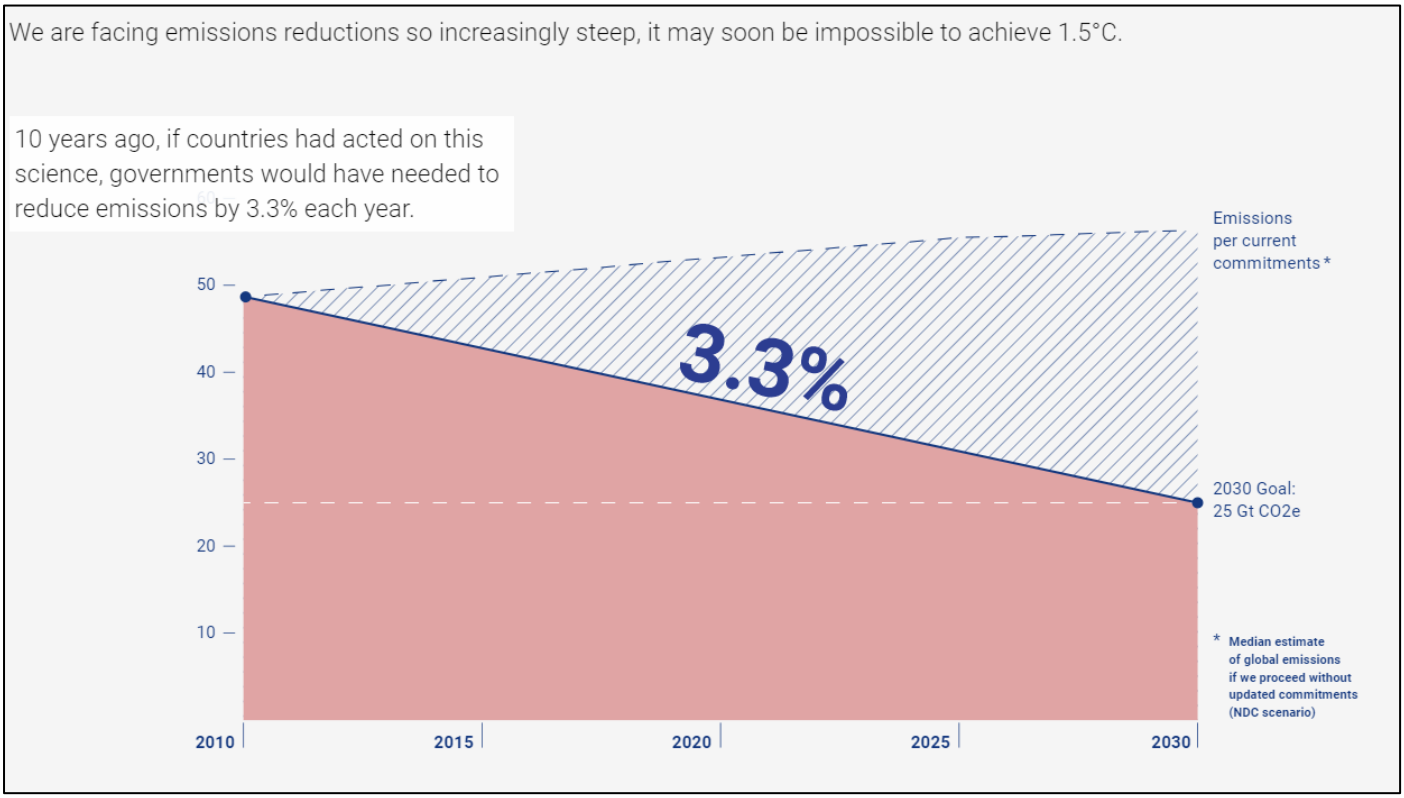


Source:
1. Provisional Report on the State of the Global Climate 2020 World Meteorological Organization, 2020

Global 2030 climate pledges are insufficient to limit warming to 2°C

Despite a brief dip in carbon dioxide emissions caused by the coronavirus (COVID-19) pandemic, the 2030 carbon emission reduction pledges, made by 184 countries under the Paris Agreement, aren't enough to limit global warming to below 2°C and pursue 1.5°C. The world is still heading for a temperature rise in excess of 3°C this century.

Achieving 1.5°C would require global emissions to reduce by 7.6% every year. Even the most ambitious national climate action plans are far short of a 7.6% reduction. The world needs a five-fold increase in collective current commitments.

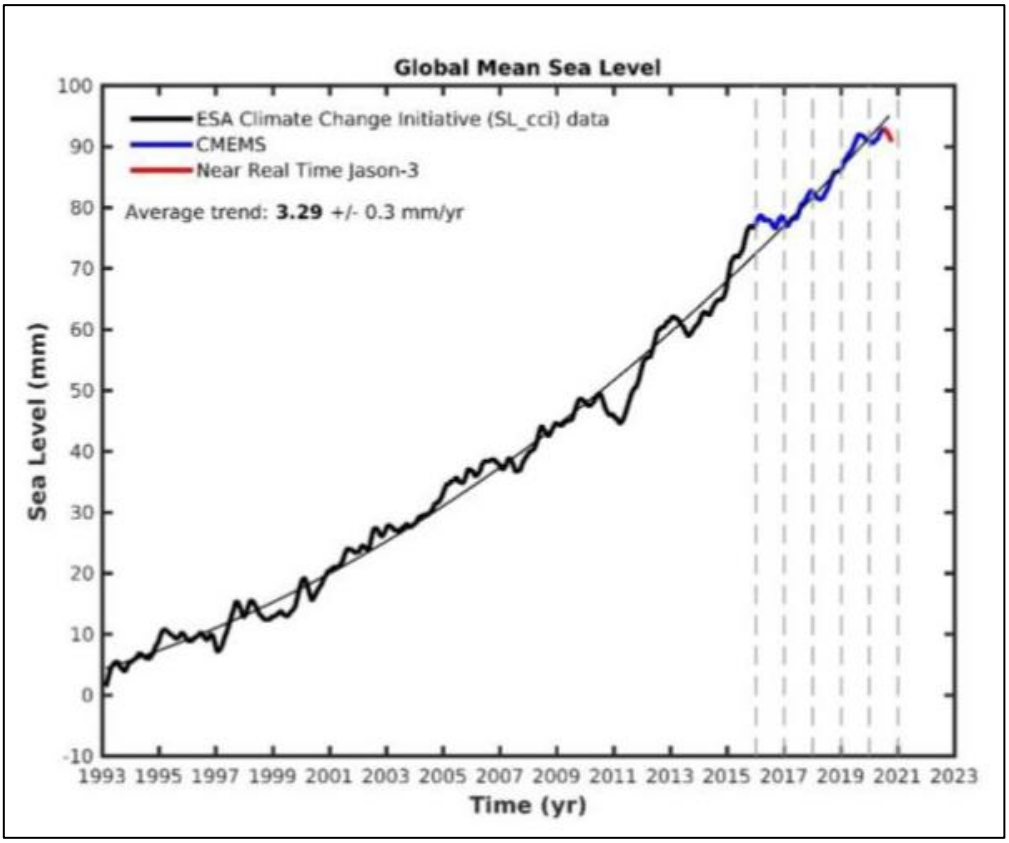


Sources:
1. United Nations Environment Programme (2020). *Emissions Gap Report 2020*. Nairobi.
2. United Nations Environnent Programme (2019). *Emissions Gap Report 2019*. Nairobi.

Average global ocean temperatures and sea levels are rising

Over 80% of the ocean area experienced at least one marine heatwave in 2020. 2019 saw the highest ocean heat content on record and the rate of warming over the past decade was higher than the long-term average, indicating continued uptake of heat from the radiative imbalance caused by greenhouse gases.

On average, since early 1993, the altimetry-based global mean rate of sea level rise amounts to 3.3 ± 0.3 mm/year. The rate has also increased over that time. A greater loss of ice mass from the ice sheets is the main cause of the accelerated rise in the global mean sea level.



Satellite altimetry-based global mean sea level for January 1993 to October 2020 (last data : 13 October 2020). Data from the European Space Agency (ESA) climate change initiative sea level project, from January 1993 to December 2015, (thick black curve); extended by the Copernicus Marine and Environment Service, CMEMS, until August 2020 (blue curve) and with near real time altimetry data from the Jason-3 mission beyond August 2020 (red curve). The thin black curve is a quadratic function that best fits the data. Vertical dashed lines mark the start of each year from 2016 to 2021.

Source:

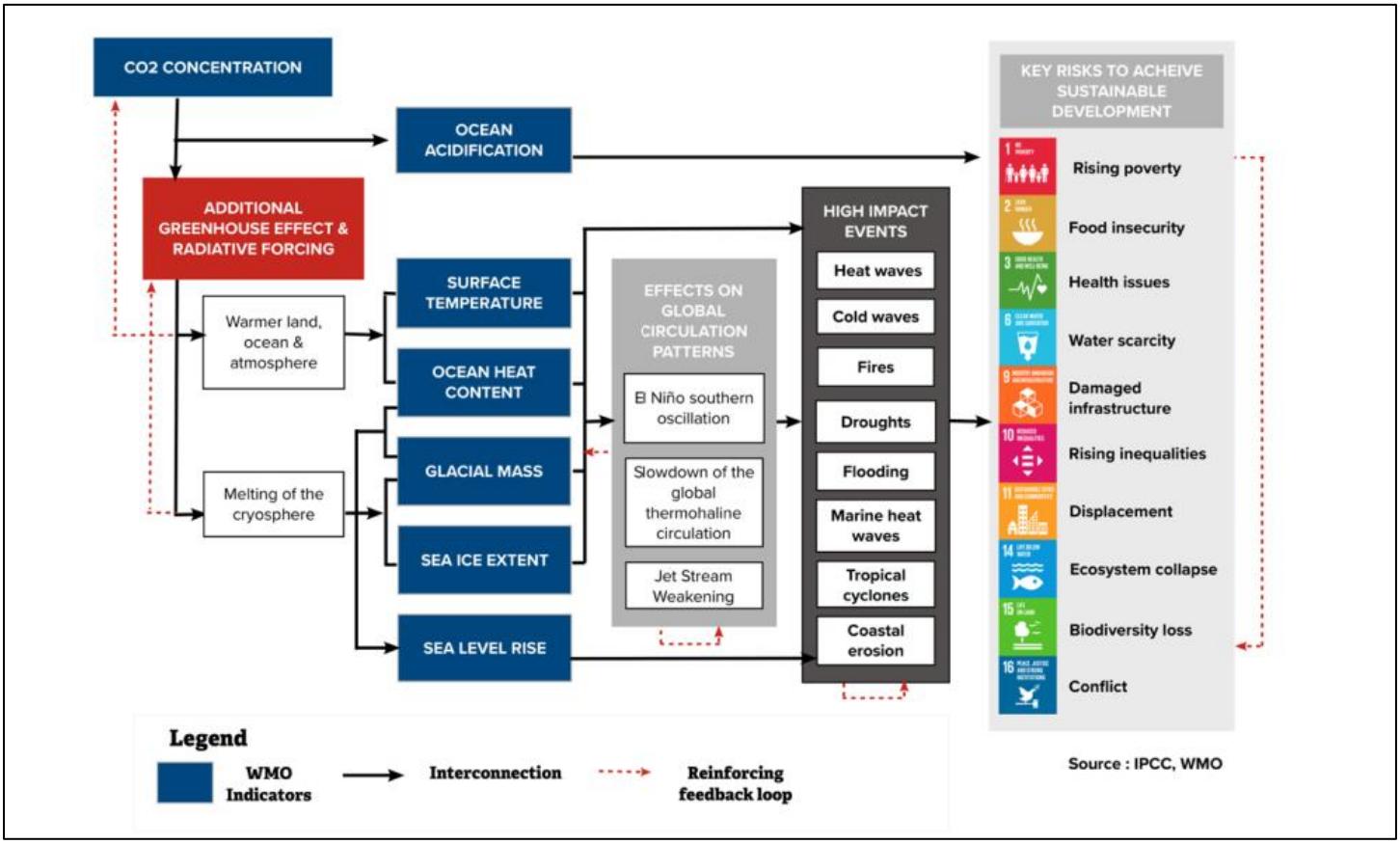
1. Provisional Report on the State of the Global Climate 2020 World Meteorological Organization

Increasing number of high impact climate and weather events affecting people

The most acute impacts of climate change are often felt during extreme meteorological events such as heavy rain and snow, droughts, heatwaves, cold waves, and storms. These can lead to or exacerbate other high impact events such as flooding, landslides, wildfires, and avalanches. In 2018, 61% of all internal displacements were triggered by weather-related disasters.

The achievement of many of the United Nations Sustainable Development Goals is put at risk by climate change causing high impact weather events.

Selected climate change related risks to the United Nations Sustainable Development Goals. Rising atmospheric carbon dioxide (CO_2) concentrations lead to cascading effects via six of the other key climate indicators. Some of these processes also have the potential to release further greenhouse gases into the atmosphere in a feedback loop that can perpetuate warming. For example, rising temperatures can thaw permafrost releasing more carbon into the atmosphere.



Sources:
1. Provisional Report on the State of the Global Climate 2020 World Meteorological Organization
2. Global Report on Internal Displacement 2019 Internal Displacement Monitoring Centre

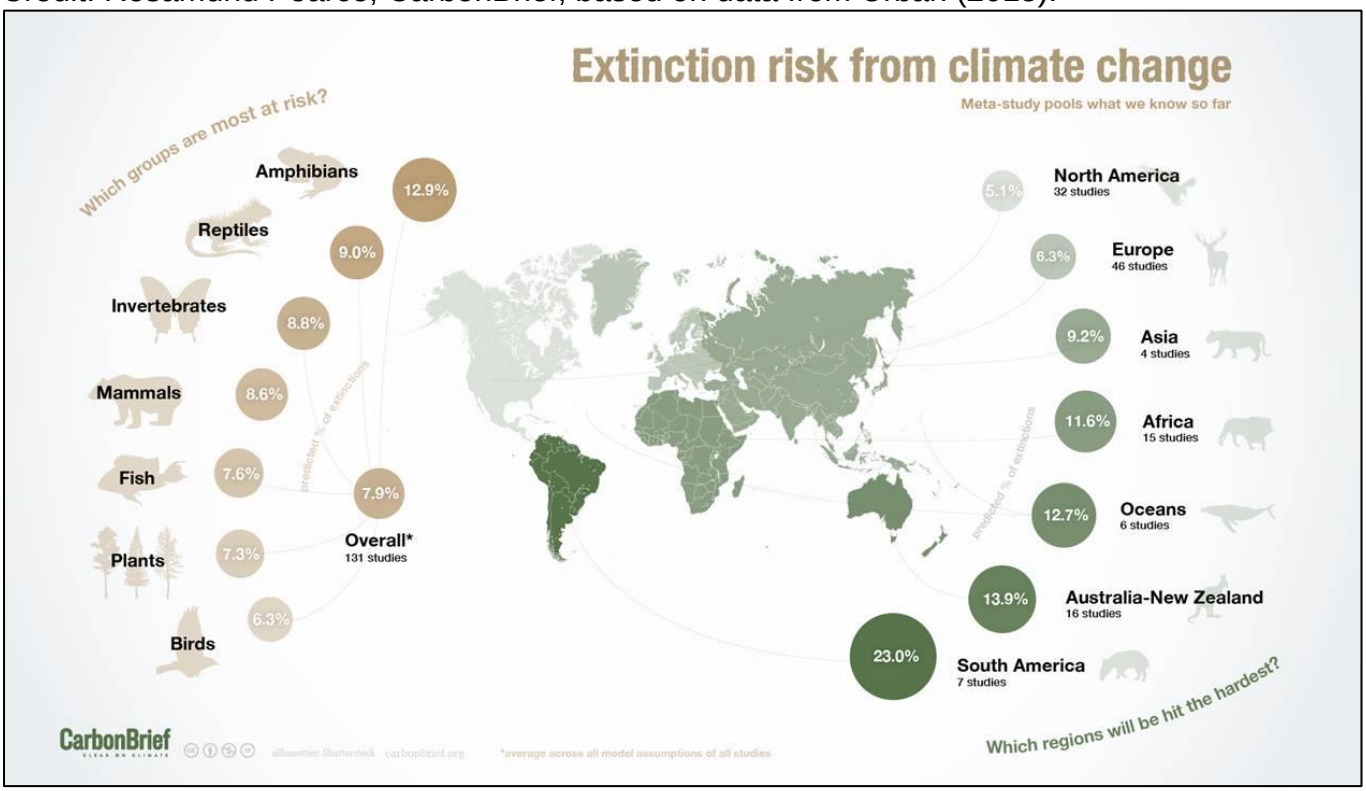
Climate change is accelerating global biodiversity loss

Climate change is currently affecting 19% of species listed as threatened on the International Union for Nature Conservation Red List of Threatened Species, increasing the likelihood of their extinction.

Results of a synthesis of published studies in order to estimate a global mean extinction rate, suggest that extinction risks will accelerate with future global temperatures, threatening up to one in six species under current policies. Extinction risks are highest in South America, Australia, and New Zealand.

Predicted extinction rates from climate change by region and group.

Credit: Rosamund Pearce, CarbonBrief, based on data from Urban (2015).



Note: Projected extinction risks are an average across all model assumptions from 131 extinction risk studies.

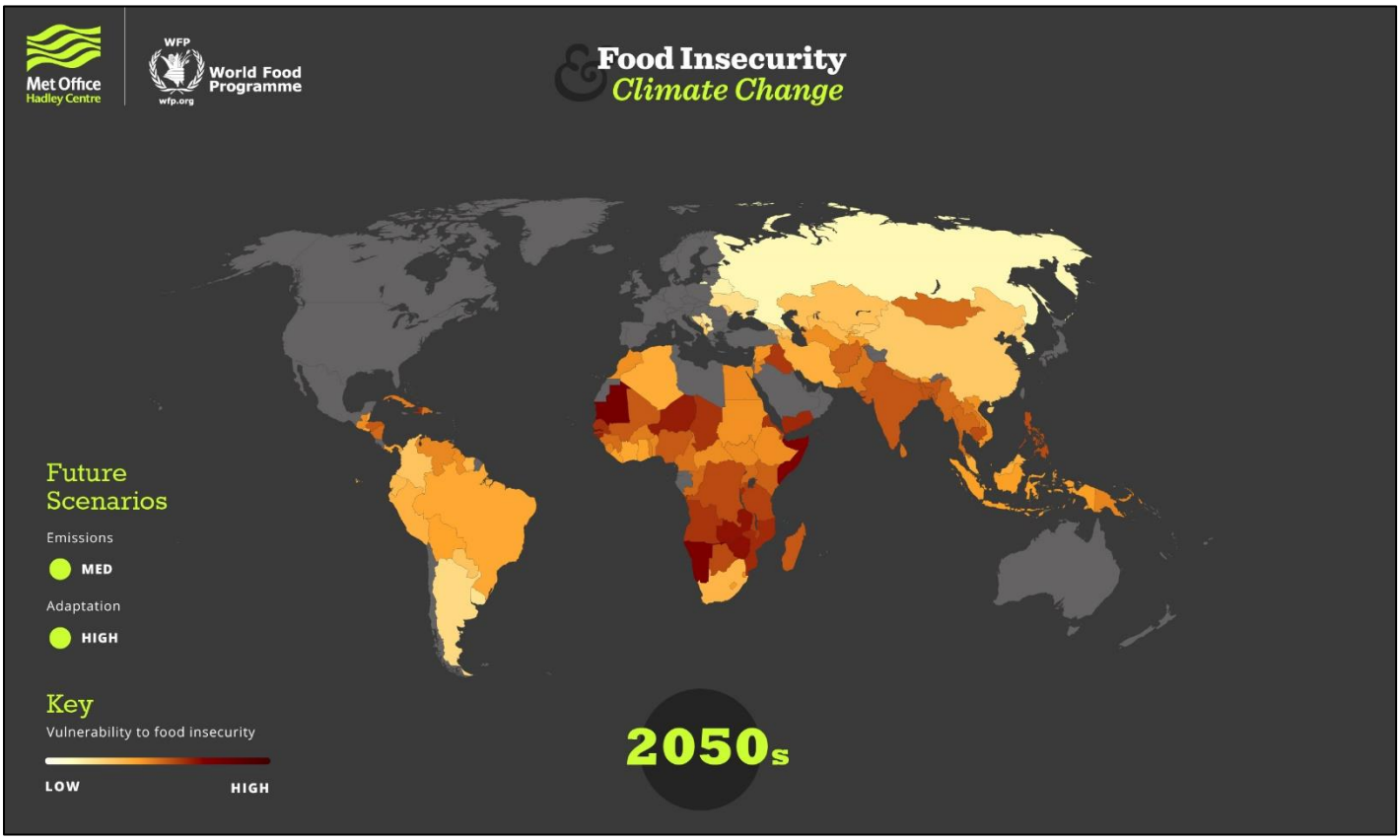
Sources:
1. Species and Climate Change Issues Brief, International Union for Nature Conservation, December 2019
2. Accelerating extinction risk from climate change, Mark C. Urban *Science* 01 May 2015: Vol. 348, Issue 6234, pp. 571-573
3. Climate change threatens one in six species with extinction study finds CarbonBrief April 2015

Climate change is projected to impact on food security

It has been estimated that a 2°C rise in temperatures will add 189 million more people to the 800 million already suffering from food shortages. Climate change is expected to have impacts on all four pillars of food security – food availability, access to food, food utilisation and stability of the food supply.

As well as direct impacts of extreme weather events, climate change is expected to affect foodborne pathogens, pests, global water quality and uptake of heavy metals by plants.

Experts from the World Food Programme have worked in collaboration with Met Office climate scientists to devise a Food Insecurity and Climate Change index which allows users to explore how different scenarios of global greenhouse gas emissions and adaptation to climate change could change the geography of food insecurity in developing and least-developed countries.



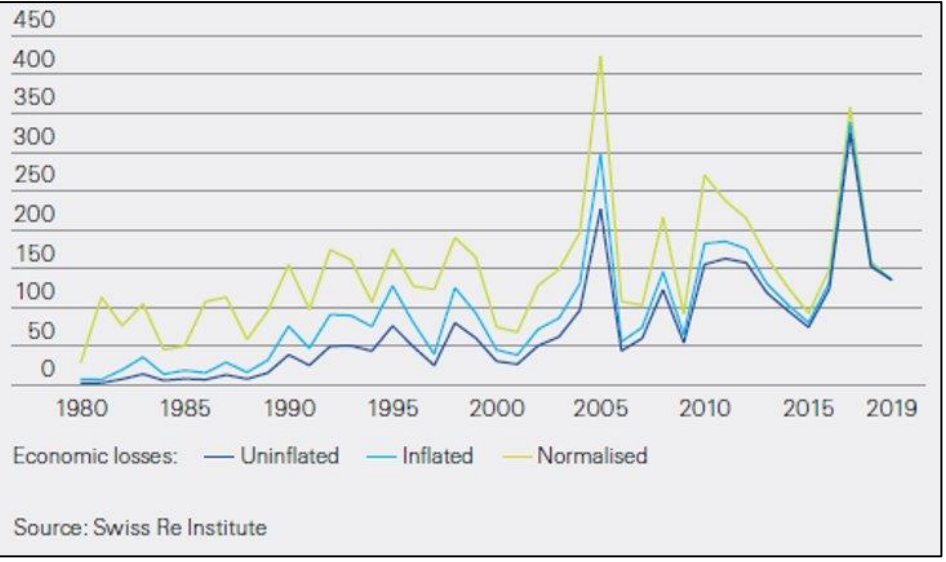
Source:
1. FAO. 2020. *Climate Change: Unpacking the buden on food safety*. Food safety and quality series No. 8. Rome. https://doi.org/10.4060/ca8185en

Fluctuating economic and insured losses from extreme weather

Economic and insured losses resulting from extreme weather events present a major threat to global resilience. Worldwide, economic losses from natural and man-made disasters in 2019 were $146 billion, lower than $176 billion in 2018 and the previous 10-year annual average of $212 billion. The global insurance industry covered $60 billion of the losses, compared with $93 billion in 2018 and $75 billion on average in the previous 10 years.

While severe weather events were still the main driver of overall losses in 2019, amplified by socio-economic developments in affected areas and climate change effects, the decrease in losses primarily stemmed from the absence of large and costly hurricanes in the United States.

Uninflated, inflated (2019 prices) and normalised economic losses from extreme weather events, 1980–2019, (USD billion)

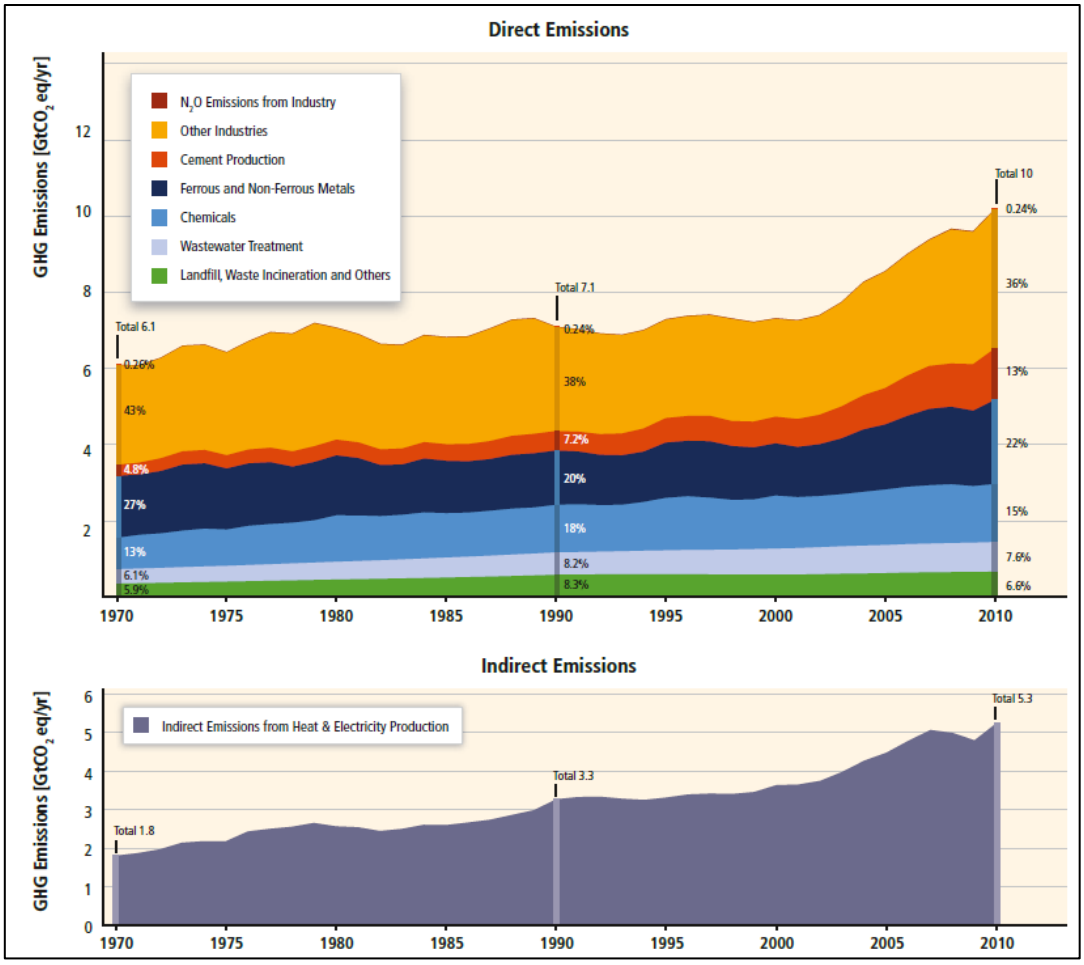


To reflect that socio-economic factors change over time, Swiss Re attempted to ″normalise" past losses resulting from weather-related events. Normalisation adjusts to show that an event in the past, if it were to occur at equal magnitude today, would cause more damage than in the year of occurrence due to value accumulation. A common approach is to apply real Gross Domestic Product and inflation factors to past economic losses. Using this approach, they estimate that the annual growth rate of normalised losses from global weather events between 1980 and 2019 was around 4%, still increasing but at much slower rate than shown by uninflated losses (10.9%) and also real (adjusted for inflation) losses (7.7%) over the same time period.

Source:
1. Swiss Re Institute, sigma No 2/2020

Increasing industry greenhouse gas emissions

Industry related greenhouse gas (GHG) emissions have continued to increase. Global industry and waste/wastewater GHG emissions grew from 10.37 $GtCO_2eq$ (global tonnes of carbon dioxide equivalent) in 1990 to 13.04 $GtCO_2eq$ in 2005 to 15.44 $GtCO_2eq$ in 2010. These emissions are larger than the emissions from either the buildings or transport end-use sectors and represented just over 30% of global GHG emissions in 2010.



Total global industry and waste / wastewater direct and indirect GHG emissions by source, 1970 – 2010 (GtCO2eq / yr.) (de la Rue du Can and Price, 2008; IEA, 2012a; JRC / PBL, 2013).

Source:

1. Fischedick M., J. Roy, A. Abdel-Aziz, A. Acquaye, J. M. Allwood, J.-P. Ceron, Y. Geng, H. Kheshgi, A. Lanza, D. Perczyk, L. Price, E. Santalla, C. Sheinbaum, and K. Tanaka, 2014: Industry. In: Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Edenhofer, O., R. Pichs-Madruga, Y. Sokona, E. Farahani, S. Kadner, K. Seyboth, A. Adler, I. Baum, S. Brunner, P. Eickemeier, B. Kriemann, J. Savolainen, S. Schlömer, C. von Stechow, T. Zwickel and J.C. Minx (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

Contents

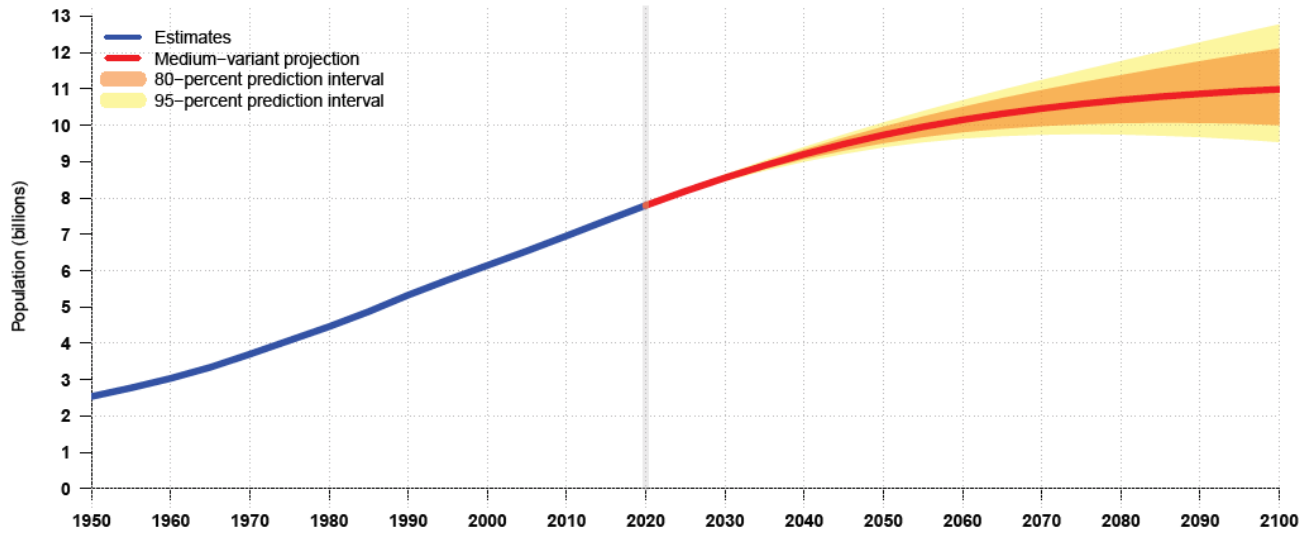
Slowing global population growth rate

The global population, the total number of humans currently living, stands at 7.8 billion people as of January 2021. Although the rate of growth is predicted to slow, the medium-variant projection estimates a global population of 8.5 billion by 2030, 9.7 billion by 2050 and 10.9 billion by 2100.

Office for National Statistics figures suggest the UK population will surpass 69.6 million by mid-2029 and reach 72 million by mid-2041.

The world's population continues to grow, albeit at a slower pace than at any time since 1950

Figure 1. Population of the world: estimates, 1950-2020, medium-variant projections, 2020-2100, with 80- and 95- percent prediction intervals



The bold blue curve refers to estimates for the period 1950-2020. The bold red curve shows the medium-variant projections for the period 2020-2100. The uncertainty of these projections is expressed using prediction intervals around the medium variant: shaded in orange for 80 per cent intervals and yellow for 95 per cent intervals. The results indicate that the global population is likely (95 per cent) to number between 8.5 and 8.6 billion in 2030, between 9.4 and 10.1 billion in 2050, and between 9.4 and 12.7 billion in 2100. Thus, uncertainty about the size of the world's population in 2030 and 2050 is relatively small but increases rapidly for projections extending into the second half of the century. Although the most likely scenario is that the world's population will continue to grow throughout the present century, there is an estimated 27 per cent probability that it could stabilize or even begin to shrink sometime before 2100.

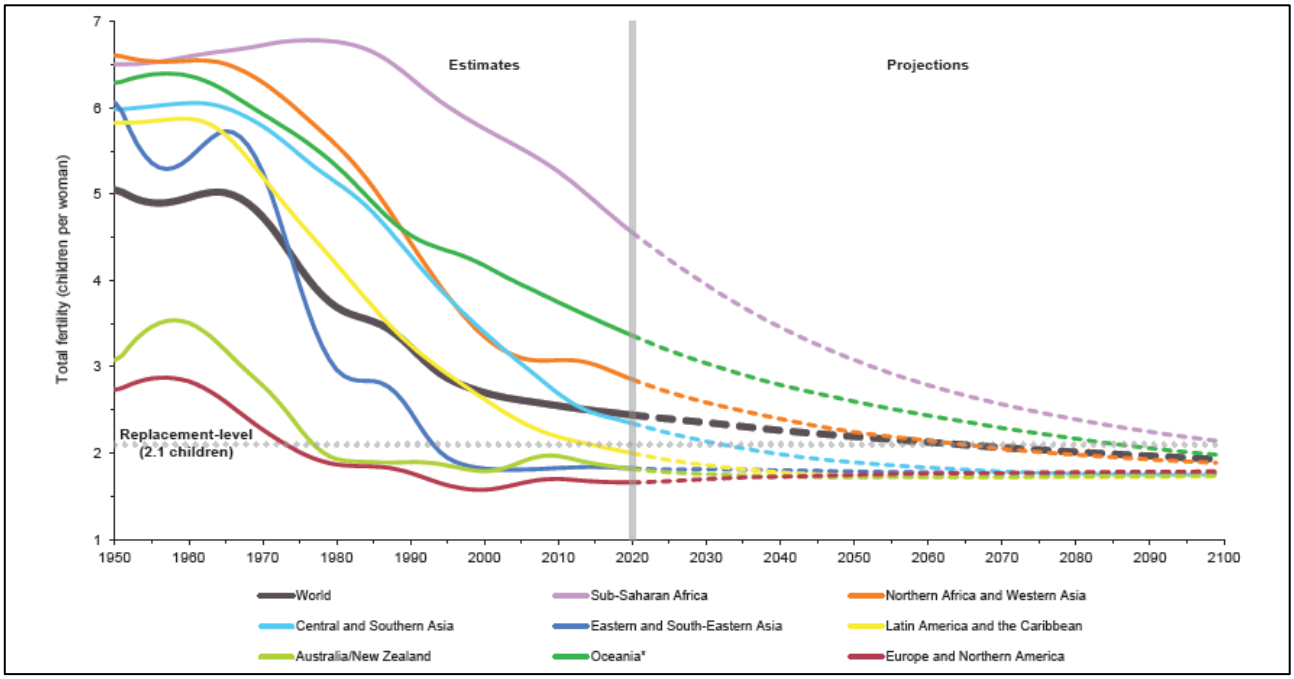
Sources:
1. World Population Prospects 2019: Data Booklet. United Nations.
2. Overview of the UK population: January 2021, Office for National Statistics

Decreasing total global fertility, falling below natural replacement levels

Globally, the level of fertility is projected to decrease from an average of 2.5 live births per woman in 2019 to 2.2 in 2050 and to 1.9 in 2100. Today, nearly half of the global population lives in a region where lifetime fertility sits below 2.1 births per woman – the natural replacement level.

In 2019, the total fertility rate in England and Wales fell to 1.65 children per woman, a 2.9% decrease from 2018. The rates have been decreasing year on year since 2013.

Total fertility (births per woman) by SDG region, estimates, 1950-2020, and medium-variant projections, 2020-2100.



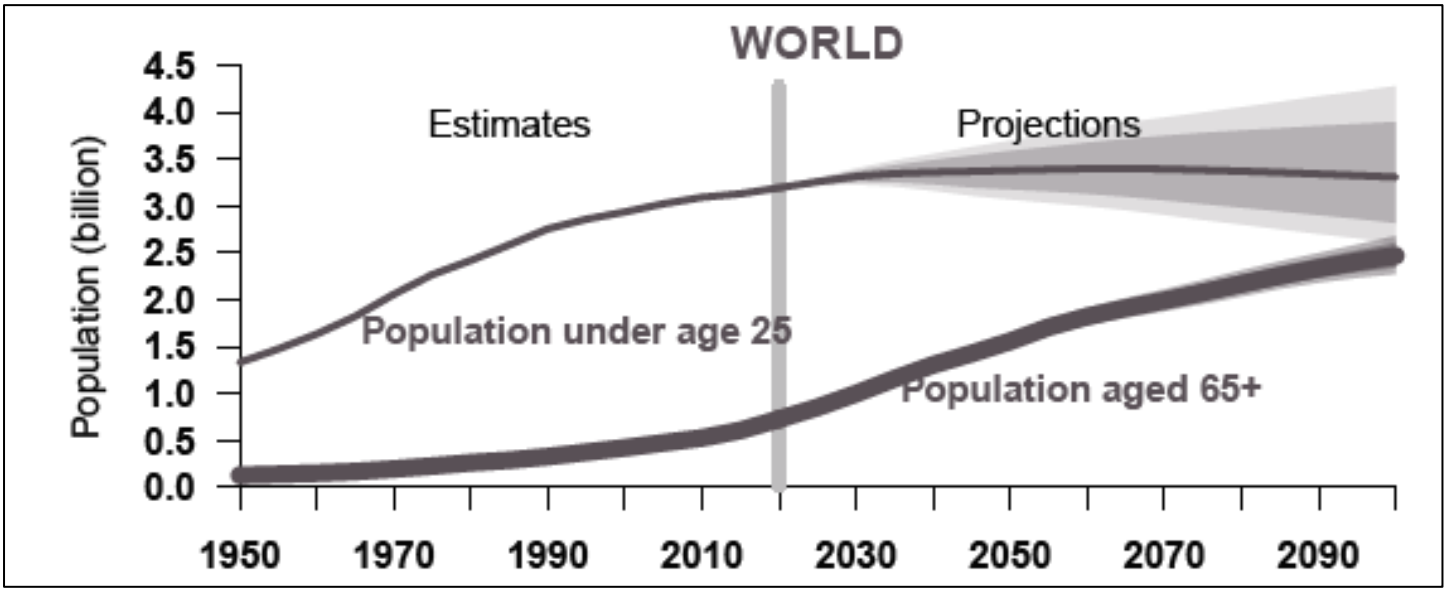
The average number of live births per women over a lifetime has fallen markedly in many regions over the past several decades. Today, close to half of the global population lives in a country or area where lifetime fertility is below 2.1 births per woman (roughly the level required for populations with low mortality to have a growth rate of zero in the long run). In 2019, fertility remains above this level, on average, in sub-Saharan Africa (4.6), Oceania (3.4), Northern Africa and Western Asia (2.9), and Central and Southern Asia (2.4). Globally, the level of fertility is expected to fall from an average of 2.5 live births per woman in 2019 to 2.2 in 2050 and to 1.9 in 2100, according to the medium-variant projection. The largest reductions in the level of total fertility are projected to occur in sub- Saharan Africa.

Sources:
1. World Population Prospects 2019: Data Booklet. United Nations.
2. Births in England and Wales: 2019. Office for National Statistics

Doubling of global over 65s by 2050

Between 2019 and 2050, the number of persons aged 65 years or over globally is projected to more than double, while the number under age 25 is projected to reach a peak and then to decline slightly. It is expected that by 2050 or soon thereafter, the number of persons aged 65 or over will outnumber those under age 25 in Eastern and South-Eastern Asia, Latin America and the Caribbean, and Europe and Northern America.

Global population aged 0-24 and 65 or over estimates, 1950-2020.



Estimates for the period 1950-2020 are shown as a thin coloured line, and the medium-variant projections for the period 2020-2100 are in bold. The uncertainty of these projections is expressed using prediction intervals around the medium variant: in darker shades for 80 per cent intervals and lighter shades for 95 per cent intervals.

Source:

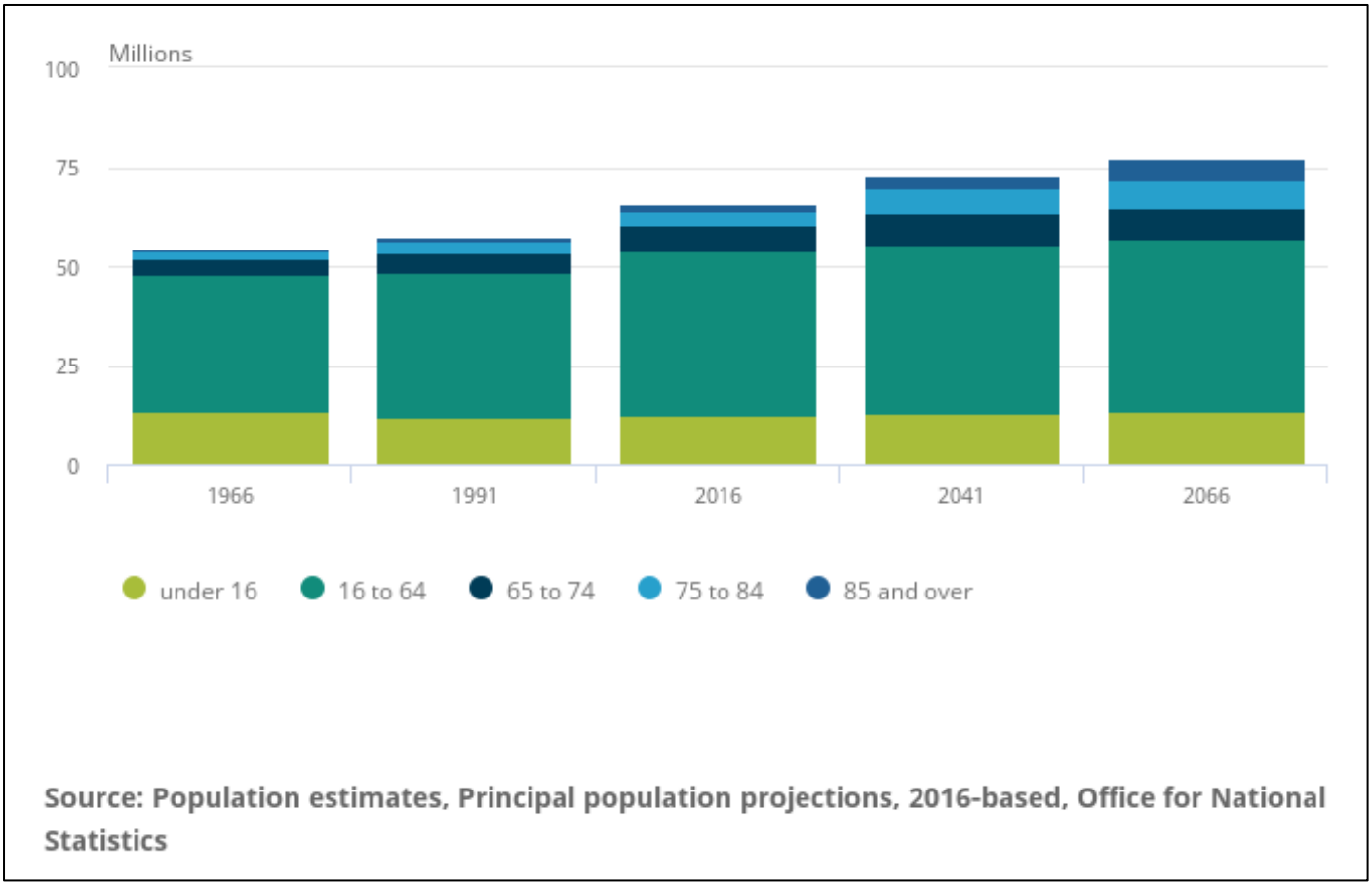
1. World Population Prospects 2019: Data Booklet. United Nations.

Increase in over 65s to more than a quarter of the UK population by 2066

By 2066 there is projected to be a further 8.6 million UK residents aged 65 years and over. The total number in this group could be 20.4 million, up to 26% of the total population. The fastest increase will be seen in the 85 years and over age group.

Within the UK, the older population is not equally spread across local areas, with older people making up higher proportions of the populations of rural and coastal areas than urban areas. Five of the 10 local authorities with the highest percentage of the population aged 65 years and over are in the South West of England.

Population by age group, selected years, UK



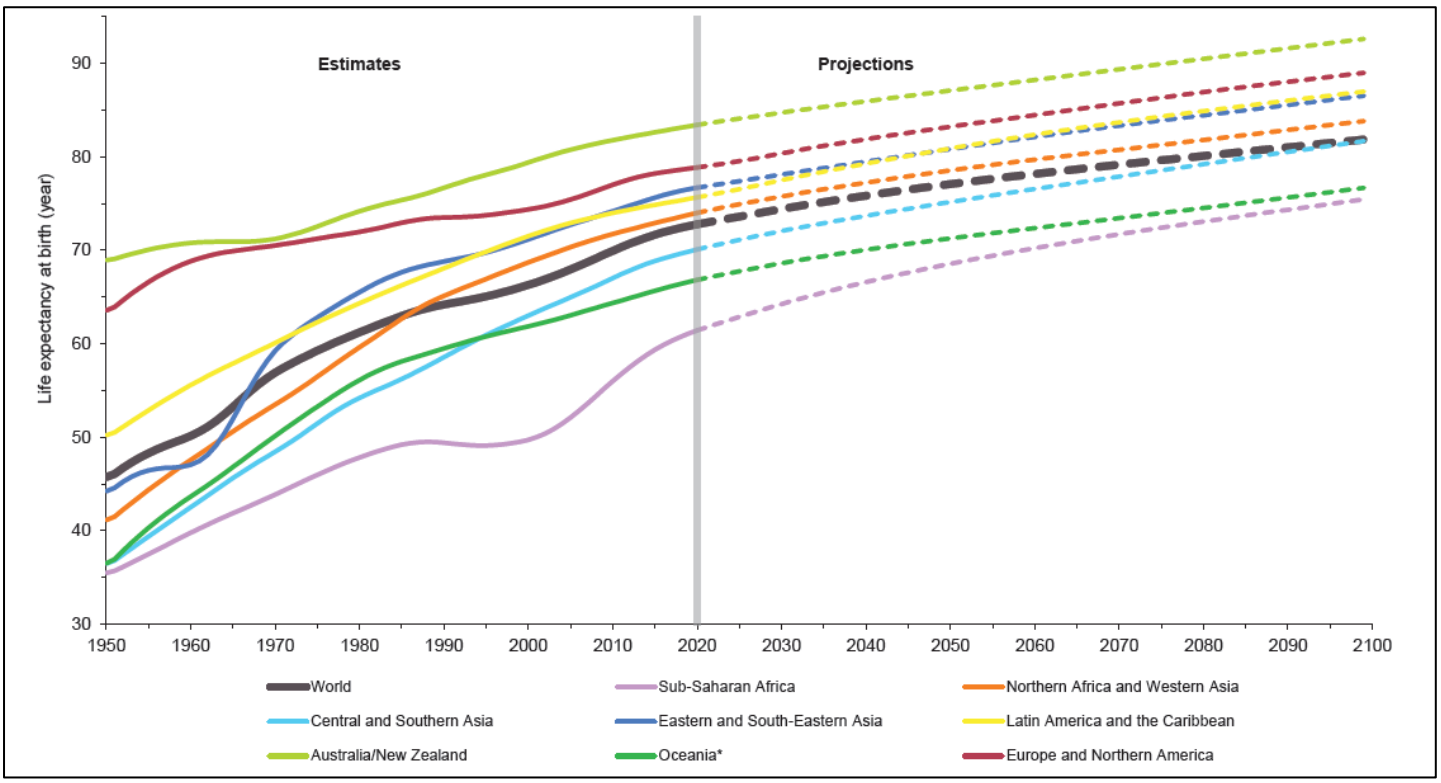
Source: Population estimates, Principal population projections, 2016-based, Office for National Statistics

Source:
1. Living longer: how our population is changing and why it matters, Office for National Statistics, August 2018

Increase in global life expectancy of 8 years over the last two decades

Global life expectancy at birth reached 72.6 years in 2019, an increase of 8 years from 1990. It is expected to further increase to 77.1 years in 2050 with increases in every region. Sub-Saharan Africa is making the greatest gains, closing the life expectancy gap with improvement in survival adding nearly 12 years to the average length of life since 1990, reaching 61.1 years in 2019.

Life expectancy at birth (both sexes) estimates, 1950-2020.



Source:

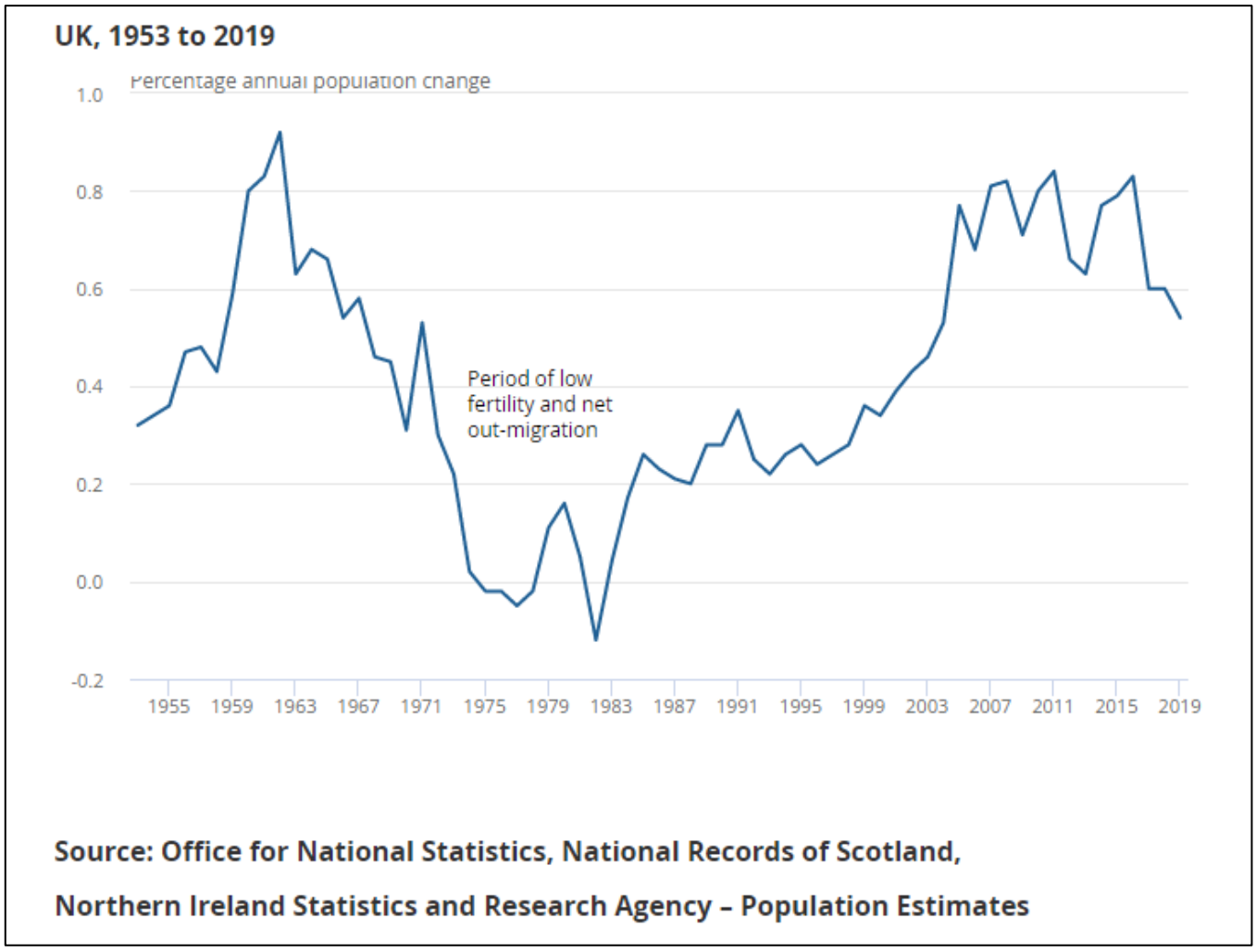
1. World Population Prospects 2019: Data Booklet. United Nations.

Increasing UK population but at a slower rate

In mid-2019, the population of the UK was 66.8 million. Over the year to mid-2019, the population of the UK increased by 0.5%, or 361,000 people.

Decreasing numbers of births and net international migration have resulted in the slowest rate of growth that the UK has seen in 15 years, returning it to the level seen in mid-2004. Despite population growth slowing, 2019 was the 37th consecutive year (since 1982) that the total UK population has increased.

UK population continues to grow in mid-2019, but at a slower rate than any year since mid-2004.



Source:

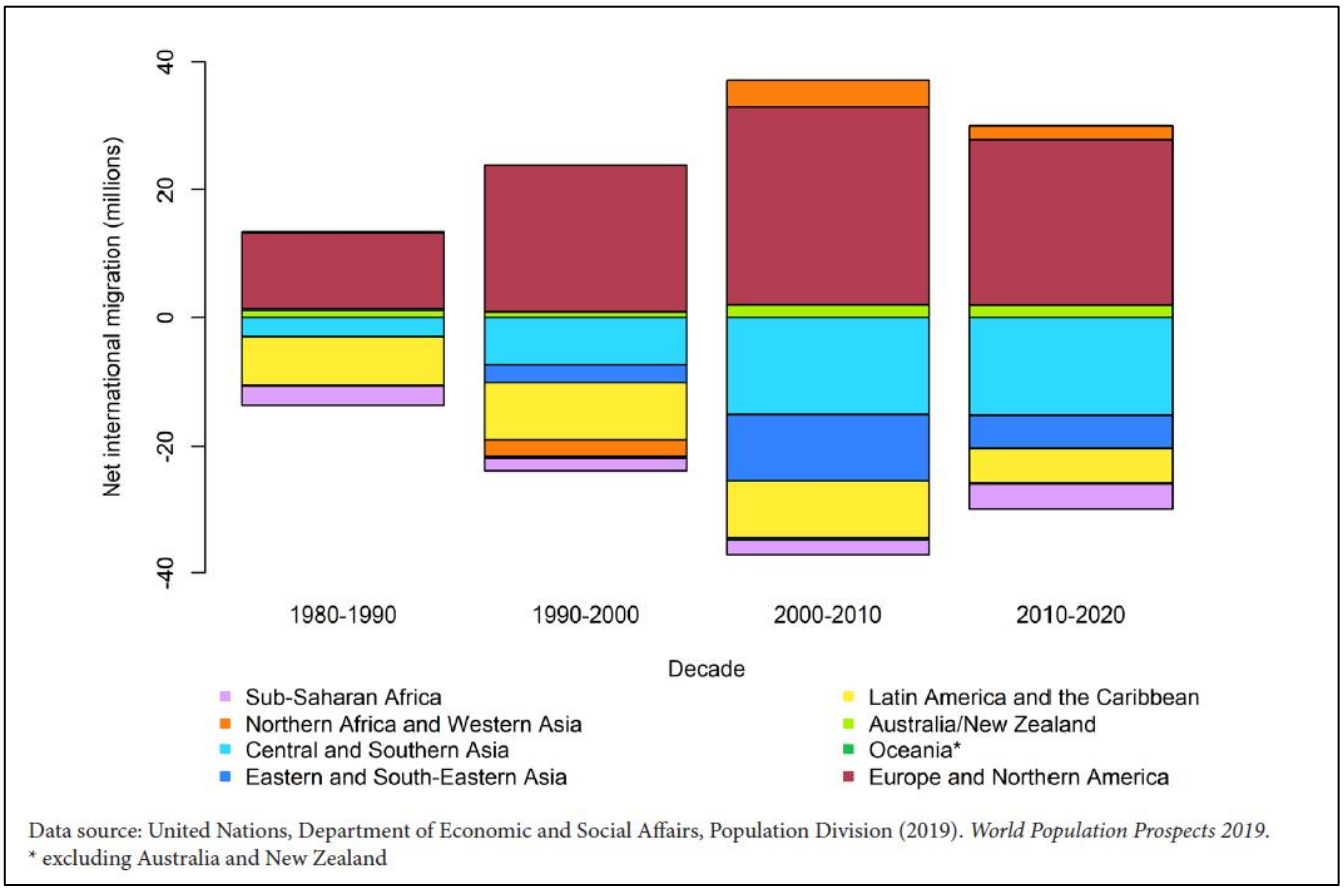
1. Population estimates for the UK, England and Wales, Scotland and Northern Ireland: mid-2019, Office for National Statistics

International migration drives major population change in some countries

In some parts of the world, international migration has become a major component of population change. Between 2010 and 2020, 36 countries or areas experienced a net inflow of more than 200,000 migrants. For several of the top receiving countries, including Jordan, Lebanon and Turkey, large increases have been driven mostly by refugee movements, in particular from Syria.

It is estimated that ten countries experienced a net outflow of more than one million migrants between 2010 and 2020. The highest outflows were for Bangladesh, Syria, and Venezuela. For many of these, losses are dominated by temporary labour movements, insecurity, and conflict.

Net international migration (the number of people coming to live in an area and the number leaving to live elsewhere) by United Nations Sustainable Development Goal region 1980 - 2020.



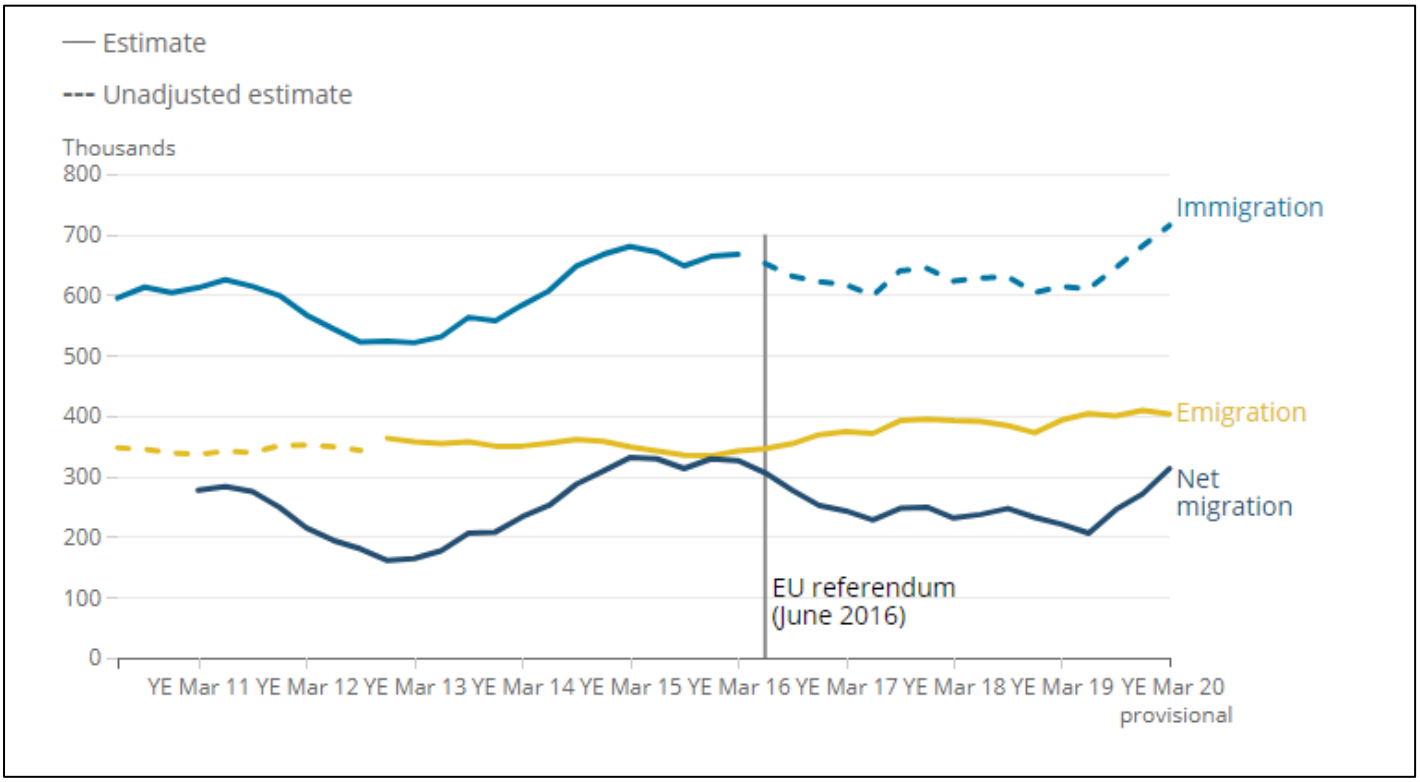
Data source: United Nations, Department of Economic and Social Affairs, Population Division (2019). *World Population Prospects 2019.*
* excluding Australia and New Zealand

Source:
1. United Nations, Department of Economic and Social Affairs, Population Division (2019). World Population Prospects 2019: Highlights. ST/ESA/SER.A/423.

Long-term international migration continues to add to the UK population

In the year ending March 2020, long-term international migration continued to add to the UK population. Current best estimates show that around 313,000 more people moved to the UK with an intention to stay for 12 months or more than left the UK (net migration). Between 2016 and 2019, long-term net migration, immigration and emigration have remained broadly stable. Data from 2019, prior to the coronavirus (COVID-19) pandemic, suggests that migration is changing with an increase driven by non-EU citizens arriving to study in the UK.

Net migration has increased since 2019. Long-term international migration, UK, year ending June 2010 to year ending March 2020



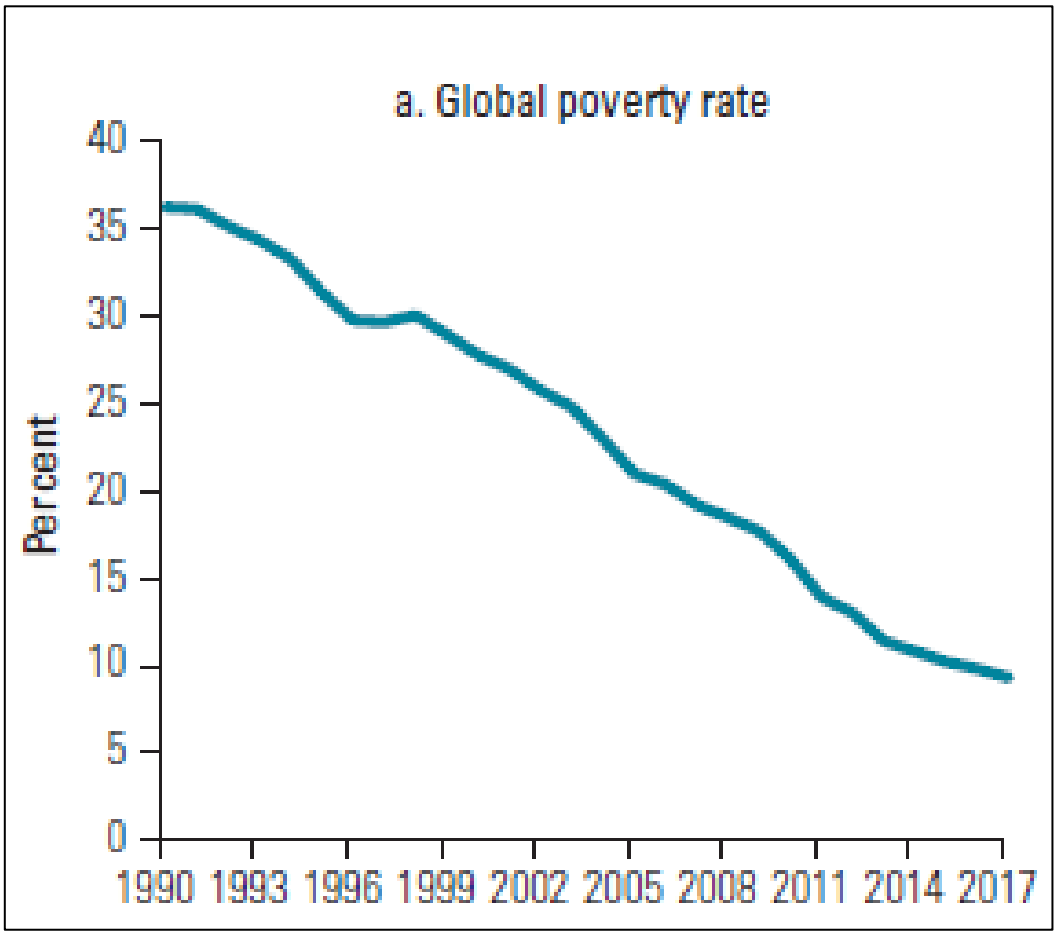
Source:
1. Migration Statistics Quarterly Report: August 2020, Office for National Statistics

Long-term decline in extreme global poverty but the rate is slowing

Globally, extreme poverty, defined as living on less than $1.90 a day, dropped by an average of 1 percentage point per year from 1990 to 2015, but the rate has been slowing from 2013 onwards. Additional poverty measures, introduced by the World Bank in 2018, suggests that many millions of people in South Asia and sub-Saharan Africa had only narrowly escaped extreme poverty before the coronavirus (COVID-19) pandemic.

COVID-19 and its associated economic crisis, compounded by the effects of armed conflict and climate change, could reverse hard-won gains in poverty reduction.

Global Poverty Rate at the $1.90-a-Day Poverty Line, 1990–2017.

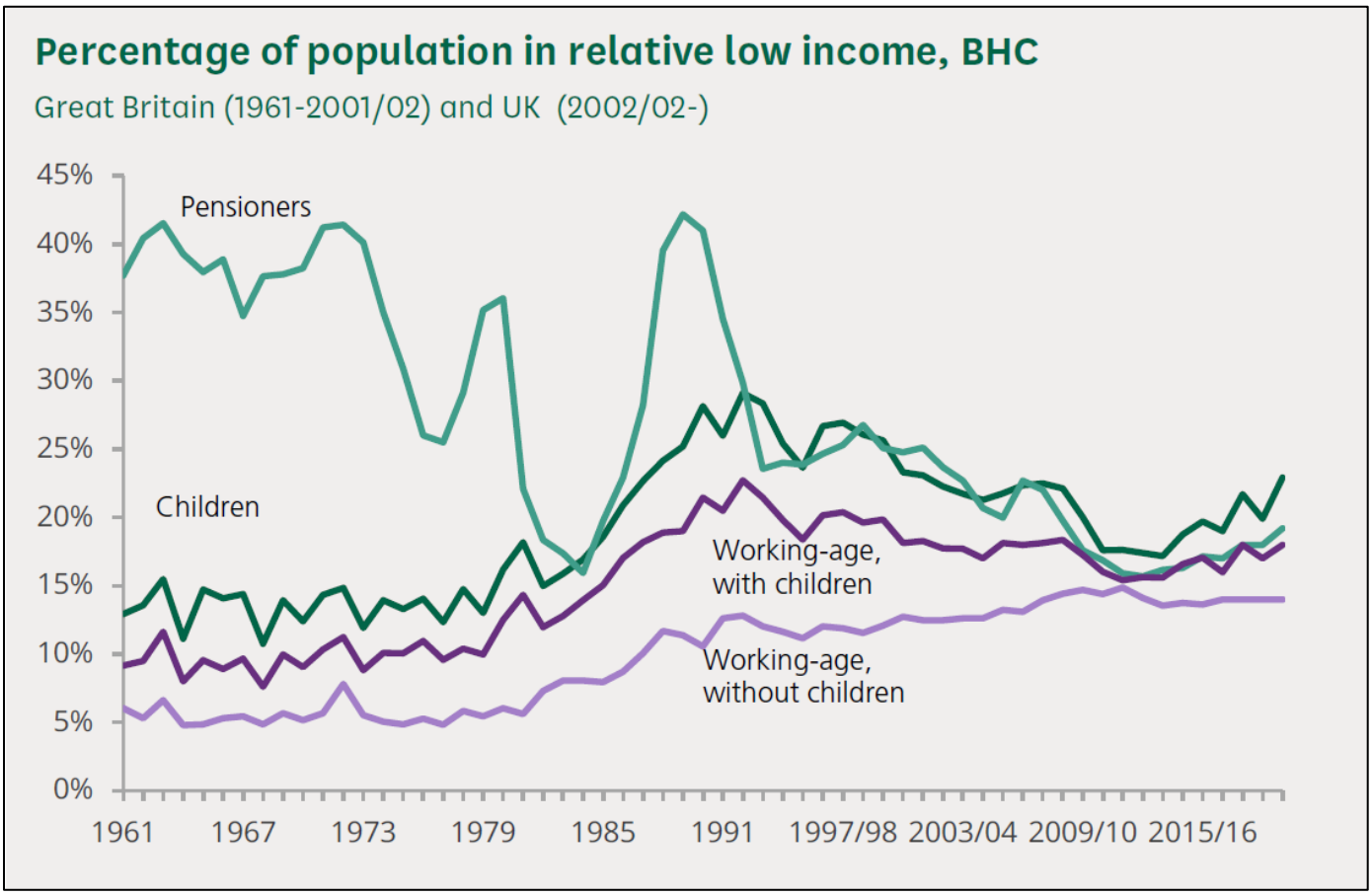


Source:
1. World Bank. 2020. *Poverty and Shared Prosperity 2020: Reversals of Fortune.* Washington, DC: World Bank. doi: 10.1596/978-1-4648-1602-4. License: Creative Commons Attribution CC BY 3.0 IGO

Long-term decline in UK pensioner poverty

The proportion of pensioners in relative poverty is much lower now than during the 1960s. Relative poverty rates for children and working-age adults rose during the 80s. Despite some reduction for working-age adults with children, poverty rates for all groups are much closer than has historically been the case.

Official data on poverty during the coronavirus (COVID-19) pandemic will not be available until 2022. While it is too soon to measure the effects of COVID-19 on long term poverty rates, early analysis suggests it could present challenges. In the UK, an individual is in relative low income (or relative poverty) if they are living in a household with income below 60% of median household income in that year.



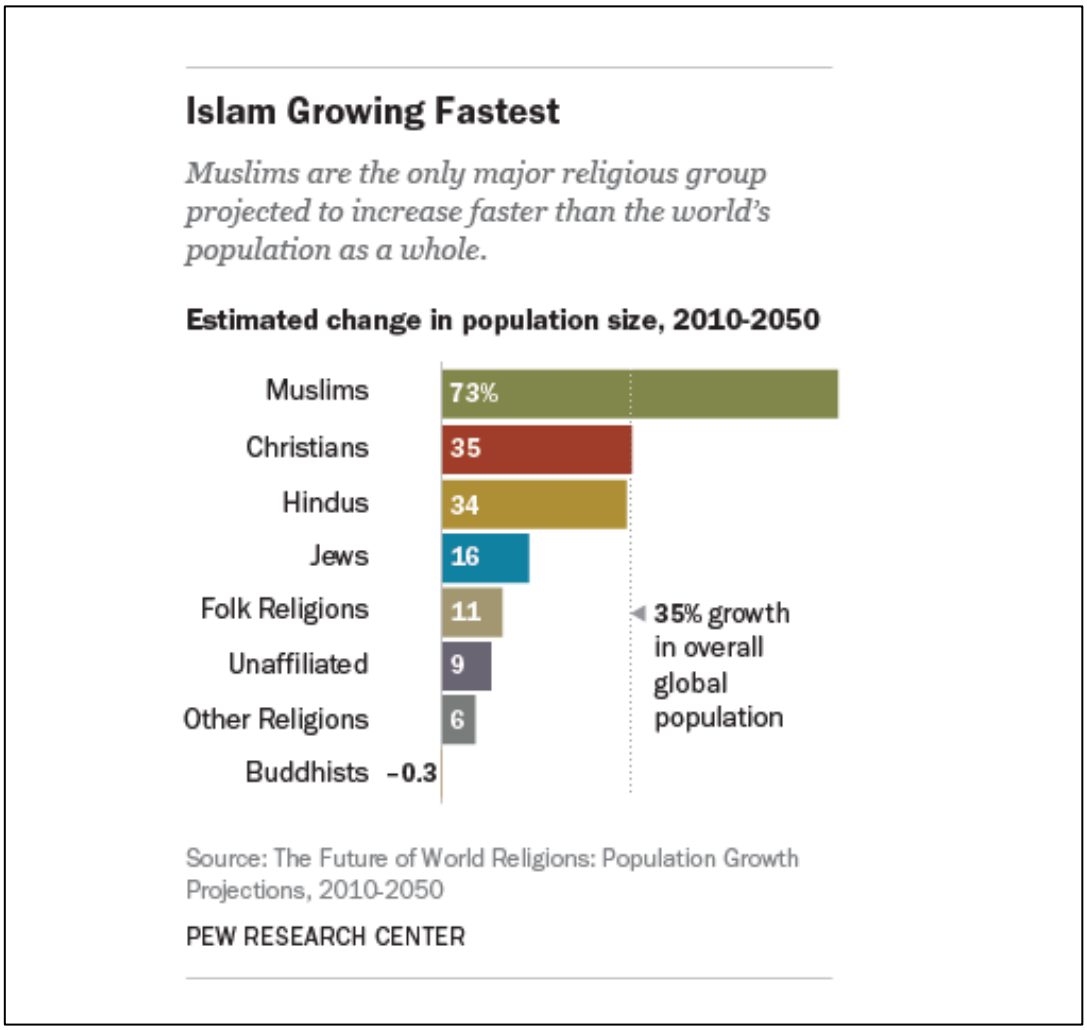
Source: Institute for Fiscal Studies, using data compiled from the Family Resources Survey and Family Expenditure Survey; DWP . BHC = before housing costs

Source:
1. Poverty in the UK: statistics, House of Commons Library Briefing Paper, March 2021

The world's religious profile is changing

The religious profile of the world is changing, driven primarily by differences in fertility rates and the size of youth populations among the world's major religions, as well as by people switching faiths.

If current trends continue, by 2050 the number of Muslims will nearly equal the number of Christians around the world. Atheists, agnostics and other people who do not affiliate with any religion, though increasing in some countries, will make up a declining share of the world's total population. The global Buddhist population is projected to be about the same size it was in 2010, while the Hindu and Jewish populations will be larger than they are today.

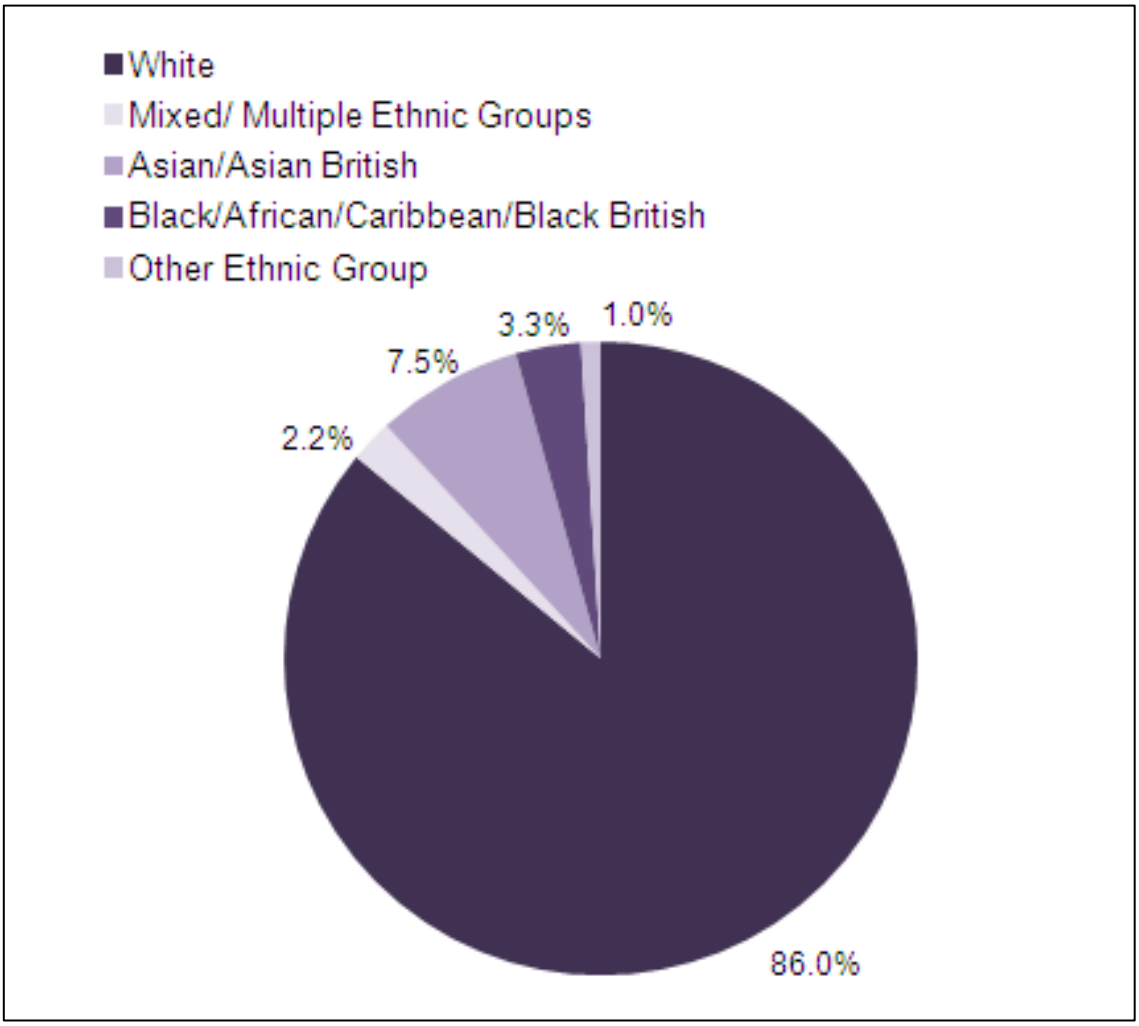


Sources:
1. Pew Research Center, April 2, 2015, "The Future of World Religions: Population Growth Projections, 2010-2050"
2. Exploring religion in England and Wales: February 2020. Office for National Statistics

England and Wales are becoming more ethnically diverse

Between 1991 and 2001, the white ethnic group in England and Wales decreased to 91.3% from 94.1%. The trend continued between the 2001 and 2011 censuses, with a further decrease to 86%. Out of all regions, London had the smallest percentage of white British people, at 44.9%, and the North East had the highest percentage, at 93.6%. Ethnic groups are more likely to live in urban locations (over 98% of the population for Pakistani, Bangladeshi, and Black African communities).

Ethnic groups, English and Wales, 2011.



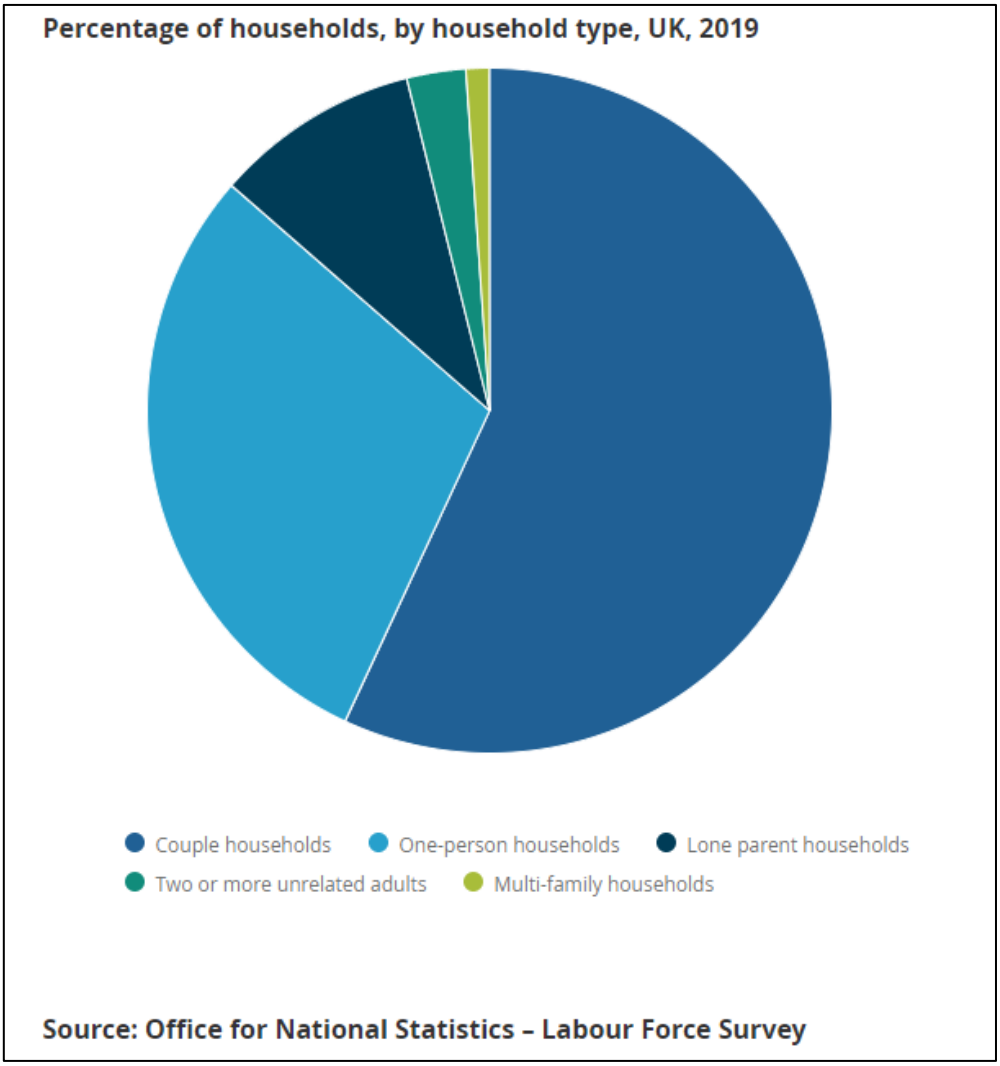
Sources:
1. Regional Ethnic Diversity, gov.uk
2. Ethnicity and National Identity in England and Wales: 2011, Office for National Statistics

Fastest UK household growth has been in those containing multiple families

In 2020 there were 19.4 million families, an increase of 7.4% over the decade from 2010 to 2020. There were 2.9 million lone parent families in 2020, which accounts for 14.7% of families in the UK. The number of people living alone in the UK has increased by 4% over the last 10 years.

Households containing multiple families represent the smallest share of all households (1%) but are the fastest growing type of household over the last two decades, having increased by two-thirds to an estimated 278,800 households in 2020.

Couple households were the most common household type in 2019.



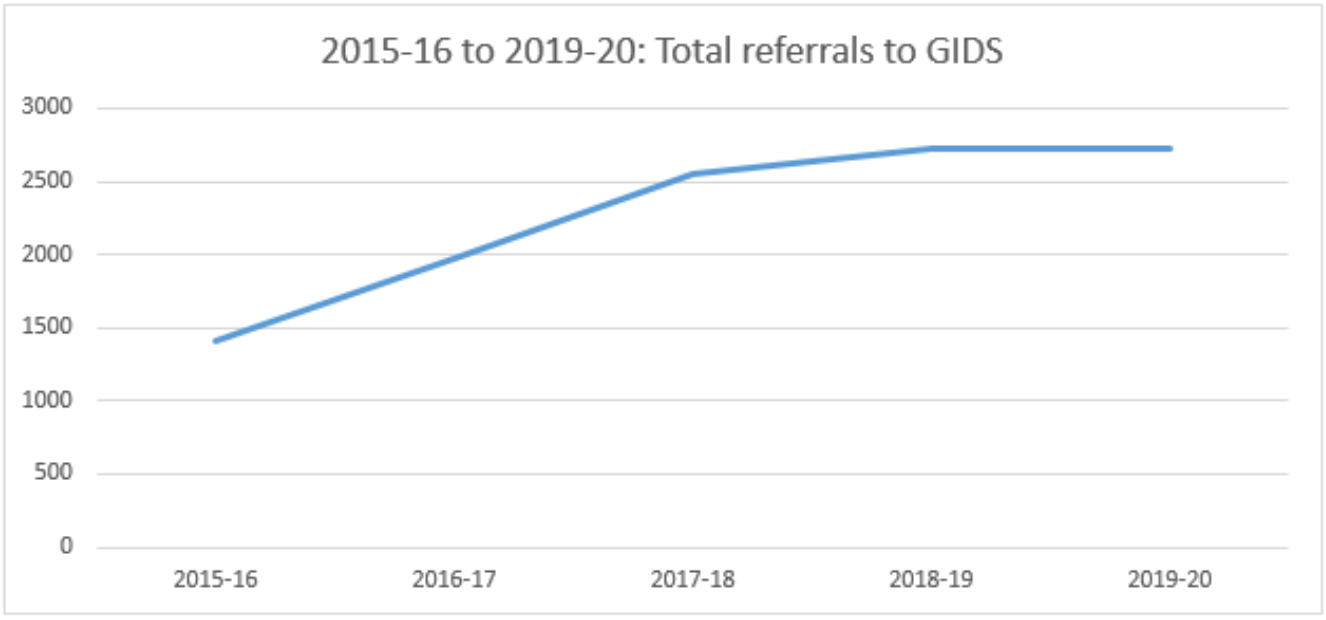
Sources:
1. Families and households in the UK: 2020, Office for National Statistics
2. Families and households in the UK: 2019 Office for National Statistics

Increasing proportion of the UK population identifying as lesbian, gay, bisexual, and transgender

The proportion of the UK population identifying as lesbian, gay or bisexual (LGB) increased from 1.6% in 2014 to 2.2% in 2018. Younger people, aged 16 to 24 years, were most likely to identify as LGB in 2018 (4.4%). There are regional variations, people in London were most likely to identify as LGB (2.8%), with people in the North East the least likely (1.8%).

The UK government estimates that there are approximately 200,000-500,000 trans people in the UK. Referrals to the NHS Gender Identity Service show a steady increase with 2,728 patient referrals in 2019-20.

Country	2015-16	2016-17	2017-18	2018-19	2019-20
England	1333	1855	2388	2537	2545
Wales	42	80	118	133	138
Republic of Ireland	25	34	39	44	41
Other	8	8	9	11	4
Total	1408	1977	2554	2725	2728



Sources:
1. Sexual orientation, UK: 2018, Office for National Statistics
2. Referrals to Gender Identity Service financial years 2015-16 to 2019-20, NHS

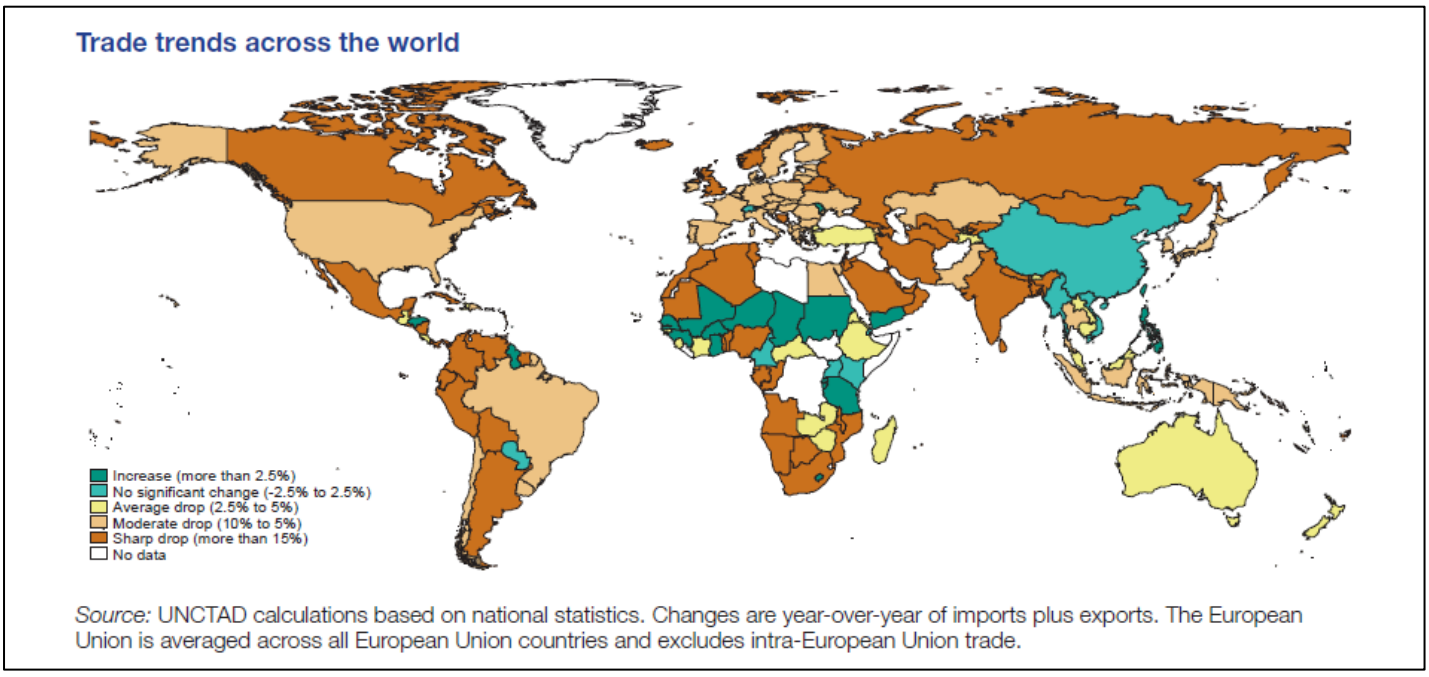
Contents

Declining international trade but China is still experiencing high growth rates

The effect of coronavirus (COVID-19) on international trade reinforces the volatile pattern observed during the last decade. The last 10 years have seen the global economy becoming less dependent on trade as measured by the value of world trade in goods and services over world output. This ratio reached its peak at more than 30% in 2008. Despite ups and downs, the ratio of international trade to global output has been in decline and was expected to settle at about 25% for 2020. For 2021 and beyond, it is possible this may rebound but there is uncertainty given the disruption of COVID-19 and unresolved trade issues among some major economies.

China's trade patterns have been notably different relative to other economies with year-over-year growth rates of almost 10%.

Trends for January – September 2020



Source: UNCTAD calculations based on national statistics. Changes are year-over-year of imports plus exports. The European Union is averaged across all European Union countries and excludes intra-European Union trade.

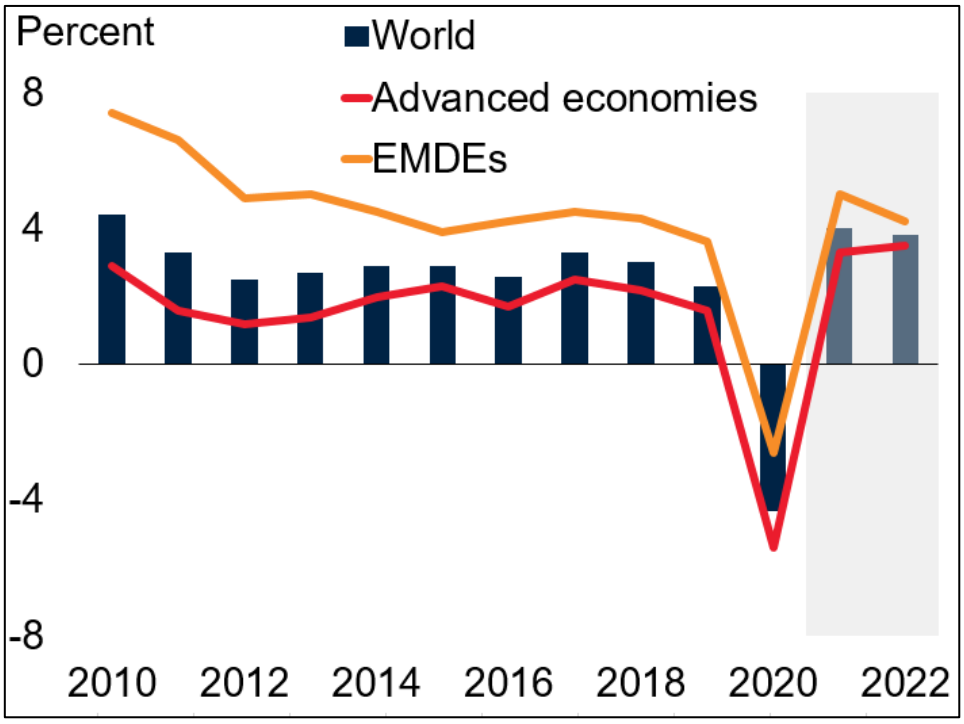
Source:

1. From Key Statistics and Trends in International Trade 2020 – Trade trends under the Covid-19 pandemic, NCTAD – Division on International Trade and Commodities. ©2021 United Nations. Reprinted with the permission of the United Nations.

Growth projections in emerging economies have been over optimistic

A decade of over-optimism toward Emerging Markets (EMs) by forecasters suggests growth prospects may be exaggerated. In 2019, the Gross Domestic Product (GDP) of the average major EM was 24% lower than the International Monetary Fund projected in 2008. China's slowdown, elevated debt levels, weak trade prospects, and global 'Japanification' (a period of stagnation, defined by weak growth and low rates of inflation) mean further disappointments are possible. The global economy will lose, given EMs are likely to account for 70% of global growth between 2020-2040.

Global Growth. The global economy is estimated to have contracted 4.3% in 2020. China's increase in output was an exception and disruptions from the coronavirus (COVID-19) pandemic in the majority of other EMDEs were more severe than previously envisioned, resulting in deeper recessions and slower recoveries.



Source: World Bank

Note: EMDEs = emerging market and developing economies. Shaded area indicates forecasts. Data for 2020 are estimates. Aggregate growth rates calculated using GDP weights at 2010 prices and market exchange rates.

Sources:
1. World Bank. 2021. Global Economic Prospects, January 2021. Washington, DC: World Bank. doi: 10.1596/978-1-4648-1612-3. License: Creative Commons Attribution CC BY 3.0 IGO
2. Ten long-term themes for the global economy and markets, Oxford Economics, Research Briefing Global, 18 March 2021

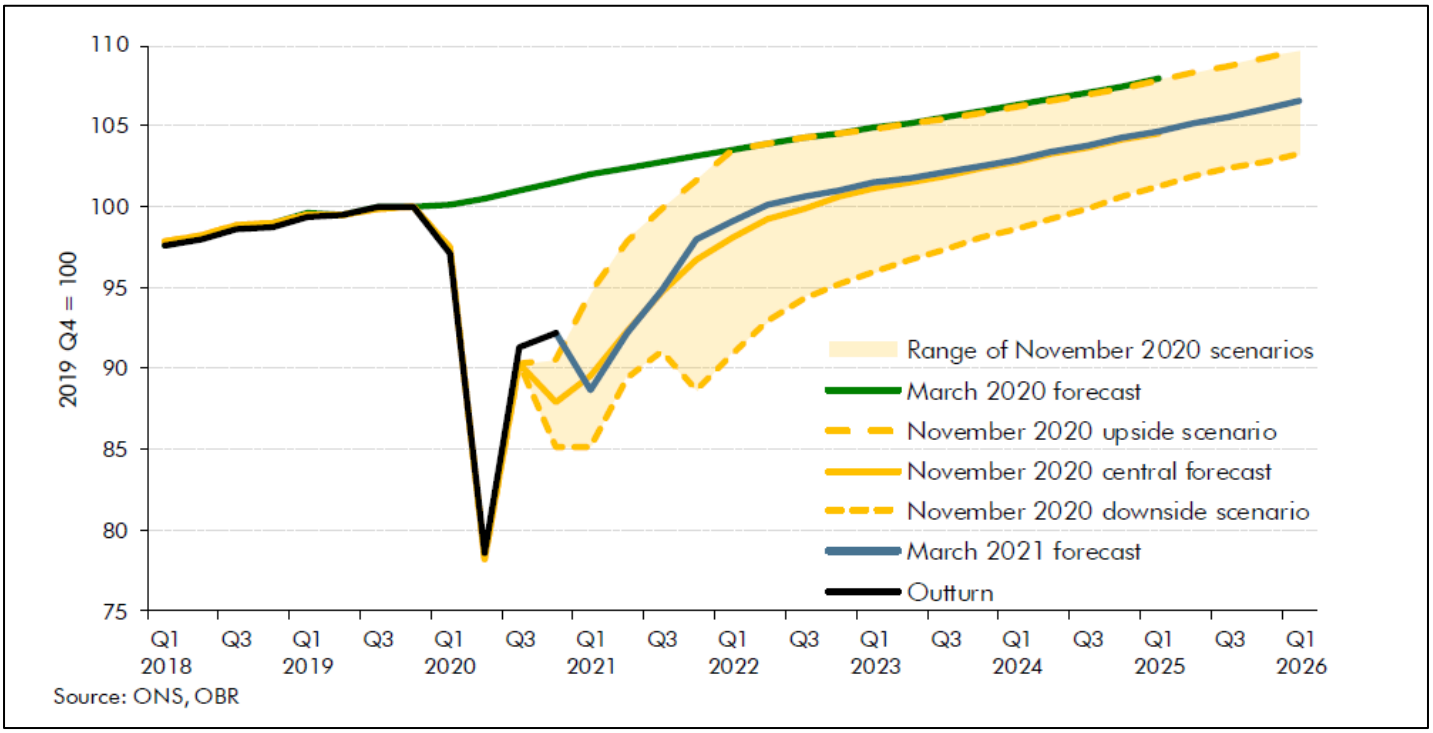
Economic growth is expected to continue but with high uncertainty over projections

Global Gross Domestic Product (GDP) fell by 3.5% in 2020 as governments imposed public health restrictions in an attempt to control the coronavirus (COVID-19) pandemic.

UK GDP fell 9.9% in 2020, the largest decline in the G7. The 2021 lockdown at the start of the year and temporary disruption to EU-UK trade is expected to result in output falling again in the first quarter of 2021.

In the UK in the medium term, the rapid rollout of vaccines and easing of public health restrictions is expected to fuel a more rapid recovery in output to its pre-pandemic levels by the middle of 2022. Beyond March 2022, the effect of the virus lingers through its 'scarring' impact on the supply capacity of the economy. This impact is uncertain, and the Office for Budget Responsibility continues to assume that the pandemic lowers output in the medium term by 3% relative to its pre-pandemic path.

Real GDP: central forecast and scenarios



Source:

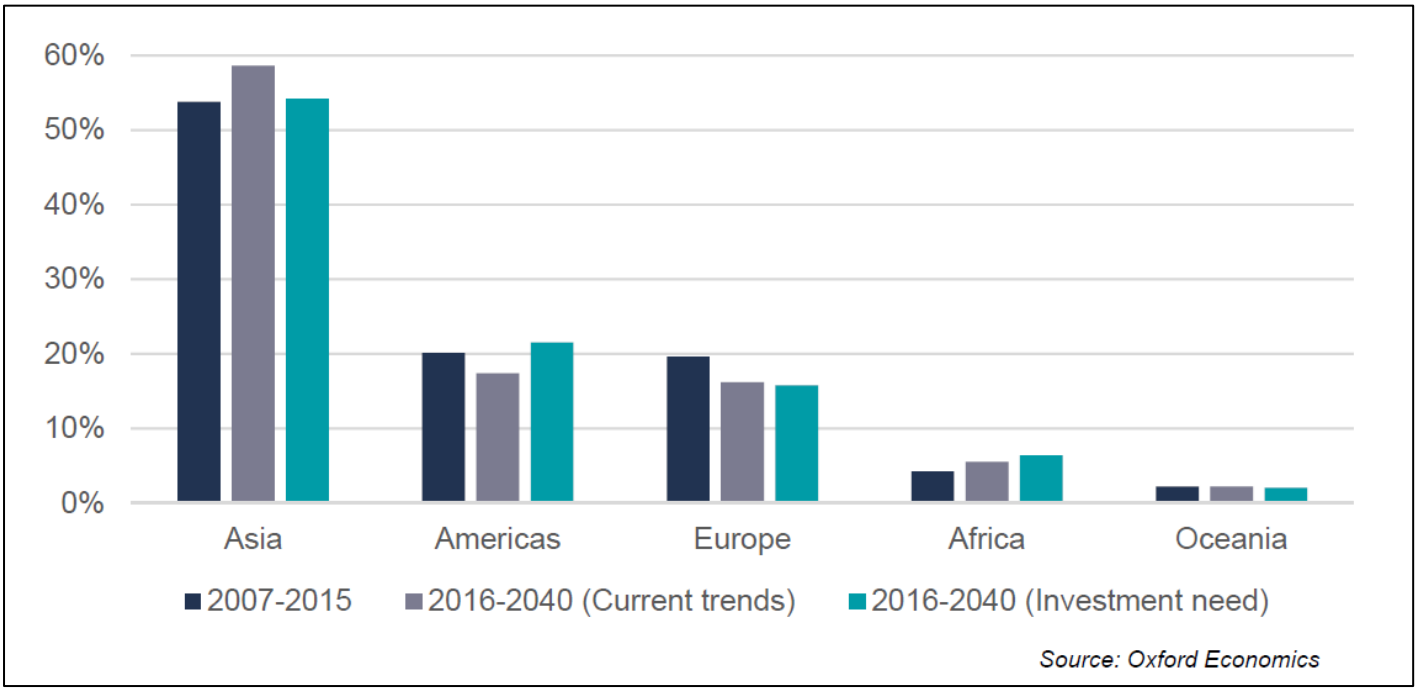
1. Economic and fiscal outlook – March 2021, Office for Budget Responsibility

Global investment in infrastructure is projected to fall short under current trends

A well-functioning, modern infrastructure (electricity, roads, water, telecoms, and transport) is central to economic development and to quality of life. The Global Infrastructure Outlook estimates investment needs to be $94 trillion between 2016 and 2040. This is 19% higher than would be delivered under current trends and is an average of $3.7 trillion per year. To meet this investment need, the world will need to increase the proportion of Gross Domestic Product it dedicates to infrastructure to 3.5%, compared to the 3% expected under current trends.

Electricity and roads are the two most important sectors - together they account for more than two-thirds of global investment needs.

Regional share of global investment infrastructure 2007-2040



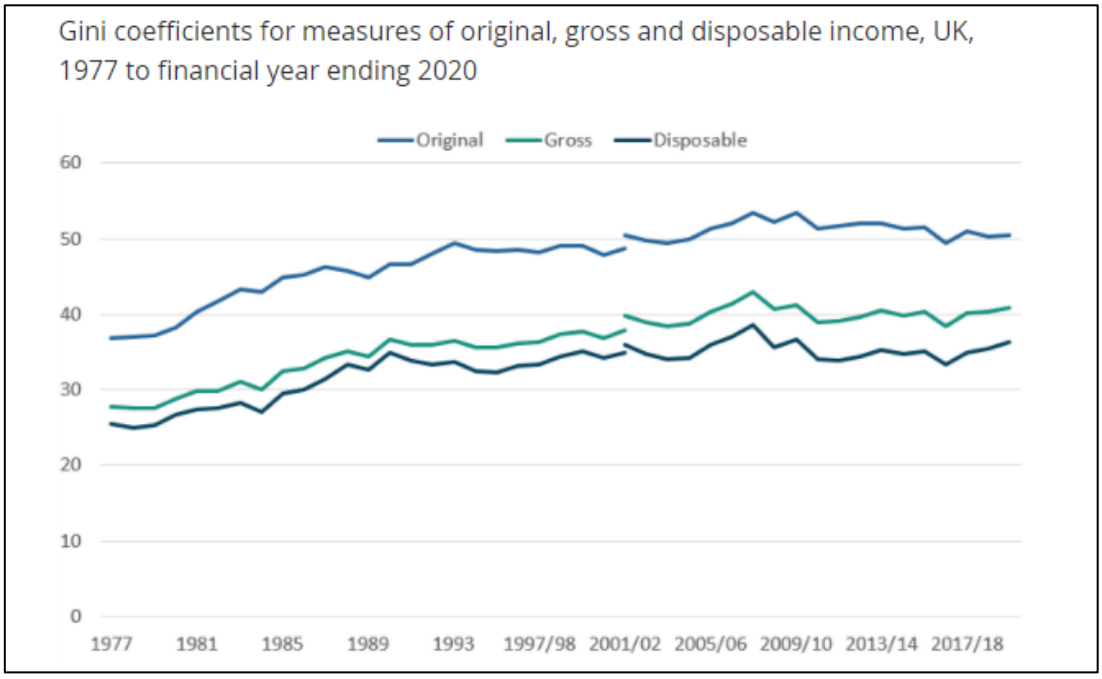
Source:
1. Global Infrastructure Outlook, Infrastructure investment needs 50 countries, 7 sectors to 2040. Oxford Economics and Global Infrastructure Hub, July 2017

Small increase in UK income inequality over the last 10 years

Following a steady rise from the mid-70s to early 90s the Gini coefficient for disposable income (the amount of money that households have available for spending and saving after direct taxes) has remained broadly stable, with the exception of the highest reported level during the economic downturn of the financial year ending 2008 (38.6%).

During the 10-year period leading up to financial year ending 2020, income inequality increased by an average of 0.2% points per year to 36.3%, as measured by the Gini coefficient for disposable income. This is still lower than after the 2008 downturn.

Income inequality has increased by 2.2 percentage points in the 10-year period leading up to financial year ending 2020



Inequality measures how evenly household income is shared among the population. One of the most widely used measures of income inequality is the Gini coefficient. Gini coefficients can vary between 0% and 100% and the lower the value, the more equally household income is distributed. Original income includes all sources of income from employment, private pensions, investments, and other non-government sources. The receipt of cash benefits is then added to original income to estimate gross income. Finally, direct taxes are subtracted from gross income to estimate disposable income.

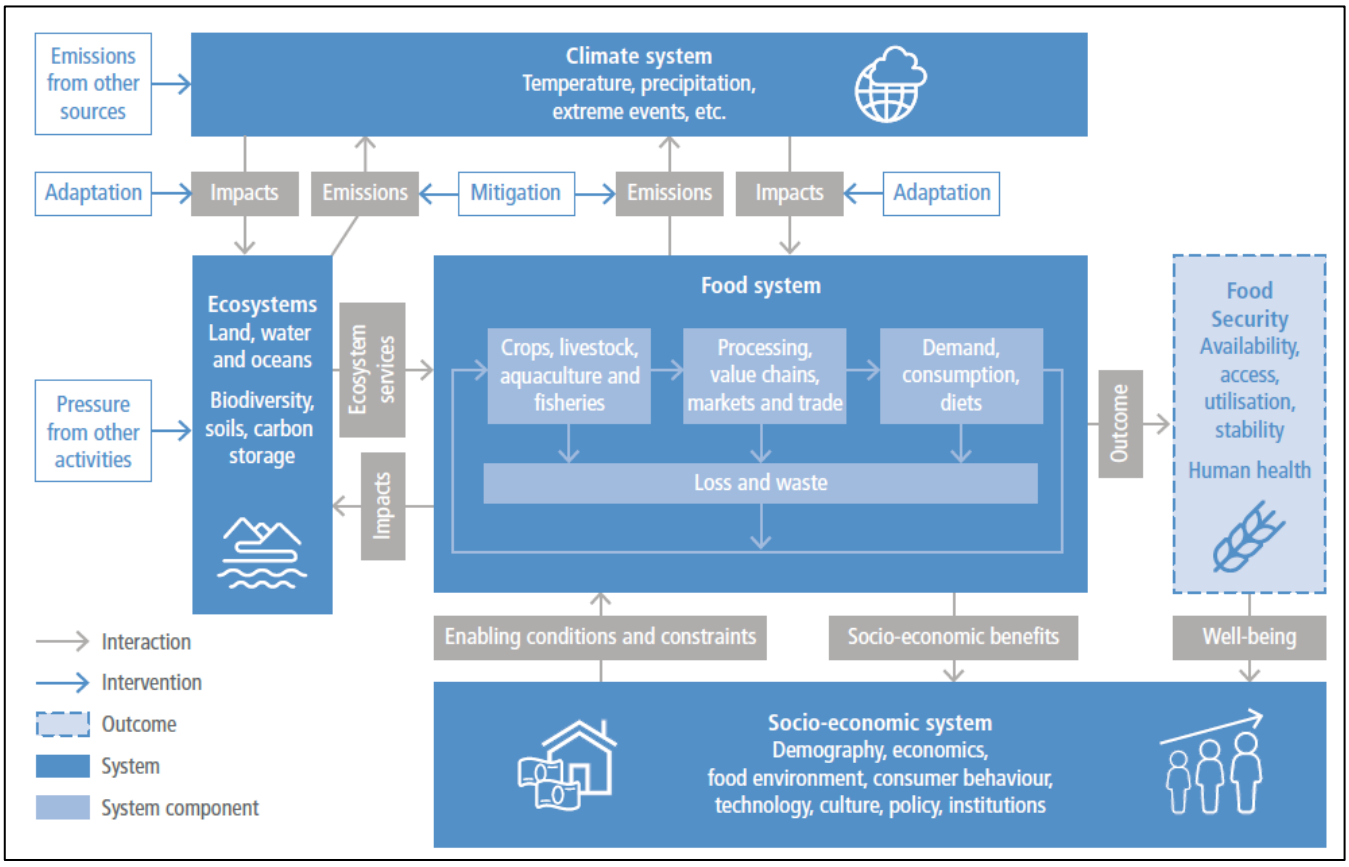
Source:

1. Household income inequality, UK: financial year ending 2020, Office for National Statistics, January 2021

Global food prices are declining but climate change is likely to mean price volatility

In the Intergovernmental Panel on Climate Change Special Report on Climate Change and Land, for shared Socio-economic Pathways (SSPs) 1 2, and 3, global crop and economic models project a 1–29% cereal price increase by 2050 which would impact consumers globally through higher food prices. Low-income consumers are particularly at risk, with models projecting increases of 1–183 million additional people at risk of hunger across the SSPs compared to a no climate change scenario. The pathways are scenarios of projected socio-economic global change to 2100.

Interlinkages between the climate system, food system, ecosystems (land, water and oceans) and socio-economic system. These systems operate at multiple scales, both global and regional. Food security is an outcome of the food system leading to human well-being, which is also indirectly linked with climate and ecosystems through the socio-economic system.



Source:

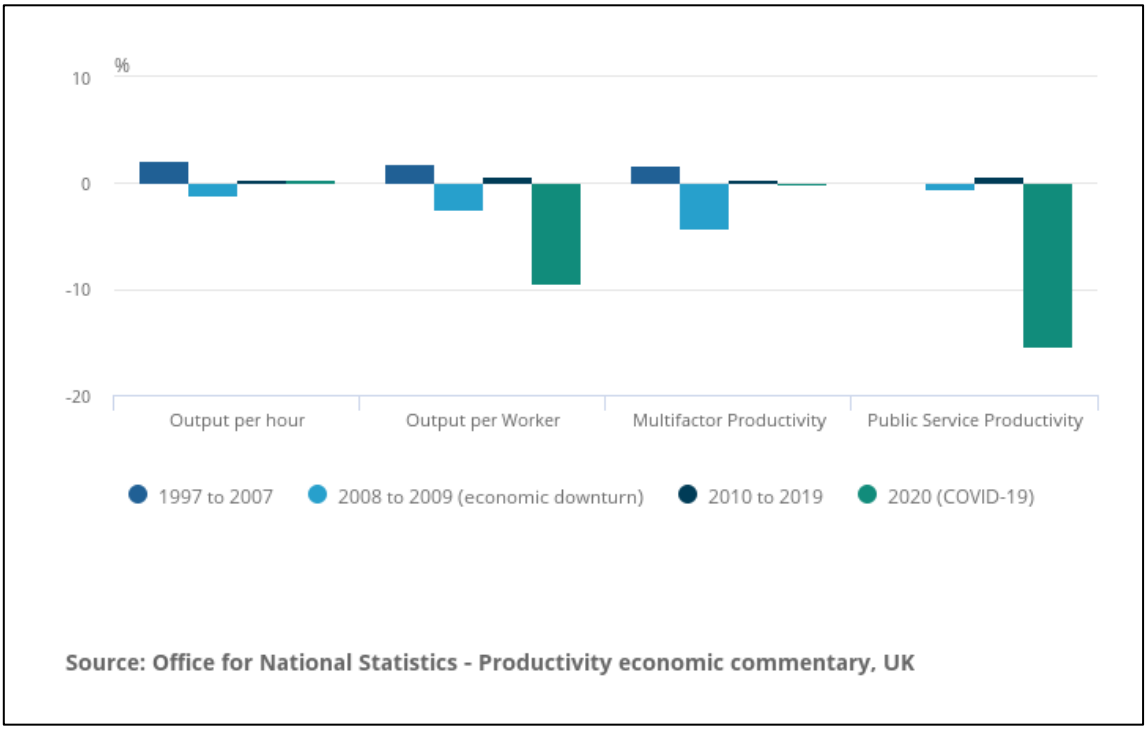
1. Mbow, C., C. Rosenzweig, L.G. Barioni, T.G. Benton, M. Herrero, M. Krishnapillai, E. Liwenga, P. Pradhan, M.G. Rivera-Ferre, T. Sapkota, F.N. Tubiello, Y. Xu, 2019: Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems [P.R. Shukla, J. Skea, E. Calvo Buendia, V. Masson-Delmotte, H.-O. Pörtner, D.C. Roberts, P. Zhai, R. Slade, S. Connors, R. van Diemen, M. Ferrat, E. Haughey, S. Luz, S. Neogi, M. Pathak, J. Petzold, J. Portugal Pereira, P. Vyas, E. Huntley, K. Kissick, M. Belkacemi, J. Malley, (eds.)]. In press.

UK labour productivity has slowed since the 2008 recession

Labour productivity in the UK, measured by output per hour, grew by an average annual growth rate of 2.2% in the 10-year period prior to the 2008 economic downturn (1997 to 2007). During the downturn (2008 to 2009), it fell by an average of 1.2%. In the subsequent nine years (2010 to 2019), output per hour growth was positive but lower than previously, instead growing by 0.4%. This phenomenon is widely known as the productivity puzzle.

In 2020, output per hour has continued to grow at 0.4%, leaving it seemingly unaffected by the coronavirus (COVID-19) pandemic. A change in the distribution of economic activity between industries is the primary reason we have not seen a similar drop to the 2008-09 downturn.

The trends of the UK's main productivity measures vary dramatically across different time periods



Output per hour and output per worker, multi-factor productivity (measures the amount that cannot be accounted for by changes in inputs of quality-adjusted labour and capital), public sector productivity (estimates of total public service output, inputs, and productivity), 1997 to 2020, cumulative annual growth rates, UK.

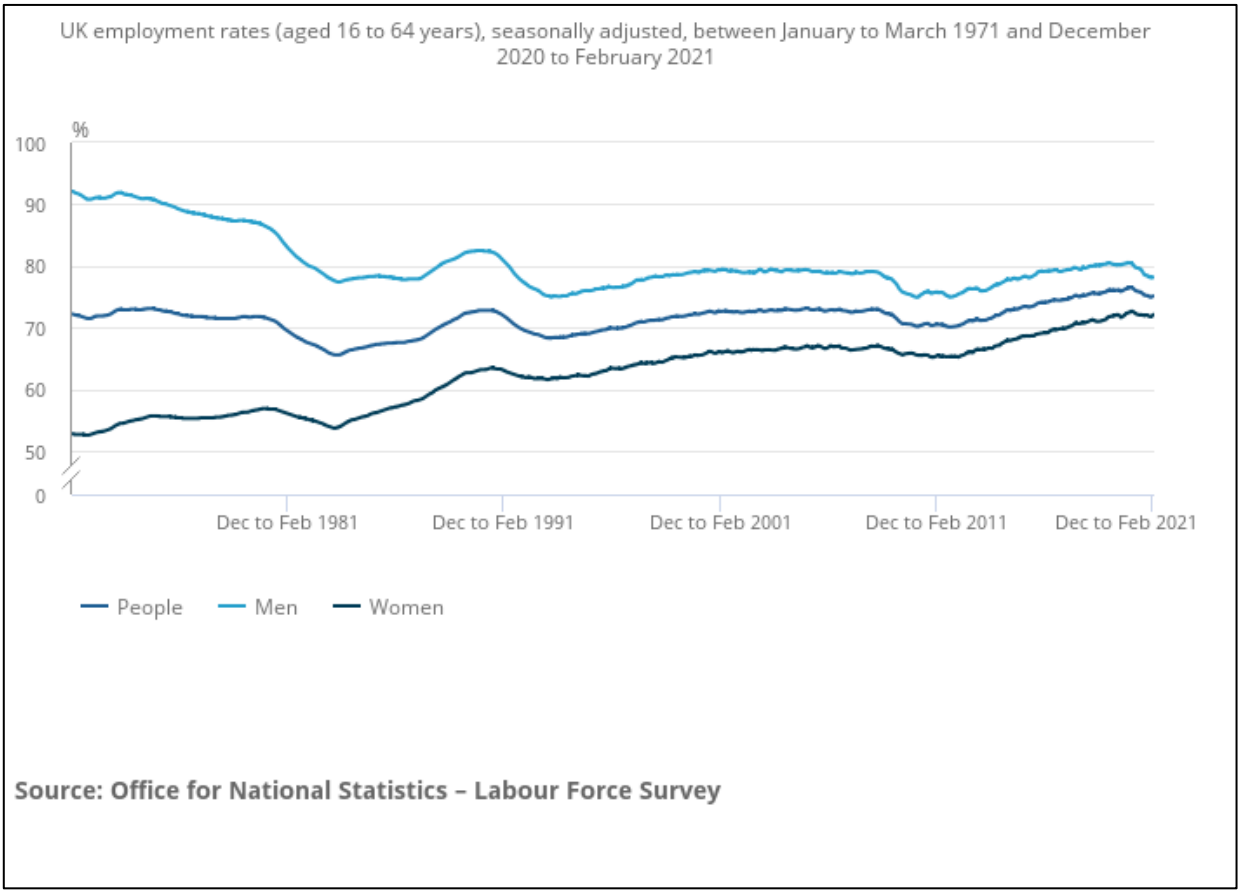
Source:

1. Productivity economic commentary, UK: October to December 2020, Office for National Statistics, April 2021

Long-term trend of increasing UK employment rates

The estimated employment rate for people aged between 16 and 64 years has generally been increasing since early 2012, largely driven by an increase in the employment rate for women and higher State Pension age. However, there has been a decrease since December 2019 to February 2020, coinciding with the start of the coronavirus (COVID-19) pandemic.

For people aged between 16 and 64 years, over the period December 2020 to February 2021, the estimated employment rate for all people was 75.1%; this is 1.4 percentage points down on the same period the previous year.

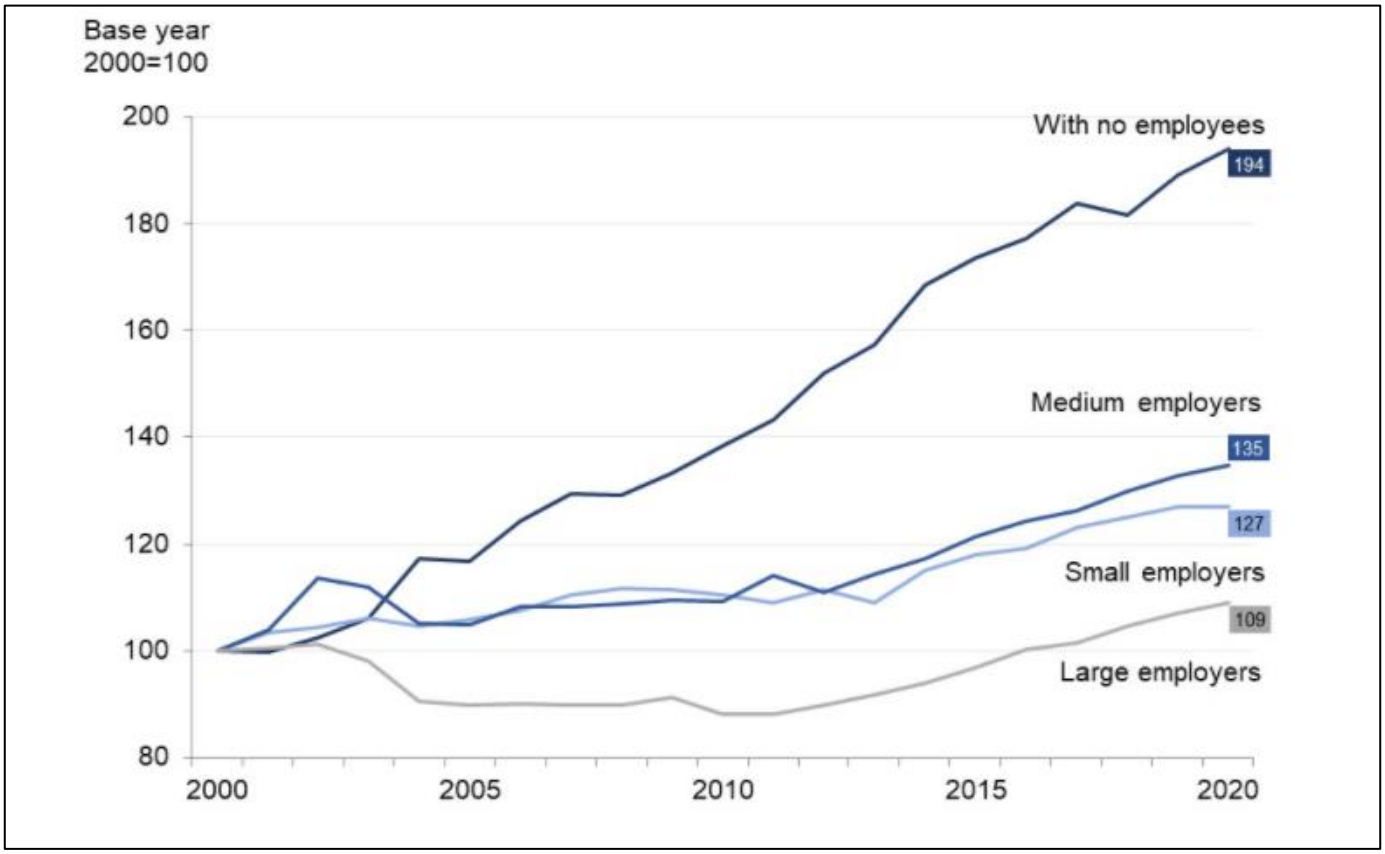


Non-employing businesses account for most of private business population growth

Between the years 2000 and 2020, the number of private sector businesses increased by 2.5 million (72%). The average annual rate of growth was at 3%.

This growth in the UK private sector business population has mainly been due to increasing numbers of non-employing businesses (businesses with a single employee director are treated as having no employees). Since 2000, the number of non-employing businesses accounted for 88% of total growth over this period.

Growth in the number of UK private sector businesses by size band, 2000-2020



Source:

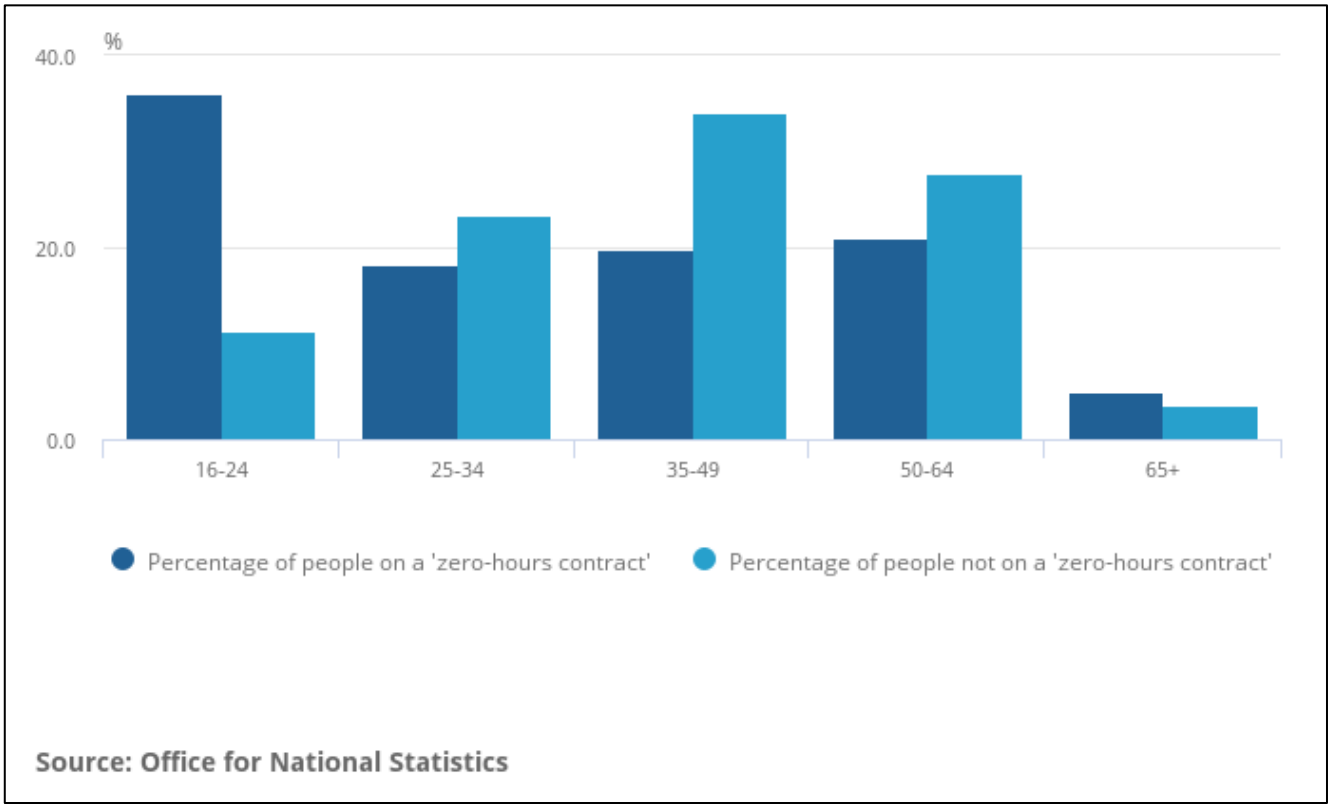
1. Business population estimates for the UK and regions 2020: statistical release, Department for Business, Energy and Industrial Strategy, October 2020

Increase share of young people in low paid job occupations and on zero-hours contracts

The share of 18-29 year olds working in relatively lower-paying occupations has risen from below 30% to almost 40% since the early 1990s, while staying flat across the workforce as a whole. The share of 18-29 year olds working part-time or in a temporary job involuntarily has not fallen since 2017, whereas the proportion continues to fall for older age groups.

People on a zero-hours contract are more likely to be younger. In 2017, 36% of people on zero-hours contracts were aged 16 to 24 years, compared with 11.4% for all people in employment.

Comparison of percentages (%) of people who are in employment on a zero-hours contract and who are not on a zero-hours contract by age, October to December 2017



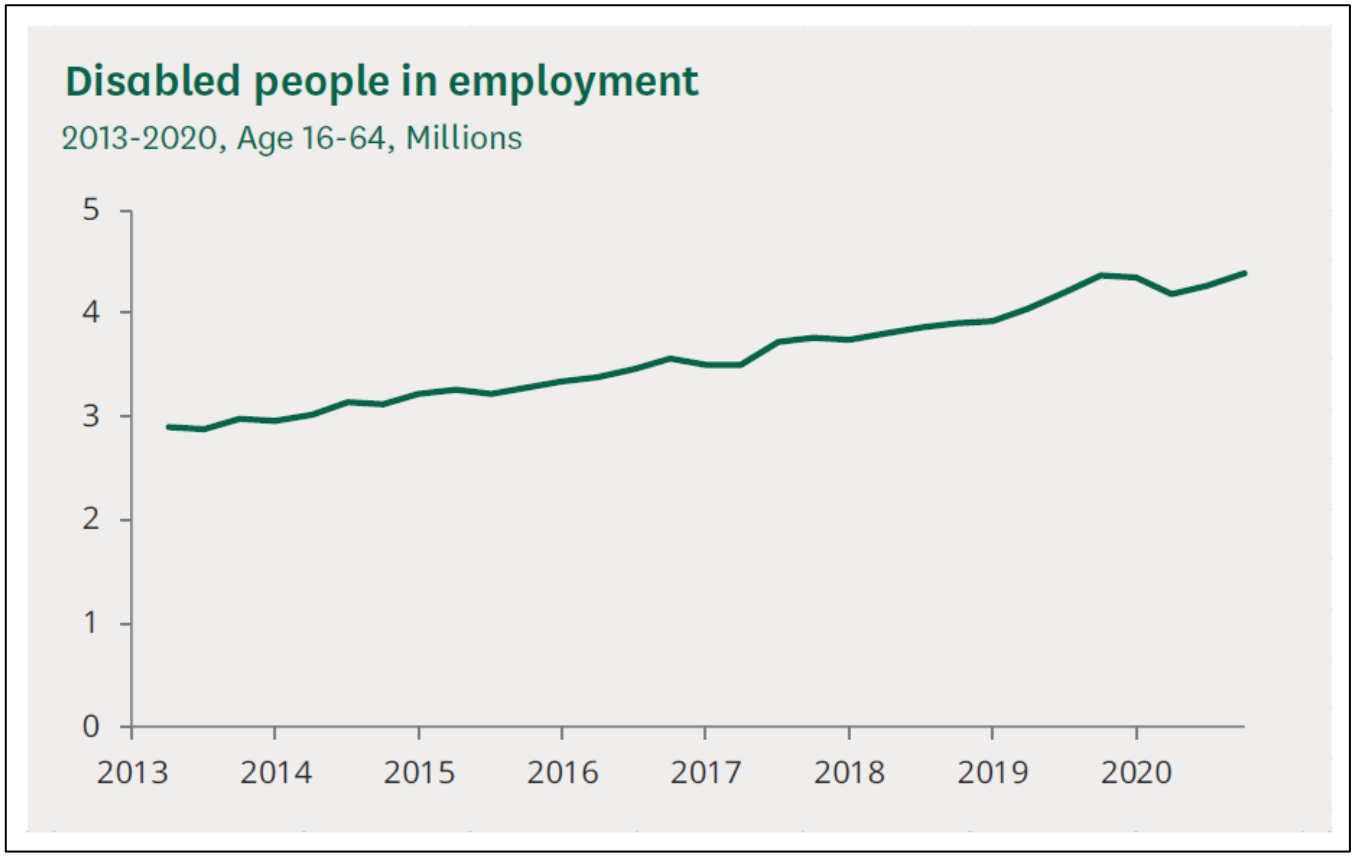
Sources:
1. G. Bangham et al, 2019 Intergenerational Audit 2019, Resolution Foundation, June 2019
2. Contracts that do not guarantee a minimum number of hours: April 2018, Office for National Statistics, April 2018

Increasing number of disabled people in employment

Between October to December 2013 and October to December 2020, the number of disabled people in employment increased by 1.41 million, an increase of 47%. In this period, the number of people in employment who are not disabled increased by 457,000, an increase of 2%.

For context, it is worth noting that the number of disabled people aged 16-64 has increased by 1.65 million, or 24%, during this period.

Over the same period the proportion of disabled people who have been in employment also increased, from 44.2% in October to December 2013 to 52.3% in October to December 2020.

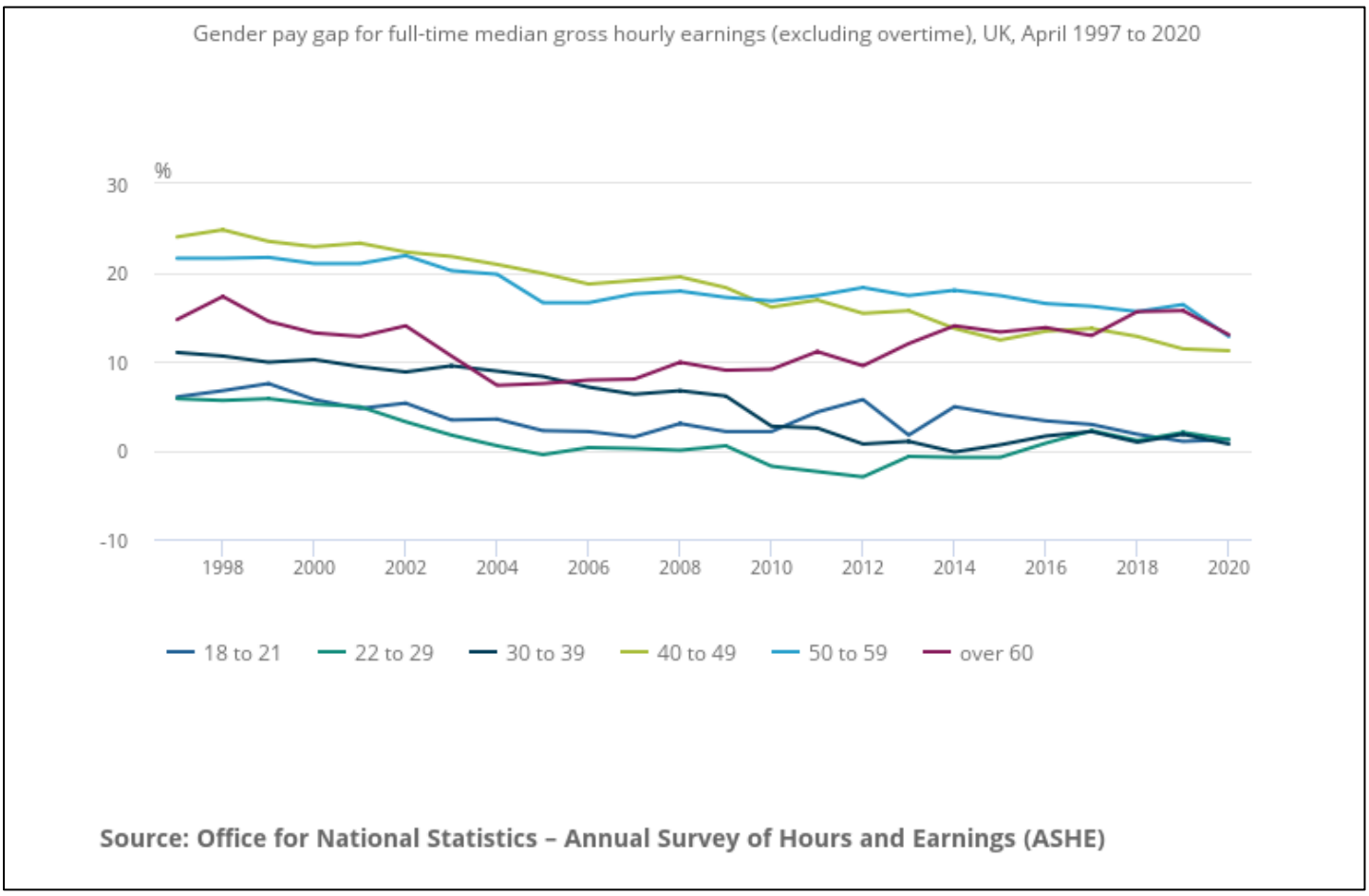


Source:
1. Disabled people in employment House of Commons Library Briefing, 13 August 2020.

The UK gender pay gap is decreasing fastest for the under 40s

The gender pay gap in the UK over the last decade has fallen by approximately a quarter among full-time employees and by just over one-fifth among all employees. In 2020, the gap among full-time employees fell to 7.4%, from 9% in 2019. Among all employees it fell to 15.5%, from 17.4%. The gap is higher for all employees because women fill more part-time jobs which have lower hourly median pay.

Since 2018, for age groups under 40 years, the gender pay gap for full-time employees is now close to zero. However, from age group 40 to 49 years and older the gender pay gap for full-time employees is still over 10%.



Source:
1. Gender pay gap in the UK:2020, Office for National Statistics, November 2020

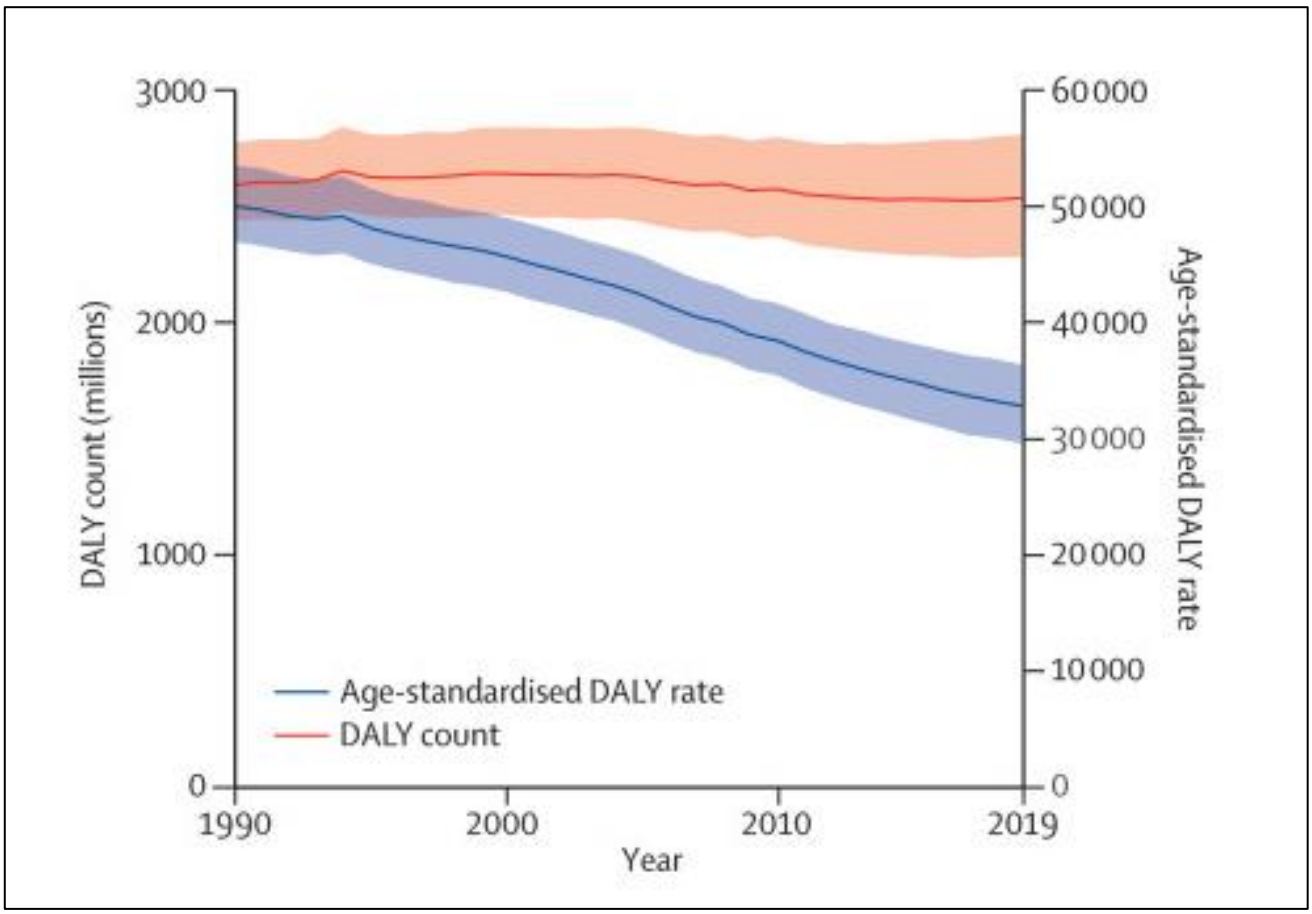
Contents

Improvements in overall global health

The Global Burden of Diseases, Injuries, and Risk Factors Study 2019 estimates incidence, prevalence, mortality, years of life lost (YLLs), years lived with disability (YLDs), and disability-adjusted life-years (DALYs) due to 369 diseases and injuries, in 204 countries and territories from 1990 to 2019.

Between 1990 and 2019, the number of global DALYs remained almost constant, but once the effects of population growth and ageing were removed by converting counts to age-standardised rates, there were clear improvements in overall health. Decreases in age-standardised DALY rates have accelerated over the past decade in countries at the lower end of the Socio-demographic Index (SDI) range, while improvements have started to stagnate or even reverse in countries with higher SDI.

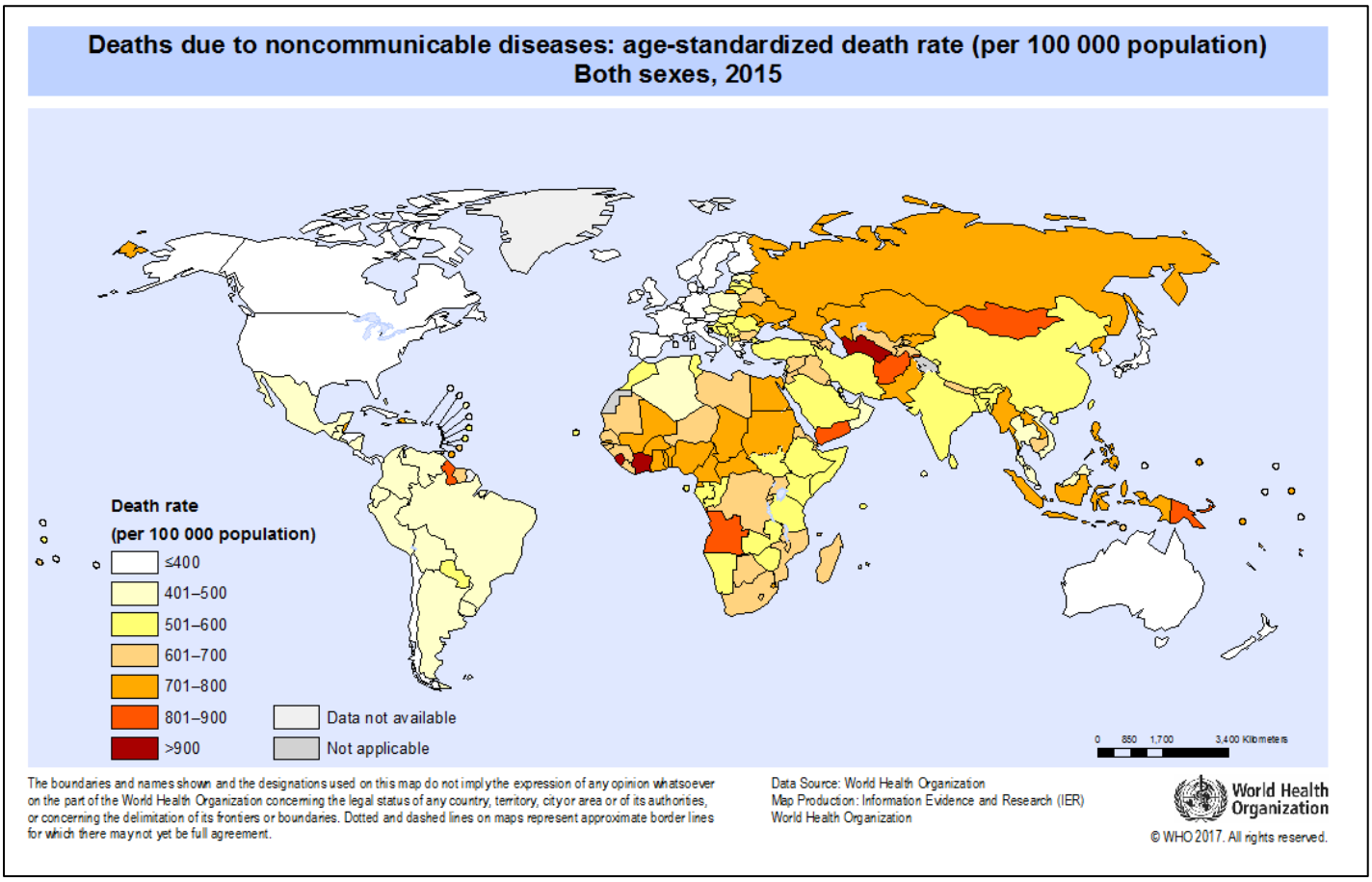
Global DALYs and age-standardised DALY rates, 1990–2019. Shaded sections indicate 95% uncertainty intervals. DALY=disability-adjusted life-year.



Noncommunicable diseases cause 71% of global deaths

Noncommunicable diseases (NCDs) kill 41 million people each year, equivalent to 71% of all deaths globally. Each year, more than 15 million people die from a NCD between the ages of 30 and 69 years; 85% of these 'premature' deaths occur in low and middle-income countries. As populations age, total noncommunicable diseases deaths are projected to rise to 52 million in 2030.

The global prevention and treatment for NCDs have been severely disrupted by coronavirus (COVID-19). Almost two-thirds (63%) of the countries surveyed by the World Health Organization have partially or completely disrupted rehabilitation services, even though rehabilitation is key to a healthy recovery following severe illness from COVID-19.



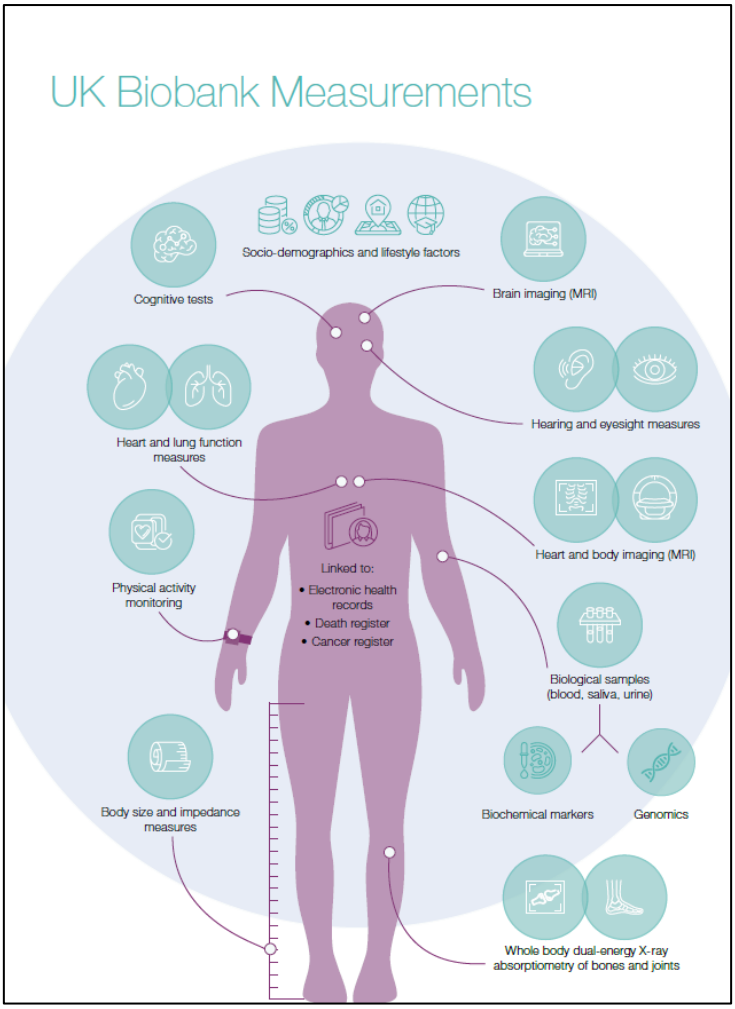
Sources:

1. Rapid assessment of service delivery for NCDs during the COVID-19 pandemic, World Health Organization; (May 2020) Licence: CC BY-NC-SA 3.0 IGO.
2. Noncommunicable diseases factsheet, World Health Organization; (2021) Licence: CC BY-NC-SA 3.0 IGO
3. Premature NCD deaths, Global Health Observatory, World Health Organization

Increasing potential for personalised medicine using genomics

By combining and analysing information about our genome with other clinical and diagnostic information, patterns can be identified that can help to determine our individual risk of developing disease; detect illness earlier and determine the most effective interventions to help improve our health. New possibilities are now emerging as we bring together novel approaches, such as whole genome sequencing, data and informatics, and wearable technology. It is the interconnections between these innovations that makes it possible to move to an era of truly personalised care.

UK Biobank is a national and international resource which aims to improve the prevention, diagnosis, and treatment of a wide range of serious and life-threatening illnesses. It has 500,000 volunteer participants.



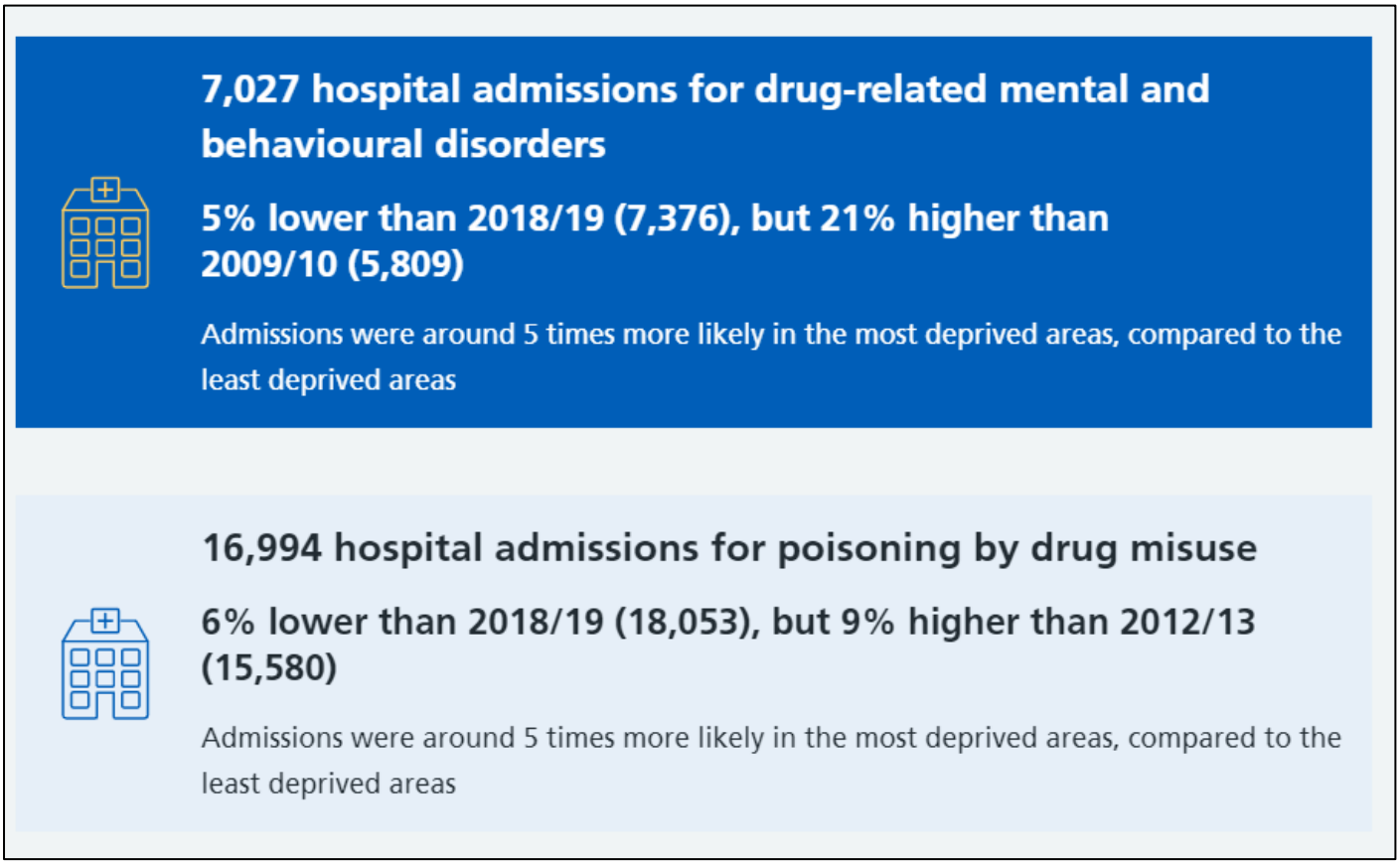
Sources:

1. Personalised Medicine, NHS
2. Genome UK the future of healthcare, HM Government, 2020

Long-term drug-related hospital admissions in England have risen

The number of hospital admissions with a primary diagnosis of drug-related mental and behavioural disorders fell from 7,376 in 2018 to 2019 to 7,027 in 2019 to 2020. This has decreased by 18% from the previous highest recorded admissions in 2015 to 2016 (8,621). However, these admissions are still 21% higher than 10 years ago – in 2009 to 2010 they totalled 5,809. Drug-related hospital admissions are five times more likely in the most deprived areas.

Key facts for 2019/20 which is the latest year of available data for hospital admissions



Source:

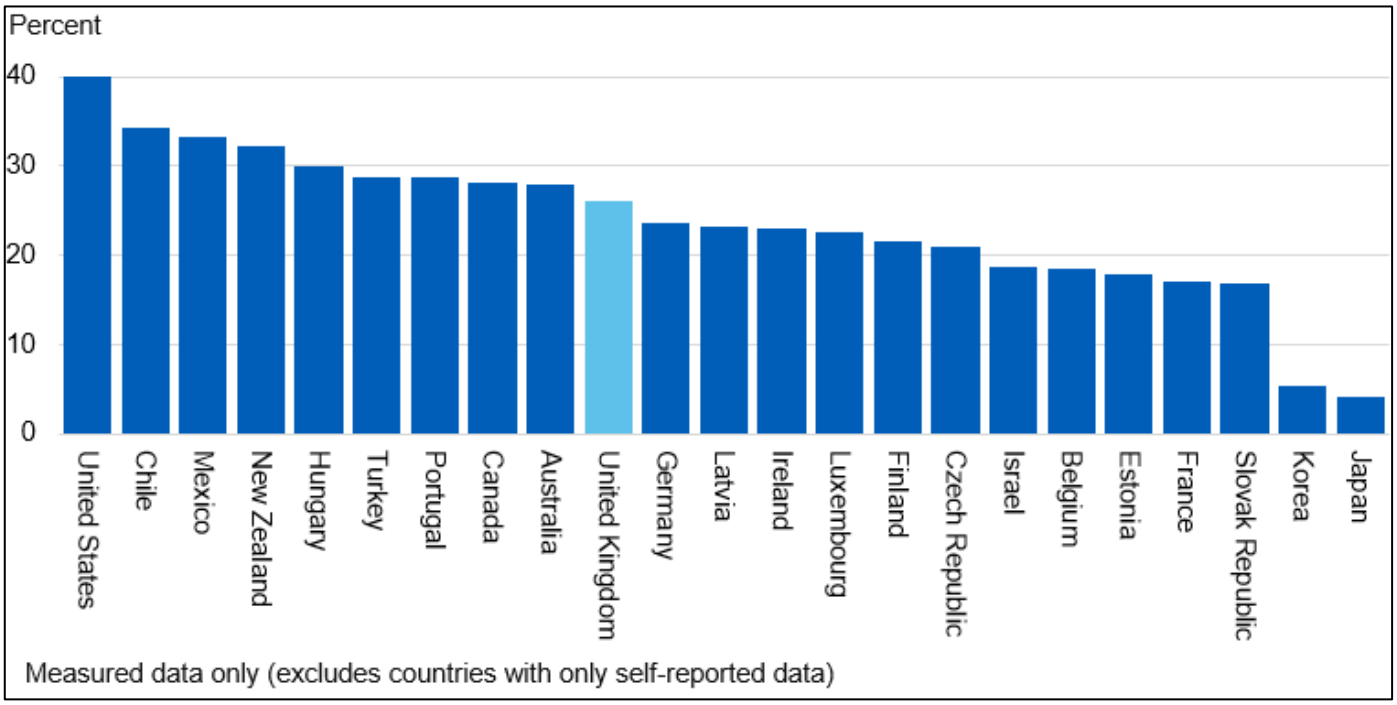
1. Statistics on Drug Misuse, England 2020, NHS Digital

Increasing levels of obesity in the UK adult population

The majority of adults in England in 2018 were overweight or obese (63%). Obesity prevalence increased steeply between 1993 and 2000, with a slower rate of increase thereafter. In 2018, the proportion of adults who were obese was 28%.

In 2017, the UK had the tenth highest adult obesity levels in Organisation for Economic Co-operation and Development (OECD) countries. Using 2017 data, the UK reported obesity levels were 26% of the population. This is 14 percentage points lower than the USA which reports the highest adult obesity level.

Obesity prevalence in the UK compared with other Organisation for Economic Co-operation and Development (OECD) countries. Comparisons are based on data for adults aged 15 and over, or closest available. Data is for 2017 or nearest available year. Only countries with measured data are included here.



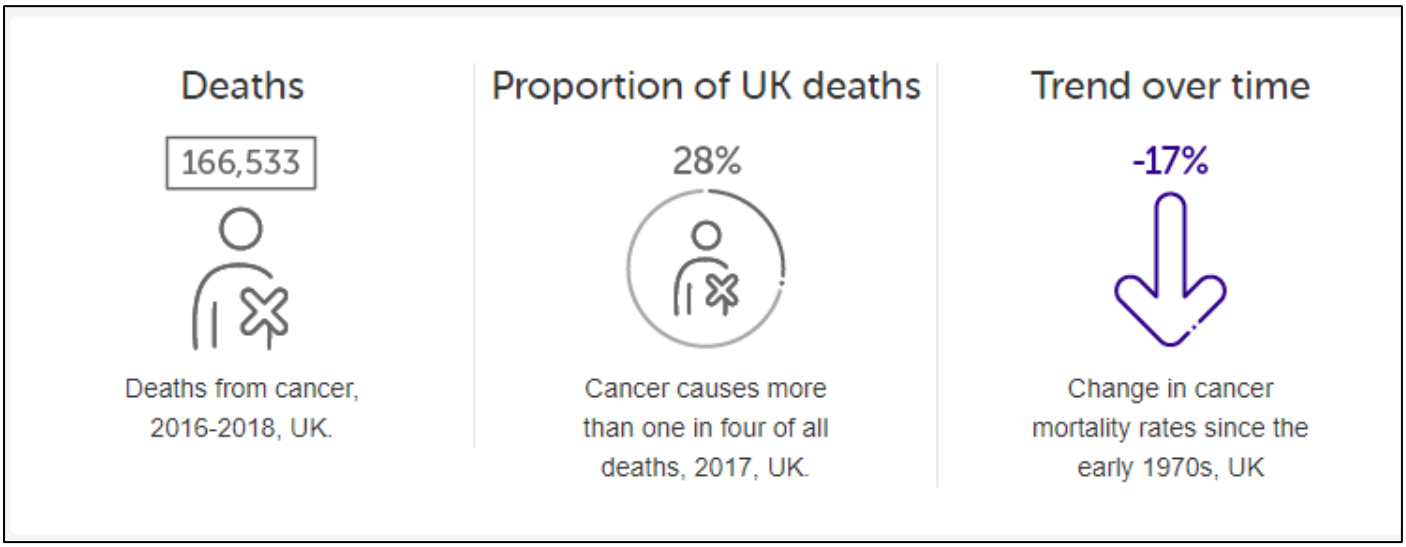
Source:

1. Statistics on Obesity, Physical Activity and Diet (part 3), 2020, NHS Digital

Decrease in UK mortality rates for all cancers

Since the early 1970s, mortality rates for all cancers combined have decreased by a sixth (17%) in the UK. Rates in females decreased by more than a tenth (12%), and rates in males have decreased by around a quarter (26%). Mortality rates for all cancers combined are projected to fall by 15% in the UK between 2014 and 2035, to 280 deaths per 100,000 people by 2035.

There are differences in UK countries. All cancers combined mortality rates (European age-standardised rates) for persons are significantly higher than the UK average in Scotland and Wales, significantly lower than the UK average in England and similar to the UK average in Northern Ireland.



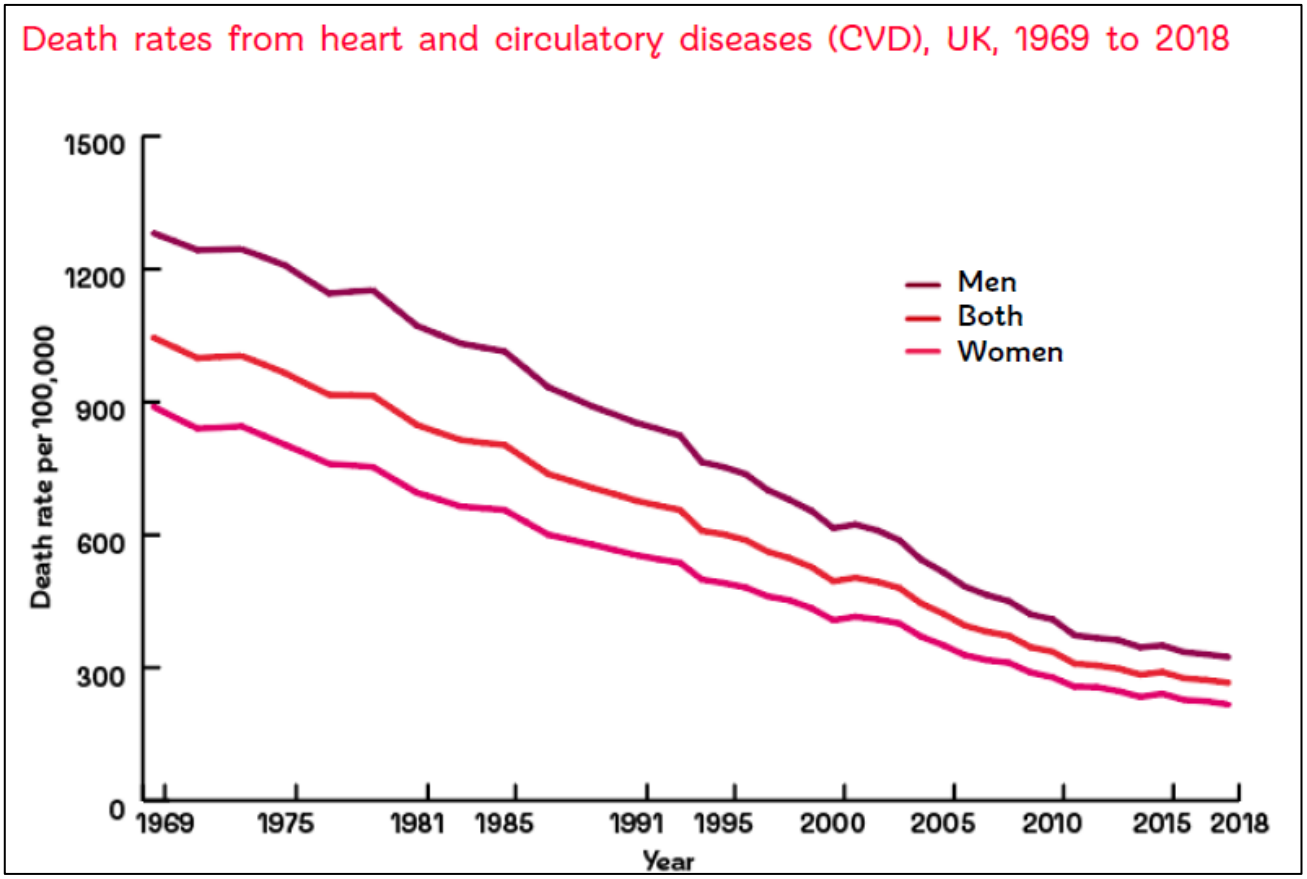
Source:

1. Cancer Research UK, https://www.cancerresearchuk.org/health-professional/cancer-statistics/mortality Accessed April 2021

Long-term decrease in death rates from heart and cardiovascular disease in England

Since 1961, the death rate from heart and circulatory diseases has declined by more than three quarters in England. There are around 7.6 million people living with heart and circulatory diseases in the UK - an ageing and growing population and improved survival rates from heart and circulatory events could see these numbers rise still further. As people are living longer, death rates have decreased more quickly than actual numbers of deaths.

Heart and circulatory diseases cause more than a quarter (27%) of all deaths in the UK. Healthcare costs relating to heart and circulatory diseases are estimated at £9 billion each year.



Source:

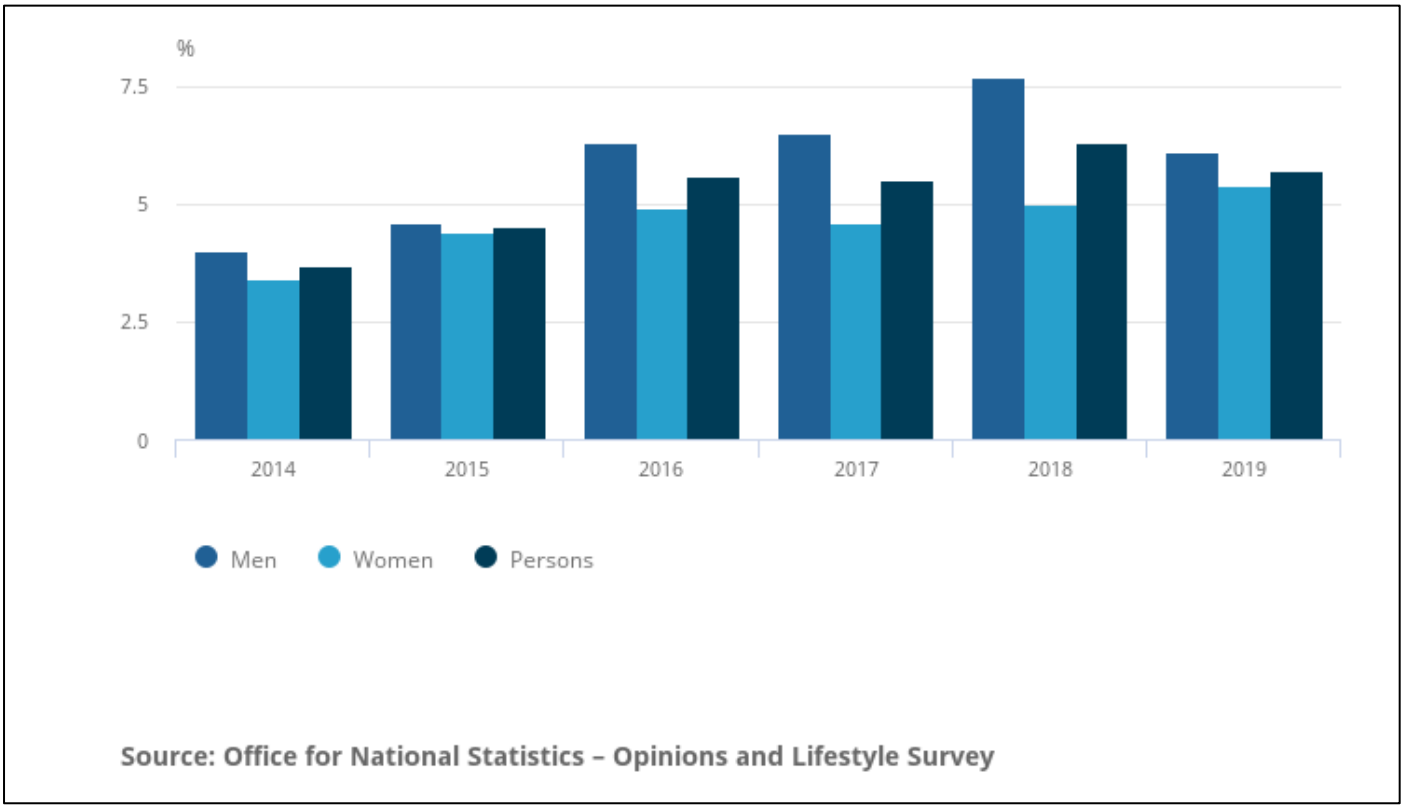
1. British Heart Foundation. UK Fact Sheet January 2021

Decline in cigarette smoking in the UK but vaping is increasing

In 2019, the proportion of current smokers in the UK was 14.1%, which equates to around 6.9 million in the population. This figure represents a significant reduction since 2018, when 14.7% smoked, and continues the trend in falling smoking prevalence since 2011.

In Great Britain, 5.7% of respondents to the Annual Population Survey in 2019 said they currently used an e-cigarette, which equates to nearly 3 million adults in the population. This proportion is significantly higher than that observed in 2014, when data collection began, when only 3.7% vaped.

Proportion of the population who were current vapers, Great Britain, 2014 to 2019

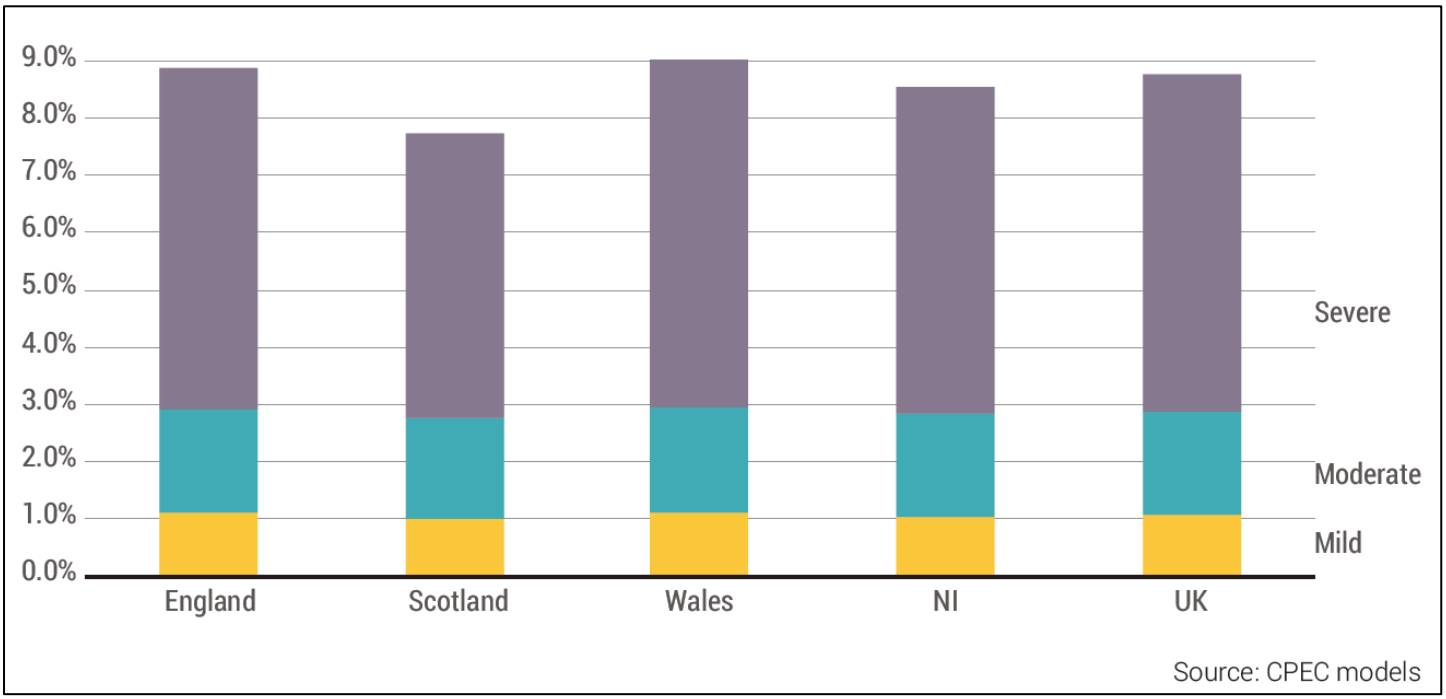


Rapid increase in the prevalence of dementia worldwide

Alzheimer's Society research suggests there are currently nearly 36 million people with dementia in the world and as many as 28 million do not have a diagnosis. By 2050 it is projected there will be 115 million people with dementia worldwide, 71% of whom will live in developing countries.

The Alzheimer's Society work projects that the number of older people with dementia in the UK will increase by 80%, from almost 885,000 in 2019 to around 1.6 million in 2040. It could reach one million in the year 2024. The prevalence rate of dementia in the UK is projected to reach 8.8% in 2040. This is largely driven by an ageing population. The total cost of dementia care in the UK is projected to increase by 172%, from £34.7 billion in 2019 to £94.1 billion in 2040, at constant 2015 prices.

Projected prevalence of dementia in the four UK countries by severity of dementia, 2040



Sources:

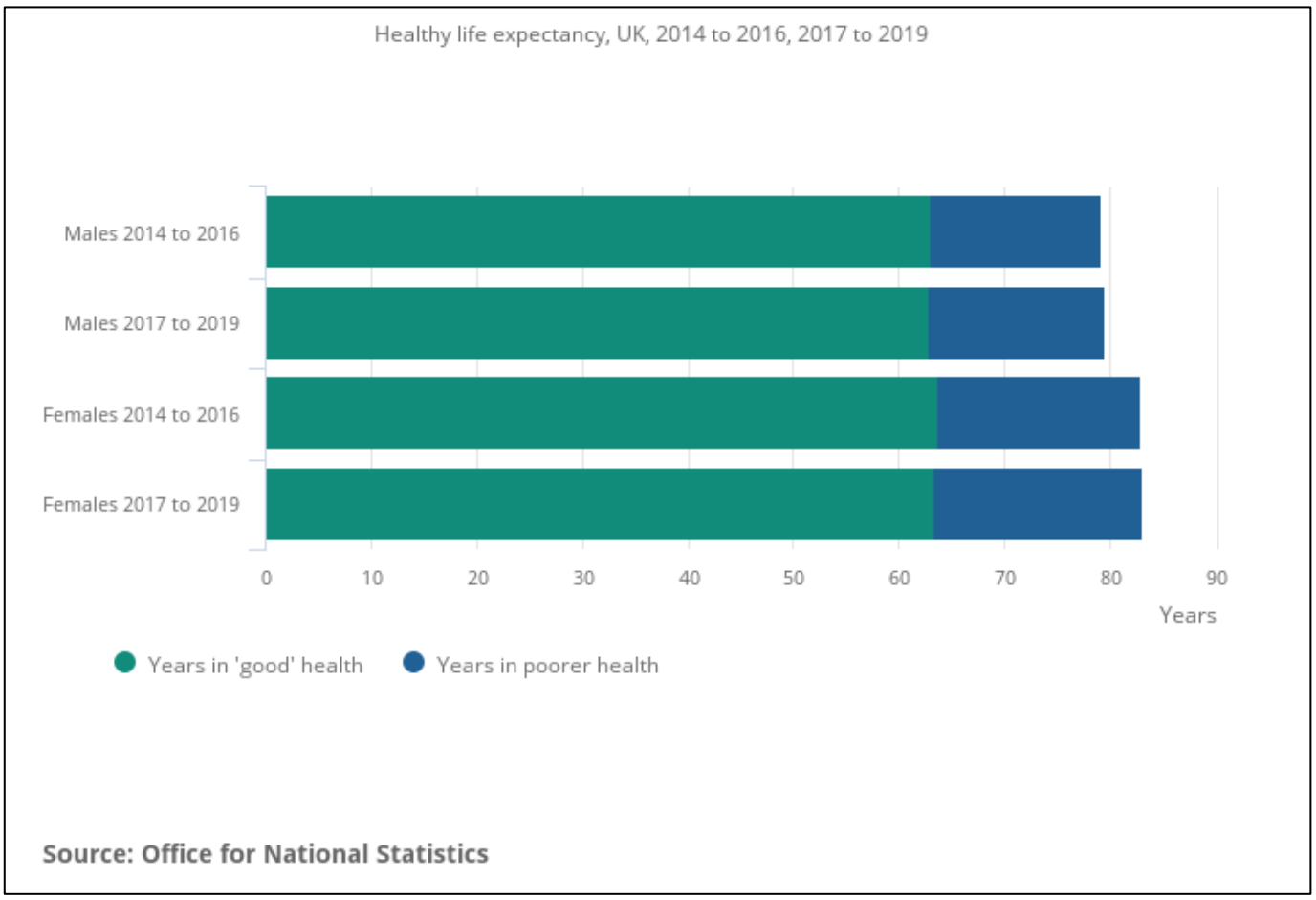
1. Alzheimer's Society's view on demography
2. Projections of older people with dementia and costs of dementia care in the United Kingdom, 2019-2040, Report by the Care Policy and Evaluation Centre at The London School of Economics and Political Science, November 2019, for the Alzheimer's Society

Healthy life expectancy for UK women has decreased

From 2017 to 2019 healthy life expectancy (HLE) at birth in the UK for males was 62.9 years, showing no significant change from 2014 to 2016. However, HLE for females showed a decrease from 63.7 years in 2014 to 2016 to 63.3 years in 2017 to 2019, although this is still higher than for males.

Female HLE in 2017 to 2019 was almost five months shorter than in 2014 to 2016, and the lowest it has been since the time series began in 2009 to 2011. In 2009 to 2011 there was a difference of 1.1 years between male and female HLE at birth, in 2017 to 2019 this narrowed to 0.4 years.

Female HLE in 2017 to 2019 was almost five months shorter than in 2014 to 2016, and the lowest it has been since the time series began in 2009 to 2011



Source:

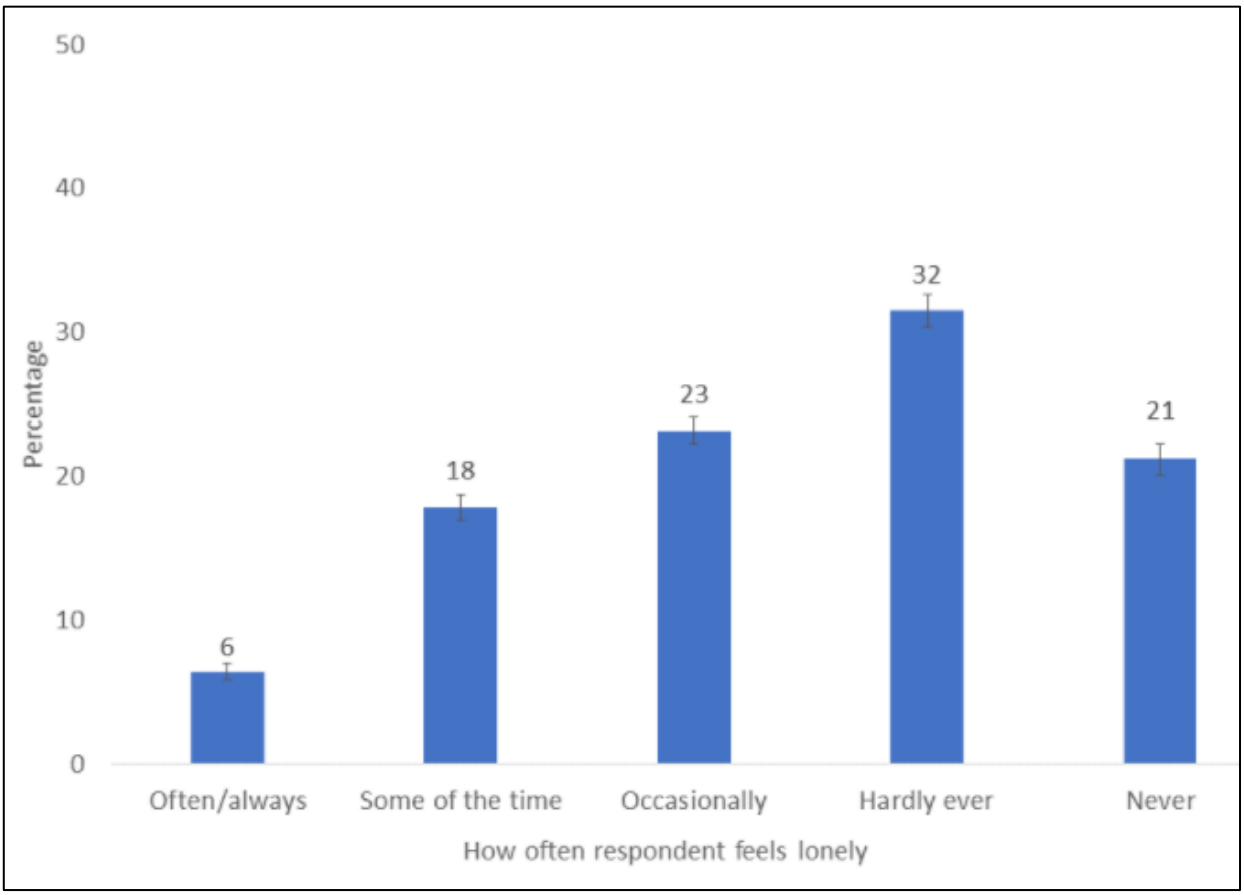
1. Health state life expectancies, UK: 2017 to 2019, Office for National Statistics

6% of adults in England continue to feel lonely often or always

Loneliness can be defined as an individual's negative perception of the quality or quantity of their social relationships. It is possible to be lonely whilst being part of a large social network or in a relationship.

In the England Community Life Survey 2019/20, 6% of respondents said they felt lonely often/always. This is the same as in 2017/18 and 2018/19. Loneliness is higher for women, 16-24 year olds, those with a limiting long-term illness or disability or living in a deprived or rural area .

How often respondents to the Community Life Survey feel lonely, 2019/20



The 95% confidence intervals are indicated by error bars on the charts. They show the range that we are 95% confident the true value for the population falls between.

Source:

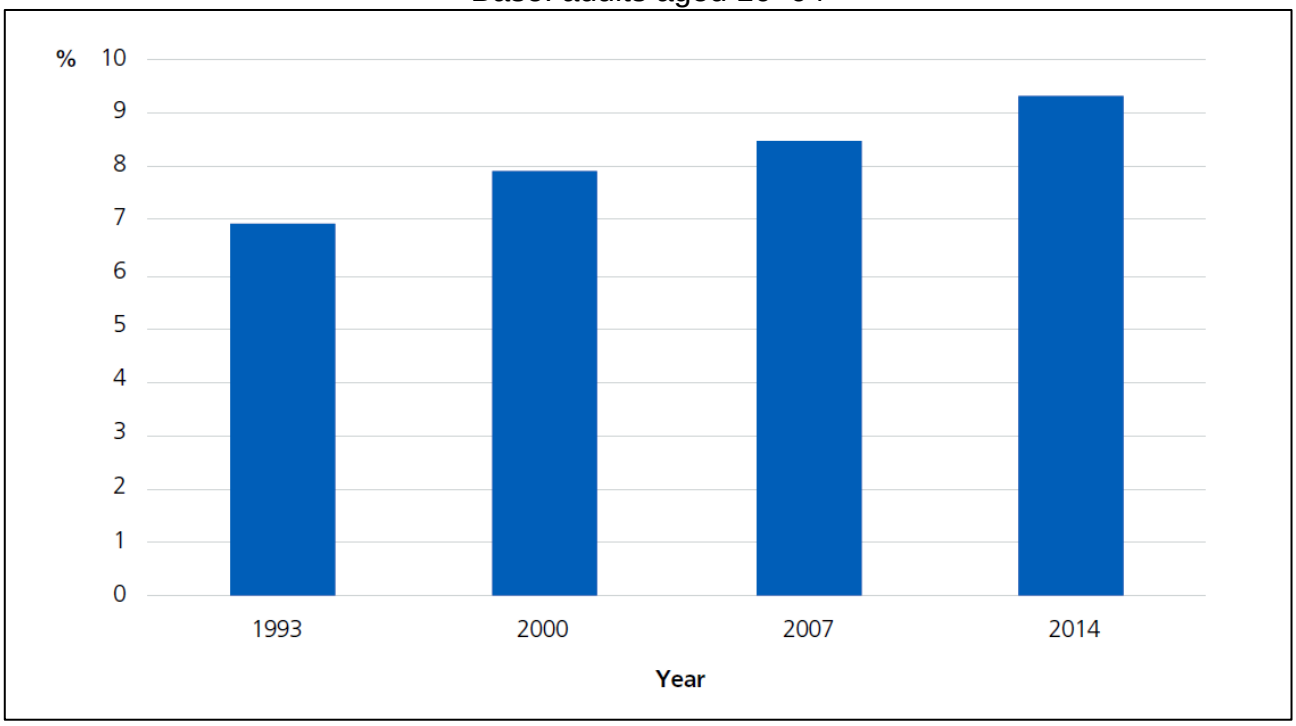
1. Wellbeing and Loneliness - Community Life Survey 2019/20, Department for Digital, Culture, Media and Sport, July 2020

Increase in common mental health disorders in adults in England

Overall, around one in six adults (17%) surveyed in England met the criteria for a common mental disorder (CMD) in 2014. This figure has increased from one in four (24%) since the last survey was carried out in 2007. Women were more likely than men to have reported CMD symptoms. One in five women (19%) had reported symptoms, compared with one in eight men (12%). Women were also more likely than men to report severe symptoms of CMD – 10% of women surveyed reported severe symptoms compared to 6% of men.

39% of adults aged 16-74 with conditions such as anxiety or depression, surveyed in England, via the Adult Psychiatric Morbidity Survey, were accessing mental health treatment in 2014.

Severe CMD symptoms in past week (CIS-R score 18+), 1993 to 2014
Base: adults aged 16–64



* The **common mental disorders (CMD)** included in this series were depression, generalised anxiety disorder (GAD), panic disorder, phobias, obsessive compulsive disorder (OCD), and CMD not otherwise specified (CMD-NOS). Many people meet the criteria for more than one CMD.

** **CIS-R Score**: A score of 12 or more indicated symptoms warranting clinical recognition, a score of 18 or more is considered severe and requiring intervention.

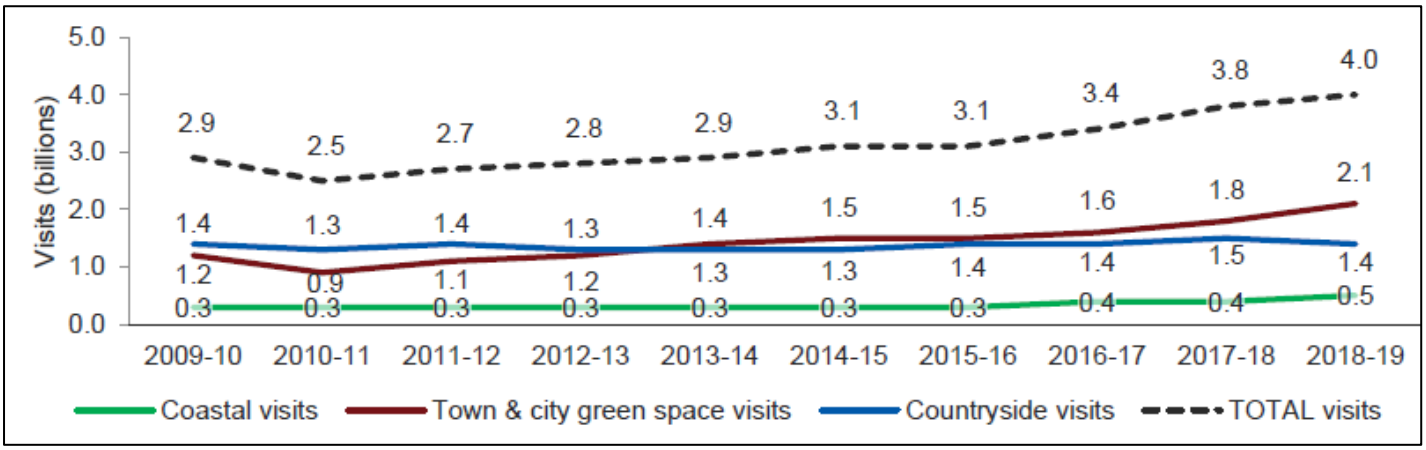
Source:
1. Adult Psychiatric Morbidity Survey: Survey of Mental Health and Wellbeing, England, 2014, NHS Digital

Visits to green spaces in towns and cities in England have increased but quality urban green space is declining

Greener environments are associated with better mental health and well-being outcomes including reduced levels of depression, anxiety, and fatigue, and enhanced quality of life for both children and adults. Valuations show £2.1 billion per year could be saved in health costs if everyone in England had good access to green space, due to increased physical activity in those spaces.

As urban areas expand or become denser, the amount of good quality green space is declining. The Committee on Climate Change found that the total proportion of urban green space in England declined by 8 percentage points between 2001 and 2018, from 63% to 55%.

Estimated annual visits to natural environment, total and by type of place visited (billions, 2009/10 to 2018/19). The total number of visits to green spaces in towns and cities almost doubled in the ten years to 2018/19.

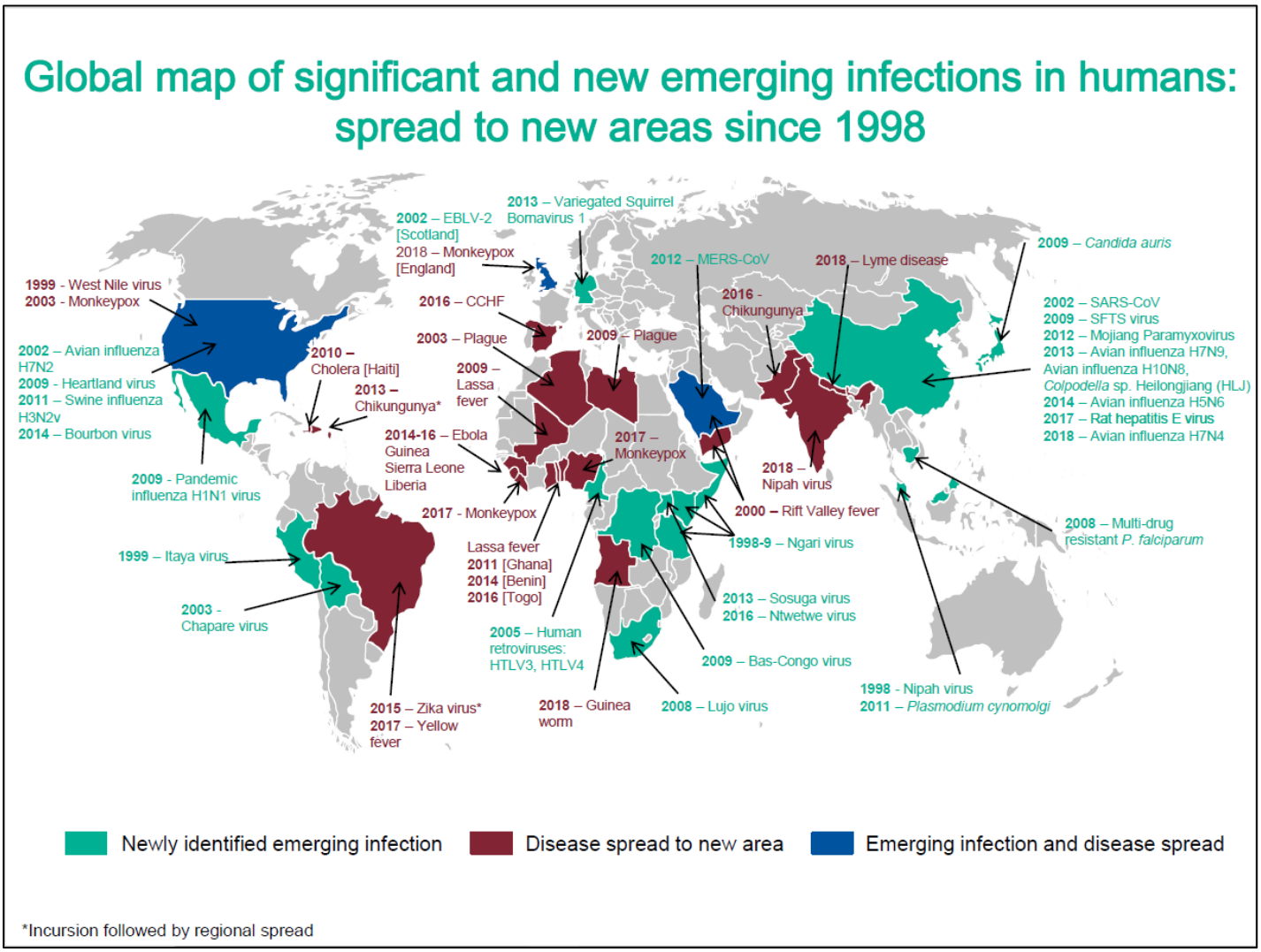


Sources:

1. Improving access to greenspace A new review for 2020, Public Health England
2. Monitor of Engagement with the Natural Environment, The national survey on people and the natural environment, Headline report 2019

Global spread of significant and new emerging infections

Many (60 to 80%) emerging infections are derived from an animal source. Infections have been emerging for thousands of years as humans have had more and more interactions with animals and their environment. Factors involved in emergence include microbial adaptation, ecological changes, human demographics and behaviour, international travel and public health infrastructure.



Major infections causing epidemics and pandemics since 2000 include severe acute respiratory syndrome (SARS), 'a 'swine flu' pandemic (H1N1), avian influenza infections (H5N1 and H79N), a widespread pandemic-like extension of Ebola over five African countries, Middle Eastern Respiratory Syndrome (MES-CoV) and a cholera outbreak in Haiti. The World Health Organization (WHO) declared coronavirus (COVID-19) a pandemic on 11 March 2020.

Sources:

1. Emerging infections: how and why they arise. Public Health England, February 2019
2. Influenza (Avian and other zoonotic) World Health Organization factsheet; (2018)

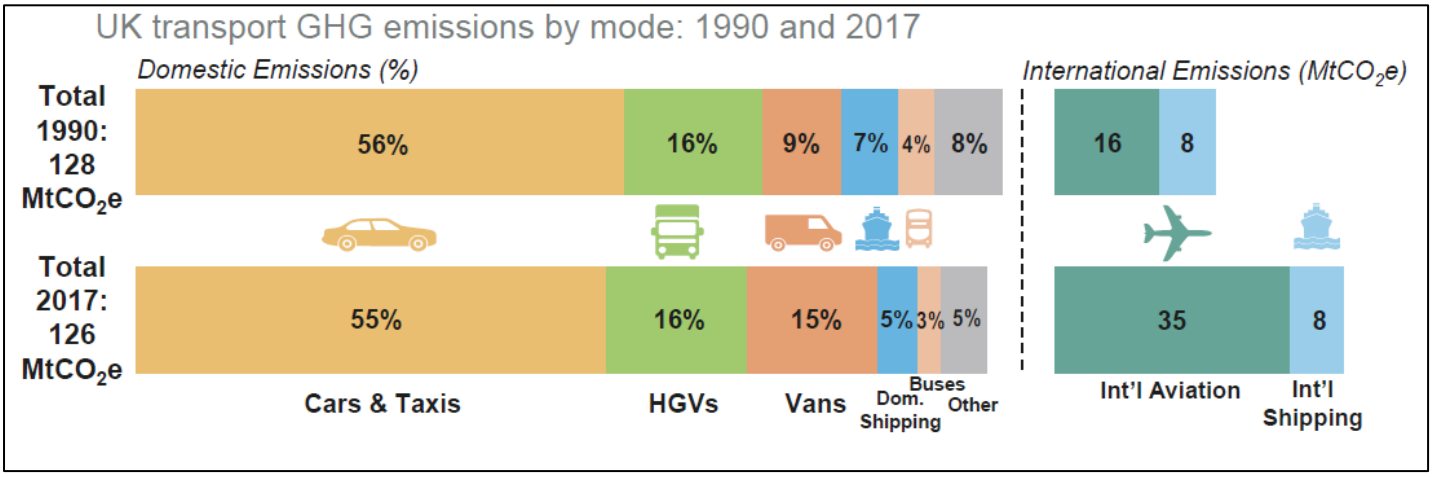
Contents

Small decrease in domestic UK transport emissions

In the UK transport emissions decreased by 2% between 1990 and 2017, and made up 27% of net domestic emissions in 2017. Since 1990, emissions from rail, buses and domestic shipping decreased, whereas van emissions increased by 67% in the UK. Van traffic has doubled since the early 1990s.

International aviation emissions, which are not part of the UK's domestic emissions, have more than doubled since 1990.

GHG emissions by transport mode.



Metric tons of carbon dioxide equivalent or $MtCO_2e$ is a unit of measurement. The unit "CO2e" represents an amount of a greenhouse gas whose atmospheric impact has been standardized to that of one unit mass of carbon dioxide (CO_2), based on the global warming potential of the gas.

Source:

1. Transport Statistics: Great Britain 2019, Department for Transport

Increase in electric ultra-low emission vehicles to 1% of global stock

Sales of electric cars topped 2.1 million globally in 2019 to boost the stock to 7.2 million electric cars. Electric cars, which accounted for 2.6% of global car sales and about 1% of global car stock in 2019, registered a 40% year-on-year increase.

In 2019, 80,578 ULEVs (ultra-low emission vehicles) were registered for the first time in the UK, an increase of 26% on 2018 and 52% on 2017. ULEVs accounted for 2.7% of all new vehicle registrations, up from 2.1% in 2018.

ULEVs registered for the first time by fuel type, United Kingdom, 2010 to 2019.

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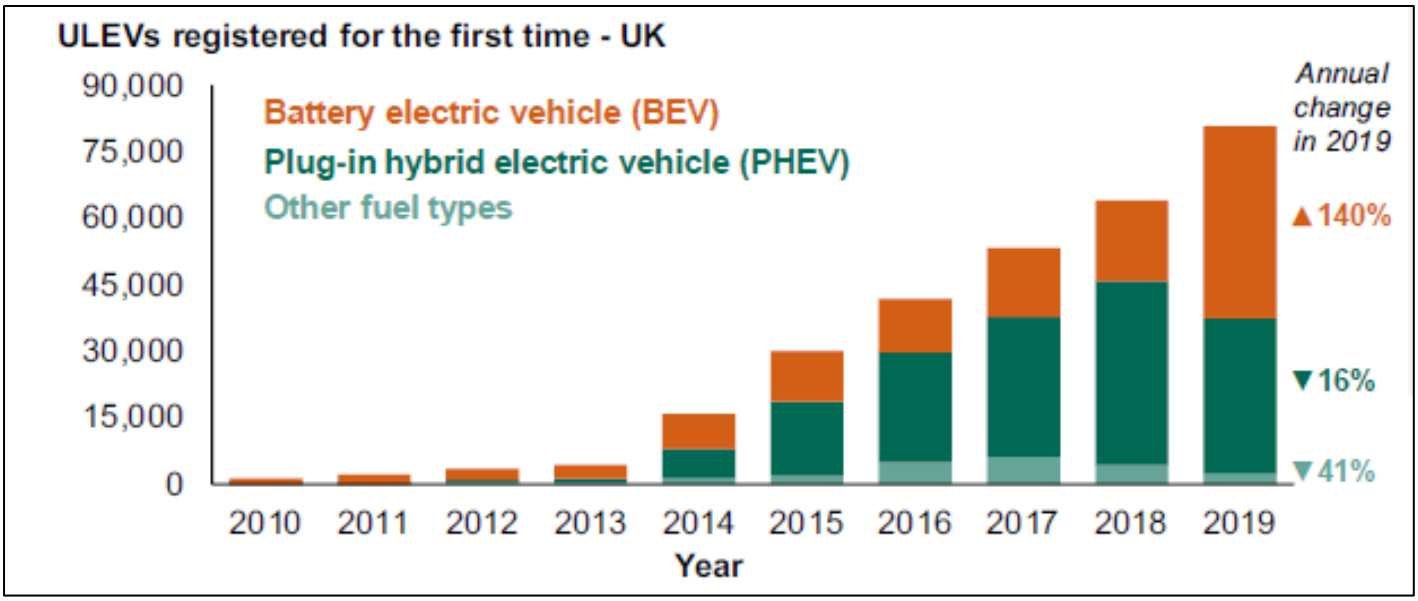


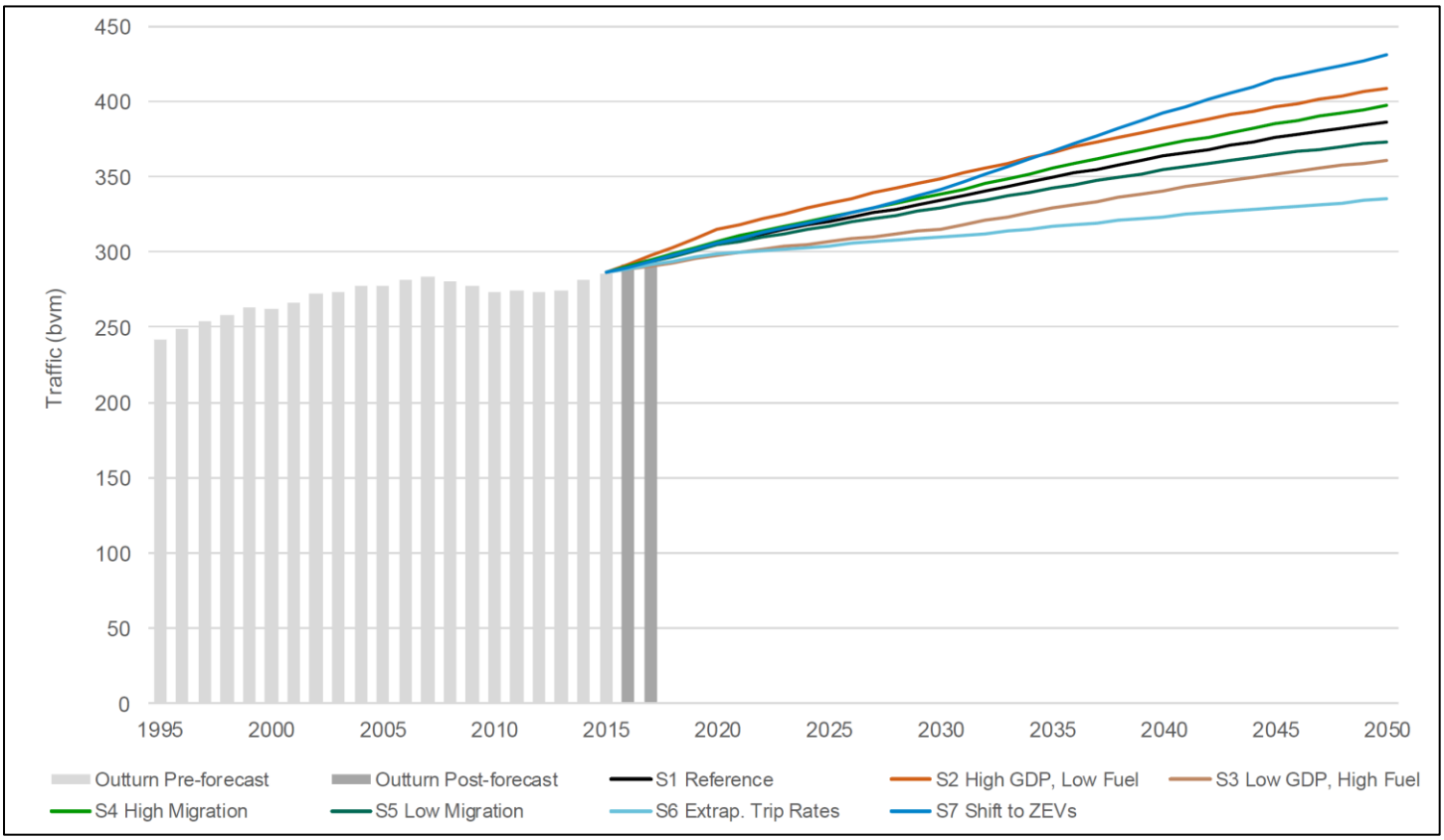
Sources:
1. IEA (2020), Global EV Outlook 2020, IEA, Paris https://www.iea.org/reports/global-ev-outlook-2020, All Rights Reserved
2. Vehicle Licensing Statistics: Annual 2019, Department for Transport, April 2020

Traffic growth forecast to increase in England and Wales

In England and Wales, the Department for Transport's National Transport Model forecasts provide a strategic view of future road travel demand under a number of plausible scenarios. From 2015, traffic is forecast to grow across all scenarios by between 17% and 51% by 2050. Car traffic is forecast to grow between 11% and 43%, whilst light goods vehicle traffic is forecast to continue growing significantly in all scenarios (between 23% and 108%).

The proportion of traffic in congested conditions in 2050 is forecast to range from 8% to 16% depending on the scenario, compared to 7% in 2015.

Forecasted road traffic in billion vehicle miles (BVM) in England and Wales, 1995-2050 under different scenarios.



Source:

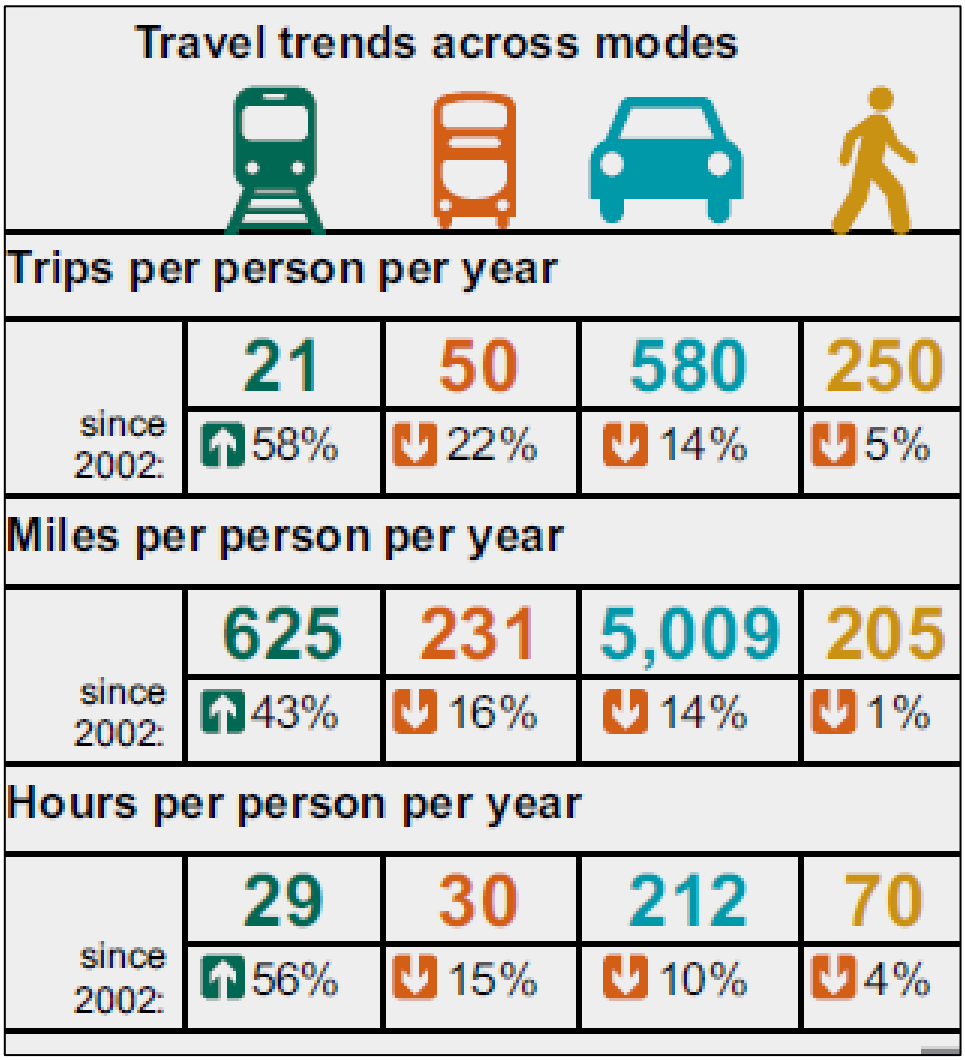
1. Department for Transport. Road Traffic Forecasts 2018, July 2018

Rail passenger travel in England is the fastest growing mode of transport

Car was the most common mode of transport in 2019, but travel by rail has increased the fastest since 2002. Of all travel in England in 2019, rail accounted for 2% of trips,10% of distance and 8% of travel time.

Commuting is the most common journey purpose of rail passengers. Over half of all rail journeys in England in 2019 were for commuting and over a quarter for leisure.

Travel trends 2002 – 2019, England



Source:

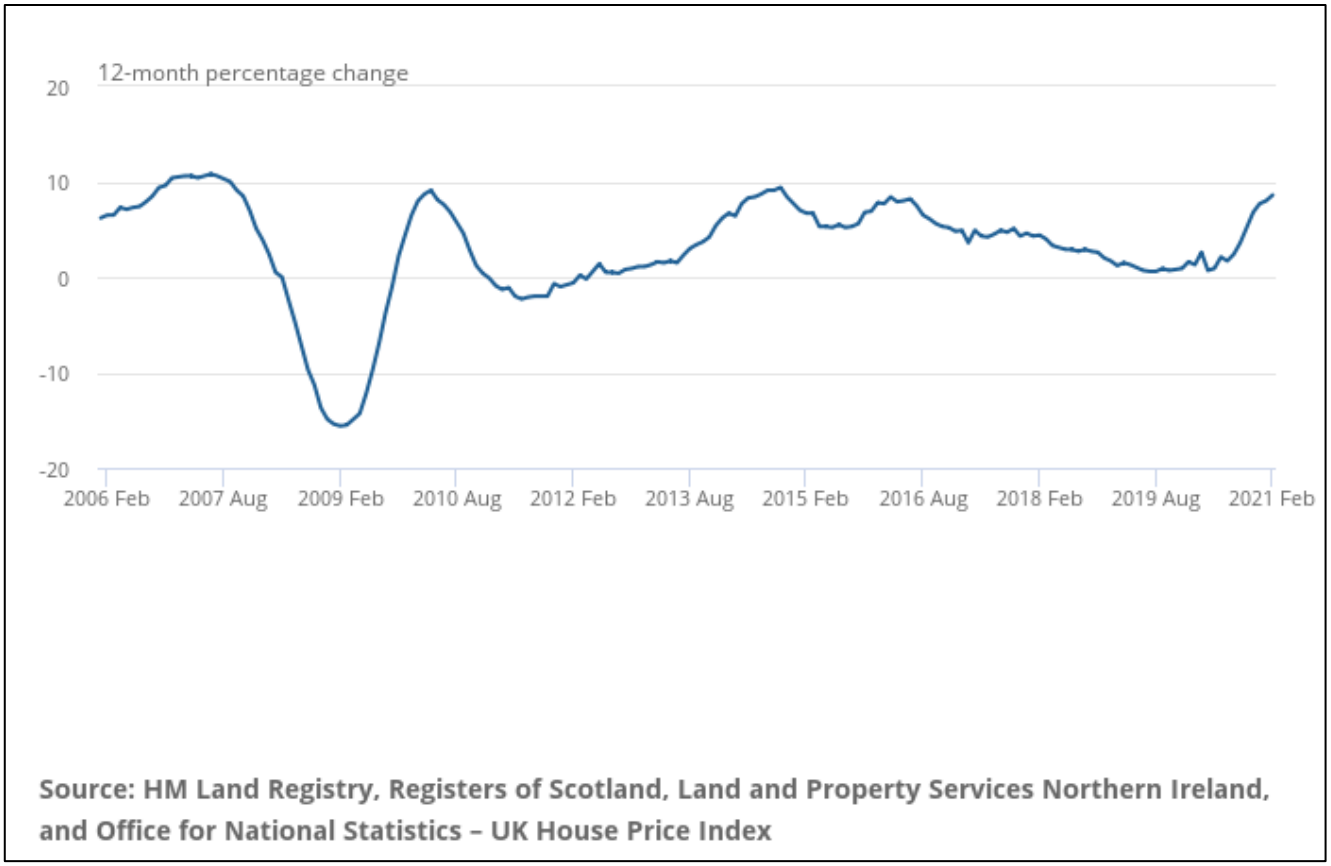
1. Department for Transport. Rail Factsheet 2020, Department for Transport and Office of Rail and Road, December 2020

Highest annual growth rate of UK house prices since 2014

UK average house prices increased by 8.6% in the year to February 2021, up from 8% in the year to January 2021. This is the highest annual growth rate the UK has seen since October 2014. The average house price in England was £268,000. The North West saw highest annual growth in average house prices (11.9%), with London at the lowest (4.6%).

It is early days, but the coronavirus (COVID-19) pandemic may have caused some house buyers to reassess their housing preferences. In the Office for National Statistics UK House Price Index data, the average price of detached properties increased by 9.1% in the year to February 2021. By comparison flats and maisonettes increased by 6.7% over the same period.

February 2021 saw UK house price growth at its highest level since October 2014
Annual house price rates of change for all dwellings, UK: January 2006 to February 2021.



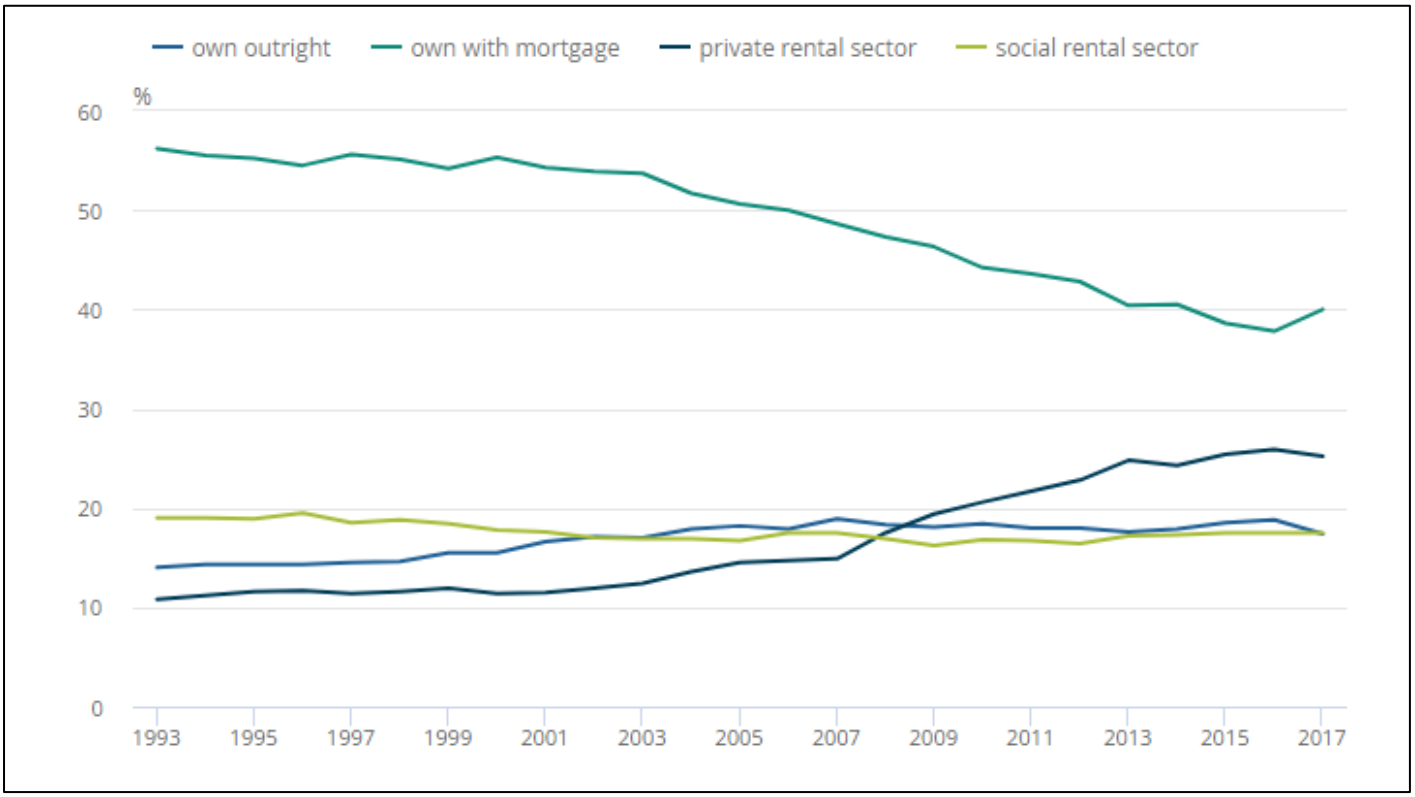
Source: HM Land Registry, Registers of Scotland, Land and Property Services Northern Ireland, and Office for National Statistics – UK House Price Index

Source:
1. UK House Price Index: February 2021, Office for National Statistics

Decrease in home ownership for people under 65

Almost three-quarters of people aged 65 years and over in England own their home outright. Younger people are more likely to be renting. Half of people in their mid-30s to mid-40s had a mortgage in 2017, compared with two-thirds 20 years earlier. People in their mid-30s to mid-40s are three times more likely to rent than 20 years ago. A third of this age group were renting from a private landlord in 2017, compared with fewer than 1 in 10 in 1997.

Housing tenure over time, ages 16 to 64 years, England.



Source: Ministry of Housing, Communities and Local Government - Survey of English Housing (1993 to 2007), English Housing Survey (2008 to 2017)

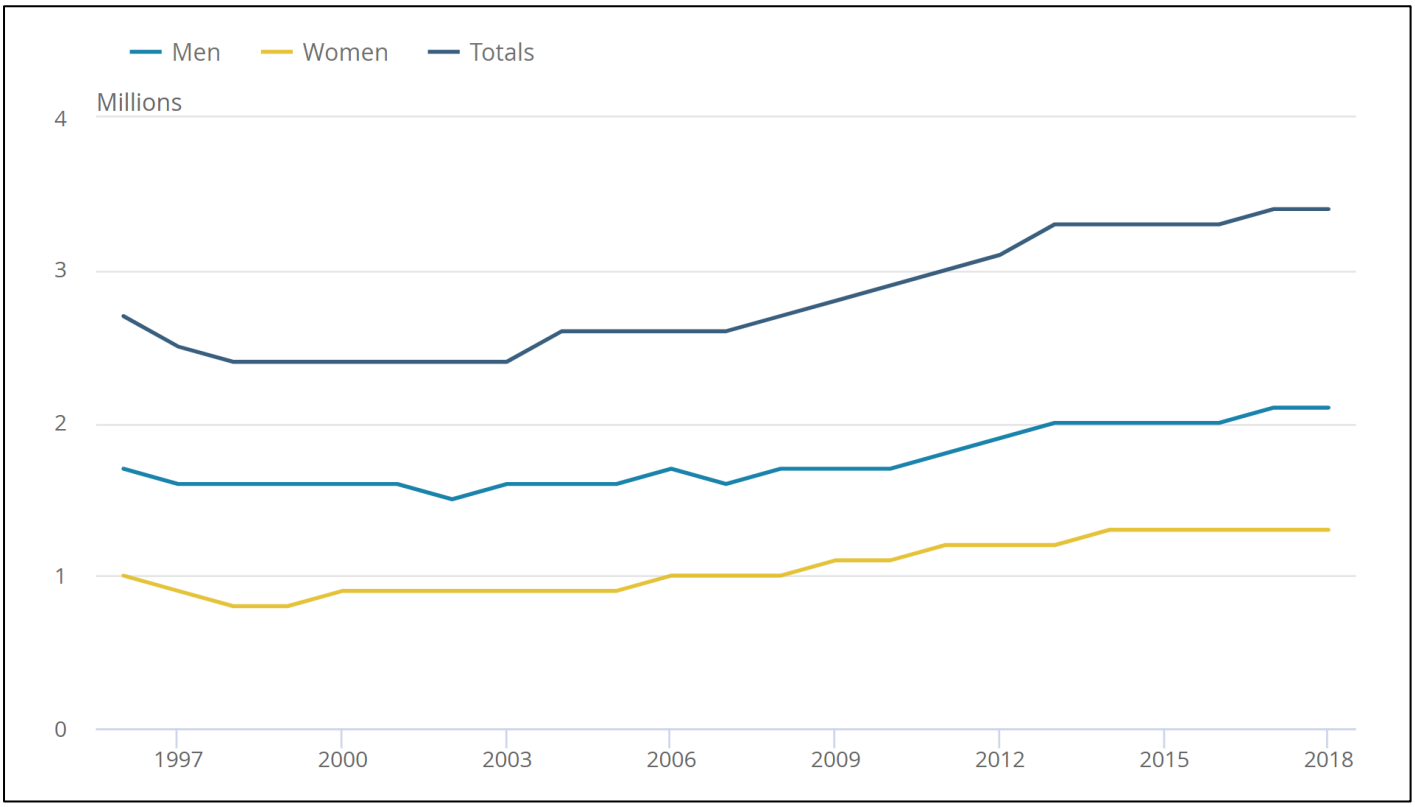
Source:
1. Living longer: changes in housing tenure over time, Office for National Statistics, February 2020

Increase in number of young adults in the UK living with their parents

Over the last two decades there has been a significant increase in the number of young people, aged 20 to 34 years, living with their parents, increasing from 2.4 million in 1999 to 3.6 million in 2020. This is equivalent to more than a quarter of young adults in this age group.

In 2020, 34% of young adult men aged 20 to 34 lived with their parents. The figure for young adult women was 22%. This difference is most likely because women tend to marry at younger ages than men.

Number of young adults aged 20 to 34 living with their parents by sex, UK, 1996-2018.



Source:

1. Families and households in the UK: 2020, Office for National Statistics, March 2021

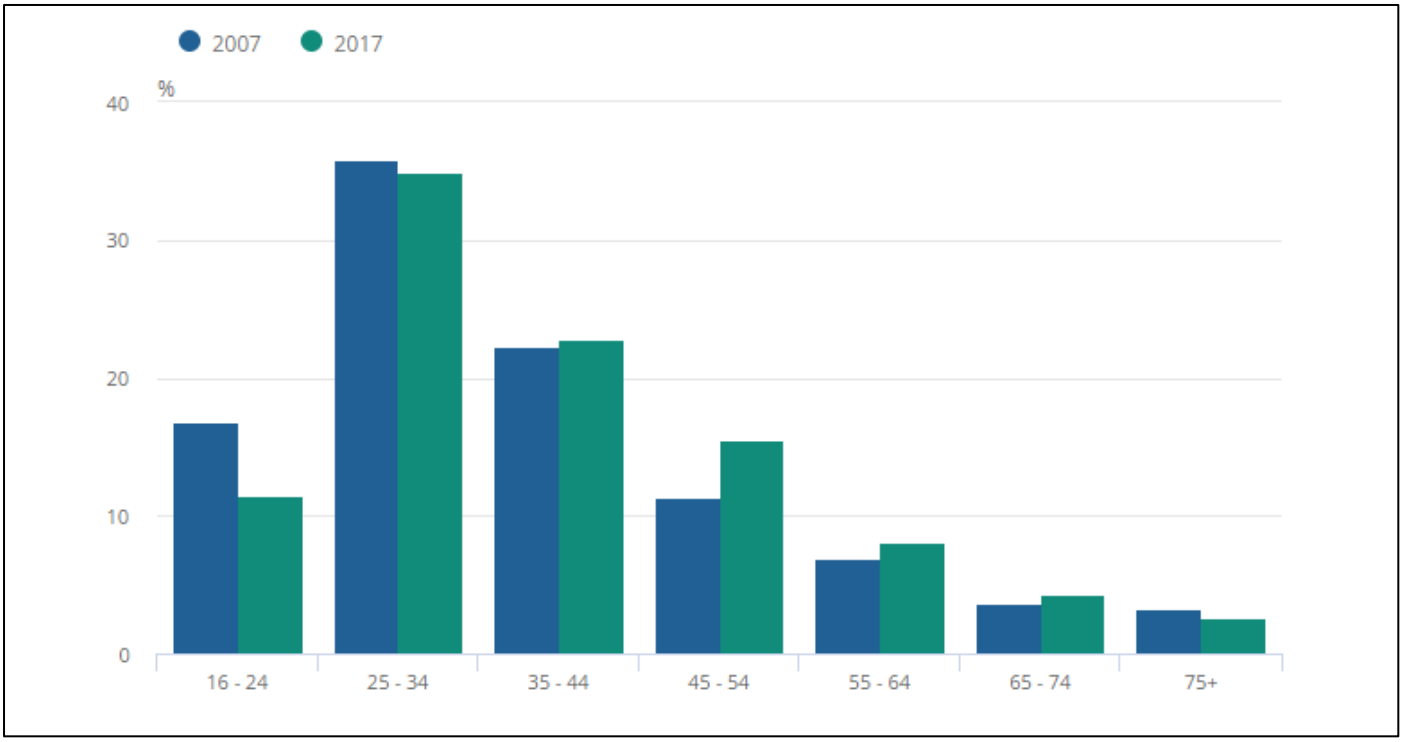
Increase in UK households in the private rented sector

The number of households living in the private rented sector in the UK increased from 2.8 million in 2007 to 4.5 million in 2017, an increase of 63%. Younger households are more likely to rent privately, with those in the 25 to 34 years age group representing the largest group.

Households in the 45 to 54 years age group saw the biggest percentage increase from 11% in 2007 to 16% in 2017, an estimated increase of 384,000 households.

In the financial year ending 2017, 35% of one adult households with children were in the private rented sector, compared with 18% in the financial year ending 2007.

Private renting sector by age of household reference person, 2007 and 2017, UK.



Source: Annual Population Survey, requested table, Office for National Statistics

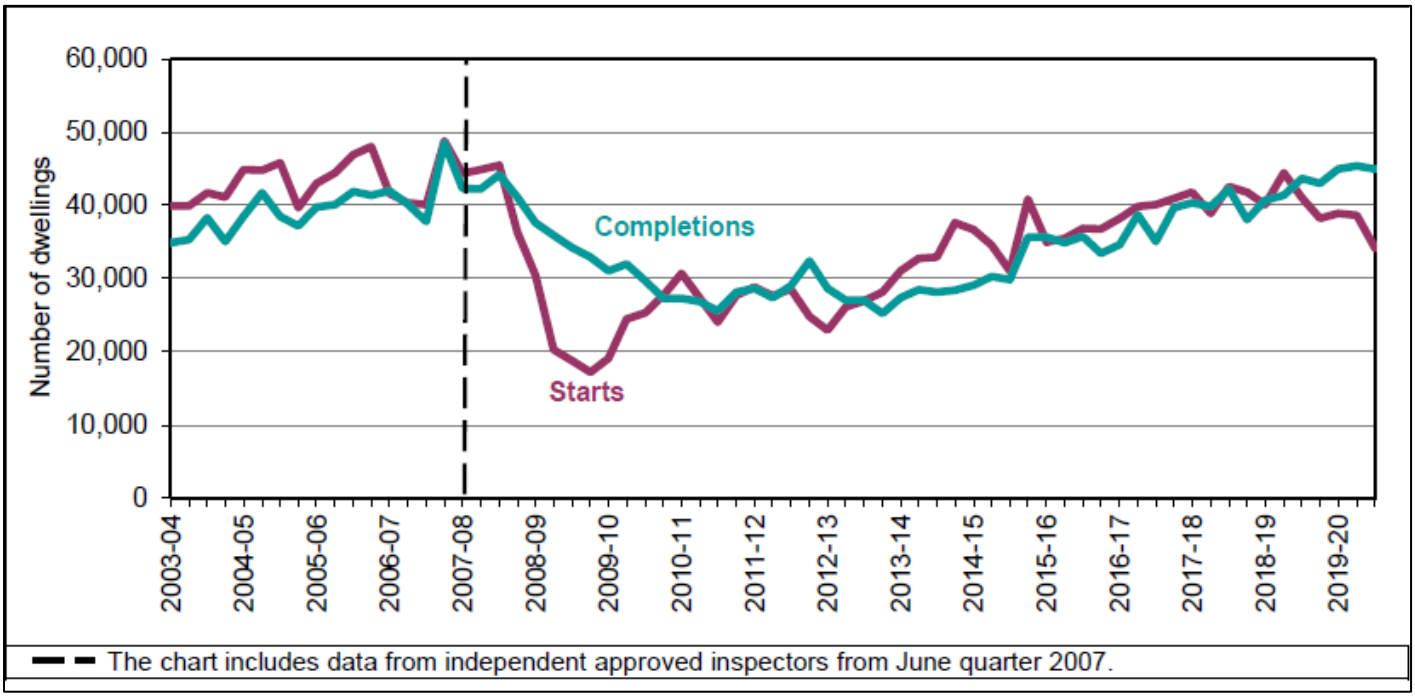
Source:
1. UK private rented sector: 2018, Office for National Statistics, January 2019

Steady increase in start and completion of new build housing since 2008

New build starts were broadly steady from 2003-04, averaging around 44,000 units each quarter until late 2007. Starts were strongly affected by the economic downturn from the start of 2008, when there was a period of rapid decline to a trough in the March quarter of 2009.

Completions increased gradually from 2003-04 reaching a similar level to starts by 2007. From 2009 starts began to recover and during the next two years both series converged and levelled out. From 2013 to 2018, starts and completions grew again gradually. More recently, completions continue to grow, but there has been a decrease in starts.

Seasonally adjusted trends in quarterly new build dwelling starts and completions, England. From 2009 starts began to recover and during the next two years both series converged and levelled out. From 2013 to 2018, starts and completions grew again gradually. More recently, completions continue to grow but there has been a decrease in starts.



Source:

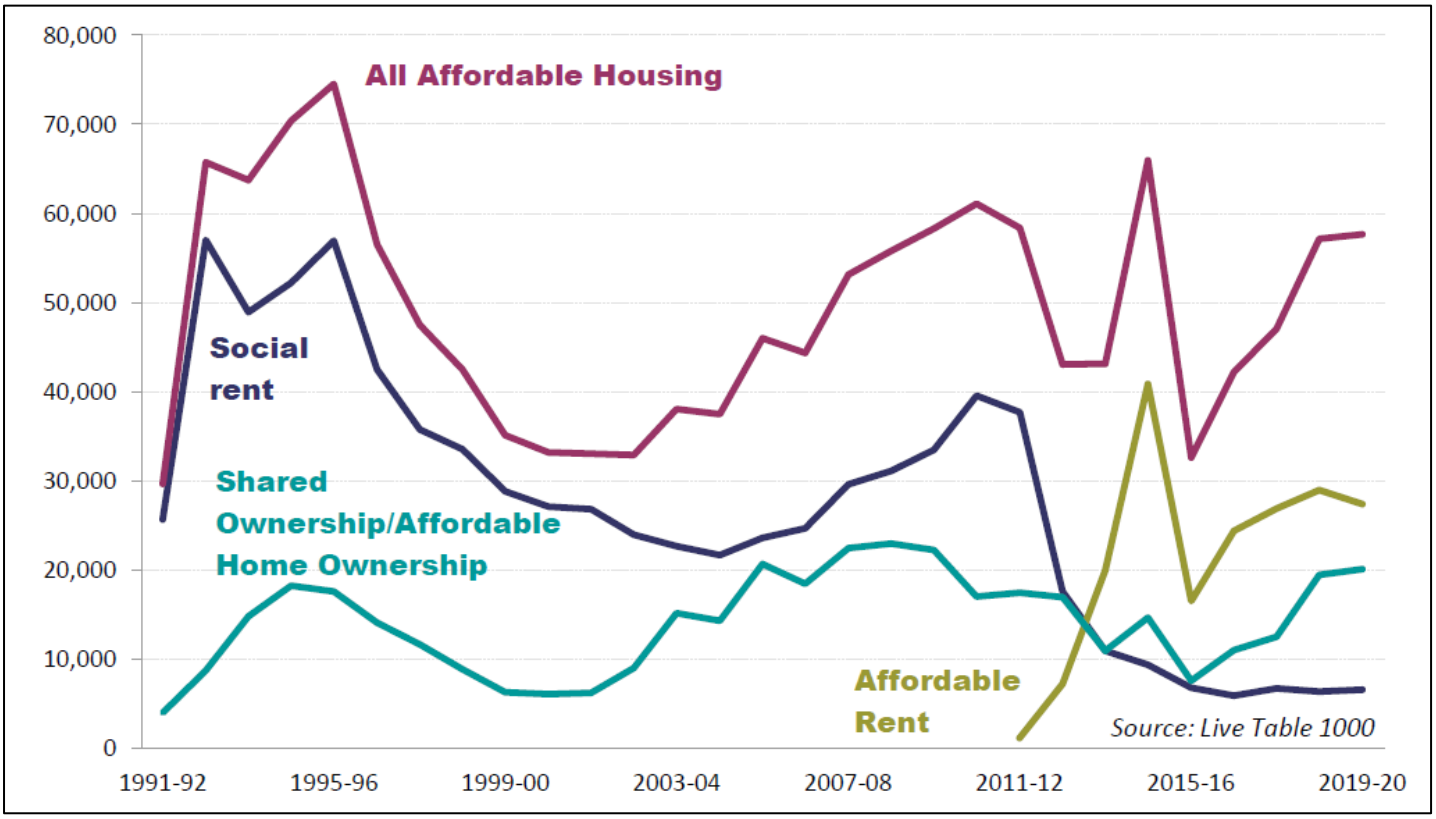
1. House building; new build dwellings, England: December Quarter 2019, Ministry of Housing, Communities and Local Government, March 2020

Affordable rent is the most common type of affordable housing tenure

Affordable rent has become the most common type of affordable housing tenure since its introduction in 2011-12. Under affordable rent housing associations offer tenancies rents of up to 80% of market rent levels within the local area.

Rents let at the 'affordable rent' level typically cost between £65-£80 more per week than traditional social rents for an equivalently sized property in an equivalent area. In England in 2019/20 average rent from housing associations was 26.5% of household income compared to 31.9% from private renting and 17.8% for those with a mortgage.

Trends in the supply of affordable housing completions by tenure, England, 1991-92 to 2019-20.



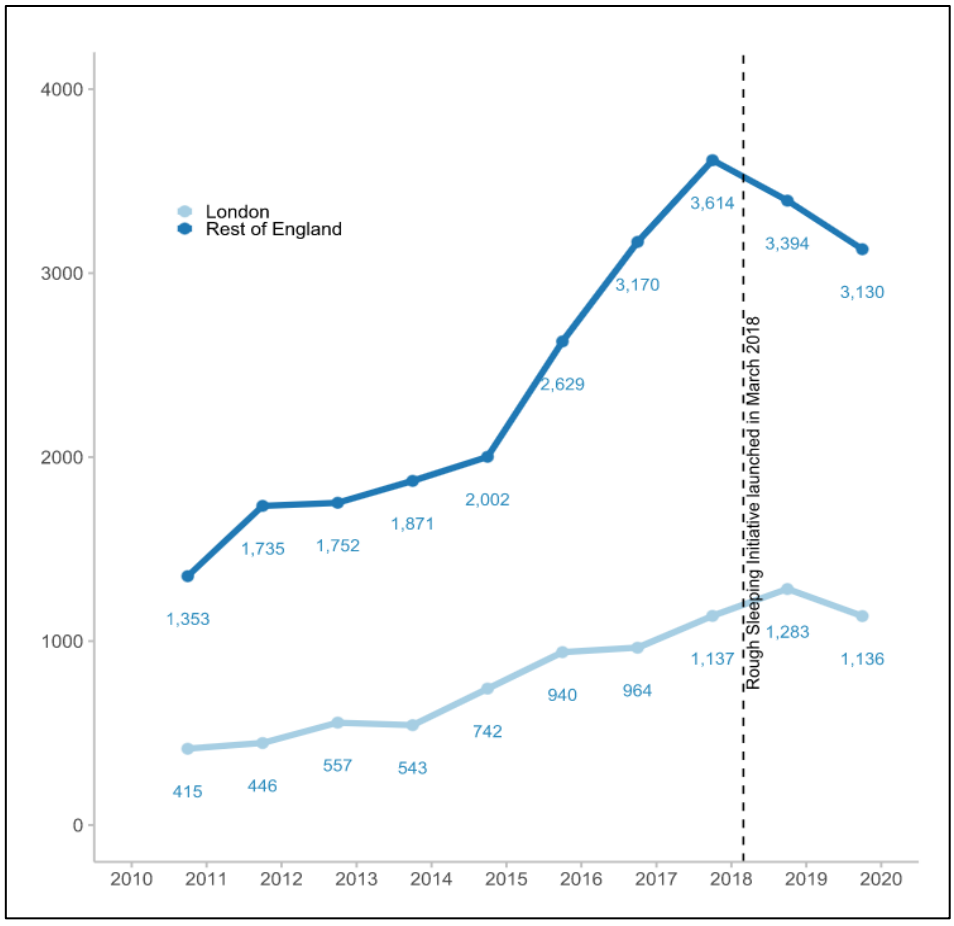
Sources:
1. Affordable Housing Supply: April 2019 to March 2020 England, Ministry of Housing, Communities and Local Government, statistical release, December 2020
2. What is affordable housing? House of Commons, Library Briefing Paper, Number 07747, 19 April 2021

Long-term increase in number of rough sleepers in England, but with a recent decline

There were 4,266 people estimated to be sleeping rough on a single night in autumn 2019. This is down 10% from the peak in 2017 but is up by 2,498 people or 141% since 2010. The South West of England was the only region where there was a notable increase in the number of people sleeping rough on a single night in autumn 2019, all other regions were broadly similar or decreased. London and the West Midlands decreased the most.

The majority of people sleeping rough in England are male, aged over 26 years old and from the UK. This is similar to previous years.

Number of people sleeping rough in London and the rest of England since 2010.



Sleeping rough includes people sleeping, bedding down or about to bed down in open air locations and other places not designed for habitation including tents, cars, and makeshift shelters.

Source:

1. Rough sleeping snapshot in England: autumn 2019, Ministry of Housing, Communities and Local Government, February 2020

Contents

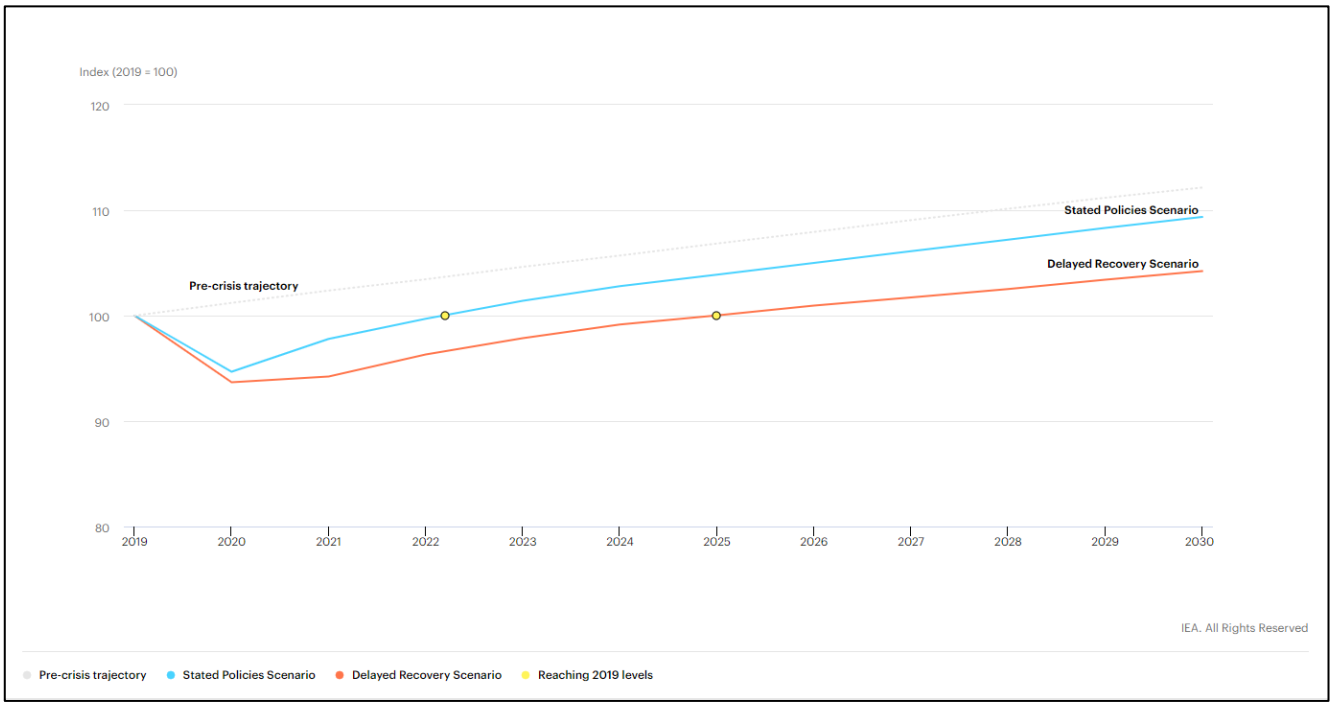
Global energy demand is projected to increase but at a slower rate

The 2020 assessment by the International Energy Agency (IEA) was for a drop in global energy demand by 5% in 2020, in response to the coronavirus (COVID-19) pandemic.

Longer term, in the IEA scenarios out to 2030, global demand continues to increase but not as rapidly. Pre-pandemic levels of energy demand were projected to grow by 12% between 2019 and 2030. Growth over this period is now 9% in the Stated Policies Scenario (where COVID-19 is gradually brought under control in 2021), and only 4% in the Delayed Recovery Scenario where the global economy recovers by 2023.

With demand in advanced economies on a declining trend, most of the increase comes from emerging markets and developing economies, led by India.

Global primary energy demand growth by scenario, 2019-2030.



Notes: The pre-crisis trajectory is represented by the World Energy Outlook 2019 Stated Policies Scenario projection.

Sources:

1. IEA (2020), World Energy Outlook 2020, IEA, Paris https://www.iea.org/reports/world-energy-outlook-2020
2. IEA, Global primary energy demand growth by scenario, 2019-2030, IEA, Paris https://www.iea.org/data-and-statistics/charts/global-primary-energy-demand-growth-by-scenario-2019-2030. All Rights Reserved.

Renewables projected to meet most of the growth in global electricity demand

Renewables grow rapidly in all the International Energy Agency (IEA) scenarios out to 2030. Solar photovoltaic (PV) is consistently cheaper than new coal or gas fired power plants in most countries. In the IEA Stated Policies Scenario (STEPS), where coronavirus (COVID-19) is gradually brought under control in 2021, renewables meet 80% of the growth in global electricity demand to 2030. Hydropower remains the largest renewable source of electricity, but solar is the main driver of growth as it sets new records for deployment each year after 2022, followed by onshore and offshore wind.

Change in global electricity generation by source and IEA scenario, 2000-2040. STEPS refers to the Stated Policies Scenario; SDS the Sustainable Development Scenario meeting sustainable energy objectives and commitments in the climate change Paris Agreement.

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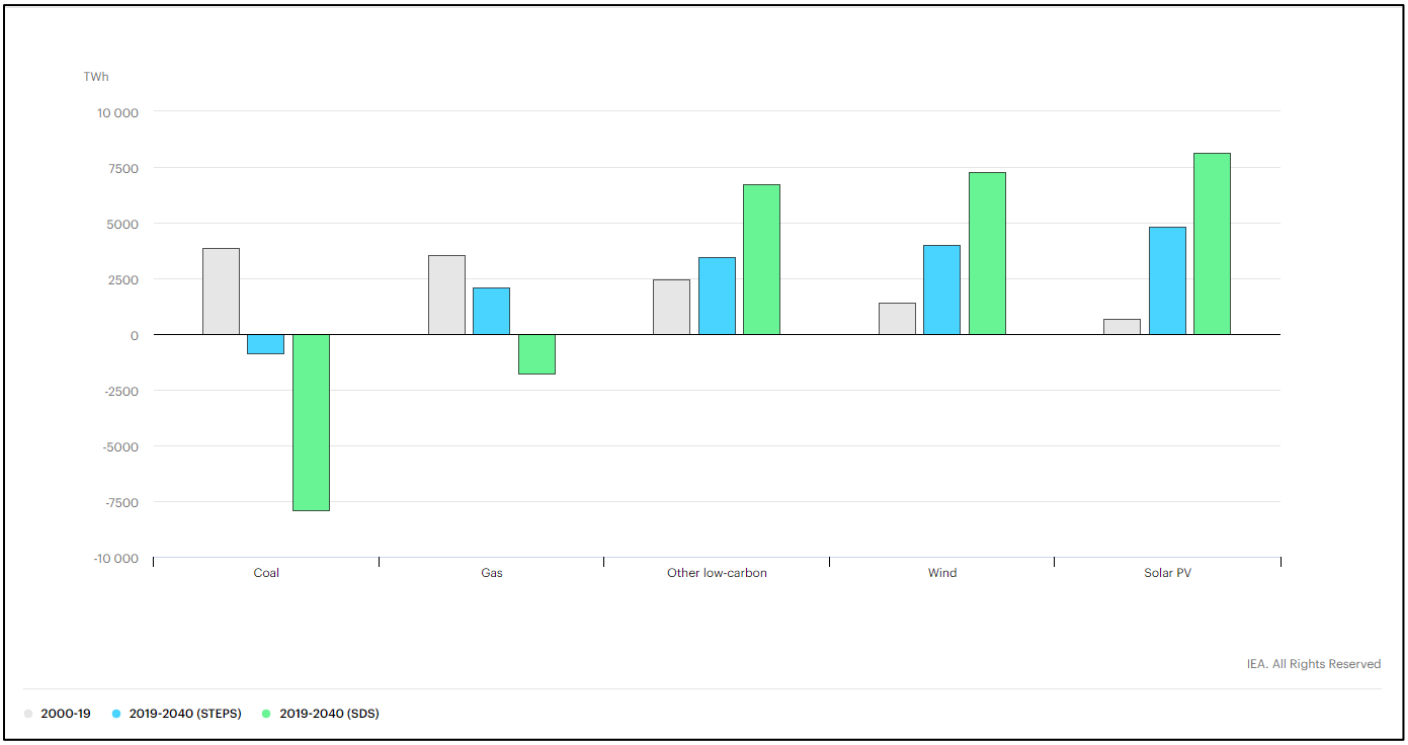


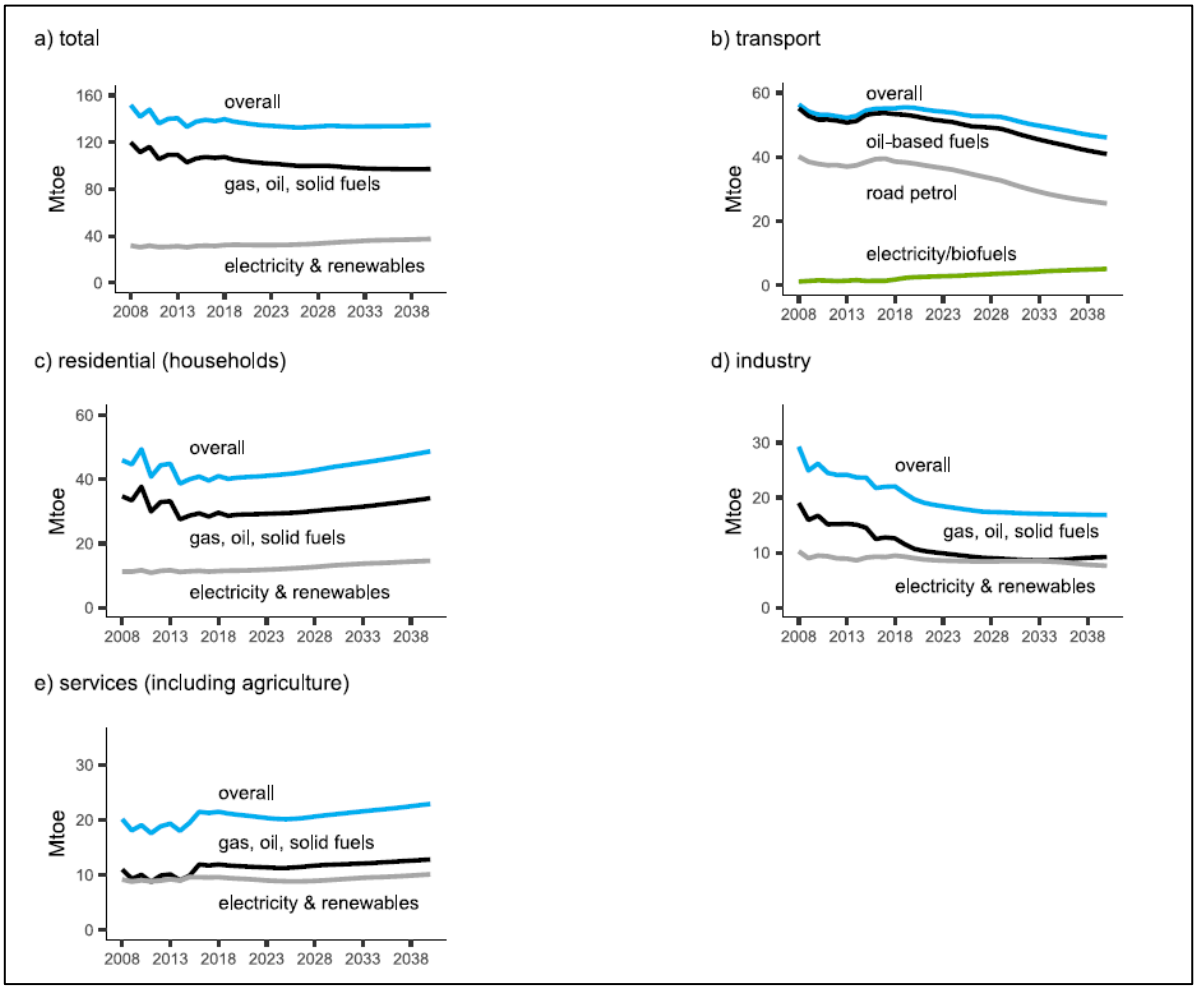
Sources:

1. IEA (2020), World Energy Outlook 2020, IEA, Paris https://www.iea.org/reports/world-energy-outlook-2020
2. IEA Change in global electricity generation by source and scenario, 2000-2040, IEA, Paris https://www.iea.org/data-and-statistics/charts/change-in-global-electricity-generation-by-source-and-scenario-2000-2040-2. All Rights Reserved.

Projected decrease in UK total final energy demand

Energy and emissions projections suggest that total final energy demand in the UK in 2040 will be around 135 million tonnes of oil equivalent (Mtoe). This is about 4% lower than the demand in 2018. The proportion of all final energy demand met from electricity or renewables is projected to rise from 23% in 2018 to 27% in 2035 and to 28% in 2040.

Patterns of demand vary across the four major energy consuming sectors. Between 2018 and 2040 the projections show transport final energy demand falling by 16% and industry by 24%. Residential increases to 36% of the total final energy demand. Services are projected to increase by 7%, reaching 17% of the total energy demand.



Source:

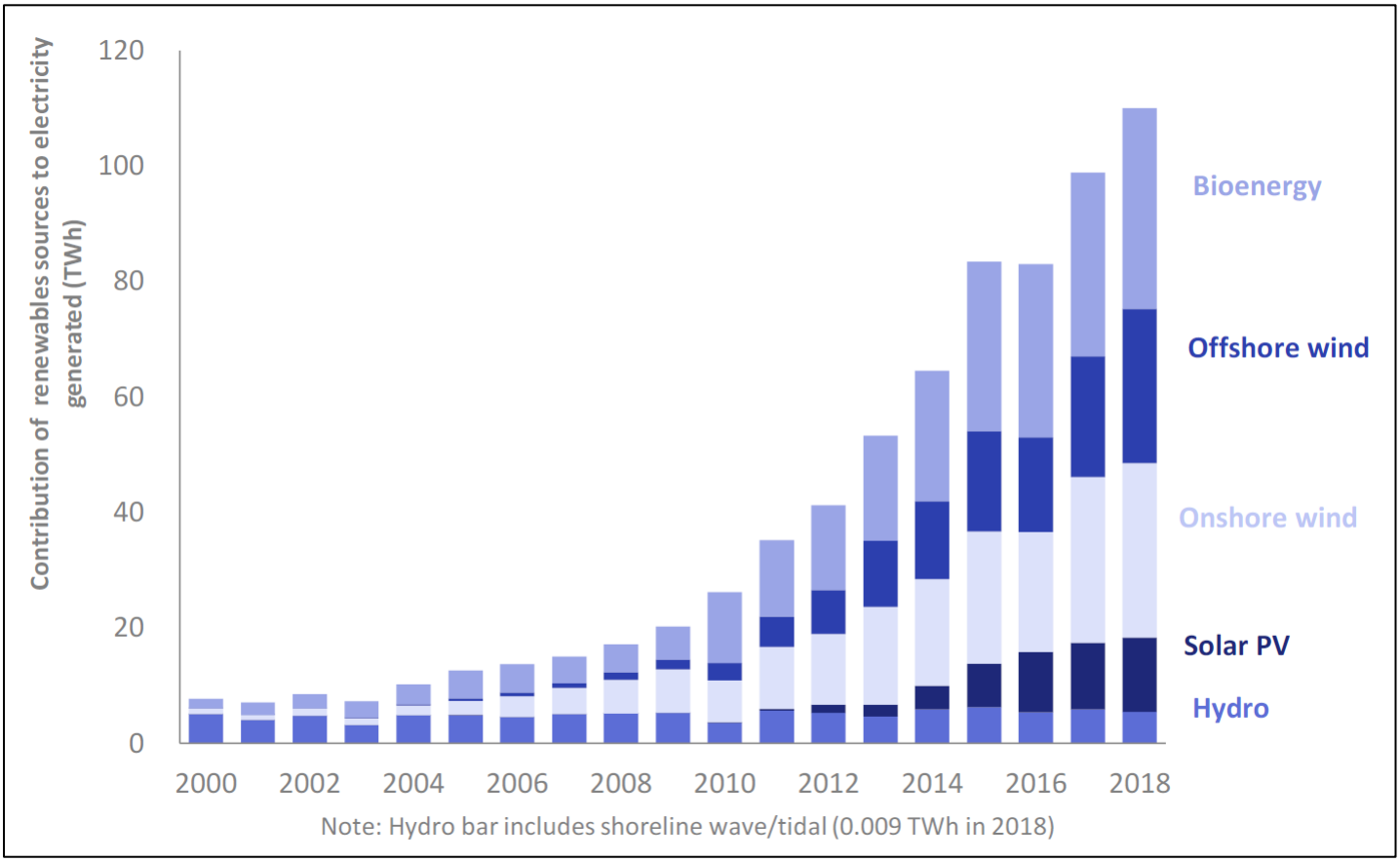
1. Energy and Emissions Projections 2019 Department for Business, Energy, and Industrial Strategy, October 2020

Britain's electricity system continues to decorbonise

2020 was the greenest year on record for Britain's electricity system. This follows a trend that has seen the electricity system decarbonise by 66% in the last seven years and progress by National Grid (who deliver gas and electricity to millions of people in the UK) to deliver a carbon free system by 2025.

Coal generated only 1.6% of the electricity mix in 2020, compared with almost 25% five years ago. Wind generation reached its highest daily peak with an electricity share of 59.9% and solar power is also setting new records with an electricity share at 34%.

Electricity generation by main renewable sources, 2000-2018.



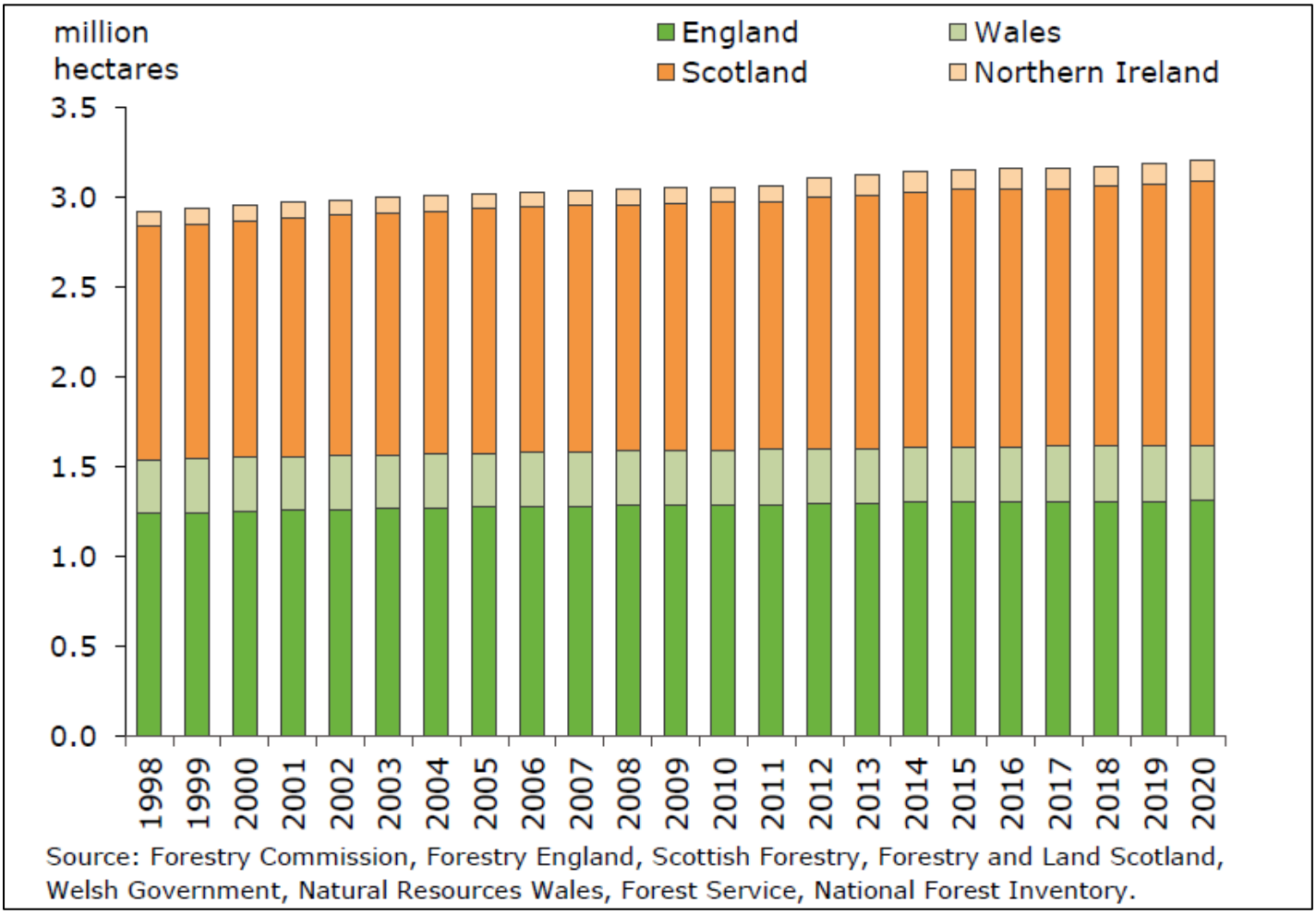
Sources:
1. National Grid 2020 greenest year on record, National Grid, January 2021
2. Chapter 6. Renewable sources of energy, Department of Business, Energy, and Industrial Strategy, 2019

Increase in UK woodland area

The area of woodland in the UK on 31 March 2020 was estimated to be 3.2 million hectares. This represents 13% of the total land area in the UK; 10% in England, 15% in Wales, 19% in Scotland and 9% in Northern Ireland. Woodland is defined in UK forestry statistics as land under stands of trees with a canopy cover of at least 20% or having the potential to achieve this.

Woodland area in the UK has risen by around 290 thousand hectares since 1998, an increase of 10% over the period to 2020.

Area of woodland, 1998-2020.



Source:

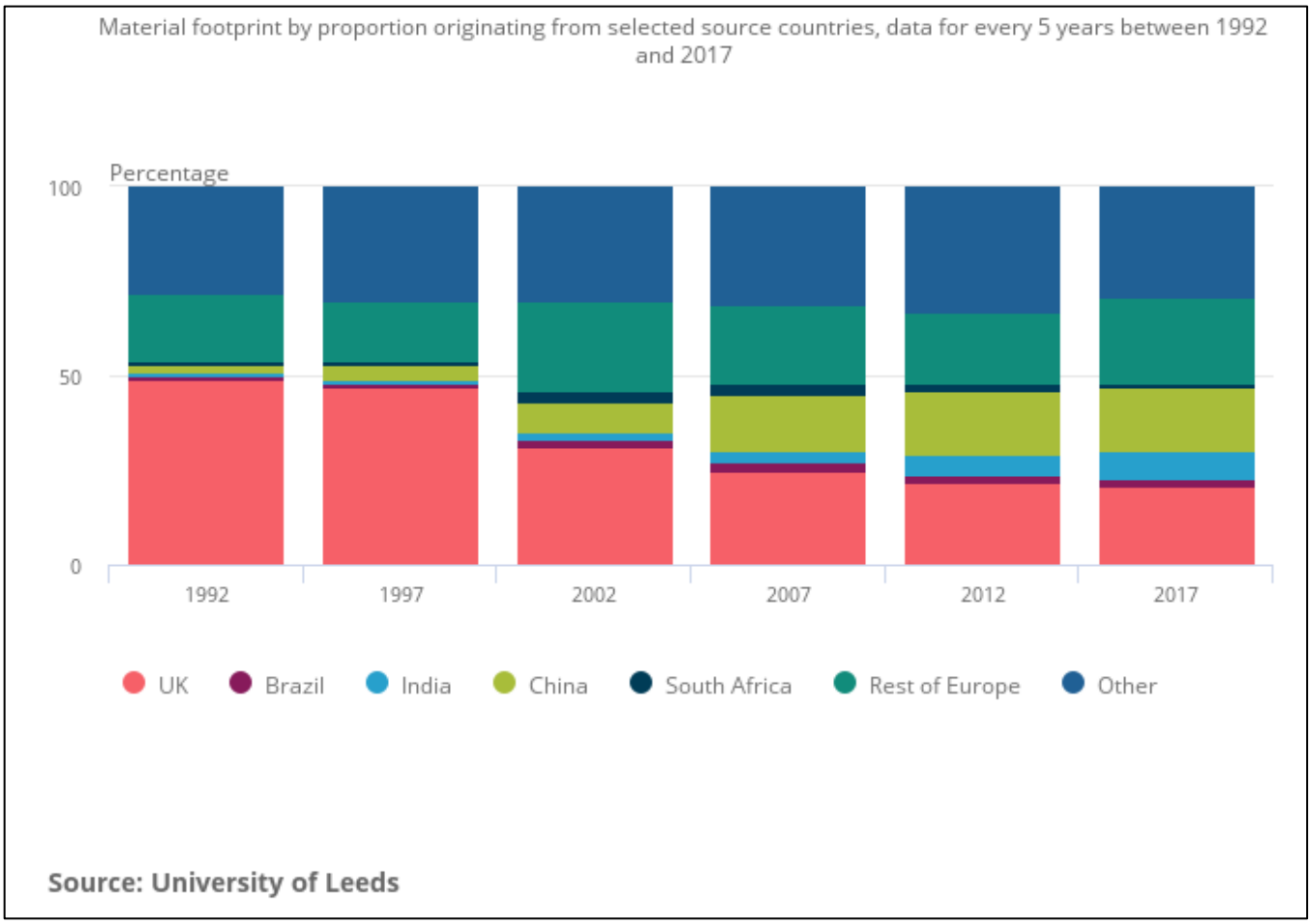
1. Forestry statistics 2020, Forestry Commission, September 2020

UK is increasingly a net importer of materials

The UK's material footprint captures the amount of domestic and foreign extraction of materials needed to produce the goods and services used by households, governments, and charities in the UK. In 2017, the UK's material footprint was estimated as 1.2 billion tonnes, equivalent to 18.5 tonnes per person.

The UK is increasingly a net importer of materials. Domestic extraction accounted for 47% of material footprint in 1990; by 2017 this had fallen to 21%. Material footprint fell during the economic downturn of 2008 and 2009 but rose again from 2012. The proportion of material footprint sourced from China and India rose between 1990 and 2017 from 2% to 17% and 1% to 7% respectively.

Domestic extraction accounted for just over a fifth of material footprint in 2017. Material footprint by proportion originating from selected source countries, data for every 5 years between 1992 and 2017.



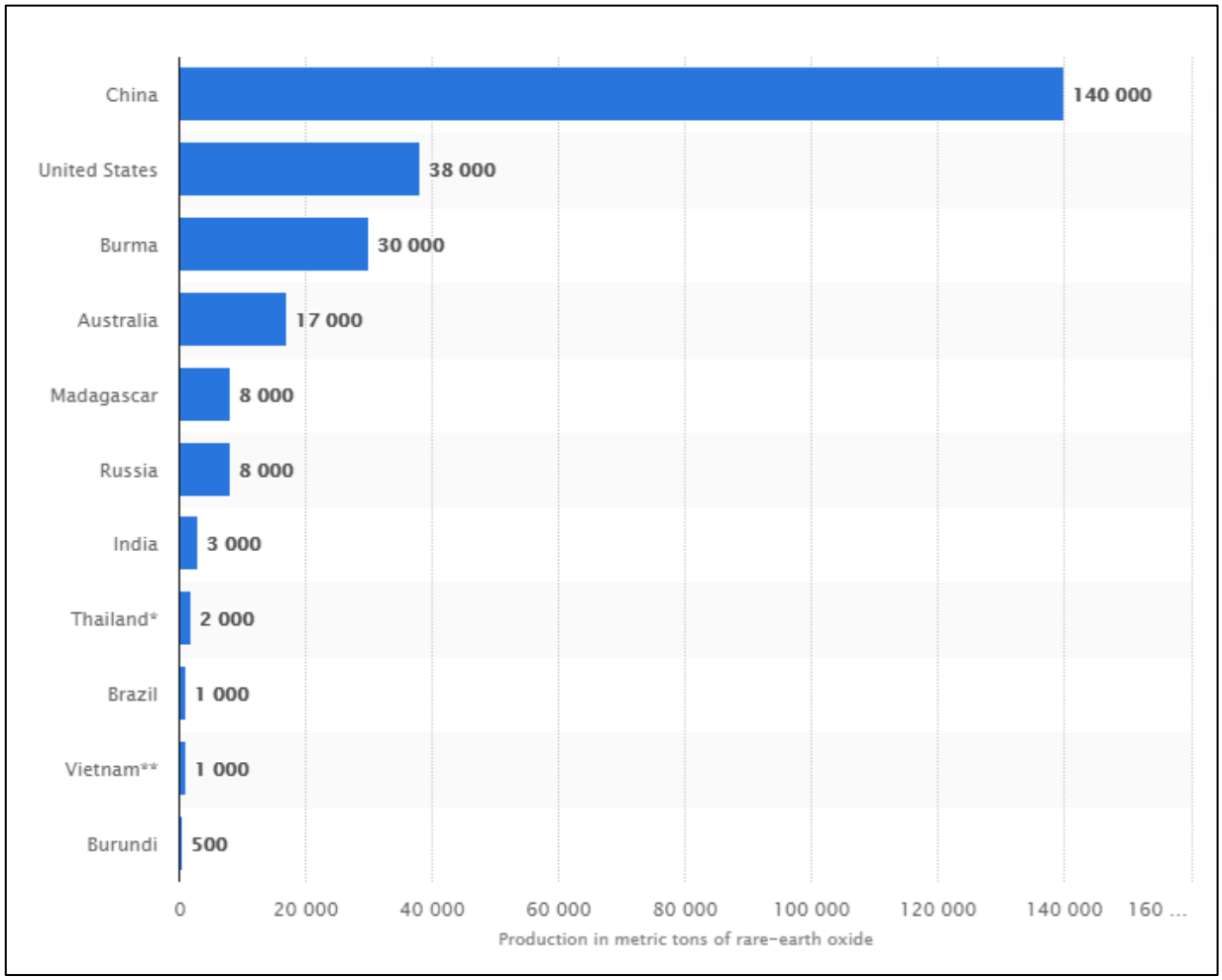
Source:
1. Material Footprint in the UK: 2017, Office for National Statistics, April 2020

China produces most of world's rare earth elements

Rare earth elements (REEs) are widely used in modern technologies. China, which accounts for an estimated 71% of global mine production of REEs, introduced export restrictions in 2010 that led to prices of some REEs rising by between 10 and 40-fold.

The global demand for lithium is forecast to grow by over 20% a year in the next decade due to its use in electric vehicle batteries. Demand for indium in the European Union is predicted to grow from approximately 200 tonnes in 2015 to 270 tonnes in 2030, driven by its use in touch screens.

Major countries in rare earth mine production worldwide 2020 (in metric tons of rare-earth oxide).



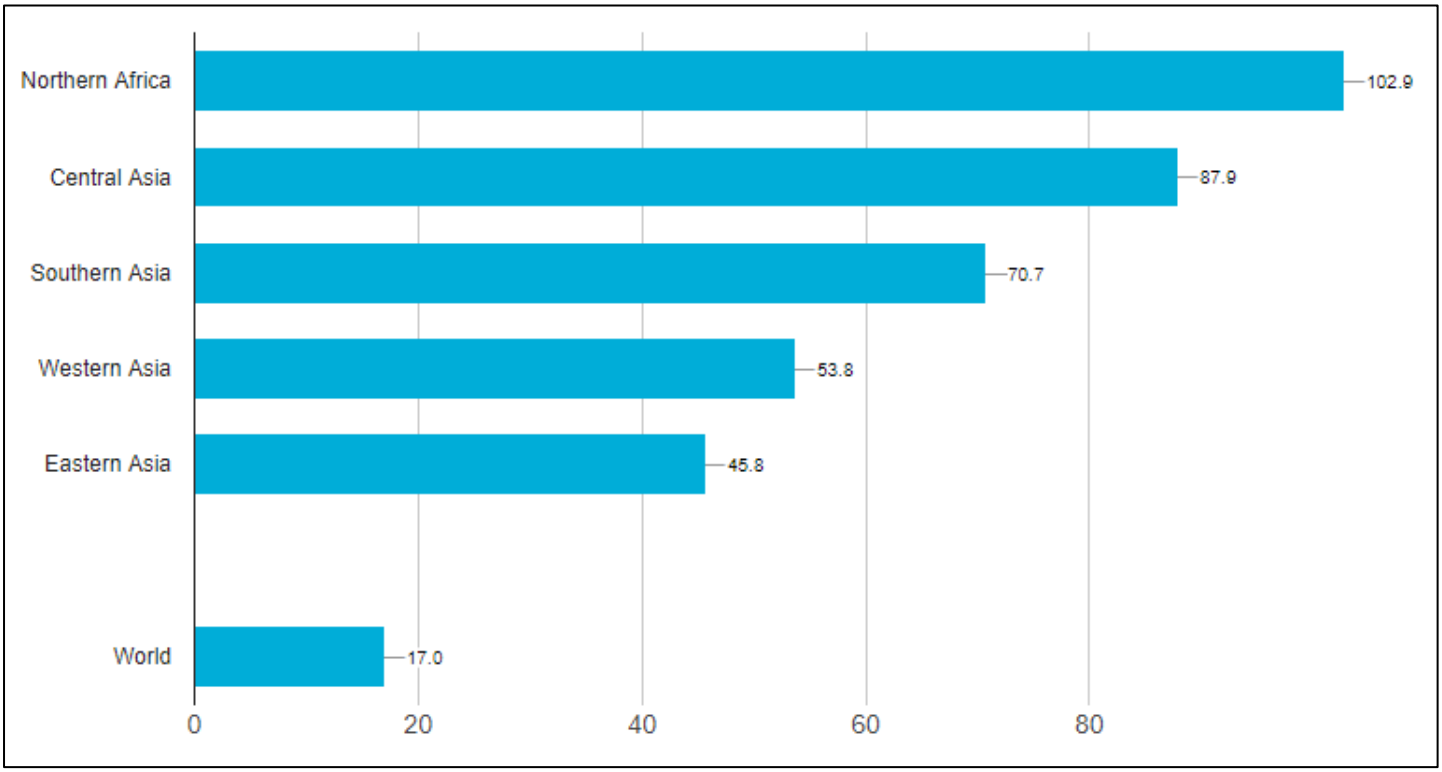
Sources:
1. Access to critical materials, Parliamentary Office of Science and Technology POSTNOTE, Number 609, September 2019
2. Major countries in rare earth mine production worldwide 2020, Statista 2021

Huge regional variations in global water stress

High water stress is the withdrawal of too much fresh water from natural sources compared with the fresh water available. If unmitigated, water stress can lead to water scarcity, which could displace an estimated 700 million people by 2030.

Globally, water stress was at 17% in 2017. However, this value masks huge regional variations. Northern Africa and Central and Southern Asia register water stress levels above 70%. Western Asia and Eastern Asia follow, with water stress levels between 45% and 55% respectively.

Global subregions with high and very high water stress, 2017 (percentage).



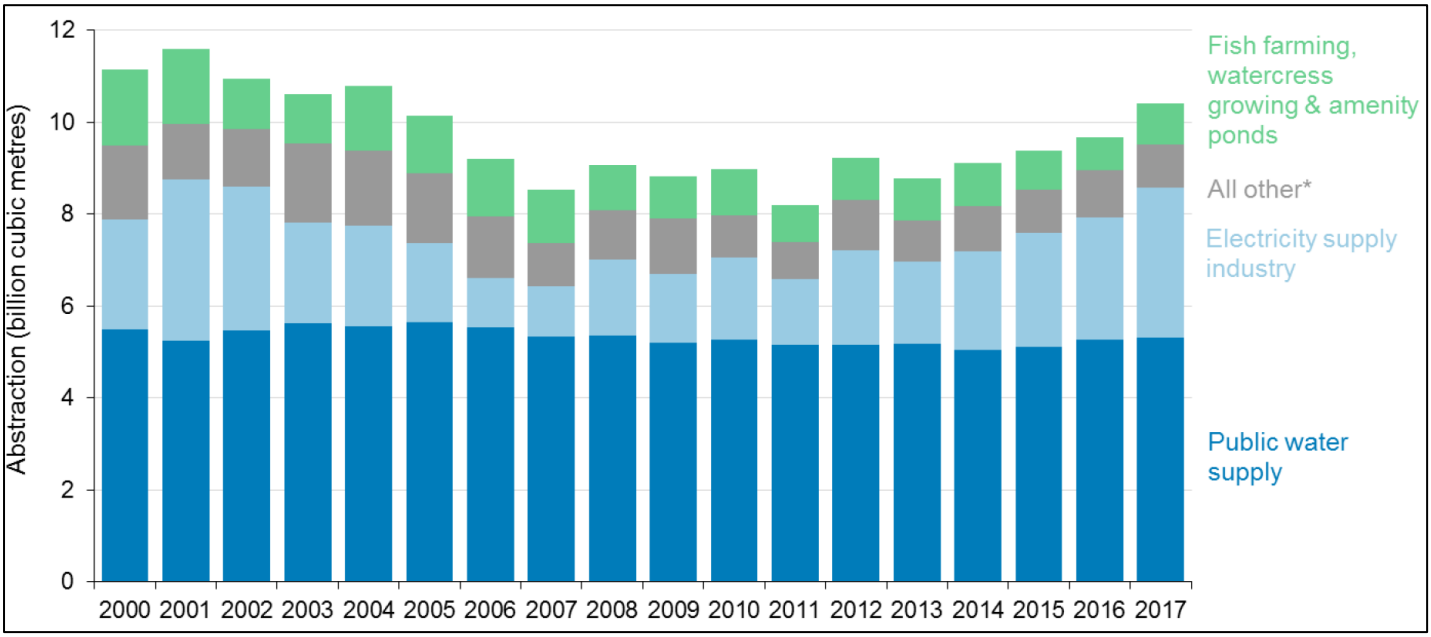
Source:
1. Sustainable Development Goals Report 2020, clean water and sanitation, United Nations

Increase in water abstraction rates in England

Abstraction is the removal of water resources from rivers, lakes, canals, reservoirs or from underground strata. Since 2011, total abstraction in England has increased by 26.9% to an estimated 10.4 billion cubic metres in 2017. This increase is mostly accounted for by the electricity supply industry.

Abstraction for public water supply, which makes up 51.2% of total abstraction, has been relatively stable, increasing by 3.1%.

Estimated abstractions from non-tidal surface water and groundwater in England, 2000-2017.



Source:

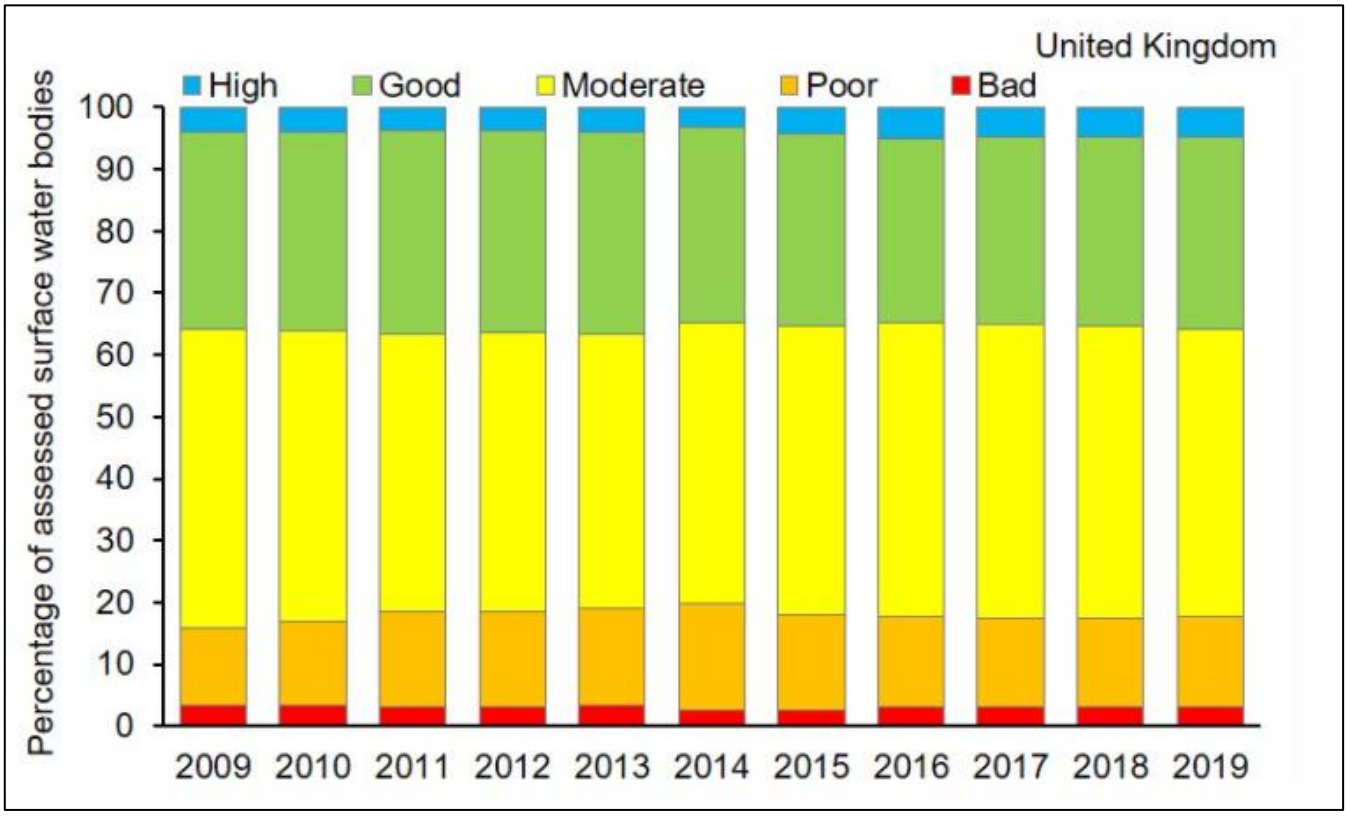
1. Water abstraction statistics: England, 2000 to 2017, Department for Environment, Food and Rural Affairs, March 2019

Little change in the ecological status of UK surface water bodies

There has been little change in the overall number of surface water bodies in the UK awarded high or good ecological status since 2009, and little change in the short term, between 2014 and 2019. The ecological status of UK surface water bodies is a measure that looks at both the biological and habitat condition status of a water body.

In 2019, 36% of surface water bodies were assessed under the Water Framework Directive as being in high or good status, the same as in 2009 and one percentage point higher than the figure of 35% reported in 2014.

Status classification of UK surface water bodies under the Water Framework Directive, 2009 to 2019.



Based on numbers of surface water bodies classified under the Water Framework Directive in England, Wales, Scotland and Northern Ireland. Includes rivers, canals (Northern Ireland does not report on canals), lakes, estuaries and coastal water bodies.

Source:

1. Surface water status, Joint Nature Conservation Committee, October 2020

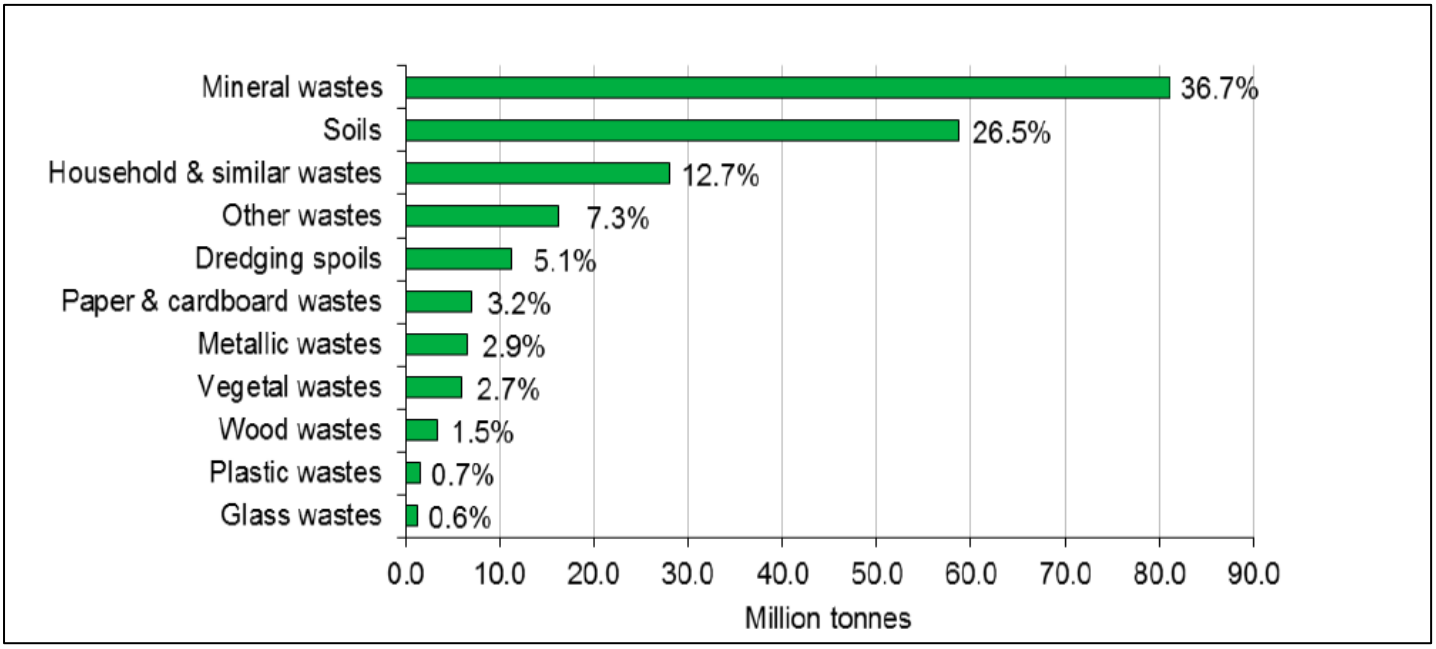
Increase in total waste generated in the UK

The UK generated 221 million tonnes of total waste in 2016, an increase of 3.3% from 2014. England generated 187 million tonnes of total waste, an increase of 2.8% from 2014, and 85% of the UK total.

The largest waste material categories in the UK in 2016 were mineral waste (from construction, demolition and excavation) at 81.1 million tonnes and soils at 58.7 million tonnes. Together, these make up 63% of total UK waste.

In 2016, recycling and other recovery was the most common final waste treatment type in the UK, accounting for 104 million tonnes (48.5%). 24.4% (52.3 million tonnes) of waste was disposed in landfill.

Waste generation by waste material, UK, 2016.



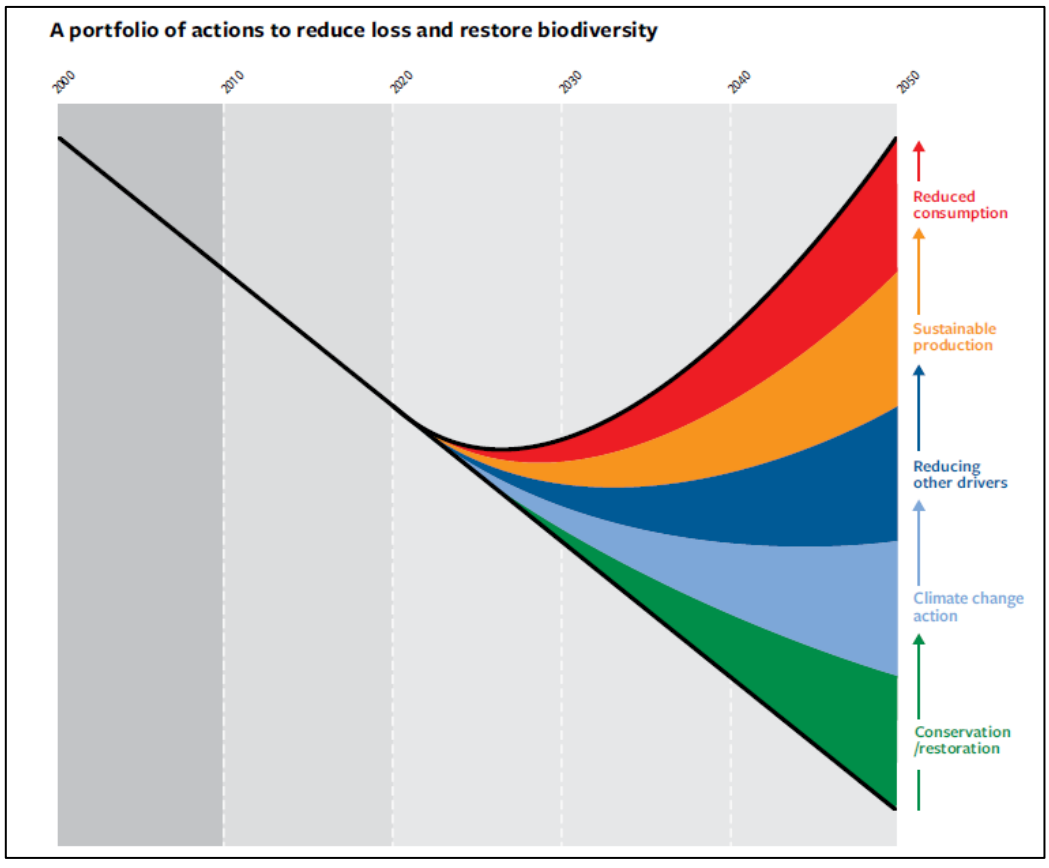
Source: Defra Statistics

Includes waste that may go on to be exported, but excludes waste imported from outside the UK. Any type of waste can be generated by any economic activity. E.g., 'Household & similar wastes' are not solely generated by 'Households'. Percentages may not sum to exactly 100% due to rounding.

Source:
1. UK statistics on waste, Department for Environment, Food and Rural Affairs, March 2020

Continuing decline in global biodiversity

Overall, biodiversity loss is continuing, despite substantial ongoing efforts for biodiversity conservation and sustainable use. While there has been significant progress towards most of the Aichi Biodiversity Targets, none has been fully achieved. While current conservation and management actions are having positive impacts, their effects are overwhelmed by the growing pressures on biodiversity, which, in turn, are related to increased levels of consumption of food, energy and materials and to the development of infrastructure. Consequently, the world is not on track to achieve most of the current globally agreed targets for biodiversity.



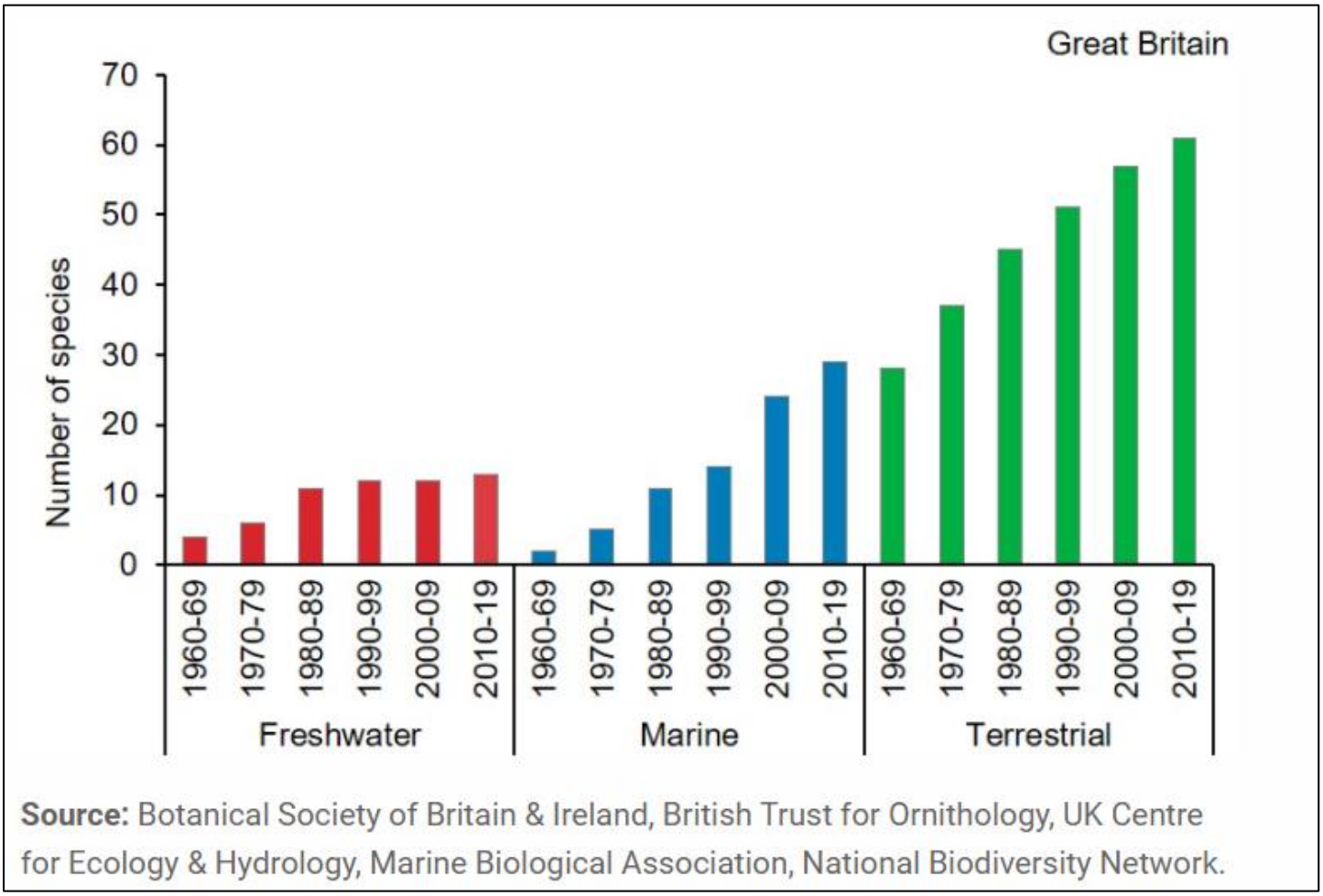
Trends in biodiversity (various metrics, left axis) have been declining and are projected to continue to do so under business-as-usual scenarios (trend line). Various areas of action could reduce the rate of biodiversity decline, and the full portfolio of actions, in combination, could halt and reverse the decline (bend the curve), potentially leading to net biodiversity gains after 2030. These are, from bottom to top: (1) Enhanced conservation and restoration of ecosystems; (2) climate change mitigation; (3) action on pollution, invasive alien species and overexploitation; (4) more sustainable production of goods and services, especially food; and (5) reduced consumption and waste. However, none of the areas of action alone, nor in partial combinations, can bend the curve of biodiversity loss.

Source:
1. Secretariat of the Convention on Biological Diversity (2020) Global Biodiversity Outlook 5. Montreal.

The number of invasive non-native species is increasing in Great Britain

Over the period 1960 to 2019 invasive non-native species have become more prevalent in the countryside. Since 1960, the number of these species established in or along 10% or more of Great Britain's land area or coastline has increased in the freshwater, marine (coastal) and terrestrial environments, increasing the likely pressure on native biodiversity.

Number of invasive non-native species established in or along 10% or more of Great Britain's land area or coastline, 1960 to 2019.



Source: Botanical Society of Britain & Ireland, British Trust for Ornithology, UK Centre for Ecology & Hydrology, Marine Biological Association, National Biodiversity Network.

Source:

1. Pressure from invasive species, Joint Nature Conservation Committee, October 2020

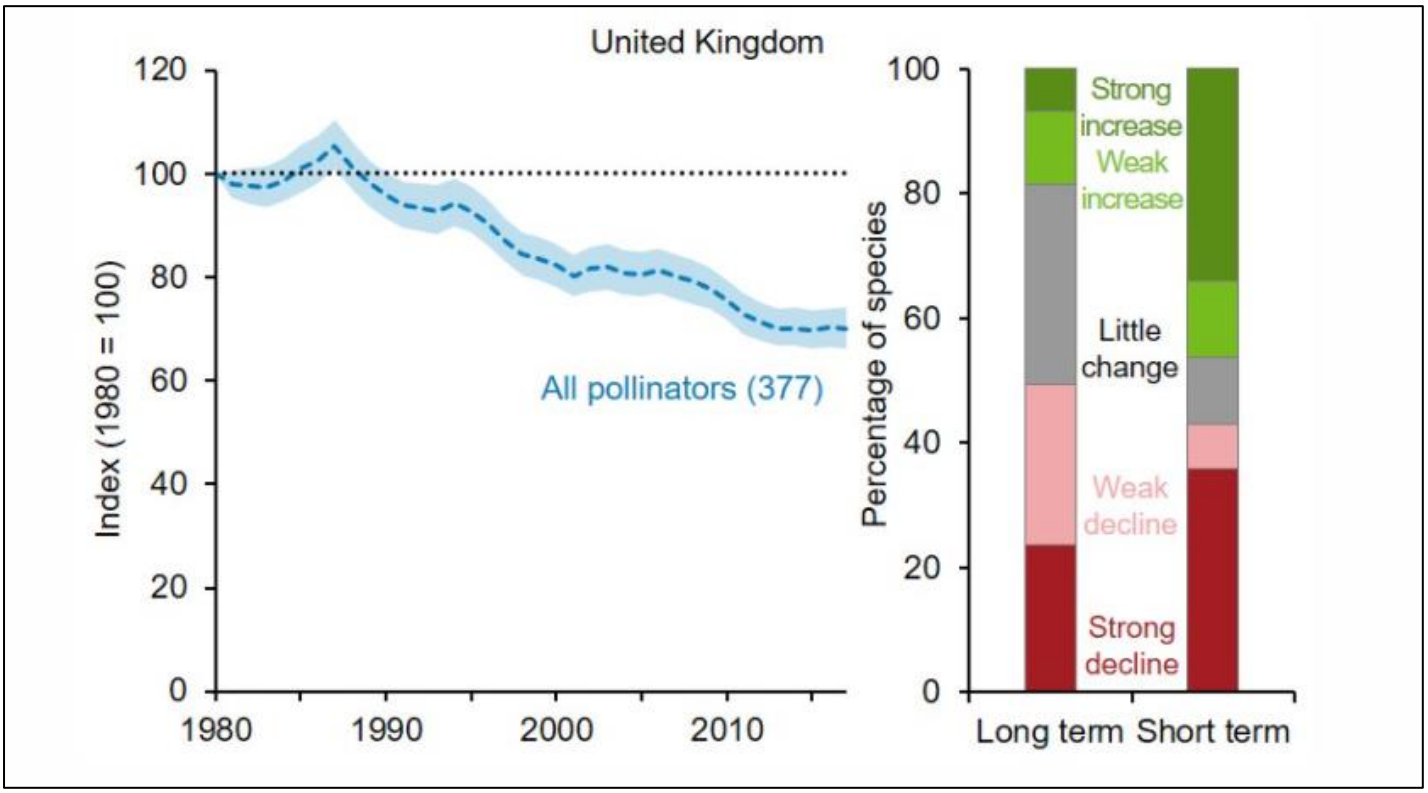
Long-term decline in UK pollinators

There has been an overall decrease in the UK biodiversity pollinator indicator from 1987 onwards. In 2017, the indicator had declined by 30% compared to its value in 1980.

Over the long term, 19% of pollinator species became more widespread (7% showed a strong increase) and 49% became less widespread (24% showed a strong decrease).

By contrast, over the short term, a greater proportion of species were increasing (46% with 34% exhibiting a strong increase) than decreasing (43% with 36% exhibiting a strong decrease).

Change in the distribution of UK pollinators, 1980-2017.



Source:

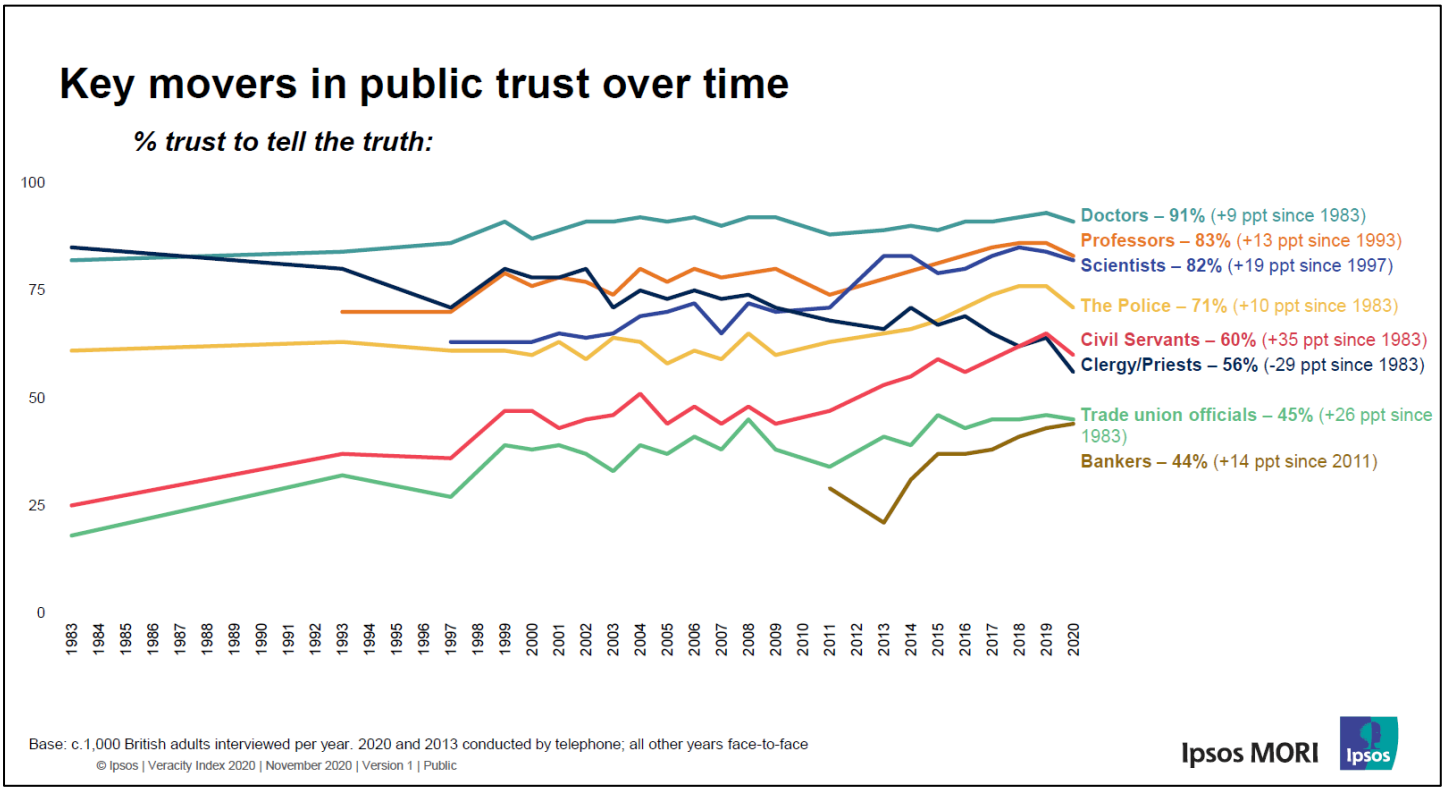
1. Status of Pollinating Insects, Joint Nature Conservation Committee, October 2020

Contents

Increase in public trust greatest for civil servants, scientists, and Trade Union officials

The Ipsos MORI Veracity Index is the longest-running poll on trust in professions in Britain, having been asked consistently since 1983. Percentage trust to tell the truth has remained consistently highest for doctors and there have been significant increases for professors and scientists since the 1990s and for civil servants since the time series began. The biggest fall in public trust since 1983 has been for clergy/priests, but 56% of people in the 2020 survey still trusted them to tell the truth.

Age of respondent is an important factor. The biggest difference between 18-34 year-olds and those aged 65 and over is on trust in civil servants, where there is a 30% gap (73% and 43% respectively).



Source:

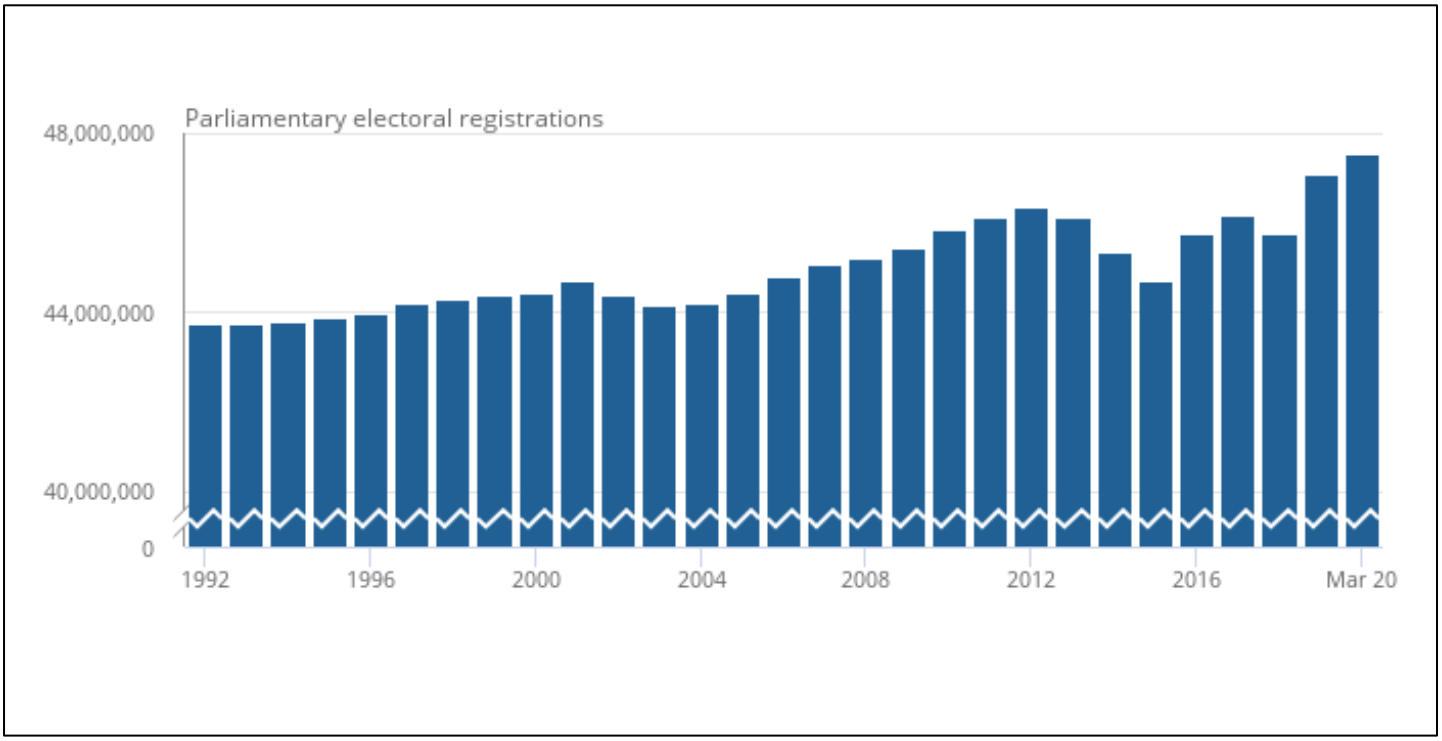
1. Veracity Index 2020, Trust in Professions Survey November 2020, Version 1, Public ©Ipsos

Increase in UK Parliamentary electoral registrations

As of 2 March 2020, there were 47.6 million Parliamentary electoral registrations in the UK, the highest number ever recorded.

The total number of UK Parliamentary electoral registrations increased by 484,000 (1%) between December 2019 and March 2020; this follows an increase of 1.3 million (2.8%) in the year to December 2019. These increases reflect the number of people eligible to vote and the impact of the 2019 general election in the UK.

Parliamentary electoral registrations, UK, 1992 to 2020.



Source: Office for National Statistics, National Records of Scotland – Electoral Office for Northern Ireland

Source:

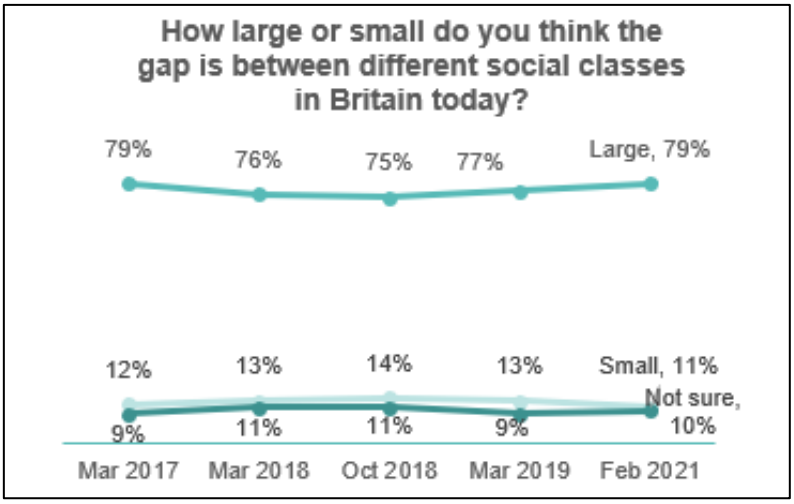
1. Electoral statistics, UK: March 2020, Office for National Statistics, January 2021

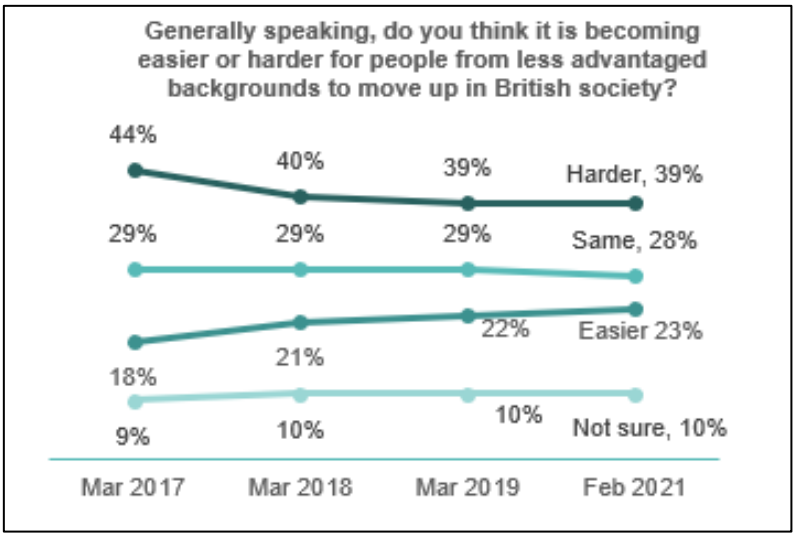
Perceptions of a large gap between social classes in the UK remain

79% of UK adults believe there is large gap between social classes in Britain, continuing a small upward trend from 2018 and 2019 (75% and 77% respectively). We are now at the same level that we were in 2017.

More people say that it's becoming easier for the less advantaged sectors to move up in society – 23% agreed with this in 2021 compared with 18% in 2017. However, two-fifths (39%) think it's getting harder (no change from 2019).

56% of UK adults think the coronavirus (COVID-19) pandemic has increased inequality in Britain: 33% say by 'a lot' and 23% by 'a little'.

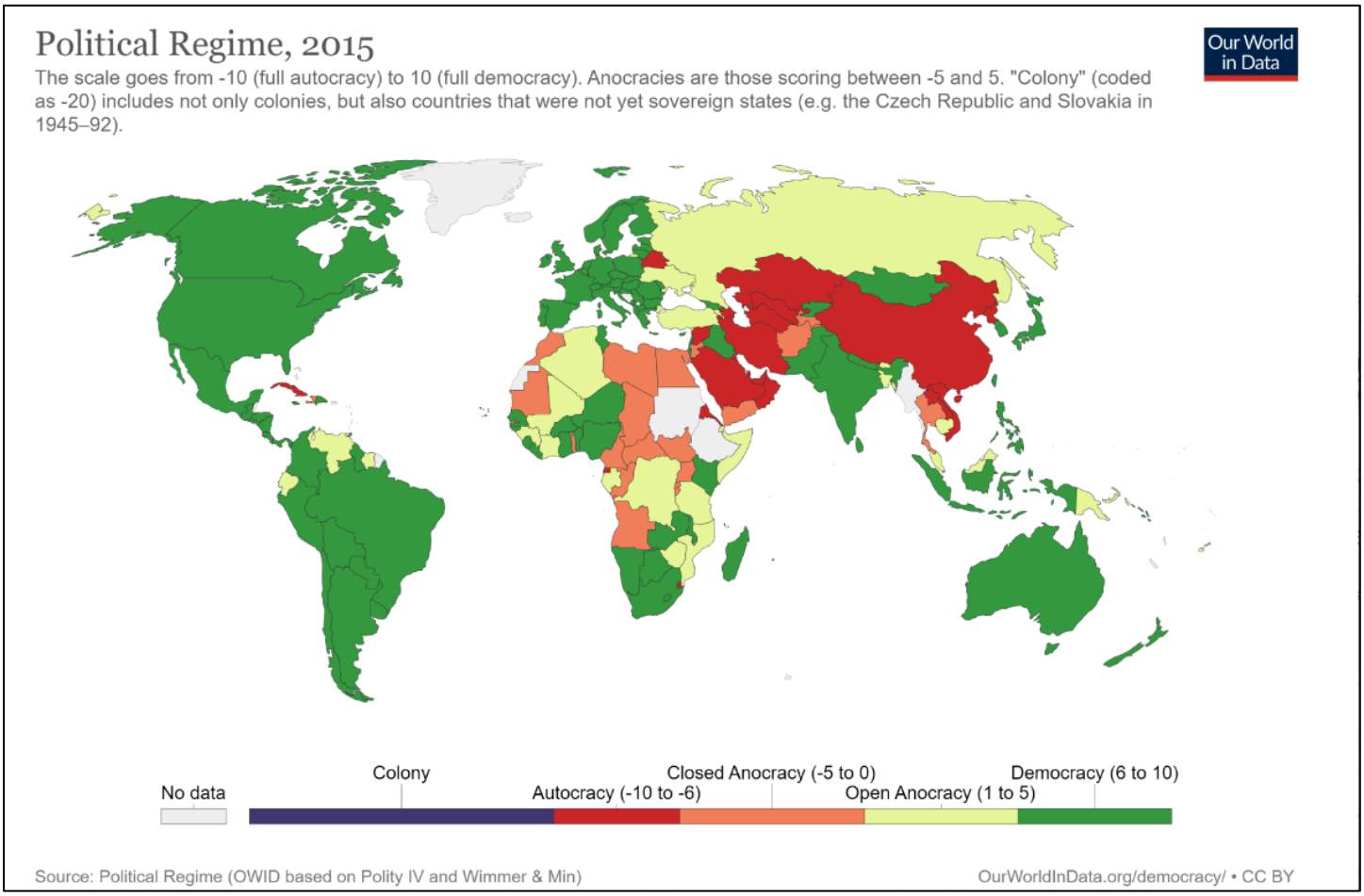




Source:
1. Social Mobility Barometer 2021, Social Mobility Commission, March 2021

More than half of the world's population live in a democracy

Most countries in Europe and the Americas are now democracies. Some parts of Africa, especially in the West and the South, have democratized. So too have countries in Asia, with India being the world's largest democracy. More than half the world's population live in a democracy.



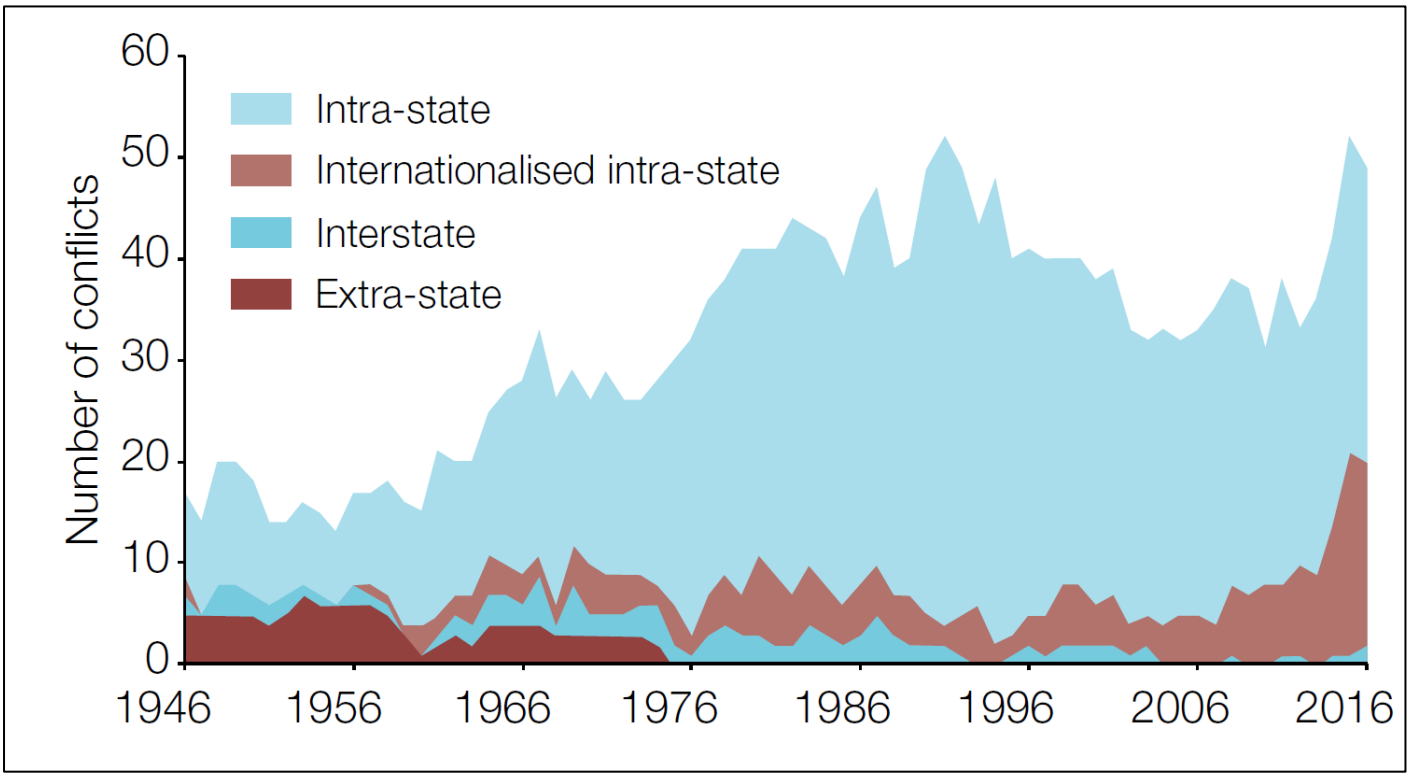
A democracy is a political system with institutions that allows citizens to express their political preferences, has constraints on the power of the executive, and provides a guarantee of civil liberties. In an autocracy, political preferences cannot be expressed, and citizens are not guaranteed civil liberties. Anocracies are regimes that fall in between - they are neither fully autocratic nor democratic.

Source:
1. Max Roser (2013) - "Democracy". *Published online at OurWorldInData.org.* Retrieved from: 'https://ourworldindata.org/democracy' [Online Resource]

Increase in armed global conflicts but with fewer reported deaths

The number of armed conflicts worldwide is on the rise, especially intra-state conflicts. At the same time, the number of lives lost due to armed conflicts has declined considerably over the past decades. More precise weapons allowing for more targeted attacks, better medical care and humanitarian aid, as well as fewer interstate conflicts (the deadliest type of conflict) have all contributed to a reduction in deaths.

Global armed conflict by type, 1946-2016.



Source: Uppsala Conflict data Program

Intra-state: between a government and non-governmental party.
Internationalised intra-state: between a government and a non-government party where one or both sides receive military support from other governments.
Interstate: between two or more governments.
Extra-state: between a state and non-state group outside its own territory.

Source:
1. Global Strategic Trends - The Future Starts Today, Sixth Edition, Ministry of Defence, 2018

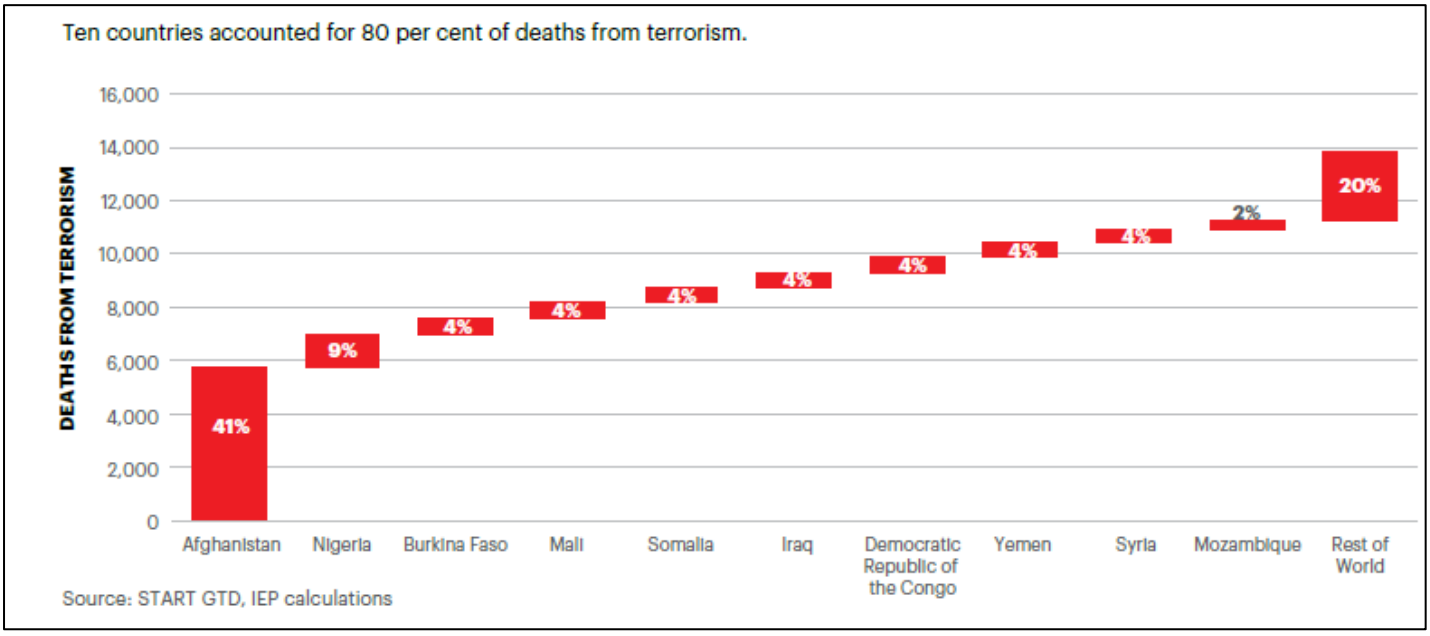
Decrease in deaths from global terrorism

In 2019 deaths from terrorism fell for the fifth consecutive year. The total number of deaths fell by 15.5% to 13,826. Conflict remains the primary driver of terrorism, with over 96% of deaths in 2019 occurring in countries already in conflict.

The fall in deaths was mirrored by a reduction in the impact of terrorism, with 103 countries recording an improvement on their Global Terrorism Index (GTI) score, compared to 35 that recorded a deterioration. The full GTI score takes into account not only deaths, but also incidents, injuries, and property damage from terrorism, over a five-year period.

The largest fall in the impact of terrorism occurred in Afghanistan, which recorded a 22.4 % decrease from the prior year. Afghanistan remains the country most impacted by terrorism, after overtaking Iraq in 2018.

Deaths from terrorism by country, 2019.



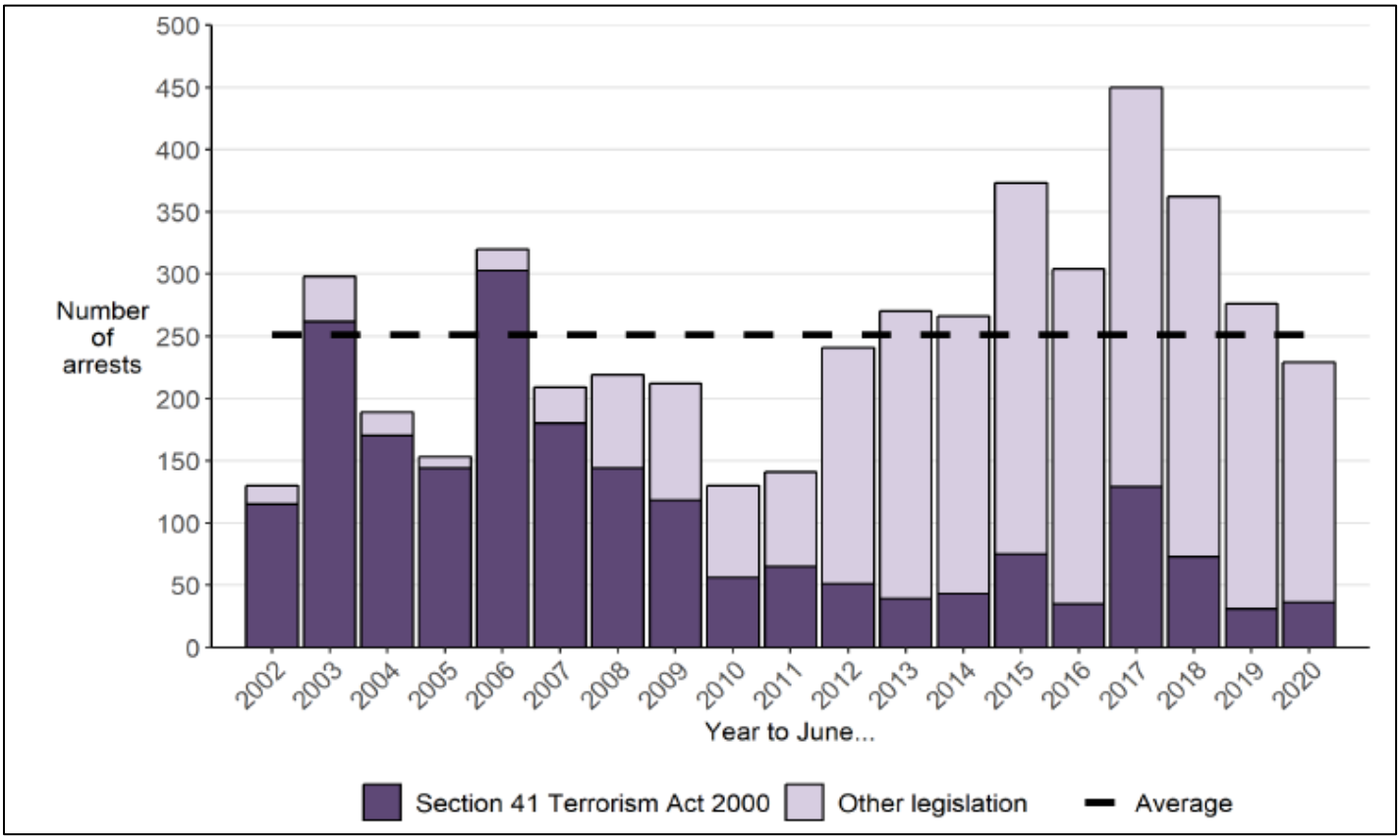
Source:
1. Institute for Economics & Peace. Global Terrorism Index 2020: Measuring the Impact of Terrorism, Sydney, November 2020. Available from: https://www.visionofhumanity.org/resources/ (accessed May 2021).

Decrease in number of arrests for terrorism-related activity in Great Britain

In the year ending 30 June 2020, there were 229 arrests for terrorist-related activity in Great Britain, 47 fewer than the previous 12-month period (a fall of 17%). This was the lowest number of arrests for terrorist-related activity in the last nine years and is below the annual average of 251 arrests over the time series 2002 – 2020.

Of those arrested in 2020, 76% considered themselves to be of British or British dual nationality, up seven percentage points on the previous year.

Arrests for terrorism-related activity, by legislation, in Great Britain, years ending 30 June 2002 to 30 June 2020.



Source: National Counter Terrorism Police Operations Centre

Source:

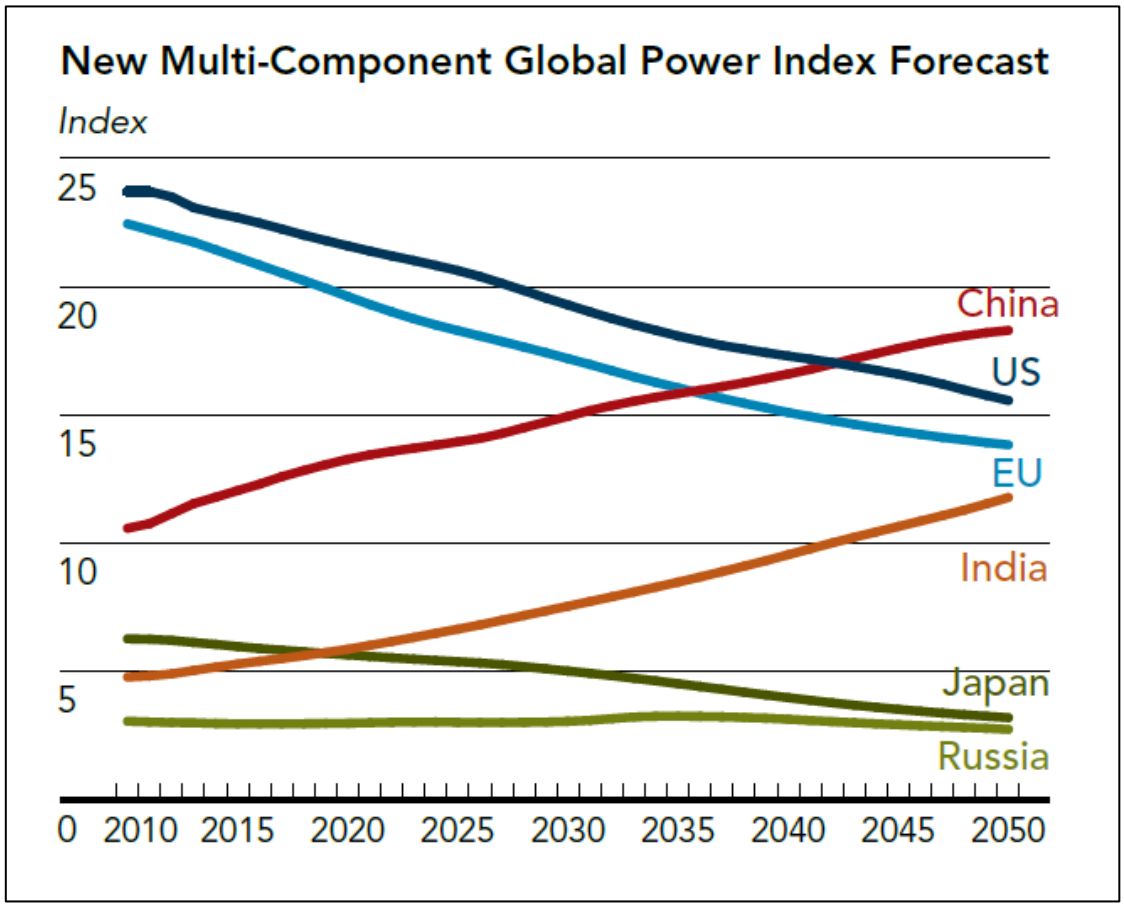
1. Operation of police powers under the Terrorism Act 2000 and subsequent legislation: Arrests, outcomes, and stop and search Great Britain, year ending June 2020, Home Office

Global power is moving towards the major emerging states

By 2040, the economic power of the E7 (China, India, Indonesia, Brazil, Russia, Mexico and Turkey) could be double the size of that of G7 (USA, UK, France, Germany, Japan, Canada, and Italy). The E7 was the same size as the G7 in 2015 and half the size in 1995.

By 2030 no country is likely to dominate globally in the way we have seen in the past. Enabled by communications technologies, a more fundamental shift may take place towards networks composed of state and non-state actors that will form to influence global policies.

A global power index, developed by the US National Intelligence Council, forecasts that the aggregate power of major emerging states overtakes that of developed states including the US by 2030. The share of global power held by the US, EU, Japan, and Russia decreases.

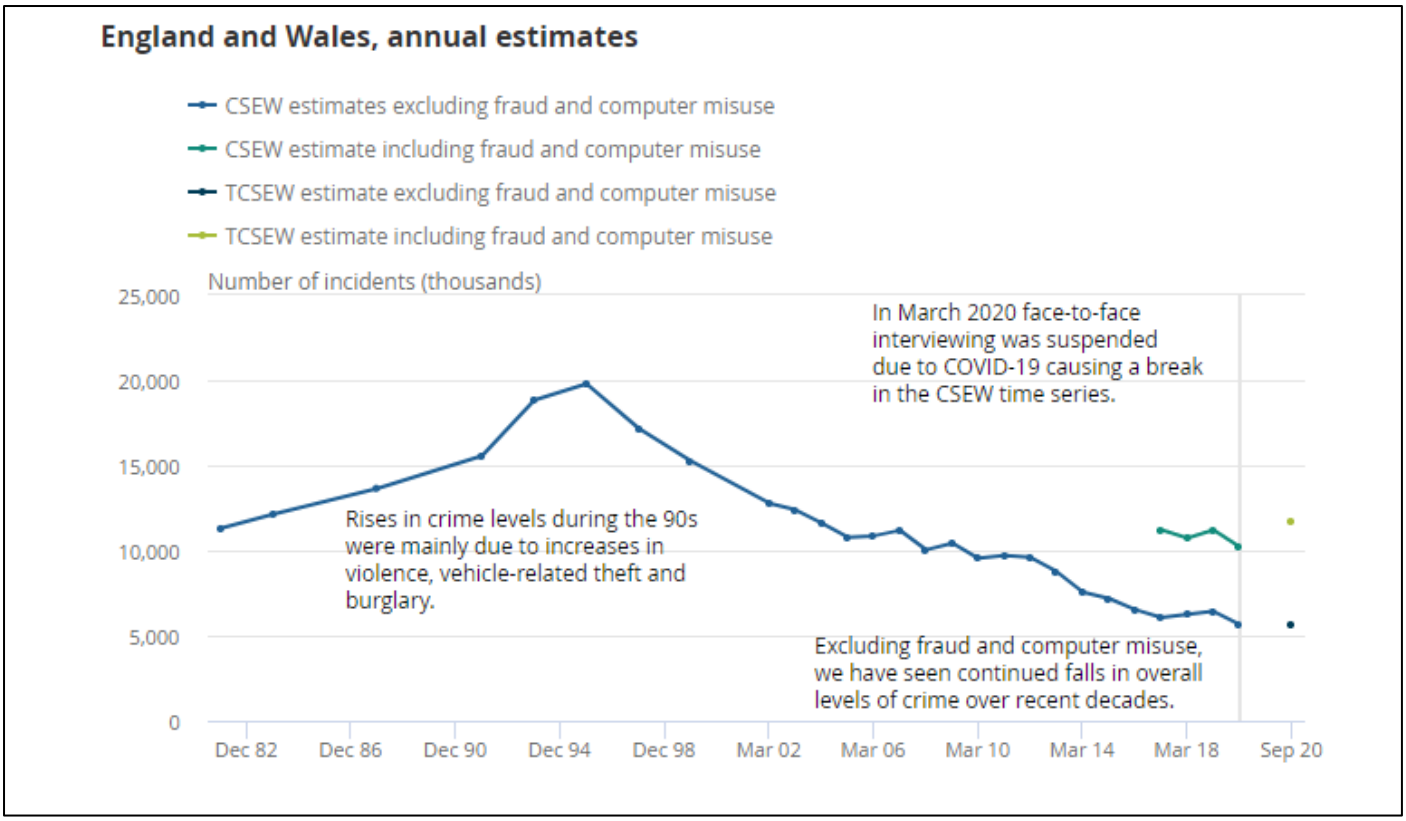


Sources:
1. Economic power shifts, European Commission
2. Global Trends 2030: Alternative Worlds, National Intelligence Council, December 2012

Long-term falls in overall crime estimates in England and Wales

Since the mid-1990s, the Crime Survey for England and Wales has recorded long-term falls in overall crime estimates. The police recorded 5.7 million crimes in England and Wales in the 12-month period to year ending September 2020, a 6% decrease from the previous year. The annual decrease was driven by substantial falls during the April to June 2020 period. This reflects the increase in time people spent at home under national lockdown restrictions due to the coronavirus (COVID-19) pandemic.

Crime estimates by the Crime Survey for England and Wales (CSEW) December 1981 to March 2020, and Telephone Operated Crime Survey for England and Wales (TCSEW) estimates for the year ending September 2020.



Source: Office for National Statistics - Crime Survey for England and Wales and the Telephone-operated Crime Survey for England and Wales.

Source:

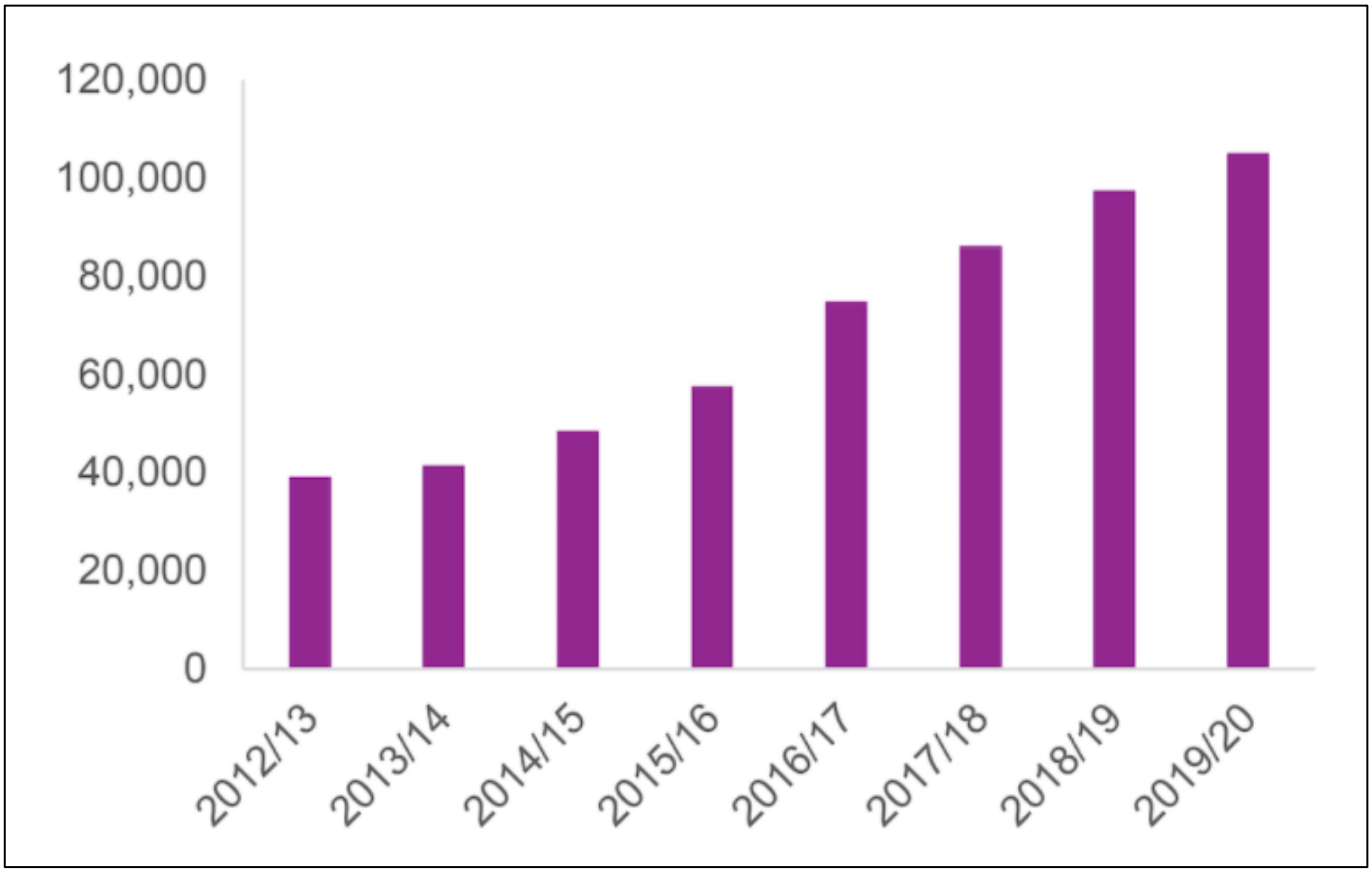
1. Crime in England and Wales: year ending September 2020, Office for National Statistics, February 2021[1]

Increase in reported hate crime in England and Wales

There were 105,090 hate crimes recorded by the police in England and Wales in 2019/2020 (excluding Greater Manchester Police), an increase of 8% compared with the year ending March 2019. While increases over the last five years have been mainly driven by improvements in crime recording by the police, spikes in hate crime followed events such as the EU Referendum in 2016 and terrorist attacks in 2017.

As in previous years, the majority of hate crimes were race hate crimes, accounting for around three-quarters of offences (72%). The majority of hate crimes are public order or violence against the person offences.

Number of hate crimes recorded by police in England and Wales, 2012-2020.



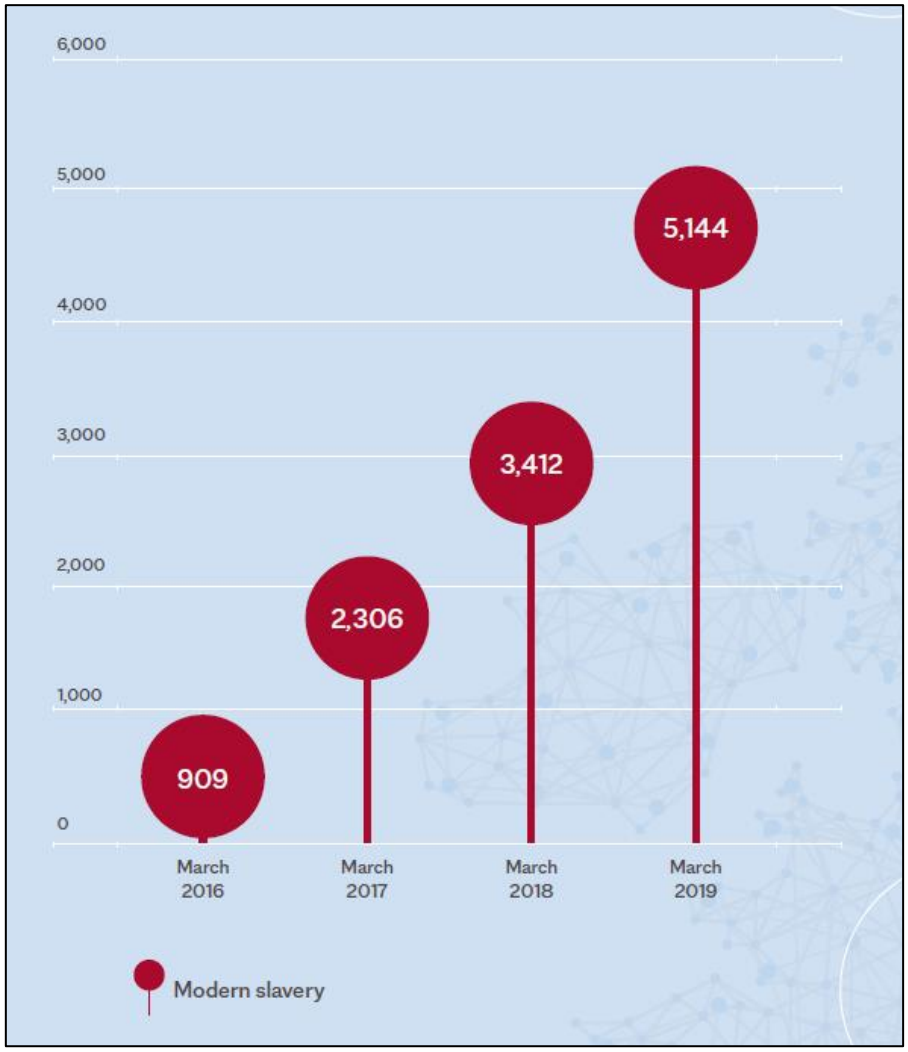
Source:
1. Hate crime, England and Wales, 2019 to 2020, Home Office, October 2020

Increasing reports of modern slavery in the UK

The true scale and cost of modern slavery is unknown. The Centre for Social Justice believes there could be at least 100,000 victims in the UK, with the actual number likely to be even greater. Since 2017, the number of suspected victims identified and referred to the National Referral Mechanism has more than doubled. There were 10,627 referrals in 2019 compared to 5,145 referrals in 2017.

The number of modern slavery crimes recorded by police forces in England and Wales in the year ending March 2017 was 2,306 compared to 5,144 modern slavery crimes recorded in the year ending March 2019 – a 123% increase.

Modern slavery recorded crimes 2016-2019.



Source:

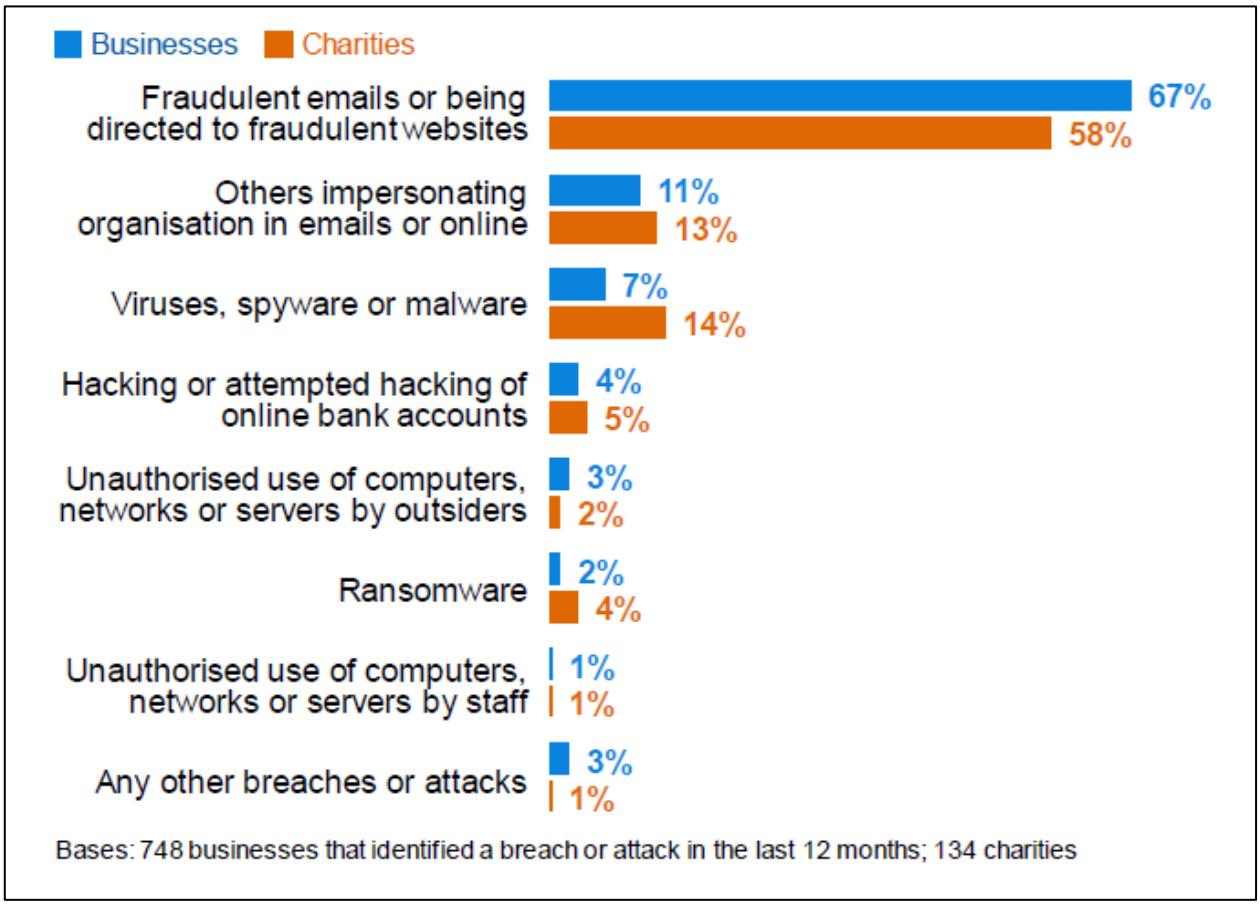
1. It still happens here: fighting UK slavery in the 2020s, Centre for Social Justice and Justice Care UK

Cyber attacks have evolved and become more frequent

Almost half of businesses (46%) and a quarter of charities (26%) report cyber security breaches or attacks in a 2019 to 2020 survey. Among the 46%, more are experiencing these issues at least once a week - 32% in 2020 compared to 22% in 2017. There is a similar pattern over time for charities, although the changes across years are not statistically significant. In 2020 a fifth of charities (22%) said they experienced breaches at least once a week.

The nature of cyber attacks has changed. There has been a rise in phishing attacks (from 72% to 86%) and a fall in viruses or other malware (from 33% to 16%).

Percentage that identify the following types of breaches or attacks as their most disruptive one, among the organisations that have identified breaches or attacks.



Source:

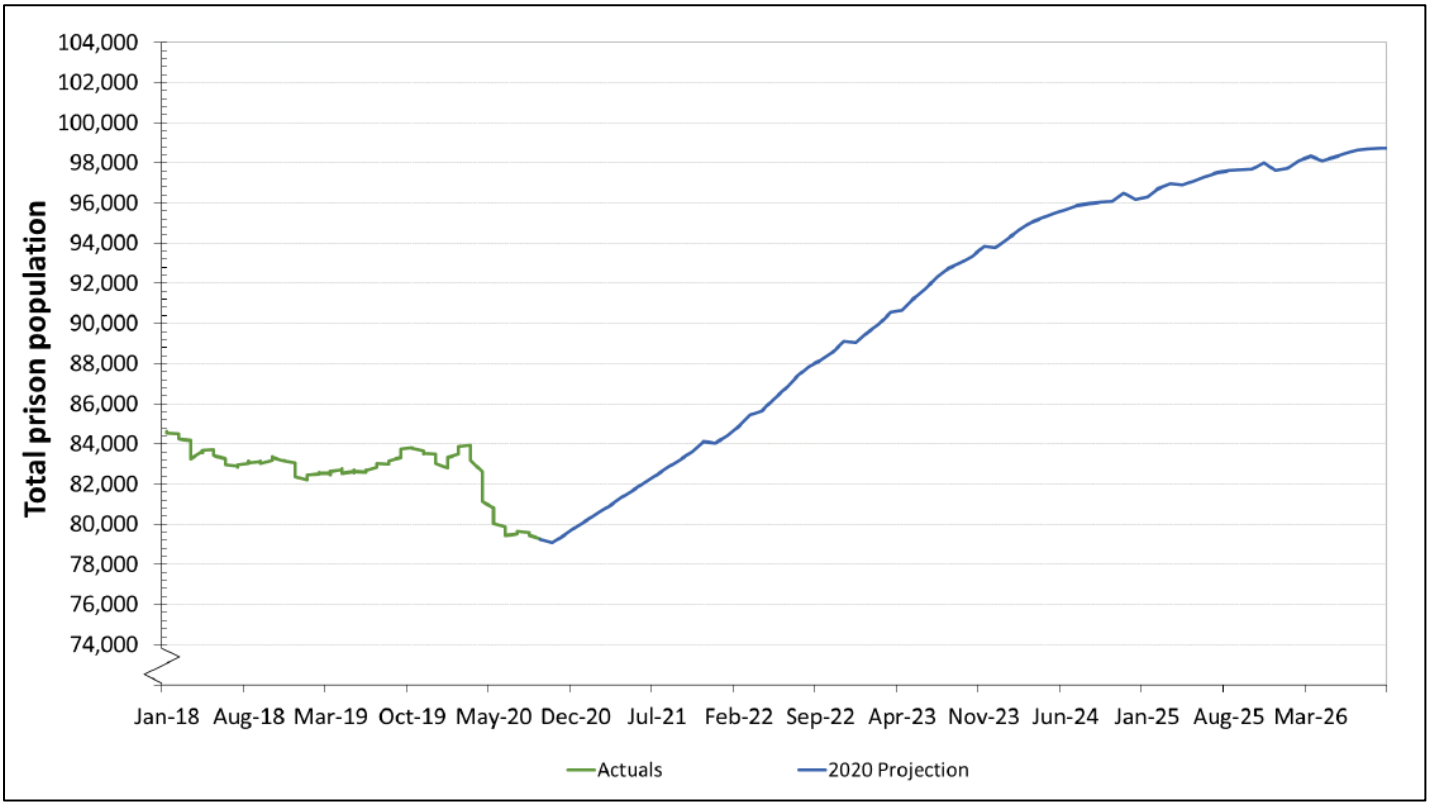
1. Cyber Security Breaches Survey 2020, Department for Digital, Culture, Media and Sport, March 2020

Prison populations are projected to increase in England and Wales

The prison population of England and Wales was 78,838 as of 20 November 2020. It is projected to increase in the short term to 83,200 by September 2021, then to keep increasing steadily to reach 98,700 offenders by September 2026.

The prison populations of adult males, females and children (age 15-17) are all expected to rise in the projections.

Total Prison Population Projection, September 2020 to September 2026.



Projections account for best available evidence, but there is considerable uncertainty around how the courts will recover from coronavirus (COVID-19) and the impact of additional police officers.

Source:

1. Prison Population Projections 2020 to 2026, England and Wales, Ministry of Justice, November 2020

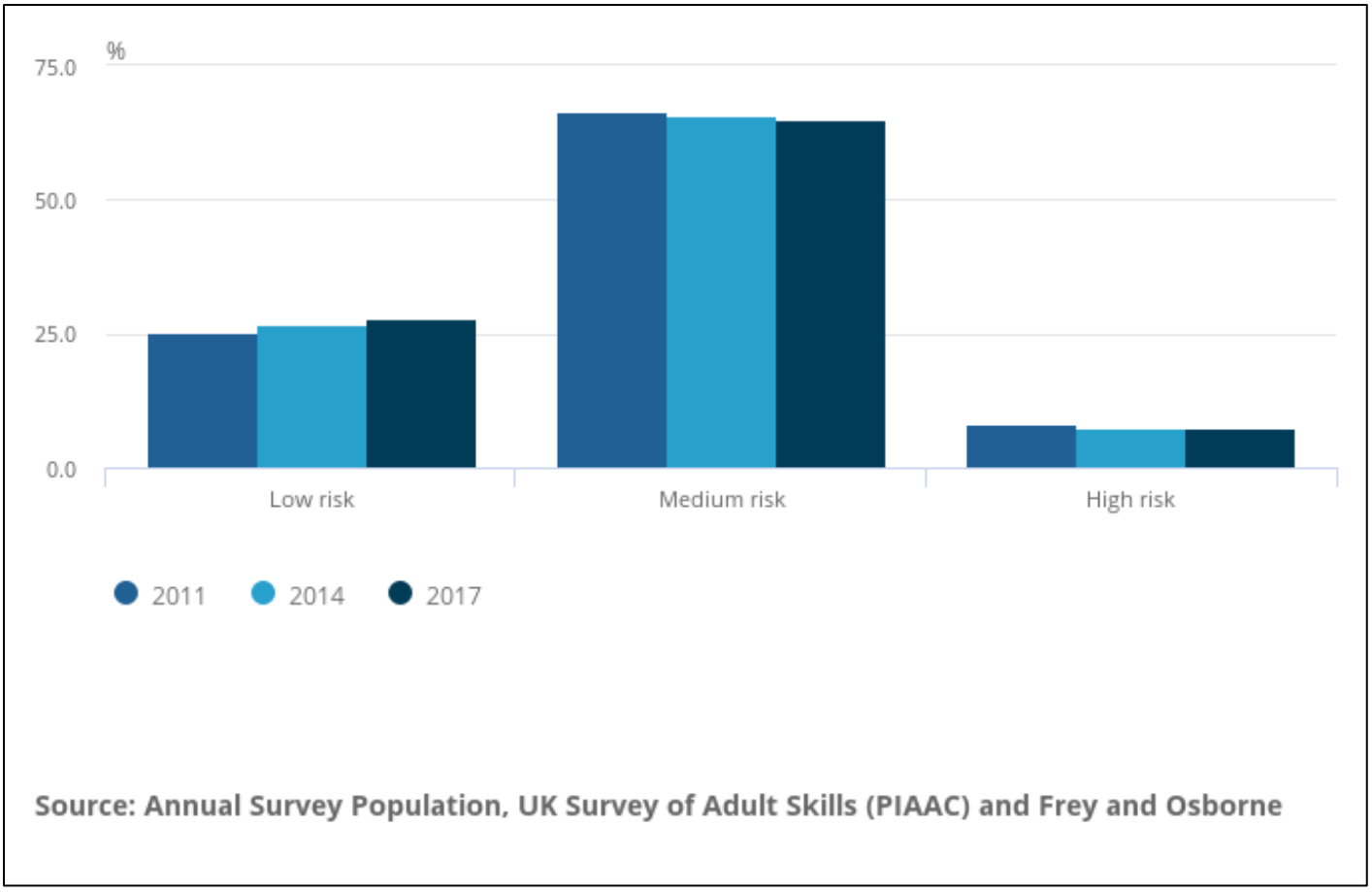
Contents

Little change in the probability of jobs at risk of automation

In 2017, 7.4% (1.5 million) people were employed in jobs at high risk of automation (out of 19.9 million jobs analysed in England). This is 0.7% fewer when compared with 2011. When looking at those in jobs with a high risk of automation, women account for 70.2% of employees.

The number of employees that were in jobs at low risk of automation in 2017 was 5.5 million, equating to 27.7% of all employees, a rise of 2.4% since 2011.

Proportion of main jobs at risk of automation, England, 2011, 2014 and 2017.



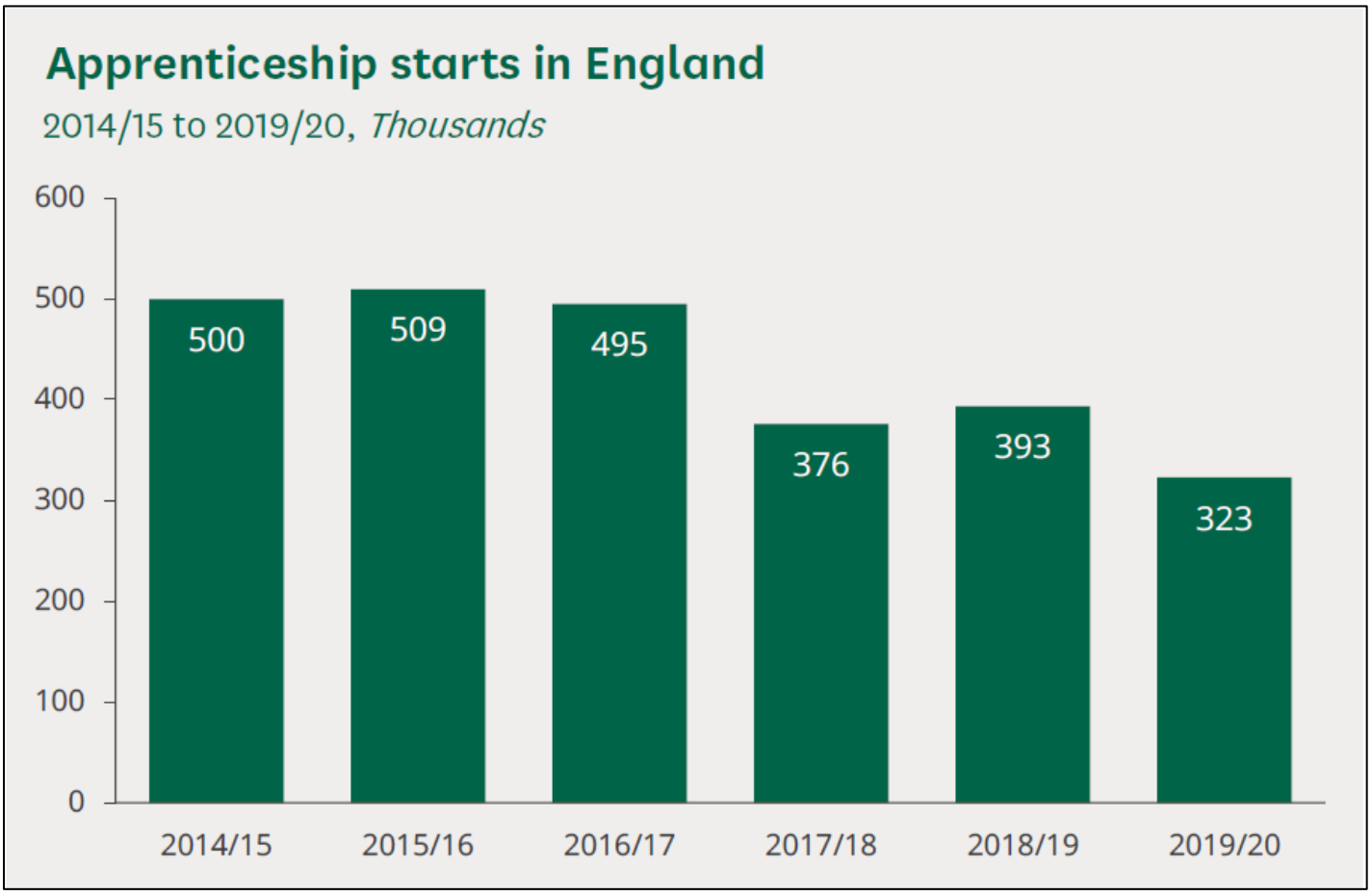
Source:

1. The probability of automation in England: 2011 and 2017, Office for National Statistics, March 2019

Decrease in apprenticeship starts in England

The number of apprenticeship starts fell after the introduction of a new funding system in May 2017. It fell again in 2019/20 after a slight increase in 2018/19 due to the impact of the coronavirus (COVID-19) pandemic. The pandemic and lockdown period had a disproportionate negative impact on apprenticeship starts for those aged under 19 and those starting an intermediate level apprenticeship.

There were 322,500 apprenticeship starts in 2019/20, 70,900 less than in 2018/19.



Source: Department for Education Apprenticeships and traineeships data

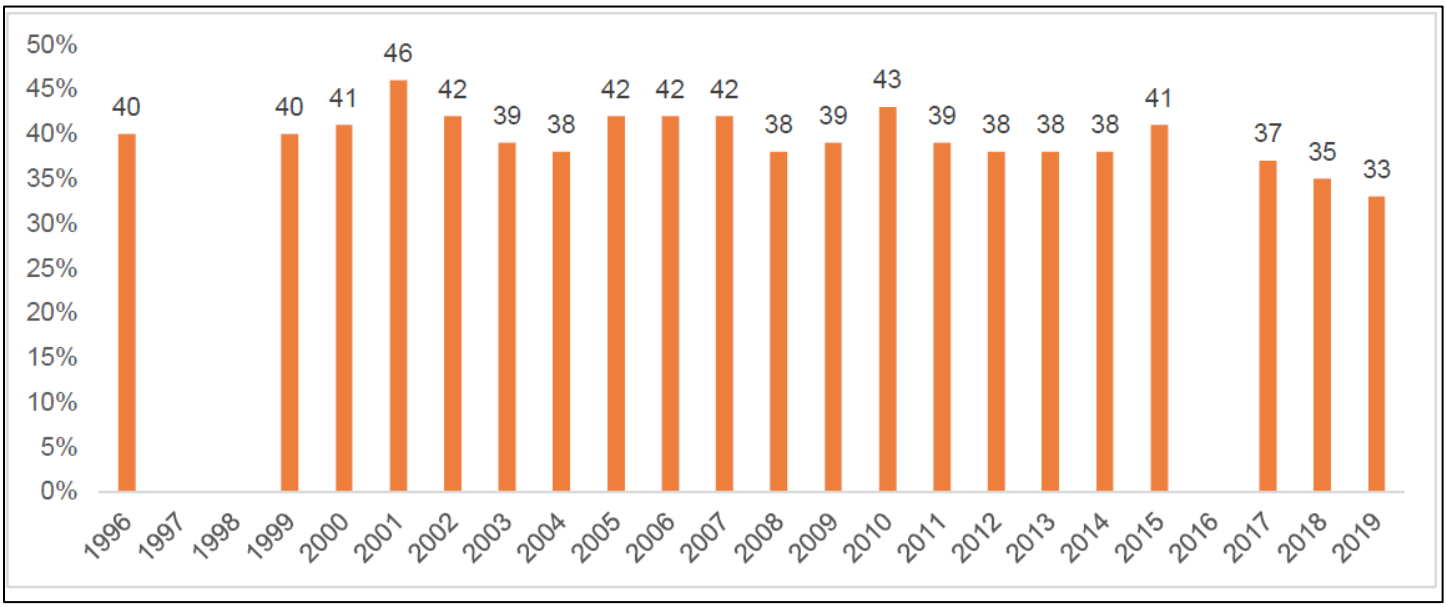
Source:
1. Apprenticeship Statistics, House of Commons Library Briefing Paper, March 2021

Participation in adult learning is declining

The 2019 Adult Participation in Learning Survey records the lowest participation rate in the 23-year history of the survey. It is the third year in a row in which the participation rate has fallen to a record low. One third (33%) of adults say that they have participated in learning during the previous three years, while 38% say that they have not done any learning since leaving full time education.

The coronavirus (COVID-19) lockdown in March 2020 accelerated the trend towards online learning. 22 million people (43%) across the UK took part in some form of 'lockdown learning'. The participation rates varied considerably depending on when an adult had left school, whether they were employed and their socio-economic group.

Participation in learning, 1996 – 2019.



Surveys were taken annually except in three years: 1997, 1998 and 2016.
Base: all respondents to each survey. Weighted base for 2019 = 5011. Unweighted base for 2019 = 5,314.

Sources:

1. Adult Participation in Learning Survey 2019, Learning and Work Institute, December 2019
2. Learning through lockdown, Findings from the 2020 Adult Participation in Learning Survey, Learning and Work Institute

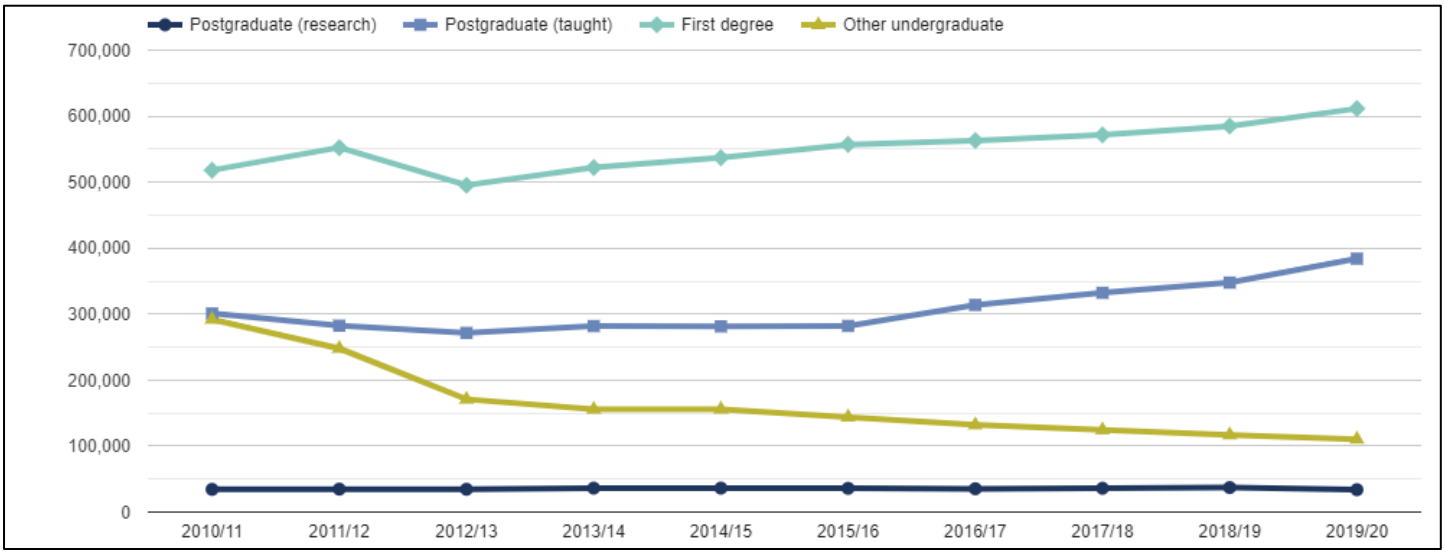
Steady increase in first degree and taught postgraduate enrolments

First degree courses (leading to a bachelor's qualification) remained the most popular type of higher education, as enrolments in other types of undergraduate courses such as foundation degrees, diplomas and vocational qualifications continued to fall, with a decline of 6% each year from 2017/18 to 2019/20.

Postgraduate taught courses saw an increase in first year student numbers in recent years, particularly in 2019/20. The rise is largely due to an increase in enrolments from non-European students.

In 2019/20 business and management attracted the highest number of students, with 16% of all students enrolling in this subject.

First year higher education student enrolments by level of study. Academic years 2010/11 to 2019/20.



Source:

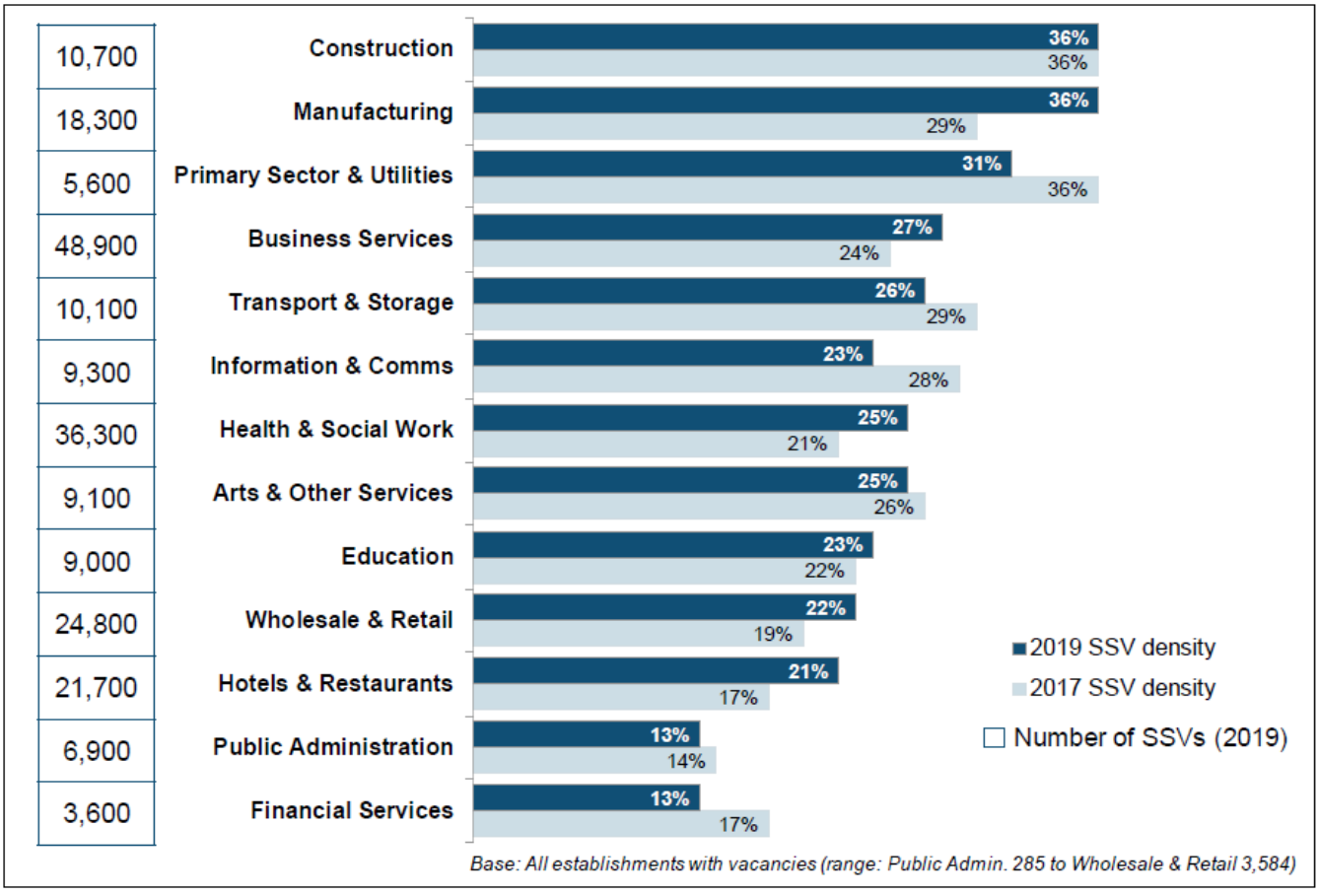
1. Higher Education Student Statistics: UK, 2019/20, Higher Education Statistics Agency, Statistical Bulletin, January 2021

Small increase in skill-shortage vacancies

Despite a fall in job vacancies between 2017 and 2019 (17% compared with 20%) more vacancies than at any point in the Employer Skills Survey series, since 2011, were proving hard to fill due to lack of qualifications, relevant skills or experience. Skill-shortage vacancies comprised nearly a quarter of all vacancies in 2019 (24% up from 22% in the 2013 to 2017 period).

Skilled trade roles have historically had the highest skill-shortage density (the proportion of vacancies which are skill-shortage vacancies). In 2019 density was highest in construction (36% the same as 2017) and manufacturing (36% up from 29% in 2017).

Number and density of skill-shortage vacancies (SSVs), by sector.

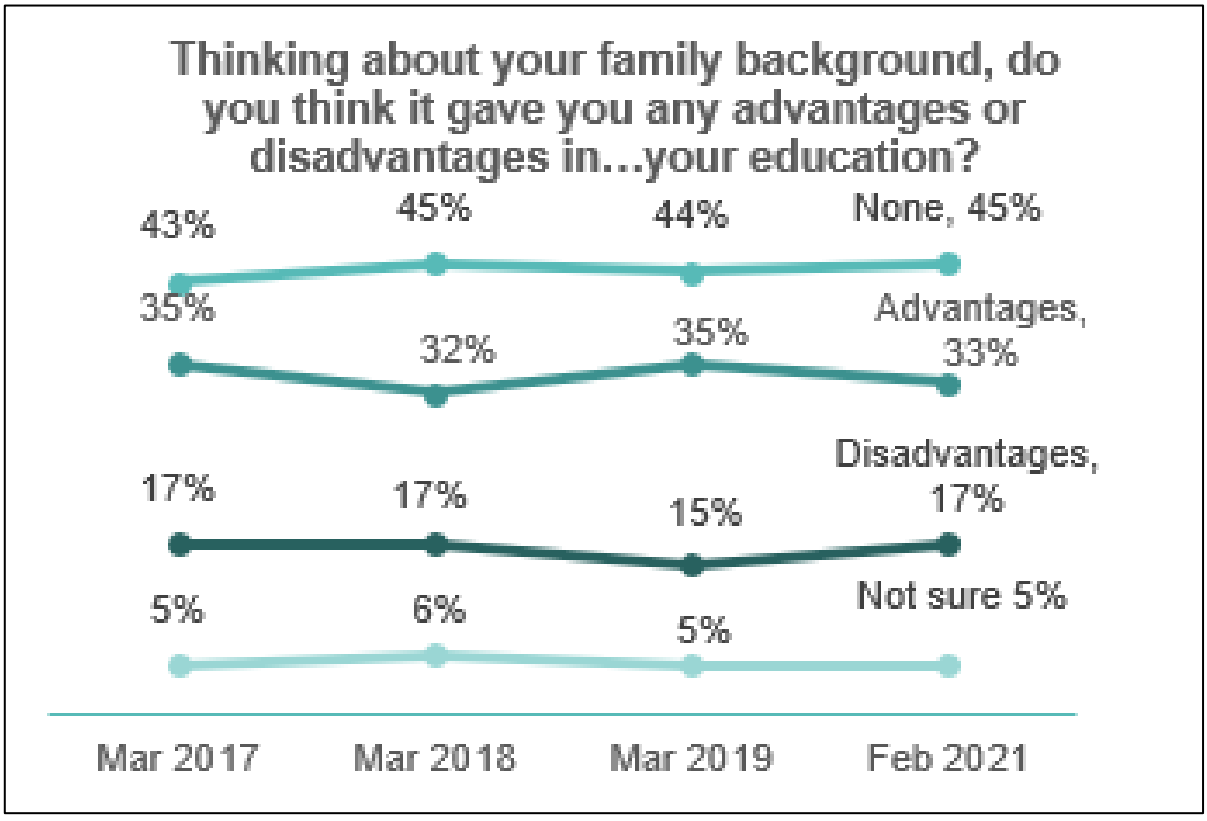


Source:
1. Employer Skills Survey 2019, Research Report, Department for Education, October 2020

Continued perception that levels of education are linked to family background

The higher an individual's level of education, the more likely they are to believe that their family background has been helpful with their education. Nearly half (48%) of those with a high level of education feel that their background has been advantageous. This is 28% higher than those who achieved a low level of education.

Overall, people are most likely to say that their own background has had no advantages or disadvantages in terms of impacting on their career and education. However, a third (33%) say their background has given them advantages with their education, which is slightly down on the 2019 figure of 35%.



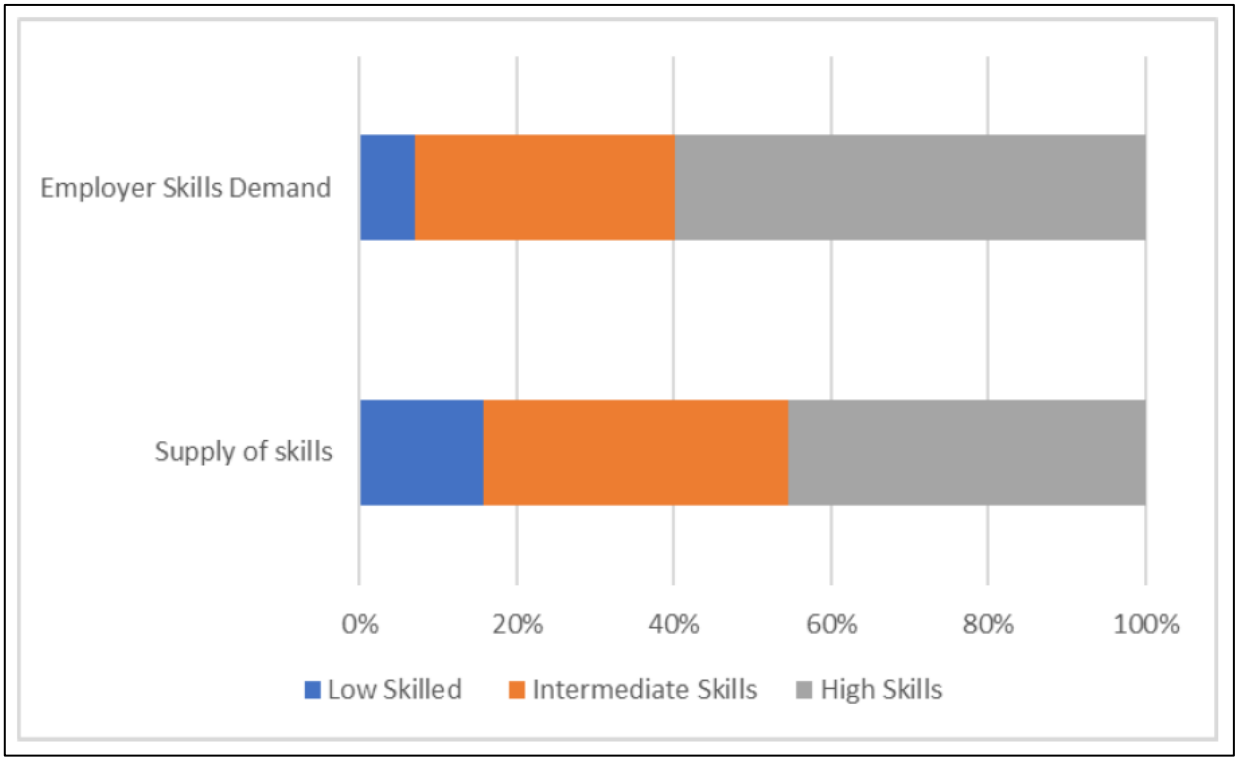
Source:
1. Public attitudes to social mobility in the UK, 2021, Social Mobility Commission, January 2021

Projected supply of skills differs from employer demand

Research conducted by Learning and Work Institute estimated that by 2030 there could be 5.1 million low-skilled people chasing 2 million low-skilled jobs; 12.7 million people with intermediate skills chasing 9.5 million jobs; and 17.4 million high-skilled jobs with only 14.8 million high-skilled workers.

England potentially faces a deficit of high skills in 2030 amounting to around 2.5 million people if there is not an increase in qualification levels.

Projected composition of skills demand and supply in England, 2030.



The figure shows the difference between the composition of the projected employer demand for skills in England in 2030 and the skills we expect to be held by the population of working age in England in 2030 (labour supply).

The composition of the projected supply of skills for England does not match the expected shape of demand for skills for England in 2030. There are projected to be surpluses at both the low and intermediate levels, especially the former and a shortage of people with high skill levels.

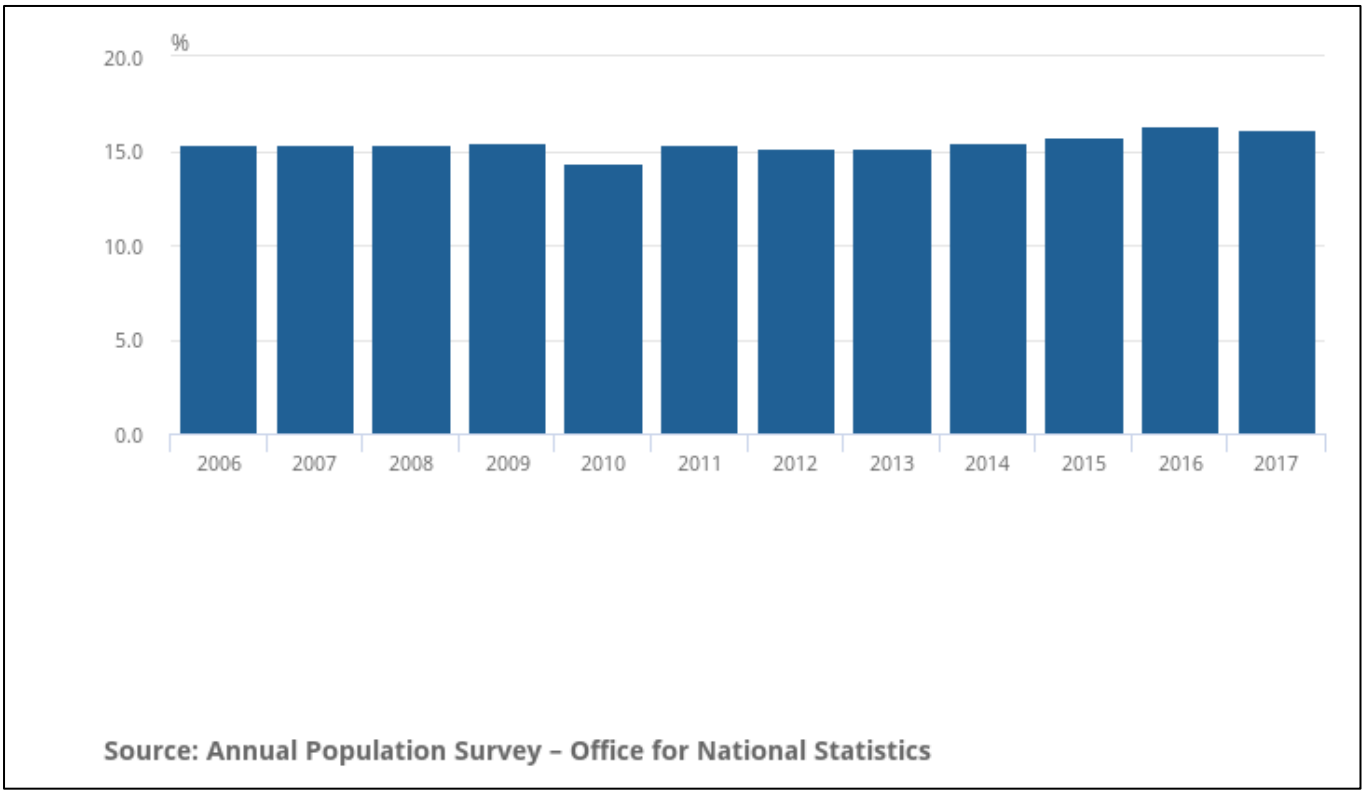
Source:
1. Local Skills Deficits and Spare Capacity, Learning and Work Institute, December 2019

Small increase in people overeducated for their job

Overeducation occurs when a person possesses more education than required for their job. In 2017, 16.1% of all those in employment aged 16 to 64 years were overeducated; the corresponding figure for graduates (with first degree or equivalent) was around 31%. From 2013, the overeducation rate began to rise reaching a peak of 16.3% in 2016.

51% of recent graduates in the arts and 50% in biological sciences were defined as overeducated for their jobs in 2017.

Percentage of those in employment defined as “overeducated”, 16-64 years, UK, 2006-2017.

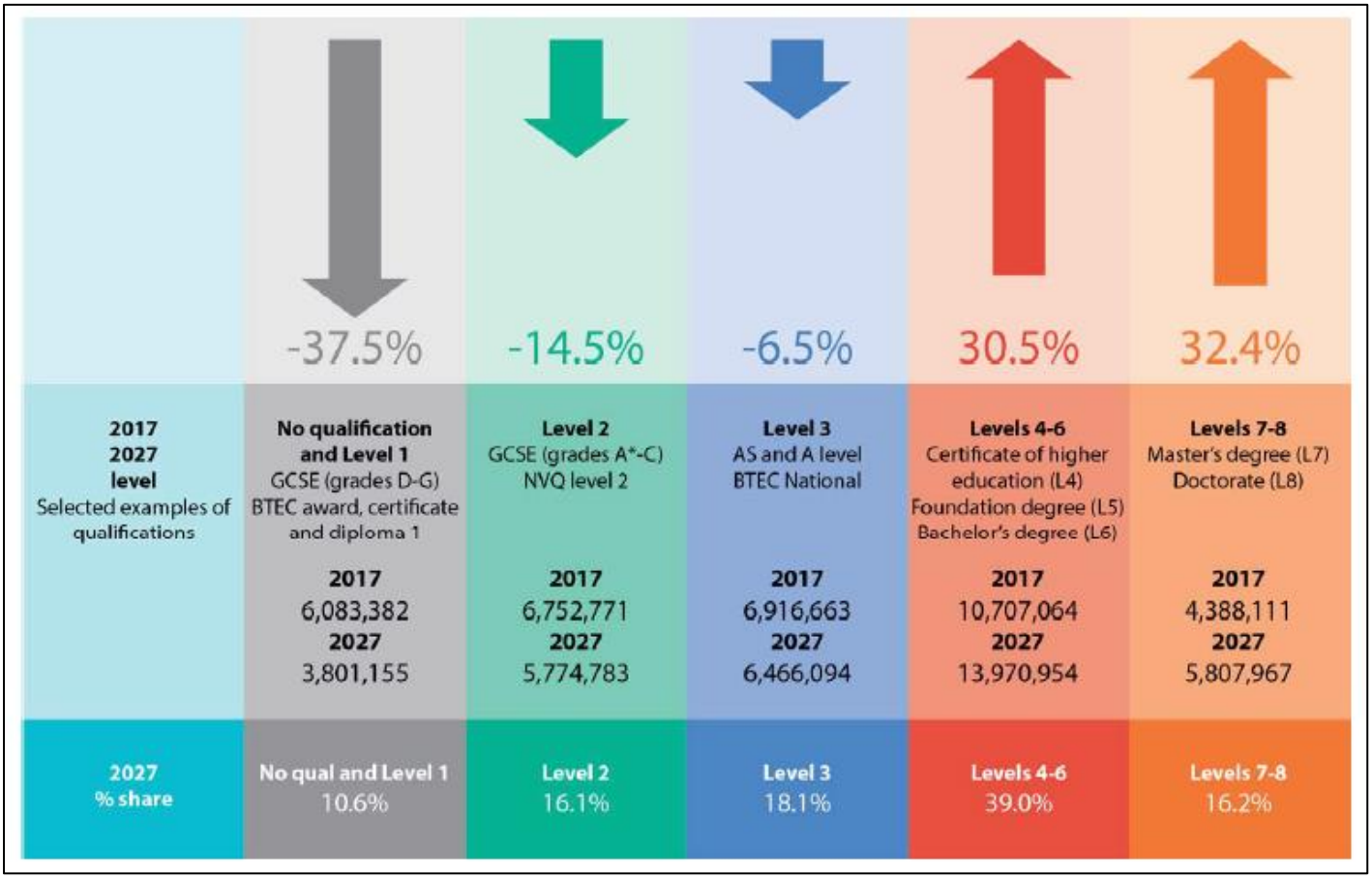


Source:
1. Overeducation and hourly wages in the UK labour market; 2006 to 2017, Office for National Statistics, April 2019

Increasing number of degree level qualifications in the workforce

By 2027, 55.2% of people in employment are expected to be qualified at level 4 (degree level) and above, whilst the proportion of people with level 1 (GCSE, BTEC award, certificate and diploma 1) or no formal qualifications is expected to fall to 10.6%. The projections are based on a continuation of current educational trends and certain assumptions about how newly qualified people obtain and retain jobs. The average qualification level held is expected to rise within all occupations.

Qualification profile of workforce, 2007-2027.



Source:

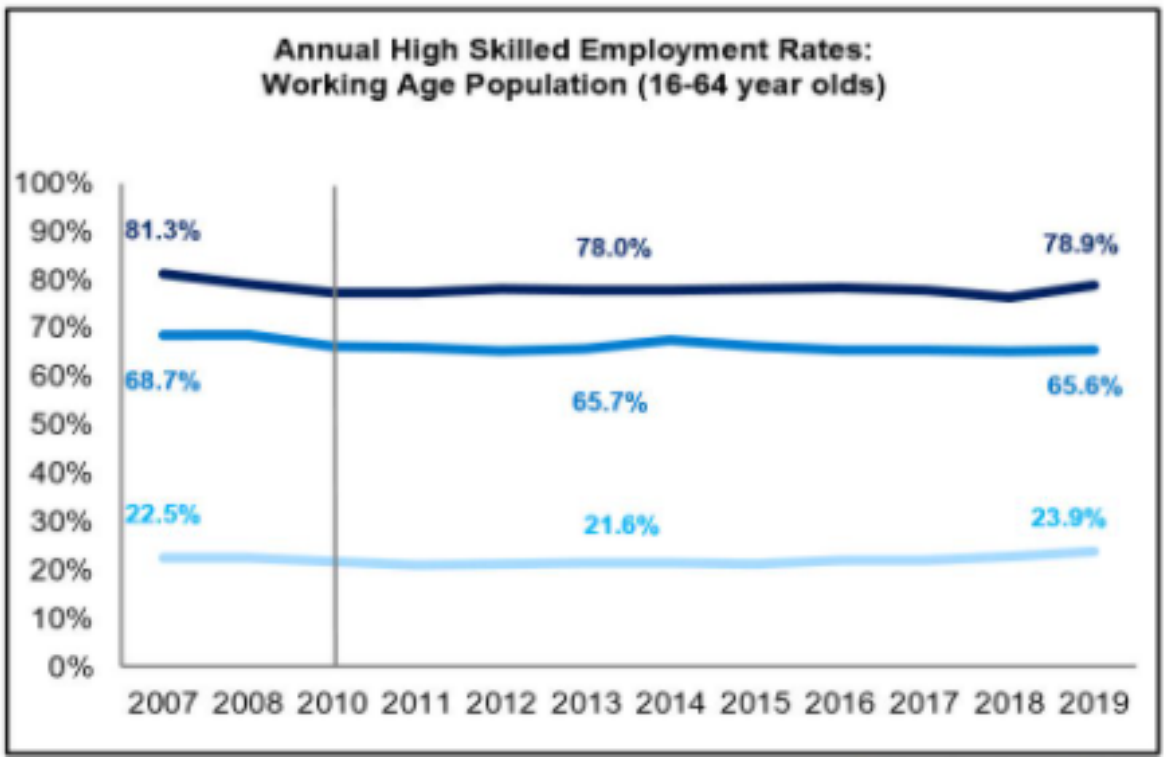
1. Working Futures 2017-2027: Long-run labour market and skills projections, Headline Report, Department for Education, February 2020

Postgraduates continue to have the highest high skilled employment rate

Although graduates and postgraduates had similar employment rates in 2019 a much larger share of postgraduates were in high skilled employment for both working-age (16-64) and young individuals (21-30 year-olds).

65.6% of working-age graduates were in high skilled employment in 2019, compared with 78.9% of postgraduates and 23.9% of non-graduates. This represents a slight increase of 0.2% since 2018 for graduates. The rise was larger for postgraduates at 2.4% and non-graduates at 1%.

Annual high skilled employment rates; 2007-2019.



Source:
1. Graduate labour market statistics Reporting Year 2019, Government Statistics, May 2020

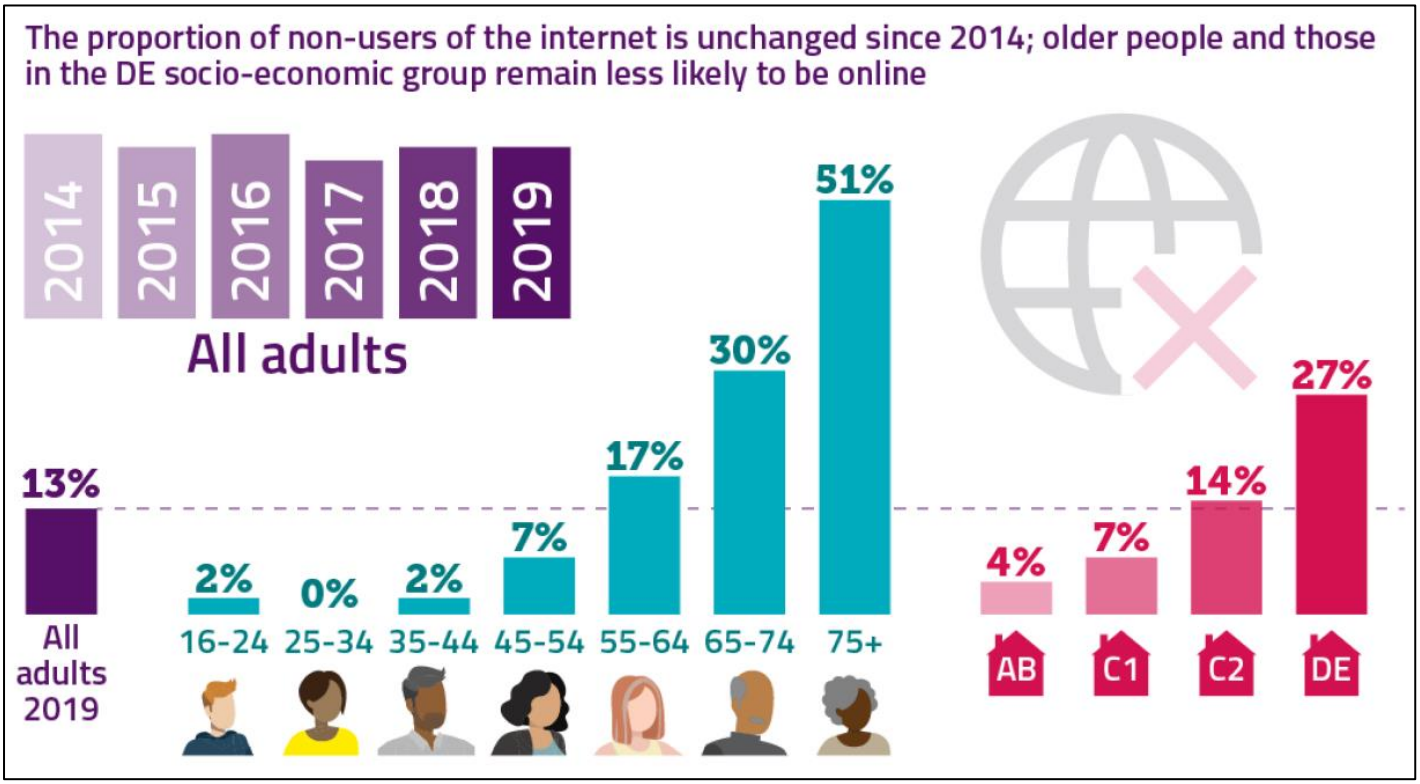
Contents

Internet use is increasing globally but significant numbers still do not use the internet in the UK

Globally the number of internet users increased from 413 million in 2000 to over 3.4 billion in 2016. In 2017, countries such as the US, Canada, Australia, Russia, Saudi Arabia, Argentina and much of Europe had more than two thirds of the population using the internet. Usage rates are much lower in developing nations. In parts of sub-Saharan Africa usage rates were below 10% in 2017.

13% of UK adults did not use the internet in 2019, unchanged since 2014. For those who do use the internet the coronavirus (COVID-19) pandemic led to online usage reaching a record high. In April 2020, internet users in the UK spent an average of 4 hours 2 minutes online each day.

The proportion of non-users of the internet is unchanged since 2014 in the UK. Older people and those in the DE socio-economic group (semi-skilled, unskilled manual occupations and unemployed) remain less likely to be online.



Sources:
1. Max Roser, Hannah Ritchie and Esteban Ortiz-Ospina (2015) "Internet ". *Published online at OurWorldInData.org.* Retrieved from: 'https://ourworldindata.org/internet' [Online Resource]
2. Adults' Media Use & Attitudes report 2020, Ofcom, June 2020
3. Online Nation 2020 Summary Report, Ofcom, June 2020

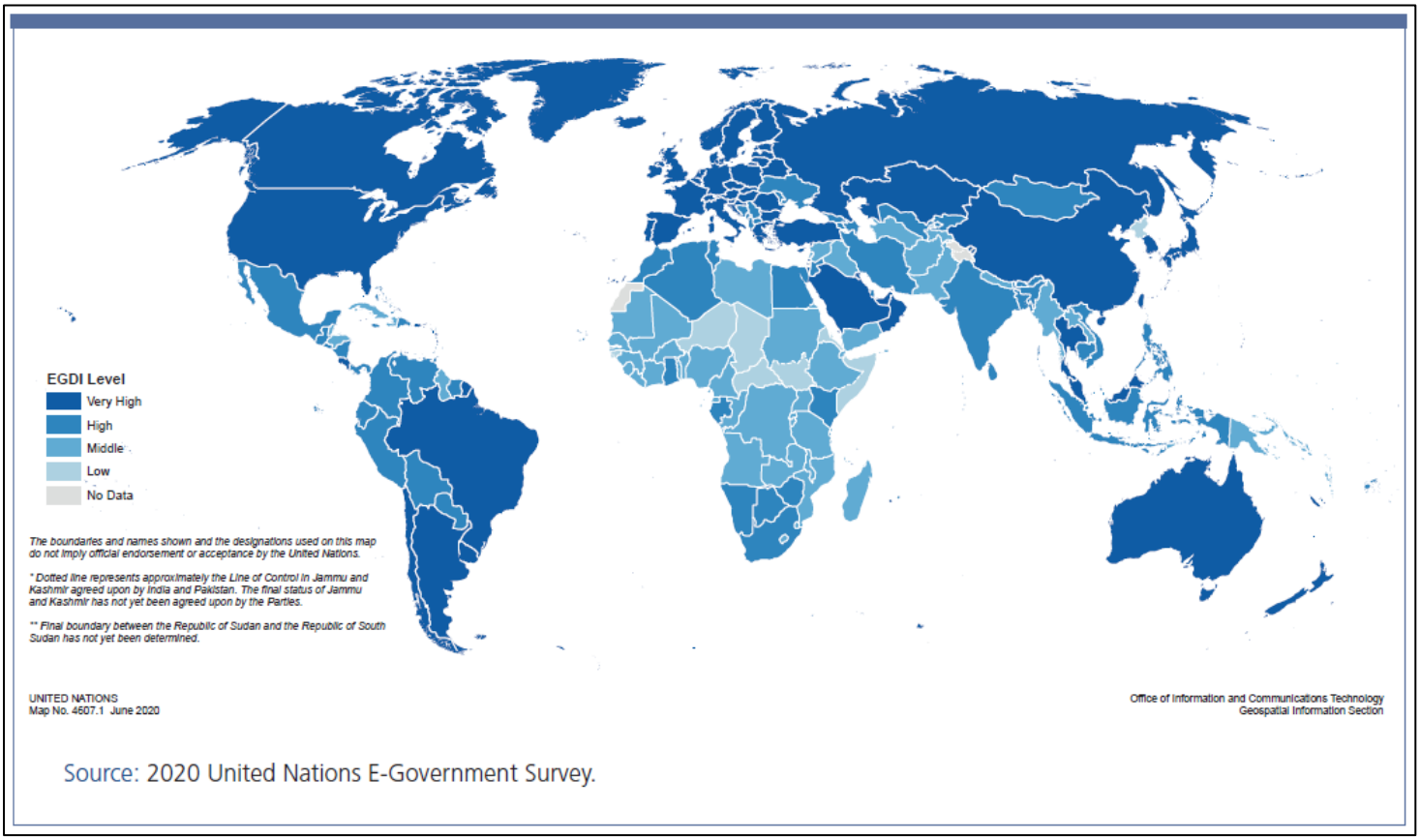
Increase in government digital services

The provision of digital government services has improved significantly. More than 84% of countries now offer at least one online transactional service and the global average is 14.

The most common digital services offered worldwide are registering a new business, applying for a business licence, applying for a birth certificate, and paying for public utilities.

In terms of top performers, in digital/E-Government development, the UK ranks seventh in the 2020 UN E-Government survey.

Geographical distribution of the four E-Government Development Index (EDGI) groups, 2020



*EGDI assesses national websites and how e-government policies, and strategies are applied in general and in specific sectors for delivery of essential services. The ranking is relative to other countries rather than being an absolute measurement.

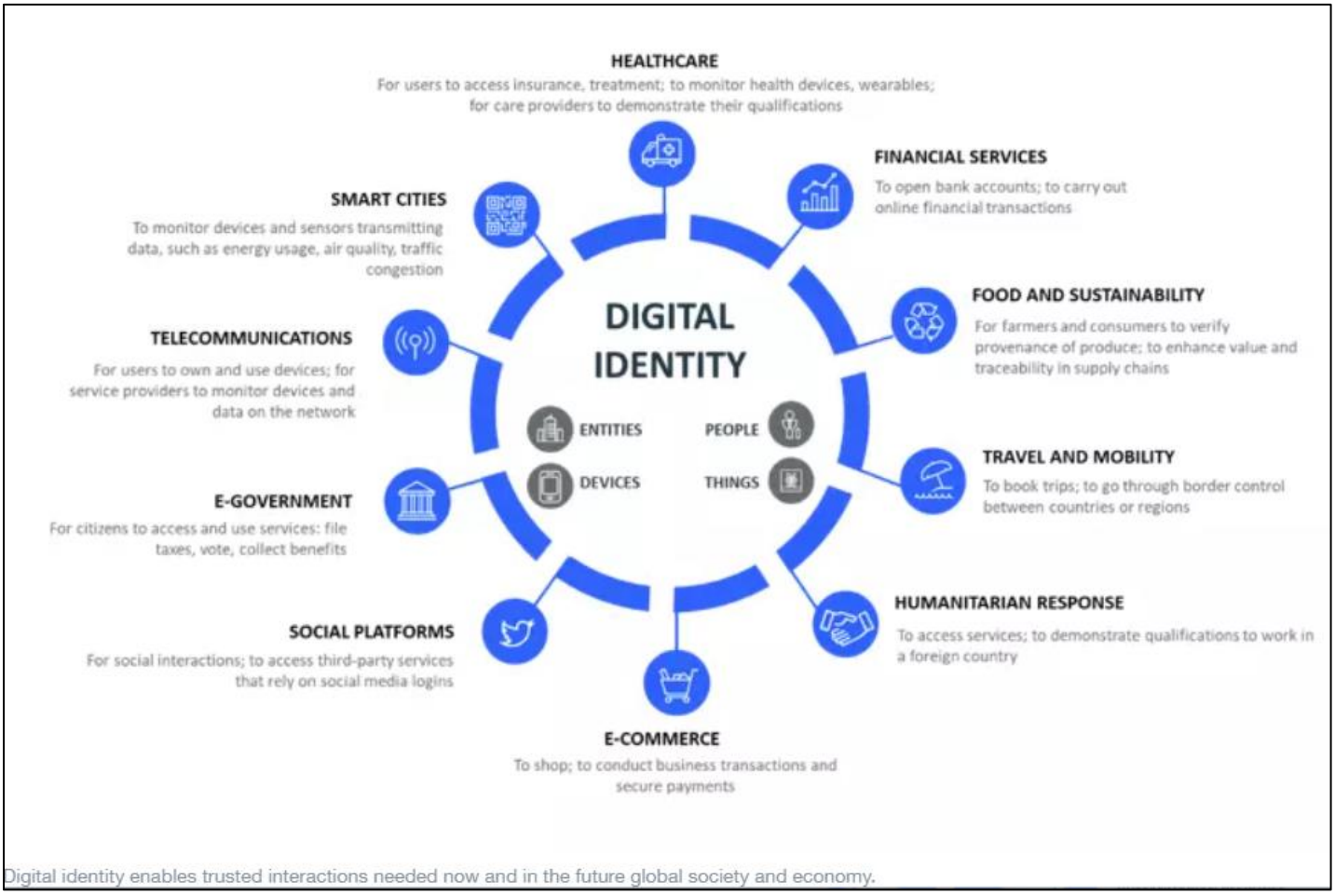
Source:

1. UN E-government survey 2020, UN Department of Social and Economic Affairs ©2021 by United Nations

Growth in digital identities to streamline services and combat fraud in the UK

Increasingly, people are required to prove their identity to access government services. Digital identities give the user control of their data. They provide clear audit trails and streamline how businesses and governments allow people to register and access their services, counteracting fraud. Figures from 2019 show a 32% rise in identity fraud in the UK over five years.

Reports show the digital identity market could add 3% to UK Gross Domestic Product by 2030.



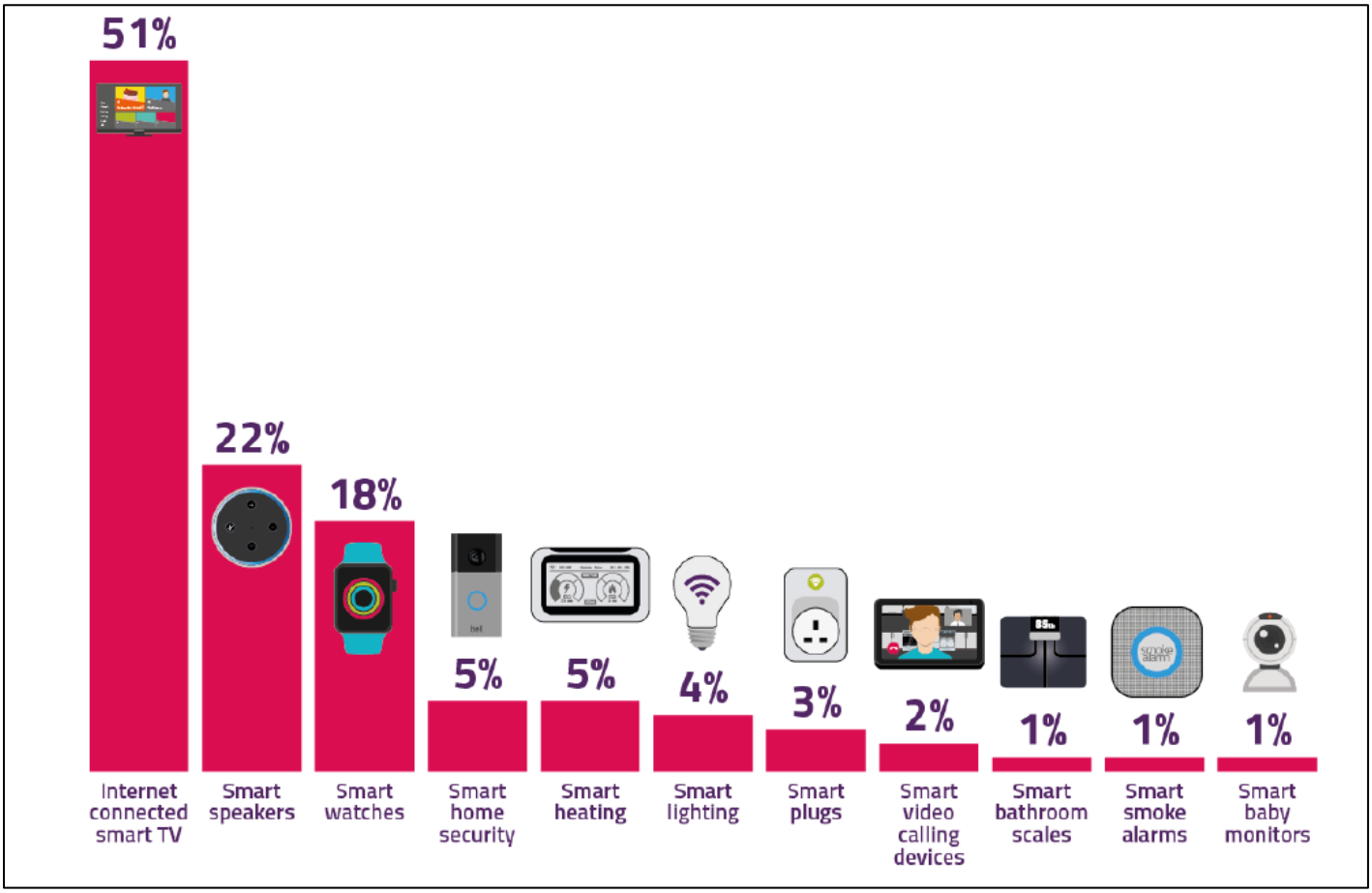
Digital identity enables trusted interactions needed now and in the future global society and economy.

Sources:
1. Next steps outlined for UK's use of digital identity, Department for Digital, Media, Culture and Sport, September 2020
2. How digital identity can improve lives in a post-COVID-19 world, World Economic Forum, January 2021

Growing number of Internet of Things connected devices in the UK

In its most basic form, the Internet of Things (IoT) connects devices through the internet to collect and share data. The number of IoT devices in the UK is projected to grow to over 150 million in 2024 from 13 million in 2006. Consumer wearables and the white goods market account for over 40% of all IoT connections. However, most of the projected future growth will be in the automotive, consumer electronics and utilities sectors.

Percentage of UK households with different types of internet-connected devices, 2020

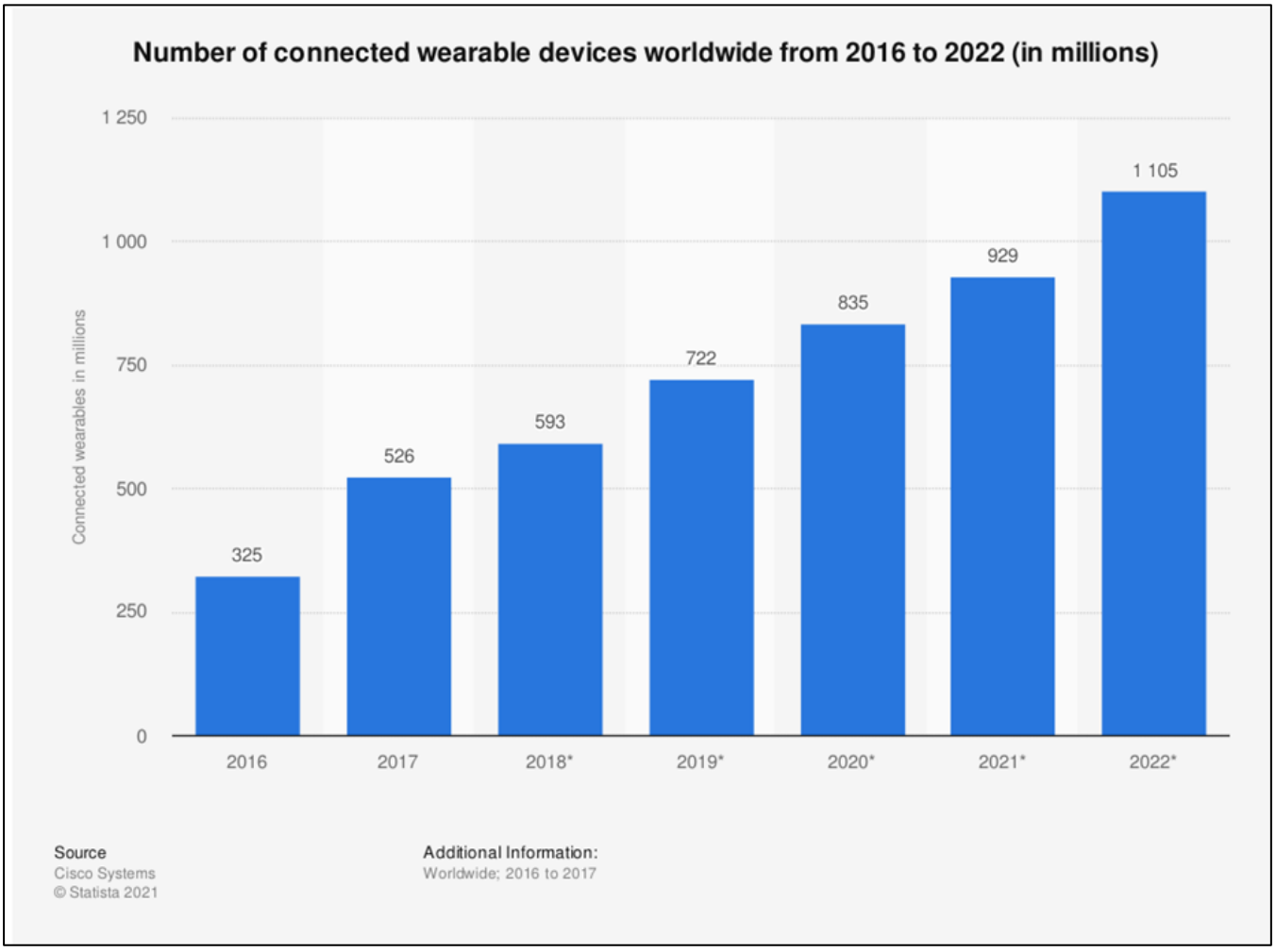


Source: Ofcom Technology Tracker, 2020

Sources:
1. Connected Nations Report 2017: Data analysis. Ofcom and Cambridge Consultants Ltd
2. Online Nation 2020 Summary Report, Ofcom, June 2020

Increase in the number of wearable devices

Wearables are electronic devices which usually have smart sensors and are connected to the internet for data exchange. The number of connected wearable devices worldwide is expected to grow to over 1.1 billion in 2022. The most common wearable devices are smart watches and health and fitness trackers with ear-worn devices projected to become the most dominant category in the future. More than 270 million units of ear-worn devices are forecast to be shipped in 2023, more than any other wearable category. Wristwear (watches and wristbands) are projected to reach almost 180 million units by 2023.



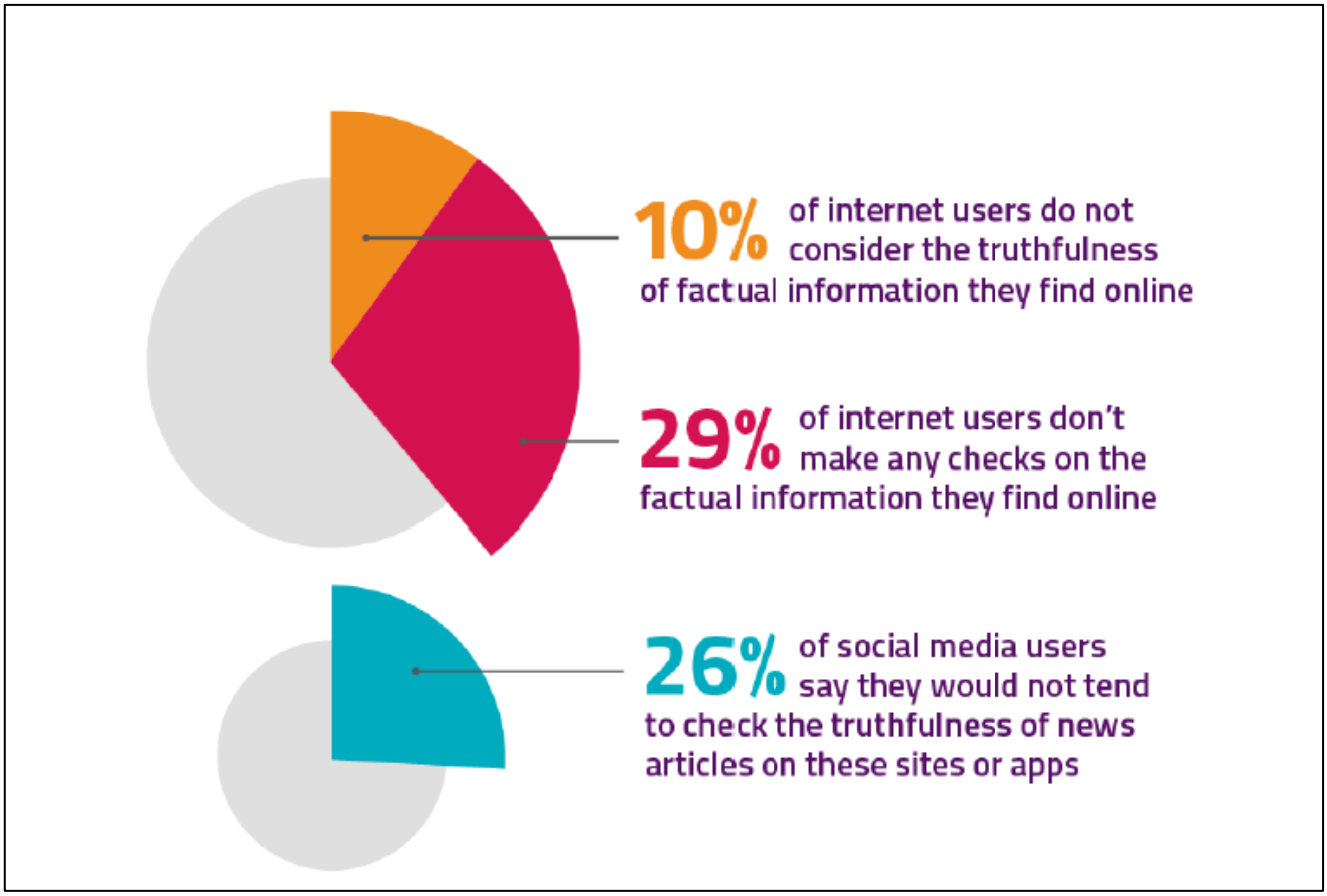
Source:
1. Number of connected wearable devices worldwide from 2016 to 2022, Statista, January 2021

Recent decline in fact checking of online content by UK internet users

Survey findings from 2019 show 10% of UK internet users do not consider the truthfulness of information they find online. A further 2% think all information online is truthful, 25% think most is and 59% show a greater degree of critical understanding, thinking that only some of it is truthful.

Internet users are less likely in 2019 than in 2018 to make checks on the factual information they find online. 29% do not make any checks on the information, up from 23% in 2018.

Similarly, social media users are less likely to check the information in articles they see on social media to establish its truth, 26% would not tend to check versus 18% in 2018.



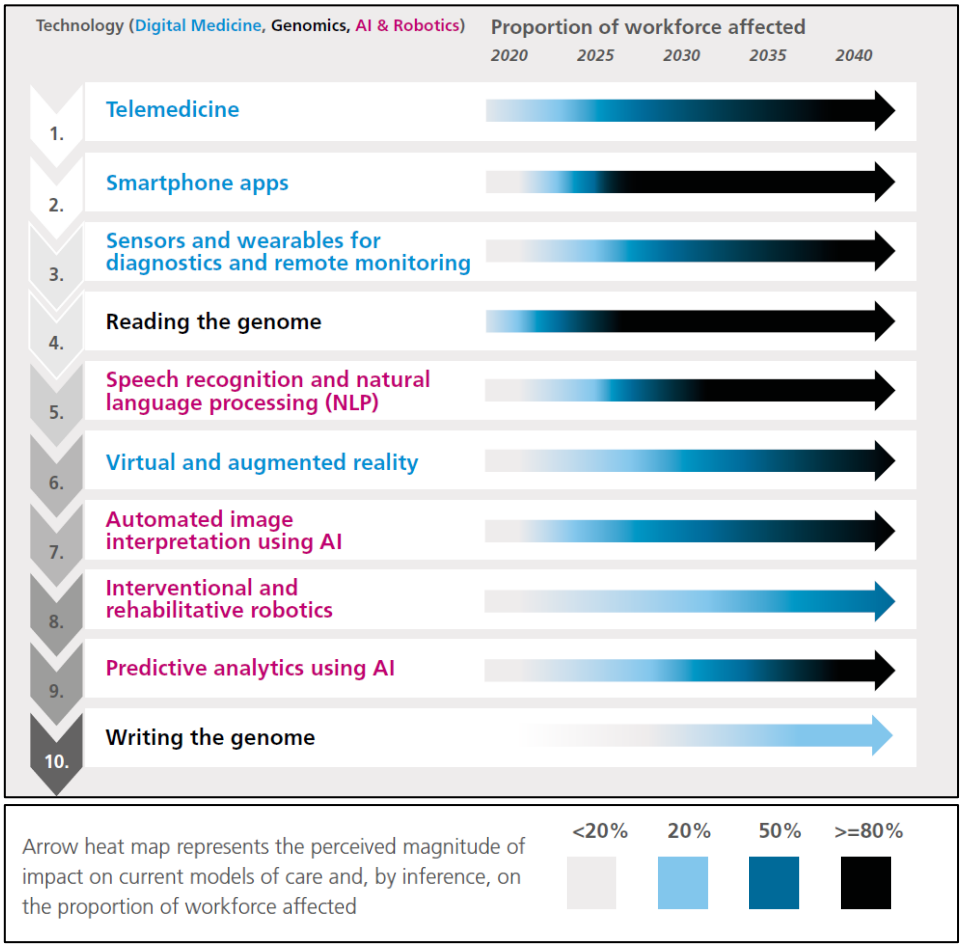
Source:
1. Adults' Media Use & Attitudes report 2020, Ofcom

Digital technologies could reshape the UK healthcare workforce

Digital medicine, artificial intelligence and robotics could significantly change the roles and functions of clinical staff by 2040, delivering improvements in patient care, labour productivity of healthcare staff and reduced costs.

Telemedicine (provision of clinical care using telecommunication and information technology), smartphone apps and wearable sensors are all examples of technologies likely to be routinely used. Progress towards this has accelerated during the coronavirus (COVID-19) pandemic, with 99% of England's GP practices now activating remote consultation platforms.

Digital healthcare technologies and their projected impact on the NHS workforce from 2020 to 2040



Sources:

1. The Topol Review, Preparing the healthcare workforce, NHS, February 2019
2. Millions of patients benefiting from remote consultations as family doctors respond to COVID-19, NHS England, May 2020

Private sector is becoming more involved in space technology

More than 3,300 operational satellites are currently orbiting the Earth. Reduced costs and growing competition has seen an increasing number of commercial satellites reaching the Earth's orbit.

Satellites owned by companies heavily outnumber those used by the military, which reflects a growing trend of the private sector becoming more involved in space technology. It is estimated, by Euroconsult, that an average of 990 satellites could be launched every year by 2028.

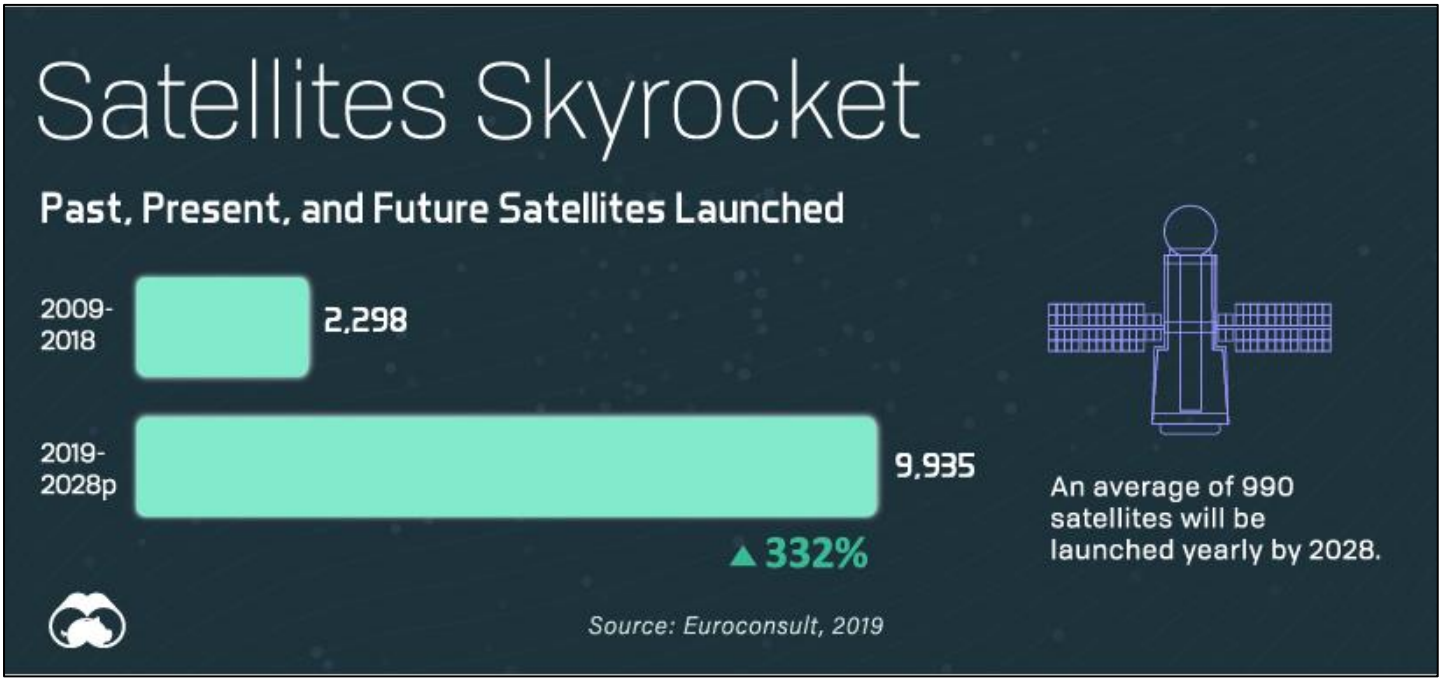


Image by Visual Capitalist

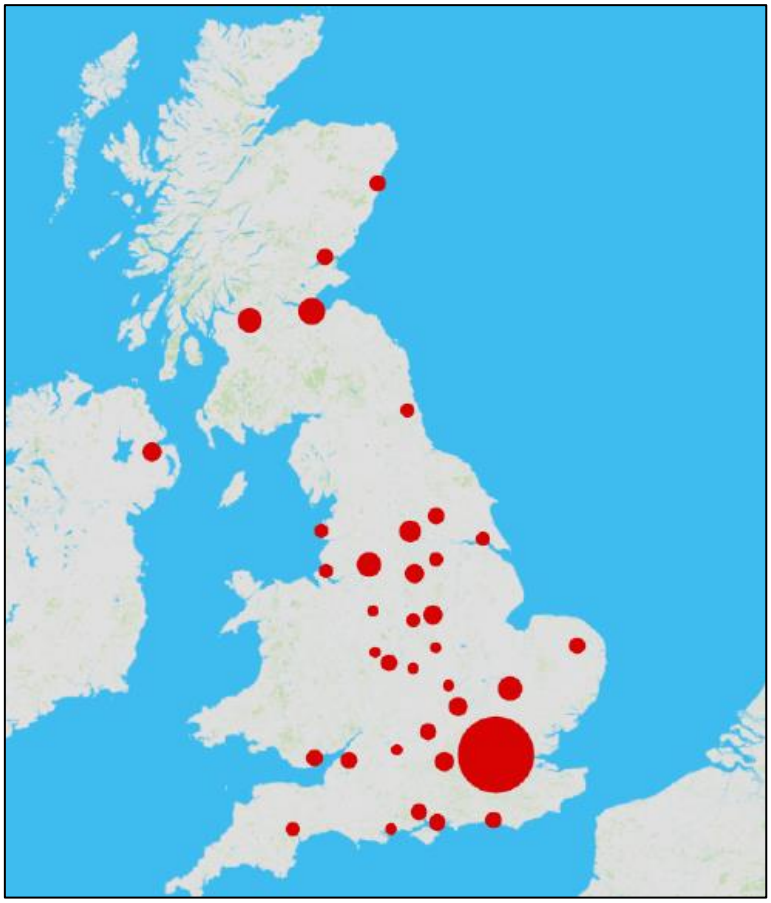
Sources:
1. Union of Concerned Scientists Satellite Database
2. The countries with the most satellites in space, World Economic Forum
3. Who owns our orbit: Just how many satellites are there in space? World Economic Forum
4. Visualizing All of Earth's Satellites: Who Owns Our Orbit?, Visual Capitalist, October 2020
5. Commercial space surveillance and tracking, Euroconsult for the UK Space Agency, March 2020

Artificial Intelligence could make a significant contribution to the UK economy

Artificial Intelligence (AI) has the potential to offer massive gains in efficiency and performance to most or all industry sectors, from drug discovery to logistics. AI can be integrated into existing processes, improving them, scaling them, and reducing their costs by making or suggesting more accurate decisions through better use of information.

It has been estimated that AI could add an additional £630bn to the UK economy by 2035, increasing the annual growth rate of Gross Value Added (the measure of the value of goods and services produced in an area, industry, or sector of an economy) from 2.5 to 3.9%.

While the majority of AI companies are based in London, there are a number of geographical clusters around the UK. The map, developed for the Open Data Institute and the Digital Catapult, illustrates clustering of activity in AI based on tech events, scientific publications, and data such as local skills, business start-up rates and research and development spending.



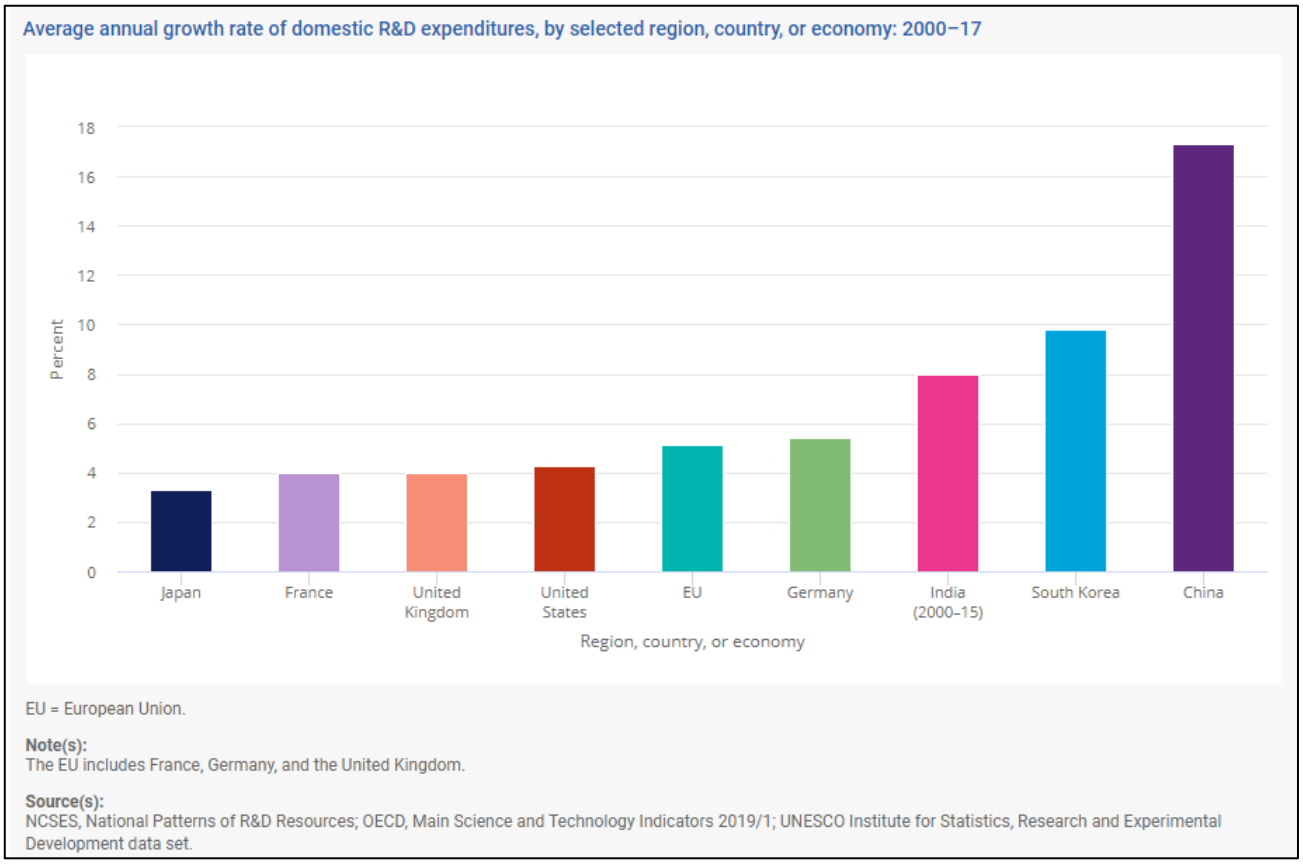
Source:

1. Growing the Artificial Intelligence Industry in the UK, Department for Digital, Culture, Media and Sport and Department for Business, Energy and Industrial Strategy, October 2017

Significant increase in global science and technology research and development expenditure

Total global science and technology research and development (R&D) expenditures have risen substantially, expanding threefold between 2000 ($722 billion) and 2017 ($2.2 trillion). Global R&D activity remains concentrated in the United States, EU and the combination of East-Southeast and South Asia regions.

Across countries, regions, and economies, differential growth rates have led to shifting global R&D shares. Despite average annual growth in R&D spending of 4.3% in the United States and 5.1% in the EU between 2000 and 2017 global R&D shares declined for the US (37% to 25%) and for the EU (25% to 20%). At the same time, the economies of China, Japan, Malaysia, Singapore, South Korea, Taiwan, and India increased their combined global share from 25% to 42%.



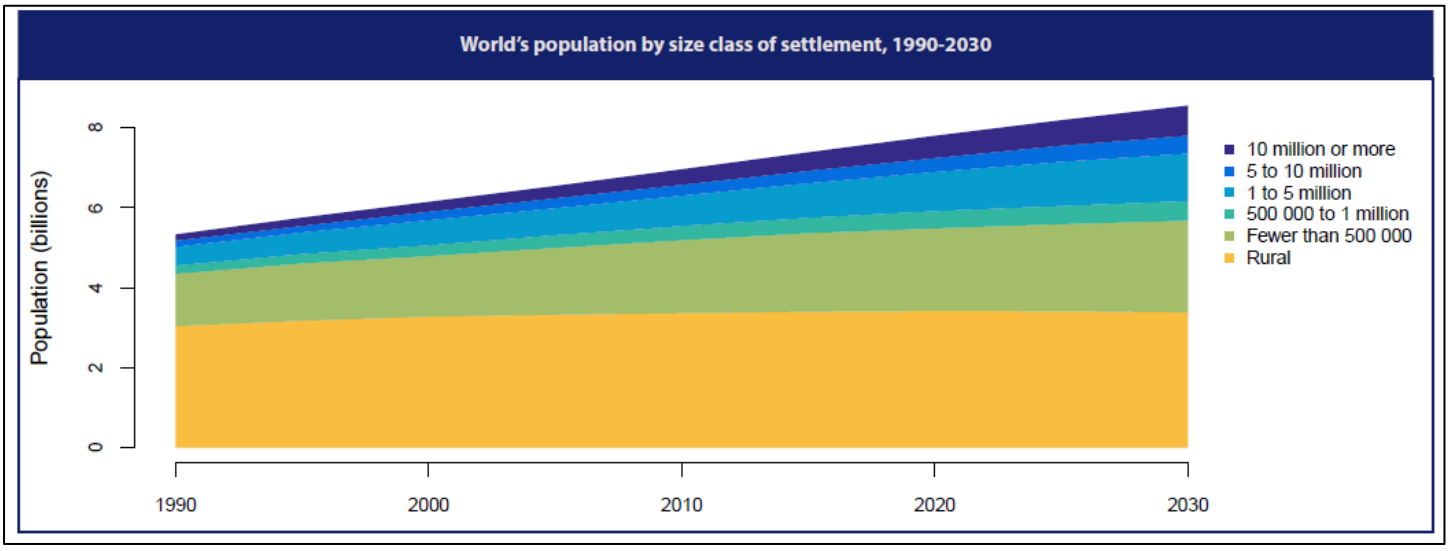
Source:
1. National Science Board, National Science Foundation. 2020. *Science and Engineering Indicators 2020: The State of U.S. Science and Engineering*. NSB-2020-1. Alexandria, VA. Available at https://ncses.nsf.gov/pubs/nsb20201/.

Contents

Increasing global urban population

Between 2018 and 2030, the urban population is projected to increase in all size classes, while the rural population is projected to decline slightly. Rural areas were home to 45% of the world's population in 2018, a proportion that is expected to fall to 40% by 2030.

In 2018, 1.7 billion people (23% of the world's population) lived in a city with at least 1 million inhabitants. In 2030, a projected 28% of people worldwide will be concentrated in cities with at least 1 million inhabitants. Cities with more than 10 million inhabitants are often termed 'megacities'. Globally, the number of megacities is projected to rise from 33 in 2018 to 43 in 2030.



Source:

1. United Nations, Department of Economic and Social Affairs, Population Division (2018). The World's Cities in 2018 Data Booklet (ST/ESA/ SER.A/417)

Significant growth in Gross Domestic Product in a number of global cities

Three of the top 10 cities by Gross Domestic Product (GDP) in 2035 are expected to be in the US and four in China. London, Paris and Tokyo form the remaining three. Altogether, these top 10 cities will contribute $13.5 trillion in GDP by 2035. Clusters of such metropolitan areas are typically considered megaregions - which account for a large share of global economic activity.

The average annual GDP growth across cities is 2.6%. The highest top ten growth rates will all be in Asian cities – Bangalore at 8.5% is top of the rankings.

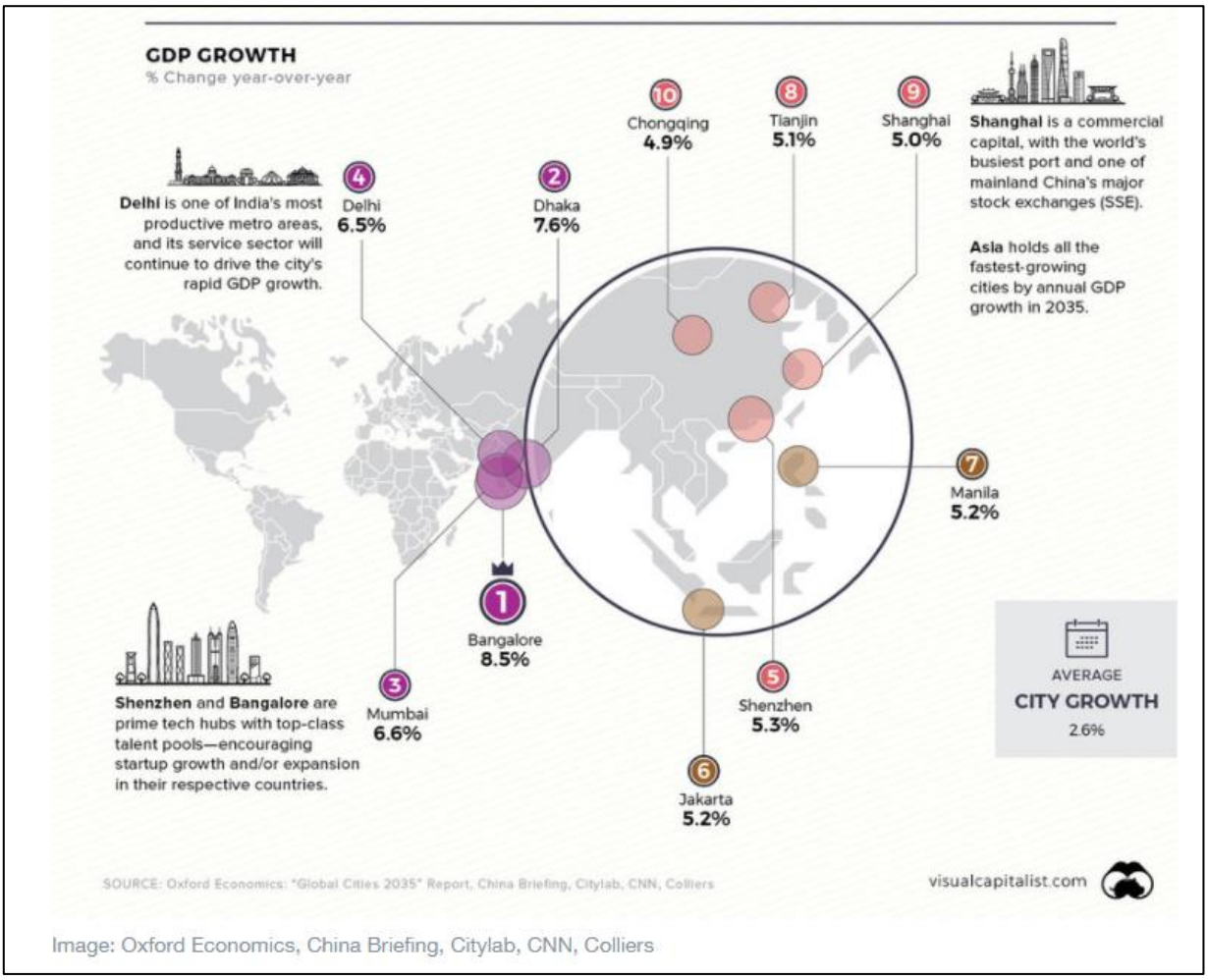


Image: Oxford Economics, China Briefing, Citylab, CNN, Colliers

Credit: Visual Capitalist

Source:

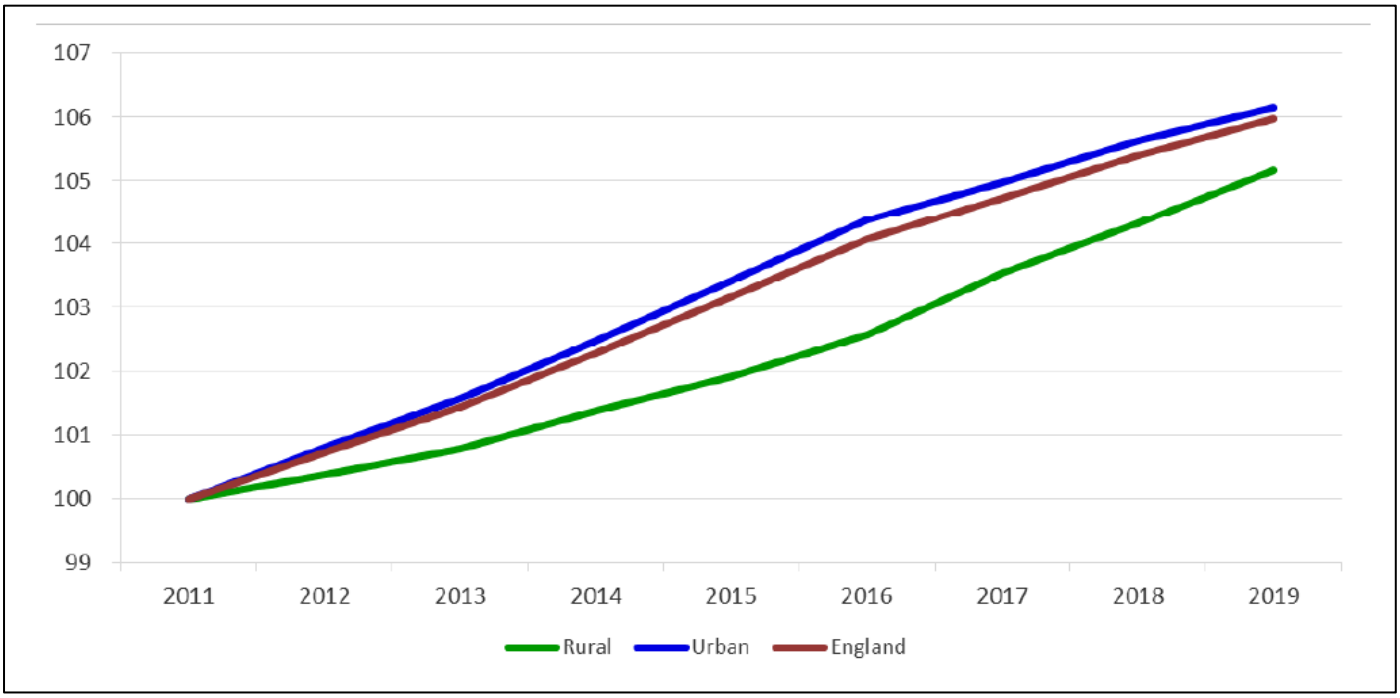
1. These will be the most important cities by 2035, World Economic Forum blog, October 2019

England's urban population is growing faster than the rural population

In England, both rural and urban areas have seen an increase in overall population between 2011 and 2019. Rural population increased by 5.2% and urban by 6.2%. Within rural areas, the greatest rate of population increase was in rural town and fringe areas (5.7%). Within urban areas it was in urban major conurbations (6.9%).

In 2019, 56.3 million people lived in urban areas (82.9% of England's population) and 9.6 million in rural areas (17.1%).

Index of population change, England, 2011-2019.
2011 = 100



Source:

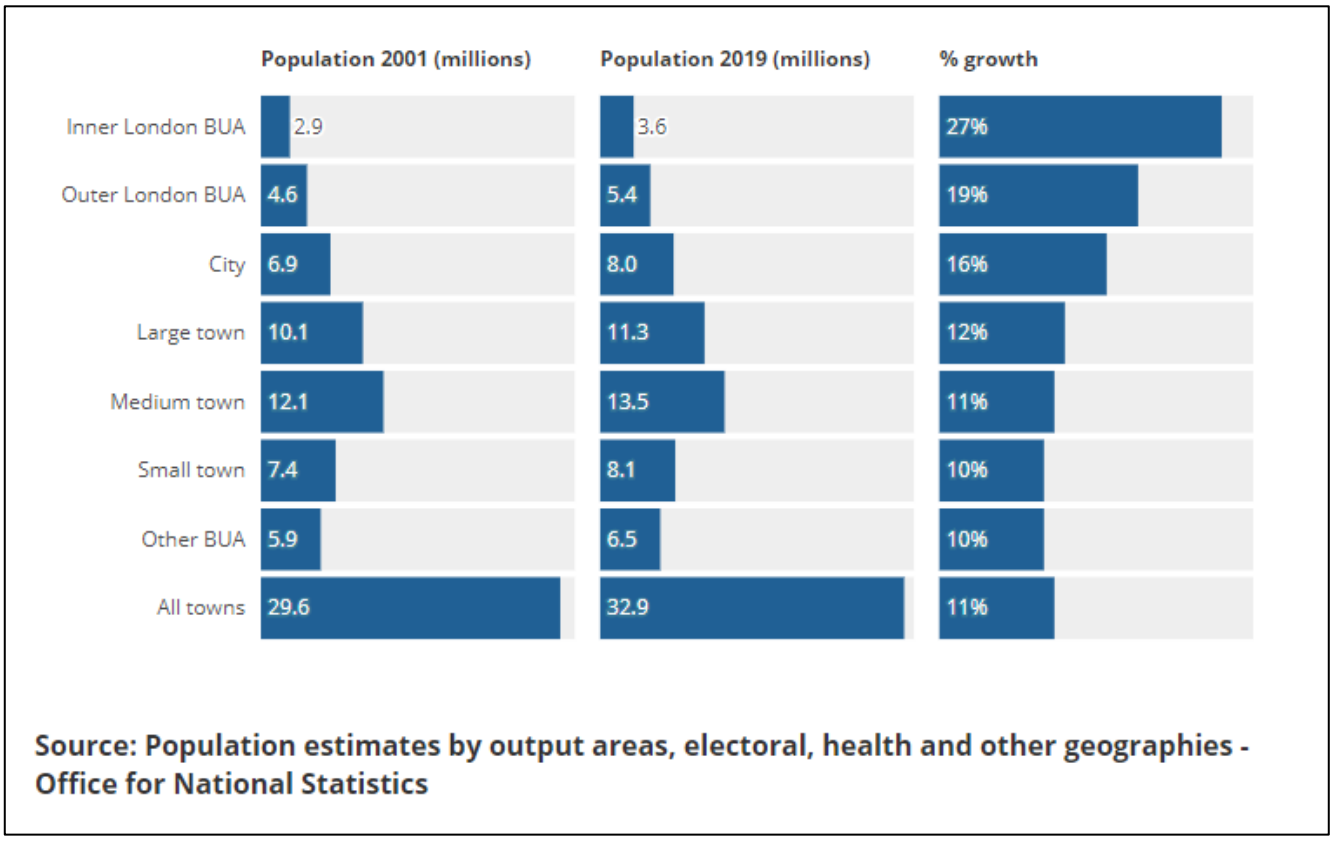
1. Statistical Digest of Rural England Department for Environment, Food and Rural Affairs, February 2021

Population in England and Wales has increased more in cities than towns

Between 2001 and 2019, built-up areas in London were the fastest-growing places in population percentage terms. Inner London had the most significant growth rate of 27%, followed by Outer London with a growth rate of 19%.

The population in cities outside of London increased by 16% during the same period. While all cities outside of London experienced population growth, comparisons across cities reveal that the population growth was quite diverse. In Manchester, the population grew by 30% between 2001 and 2019, followed by Nottingham where the population grew by 25%. In contrast, the cities of Kingston upon Hull and Stoke-on-Trent recorded a population growth of just 4% and 6%, respectively.

Population growth, England and Wales, mid-2001 to mid-2019 (BUA = built up areas)



Source:

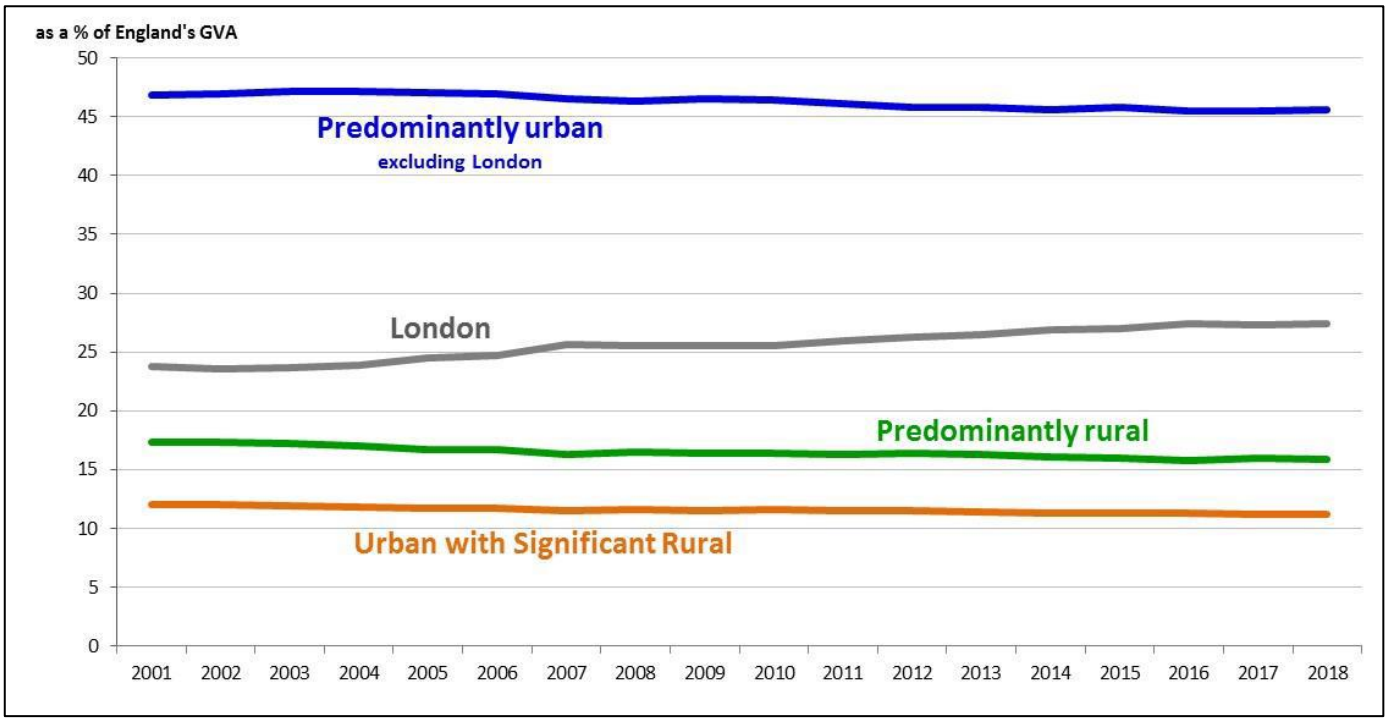
1. Understanding towns in England and Wales: population and demographic analysis, Office for National Statistics, February 2021

London's contribution to England's Gross Value Added is increasing

Urban areas contribute more to England's Gross Value Added (GVA) than rural areas; this has been a consistent trend since 2001. London's GVA has gradually risen since 2001.

In 2018, GVA from predominantly rural areas contributed 15.9% of England's GVA, and was worth an estimated £261 billion. This compares with 45.6% from predominantly urban areas (£749 billion), 27.4% from London (£450 billion) and 11.2% from urban with significant rural areas (£184 billion).

Gross Value Added (GVA) by Local Authority Classification as a % of England GVA, 2001-2018.



Gross Value Added (GVA) measures the contribution to the economy of each individual producer, industry, or sector.

Source:

1. Rural productivity and Gross Value Added (GVA), Department for Environment, Food and Rural Affairs and Office for National Statistics, January 2020

Strong population growth rates in city regions

In total 11 city regions had over 27 million residents in 2015, over 40% of the total UK population of 65 million. Population projections from 2015 to 2025 show city regions have a percentage growth rate of 7.6% compared to the UK growth rate of 6.7%.

Greater London, Bristol, the West Midlands and Edinburgh city regions all have higher projected population growth rates than the UK.

Projected population change (principal projections), mid-2015 to mid-2025.

City region	Mid-2015 projection	Mid-2025 projection	% growth 2015-25
Greater London	8,697,000	9,802,000	12.7
Bristol	1,116,000	1,215,000	8.9
West Midlands	2,834,000	3,045,000	7.5
Greater Manchester	2,752,000	2,915,000	5.9
Edinburgh	1,349,000	1,447,000	7.3
West Yorkshire	2,279,000	2,405,000	5.5
Sheffield	1,373,000	1,439,000	4.8
Cardiff	1,504,000	1,558,000	3.6
North East	1,960,000	2,024,000	3.3
Liverpool	1,521,000	1,564,000	2.8
Glasgow	1,797,000	1,837,000	2.2
City regions	27,184,000	29,252,000	7.6
City regions, not London	18,486,000	19,450,000	5.2
Rest of the UK	37,913,000	40,192,000	6.0
UK	65,097,000	69,444,000	6.7

Sources: ONS: National population projections, 2014-based, ONS: Subnational population projections for England, 2014-based, Welsh Government: Local authority population projections for Wales, 2014-based, NRS: Population projections for Scottish areas, 2012-based

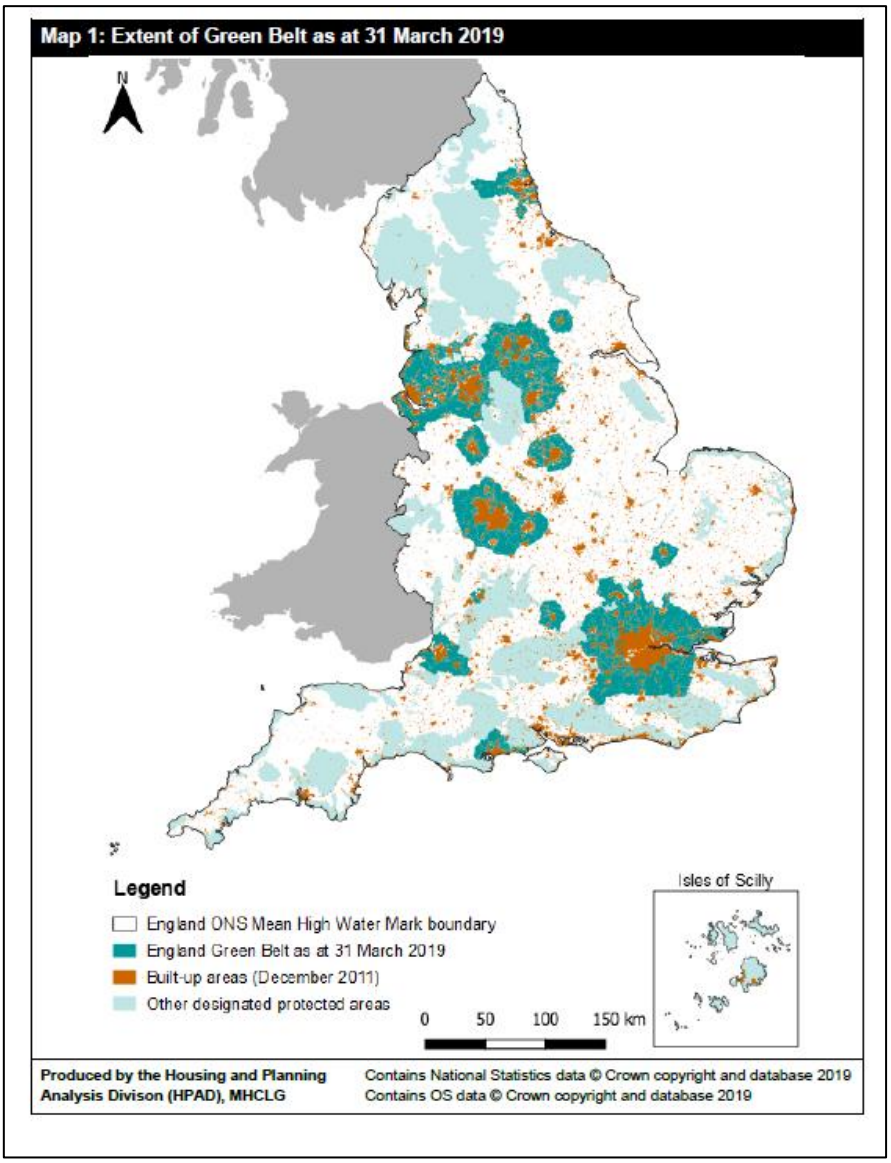
Source:

1. Population dynamics of UK city regions since mid-2011, Office for National Statistics, October 2016

Small decrease in the area of Green Belt land in England

Allowing for overlaps, just over 40% of the area of England (5.6 million hectares) is protected against development by one or more environmentally-protected designations. The extent of the designated Green Belt in England, as at 31 March 2019, was estimated at around 12.4% of the land area of England.

Trends between 2013/14 and 2018/19 show a 1.1% loss of Green Belt land in England, this is partly due to local authorities adopting new plans in 2018/19.



Source:

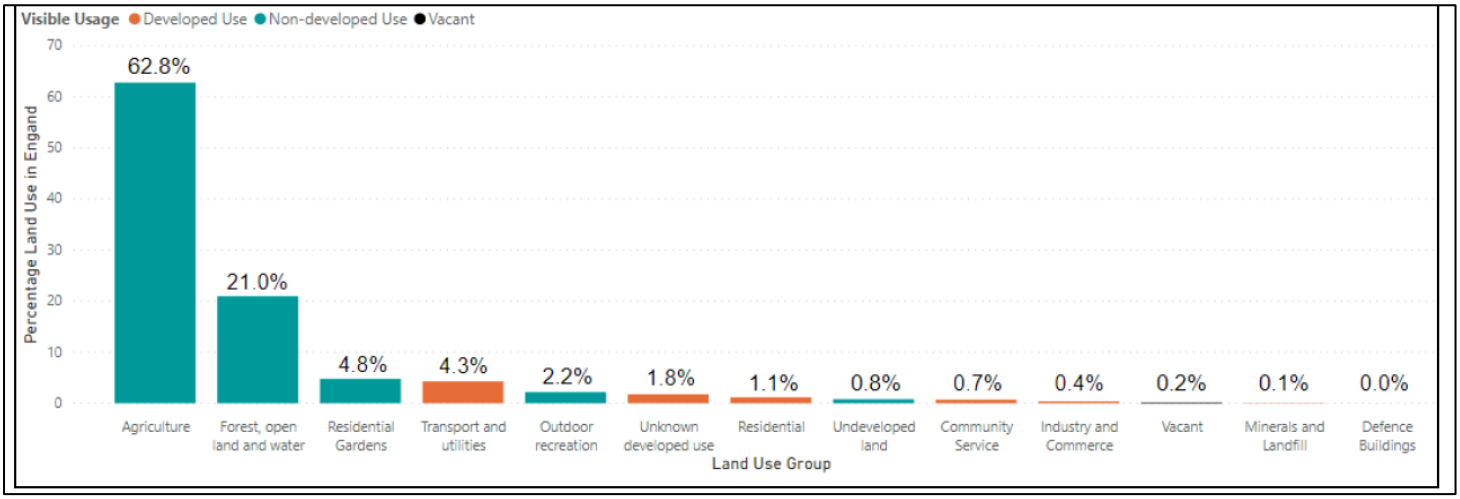
1. Local Planning Authority Green Belt: England 2018/19, Ministry of Housing, Communities and Local Government, October 2019

Agriculture continues to dominate land use in England by area

In 2018, 8.3% of land in England was of a developed use with 91.5% non-developed and 0.2% vacant (unclassified in terms of land use). The highest percentages of land use were agriculture (62.8%), forest, open land and water (21%) and residential gardens (4.8%).

The amount of land with developed use varies significantly by English region. London has the highest percentage of land in developed use at 39.6%. The South West has the lowest figure at 6.7%.

Land use in England 2018 by group as a proportion of total land use area



Source:

1. Land Use in England 2018, Ministry of Housing, Communities and Local Government, May 2019

Acknowledgements

The Government Office for Science would like to thank the officials, experts and stakeholders who generously contributed to the development of this and earlier versions of the Trend Deck.

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