

The Big Read Visual journalism

Ten charts that tell the story of 2019

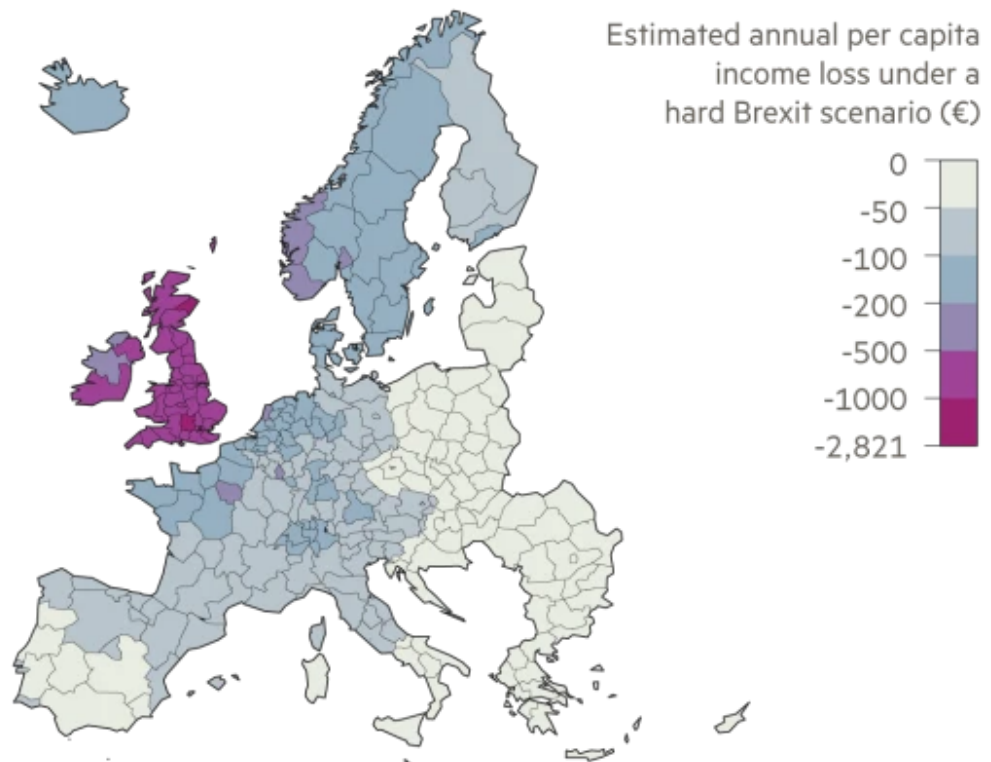
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The FT's pick of the year's best visual journalism, from extreme weather patterns to signs of a growing surveillance society

Alan Smith in London DECEMBER 29 2019

The power of a good chart or map lies in its ability to inform the debates and decisions that lie ahead. Here are 10 graphics published by the Financial Times in 2019 where the real story is often about what happens next — in the years, decades and centuries to follow.

Brexit: Europe to share the pain of departure

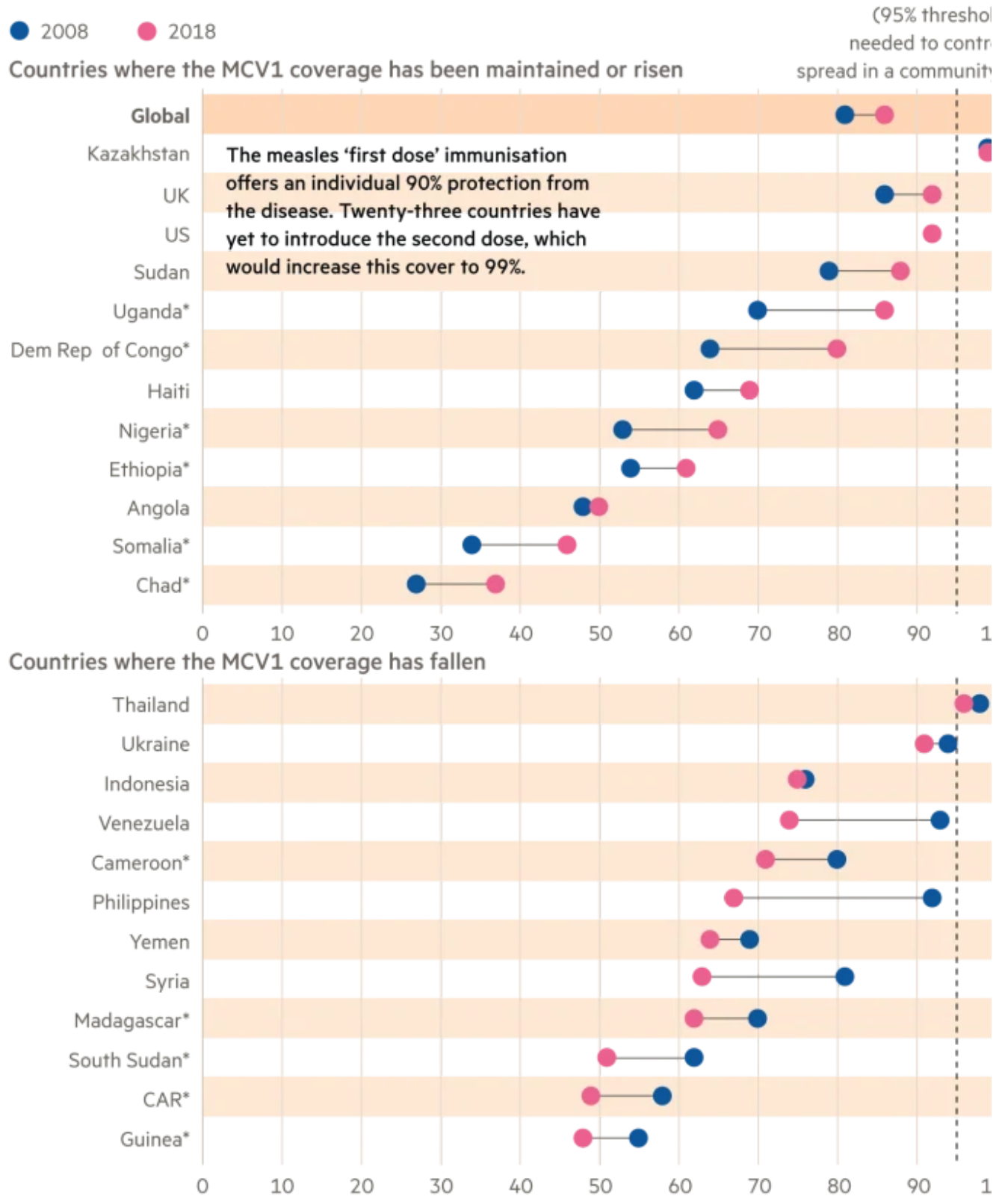


Graphic: Alan Smith Source: Bertelsmann Stiftung
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Boris Johnson's victory in the UK's December general election, driven by his promise to "get Brexit done", means that the premise of this graphic from earlier in the year — a "hard Brexit" — [remains a strong possibility](#) as we enter 2020. The estimated per capita income losses shown on the map illustrate cartographer Waldo Tobler's first law of geography: "Everything is related to everything else, but near things are more related than distant things." Most economists predict a hard Brexit will hit the UK hardest, with neighbour Ireland a close second — but the ripple is [predicted to extend across Europe](#).

Global health: mixed fortunes in countering the 'anti-vax' movement

Measles immunisation coverage (%) for the first dose (MCV1) among 1 year olds. Estimates, as of Jul 15 2019



South Sudan=2011 and 2018

*No MCV2 vaccine coverage

Sources: WHO; Unicef

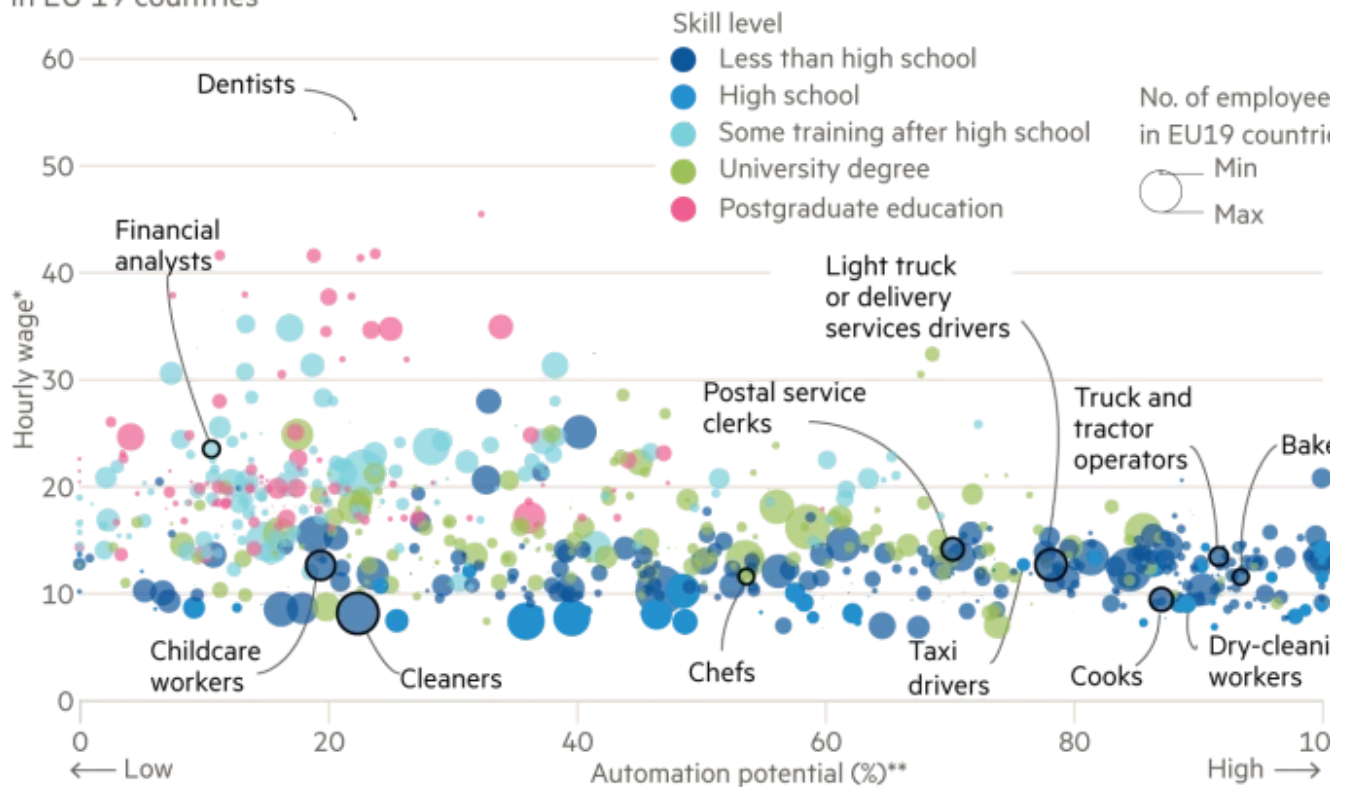
Visual journalism: Liz Faunce

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Not all countries have made progress in their efforts to reach vaccination targets. Countries affected by war or civil unrest, such as Syria and South Sudan, have seen a big decline in measles vaccination rates in the past decade. In the US, where there is a prominent “anti-vax” movement, levels remain stubbornly below the 95 per cent threshold needed to prevent wider outbreaks. Meanwhile, [new research](#) suggests that the disease has a much more serious effect on children’s immune systems than previously thought.

Automation: the jobs at risk

In EU 19 countries

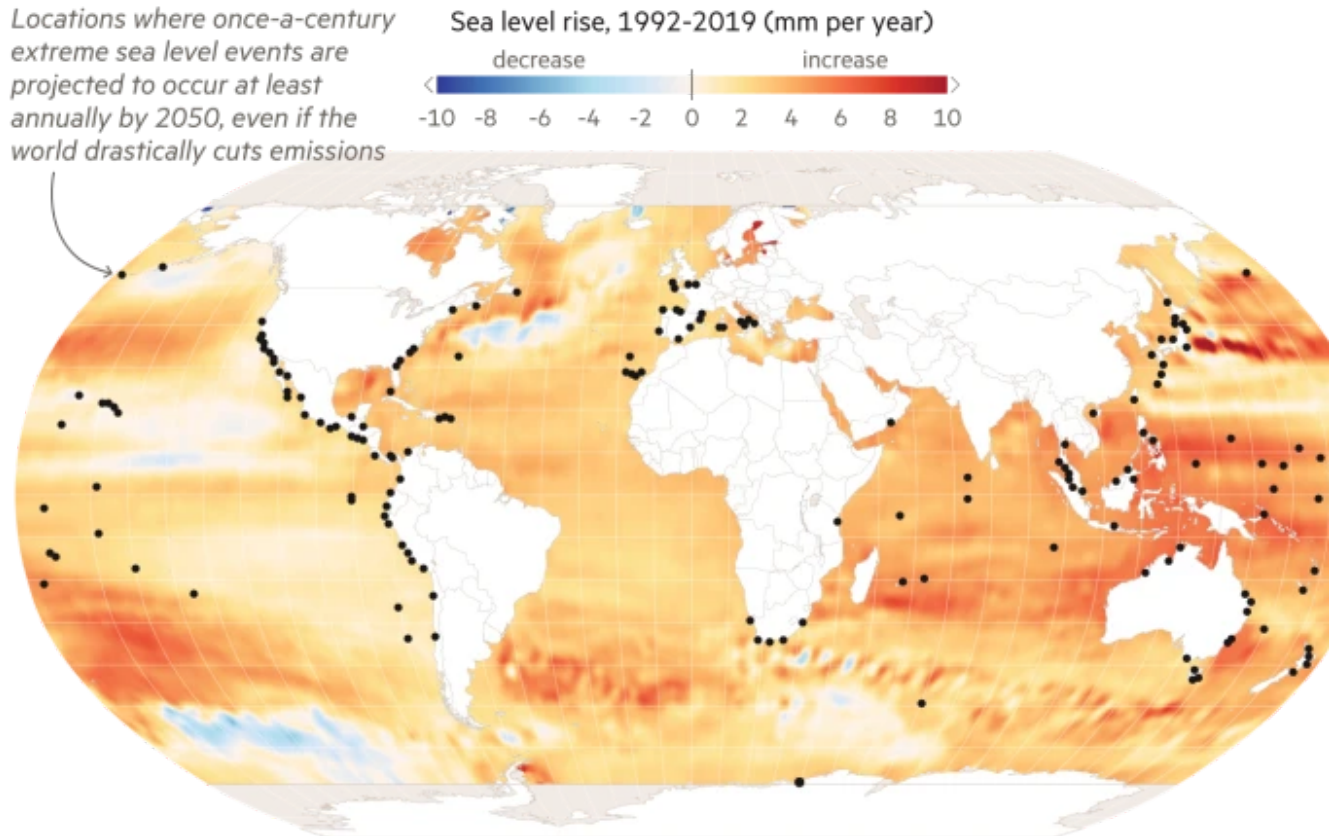


*Average hourly wage (\$ at purchasing power parity), weighted average for EU19 workers **Estimated percentage of time in each job at risk of automation Source: McKinsey Visual journalism: Bob Haslett, Federica Cocco © FT

Workers are set to experience major changes to their jobs and careers as a result of automation. And according to the OECD, their governments are not preparing them for the disruption. Separate analysis by McKinsey suggests that those in low-skilled and low-paying jobs are exposed to the greatest risk of automation. But [virtually every worker](#) faces the threat of elements of their job being automated.

The environment: extreme sea level events to become more frequent

Locations where once-a-century extreme sea level events are projected to occur at least annually by 2050, even if the world drastically cuts emissions



One metre

Sea level rise by 2100 if global warming exceeds 3C

20%–90%

Projected loss of coastal wetlands by 2100

90%

Projected loss of warm water coral reefs, even if global warming is limited to 1.5C

Cartography: Chris Campbell

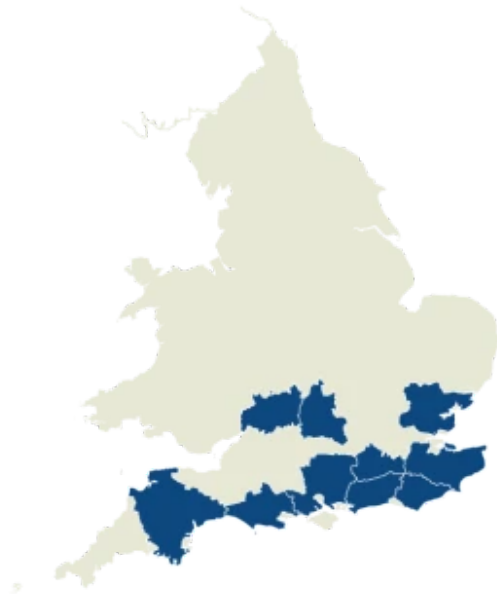
Sources: NOAA/Laboratory for Satellite Altimetry; IPCC

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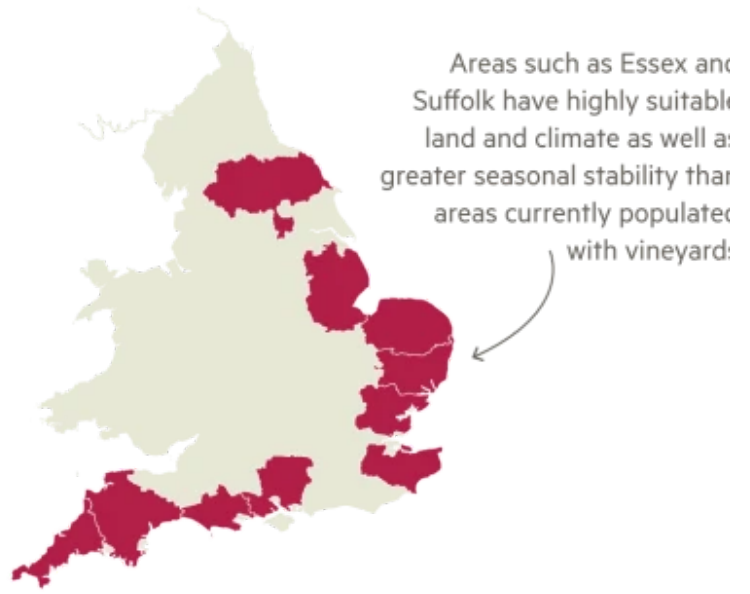
Sea levels are rising quicker than previously thought — and pose a significant risk to coastal cities and low-lying islands, according to a September report from the [UN's Intergovernmental Panel on Climate Change](#). The UN's researchers warned that extreme floods — typically experienced once a century — are likely to happen at least once a year by 2050 in many regions, even if global warming is limited to 1.5C above pre-industrial levels.

Climate change: the best vineyards in England and Wales may not yet exist

Top 10 counties according to total vineyard hectares, 2015



Top 10 counties based on area of viticulturally suitable land

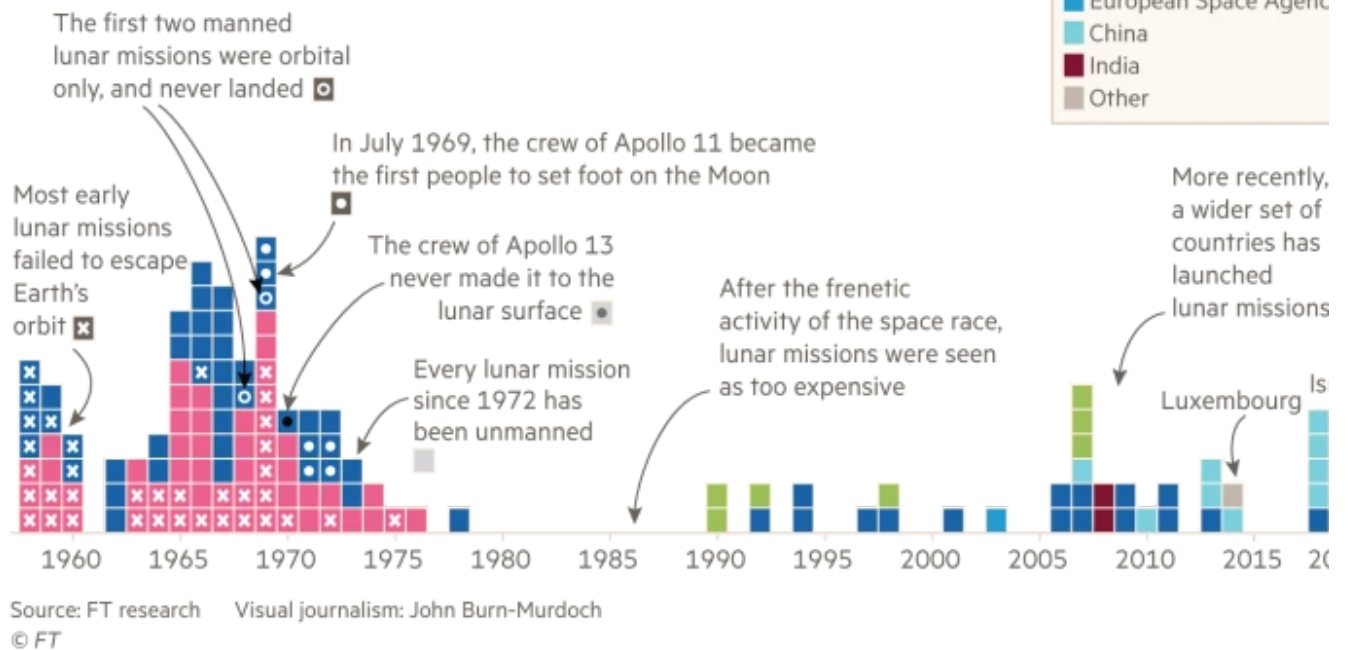


Source: A Nesbitt, S Dorling and A Lovett (2018) *A Suitability Model for Viticulture in England and Wales*, Journal of Land Use Science
 Graphic: Alan Smith
 © FT

[Climate change](#) presents an unusual economic opportunity to English winegrowers according to academics at the University of East Anglia. A combined terrestrial and climatic model identifies over 33,000 hectares of prime viticulture land — an area larger than France’s Champagne region. The research suggests that Essex and Suffolk are particularly ripe for cultivation, while many current English vineyards are “sub-optimally” located. Useful intelligence, if you think you could [run a vineyard](#).

The race for space: a visual history of lunar missions

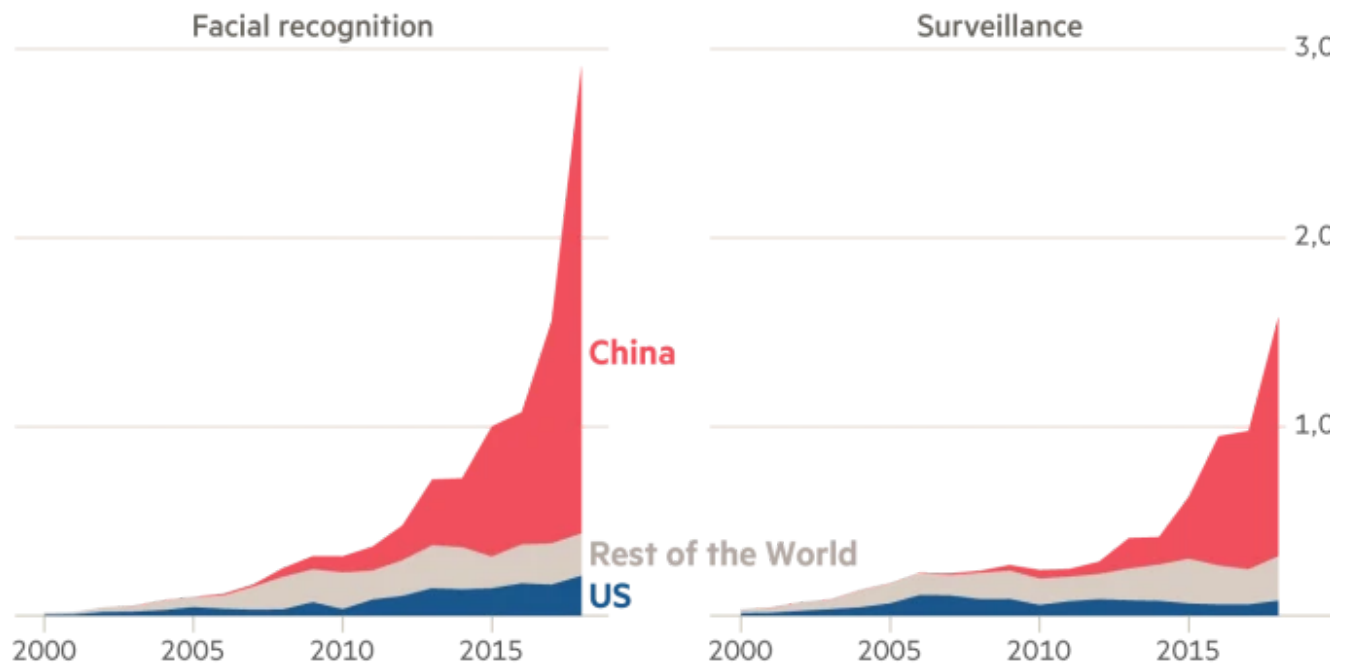
Almost all missions have been unmanned; some completing a lunar orbit, others using the Moon for a 'gravity assist' as part of a longer journey, some sending a probe to impact the lunar surface, and others landing rovers on the Moon.



2019 saw the 50th anniversary of the first manned Apollo landing — and [renewed questions](#) asking why it has been so long since the last crewed mission to the moon in 1972. With Nasa's [publicly declared goal](#) of returning humans to Earth's closest neighbour by 2024 and [billionaire entrepreneurs](#) joining [aspiring space nations](#) in launching ambitious missions of their own, one thing seems certain: space is set to become extremely busy.

Privacy: is a surveillance society inevitable?

Number of patents published worldwide that mention facial recognition or surveillance cameras in the title or abstract, by country of patent author(s)



Specific terms searched were 'facial recognition' or 'face recognition', and 'video surveillance', 'surveillance footage' or 'surveillance camera'

Source: European Patent Office

Visual journalism: John Burn-Murdoch

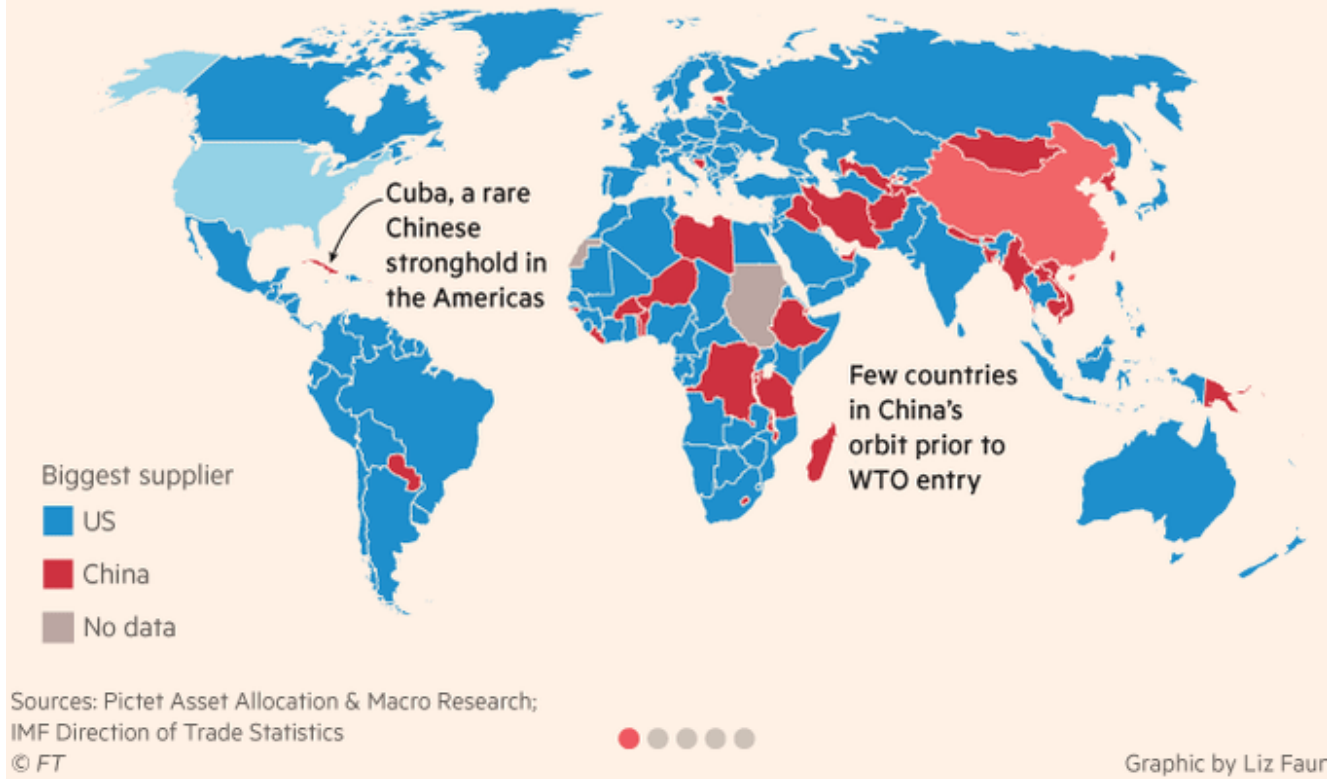
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China is leading a global [boom in surveillance technology](#) that is fuelling increasingly polarised views on privacy and security. San Francisco police may have banned its police from using facial recognition software but, according to the FT's Henry Mance, there are a growing number of companies justifying their technological advances on the premise that "[anonymity was just a phase in human existence](#)".

Trade war: China usurps the US as dominant exporter

US or China as larger supplier of goods

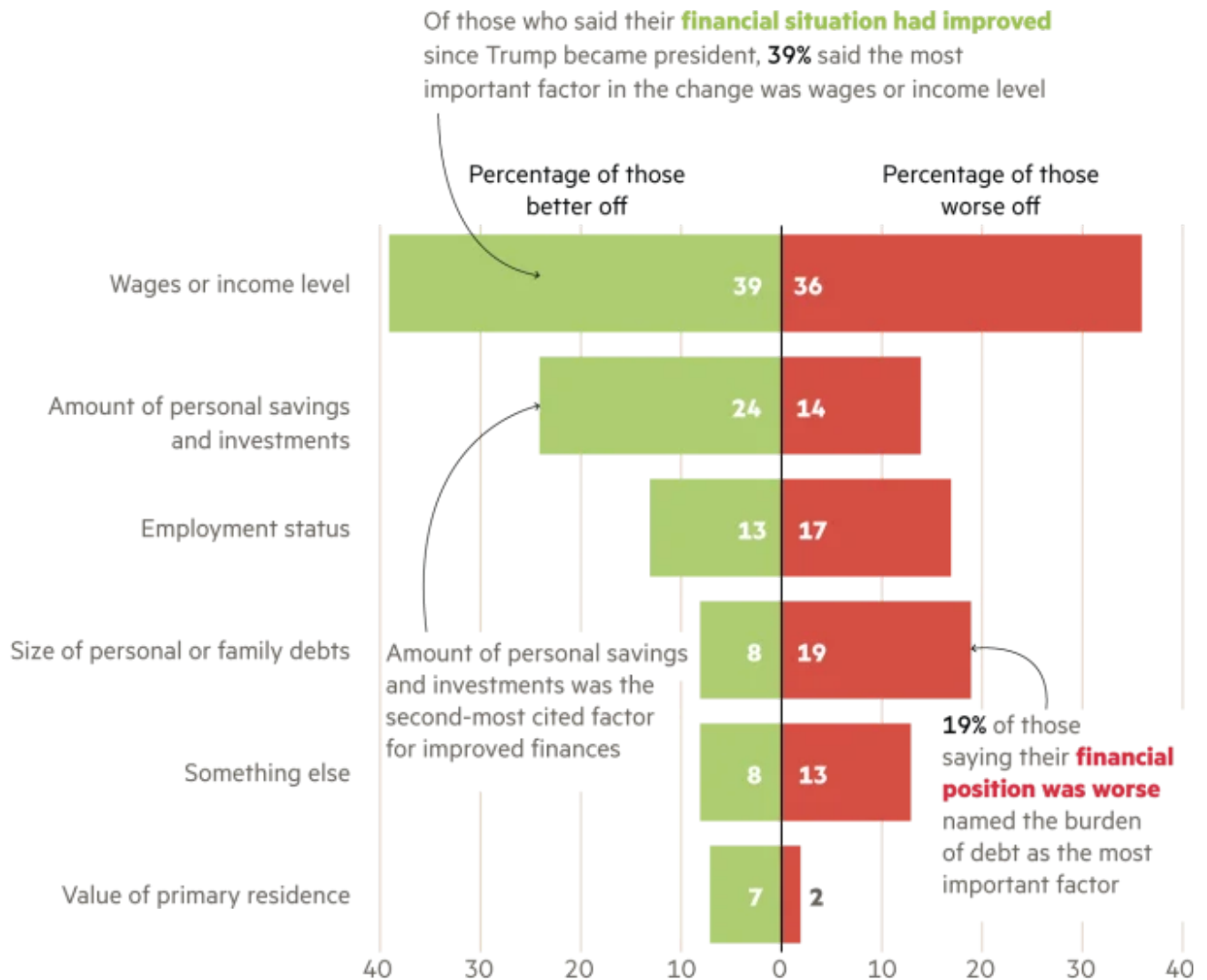
2000



The simmering trade war between the US and China threatened to spiral out of retaliatory control before signs of de-escalation [finally appeared](#) at the end of the year. This animated map paints a stark picture of the inroads into global trade China has made since joining the World Trade Organization in 2000. One analyst described 2019 as “[peak China](#)”.

US election: voters feel the economic pinch

Which of the following is the most important reason for the change in how you are faring financially



FT graphic: Billy Ehrenberg-Shannon

Source: FT-Peterson US Economic Monitor poll of 1,005 adults, October 2019

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The US election will dominate news coverage in 2020. Rather than predicting a winner, a new FT/Peterson Foundation poll on US voter economic sentiment hints at some of the debates that will feature in the campaign, as [two-thirds of Americans](#) say the Trump presidency has not made them better off.

Fragile Earth: the changing World Magnetic Model

Fluid nature of Earth's core, and magnetic field it influences, requires regular updates

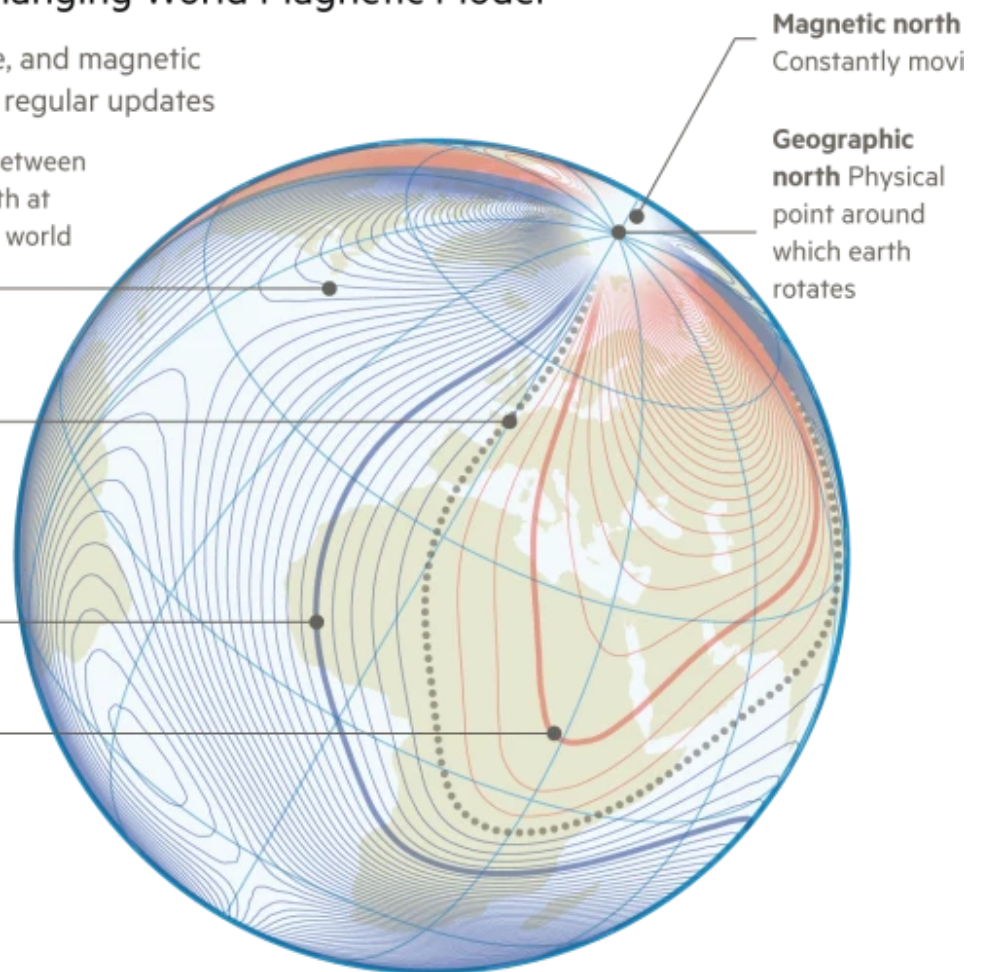
This globe shows difference between geographic and magnetic north at different locations around the world

The closer the lines, the greater the gradient between the two figures

The dotted contour indicates 0° of difference between magnetic and geographic north

Along this blue line there is a difference of -5°

This red line indicates a positive difference of +3°



Visual journalism: Ian Bott Sources: NOAA; BGS; FT research
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Finally, geologists revealed in December that magnetic north — the point on Earth's surface that points directly downwards — is moving at an unprecedented rate of 50 kilometres a year. The latest update to the [World Magnetic Model](#) also confirmed that the planet's magnetic field is weakening, which could eventually lead to a complete reversal in the field. Under such a scenario, Earth would be exposed to harmful solar and cosmic radiation, wreaking havoc on terrestrial life. As we enter the new decade looking for signs of optimism in an uncertain world, it is of some comfort that experts consider the chances of this particular catastrophe remote — at least for the next few centuries.

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