



ECONOMY

Self-employment



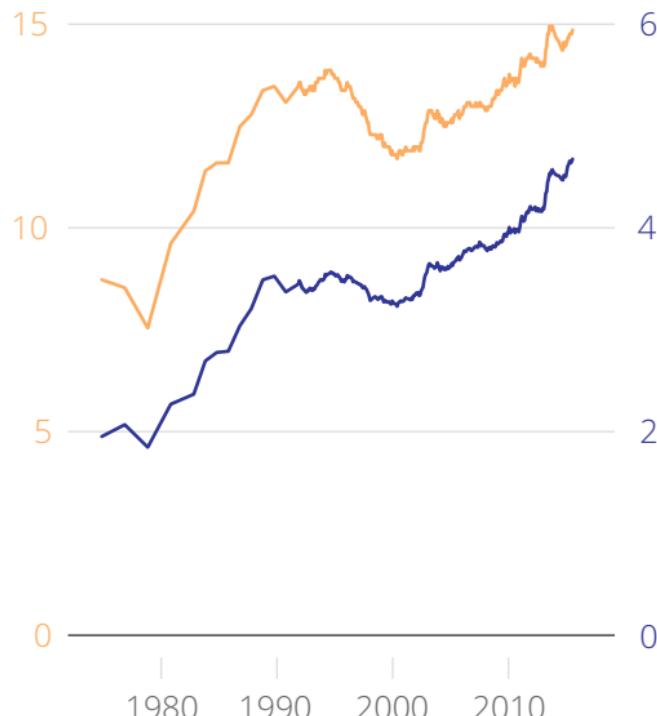
Self-employment is on the rise

The latest figures (Jan-Mar 2016) show the number of people self-employed in the UK is at an all-time high of 4.69 million people and 14.9% of the workforce, up from 2 million and 8.7% in 1975. Median income from self-employment in 2012/13 has fallen by 22% since 2008/9.

Self-employed people report higher happiness levels despite typically lower earnings than employees and not receiving benefits such as paid employees in terms of paid leave, sick pay, maternity pay and workplace pension provision. The growth of self-employment could require policies to reduce the administrative burdens of being self-employed and social measures to insulate them against a less predictable income.

Self-employment numbers and proportion

- % of self-employed people
- Number self employed (millions)



Sources: ONS Labour Force Survey | DWP Family Resources Survey | Resolution Foundation Earning Outlook 2015

Image: Flickr/cmbellman, CC-BY-NC-ND



ECONOMY

Rising developing world

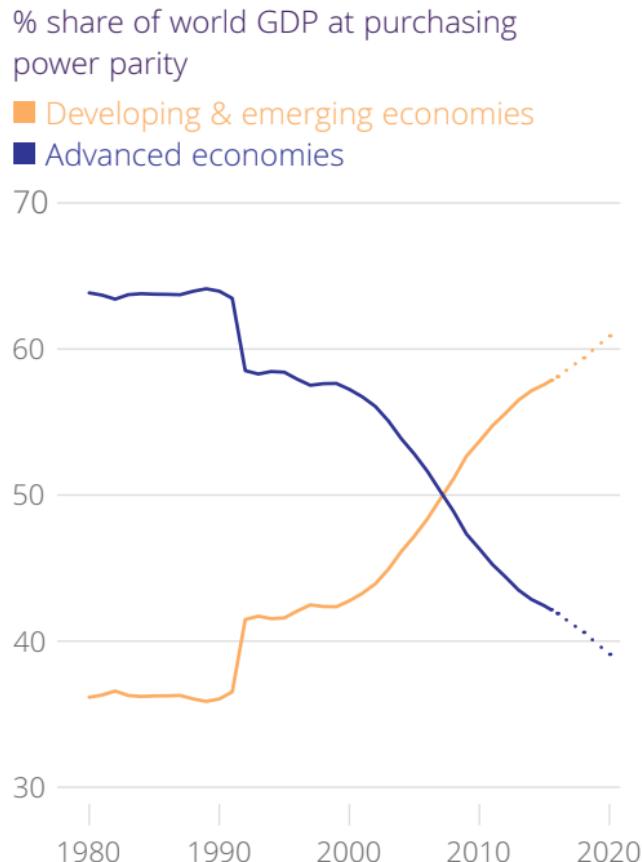


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Developing countries are increasing their share of the world economy

In 2000, developing countries and emerging markets accounted for 43% of world GDP; by 2012 this had increased to 56%. The developing countries alone increased their share of world exports from 33% to 48% over the same period. These trends can be attributed, in part, to slower growth in developed economies and faster growth in developing countries. In addition, the G-20 developing nations have reduced trade tariffs, which have helped developing countries to integrate into the world economy.

For UK businesses, the increased access to wider markets is a major opportunity, if they can be innovative and responsive in an increasingly competitive global marketplace.





DEMOGRAPHICS

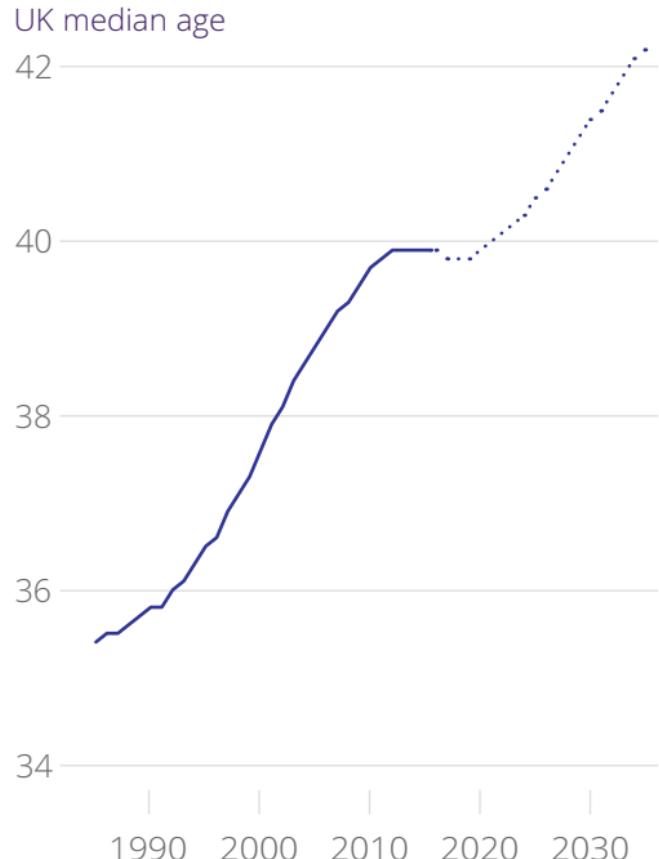
Ageing population



The UK population is ageing

The UK population is ageing and will continue to age over the next few decades as a result of past reductions in mortality rates at all ages, especially at the oldest ages, combined with overall past declines in fertility rates. Although the fertility rate has been increasing in the UK since 2001, it is still below replacement level.

In 2014, there were 3.2 people of working age for every person of pensionable age. This ratio is projected to fall to 2.7 by 2037. Welfare spending on pensioners is projected to rise from £114bn in 2014/15 to £128bn by 2019/20.



Source: ONS National Population Projections
Image: Flickr/yourdon, CC-BY-NC-SA



DEMOGRAPHICS

UK population



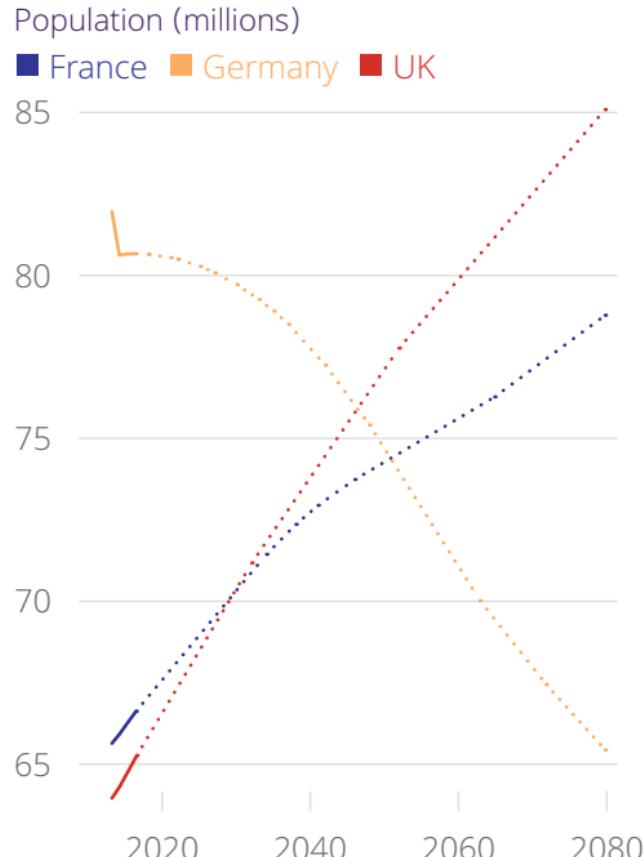
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The UK population is growing at 0.6%

The UK population is growing by an average of 0.6% each year and is projected to reach 70 million by mid-2027.

Assumed net migration accounts for 51% of the projected increase over the next 25 years, with natural increase (more births than deaths) accounting for the remaining 49% of growth. Different assumptions for fertility, migration and life expectancy cause the predictions of population to vary from 4.8 million higher for mid-2039 to 5 million lower.

Projections see the UK overtaking France in population by 2030 and Germany by 2047 to become the most populous country in Europe.



Sources: ONS National Population Projections: 2014-based Statistical Bulletin | EUROPOP 2013 Projections

Image: Flickr/eduardoskinner, CC-BY-NC

DEMOGRAPHICS

Housing need

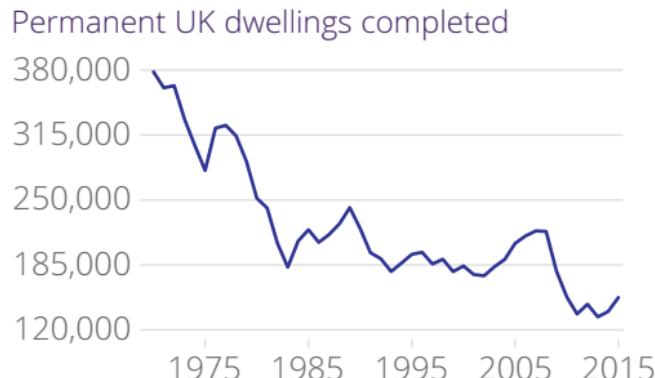


Demand for housing is increasing

The number of households is projected to grow, and more housing will need to be built in order to accommodate this growth. The Town and Country Planning Association estimates that around 240,000 homes will need to be built in England each year up to 2031; in 2014-15, English housing completions totalled 124,490.

A failure to build the homes required will exacerbate current problems of affordability: over the last 14 years average house prices have risen by 155%, while the average wage has risen by 41%. Since 1996, the number of 20-34 year olds living with their parents has increased by 669,000 to 3.3 million in 2013, despite the population of 20-34 year olds being largely the same.

Sources: TCPA, New estimates of housing demand and need in England 2011-2031 | ONS Trends in the UK Housing Market 2014
Image: wikimedia, CC-BY





DEMOGRAPHICS
Urbanisation



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Urbanisation is on the rise

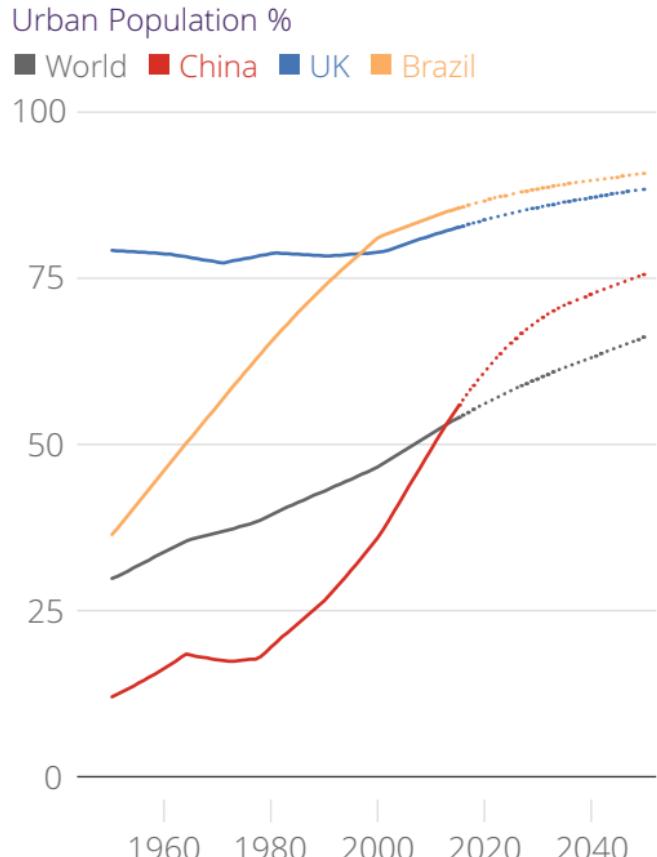
The population living in UK urban areas is increasing, measured at 81.6% in 2011 and forecast to rise to 88.6% by 2050. Population density in urban areas will also increase as the area of urban land will not significantly change.

Urban living is often associated with better jobs opportunities, better transport, greater access to social services, and enhanced opportunities for cultural and political participation. But it may also lead to pressure on infrastructure, housing and public services as well as health costs, for example from poor air quality.

Urbanisation globally will also affect the location of emerging markets and businesses. Cities are predicted to contribute 61% of global GDP by 2030.

Source: UN World Urbanization Prospects: 2014 Revision | EY Megatrends 2015.

Image: Flickr/setiadi, CC-BY-NC-ND





TRANSPORT
Air passengers

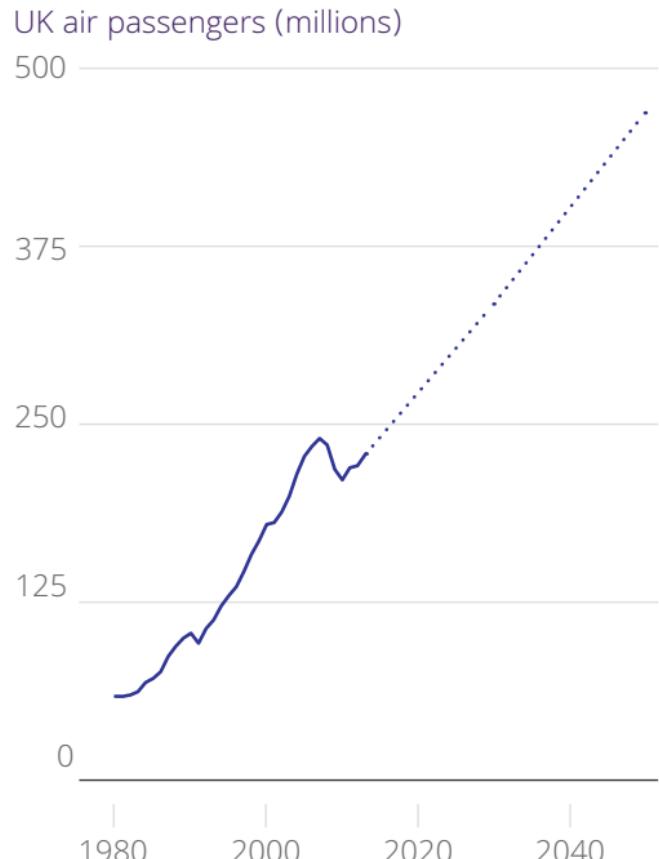


Passenger numbers through UK airports are increasing

The number of trips UK air passengers take is growing steadily and is predicted to continue for the next few decades. Events such as 9/11, the global economic recession and the 2010 volcanic eruption of Eyjafjallajökull stalled growth in the short term.

Over the past 10 years the growth rate of passenger numbers has stabilised to around 3% per year. Trips for leisure purposes have increased and journeys made for business have declined.

To meet the forecasted growth there will need to be an increase in airport capacity and the number of flights. Aviation emissions will also need to be addressed to meet future greenhouse gas targets.



Source: DfT Air traffic at UK airports

Image: Shutterstock

TRANSPORT

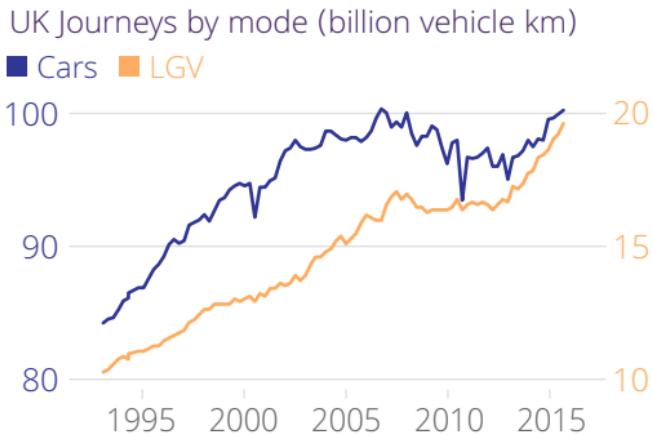
Light goods vehicles



The rise of internet shopping is changing traffic

Over the past twenty years the strongest growth in UK road traffic has been from light goods vehicles (LGV). LGV traffic was not affected by the 2008 recession like car journeys were. It has been suggested that the rise of internet shopping is driving this trend, as more deliveries are made to homes by vans.

The average weekly spend online in May 2016 was £963.8 million in Great Britain, almost triple of 2009's figure of £341.7 million.



Sources: ONS Overview of Internet retail sales in 2014 |
DfT Modal comparisons
Image: Wikimedia

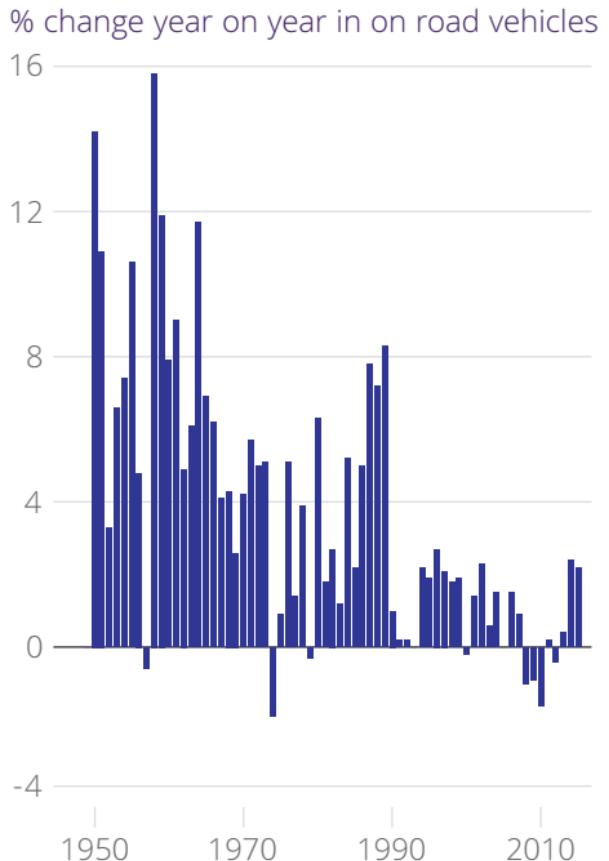


TRANSPORT
Traffic volume



Traffic volume has decreased

Traffic volume has been stabilising over the past decade, despite an increasing population. This means that car use per capita is falling. There is debate as to how this trend will continue. On the one hand the Department for Transport estimates that traffic volume will grow again as the economy recovers; on the other, proponents of 'peak-car' argue that car use will continue to decline or remain stable because of a falling number of company cars, more young people remaining in the family home for longer and improved public transport in urban areas. These trends are not uniform across all groups – young people, Londoners and men are driving less while older people and women are driving more.





TRANSPORT

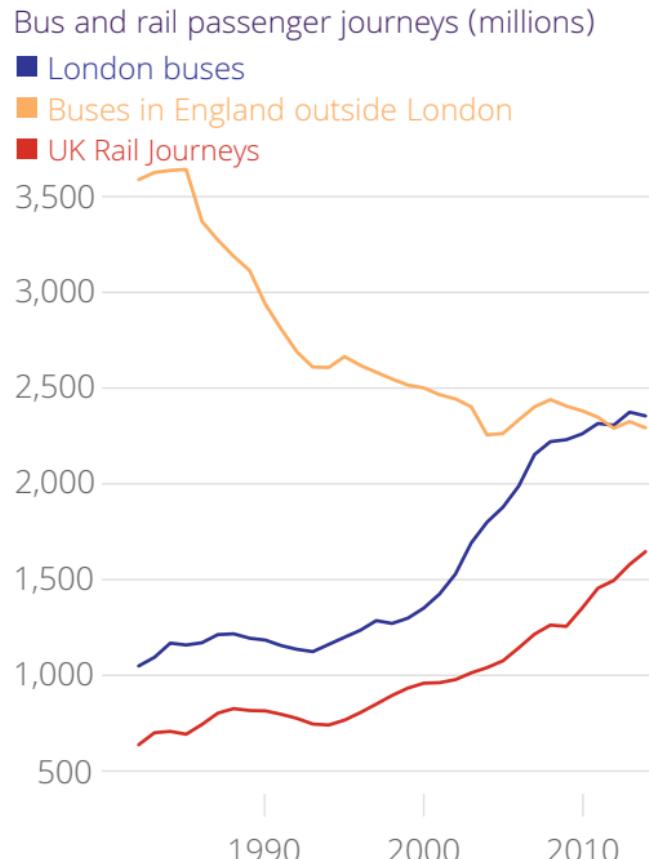
Buses and trains



Bus use is falling outside London while train use is increasing

In 2014, over half of all bus journeys in England were made in London. Across the UK, bus use has been falling since deregulation in 1985 in part because of a reduction in funding, but also because of the increasing affordability of cars. In London, however, bus use is going up because of the introduction of the congestion zone, a growing population and the introduction of touch payment technology.

Trains meanwhile have seen a strong increase nationwide, especially in the south east. The increase in rail travel is driven mainly by a reduction in the use of company cars.



Sources: DfT Rail usage, infrastructure and performance |
DfT Local bus passenger journeys
Image: Flickr/nikmorris, CC-BY-NC-SA



TRANSPORT

Ultra low emission vehicles



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The small number of ultra-low emission vehicles on the roads is rising

Ultra low emission vehicles (ULEVs) are those with emissions of CO₂ below 75 g/km, or fully electrically powered.

Uptake of ULEVs has recently increased, with more than half of the total number on the road registered in 2015, but the total fraction of all vehicles remains small at just under 0.2%. The recent growth has been stimulated by the 2011 Plug-in Car Grant, which provides up to 25% of the cost of an electric car capped at £4,500.

The UK's climate change strategy relies heavily on the uptake of electric vehicles but high prices and limited recharging infrastructure is inhibiting take up.

Quarterly new ULEV registrations and % of all new registrations

■ Registrations

■ % of new registrations

12,500

10,000

7,500

5,000

2,500

0

1.25

1.00

0.75

0.50

0.25

0

2010

2012

2014

2016

Source: DfT All licensed vehicles and new registrations

Image: Flickr/pembina, CC-BY-NC-SA



COMMUNICATIONS

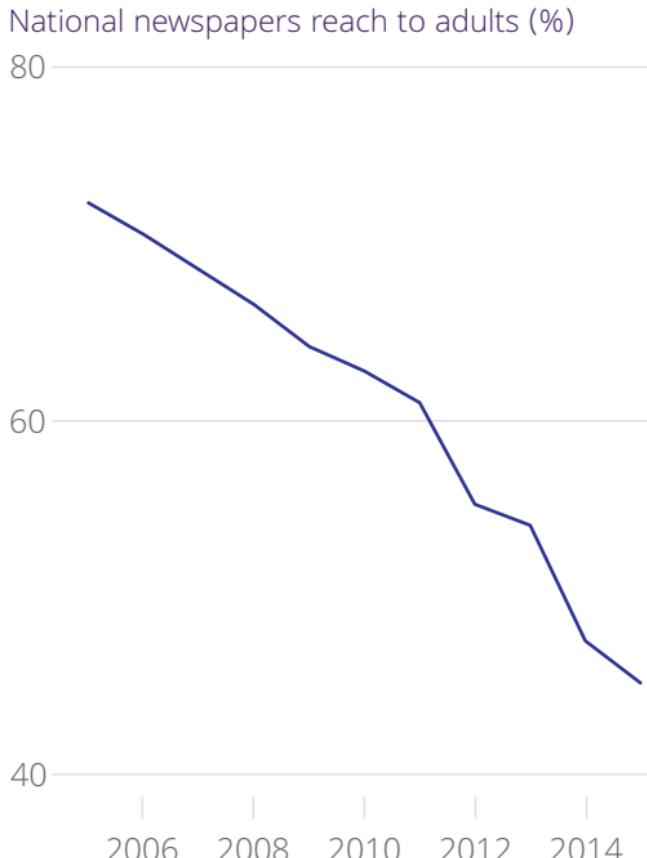
Sources of news



News is diversifying to cater for specific interests

The diversification of news sources has enabled people to access news that is increasingly relevant to them, however this comes with a risk that the breadth of coverage of issues is reduced. Across all platforms, UK adults use an average of 3.8 sources for news.

The average number of news sources people use varies depending on the platform they use; for television, website, apps and newspaper it is 2 and for radio it is 1.4. Nine out of ten (90%) people aged 55 and over consume news through the television compared to three in five (59%) of the 16-24 age group. 60% of the 16-24 age group use the internet or apps for news, three times higher than those aged 55 and over.



Source: Ofcom News consumption in the UK 2015

Image: Flickr/plantronicsgermany, CC-BY-ND



COMMUNICATIONS
Children's media habits

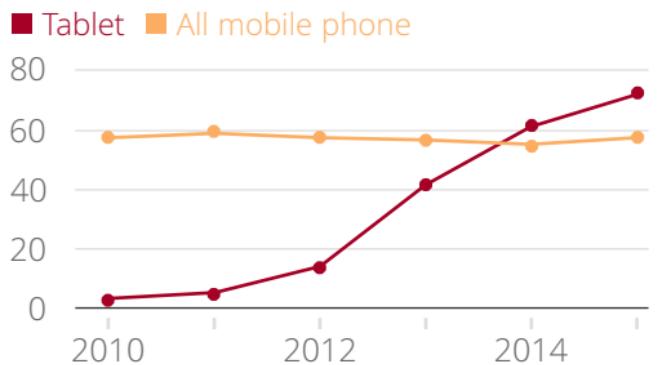


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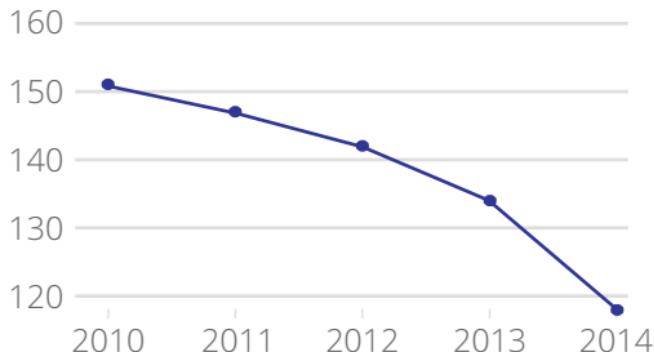
Young people are watching less TV year-on-year

In 2014, 16-24 year olds spent over 14 hours per day consuming media and communications, a significant increase on the 2010 figure of 9½ hours. Their use of the TV, however, is declining, with average daily television consumption by the same age group falling by 18% between 2010 and 2014. The surge in smartphone and tablet ownership has presented young people with new communications and entertainment options, at the expense of the TV set. Changing habits are altering the way advertisers reach their target audiences and may ultimately affect the way the media is regulated.

Media used by children aged 5-15 at home (%)



Average minutes per day of broadcast TV viewed by children aged 5-15



Sources: Ofcom Children and Parents: Media Use and Attitudes 2014, 2015 | Ofcom Communications Market Report 2014, 2015

Image: Flickr/dcmetroblogger, CC-BY-NC-SA



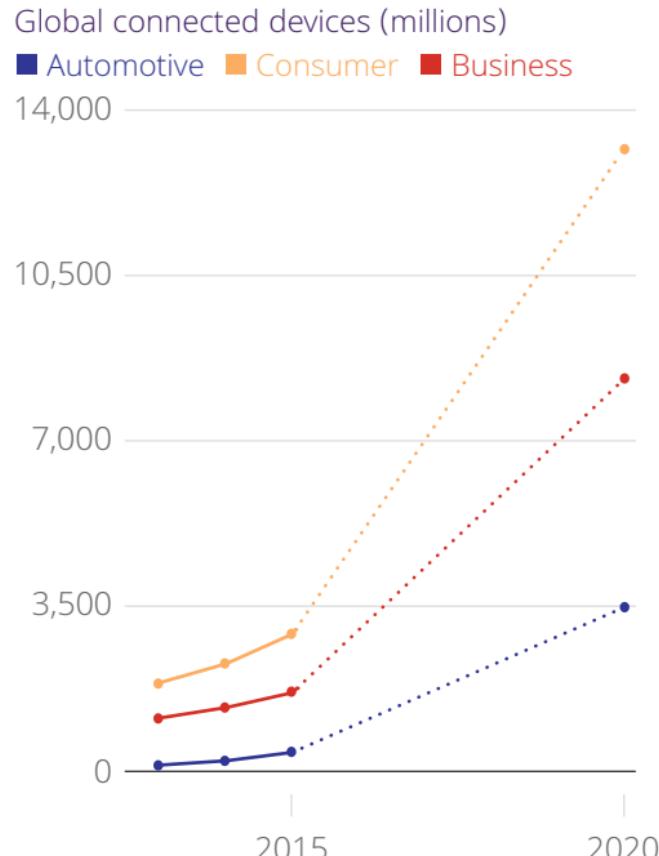
COMMUNICATIONS
Connected devices



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More devices are connecting to the internet

The number of devices connected to the internet is growing rapidly. The wider availability of wireless communication networks, combined with reductions in the cost and size of sensor technology, is making it feasible to place communicating sensors in objects ranging from exercise wristbands and household appliances to car tyres and cow's stomachs, creating an 'Internet of Things'. This linking together of hitherto disparate systems raises a range of potential security vulnerabilities and privacy issues but also many economic, policy and societal opportunities.



Source: Trends in ICT POSTnote

Image: CERN

COMMUNICATIONS

Cyberattacks



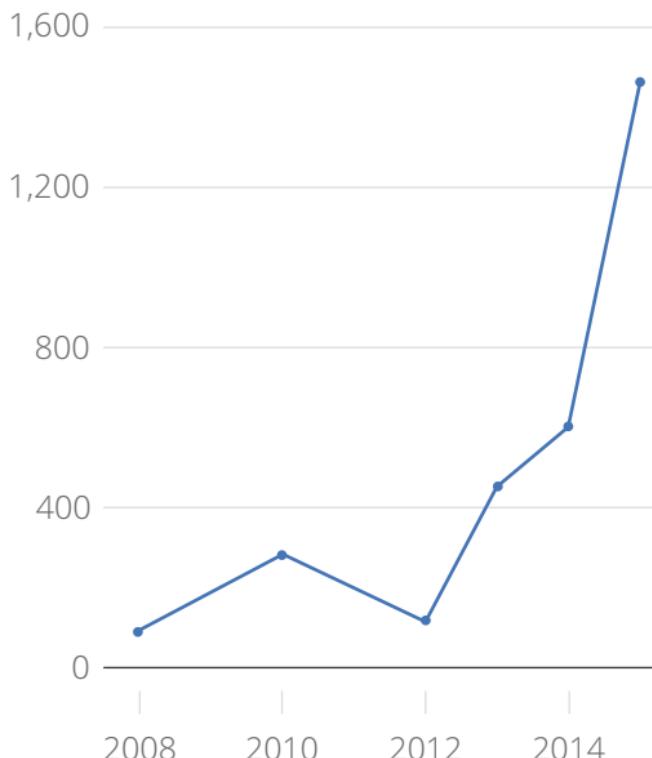
The cost of cyberattacks seems to be rising

Assessments of the scale of cybercrime vary considerably. Estimates by the Office of National Statistics for cybercrime in England and Wales in 2015/16 included:

- 1.9 million incidents of cyber-related fraud (e.g. related to online shopping or fraudulent computer service calls)
- 0.6 million incidents of unauthorised access to personal information (including hacking).

The average cost of a serious attack on a large organisation has grown rapidly in recent years. Damage ranges from espionage to data loss, reputational damage and the destruction of physical infrastructure. GCHQ estimates that 80% of cybercrime could be prevented through simple best practice.

Average cost of a large company's worst loss in a year from a cyberattack (thousands £)



Sources: ONS: Crime in England and Wales 2015/16 | NAO: The UK cyber security strategy | PWC and BIS: Information Security Breaches Surveys 2008-2015
Image: Flickr/nouqraz, CC-BY-NC-ND



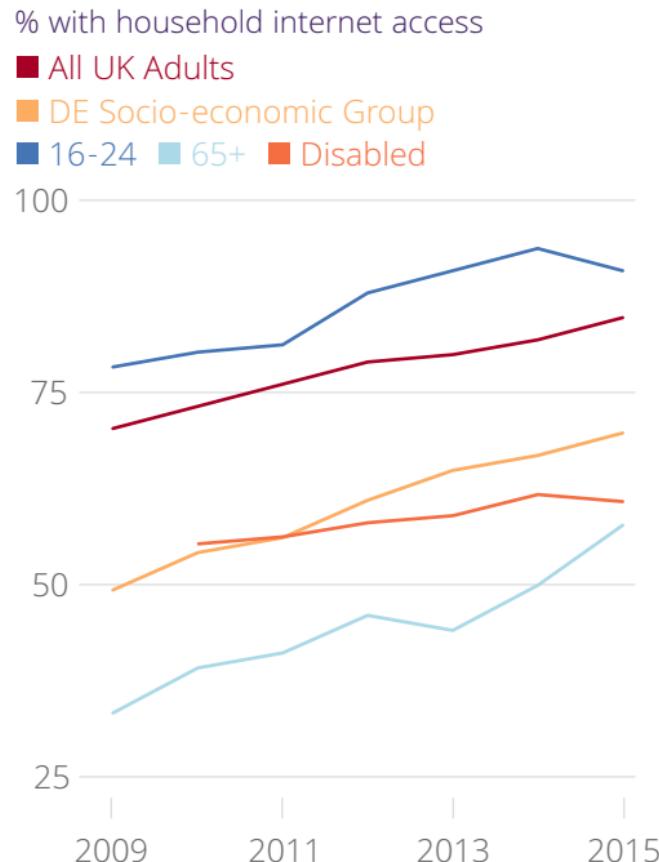
COMMUNICATIONS
Internet access



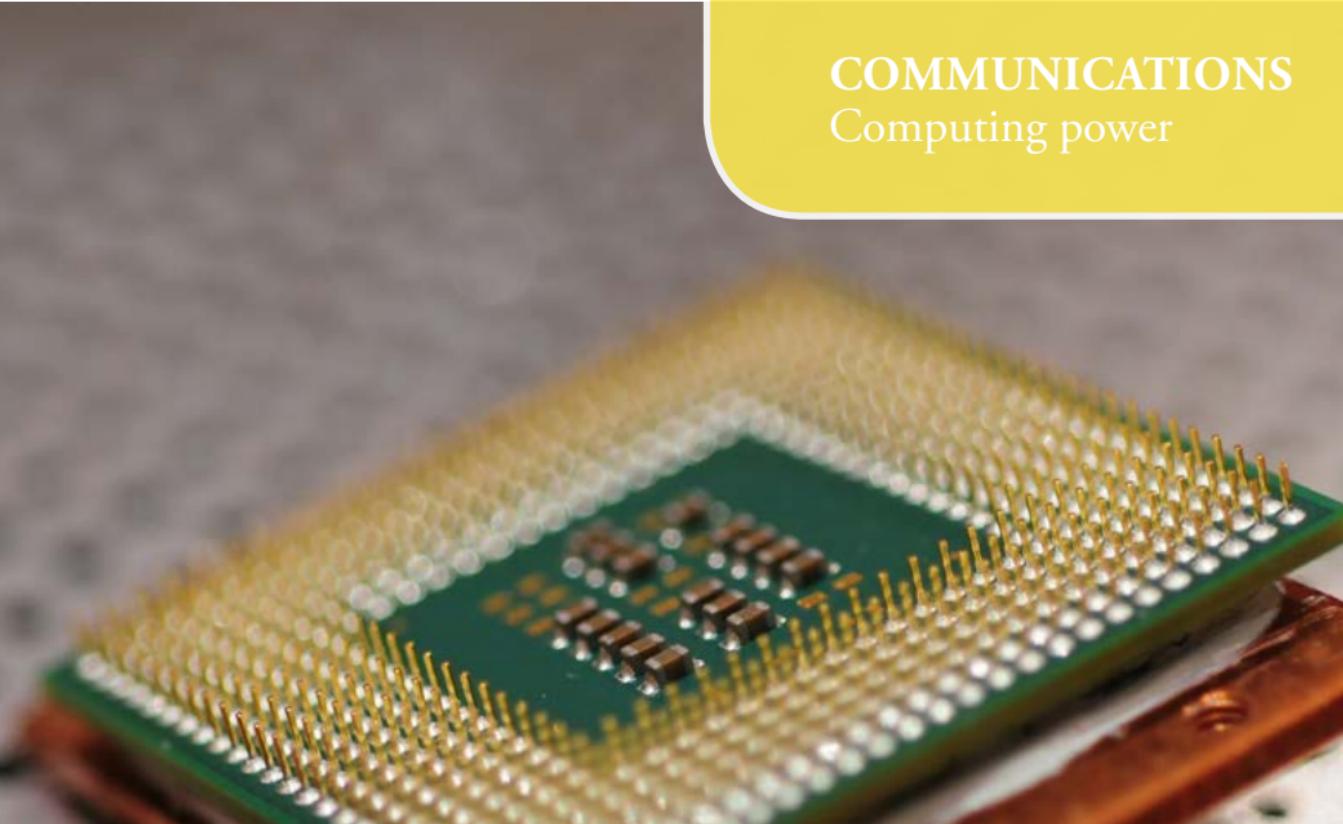
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Internet access is increasing but there is still inequality of access

Levels of internet access in UK households are increasing, including for those less likely to have basic digital skills: people who are elderly, disabled or from the lowest socio-economic groups (DE). The proportion of people with basic online skills is also expected to rise, driven by the falling cost of internet access, an increasing number of online services, a greater number of people with the skills to support others, and younger people generally having better digital skills. A survey conducted in 2014 found that lack of motivation (being unaware of the benefits) was cited as the main reason for not using the internet (77%), followed by lack of access (42%), lack of knowledge or confidence (28%), and cost (14%).



Sources: Tinder Foundation: A Leading Digital Nation by 2020 | Ipsos MediaCT, Media Literacy: Understanding Digital Capabilities | Ofcom Technology Tracker (09-15) | ONS Internet Users, Internet Access
Image: Flickr/prupert, CC-BY-NC-ND



COMMUNICATIONS

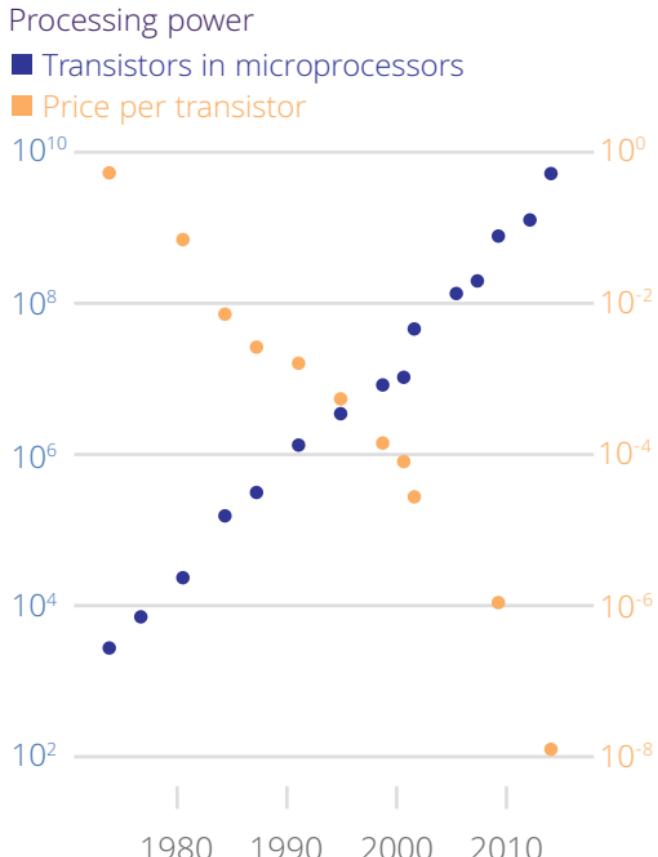
Computing power



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Computer capability is continuing to improve

Transistors (the key component of computer chips) have become exponentially cheaper and smaller since the 1970s. This has made it possible to fit more of them onto a single chip, and has been a key driver for continual improvements in computer performance. However, future improvements are likely to require new types of transistor, which may take longer to develop and could slow future progress. Quantum computers, which store and process data using the unique characteristics of very small-scale systems, could dramatically improve capability by facilitating multiple simultaneous calculations. Large-scale quantum computing is likely to be over 15 years away.



Sources: IEEE Spectrum: 50 Years of Moore's Law | DSTL
UK Quantum Technology Landscape 2014
Image: Flickr/sk8geek, CC-BY-SA



COMMUNICATIONS
Data

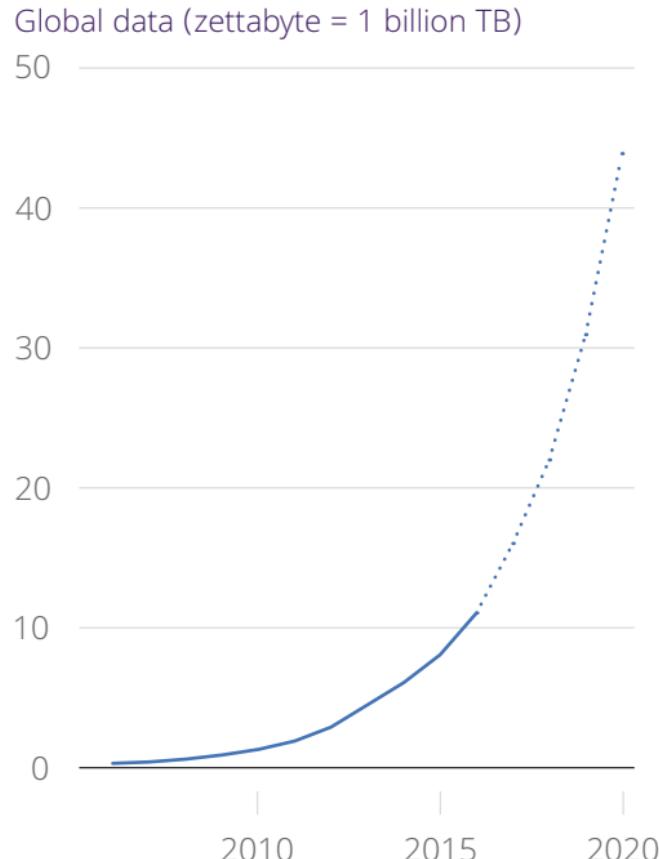


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The quantity of data stored worldwide is growing exponentially

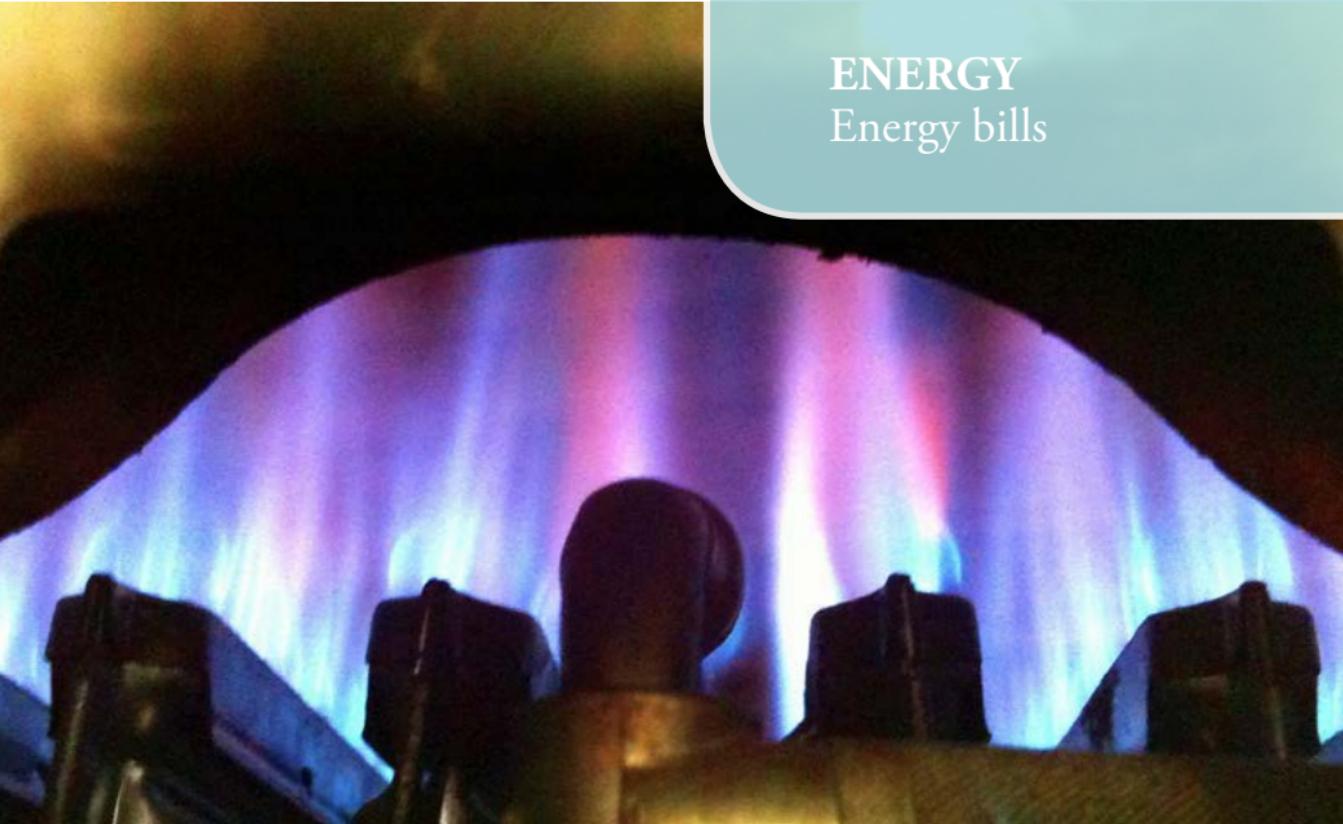
The quantity of data stored worldwide has doubled roughly every two years since 2005 and is expected to do so until 2020. Sources of new data include customer and operational data, videos, social media, and sensors such as those used in the utilities, health, retail and automotive sectors. Data are being increasingly stored in data centres – dedicated facilities for data storage and processing, some of which are deemed to be ‘Critical National Infrastructure’.

The Cloud Industry Forum estimates that 84% of UK organisations use cloud-based services, up from 48% in 2010. Globally it is predicted to be 40% in 2020. Some have raised concerns about the security and privacy of cloud computing, especially if it crosses jurisdictions.



Sources: IDC and EMC2 Digital Universe 2014 | Trends in ICT POSTnote

Image:Flickr/ervins_strauhmanis, CC-BY



ENERGY
Energy bills



Energy bills have risen despite a steady decline in consumption

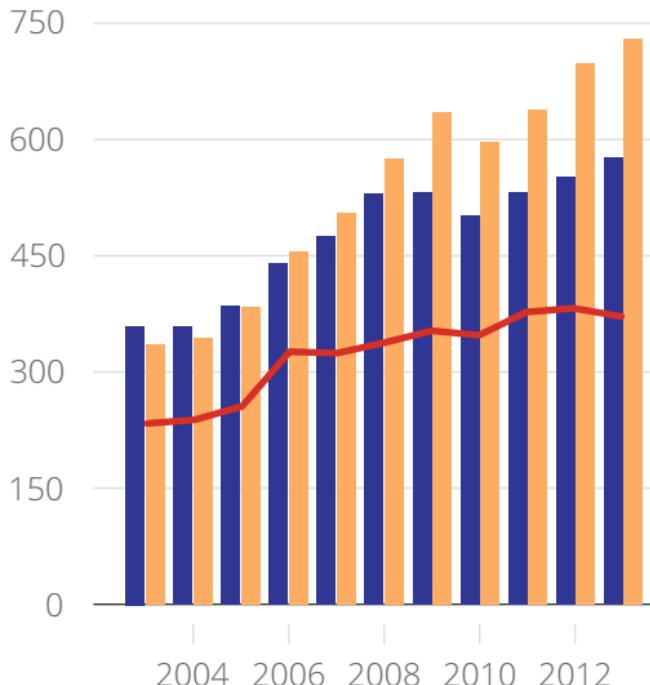
Between 2003 and 2014, domestic energy consumption decreased by around 20%. Over the same period the average electricity bill rose by around 60% and the average gas bill more than doubled. These trends towards increasing costs are driven by increases in wholesale prices, network costs and environmental levies.

Fewer households are in fuel poverty (11.8% in 2003 to 10.4% in 2013) but the amount that fuel costs would need to fall for fuel-poor households no longer to be fuel poor (the fuel poverty gap) has increased on average from £231 to £374 in real terms between 2003 and 2013.

Average annual UK energy bills and fuel poverty gap in real terms (£, 2013 prices)

Electricity bill Gas bill

Fuel poverty gap



Source: DECC Quarterly Energy Prices, March 2015

Image: Flickr/domiriel, CC-BY-NC



ENERGY
Fossil fuels



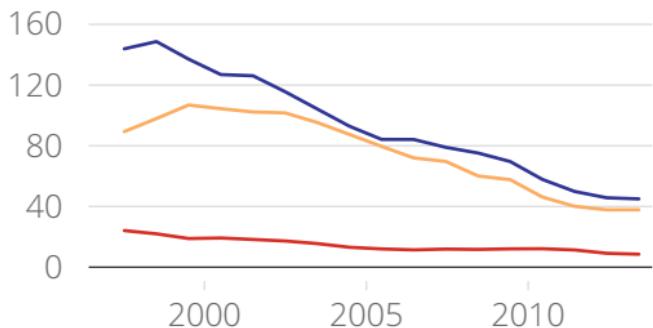
The UK is producing less oil, gas and coal, and importing more

In 2014, primary power generation was at 38% of its 1999 level, declining on average by 6.3% every year. Coal production is declining because of cheaper coal imports and increased use of gas for electricity generation; this has led to coal mine closures across the UK.

Ageing infrastructure, in need of decommissioning over the next 30 years, is reducing production efficiency and increasing costs of North Sea oil and gas. Because of falling primary energy production, the UK became a net importer of fuel in 2004, and imports are rising (46% in 2014). This means that the UK is more vulnerable to international price fluctuations. The UK's fossil fuel supply diversity is considered to be resilient to all but the most extreme combination of severe infrastructure failure or supply shocks.

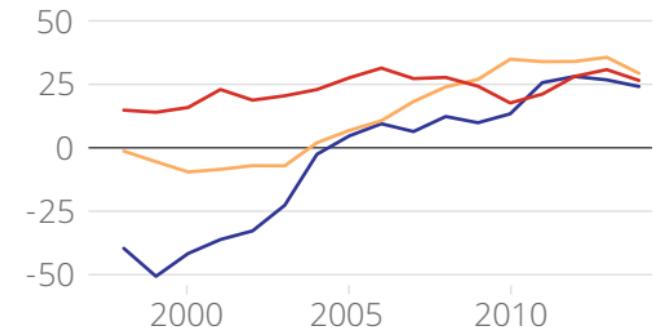
UK fuel production (MTonne of Oil Equivalent)

■ Oil ■ Gas ■ Coal



Net UK fuel import/export (MToe)

■ Oil ■ Gas ■ Coal



Source: DECC DUKES 2015

Image: Flickr/dpbirds, CC-BY-NC-ND

ENERGY

Energy intensity



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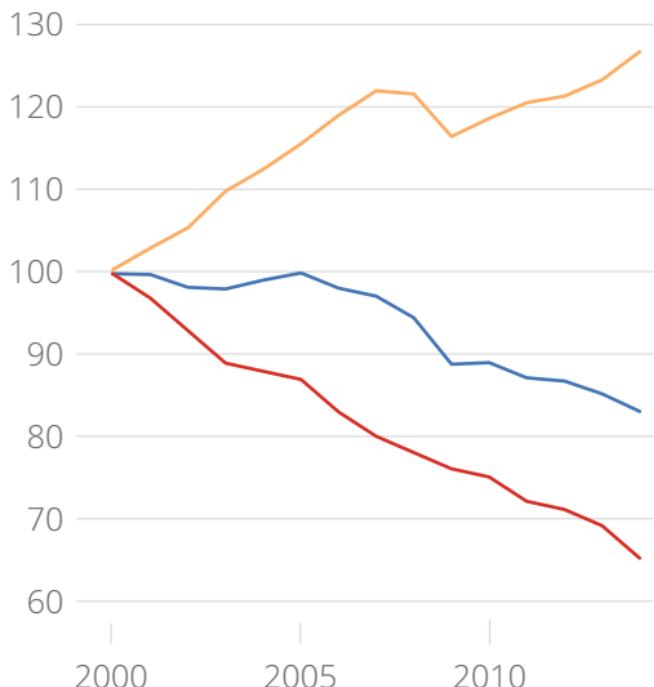
UK GDP is increasing while energy consumption is declining

Energy intensity is a measure of a nation's energy use relative to the size of its economy. The UK's energy intensity has fallen by around 65% since 1970. GDP grew by over 25% between 2000 and 2014. At the same time consumption has decreased by 17%. This reduction in consumption has been driven by energy efficiency improvements across sectors, energy price rises and the shift of UK industry toward less energy intensive industries.

UK energy demand is predicted to continue to decline until the mid-2020s. However, electricity use is predicted to increase as heat and transport become electrified.

Energy intensity, energy consumption per unit of GDP 2000-2014 (indexed: 2000 = 100)

■ Primary energy consumption
■ GDP ■ Energy per unit GDP



Source: DECC DUKES 2015

Image: Flickr/laughingsquid, CC-BY-NC-ND



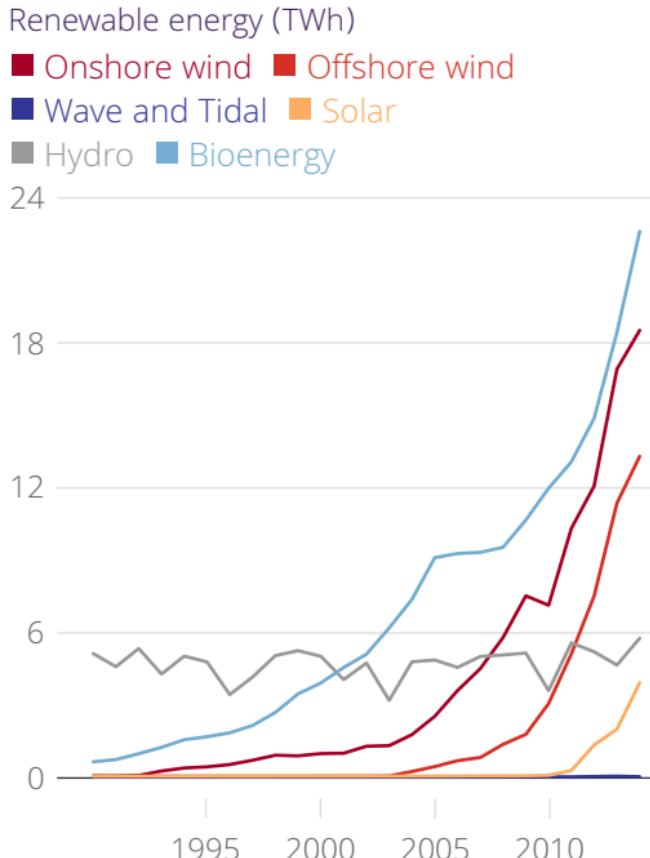
ENERGY
Renewable energy



More power is being produced from renewable sources

Electricity generated from renewables has increased rapidly since 1990. This trend is predicted to continue both globally and in the UK in order to meet climate change targets.

Wind, solar and biomass are predicted to be the most cost-effective technologies and therefore are likely to dominate renewable generation in the near future. The increasing contribution of intermittent renewables such as solar and wind to electricity generation means that there will be large, uncontrolled variations in the electricity available. Flexible power sources, such as energy storage, will be required to provide back-up generation, and 'demand-side response' will be needed to reduce peak demand.



Source: DECC DUKES 2015

Image: Flickr/richardghawley, CC-BY-ND



ENERGY

Greenhouse gas emissions

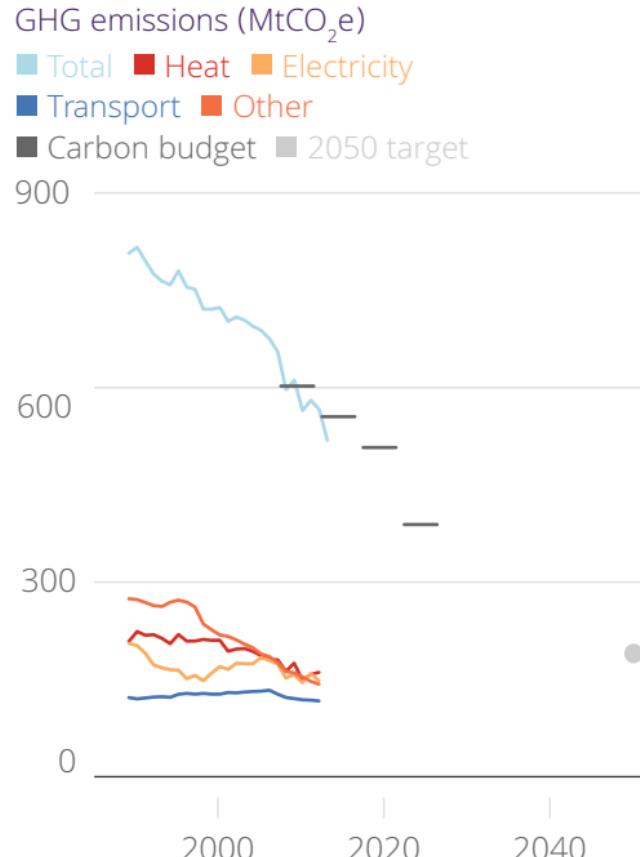


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Total greenhouse gas emissions have steadily declined since 1990 levels

Figures from 2014 show that, since 1990, UK carbon dioxide emissions have reduced by 29% and total greenhouse gases (GHG) by 36%. This trend has been largely driven by decarbonisation policy.

To maintain progress on the 2008 Climate Change Act target of 80% reduction of GHG on 1990 levels by 2050, the Government set carbon budgets for the amount of GHG emissions that can be emitted over five-year periods. The UK met its first carbon budget of an average reduction in emissions of 23% over 2008-2012 from 1990 levels, and is on course to meet the second, a 29% reduction over 2013-2017. However, the Committee on Climate Change considers that the fourth carbon budget (a 50% reduction over 2023-2027) is at risk without changes to Government policy.



Source: DECC 2014 UK Greenhouse Gas Emissions

Image: Flickr/freefoto, CC-BY-NC



EDUCATION
Pupil numbers



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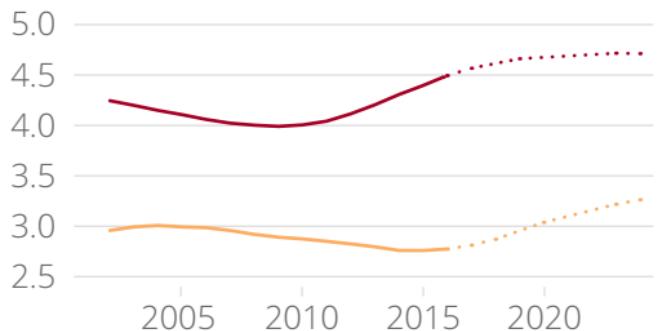
School pupil numbers in England are increasing

The rise in children born in England between 2001 and 2011 was the largest ten-year increase since the 1950s and increased demand for primary school places. Now demand for places is feeding through to secondary schools.

Local Authorities are required to ensure that the supply of school places meets demand while promoting parental choice, diversity and fair access. Demand for school places is likely to be met through the building of new free schools and academies, and the expansion of existing schools.

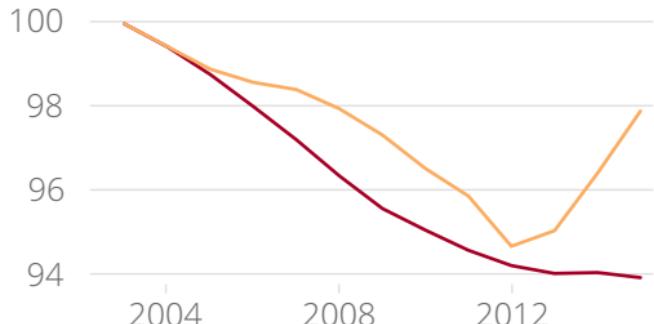
Pupils in English state-funded schools (millions)

■ Primary ■ Secondary



Number of English state-funded schools

■ Primary ■ Secondary (indexed: 2003 = 100)



Sources: NAO Capital funding for new school places | DfE Schools, pupils and their characteristics Jan 2015 | DfE National Pupil Projections July 2015 | House of Commons Library School places in England SN 07147.
Image: Flickr/wellingtoncollege, CC-BY-NC



EDUCATION

Early years education



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More children are in early years education

There is good evidence that good quality education in the early years of a child's life (0-5 years) have a strong effect on later achievement. As children grow older the rate of brain development slows and interventions to improve learning and behaviour have less and less impact.

The numbers accessing state-funded early education varies geographically and is lower for disadvantaged groups. While 96% of 3-4 year olds benefitted from funded early education in 2015, it is only 58% for 2 year olds and this is disproportionately from better off families. Health visitors are seen as a key way to promote take-up with families.

3-4 year olds accessing funded early education in England

■ Numbers (millions)

■ Percentage of population



Sources: DfE Statistics: childcare and early years | Ofsted Early Years Report 2015 | Hummel et al. 2011 Economic outcomes of early years programmes and interventions.
Image: Flickr/dharmaspHERE, CC-BY-NC



HEALTH

Diseases of lifestyle



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Infectious diseases are giving way to diseases of lifestyle

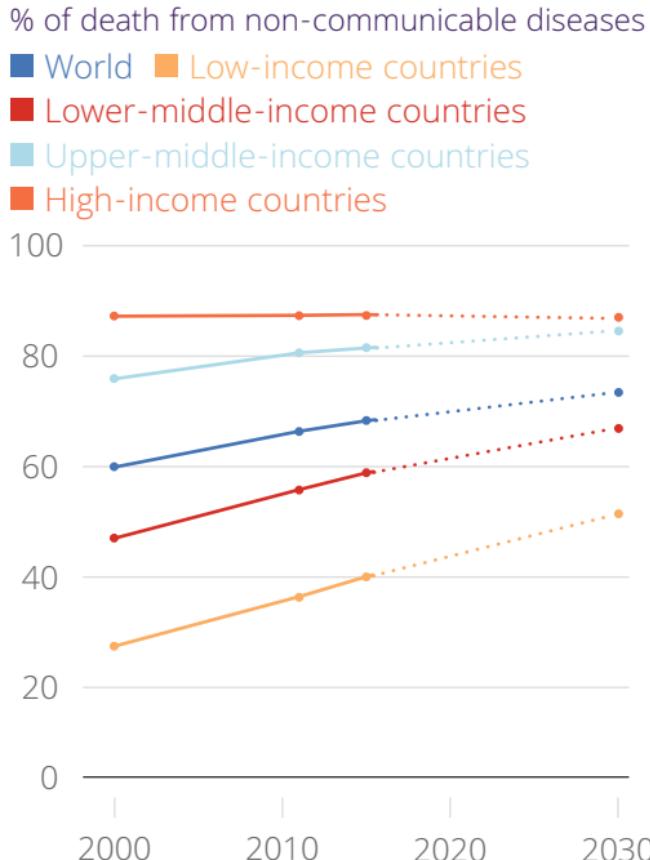
Historically, infectious diseases such as malaria, TB and HIV/AIDS were the biggest global burden on healthcare. This has switched to non-communicable diseases (NCDs) such as diabetes, heart disease or cancer since 1998 and is rising. This trend is reflected in all types of country.

Individuals live increasingly wealthy, urban, sedentary and long lives, which means that morbidity due to NCDs is likely to continue to rise both in the developed and developing world.

Key health policies are addressing risk factors such as tobacco use, physical inactivity and unhealthy diet, alcohol abuse and exposure to environmental pollution.

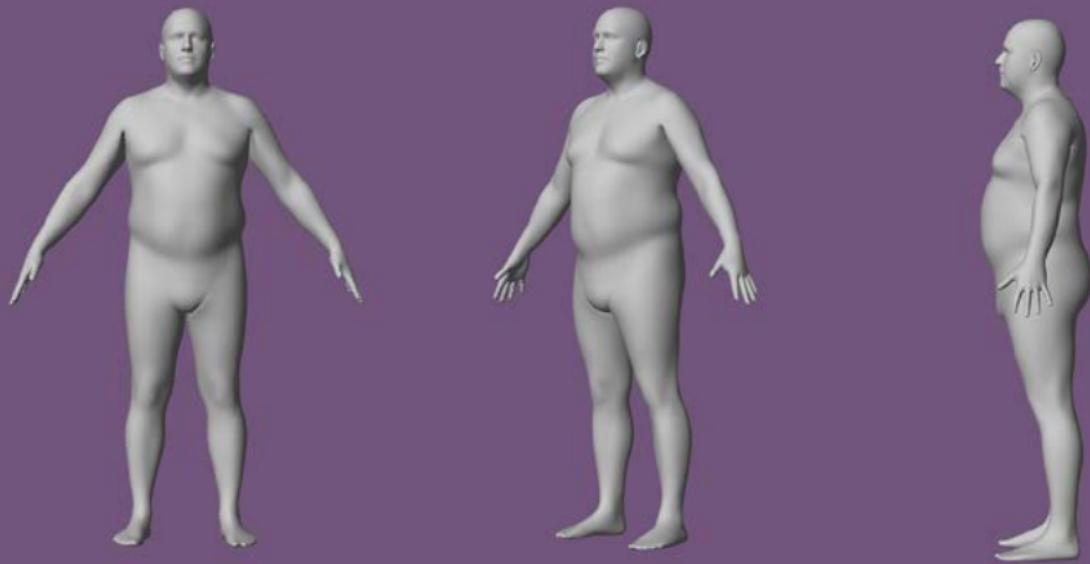
Source: European Environmental Agency, The shift in global disease burden.

Image: Flickr/directrelief, CC-BY-NC-ND



HEALTH

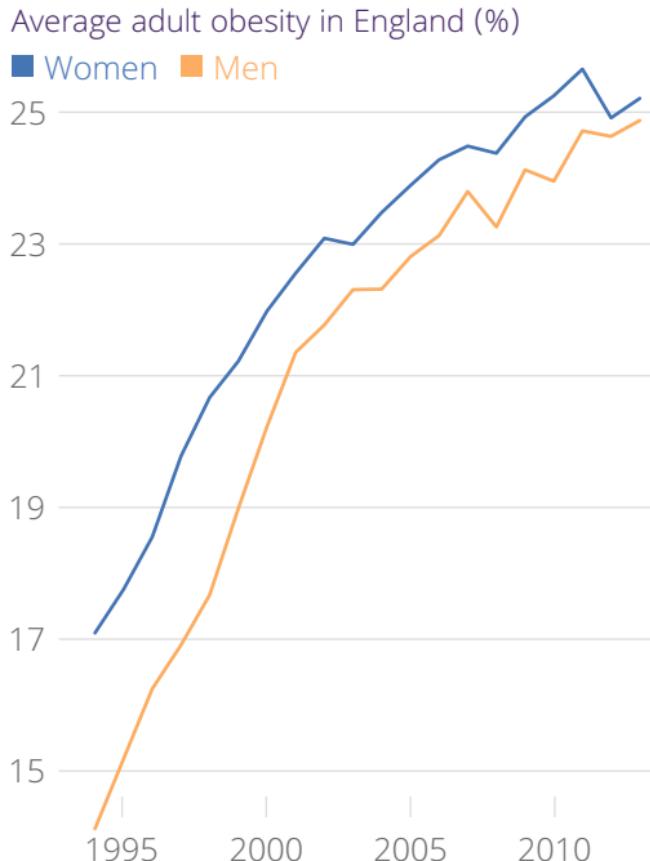
Obesity



Adult obesity is increasing

The number of overweight and obese people in the UK has been rising steadily despite national surveys suggesting that the population is consuming fewer calories. Difficulties with surveys mean that the drop in calorie consumption may be smaller than it appears. The average man and woman in England is still consuming about 300 and 200 calories respectively a day more than they need.

The Health Select Committee recently recommended population-wide interventions to improve diet and levels of physical activity to prevent people becoming obese.



Sources: Health survey for England 2014 Trend tables | Health Select Committee, Impact of physical activity and diet on health, 2015.

Image: Flickr/vblibrary, CC-BY-NC



HEALTH

Antibiotics



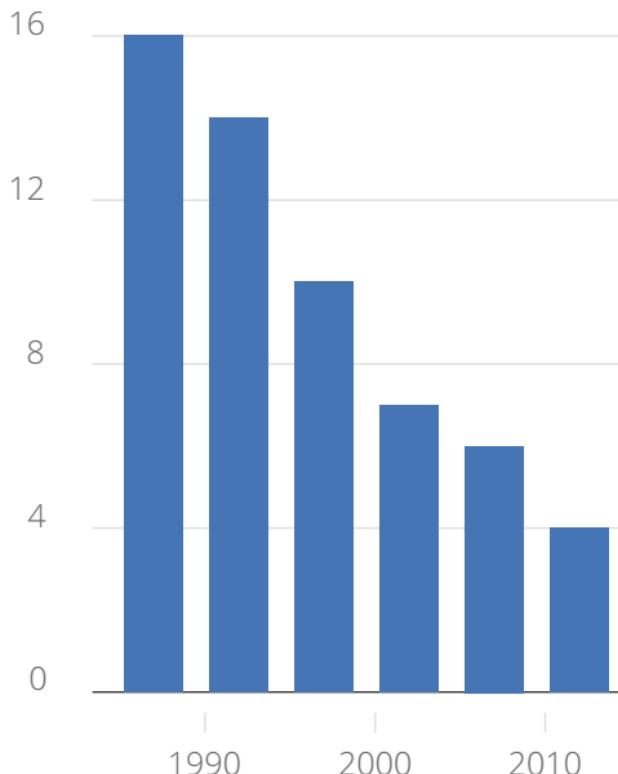
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Antibiotic resistance is rising and the discovery of new antibiotics is difficult

The overuse and misuse of antibiotics has increased the proliferation of drug resistance in bacteria. The treatment of drug-resistant infections is a major medical challenge. The Review on Antimicrobial Resistance estimate 10 million deaths a year will be attributable to drug-resistant bacteria by 2050.

The rate of discovery and approval for antibiotics has been falling. Approaches to slow the spread of resistance include banning the use of antibiotics as growth promoters in farm animals, changing clinical practice and increasing public awareness.

Number of new antibiotics discovered in five year periods



Sources: CDC Antibiotic Resistance Threats in the United States 2013 | Review on Antimicrobial Resistance, Tackling Drug-Resistant Infections Globally 2015.

Image: Flickr/emagineart, CC-BY



HEALTH

Genome sequencing



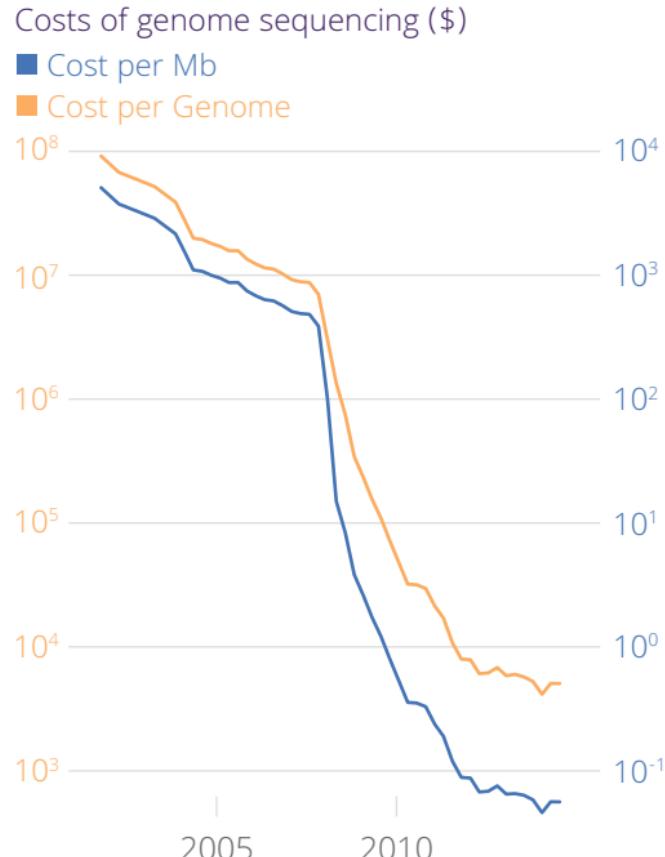
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Genetic sequencing is getting faster and cheaper

Currently, identification of a bacterial infection requires samples from a patient to be grown in a lab over several days, after which tests can be run. This is both expensive and time consuming, and can only identify a limited range of pathogens.

With the advent of cheaper and higher capacity genome sequencing the speed and cost of identification is set to improve greatly. Furthermore, sequencing allows the precise identification of traits such as drug-resistance, which offers more general improvements in the efficiency and cost-effectiveness of treatment.

Healthcare providers such as the NHS are considering how large-scale sequencing might be clinically useful.



Source: genome.gov

Image: Flickr/garrettziegler, CC-BY-NC-ND



HEALTH

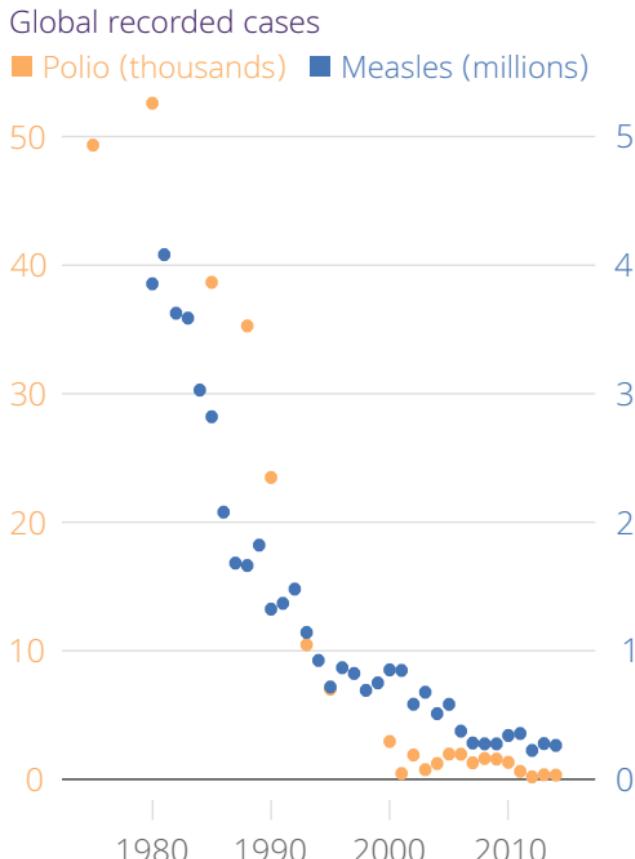
Vaccinations



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Polio is near to eradication

Through a successful programme of vaccination, smallpox was eradicated in 1979. Following this success, the World Health Organisation (WHO) established programmes to eradicate polio, dracunculiasis, yaws and malaria. In addition, there are regional elimination programmes for measles, hookworm, lymphatic filariasis, rubella, onchocerciasis and vCJD. The WHO had hoped to eradicate polio by 2000, but wars, poor governance and logistical problems hampered efforts to vaccinate vulnerable populations. Despite this, progress is being made and poliovirus transmission remains endemic in only Afghanistan and Pakistan.



Source: WHO Global Health Observatory data repository
Image: Flickr/europedistrict, CC-BY



HEALTH

Cancer survival



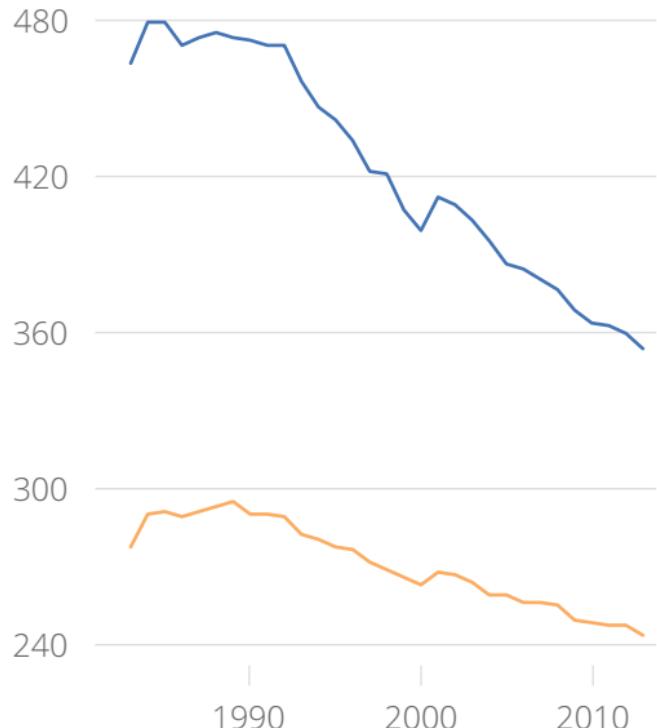
With better and earlier interventions, cancer mortality is falling

Cancers are a complex family of non-communicable diseases that have many underlying causes. Their incidence varies by age and gender, and can be heavily influenced by lifestyle – more than 85% of lung cancer cases are attributable to smoking for example.

Thanks to interventions such as public awareness campaigns and early screening, an increasing number of cancers are caught early, which has improved survival rates. Although some cancers are on the rise, the overall trend is one where cancers cause fewer deaths. With better treatments coming, and further improvements in screening and awareness, these trends are set to continue.

UK Age-standardised cancer mortality rates
(rate per 100,000)

■ Males ■ Females



Source: ONS Mortality in the UK 1983-2013

Image: Flickr/94674772@N03, CC-BY-SA



DEFENCE
Military resources

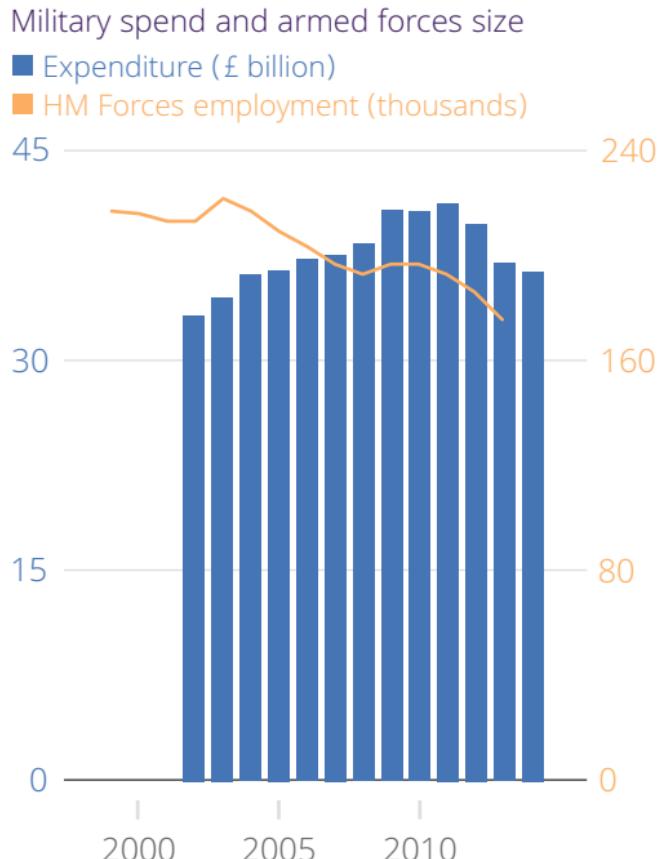


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Military systems will be increasingly automated

Defence budgets and the number of people employed by the Armed Forces have been falling since 2010, although the Government committed to maintaining the size of the Armed Forces in the 2015 Strategic Defence and Security review.

At the same time, there is growing military interest in automation because of its potential to reduce the risks to personnel and cut costs. The global market for military unmanned aerial vehicles is predicted to double to more than \$10 billion dollars by 2024.



Sources: ONS Defence-related activities in the UK | ONS Labour Force Survey | HM Treasury
Image: Flickr/defencephotos, CC-BY-NC

A photograph showing two men in a workshop setting. The man on the left, wearing a grey t-shirt, is looking down at a small white aircraft model on a workbench. The man on the right, wearing a blue and white argyle sweater vest over a white shirt, is holding the aircraft's propeller and looking at it. In the background, there are shelves with various items and a computer monitor on a stand.

DEFENCE
Military research

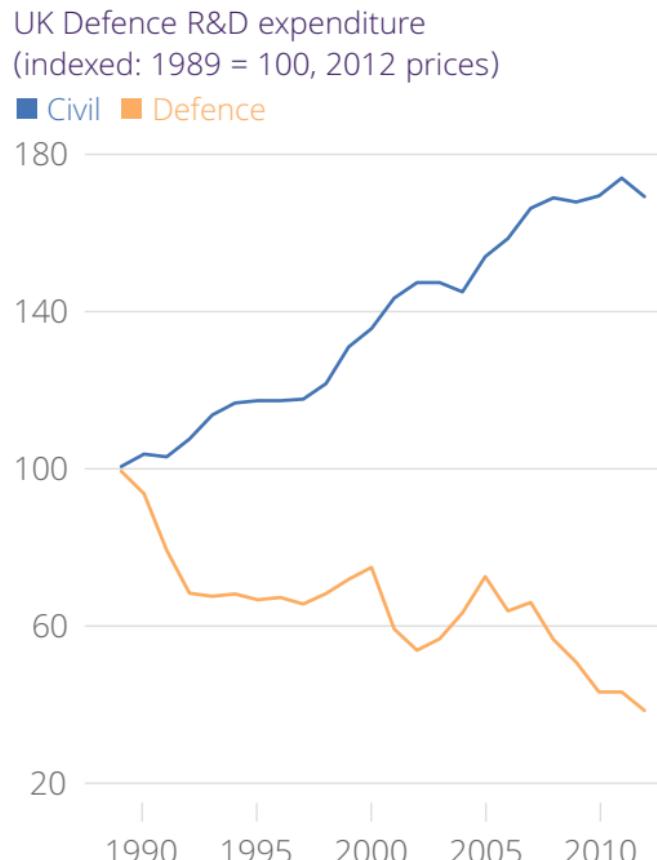


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Defence R&D is increasing driven by the civilian sector rather than the military

Historically, government-funded military R&D has driven innovation and led to spin-offs in the civilian world. However, UK government investment in defence R&D has been in overall decline since 1989, while investment in civilian R&D has risen.

New military equipment such as sensors, engines, armour and communications equipment is built around technology originally developed for civilian use. Big Data analytics and the Internet of Things could transform defence by saving money and speeding up development times. Military investment is still needed to identify and harness wider innovation, and the military sector will continue to drive innovation in areas where there is no equivalent civilian market, such as missile development or nuclear propulsion.



Sources: ONS Defence-related activities in the UK

Image: Flickr/rdecom, CC-BY

POLITICS

Displaced people

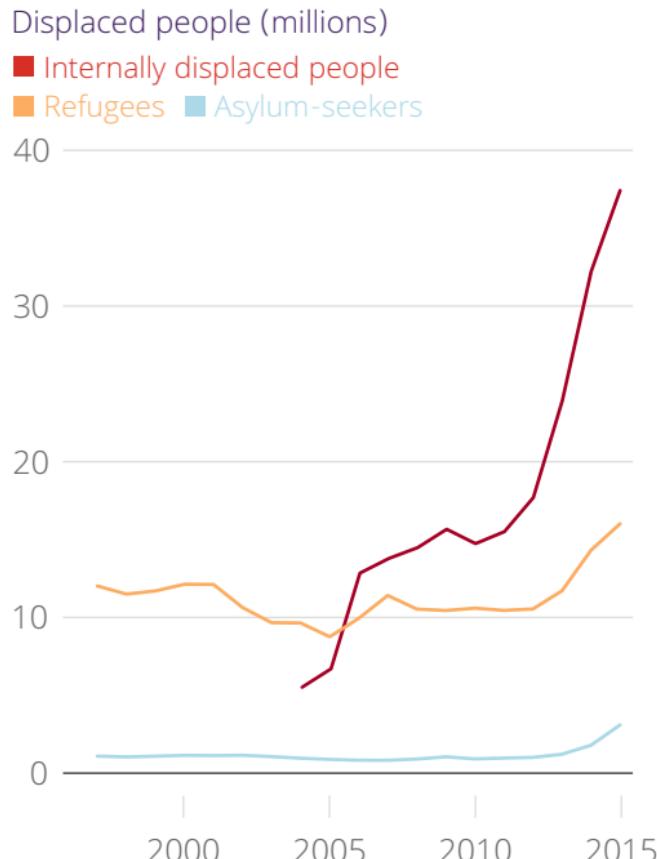


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Conflicts are displacing more people

At the end of 2015, 65.3 million people were forcibly displaced worldwide as a result of persecution, conflict, violence, human rights violations or disasters; the highest on record.

Forced displacement has been on the rise since at least the mid-1990s in most regions, but over the past five years the rate has increased. This is because conflicts that cause large refugee outflows are lasting longer, new or rekindled conflicts are occurring more frequently, and the rate at which solutions are being found for refugees and internally displaced people is falling.



Sources: UNHCR Global Trends Forced Displacement in 2015.

Image: Flickr/Oxfam, CC-BY-NC-ND

A photograph showing the lower half of two people shaking hands. On the left, a person is wearing a bright red suit with a geometric, maze-like pattern. On the right, another person is seen from the side, wearing a dark green or black suit and a striped tie. They are standing in what appears to be a formal setting, possibly a parliament, with wooden paneling visible in the background.

POLITICS

Governance

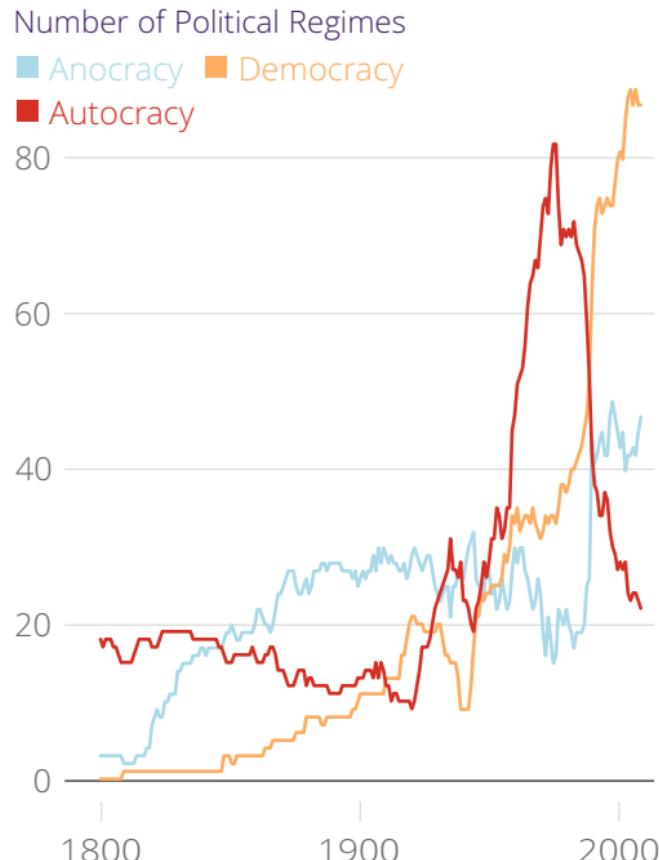


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Democracies are now the dominant form of governance

A majority of the world's countries are now democracies, which are defined as governance systems with citizen political participation, constraints on the power of the executive and a guarantee of civil liberties. This predominance of democracies only occurred over the last 20 years. The growth of democracies has been interrupted by the two World Wars and increased quickly after the breakdown of the Soviet Union in 1989.

After 1989, the number of countries where power is held by one person with no constraints (autocracies) has decreased dramatically while the number of countries that are neither fully democratic nor autocratic (anocracies) initially increased but then stabilised.



Source: Center for Systemic Peace Global Trends in Governance.

Image: Flickr/eeas, CC-BY-NC-ND



POLITICS
Party membership



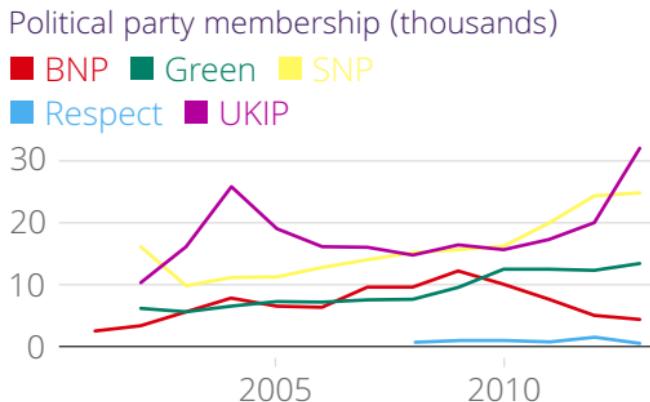
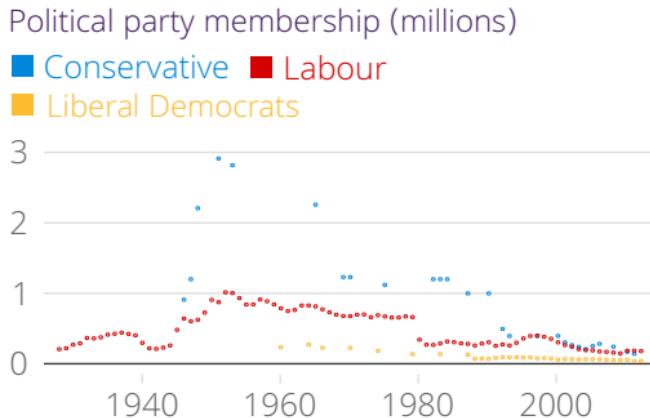
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Political party membership is falling

After many decades of relative stability the political landscape is changing. Voters are choosing to join smaller parties that focus on a narrower set of issues for particular societal groups. Despite this support, the UK's electoral system makes it difficult for insurgent parties to gain power.

The NatCen British Social Attitudes (BSA) survey suggests that trust in politics is declining. Factors increasing mistrust and antipolitical sentiment may include: scandals, such as the 2009 MPs expenses crisis, negative media representation of politics, unrealistic expectations of standards of behaviour and a perceived lack of accountability arising from the transfer of some decision-making powers away from UK elected officials.

Sources: House of Commons Library | Trends in Political Participation POSTnote
Image: Flickr/dupphotos, CC-BY-NC-ND





CRIME
Law and order legislation



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In recent years, more law and order legislation has been passed

Behaviours that are considered criminal are defined by law. The definition of crime changes with societal attitudes (e.g. decriminalising homosexuality) and emerging forms of activity that are considered criminal (e.g. cybercrime such as hacking or bank and identity theft). This may affect the comparability of crime statistics year on year.

There have been 20 new UK law and order Acts passed since 2010, which is almost double the number of Acts passed in the 1980s.

Counts of 'law and order' legislation
1980-2009

6

4

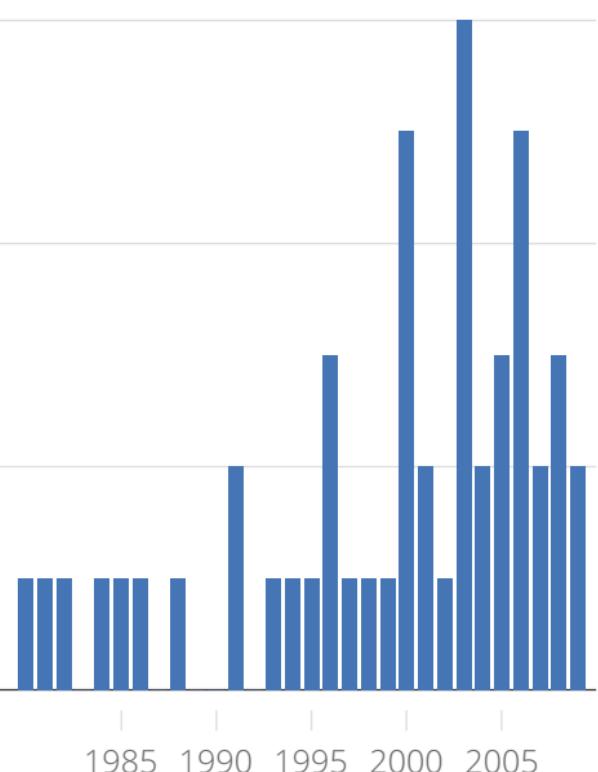
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1985 1990 1995 2000 2005

Sources: Howard League for Penal Reform, Do Better Do Less.

Image: UK Parliament, CC-BY-NC-ND





CRIME
Number of offences

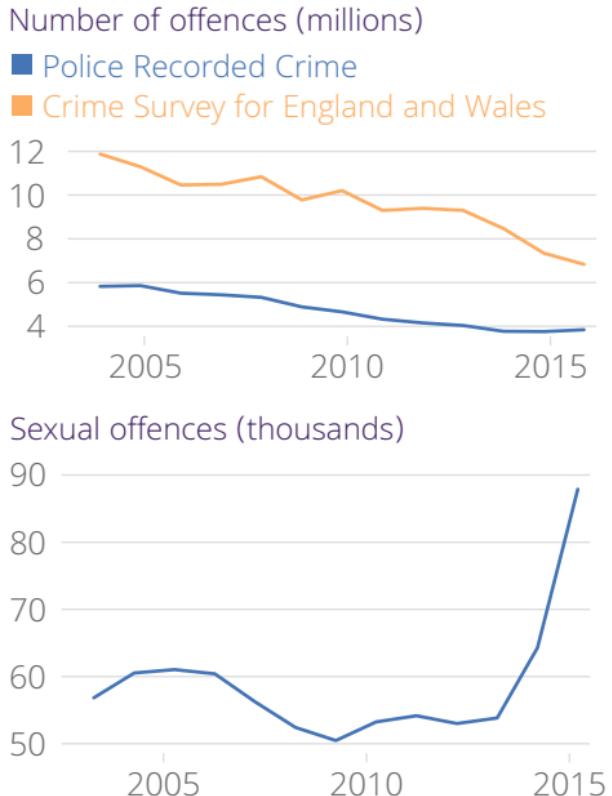


Overall crime is declining, but certain areas are increasing

Overall crime in the UK and across the developed world has been steadily declining since the 1990s. The drivers behind the falling crime rate are complex. Some believe that more crime is going undetected as it shifts online.

Property crimes (burglary, car theft and robbery) fell from 15.3m offences recorded in 1995 to 6m in 2013/14, in part because of better security. Certain areas of crime appear to be increasing. The reporting of sexual offences has sharply increased, which is thought to reflect victims becoming more likely to report offences as a result of Operation Yewtree, rather than an increase in the incidence of sexual offences.

Source: ONS Crime in England and Wales Year Ending March 2015.
Image: Flickr/lanier67, CC-BY-NC-ND



Police recorded crime data is no longer an official statistic. The Crime Survey for England and Wales retains its official status.



CRIME

Police workforce

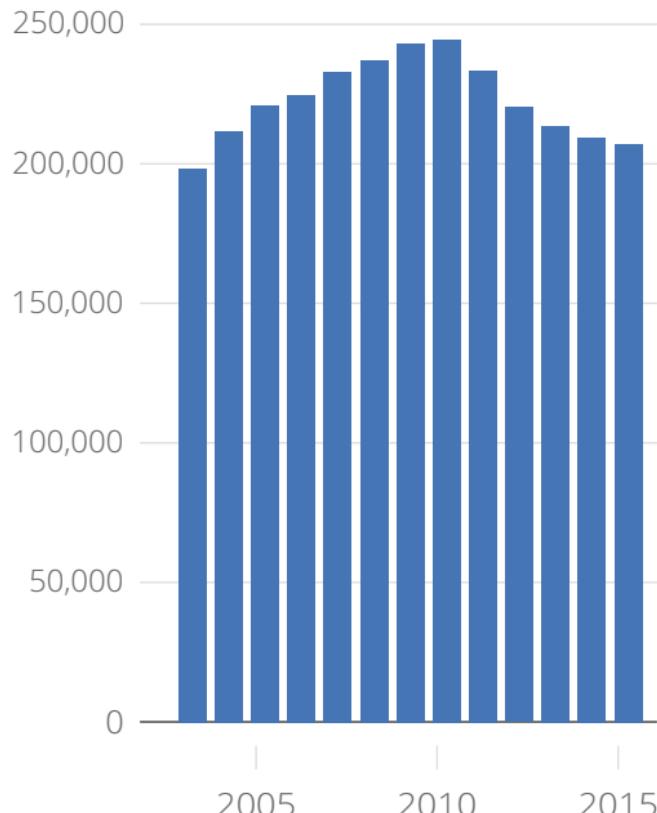


Police numbers are reducing

In 2010, the police workforce was 245,000. It has since reduced by 15% at a time when crime is reported to have fallen.

At the same time, the demand crime places on the police is thought to be rising. This may result from the changing crime mix, which is shifting towards crimes such as abuse, cybercrime and terrorism that are time consuming and require specialist skills. There is increasing pressure for police to deal with incidents involving people with complex needs, such as poor mental health, which requires that police collaborate with health and social care services.

Police workforce for England and Wales (FTE)



Source: Home Office Police workforce England and Wales
31 Mar 2015.

Image: Flickr/conner395, CC-BY



CRIME

Prison population

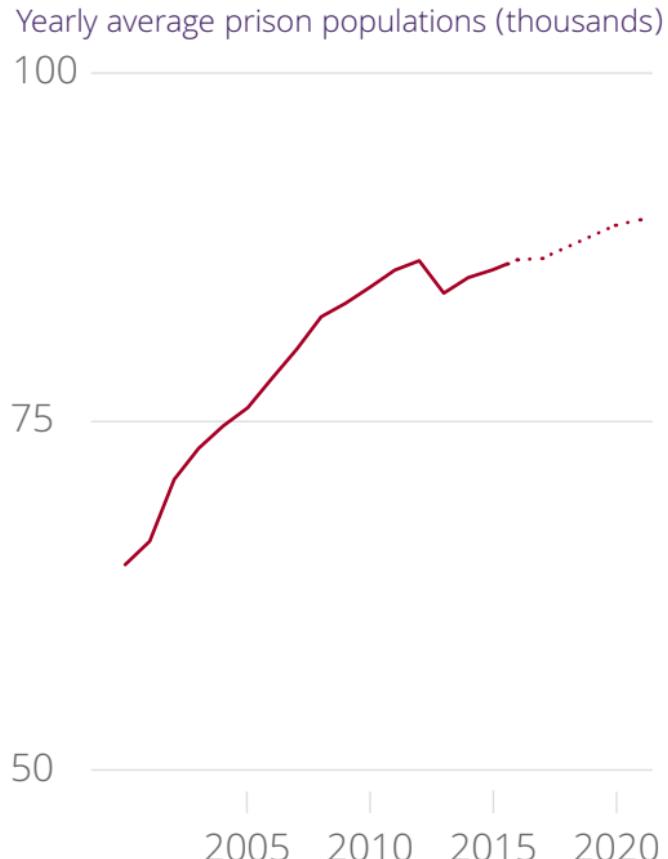


Prison populations are rising, which may reflect changes to sentencing

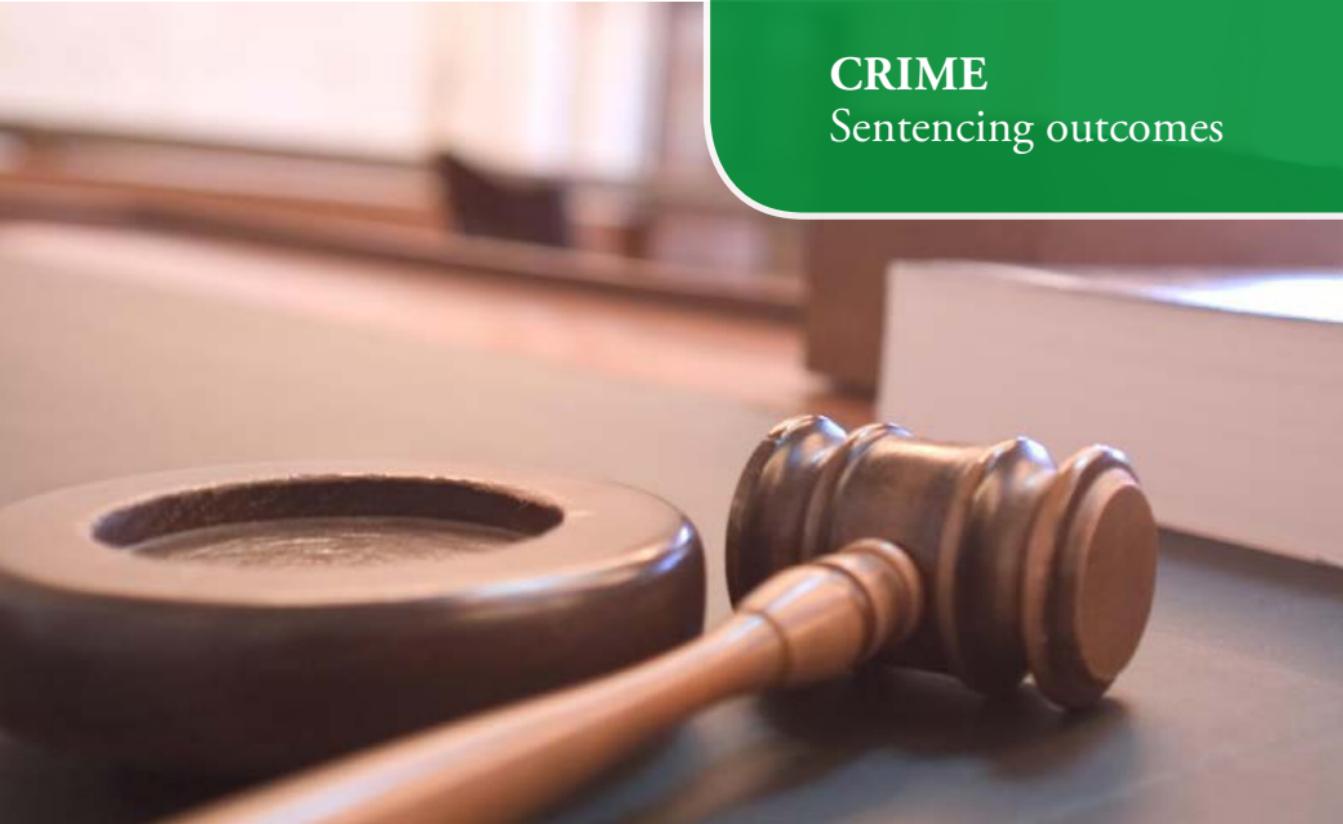
The size of the prison population has increased over the last two decades at a time when crime is falling. This is thought to reflect an increase in the average sentence length and more recalls to prison. As a result, prisons are overcrowded. Some suggest that this may be contributing to an increased risk of prisoner mental health issues, riots and security breaches.

Women make up just 5% of the prison population. The number of women in prison has increased from less than 2000 in 1993 to 3,899 in May 2015. This trend has recently begun to reverse.

First time entrants under 21 years to youth justice have reduced 81% since 2007.



Sources: House of Commons Library SN02620 & SN04334 | MoJ Prison Population Projections 2015–2021 England and Wales
Image: Flickr/sheeprus, CC-BY-NC-ND



CRIME
Sentencing outcomes

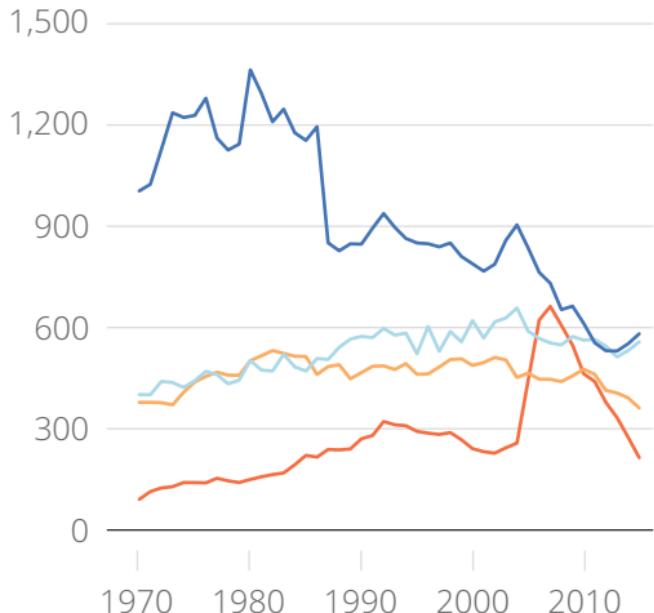


Out-of-court disposals are being used less

The use of out-of-court disposals (such as police cautions) is intended to provide swift, simple and proportionate responses to antisocial behaviour and low risk offending. Out-of-court disposals peaked in 2007 at 669,900 with the introduction of cannabis warnings, penalty notices for disorder and a 2001 target to increase offences 'brought to justice'. The target was replaced in 2008 with a focus on serious crimes and community resolutions were introduced, which caused out-of-court disposals to fall to 211,900 for 2015. The Home Affairs Committee 2015 report into out-of-court disposals estimated that between 20% and 33% of cases are dealt with inappropriately.

England and Wales convictions and sentencing (thousands)

- Out-of-court disposals
- Indictable
- Summary non-motoring
- Summary motoring



Sources: MoJ Criminal justice system statistics quarterly: December 2015 | Home Affairs Committee Out-of-Court Disposals Report 2015

Image: Flickr/joegratz



ENVIRONMENT

Land use

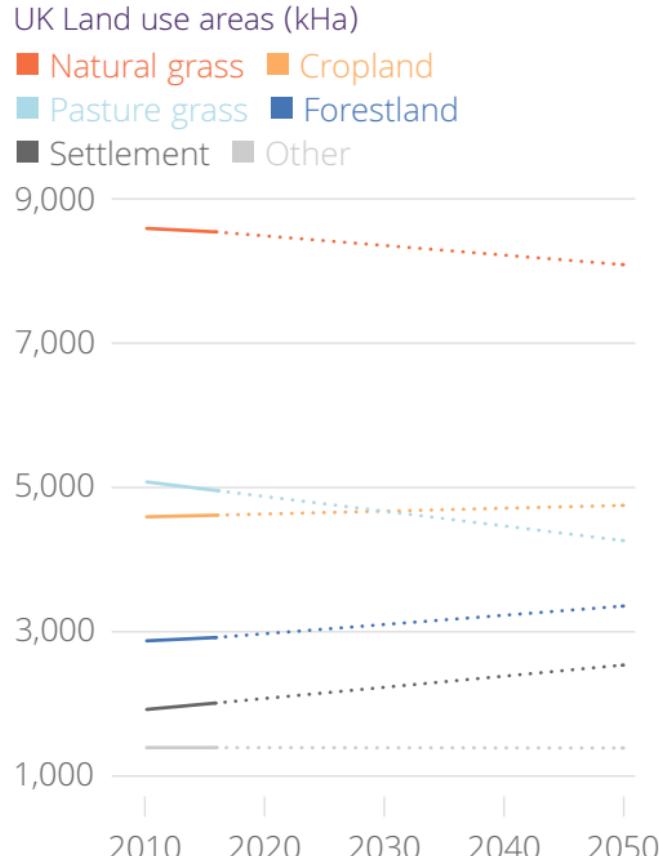


More land will be used for settlement and forestry

Currently around 8% of the total land in the UK is used for settlement; this is forecast to increase to 11% by 2050, largely coming at the expense of grasslands.

The amount of land for farming crops is set to stay fairly constant over the same period, while the area covered by forests is projected to rise from 12% to 14% by 2050, largely due to increases in industrial forestry.

Land use will need to be managed to address carbon emissions, food production and water resources.



Source: NERC Projections of emissions and removals from the LULUCF sector to 2050

Image: Flickr/sarflondondunc, CC-BY-NC-ND



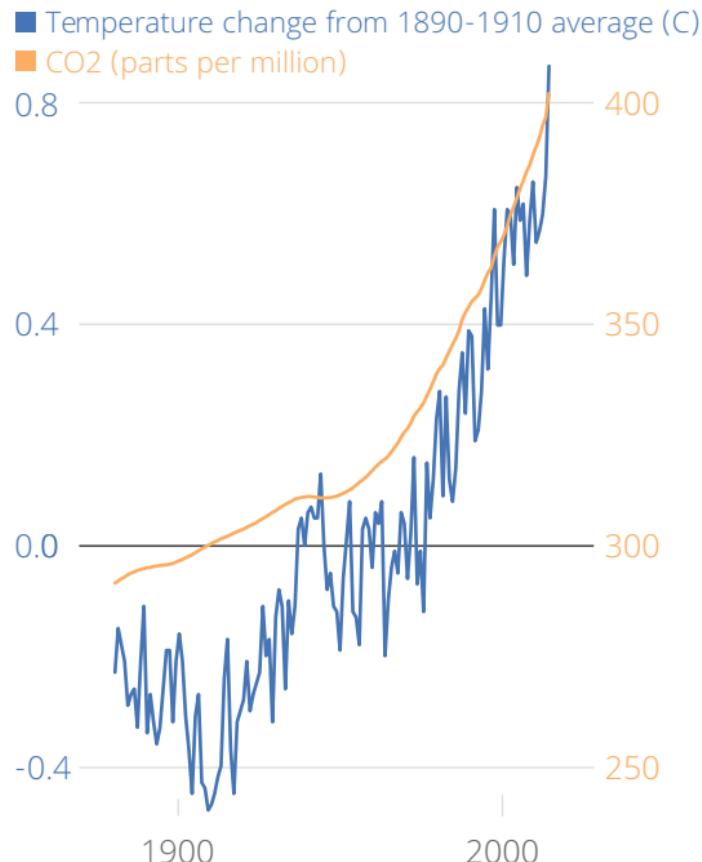
ENVIRONMENT
Climate change



The world will continue to grow warmer as a result of human activity

Both land and sea temperatures are rising because of increases in atmospheric gases such as carbon dioxide, methane and nitrous oxides from fossil-fuel burning, deforestation, agriculture and other industries.

This warming is a driver of changes in climate. In the long term there will be a pattern of rising sea levels, more frequent heavy rainfall, drought and heat waves, and wider environmental damage that will likely reduce some crop yields and contribute to species extinction.



Sources: NOAA Trends in Atmospheric Carbon Dioxide |
NASA Global land-ocean temperature index
Image: unsplash.com/@amaradestempo



ENVIRONMENT
Global forest



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Forests are being removed worldwide to create both lumber and land

Forests have been cleared for agriculture since pre-industrial times, but this has accelerated in the developed world since the 1960s.

Agriculture, new farming techniques, and demand for timber and wood as fuel are all contributing to forest loss.

Deforestation removes habitats for millions of species and is also a driver of climate change. Living trees act as a carbon sink while burning forest plants releases carbon into the atmosphere.

Trees perform an ecological balancing act by, on the one hand, protecting the soil from the sun and preventing it from drying out, and on the other, extracting water from the ground and releasing it into the atmosphere for a wetter climate.

Sources: FAOstat - Forest land | Outlook to 2060 for World Forests and Forest Industries, Buongiorno et al.

Image: Flickr/cifor, CC-BY-NC

Global Forest (billion Ha)

4.25

4.00

3.75

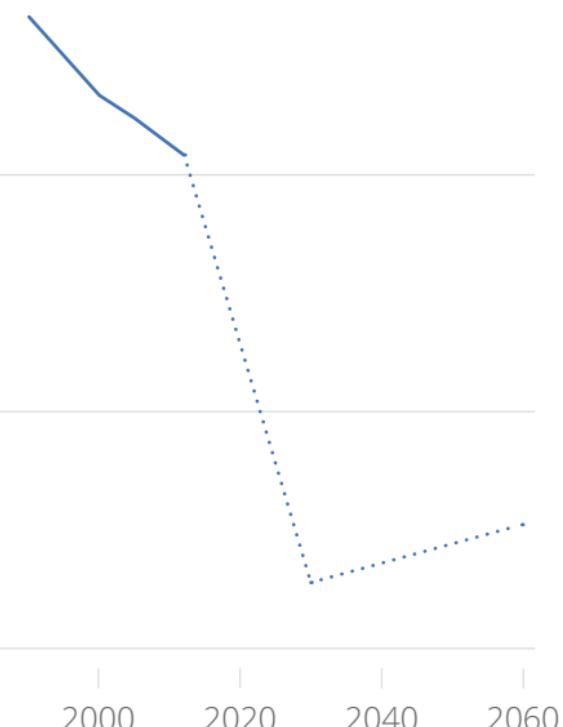
3.50

2000

2020

2040

2060





ENVIRONMENT

Water use

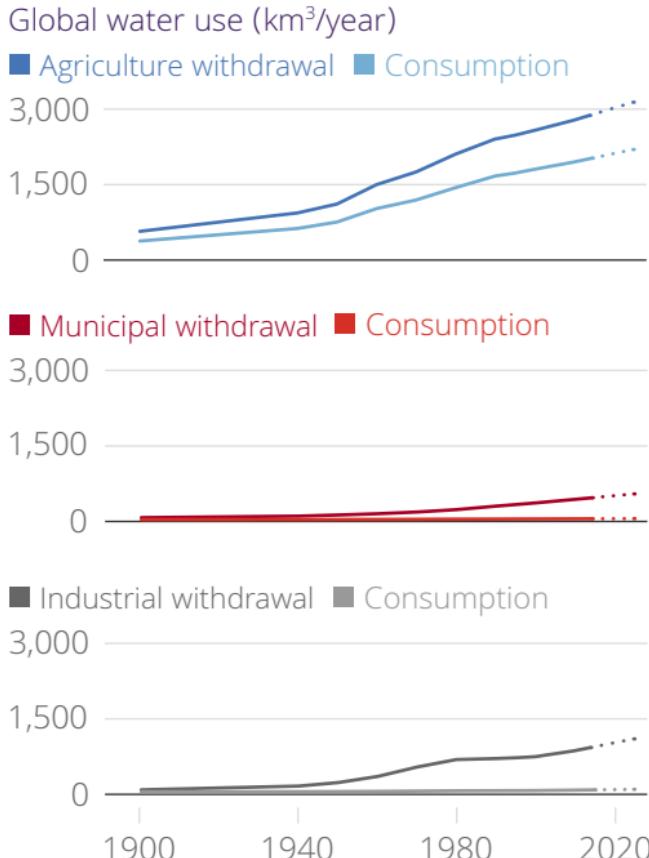


Water withdrawal is rising faster than consumption

On average, global use of freshwater is within sustainable limits, but there are large regions where this is not the case, leading to ecosystem losses and threats to human well-being.

Irrigation for agriculture is the main cause for increased water use, with the majority being unrecoverable known as consumption. Irrigation is needed to mitigate poor growing conditions as well as support water-intensive crops such as almonds and the demands for cattle feed. Switching to alternative crops and sources of protein may help mitigate demand.

Industrial and municipal uses have also grown but much of the water is recycled so that consumption, the final use of water, has risen far less than withdrawal.





ENVIRONMENT

Resource use



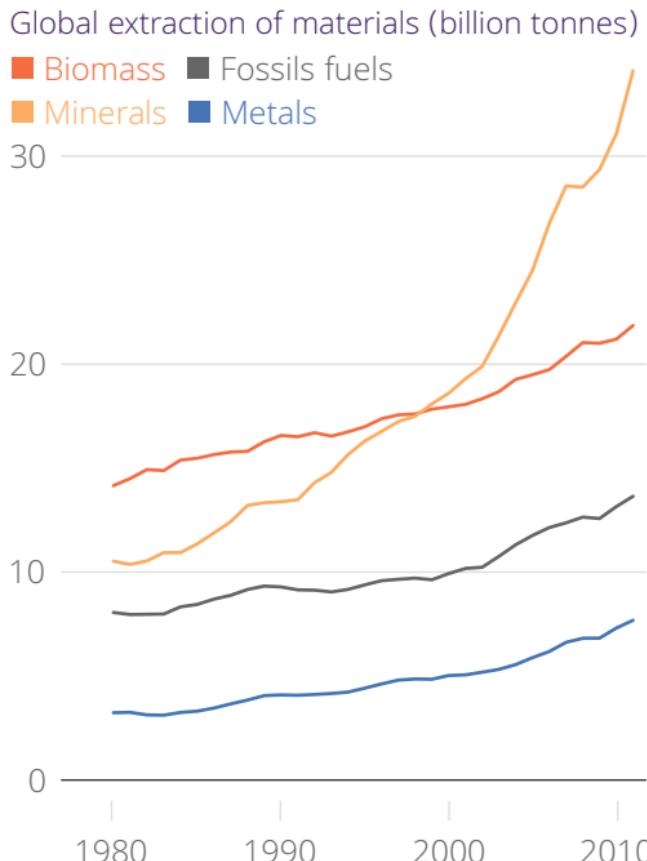
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Demand for raw materials is rising

The world is set to be more populous, richer and more productive in the future, driven by the rise of globalisation, the waning of interstate conflicts and technological advancement.

These factors increase demand for all sorts of goods, from building materials to advanced electronics. Ultimately this rise in consumption increases the demand for raw materials, which has been rising fast and is set to rise further.

Rare earth metals used in communication equipments and batteries are costly to extract. Recycling may increase as a secondary means to sustain consumption in a more affordable and more environmentally friendly manner.



Source: Sustainable Europe Research Institute, Global Material Flow Database

Image: Flickr/pamnani, CC-BY-NC-ND



AGRICULTURE
Food waste



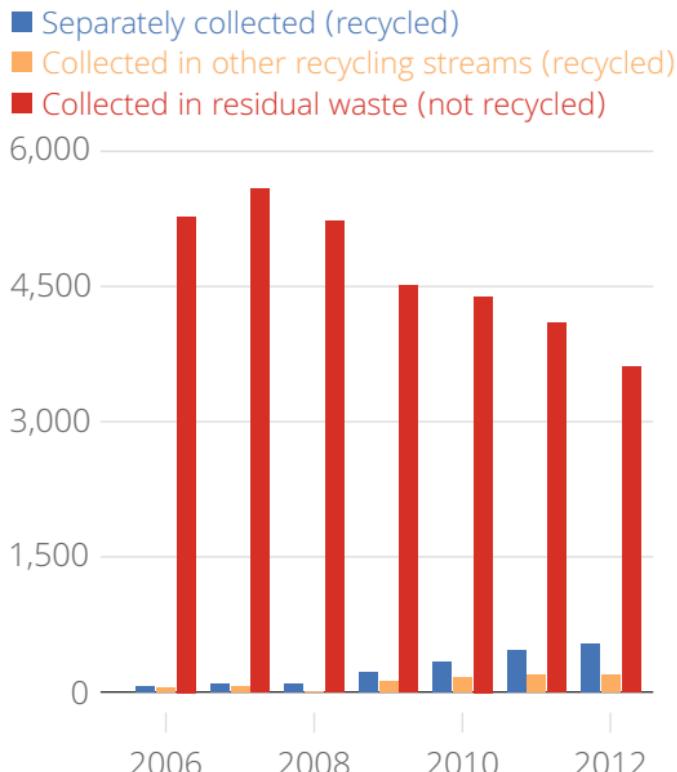
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Recycling is on the rise

Food waste in landfill incurs a cost to local authorities and breaks down into methane – a greenhouse gas. In the UK, 4.2 million tonnes of consumable food was wasted in 2012, worth an estimated £12.5 billion. This has fallen by 21% from 2007 with consumer awareness campaigns and packaging innovations. Consumer behaviour, supply chain inefficiencies, food standards, insufficient planning and best-before dates all contribute to food waste.

Globally, one third of food produced for human consumption is lost or wasted – amounting to 1.2 billion tonnes per year. In developing countries the lack of adequate storage facilities for harvested food and less developed transport and marketing systems contribute to food waste.

UK food waste collected by local authorities (thousand tonnes)



Sources: UN FAO | WRAP Household food and drink waste 2012 | Defra Digest of Waste and Resource Statistics 2015
Image: Flickr/stefan-szczelkun, CC-BY-NC-SA



AGRICULTURE
Food consumption



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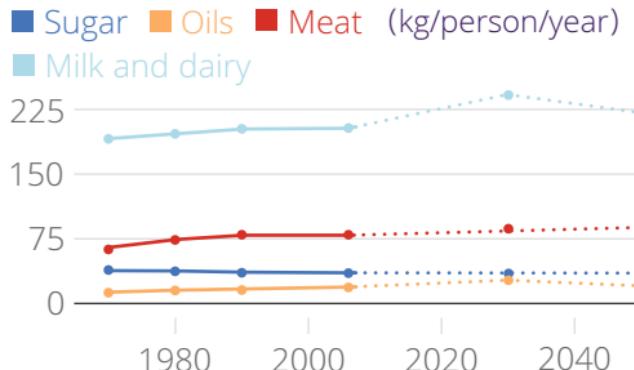
People are eating more meat and dairy

Major shifts in diet are occurring across the world as countries develop. Between 1963 and 2003, sugar and meat consumption in developing countries increased by 127% and 119% respectively. More fats, salts and processed food will be consumed while cereals, roots and pulses will decline with the largest changes in developing countries.

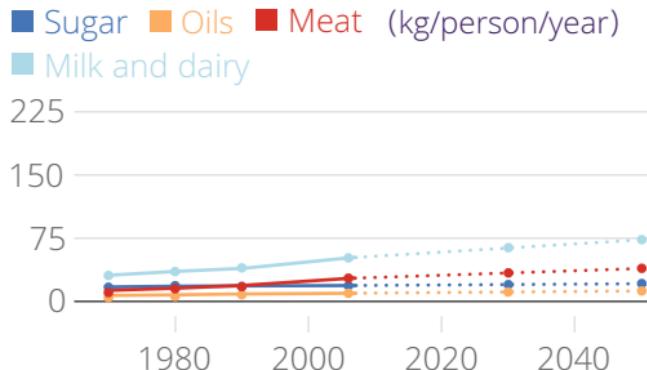
These trends contribute to the upsurge of obesity and diabetes seen in low to middle-income countries.

Global demand for meat is predicted to increase by at least 70% by the year 2050 from 2005 levels. Livestock farming will need to change to meet this demand sustainably and new sources of protein will need to be explored.

Developed world food consumption



Developing world food consumption



Sources: FAO World Agriculture Towards 2030/2050

Image: Flickr/96969158@N00, CC-BY



AGRICULTURE
Agricultural land



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The world is farming more land

The demand for food, driven both by population expansion and the expansion of consumption, will require farmed land to be more productive and more land to be farmed. Through advances in irrigation and other farming technology land can be converted for use in arable farming. Although expansion is not the only means to produce more food, it is projected that by 2050 arable land globally will increase by 70 million ha, with most of the expansion in the developing world.

Arable land is often formed through the removal of existing wild grasslands and forests, with associated costs to local biodiversity and ecosystem services. Sustainable intensification is possible with the right governance and support systems.

Global arable land (billion Ha)



Sources: FAOstat - Arable land

Image: Flickr/leecannon, CC-BY-SA



AGRICULTURE

Biofuels



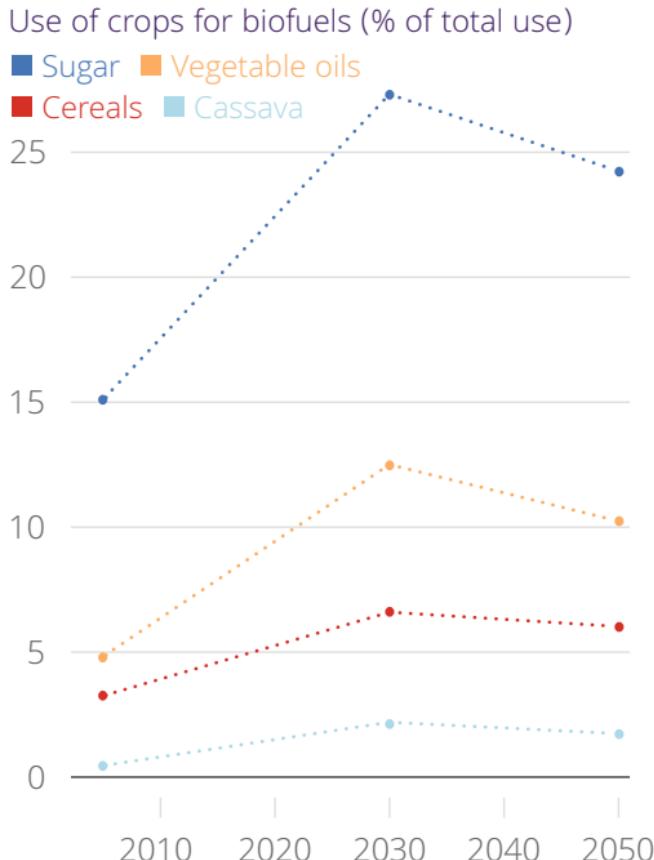
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Biofuels production is growing

In the future, an increasing proportion of crop production will be devoted to species that can be used to produce biofuels. Biofuels will be used in almost all capacities that petroleum-based fuels are currently used, with one of the benefits that the source is renewable.

Biofuels are a small share of total fuel use, around 3% of the total liquid fuel for global road transportation, but could reach 8% by 2020. The Food and Agricultural Organisation estimates that the amount of cereals, vegetable oils and sugar used to make biofuels will treble from 101 million tonnes in 2005 to 300 million in 2030. This in turn places strains on the food system, as land that could be used to grow food or feedstocks for animals is used to produce fuels.

Sources: FAO World Agriculture Towards 2030/2050 |
World Bank Future Impacts of Increased Biofuels Use.
Image: unsplash.com/@aaronburden





AGRICULTURE

Fertiliser use



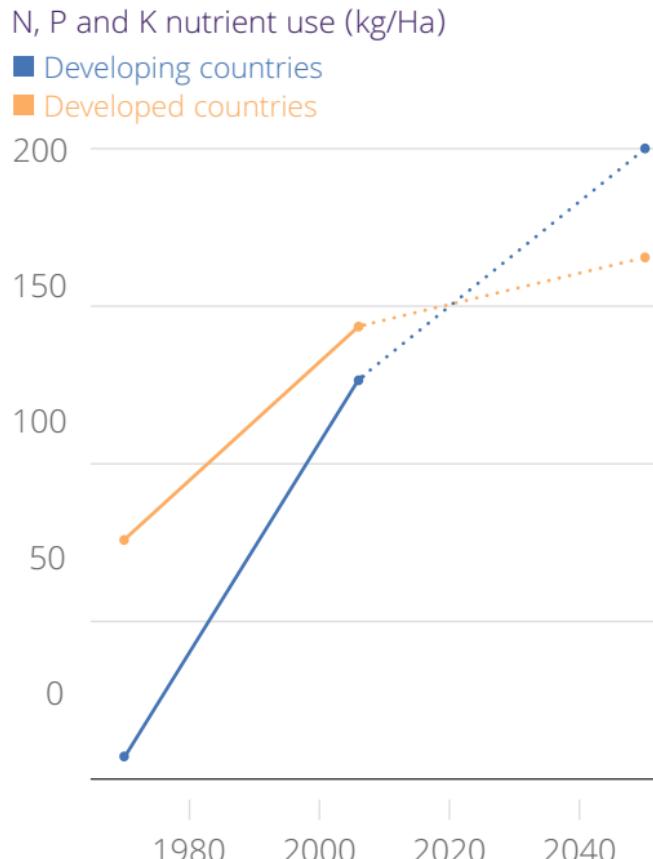
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Farming intensity is increasing

A growing world population requires more food, however even with wild grasslands and forest converted to cropland and pasture there is a limit to gains in production that can come from expansion. Yields have improved with fertilisers, but there is potential for further increases in the efficiency of agricultural inputs such as fertilisers, water and labour.

Fertiliser use is an indicator of farming intensity. Inefficient or inappropriate use of fertilisers can create environmental problems.

The dramatic increases seen in the developing world also reflect underlying structural issues such as poor soils and deficiencies in other farming practices. Many Sub-Saharan Africa countries will need to increase fertiliser use in order to raise productivity.



Sources: FAO World Agriculture Towards 2030/2050

Image: Flickr/adamcohn, CC-BY-NC-ND



AGRICULTURE

Food prices



Food is becoming more expensive and prices are becoming harder to predict

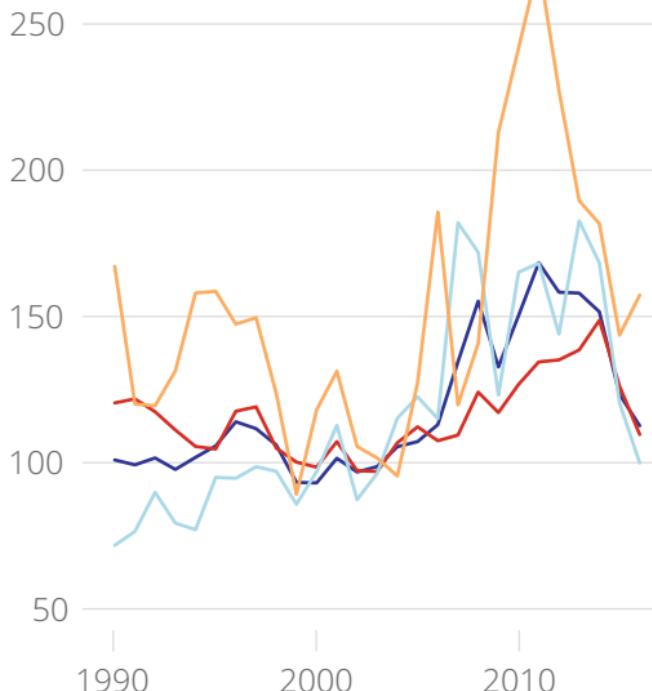
The cost of all food types has increased globally since 1990. The prices of goods both locally and globally are often volatile, influenced by diverse factors such as market speculation, regional warfare, climate-effects and trade policy.

Underlying the prices is a trend of increasing demand, which is likely to increase as the world grows richer and more populous. Volatility is difficult to predict but seems unlikely to diminish as food production methods remain relatively static in a world that is otherwise changing rapidly in many ways.

Although food prices have declined somewhat in recent years, they are still well above pre-2005 levels and are likely to increase again.

Global food, meat, dairy and sugar deflated price index (indexed: 2002-2004 = 100)

■ Food ■ Meat ■ Dairy ■ Sugar



Sources: FAO Food Price Index

Image: Flickr/cost-of-living-worldwide, CC-BY

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Trends cards - v1.0

July 21 2016



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Economy

Self-employment
Rising developing world

Energy

Energy bills
Fossil fuels
Energy intensity
Renewable energy
Greenhouse gas emissions

Crime

Law and order legislation
Number of offences
Police workforce
Prison population
Sentencing outcomes

Demographics

Ageing population
UK population
Housing need
Urbanisation

Education

Pupil numbers
Early years education

Environment

Land use
Climate change
Global forest
Water use
Resource use

Transport

Air passengers
Light goods vehicles
Traffic volume
Buses and trains
Ultra low emission vehicles

Health

Diseases of lifestyle
Obesity
Antibiotics
Genome Sequencing
Vaccinations
Cancer Survival

Agriculture

Food waste
Food consumption
Agricultural land
Biofuels
Fertiliser use
Food prices

Communications

Sources of news
Children's media habits
Connected devices
Cyberattacks
Internet access
Computing power
Data

Defence

Military resources
Military research

Politics

Displaced people
Governance
Party membership