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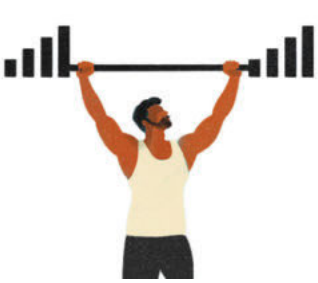
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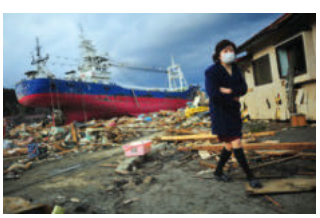
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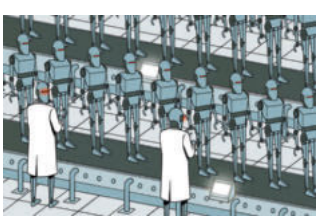
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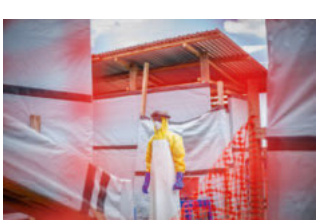
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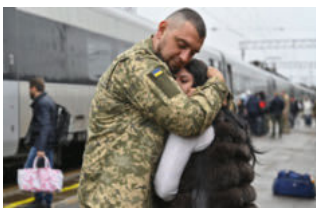
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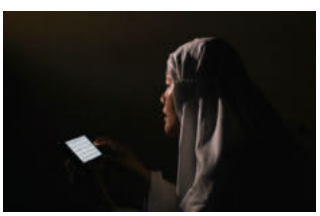
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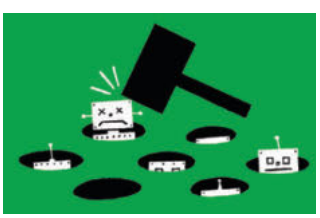
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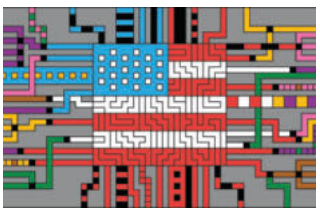
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to take part in *"a severe contest between intelligence, which presses forward, and an unworthy, timid ignorance obstructing our progress."*

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The world this week Politics



The Democratic Party won a landslide in **America's mid-term elections**, gaining majorities in both houses of Congress. In the Senate the party captured seven seats, giving it at least 54 (although Senate races in Alaska and Mississippi are too close to call). Democrats took control of the House of Representatives with the biggest popular-vote margin since 1976.

Donald Trump tried to distance himself from the defeat, claiming that the Republican Party "would have won in a landslide" had he been on the ballot. But Americans were angry at the president's war in Iran, which has pushed up prices, and corruption. Republicans turned to infighting. **J.D. Vance**, the vice-president, offered his diagnosis: "The reason we lost is the war."

The Democrats gained Senate seats in Republican strongholds. **James Talarico** became the first Democratic senator elected in Texas in 38 years, beating the Republican candidate, Ken Paxton, by 12 points. **Adam Hamilton** took the party's first seat in Kansas since 1932. **Annie Andrews** won in South Carolina, which had voted for Mr Trump by 18 points in 2024. The Democrats regained support among Hispanic voters, who had swung sharply towards Mr Trump in 2024. This helped negate Republican gerrymandering in House districts in the South.

A day before the election American forces bombed **Qeshm Island** in the Strait of Hormuz. The Iranian island hosts several military bases. American officials described the strikes as "defensive". Mr Trump said that he is not planning to restart the war in Iran, even as he hinted that American forces are ready to launch strikes on the country.

Mr Trump said that America would stop providing around $4bn a year in aid to **Israel** at the end of 2026. The funding is not due to expire until 2028. Mr Trump said Democrats had used his administration's support for Israel as a "bad talking-point" during the midterms. Binyamin Netanyahu, Israel's prime minister, has repeatedly said that he wants to wean Israel off American aid.

Joshua Wong, a pro-democracy activist in **Hong Kong**, was sentenced to ten years in jail. Mr Wong was already serving a shorter sentence under the territory's national-security law. Meanwhile John Lee, Hong Kong's leader, apologised after an inquiry exposed regulatory failures and corruption behind a fire in a housing estate last year. The blaze killed 168 people.

Indonesia deployed 20,000 troops to Jakarta, the capital, after the authorities accused several people of snooping on the communications of Prabowo Subianto, the president. Mr Prabowo's chief of staff and two senior police officers were arrested. An ally of Mr Prabowo said the wiretapping scandal could amount to an attempt to overthrow the government.

Quaking in their boots

Japan's government created the National Disaster Management Agency, which will oversee its preparation and response to calamities such as earthquakes, tsunamis and volcanic eruptions. The agency, which has roughly 350 staff, will co-ordinate between different departments.

Early results in **South Africa's** local elections pointed to a bad outcome for the African National Congress. The once-hegemonic party was on course to win about 32% of the vote, its lowest-ever share in a nationwide election. The second-largest party, the Democratic Alliance, was set to win the most votes in Johannesburg, the commercial capital. Whether its candidate, Helen Zille, becomes mayor will depend on coalition talks.

America said it would exclude **South Africa** and **Rwanda** from the African Growth and Opportunity Act (AGOA) from next year. The law, passed in 2000, allowed them to export certain goods to America duty-free. The Trump administration is annoyed about South Africa's refusal to change race-based laws and Rwanda's warmongering in the Democratic Republic of Congo. But since just a fraction of their exports to America were covered by AGOA, the economic impact will be limited.



King Charles attended the **Commonwealth Summit** in Antigua & Barbuda, alongside Britain's prime minister, Andy Burnham. Some Caribbean leaders and activists demanded an apology and reparations for Britain's role in the slave trade. Mr Burnham said he was open to discussing a formal apology, but ruled out paying reparations directly.

Donald Tusk, **Poland's** prime minister, defended his efforts to overhaul the country's Constitutional Tribunal. On October 30th judges appointed by Mr Tusk's government took their seats on the court. Karol Nawrocki, the nationalist president, had refused to swear them in. One of the new judges suspended the court's president, an ally of Mr Nawrocki's Law and Justice (PiS) party. Mr Tusk said the move was necessary to restore the rule of law, which was undermined by PiS when it was in power in 2015-23. PiS accused Mr Tusk of a "coup".

Bulgaria elected Iliana Yotova as its first female president. Ms Yotova describes herself as a "president of peace" and favours negotiations with Russia to end the war in Ukraine. Bulgaria's presidency is a largely ceremonial role. But the election cements Bulgaria's Russia-friendly tilt under its prime minister, Rumen Radev.

Cold war

Dozens of **supermarkets** in Europe lost food after **hackers** meddled with the temperature settings of their fridges and freezers. Millions of euros' worth of food was spoiled. Danfoss, a Danish company whose systems were targeted in the cyber-attacks, urged shopkeepers to update their software. Nobody has claimed responsibility for the attacks, though similar incidents earlier this year were linked to pro-Russian hackers.

Alexander Dobrindt, **Germany's** interior minister, said there would be "severe penalties" after riots in Frankfurt. More than 100 police officers were injured. The violence followed protests against education-spending cuts and high living costs. Mr Dobrindt blamed "violent left-wing groups and troublemakers from migrant communities".

Britain and the **European Union** agreed to a draft deal to remove border checks on food and agricultural goods. The agreement is a boon to British farmers, whose exports to the EU have fallen by a third since Britain left the bloc. It is one of several "mini-deals" (over students, electricity trading and other issues) that the two sides hope to seal before a summit on November 20th.

The world this week Business

American stock markets rose a little following the Democrats' landslide victory in the midterms. The S&P 500, an index of big American companies, rose by 1.6% the day after the vote, while the tech-heavy NASDAQ rose by nearly 1.5%. Health-care and renewable-energy stocks rallied. Bond yields fell slightly and the dollar weakened.

Some **artificial-intelligence stocks** fell amid worries that local Democratic lawmakers could curtail the construction of data centres. Share prices of Nvidia, the world's most valuable chipmaker, fell by more than 3%. Those of CoreWeave, a data-centre operator, fell by around 10%. Companies owned by Elon Musk, a big Republican Party donor, took a beating. Shares in SpaceX, his rocketry-cum-AI firm, fell by nearly 4%.

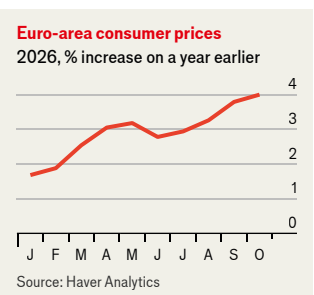
Brent crude, the global oil-price benchmark, fell by 8% to around $95 a barrel—its lowest level since September. Prices had risen in recent weeks over fears that Donald Trump might resume the war with Iran, causing fresh disruption to oil supplies from the Gulf. But after the Republicans' poor showing in the midterms, traders are betting that the president may be reluctant to restart the unpopular war.

Anthropic committed to spending $895bn on AI infrastructure and computing power, according to a regulatory filing ahead of its planned IPO. The model-maker reported revenues of almost $17bn in the third quarter, up from $1.4bn in the same period a year ago. But computing costs led to operating losses of $567m. Its IPO will be one of the largest ever.

Apple reported its first quarterly results since John Ternus, its new boss, took over in September. The tech giant's revenue reached $114bn, an increase of 12% year on year. But Mr Ternus warned of a sharp rise in the cost of memory chips, which would squeeze its margins. Shares in the firm briefly fell.

Tokens of depreciation

Hackers stole some $6.3bn-worth of tokens from **Binance**, the world's largest cryptocurrency exchange. The firm worked with other companies to freeze $3bn-worth of crypto. It promised to cover all losses. TRM Labs, a blockchain-intelligence company, said it suspected that North Korean hackers were responsible. Bitcoin fell by around 5% following the attack, though it has since recovered to its earlier level of around $80,000.



Inflation in the **euro zone** rose to 4% year on year in October, the highest level since 2023. Energy prices, which have been pushed higher by the war in the Middle East, rose by nearly 21%, driving the increase. Core inflation, which excludes energy and food, was 2.5%. The European Central Bank is now expected to raise its main interest rate by a quarter of a percentage point, to 2.75%, in December.

America's economy grew at an annualised rate of 3.4% in the third quarter, the fastest expansion in a year and above economists' predictions. The personal-consumption-expenditures price index, the Federal Reserve's preferred measure of inflation, came in at 3.6% year on year in September.

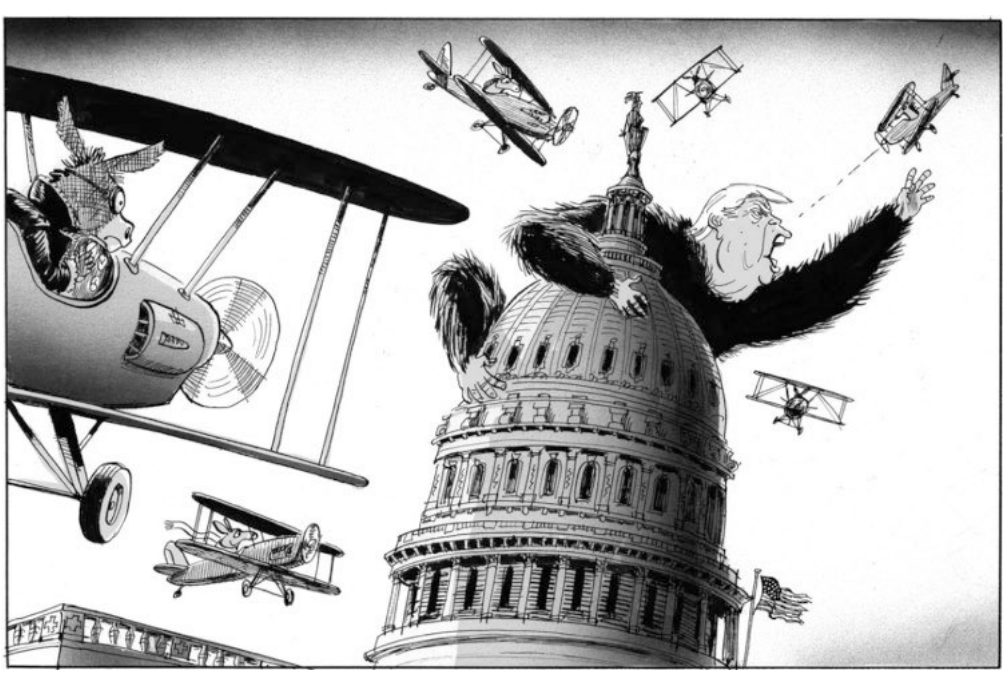
South Korea's exports reached $115bn in October, up 94% from a year earlier. Semiconductors performed especially well, as AI firms gobbled up the memory chips produced by Samsung Electronics and SK Hynix. South Korea has exported $930bn-worth of goods in 2026 so far, putting it within reach of $1trn for a single year.

Chinese stocks found a floor this week after entering a bear market in October. The country's market regulators announced a rescue plan to support stock buybacks and help investors access collateral for equity purchases. Officials have also quietly paused initial public offerings. China's markets have been a global outlier this year. The CSI 300 is down by 13%, while most other markets have risen.

Saudi Aramco, the world's biggest oil company, reported profits of $31.2bn in the third quarter, up 9% from a year earlier. High oil prices caused by the Iran war have created a windfall for oil firms. Saudi Arabia's state oil concern has been more exposed than many. Attacks on shipping in the Strait of Hormuz have disrupted its exports and Yemeni rebels have bombed its facilities. But last month the firm managed to supply around 7m barrels of oil a day, roughly the same as before the war.

In a foxhole

Fox News revealed that viewership had fallen by 27% ahead of the midterms. Last October an average of 2.3m people tuned in to the news channel during prime time. This year 1.7m did. Lachlan Murdoch, the cable-television network's boss, blamed "viewer fatigue". Mr Trump said Fox owed its poor ratings to "spending too much time covering the Trump Deranged Dumocrats".



Wipeout

Voters have castigated Donald Trump. That has given Washington a rare opportunity

SURFERS CALL it the washing machine. When a giant wave throws you off your board and plunges you underwater, you lose all sense of where you are. That is what befell Donald Trump and his party on November 3rd, as they were slammed by tens of millions of American voters. They have still to grasp just how much their country has changed.

Already it is clear this was not a normal midterm swing against a sitting president, but the biggest wave-election since the aftermath of Watergate more than 50 years ago. Democrats won control of both chambers of Congress, flipping seats deep into once-safe red waters, from South Carolina to Texas.

The coming days will spell out two further lessons. One is that this is not just a triumph for Democrats, but also for American democracy. Voters cannot be taken for granted. If they are angry, they will turn against parties they have long supported. The other lesson, which follows from this, is that both parties now need to find a new way of doing politics—one that spends less time riling up their constituents and more getting things done on their behalf.

The wave has swept across America. With some races still uncalled, the Democrats have 54 Senate seats (including two independents) and around 260 in the House, up from 47 and 214. They are set to win the popular vote for the House by 13 points. They have also taken at least five more governors' mansions. Kansas has its first Democratic senator since the New Deal. In Texas Democrats won their first Senate seat in almost 40 years and kicked out a three-term governor (see United States section).



It turns out that voters do not much like a president who is elected on a promise to lower prices and stay out of wars, but who then goes on to launch a tariff crusade and attack Iran—thereby driving up prices. And they hate it if that president's relentless self-glorification and enrichment of his family and friends mocks their own hardship. In Mr Trump's America, Gallup finds, nine in ten adults complain that corruption in their government is widespread—about as many as in Nigeria.

The vote was thus a verdict on the president. But politicians from both parties should also reflect on voters' rejection of the ugly mechanics of modern partisanship. Republicans gerrymandered seats, but failed to make gains. Elon Musk, a multi-billionaire, poured more than $150m into a race in Texas, but his candidate was trounced. Republican candidates stoked fears over Muslims and transgender people, and lost. One in Ohio backed an ad in which a mother damned his opponent: her own abused daughter. It sealed his defeat.

The message from this is clear and it is hopeful. It has often seemed as if polarisation was stronger than the electoral feedback that ensures democratic accountability. Not this time. Voters demanded that politicians put the nation's prosperity above the grubby pursuit of power. Just before the election, polls say, 80% of Americans called for "substantial change" or "complete and total upheaval" in how America is run.

Voters have done their job. Politicians must now do theirs. The immediate task falls to the Republicans. When Mr Trump took control of the party, he ditched its values. Most old-guard Republican politicians were either forced out of office or traded their principles for political survival. With their call for change, voters have given Republicans a second chance. Some may stick with the president, risking further drubbings in future elections. Braver souls will breathe new life into their party, even if that courts Mr Trump's vengeance. He is more feared than loved. They may discover that, once the old king's power begins to ebb, it drains away surprisingly fast.

Plenty could go wrong—including with Democrats flushed by success. Their party is only a bit more popular than Mr Trump. Their campaign succeeded by pairing a promise to lower costs with one to crack down on corruption and incompetence. Both are vital, but the balance will be hard to strike.

If Democrats ignore the rot, they will only deepen voters' cynicism and despair at the federal government in Washington. But if subpoenas and impeachments consume all of their efforts and they fail to improve people's lives, voters will feel that they have been hoodwinked once again. A running fight with the administration will also make it harder to pass legislation that would, say, restore funding for health care.

Above it all will loom the legacy-obsessed figure of Mr Trump. Some hold out hope that he will spend the rest of his presidency pottering about the White House, gilding golf balls and opining on granite. That underestimates the president's capacity, for good and ill.

At home Mr Trump may focus on pardoning his friends and punishing his enemies. With only two years left, he and his cronies and ideologues may try to wring what more they can from their time in power, be that through lucrative state-supported mining ventures or more deportations.

The president also retains enormous authority over foreign policy. He may yet pursue further strikes on Iran, try to bully Ukraine into a bad deal with Russia, or invade Cuba (see Briefing). As the White House's more talented staff eye the exits, a depleted executive branch may find itself even more subject to the president's whims. It will be ill-prepared for a crisis.

Coming up for air

There is a glimmer of a possibility, however, that politicians will take their responsibility seriously. Republicans in Congress may consider working with Democrats, and vice versa (imagine that). They could pursue egregious corruption or even impeach the administration's most reckless cabinet members, including Pete Hegseth, the secretary of war. They could develop rules for artificial intelligence that guard against disastrous outcomes without crippling innovation.

Mr Trump is not a man who enjoys being left out. He may judge that he could improve his legacy by working with Congress, rather than trampling on it. That is not the likeliest scenario, we admit. But, as the voters have shown, politicians who ignore them risk ending up in very deep water. ■

Haiti

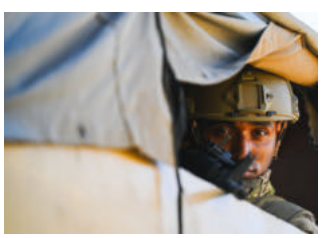
El Salvador's gangbuster enters the fray

So dire is the status quo in Haiti that Nayib Bukele might improve it. But the risks are huge

FEW PLACES on Earth are as miserable as Haiti. The last elected president was tortured and shot dead in his home in 2021. Since then, gangs brandishing military-grade weapons have wrought havoc.

They have taken over large swathes of territory in and around the capital, setting up roadblocks, terrorising residents and extorting "taxes" from them. At least 16,000 people, mostly civilians, have been killed, and over 1.5m displaced. Life expectancy is the shortest in the Americas. Ill-funded UN-backed forces sent to quell the violence have struggled. A UN "Gang Suppression Force" was approved in September last year, but only about 2,000 of the 5,500 soldiers it was promised have arrived, and they rarely venture out from their base.

Things are so bad that it is tempting to welcome almost any determined outsider who wants to impose order. Nayib Bukele, El Salvador's president, has just sent over 2,000 Salvadoran soldiers to Haiti. His contingent outnumbers the UN's forces. Mr Bukele is a brutal strongman but widely admired in the Americas for his crime-busting. Other countries have pledged logistical support for his intervention, including Colombia and the Dominican Republic, which shares an island with Haiti. President Donald Trump, who wants to see the region's gangs smashed, appears to have given Mr Bukele the nod (see Americas section).



Mr Bukele says his aim is to recover four Salvadoran air-force technicians who were working in the UN's Gang Suppression Force when they vanished (and were perhaps killed) in an ambush last month. But 2,000 troops does not sound like a mere rescue mission. More probably, he wants to burnish his reputation, by showing that his record of suppressing gangs at home in El Salvador can be extended abroad. Mr Bukele once bragged that he was strong enough to fix Haiti. In social-media posts he boasts he can "finish off" its gangs.

Foreign military interventions have a mixed record in Haiti. Previous UN efforts failed to calm the mayhem and sometimes added to it. A big worry about Mr Bukele's mission is that its aims are unclear. Will the Salvadorans kill some gangsters and leave quickly, or occupy parts of the country? Will they work with other foreign forces and the local army and police? Today's picture is confused, including not only the UN and the Haitian security services but also Vectus Global, a private military firm run by Erik Prince, an American with links to Trump-world, who was hired by Haiti's government to fight the gangs with drones. The UN frets that its role is being usurped.

Mr Bukele is wrong if he imagines Haitian gangs are like their less scary counterparts in El Salvador. Back home Mr Bukele brought down the murder rate by locking up hordes of young men, almost 2% of the total population, without due process. (Trials, if they happen, are of hundreds of suspects at once.) By tossing aside the rulebook while also quietly negotiating with gang bosses, he made his country safer with remarkably little bloodshed: only four police officers died in the first 14 months of his crackdown. Haiti, by contrast, is more like a warzone. Gangs are stronger, the state is weaker and prisons are notorious for escapes. Victory here would be more akin to winning a civil war.

Salvador complex

Mr Bukele may end up doing some good in Haiti, especially if he persuades others to send more peacekeepers. But he needs to make clear whether his soldiers will work with the UN or do their own thing. The UN could help with vetting and training, and discourage abuses against civilians. Yet Mr Bukele may prefer his own gloves-off approach. His opacity is troubling. He should spell out his intentions—and remember that it is easier to start a fight than to end one. ■

Cyber-security

Give the good guys guns

Stopping cyber-disasters means making sure defenders have better models than attackers do

IT WAS MEANT to be "cyber-security awareness month". Experts now call it "Black October". In recent weeks the normal flow of computer hacks and bugs that engineers must constantly stem has become a torrent. The cause is artificial intelligence, which has turbocharged cyber malfeasance. Open-source AI models have empowered attackers to work with inhuman efficiency, competence and persistence. As a result, years' worth of critical flaws have been exposed in days.

Those flaws range from shocking to ridiculous. Engineers have rushed to fix a flaw in PHP, a widely used programming language, that let attackers take over any computer using it. Freezers in supermarkets across Europe powered down on the instructions of cyber-criminals. And a crucial internet security certificate was revealed to have a private key of "4", when it should have been a hundred digits long. Nobody knows what bugs might have been found and exploited in private.

These events have been sobering for the many commentators, including this newspaper, who hoped that the disruption to cyber-security from AI would be short-lived, and that the technology itself would help those who defend digital systems more than it would empower crooks. Those hopes are being dashed. Instead, the digital infrastructure on which modern ▸▸

life depends looks increasingly vulnerable to AI. Urgent action is needed to defend it.

Why are defenders struggling? The first reason is that many of them do not have the most advanced tools. In April Anthropic, a leading model-maker, launched "Project Glasswing", an invitation-only club with access to the full cyber capabilities of its frontier models. It originally intended to broaden the membership widely. A similar programme from OpenAI was launched with a promise to democratise access to its tools.

However, access to powerful AI has become a geopolitical issue. Both of the model-makers now need sign-off from America's federal government before admitting new members to their clubs, so expanding them has become a painful political process. In the meantime those outside the gates must defend themselves with the same open-source tools that are powering the attacks (see Middle East & Africa section). Some are stuck in a no-man's land: unable to access American tech, but also scared of using Chinese alternatives.



The second problem is that when AI is used benignly it creates a friendly-fire problem. The moment that a "patch" for a newly identified vulnerability is released, hackers' AI models can examine it. This may reveal exactly what the weakness was and how to exploit it in systems that have not yet been fixed. If defenders are really unlucky—as they were with PHP—the patch may leak before it is released for defenders to use to fix their code. Attackers can then operate against still-defenceless systems.

A final issue is that attackers can exploit prosaic vulnerabilities faster and on a greater scale (see Business section). Cyber-security is not just about having strong systems available in theory, but avoiding laxity in practice. Unfortunately, AI has made human carelessness easier to exploit without making computer users any wiser. An internet-connected fridge running outdated software or using a default password has been a security hazard for decades. Only now, however, have attackers found it so easy to automate the search for and exploitation of weak points, running thousands of attacks in parallel.

Companies and governments must act decisively against these threats. Generating an imbalance in cyber-weaponry is crucial. With equal firepower, defenders rely on a narrow natural advantage: they must find and patch only single vulnerabilities—isolated problems which might in theory help create a breach. Attackers typically need to know of a whole chain of those vulnerabilities in order to breach a system.

Now that AI-powered attacks are proliferating, this advantage is too narrow. Defenders need a bigger armoury. America's government should take a more permissive attitude to membership of cyber-defence programmes, or at least approve new joiners faster. It would also be better if attackers' capabilities were pushed further behind the frontier. China's government has recognised the folly of distributing potent cyber-weapons to all, and is requiring labs to limit the destructive potential of newly released systems.

Organisations that are not yet using AI constantly to find and close security holes have fallen behind the curve and must catch up. Some entities need more help. In America efforts like Texas's "Project Watershed 250" are funnelling resources to providers of infrastructure to help with the basics. Those efforts should be expanded. In time, the software industry may be able to verify some code formally, thereby proving that it is unhackable, much as a mathematician proves a theorem.

Commerce, infrastructure and human relationships have come to rely on the assumption that the internet is secure. A sudden loss of cyber-security would therefore pose a grave threat to society. Cyber-security awareness has risen over the past month. Action must follow. ■

Health care

Markets maketh medicine

Patients are acting more like consumers. Good

THE PERSON who uses a product usually chooses it and pays for it. The great exception is health care. Most of the time insurers (public or private) decide what is covered; doctors decide what is prescribed and patients take what they are given. The result is markets riddled with inefficiency, and nowhere more so than in America, the world's biggest. This year Americans are expected to spend about $6trn on health, nearly a fifth of their country's GDP. Yet for all that money, about one adult in ten could not get an appointment when they needed one last year, and more than a quarter put off or skipped care because of the cost.

No wonder patients are taking matters into their own hands. They pepper chatbots with questions such as how to decode a blood test or prepare for an appointment; every week more than 300m people ask ChatGPT about health, says OpenAI, its creator. The market for tests that patients order themselves has grown to be worth about $4bn a year in America, double its size in 2021, reckons Morgan Stanley, a bank. And drugmakers have started selling directly to patients. Eli Lilly, an American pharmaceutical giant, now fills about half of new prescriptions for its obesity jab in America this way, bypassing insurers. All three developments are good news.

One reason is that patient-led markets bring lower prices. Take drugs. In America their true cost is obscured by a tangle of middlemen and insurers, who negotiate secret discounts from inflated list prices. When patients pay directly, prices are transparent and drugmakers must compete. New obesity drugs are a good example. Novo, a Danish drugmaker, launched Wegovy in 2021 at a list price of about $1,350 a month. That led to a price war with Lilly, and competition from cheap copies. Both firms now sell their jabs direct to patients for as little as $300-350 a month. The same logic works for older products. Mark Cuban Cost Plus Drug Company, an online pharmacy founded by a billionaire, buys generics from their makers and sells them at cost plus a 15% mark-up. One study found that patients with employer-provided insurance

who pay over $15 for a prescription could buy it more cheaply from Cost Plus nearly 80% of the time.

When patients pay, firms also come up with new ways to sell to them. "Direct primary care", where medical practices ditch insurers and charge patients a monthly fee instead, has grown by nearly a fifth per year since 2022, to more than 3,600 practices in America. Others, such as Amazon's One Medical, treat common ailments on a pay-per-visit basis. Drugmakers are looking at treatments that consumers will pay for, even if insurers will not. Novo is eyeing treatments for hair loss, addiction and menopause, conditions that big pharma long dismissed as unworthy of serious research. Even fighting off ageing now attracts money (see Business section).

Most profound of all is the erosion of the original source of market power: a doctor's hold on medical knowledge. In 1963 Kenneth Arrow, an economist, said that health care could not work like an ordinary market partly because the information a doctor possesses is "necessarily very much greater than that of the patient, or at least so it is believed by both parties". Technology has since narrowed that gap. Chatbots, though hardly infallible, translate medical jargon into plain English and set out the treatment options for a condition. Increasingly they work with patients' own data, too.

Consumer-led health care carries dangers. The first is quackery. Websites and influencers peddle peptides and supplements that promise bigger muscles, better skin or a longer life. Many do nothing and some do harm. Regulators should make sure sellers do not lie about their products. Access matters, too. Nearly all consumer health care is paid for out of pocket, so for now it mostly serves the well-off. However, most innovations start out as luxuries and get cheaper.

No one will shop for doctors from the back of an ambulance. Complex and emergency care will stay with doctors, hospitals and insurers. But in the routine parts of medicine, patients can and should be treated as customers. A bloated, paternalistic industry has kept them waiting long enough. ■

Sex on screen

Repeal the porn laws

England's new ban on kinky smut is misguided

PORNOGRAPHY DEPICTING strangulation, suffocation, incest and actors pretending to be underage will be banned in England and Wales from November 6th. Few will publicly mourn the loss of videos with titles such as "Choking gets her off". But free expression means nothing if it does not apply to that which is objectionable.

The government argues that porn is causing real harm, by teaching young people that dangerous practices are not merely normal during sex but expected. It notes with shock a sharp rise in "choking". In America, Australia and Britain roughly half of sexually active 18- to 35-year-olds report having experienced this; a generation ago it was so niche that pollsters did not bother to ask about it. Mostly it is young men choking young women; sometimes, alarmingly, without prior consent.



For many worried parents, that ends the argument. But reality is muddier than the simple morality tale told by anti-porn campaigners. "Choking" refers to a range of acts, including light pressure on the neck, that some consenting adults find pleasurable. Evidence that porn is what made it so widespread is weak (see Britain section). Young people hear about sex from a variety of sources, including their peers. Under-18s in Britain are already barred from accessing porn sites, but tech-savvy ones have found ways round the age-verification system—and will find ways round the new ban, too.

The idea that the young can be prevented from hearing about kinks is implausible. Some of the acts whose depiction the government is forbidding are so popular that they appear in pop lyrics. Doja Cat, an American rapper with more than 50m monthly listeners on Spotify, offers lyrics such as: "Spank me, slap me, choke me."

Restrictions on free speech should be rare, narrow and clearly defined. No one doubts that governments should ban child pornography, and that this ban should be vigorously enforced. But in general people should be allowed to film acts that are legal, even if many voters find them repulsive.

Britain's new law fails the test. It is both broad and unhelpfully vague. The government has not defined the acts that will be illegal to depict. Instead it expects courts to decide on a case-by-case basis. But Britain's overburdened state will find it hard to police the many difficult-to-judge edge cases that will emerge. In an industry enamoured with terms like "mummy" and "daddy", how will judges be able to decide what constitutes a depiction of incest? What about whether a hand on a consenting adult's neck constitutes strangulation? Or when fellatio crosses the line into suffocation? Courts have many more important things to do than to debate such matters, including hearing cases of actual sexual assault.

Since possession of banned content is punishable by up to two years in prison, the new rules will also dilute what it means to be a sex offender. Such an important label loses value when it can be applied both to paedophiles and those harbouring a stepmum fantasy.

Rather than trying ineffectually to prevent the young from learning about risky acts, governments should be ensuring that they are taught about safety, consent and how to talk frankly to prospective partners about what the other person does and does not want. Sex education in most countries is dismal. In Britain it is better, but still has room for improvement. If children do not learn about sex and relationships from reliable sources, they will depend on unreliable ones.

Pornography is an unpopular thing to defend. But Britain has become too willing to ban anything pearl-clutchers dislike, from plastic straws to noisy protests. A ban on kinky porn may please moralists, but it should alarm anyone who cares about freedom of speech or government overreach. ■

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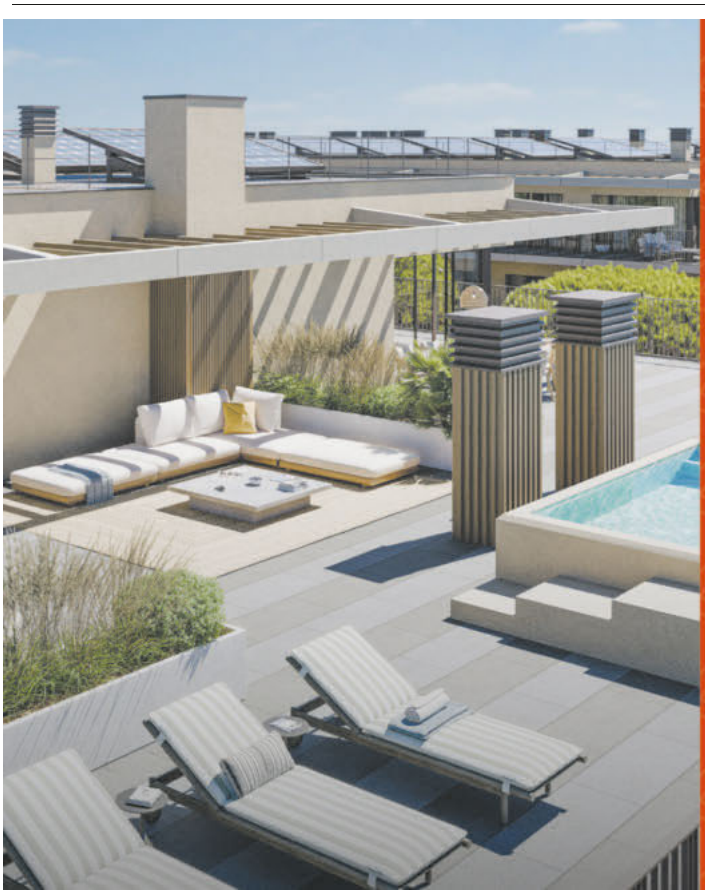
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Prime Collection, French Alps
Photography by Nico Wills

August brings together a small group of owners around a private collection of homes in Europe's finest regions, looked after and ready whenever they choose to arrive. Its newest home is a chalet above Megève.

The way families think about holiday homes is changing. Rather than committing to one house in one place, more are choosing a collection: several homes across Europe, and the freedom to follow the seasons between them.

With August, owners don't buy a single house. They join a collection of four or five homes across the South of France, Tuscany, Mallorca, the French Alps and beyond, and spend approximately eight to twelve weeks a year across them.

August finds the homes, restores them and looks after them throughout the year. Owners simply arrive, as if returning to a home they have known for years.

Effortless ownership

Founders Mélie Dunod and Nico Watzenig saw early on that the traditional holiday home is often underused, occupied for an average of 35 days a year, yet needing constant care from a distance. They also understood the practical challenges of buying abroad: finding the right place, navigating unfamiliar legal requirements and managing a home from another country.

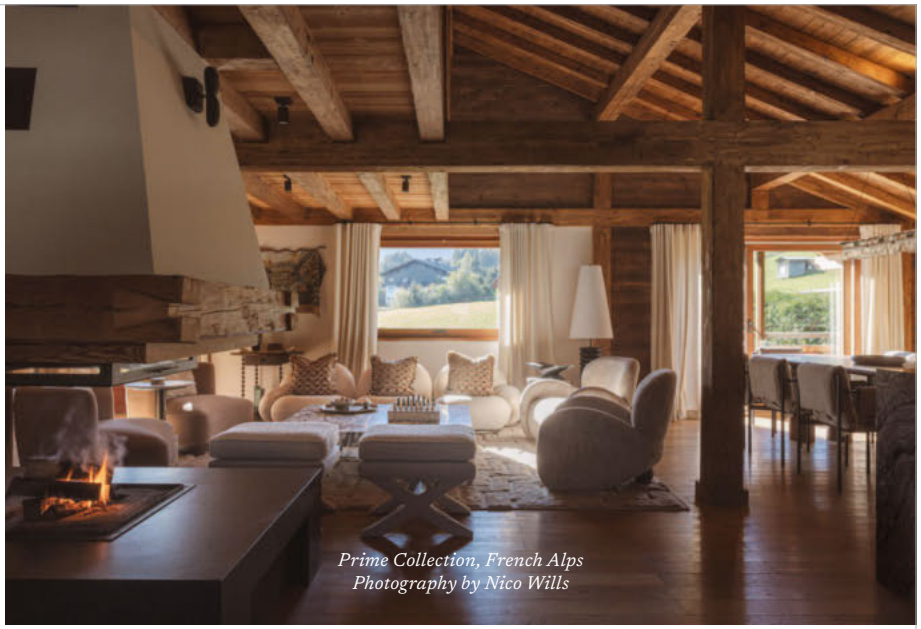
> *"We kept meeting people who had spent years searching for the perfect second home, only to find that a single place could never quite capture everything they were looking for. August was born from that realisation."*
>
> Mélie Dunod, CEO, August

Before every stay, August's regional teams prepare the home, and they care for it all year, whether it's occupied or not. Owners book their time through Valeria, August's own platform, using points released across the year, so the weeks that matter most stay within reach. Each owner holds a registered stake in the company that owns the homes.

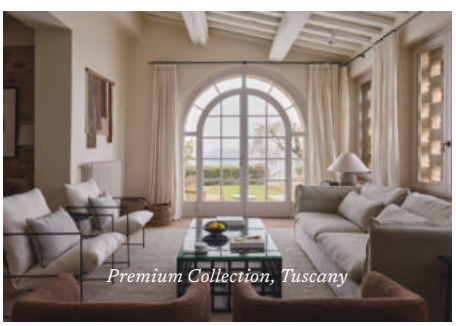
A chalet above Megève

The newest home in the Prime Collection is Le Tour, a five-bedroom chalet on Le Mont d'Arbois, in a quiet hamlet of old chalets and farmhouses above Megève. The lift is a two-minute walk away, opening onto the 400 kilometres of the Evasion Mont Blanc domain. After the last run, skis go back into the ski room and the day ends by a free-standing fireplace, the mountains framed by wide windows, or on the terrace, in the jacuzzi and sauna. Megève's cobbled streets are ten minutes away, and Lake Annecy makes for an easy day out.

Le Tour sits alongside a villa in the South of France, a farmhouse in Tuscany and a finca in Mallorca, held by just sixteen owners, with a dedicated concierge.



Prime Collection, French Alps
Photography by Nico Wills



Premium Collection, Tuscany



Prime Collection, South of France

A collection for every lifestyle

August's collections are shaped around different ways of spending time in Europe. For those drawn to Europe's great cities, the Pied-à-Terre and Grand Pied-à-Terre collections offer apartments in London, Paris, Rome, Cannes and Barcelona. For countryside, coast and mountains, the Signature and Premium collections bring together homes across several regions, with Premium offering more space for hosting and entertaining with family and friends. In the same destinations, Prime gathers rare homes set in the most exclusive locations and with fewer owners.

Rare by design

Many future owners join waiting lists for the next collection. Every home is designed by August's interior design studio, Studio RL, so that a Tuscan farmhouse feels unmistakably Tuscan and a chalet belongs to its mountain. Antiques, locally made pieces and carefully chosen materials give every home its own character.

The result is a way of experiencing Europe that feels effortless and meaningful: returning season after season to homes that grow familiar over time.

To find out more, scan the QR code below or visit augustcollections.com

August

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Discover the collections

Letters *palaeontology, publications, film critics, preparing for emergencies, London traditions, accounting*

AI needs to bone up

I work for an AI lab as a scientist and read your piece on how AI companies are not merely providing a tool for discovery but choosing to wield it themselves ("A scientific revolution", October 17th). My field of palaeontology uses large language models to investigate the evolution of fossils by mining the formal descriptions of species from literature that often extends back to the 18th century. How fossils are formally described (their taxonomy) is key to their identification and use.

The trouble is that LLMs are not good at understanding very old literature and how terminology, measurement and concepts of species and evolution have changed over two centuries. This means an enormous amount of work for human scientists in cleaning the data before the LLM can be put to work. It's the same for other descriptive, observational sciences like botany and zoology, where written descriptions and evidence are a big part of the accumulated knowledge of humanity codified in legacy scientific literature.

The truth is that the low hanging fruit of AI, the high-quality data already in number form, collected recently in genomics and physics, is easy, but human elbow grease is what will lubricate the older sciences.

MIKE STEPHENSON
Visiting professor in palaeontology
Nanjing University

Covering publication costs

"Stop the slop" (October 17th) reports that roughly 90% of papers submitted to "predatory journals" are AI-generated. However, you characterise these journals simply as being "where authors pay for publication". There is a brief but critical distinction. Publication fees are neither exclusive to predatory outlets nor inherent to open-access publishing. Many reputable subscription and open-access journals, including those published by non-profit learned societies such as the Federation of European Biochemical Societies, charge legitimate processing or page fees to cover operational costs and support the scientific community.

The defining issue is not that authors pay, but whether rigorous peer review and high-quality editorial oversight are provided in return.

DIETMAR MANSTEIN
Editor
FEBS Letters
Hanover, Germany

The Kane mutiny

"Are film critics as snooty and out of touch as people think?", you ask (October 24th). You confuse subjective opinion with objective fact. Neither ten nor 1,000 subjective opinions that agree with one another add up to one objective judgment. So when you say we should "pity the reviewer" who dismissed "Citizen Kane" as "well-intentioned, muddled, amateurish" you tacitly assume that an objective review is possible, implying that any review that does not conform to expert opinion is wrong. Naturally, the great and good in every field like to think their judgments are more informed or even just better than those of hoi polloi. What they have to say may well be more informative and interesting than Kev's waffle down the pub. But at the end of the day their remarks are just as subjective.

As for "Citizen Kane", context is everything, especially considering what other films were being made more than 80 years ago. I could never see what all the fuss was about.

PATRICK POWELL
St Breward, Cornwall

Be prepared to help

Thank you for drawing attention to Britain's preparedness for major emergencies and conflict ("Dad's Army returns", October 17th). However, the image you presented of a large, uniformed civil-aid corps undermines the principle of a whole-society approach. Berets, ranks and bands may appeal to some volunteers, but they reinforce a notion of civil defence as an eccentric, quasi-military pursuit.

Moreover, building preparedness around a centrally directed corps reproduces the very dependencies that a resilient society must be able to withstand. Major, cascading emergencies, such as natural hazards, infrastructure failures or armed attacks, disrupt communications, transport, leadership and logistics. An organisation dependent on those systems will struggle precisely when it is most needed.

Whole-society resilience starts with different questions. What can continue to function when organised assistance is unavailable? Can households meet their essential needs without immediate outside help? Can neighbours support one another? This approach recognises the strengths already present in communities. Practical skills, professional expertise and local knowledge exist far beyond the organisations formally designated to respond. Adults who are able to do so should be encouraged and equipped to take responsibility for themselves and those around them.

DR FRANK LONG
General secretary
Institute of Civil Protection and Emergency Management
Camberley, Surrey

Pick a number, any number

Schumpeter (October 17th) did an excellent job of describing the convoluted financial reporting of AI firms. It reminded me of Charlie Munger, a former vice-chairman of Berkshire Hathaway, who dismissed EBITDA as "bullshit earnings". If he were alive today, he might well create a more suitable label, like "totally made-up bullshit earnings".

SCOTT SIMMONS
Highlands Ranch, Colorado

Bells and Beefeaters

Here at All Hallows by the Tower (the oldest church in the City of London dating from 675AD) we have our share of the "lovely nonsense" of traditions ("Standing on ceremony", October 17th). One dates from 1380 and involves paying an annual fine of one red rose to the Lord or Lady Mayor on a velvet cushion. On Ascension Day we "beat the bounds" of the parish to demonstrate where our boundaries lie. Given that we proudly stand next to the Tower of London this involves a ceremonial skirmish with the resplendently dressed, and splendidly armed, Beefeaters. As the sides meet, much bellowing, roaring and stick waving ensues, typically in front of many bemused tourists. But no blood is spilt and both sides retire with honours. Nonsense? Absolutely not. It's a reminder that the Church of England gives everyone in its land a place to worship, be baptised, married or buried. Lovely? Absolutely.

REVEREND NICOL KINRADE
Vicar of All Hallows by the Tower
London



→ *Letters should be addressed to the Editor at: The Economist, The Adelphi Building, 1-11 John Adam Street, London WC2N; Email: letters@economist.com. More letters available at:* ***economist.com/letters***

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BY INVITATION
Tomas Philipson

Ignore conventional wisdom. Divided government in America is likely to mean more spending, not less



THE RESULT of America's midterm elections occurred under two sets of conflicting facts: by many conventional measures the economy is performing above average, yet Americans remain deeply dissatisfied with their economic circumstances, displaying attitudes in surveys more typical of those during a recession.

And America is far from being in that predicament. Real GDP grew at a healthy 3.4% annual rate in the third quarter, up from 2.2% in the second. Unemployment and layoffs are low and the roaring expansion in investment, partly thanks to an AI sector free from excessive regulation, offers reasons for optimism about future productivity. Yet the University of Michigan's consumer-sentiment index stood at just 48.0 in October, down from 53.6 a year earlier. Its index of current economic conditions was even lower, at 46.7. Such readings have in the past been associated with severe economic stress.

The election results may be explained in part by a continued—and generally faster-than-expected—rise in the prices of food, gasoline, housing and much else. Many households with rising nominal wages have endured real wage declines this year.

Democrats naturally took full advantage of public anxiety over affordability during the election campaign. They omitted to mention that much of the rise in prices happened on Joe Biden's watch. The unadjusted CPI-U consumer-price index jumped by 21.4% during his four years in office, compared with 6.1% during the first 20 months of Donald Trump's second term.

The economic statistics are not wrong, and households are not imagining their bills. They are looking at different dimensions of economic activity and prosperity. Until real wage growth makes the cumulative inflation shock less painful, Americans may continue to feel economically insecure even as the aggregate economy expands. Ordinary voters do not experience the economy as a quarterly GDP rate or a stock index. They experience it through how much their paycheques can buy and, as this election illustrated, that purchasing power is not always synchronised with the aggregate statistics.

Voters mostly blame the Iran war and tariffs for persistent inflation. The irony of this election is that these are the two policies the new Democratic Congress will find hardest to reverse.

Start with the Iran war. The president began it in February without congressional authorisation. A resolution to curb his war powers would need support from two-thirds of both chambers to survive his veto, and Democrats are well short of that. And much as the new Congress may wish to choke off funding for what it sees as military adventurism, few members would vote to defund troops already in the field.

It is a similar story with tariffs. After an adverse ruling by the Supreme Court in February, the administration reissued the duties under another statute, limited to 150 days unless Congress extends the term. The administration then moved them to a more permanent "Section 301" footing. Democrats can ask for, or trade, exemptions for particular countries or goods, but any broader reversal would be vetoed by the president.

Other parts of the White House agenda will survive the election as well. Chief among them is Mr Trump's welcome deregulatory programme. An executive order signed in January 2025 told agencies to retire ten rules for every new one. Its impact has been impressive: in the 2025 fiscal year, the White House regulatory office counted 646 deregulatory actions against five new rules, with claimed savings of $212bn.

Much of the deregulation drive is baked in for this Congress. It is true that federal-agency rules issued towards the very end of any given Congress can be overturned by the subsequent one using the Congressional Review Act "lookback" mechanism. However, the administration will probably aim to finish its major rules through notice-and-comment rulemaking well before 2028, meaning that fewer of them will be reversible.

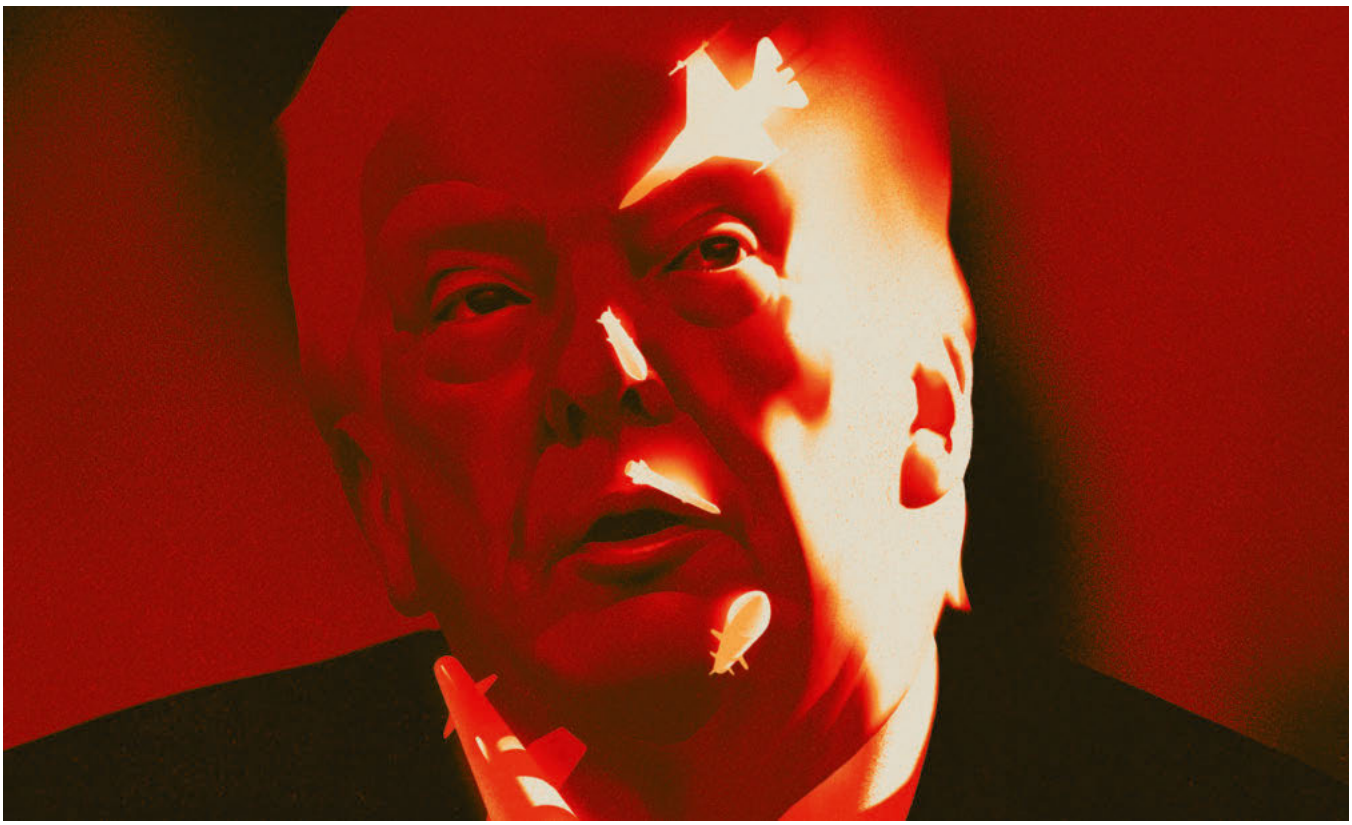
The election's fiscal impact is less clear. If recent history is a guide, the new divided government will agree to spend more, not less. Since 2013, whenever a president has lacked full control of Congress or needed opposition votes in the Senate, the budget deal that followed has raised spending on both parties' priorities at once. Republicans got more for defence, Democrats more for domestic programmes. In a classic logroll, each side voted for the other's spending to secure its own. The 2013 and 2015 deals kept "parity", with equal increases for defence and non-defence spending. In 2018 Senate Republicans counted it a win that defence rose more than domestic spending, but they still conceded $131bn more for domestic programmes over two years.

This recent history cuts against a long-held view that divided government acts as a brake on spending. For instance, William Niskanen of the Cato Institute, a think-tank, found that, from Dwight Eisenhower to Bill Clinton, real federal spending grew more slowly when the two parties split control of Washington.

The horse-trading of the past decade and a half points in a different direction. Each of the deals came under split control, or when the minority's Senate votes were needed, and each raised spending above the limits Congress had set for itself. On the annual budget, in short, divided governments have become a way for each side to buy the other's agreement with additional spending. Added to which, this is a White House that likes to make deals. Only an optimist could expect growth in government debt, and the associated risk of higher interest rates, to be lessened by the new gridlock. ■

Tomas J. Philipson was acting chairman of the Council of Economic Advisers during President Donald Trump's first term.

Briefing Donald Trump's lame-duck foreign policy



After the fall

Embattled at home, the president will turn his attentions abroad. That is worrying for the world, but it is not clear what he can achieve—for good or ill

DOUG SOSNIK, a former adviser to Bill Clinton, recalls the president's frenetic agenda during his final stretch in the White House. "We talked about the schedule and how many more trips we could do—do you mind doing an 18-hour day?" Mr Clinton was a man in a hurry. "I've only got a year left in office," he observed. "I've got the rest of my life to sleep."

The same clock now ticks for Donald Trump. He has been the defining protagonist of the past decade in American politics. But on November 3rd he became only the second term-limited president, after George W. Bush in 2006, to fight his final midterm election in control of both chambers of Congress and to lose both, shocking Mr Trump himself. "Wow," he told the *New York Times* upon learning of his party's loss in South Carolina, a former MAGA stronghold. "That's amazing."

In his final two years in office, Mr Trump will be embattled at home as he confronts his political mortality. Congress, which Mr Trump had rendered largely irrelevant while under Republican control, will swamp his administration with hearings and subpoenas on corruption and abuse of power. ("Lawyer up," one congressman advised on X.) It will dare him to veto popular policies such as restoring health-care funding. Democrats will try to stop his vanity pursuits in the capital, too: his grand ballroom and his triumphal arch. But the area where he will continue to have the greatest, most unrestrained impact is overseas, where he will turn for monsters to slay and legacies to leave.

Mr Trump's foreign policy—from Venezuela to Greenland to Iran—has been radical and hyperactive. Now it could become more so. Mr Trump has unfinished business in Iran and Cuba that could drag America deeper into the Middle East and Latin America. His flirtation with great-power carve-ups, including summitry with Vladimir Putin and Xi Jinping, could herald a darker world order—and difficulties for Ukraine. His quixotic courtship of Kim Jong Un, North Korea's leader, could upturn American nuclear policy. All this will unfold as AI wizardry spirals towards artificial general intelligence, throwing up diplomatic and national-security challenges that will fall to Mr Trump to manage.

All this would be concerning enough for the world under a president who had a gift for diplomacy, a Herculean work ethic and a normal attention span. Mr Trump not only will have to do without those qualities, but he will also probably lose experienced staff who could help in a crisis—another feature of lame-duck periods. The president's adventures abroad over the next two years promise to be chaotic and unpredictable, if not necessarily fruitful.

Mr Trump will not be unique in searching for solace abroad as the end comes into sight. *The Economist* has analysed presidential travel records going back to Harry Truman. They show that presidents are typically much more active overseas in the

last two years of their second terms (see chart). Mr Bush spent 50 days abroad in 2008, twice his previous annual average. After losing the 2006 midterms, he ordered a surge of military forces in Iraq against bitter opposition in Congress in the hope of salvaging a war that had gone badly awry. Barack Obama doubled his travel between the final two years of his first and second terms. His sweeping nuclear deal with Iran came the year after his own bruising in the 2014 midterms. "Presidents by the end of their term are frustrated with the various constraints on them," says Yuval Levin of the American Enterprise Institute, a think-tank, who served in the Bush administration. "And foreign policy is where there are fewest constraints."

Make war, not love?

Mr Trump, like an impresario who changes the act when the audience grows weary, is drawn to foreign-policy manoeuvres that confound his critics and, in his mind, demonstrate his strength. Mr Trump has long boasted of his diplomatic prowess, famously claiming that he would end the Ukraine war in a day—and, at a midterms rally on November 1st, that he would have won the Vietnam war in a week. Mr Trump's evident failure to win the war at hand, with Iran, therefore rankles with him. The two sides continue to skirmish, with America conducting what it described as "defensive" air strikes on November 2nd.

Until recently Mr Trump was leaning towards his third attack on Iran in 18 months (see map on next page), in concert with Israel, to force it to fully reopen the Strait of Hormuz and limit its nuclear programme. That would trigger Iranian retaliation against Gulf energy facilities, consuming Mr Trump's attention for months to come. On October 28th Chris Murphy, a Democratic senator, said that he had received an intelligence briefing on America's war plans. "I will just say this—their plan is insane," said Mr Murphy, noting that public reporting had pointed to the targeting of civilian infrastructure. "It will lead to devastating escalation and the likely destruction of our commitment to the rule of law." (Three days later Mr Murphy went to hospital after suffering a stroke.) A person familiar with the planning says that Mr Trump was considering whether to strike Iranian oil tankers in Asia.

In recent days other sources say that Mr Trump has put these plans on ice, telling Binyamin Netanyahu, Israel's prime minister, that America will not back an Israeli attack. Israeli forces, which were ready for a strike, have paused their preparations.

Mr Trump will face opposition to fresh strikes from multiple sources. One is J.D. Vance, his vice-president—and a probable candidate for president in 2028—who, in a post on X on November 4th, explicitly blamed the midterms drubbing on the war and said voters wanted a different relationship with Israel. Another is Congress. Such is the scale of the blue wave and so detested is the war—on a par with the Vietnam war—that Democrats might withhold funding (and risk being accused of undermining the troops in the field). Even if Mr Trump chooses to escalate, America is unlikely to have the munitions, air-defence interceptors or political stomach for another protracted campaign. Mr Trump's aim is presumably to secure a deal that allows him to emerge from the fracas with the appearance of an honourable peace. Iran's leadership, conscious of Mr Trump's political frailty, is unlikely to fold easily.

If Iran is the first test of Mr Trump's diplomatic agenda, Ukraine is likely to be the second. Here the president's vengeful instincts present dangers. Mr Trump has repeatedly blamed Ukraine for the war, criticised the country's strikes on Russian oil refineries and belittled Volodymyr Zelensky, its president. So far American intelligence-sharing with Ukraine and arms sales via Europe have survived. When American negotiators unveiled a half-baked 28-point peace plan, in November 2025, Mr Trump's secretary of state, Marco Rubio, and European allies intervened to prune its worst parts. At each juncture, Mr Trump has stepped back from the breach of a complete abandonment of Ukraine and a definitive turn towards Russia.

Mr Trump may direct his ire once again at Mr Zelensky, should he conclude—wrongly—that Ukraine's strikes on Russian refineries were primarily responsible for the fuel-price shock that helped doom Republicans at the polls. In 2020 Mr Trump responded furiously after believing that China had misled him over the spread of covid-19. A similar sense of betrayal could translate into a more aggressive pressure campaign against Mr Zelensky personally and Ukraine as a whole, with the aim of forcing Ukraine's capitulation.

An early glimpse of Mr Trump's post-midterms mood may come on November 18th-19th, when he and Mr Putin visit Shenzhen, China, for an international summit hosted by Mr Xi. America's European allies fret that Ukraine will be on the menu. In recent months, Mr Trump has made concession after concession to Russia, cutting a deal to buy diesel and waiving sanctions in return for the release of an American prisoner, in part to lure Mr Putin to the negotiating table. Mr Putin may conclude that he will never again enjoy as pliant a partner as Mr Trump. But the Russian leader also believes that time is on his side, and that European support for Ukraine will ebb away. What is more, Democrats in Congress can be expected to hinder or block efforts by Mr Trump to give Mr Putin more ground on Ukraine—especially any deal that reeks of corruption.

The president may quickly lose interest (not for the first time) in the quagmire of Ukraine and turn his attention to another developing hot spot in his own hemisphere: Cuba. Since taking office, Mr Trump has squeezed Cuba's dictatorship economically, causing power cuts, food shortages and a collapse of health care on the island. In January 2026 the president decapitated Venezuela's government by abducting Nicolás Maduro, its leader. He is thought to be tempted by a similar model of light-touch regime change in Cuba.

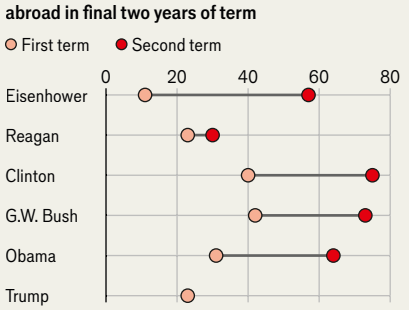
America's economic warfare is intended both to weaken the regime and split the country's elite, potentially throwing up partners who might work with America, much as Delcy Rodríguez, Venezuela's acting leader, abandoned Mr Maduro. Mr Trump has made little secret of his goal. "We'll take care of Cuba on our way back from Iran," he boasted on the campaign trail in October. That month Mr Rubio, a Cuban-American hawk, urged disaffected Cubans to work with the CIA: "To those who seek to create positive change in Cuba—now is the time."

Mr Trump longs to be a president who achieves what his predecessors did not. He would relish being the leader who reversed the Cuban communist victory of 1959. But he is not a man for details. In Venezuela he has largely left the country's dictatorship in place, swapping its leaders and cutting grubby deals to secure its oil for American firms. A fudge like that would be far harder to pull off in Cuba, notes a person with knowledge of the administration's debates, because Cuba's diaspora—which is older and more established than Venezuela's—would make its wrath felt.

It would arguably help Mr Trump's chances of success in his foreign-policy endeavours if he had experienced staffers around him. But an exodus may be under way. Mr Rubio, who also serves as national security adviser, has quietly been exploring jobs in the private sector. (He may skip the 2028 presidential race, hoping for more fa-

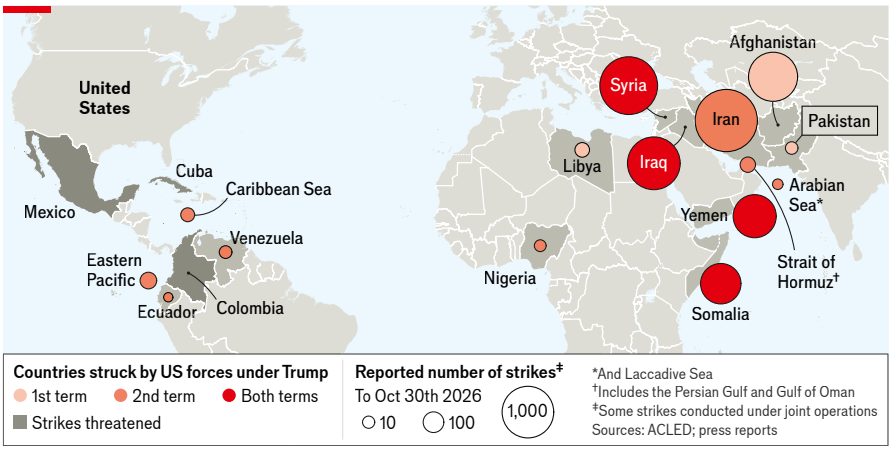
Pack your bags

Two-term US presidents*, days spent abroad in final two years of term



*Since 1945

Source: US Department of State, Office of the Historian



vourable conditions in 2032.) Mr Rubio's departure would shift the balance of the administration, potentially leaving John Ratcliffe, the director of the CIA, as the most influential hawk in the cabinet.

The president may also lose his favourite man at the Pentagon. Many Democrats want to impeach Pete Hegseth, the pugnacious and divisive secretary of war. Hakeem Jeffries, the likely Democratic Speaker of the House, has not ruled it out.

Democrats may demand Mr Hegseth's ousting as the price of passing an $87.6bn supplemental bill including $67bn for the Department of War, which is in a deep financial hole. Presidents often seek scapegoats after an electoral pummelling. Mr Bush dumped Donald Rumsfeld, his defence secretary, after his midterm loss in 2006; Mr Trump sacked Jeff Sessions, his then attorney-general, after his party's defeat in the House in 2018.

Yet Mr Trump is more likely to respond with defiance than with contrition. There is speculation that Mr Hegseth could be shunted into the job of national security adviser or possibly appointed to the Senate seat for Tennessee that is to be vacated in January by Marsha Blackburn, who has been elected the state's governor. There, some note, he would enjoy a degree of protection from Democratic probes—including those into his deadly strikes on boats thought to be carrying drugs.

Even if Mr Hegseth survives, Mr Trump's coterie of advisers has already begun to thin out. The national security council has been largely gutted, resulting in ad hoc and haphazard decision-making. Experts have been fired en masse, resulting in poor preparation for meetings and negotiations. Policy can swing on the whim of individuals or small groups, as Elon Musk, the founder of SpaceX and a former adviser to Mr Trump, showed when his firm appeared to cut off vital satellite communications to Ukraine during a row in October. Some of Mr Trump's envoys, both official and unofficial, blend diplomacy with the pursuit of lucrative business deals.

Mr Trump will also find it ever harder to gain the Senate's assent for new cabinet secretaries and other appointees, leaving officials in acting roles for long stretches. Susie Wiles, the president's chief of staff, who is widely viewed as a stabilising force in the White House, may depart after serving for longer than any of Mr Trump's first-term consiglieri. The ultra-nationalist agenda pushed by Stephen Miller, Ms Wiles's deputy, has proved to be an electoral liability. The quality of staff tends to fall during an administration, observes Mr Sosnik: "You see a thinning of the herd, with the people coming in...generally a peg or two below the people that they replace."

Give peace a chance?

That leaves an increasingly isolated, embattled Mr Trump looking for ways to shore up his legacy in the only way he knows: entirely ad hoc. It is not unusual for lame-duck presidents to roam the globe in search of lasting achievements in their final days. But history shows it is hard going.

Woodrow Wilson spent six months at the Paris Peace Conference in 1919 and returned to sell the League of Nations to the American public—an effort that failed spectacularly when the Senate spurned the treaty. Dwight Eisenhower's superpower summit with the Soviet Union fell apart after a U2 spy plane was shot down. In 1968, after he decided not to seek re-election, Lyndon Johnson tried to secure a settlement of the Vietnam war, to no avail. In his last year in office Mr Clinton came close to visiting Pyongyang and tried, but failed, to forge a lasting peace deal between Israel and the Palestine Liberation Organisation.

Some have fared better. Richard Nixon and Ronald Reagan signed major arms-control agreements in their final years (as did Johnson). Mr Obama normalised ties with Cuba and painstakingly negotiated the Iran nuclear deal (scuttled by Mr Trump). And Mr Trump himself, in the last part of his first term, went on a foreign-policy blitz, meeting Mr Kim three times, signing a peace deal with the Taliban and brokering the Abraham accords which normalised relations between Israel and several Gulf Arab and north African states.

A lame-duck Mr Trump does not seem well-positioned to strike lasting, historic deals. But he will try. He wants to meet Mr Kim yet again to pick up where he left off in his first term. He is keen on a three-way meeting with Mr Putin and Mr Xi at the summit in Shenzhen. That is ostensibly also to discuss nuclear arms control (a topic China has no interest in broaching while its arsenal is below parity with America and Russia). Eventually he may again try to broker a peace in Ukraine.

The prospects for substantive diplomacy seem bleak. The risk is that Mr Trump agrees to shoddy deals that serve as sticking plasters, allowing him to claim he is worthy of a peace prize. (Mr Vance too may encourage such pacts to promote his own peacemaking bona fides to future voters.) That could store up serious problems for Mr Trump's successor, just as happened in 2020: Mr Trump's pact with the Taliban contributed to the collapse of the Afghan government and Joe Biden's chaotic withdrawal the following year.

Mr Trump's lame-duck status will also make it harder for him to strike lasting deals in the first place. Friends and foes will adjust how they interact with the president, notes Sam Charap of the RAND Corporation, a think-tank, mindful that his political authority will ebb away. The extent of Democratic gains on November 3rd suggests that the party is in a strong position to win the presidency in 2028. Many late-term deals, such as Mr Obama's nuclear agreement with Iran and opening to Cuba, rest on weak legislative footing and are easily undone by successors. Ukraine, in particular, might try to wait out Mr Trump in the hope of a successor, in 2029, who would look more favourably on the country. Indeed, it will now be hard for Republicans to recapture the Senate—which must approve international treaties—until 2032, beyond Mr Trump's tenure.

It is possible that Mr Trump's fundamental unseriousness will work in the world's favour. It takes work to achieve diplomatic breakthroughs. Mr Trump's lack of follow-through might end up leaving a status quo world to the next president. Perhaps he will be drawn more to his domestic preoccupations: carving his name into Washington's granite, securing his family's post-presidency business interests and doling out pardons. But it is also possible that his impetuous nature will put the world at risk in a crisis, a black swan that tests a president's wisdom and patience. Consider an AI-enabled cyber crisis or a Chinese blockade of Taiwan, or something worse. For two years, the world will be holding its breath. ■

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ZERO WASTE FOUNDATION | COP31 TÜRKİYE ANTALYA



Turning zero-waste ambition into climate action

Raising the global circular material use rate to at least 15% by 2035 and halving the projected growth in municipal waste will require a shift in how the world produces, consumes and manages resources.

H.E. Murat Kurum, COP31 president-designate and minister of environment, urbanisation and climate change of the Republic of Türkiye, announced these targets, drawing inspiration from the Zero Waste initiative championed by H.E. Emine Erdoğan, first lady of the Republic of Türkiye, founder of the Zero Waste Movement and honorary president of the Zero Waste Foundation. The aim is to make Zero Waste and the circular economy a measurable part of the climate action agenda and contribute directly to the Global Stocktake.

At the centre is the Istanbul Platform, whose Zero Waste Package brings together solutions, partnerships and implementation opportunities across sectors.

Complementing this is the Zero Waste District initiative, introduced by the Zero Waste Foundation with support from the Global Methane Hub. It brings organisations and communities within defined areas together to apply zero-waste principles, coordinate action and measure results.

"Zero Waste Districts are the practical demonstration of the 'whole-of-society' approach—uniting governments, communities, businesses and finance to drive resource efficiency and sustainable consumption," says Samed Ağırbaş, COP31 climate high-level champion and president of the Zero Waste Foundation. "By localising these efforts in major cities and towns, we are producing measurable outcomes and a scalable pathway forward."

The initiative focuses on organic waste and methane reduction. By combining waste streams and coordinating services across multiple sites, districts can build the scale needed for shared composting and digestion facilities, washing and reuse systems, reverse logistics and repair services. Integrating biomass and building materials into circular systems can create opportunities for carbon removal and emissions-avoiding investment. This district-wide model supports coordinated management, measurable progress, shared infrastructure and financing.

Pilot districts include Kuala Lumpur and Penang in Malaysia, Kisumu in Kenya, Santiago in Chile, Fortaleza in Brazil, Gaziantep in Türkiye, and Yokohama in Japan. An initial cohort of 20 districts is to be presented at COP31 in Antalya, demonstrating how local implementation can support wider climate goals.

Mr Ağırbaş sees a longer-term role: "Beyond COP31, Zero Waste Districts will help proven approaches to reach scale, mobilise investment and strengthen tracking of emissions reductions, resource efficiency, resilience and social benefits," he says. "Zero Waste is climate action. But commitments alone do not deliver results—this is a practical model that moves ambition to implementation."

United States



Subpoena season

Democrats' next challenge

WASHINGTON, DC

The party has control of Congress, at last. Now it must govern

IN DEMOCRATS' QUEST to restrain Donald Trump over the past two years, no tool was more frequently deployed than the sternly worded letter. Democrats sent these missives regularly; the president and his associates ignored most of them. Such is the plight of the minority party in Congress, which lacks power to call hearings or issue subpoenas, much less pass laws.

That will change when Democrats grab the gavel on January 3rd, having won a thumping majority in both the House and Senate. They will probably have around 260 seats in the lower chamber. The task now is to live up to the twin promises of the campaign: boosting the fortunes of ordinary Americans and checking the president. Their hope is that substantive victories will pave a path back to the White House in 2028. The risk is that they fall short, or overreach, and create an opening for a Republican recovery.

The main problem is that the Democrats' win, though triumphant, still leaves them far short of the 290 seats in the House and 67 in the Senate that would have given them a veto-proof majority. They are unlikely to advance major legislation. They may, however, manage to make modest deals with the president that appeal to his populist instincts, such as capping drug prices.

Indeed, the first order of business for Hakeem Jeffries, the presumptive speaker of the House, will be to try to reinstate the funding that Republicans cut for Medicaid, the health programme for the poor, and the subsidies for individual insurance on the Obamacare exchanges. Democrats will also move to end the Iran war and scrap Mr Trump's tariffs, which they argue (correctly) have driven up costs. One bill, the "End Trump's Tariff Tax Act", would repeal levies on Canada and various laws that Mr Trump has used to support his trade war. Most of these initiatives stand little chance of becoming law; the point is to force confrontation with Mr Trump and telegraph their priorities to voters.

Yet Congress does have an important tool at its disposal: the budget. Government funding expires on December 11th. Letting it lapse at that point seems unlikely; Democrats will not want to welcome their new majority with a shutdown. Instead, Congress will probably agree to stopgap funding through February or March, then hash out a proper budget for the rest of the fiscal year—which is when Democrats might extract concessions on health care, tariffs and other priorities, if they are savvy and Mr Trump is pliable.

Achieving other big policy changes will be difficult. Democrats have long grumbled about spending money on a costly, ferocious deportation campaign rather than basic support programmes. However, Republicans have already moved to protect

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funding for immigration enforcement through the remainder of Mr Trump's term. The president continues to try elaborate legal methods to sustain his tariffs, none of which require congressional approval.

As for the Iran war, Democrats could try to bar funding to prosecute it, though that would require bringing some Republicans on-side to overcome the Senate filibuster—and even among Democrats, cutting off all funding is controversial. It is more likely that Democrats could make money contingent on more thorough disclosure about the war, from casualties to weapons stockpiles, says Damian Murphy, a former Democratic congressional staffer now at the Centre for American Progress, a think-tank. The Pentagon has largely kept lawmakers in the dark over the past year. Democrats imposed similar reporting requirements during the Iraq war after flipping Congress in 2006.

If progress on economic issues may prove incremental, Democrats could be more aggressive in their efforts to check the president. In the Senate, Democrats can block Mr Trump's judicial appointments and cabinet nominees. That would matter most if one of the conservatives on the Supreme Court were to leave the bench before the 2028 election—two are in their late 70s. Then Senate Democrats would probably copy the tactic of Republicans who refused to consider Merrick Garland, Barack Obama's nominee, in 2016. Meanwhile, lower-court confirmations will definitely stop. Republicans will ram through as many as possible in November and December, before the Democrats take over.

Oversight will dominate the agenda. Democrats will move to issue subpoenas to officials and force testimony. Exposing the administration's perceived self-dealing will be the biggest focus. Mr Trump has supplied them with ample material and voters have taken note. Two-thirds of Americans say Mr Trump is using the presidency to enrich himself; in exit polls, nine in ten said government corruption was a major factor in their vote. Democrats may, for instance, explore how a manufacturing firm whose investors include Donald Trump junior, the president's eldest son, secured a loan from the Pentagon, and whether Gulf states have sought leverage over Jared Kushner, Mr Trump's son-in-law and foreign envoy, by investing billions in his private-equity fund. Democratic leaders also talk up plans for hearings on tariffs, Iran, the draconian immigration agenda and much else.

Democrats know full well that the administration will stonewall by asserting the right to keep certain communications confidential. So instead they will seek information from firms and people who have dealt with the White House. Mr Trump will try to shield those communications, too. In August the Office of Legal Counsel issued an advisory opinion outlining an expansive scope for "executive privilege". Yet firms are not waiting to get right with the incoming majority. "We couldn't even get an email returned from these guys for two years," says a Democratic aide in the Senate. "Now they all want to let us know how they're not MAGA."

Democrats will seek to show that they are the party of clean government. Cue a raft of reform proposals. A ban on stock-trading by lawmakers may well pass. The rest are meant as messaging. Jamie Raskin, the incoming chair of the House Judiciary Committee, wants to require pardon brokers to register under federal law, much like lobbyists representing foreign governments. He also wants to force Mr Trump to disgorge the luxury jet he received from Qatar. Robert Garcia, who will chair the House Oversight Committee, wants to stop bosses of federal contractors from donating to political campaigns or parties. He calls this closing the "Musk loophole".

The risk for Democrats is that they get bogged down in futile attempts to boot Mr Trump from the White House. They have already impeached him twice. The party's base and lawmakers in safe seats will demand a third attempt. Democrats in the House have introduced seven such resolutions in his second term. A recent one failed in a procedural vote, but not before gathering support from 70% of the Democratic caucus. People need to "understand the constitutional math", says Mr Raskin, that is, the two-thirds majority required in the Senate to convict and remove a president. Mr Raskin was the lead House impeachment manager after Mr Trump tried to steal the 2020 election; he says the tool is no "panacea". If any conduct were to get a president barred from office, that would have been it—and still the Senate let Mr Trump off the hook.

Mr Jeffries's goal will be to maintain the majority in 2028, which means he will have to protect competitive seats held by moderates; targeting the president will not be a winning message in their districts. Democratic leadership will probably try to satisfy the base by impeaching cabinet officials instead. Pete Hegseth, the secretary of war, will probably be the first target, for waging war without congressional authorisation and ordering extrajudicial killings of alleged drug traffickers, among other things. Robert F. Kennedy junior, the health secretary, may be next, having presided over the worst measles outbreak in 35 years.

Election landslides often engender hubris, and Democrats are not immune. After a historic victory, the same voters who elected Democrats so resoundingly may soon accuse them either of timidity or overreach. Messrs Schumer and Jeffries have their work cut out. ■

Midterm results

Anatomy of a victory

How Democrats won the biggest congressional landslide in 50 years

GEORGE W. BUSH described his party's midterm loss in 2006 as a "thumping"; Barack Obama called his setback four years later a "shellacking". There may not be a sufficient superlative in the English language for the magnitude of the midterm defeat that Republicans suffered on November 3rd, but Donald Trump might call it "yuge".

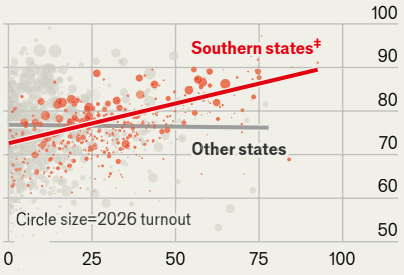
When *The Economist* went to press on November 5th, Democrats were expected to win the national popular vote for the House of Representatives by 13 percentage points, the largest congressional margin of victory for either party since 1976, in the wake of the Watergate scandal. They are on track to win around 260 of the 435 seats in the lower chamber, more than they obtained amid the financial crisis of 2008. The party has secured at least a 54-46 majority in the Senate, including victories in five states that Mr Trump won by double digits in 2024. Betting markets are nearly certain that it will win the two remaining uncalled races in Alaska and, shockingly, Mississippi, which backed Mr Trump by 23 points two years ago.

In state contests, Democrats comfortably unseated Republican governors in Georgia, Iowa, Nevada, Ohio and Texas, and are expected to claim another in Alaska. By winning state legislatures, too, they gained unified control of government in Michigan, Minnesota, Nevada, Pennsylvania and Wisconsin, and are likely to do so in Arizona as well.

A wave this big washes up everywhere. In 343 of the 346 contested House districts

Blacklash

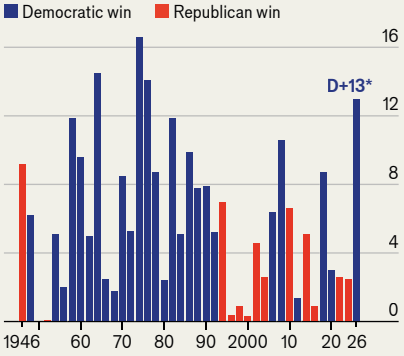
US elections, 2026 House turnout as % of 2024 presidential turnout*, by county and district†



*At 18:00 GMT November 4th †Where counties are split between multiple districts, the portions in each district are shown separately ‡AL, GA, LA, MS and SC
Sources: Associated Press; Census Bureau; *The Economist*

That 70s Show

US House elections, vote margin, % points

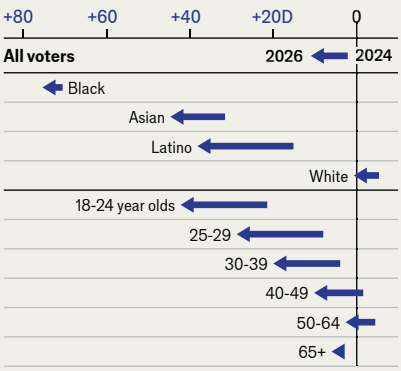


*Estimate

Sources: Brookings; *New York Times*; *The Economist*

Group dynamics

Change in House vote margin 2024-26, % points



Source: NORC Civic Health & Elections Project

with at least 80% of votes counted, Democrats won a higher share of the vote than they had in the 2024 presidential election. But the trend was most pronounced in the South, a repudiation of the notion that the region is particularly unresponsive to national trends, due to its high concentration of loyal Democratic black voters and loyal Republican white Evangelicals. Compared with 2024, Democrats gained two more points of margin in the region, on average, than the party did outside it. It was only the jaw-dropping Senate upsets in South Carolina and probably Mississippi that rendered the otherwise stunning wins elsewhere in the South look more ordinary: Democrats won North Carolina's Senate race by 20 points and Georgia's by 18, and came within two points of winning Louisiana's. The party is likely to flip five or six House seats in North Carolina that had not been considered competitive.

The region's Republican state legislators may well bear some responsibility for their party's woes. After the Supreme Court earlier this year weakened an important provision of the Voting Rights Act, in *Louisiana v Callais*, lawmakers in Alabama, Louisiana and Tennessee redrew their House maps to eliminate majority-black districts. That seems to have sparked a backlash. Turnout in a midterms election is always lower than in a presidential one. In Deep South states, however, the decline in turnout was smallest in counties where most voters are black, and largest in those with the fewest black residents. Outside this region, where the Supreme Court's ruling did not prompt further redistricting, there was no such disparity.

Across the country, pre-election polls detected a "last in, first out" pattern to Republican support: the Hispanic, Asian and younger voters who had moved right from 2020 to 2024 said that they planned to abandon Republicans in 2026 in even greater numbers. District-level results and exit polls both show they kept their word. Democratic gains were largest in areas with big shares of residents who were foreign-born or of Mexican descent, and comparatively small in those with lots of older voters. Although Hispanic and Asian voters were much more likely to list prices or the economy as their most important issue, rather than immigration, it is little surprise that the party waging a sweeping deportation campaign suffered an unusually harsh electoral rebuke in the places where most immigrants live.

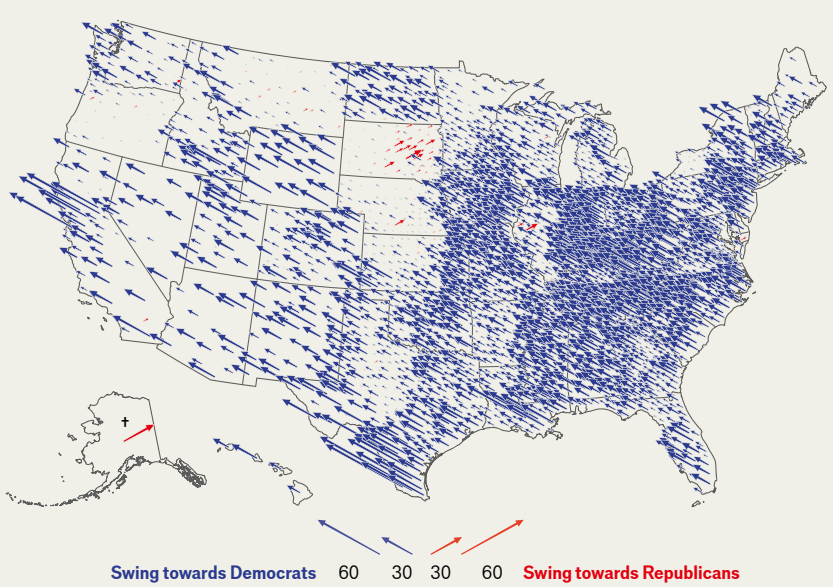
The scale of Democrats' victory in the popular vote, along with the concentration of their gains in Republican-voting areas, also disproves the conventional wisdom that entrenched partisan polarisation gives modern parties a relatively high floor of support. Neither Barack Obama nor Bill Clinton, two popular Democratic presidents, ever won the White House or had their party win the House by such a big margin. According to the NORC Civic Health & Elections Project (CHEP), a large pre-election survey, Democrats managed to peel off a healthy slice of erstwhile Republican backers: 6.5% of respondents who said they voted for Mr Trump in 2024 supported a Democrat for the House this year, compared with just 2.8% of those who said they plumped for Kamala Harris in 2024 and opted for a Republican House candidate this time.

Democrats also enjoyed a strong advantage in turnout. In CHEP's data just 7.6% of former Harris voters stayed home or supported third parties, compared with 12.2% of Mr Trump's. And despite the overall decline in voter numbers from a presidential election to a midterm, fully 14% of this year's electorate did not vote in 2024. CHEP estimates that Democrats won these new entrants by 22 points.

With victory of an almost unimaginable scale in hand, Democrats are already licking their chops in anticipation of the 2028 election cycle. If they secure the expected 56 seats in the Senate, where terms last for six years, they will be clear favourites to hold the upper chamber regardless of which party wins the presidency. If Democrats can manage a second consecutive wave election two years from now, as they did in 2006 and 2008, they could plausibly hope for a 60-vote supermajority that would enable them to pass legislation without Republican support. ■

Here, there and everywhere

US counties, change in vote margin from 2024 presidential to 2026 House elections*, % points



Source: Associated Press

*At 18:30 GMT November 4th †Statewide margin shown in Alaska

Texas

Lone Star politics

AUSTIN

Big state, big sweep

"EVERYTHING IS BIGGER in Texas, including the shock of this win," Gina Hinojosa said in her victory speech on November 3rd. Though she had spent months telling voters that a Democrat could win the governorship, she clearly hadn't believed it. At an election-night watch party for James Talarico, the Democratic Senate candidate, staffers refreshed early-voting results pages, wondering if stellar numbers were a glitch—pundits had reckoned he could win only narrowly. By midnight, bleary-eyed Texans in "Talafreako" shirts flooded downtown Austin cheering in disbelief: Democrats had swept Texas, claiming the Senate seat by a 12-point margin, replacing every Republican statewide official on the ballot, picking up one congressional seat and flipping the Texas House. Republicans had outspent them more than two to one. It was a stunning upset in what has been America's biggest red state.

Democrats won back some Texans who had voted Republican in 2024. This year average margins of victory in four South Texas districts topped 20 points, as dismay over economic issues and immigration-enforcement tactics sent voters rushing back to Democrats. The party also, at last, convinced more longtime Republicans to try something new. Collin, Denton and Tarrant counties, Republican-leaning suburbs north of Dallas, all flipped. Democrats won four of the five congressional seats that Texas Republicans gerrymandered last year, ostensibly in their favour.

What will Texas Democrats do with their new power? Kendall Scudder, the state Democratic Party chairman, insists Texas Democrats are different from their national counterparts. "A lot of us really believe that the government should provide you with positive services, be fair to everybody and get the hell out of your lives," he told *The Economist* the morning after the election. The task now, he added, is to "start dispelling these myths that they perpetuate through Fox News that we're a bunch of tax-and-spend liberals, but instead be responsible stewards." Asked whether the party would prioritise rolling back social policies, such as Texas's strict abortion ban, he didn't respond directly. Instead, he said he hopes Democrats in Washington can reverse the cuts of the One Big Beautiful Bill Act, particularly to health care. Texas has the country's highest rate of uninsured citizens; less money for rural health care is due to force hospital closures across the state.

Ms Hinojosa's defeat of Greg Abbott, a three-term governor, was even more of a surprise than Democrats' victories in Congress. Constraints on her power within the state remain. Her Trumpian campaign promise to send every Texas household a $1,500 cheque, dubbed the "corruption tax refund", could cost the state $17bn and is unlikely to gain the support of the Republican-controlled state Senate. State agencies, university boards and policy commissions are staffed by some 2,500 bureaucrats, many of whom serve six-year terms and none of whom the governor can sack. Nor can Ms Hinojosa reshape the courts. Seven of the state's nine Supreme Court justices were appointed by Mr Abbott.

Nevertheless, she plans to start dismantling many of Mr Abbott's policies. She campaigned against data centres, which Mr Abbott initially welcomed, and wants to end "corporate welfare", which businesses fear will mean ending tax breaks. Ms Hinojosa and Mr Talarico also fought bitterly against the state's $1bn school-voucher scheme, which launched this autumn. Expect Ms Hinojosa to fire the Republican education commissioner and for Sarah Eckhardt, the new Democratic comptroller, to start scrutinising public funding for private schools.

The party's other priorities include anti-corruption legislation and cutting property taxes; those levies rose by 86% during Mr Abbott's tenure. Nathan Johnson, the incoming attorney-general, may join other blue states—still a surreal phrase—in suing the Trump administration. "After getting punched in the face for 30 years, it's now time to get to work," says Jason Sabo, a Democratic lobbyist in Austin. The immediate task for Democrats is staffing up. "We don't have the muscle," says Mr Scudder, who joked that he has suddenly realised he must plan an inauguration.



On the bright side

Democrats' thrill at winning in Texas is tempered by the knowledge that this year was unusual. Dissatisfaction in Texas, as elsewhere, was extreme. Ken Paxton, the Republican Senate nominee, was an abysmal candidate and Mr Abbott's long tenure provided Democrats with an easy target at which to direct voters' angst. Republican candidates and deep-pocketed donors are likely to attempt a broad, well-funded comeback. In the Lone Star State political realignment doesn't happen overnight, says Cal Jillson of Southern Methodist University. "Even if Democrats don't disappoint," Mr Jillson explains, "Texas is not a blue state now." The party will work hard to make it so. ■

Democrats in the Midwest

Plains-speaking

Wins in Iowa and Kansas have revived the left's rural populism

WHILE RUNNING for governor of Iowa, Rob Sand, a Democrat and the state's auditor, reprised a campaign slogan used by Iowa Democrats of an earlier era: "It's time to rotate the crops." Voters agreed. Iowans elected Mr Sand to be their first Democratic governor in 15 years. Democrats won a Senate seat and flipped three congressional districts in the Hawkeye State, too. In Kansas, Adam Hamilton, the pastor of America's largest United Methodist church, was first Democratic senator elected by the state since 1932.

Mr Hamilton's victory is the most stunning and idiosyncratic of these results. He had the challenge of competing in a state that Donald Trump had won by 16 points in 2024. He had the benefit, however, of possessing ample charisma in a race against an opponent lacking it. The Republican incumbent, Roger Marshall, a doctor, is a dismal campaigner. It didn't help that he was plagued by reports that he sued his patients to collect medical debts.

Across Democrats' victories on the Plains, a few common themes emerge. Mr Hamilton was buoyed by the unpopularity of Donald Trump's war with Iran, as were Democrats everywhere and those in farm states in particular. The war has increased the price of petrol, diesel and fertiliser—all crucial inputs for farms. Sarah Trone Garriott, a Lutheran minister who flipped a red district that contains liberal Des Moines and rural southern Iowa, yoked her Republican opponent to the president. One of ▸▸

her ads featured Mr Trump describing himself as "the best president for Iowa" and asking Iowans to re-elect the incumbent, Zach Nunn. That Mr Trump's endorsement was used as an indictment of Mr Nunn reveals the extent of Iowans' dissatisfaction with the man they have thrice backed in presidential campaigns.

Democrats in the Plains were also able to harness surging national populism and give it a distinctly local character. Agrarian populism spread through the Plains during the Gilded Age, and reared again during tough times for farmers in the 1930s and 1980s. Josh Turek, Iowa's Democratic senator-elect, calls himself a "prairie populist". Mr Sand, incensed that Iowa's Republican legislature curtailed his powers as auditor, campaigned for more transparency and less corruption. Sam Forstag, a millennial firefighting paratrooper, looks likely to win a House seat in western Montana. He preached economic populism and the need to get money out of politics—ideas that could hold appeal in a red state once home to New Deal Democrats and a strong labour movement.

When pressed on policy, these candidates resemble Democrats in other states. Mr Turek denounces billionaires, wants to raise the minimum wage and reverse federal cuts to welfare. Yet they avoided alienating Republican voters by using distinctly post-partisan rhetoric and expressing discontent with the record of both major political parties. Mr Sand started his town halls by singing "America the Beautiful" and encouraging voters to clap for Republicans in attendance. Democrats in Middle America sometimes complain that their coastal strategists fall in love with rural candidates who seem straight out of "central casting", without considering how authentic those candidates appear to actual rural Americans. In this cycle, Kansans and Iowans seemed to see themselves in the Democratic challengers.

That was not true for Dan Osborn, a populist independent who lost a Senate race in Nebraska. Unlike Messrs Turek and Hamilton, he seemed to have contempt for Trump voters. Leaked audio revealed him saying: "Billy Bob in fucking Red Cloud, Nebraska, who lives next door to the fucking Trump store as you pull into town, and is waving the Trump flag, all he knows is he's on the winning team."

This year's victories on the Plains will bolster Democrats' hopes that the region offers more opportunities. Democrats have long bemoaned their loss of support in Iowa since the state helped launch Barack Obama to the presidency in 2008, then padded his win four years later. As the party prepares for a presidential contest two decades after Mr Obama's first election, they hope that Iowa will offer promising terrain, as will its neighbours. ■

Abdul El-Sayed

Hero or liability?

DETROIT

The debate over Michigan's pugnacious populist

"I TELL MY friends he's like our generation's JFK," says Imran Aijazuddin, referring to his friend, Abdul El-Sayed. The mood at Dr El-Sayed's election-night party is similarly exuberant. The pugnacious populist won the hard-fought Senate race in Michigan by seven points, exactly as he had predicted in May. He will be the first Muslim to serve in the upper chamber. And his victory gives the left wing of the Democratic Party a powerful new voice in Washington. Moderates, though, have a different take on the result.

Nearly everyone agrees that it was an exceptionally ugly and chaotic race. Donald Trump referred to Dr El-Sayed as a "jihadist". Mike Rogers, his Republican opponent, falsely accused Dr El-Sayed of believing that America deserved the September 11th attacks. Then, in the final days of the race, Haley Stevens, his defeated rival in the Democratic primary, endorsed Mr Rogers. She had become increasingly angry about Dr El-Sayed's confrontational style and fierce criticism of Israel.

Had Dr El-Sayed lost, moderate Democrats might have taken comfort in a setback for the insurgent left. The unwaveringly self-assured Dr El-Sayed has made little secret of his disdain for the party's establishment. He has talked of backing primary challenges to Democrats with whom he disagrees, such as John Fetterman, a senator from Pennsylvania. "Ideally, you put one ogre on a pike and then everyone else gets the message," he told donors.

Such combativeness appeals to progressives. Bernie Sanders, the democratic-socialist senator from Vermont, called Dr El-Sayed's primary win "the most extraordinary victory...in modern American politics", praising his defeat of the "Democratic establishment". Alexandria Ocasio-Cortez, a progressive congresswoman, lauded his "agenda that speaks directly to working people". Dr El-Sayed backs Medicare for all and universal free child care. In his victory speech, he declared that winning a Senate seat was never the goal. His ambition, rather, is to "transform our politics".

Yet Dr El-Sayed's victory was less impressive than his supporters suggest. His seven-point margin was modest compared with the scale of the Democrats' national gains. His race was close enough that the hated Democratic establishment had to put plenty of money to work in Michigan to support him. Other Democrats won in deep-red territory, such as Kansas and South Carolina, while Dr El-Sayed merely retained a seat already held by his party.

Candidates in the mould of Dr El-Sayed underperformed elsewhere, too. Based on endorsements by leftist groups and opposition to Democratic Party leadership, we identified 32 such Congressional nominees before the election. Most ran in deep-blue districts. But among the eight who stood in places that Kamala Harris won by fewer than ten points in 2024, their average vote shares were 1.5 percentage points lower than you would expect based on past voting and demography.

That is unlikely to dim Dr El-Sayed's zeal. The party's comfortable Senate majority gives him plenty of room to snipe at its establishment—and to cement his status as a hero of the progressive left. ■



Having the last laugh

LEXINGTON
Who's MAGA now?

Republicans face a brutal presidential contest, while Democrats can glimpse a unifying agenda



IF FUTURE HISTORIANS want to pinpoint the start of the campaign for the presidency in 2028, they might consider the moment late on election night of 2026 when Chris Christie, the once and probably future Republican presidential candidate, brought the hammer down on the vice-president, J.D. Vance.

As stunning results came in from Ohio, Mr Christie, serving as an analyst on ABC, zeroed in on the most vile act of the midterms: the choice by that state's Republican candidate for governor, Vivek Ramaswamy, to broadcast an advertisement in which the mother of his opponent, Amy Acton, called her a liar. Dr Acton had not seen her mother, Donna Arthur, in nearly 50 years, not since Ms Arthur fled with her husband after he was charged with raping his stepdaughter, Dr Acton, then 12. When the ad drew criticism from some Republicans, Mr Vance said he was disgusted by their "whining" and praised Mr Ramaswamy's "audacity".

Mr Vance will be remembered for that embrace "more than anything else" from this campaign, Mr Christie predicted, as he helped make that so by recalling it on ABC. "He stood behind that ad!" Mr Christie expostulated. "A man who wrote a book on Catholicism stood behind that ad. It's a disgrace." Mr Christie later added that the Trump era was over and that, for voters, "character matters". That was perhaps a rosy inference, one of many being made—including that gerrymandering can backfire and the richest man in the world cannot buy an election outcome—yet, like the others, one borne out by facts. Dr Acton thumped her opponent. She is the first woman elected to serve as governor of Ohio, and the first Democrat in 16 years.

This was, in all, a bad election outcome for Mr Vance. Despite repeated trips to his home state of Ohio, he also saw his old Senate seat there go to a Democrat, Sherrod Brown. Moreover, as the vice-president's dabbling with profanity and innuendo on the campaign trail had already shown, the cruel, vulgar style of MAGA politics never really worked for anyone but Donald Trump, and even for him the act has worn thin. Worse, still, Americans have also repudiated the substance of Trumpism.

Mr Vance has laboured to position himself as Mr Trump's heir. But he can expect brutal competition if he does, in the end, choose to run. He wants to ascribe Republicans' defeat solely to the war on Iran, from which he has gingerly distanced himself. But, protean though he is, Republican challengers will not let him duck responsibility for the full Trump agenda. Some of those historians may instead date the start of the presidential campaign to November 2nd, when Ron DeSantis, Florida's Republican governor, accused unnamed members of his party of "gaslighting" Americans by pretending the war had not raised costs, as well as "corporatism" and failures on artificial intelligence and big tech.

Republicans are paying the bill for their strong leader and his idiosyncratic agenda. In the campaign to come, they must battle over what their party stands for, if not trade wars on friend and foe, shooting wars in the Middle East, state capitalism, public debt, self-enrichment in office and unchecked executive power. By contrast, Democrats, who for two years have lacked a national leader or a coherent politics besides opposing Mr Trump, emerge from the midterms with a blueprint for unifying the party and winning nationally. In his eccentric, Republican-defeating way, Mr Trump even did the Democrats a favour on election day by appearing to take an issue that bitterly divides them off the table. He said he would stop $4bn in aid to Israel by the end of the year.

Success in the South and Midwest brings the Democrats a ballasting geographical diversity. To hold their gains, let alone build on them, they will have to appeal to the socially moderate voters—Latino, black and white—who made the victories possible. Candidates such as James Talarico and Josh Turek, senators-elect from Texas and Iowa, tapped into anger against both parties, talking up decency, bipartisanship and even, at times, Mr Trump.

They also embraced an economic populism that is the through-line for successful Democratic candidates from North Carolina to Michigan to Texas. One of the canniest and most ambitious Democrats, Representative Alexandria Ocasio-Cortez, released a five-page memo on election day describing her campaigning for candidates from the centre to its left. The memo did not mention climate change or any social issues but touted her focus on "economic populism, confronting concentrated wealth and power, and revitalising American democracy". Words such as "justice" and "equity" made no appearance.

The grass could be yet greener

That Democratic leaders are aware of the danger of tying up Congress in futile impeachment proceedings may not prevent them from being dragged down that path. But this was also a bad midterm outcome for the party's radical legislators, since its big House majority will deprive them of leverage. The priorities of the party's precious new office-holders are to begin lowering prices by ending the war in Iran and to restore congressional authority over tariffs. Beyond that are such equally popular measures as banning stock-trading by members of Congress and reversing tax cuts for millionaires, a move Mr Trump has, in the past, suggested he could support. A veto would mean, for Democrats, a compelling campaign issue.

In fact, opportunities beckon for Mr Trump, too. He may yet have the chance to memorialise himself not just by "regrassing" the White House lawn, an achievement he celebrated the day before the election, but by, say, accomplishing landmark legislation to reform immigration. That would deprive Mr Vance and the Republican Party of a cherished campaign issue, illegal immigration. But Mr Trump would not care about that. ■

The Americas



Haiti

Gates of hell

MEXICO CITY AND MIAMI

El Salvador's strongman, Nayib Bukele, thinks he can eliminate Haiti's gangs

PRESIDENT NAYIB BUKELE has gained fame around the world for making El Salvador safer—albeit in a deeply vexing way. Leaders from Latin America trek to see the mega-prison in which he has locked up thousands of men accused of being in gangs, often without due process. Even domestic critics acknowledge that his round-ups have improved everyday life for most people. But now Mr Bukele wants to go further. Since October 22nd he has deployed over 2,000 Salvadoran soldiers to gang-ridden Haiti. He has warned its gangs (in Haitian Creole) that he can "finish with you too".

Haiti has slumped into appalling chaos since its last elected president, Jovenel Moïse, was assassinated in his bedroom in 2021. Gangs control most of the capital, Port-au-Prince, as well as some areas outside it. At least 16,000 Haitians have been killed during the anarchy; 1.5m have been displaced (see chart on next page). Two years ago Mr Bukele boasted that he could sort the mess out.

A pretext emerged on October 18th when four Salvadoran aviation technicians serving in Haiti as part of a UN-backed "Gang Suppression Force" (GSF) were ambushed and disappeared. Although they are probably dead—bodies purported to be those of the Salvadorans were handed over for testing on October 24th—Mr Bukele says he is mounting a rescue mission. Few believe that finding lost comrades is his sole aim, given what he has said about Haiti before, and the number of men he has sent. The Salvadoran force in Haiti now outnumbers all the soldiers serving with the GSF, who are drawn from six countries including Chad and Guatemala.

Mr Bukele's operation marks the largest deployment of foreign troops to a country in the Americas, outside the remit of a UN mission, in many years. Much about it is murky, not just the scale of his ambitions. In 2024, speculating on the possibility of intervening, Mr Bukele said he would need a resolution from the UN, along with Haiti's consent, and for costs to be covered.

Only one of these preconditions is clearly in place. On October 28th, six days after Salvadoran troops started to arrive, Haiti's government said it had authorised the deployment (the terms of the agreement are not public). The United States also appears to have given a nod. Donald Trump is reported to have told Mr Bukele, during a phone call, "You have to do what you have to do." Some Salvadoran troops flew in on an American military plane. Countries including Colombia and Haiti's neighbour, the Dominican Republic, have also pledged logistical support—citing their joint membership of the "Shield of the Americas", a group of countries that have promised to work with Mr Trump to combat gangs in the region.

Mr Bukele says El Salvador is paying at least 90% of the operation's expenses. But some doubt this can be true; they wonder if money from the United States is involved. Deploying 2,000 soldiers to a coun-

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try with no infrastructure, where even the water will make you sick, is extremely expensive, says Adam Isacson of the Washington Office on Latin America, a think-tank in the United States.

The UN confirms the Salvadorans are not working within the remit of the GSF. (Mr Bukele reportedly promoted the general in charge of his contingent to three stars before dispatching him, perhaps so he outranked the two-star Mongolian general leading the UN team.) The deployment risks creating "confusion and challenges for co-ordinating operations and for determining accountability for any possible violations of international law", says William O'Neill, the UN's expert on human rights in Haiti. It could be the beginning of the end for the GSF, says Jake Johnston of the Centre for Economic and Policy Research, another Washington think-tank.

What might Mr Bukele achieve? "He may get some tweets out of this; videos of stuff that goes boom," says Mr Isacson. A brief deployment may impress Salvadorans. But at least some people believe Mr Bukele could make Haiti safer in the long term. Luis Contreras, a Salvadoran security analyst, thinks the gangs are no match for soldiers. "Any army could do it," though it might take a while, he says.

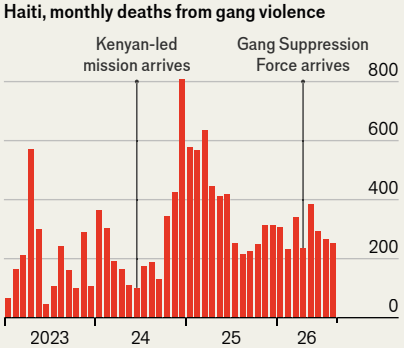
Haiti's situation is so desperate (half the population of 12m suffer acute hunger) that many in the region welcome Mr Bukele having a go. Haitians have to be "pragmatic", says Jean Walnard Dorneval, a former Haitian defence minister. "We cannot simply sit idly by for fear of collateral damage while gangs have been traumatising the population." There is a chance that Mr Bukele's iron-fist reputation may scare gang leaders into negotiating.

Yet the risks of getting bogged down are huge. Mr Bukele may underestimate Haiti's problems: on October 29th he insisted that El Salvador "lived through a nightmare that was even more horrific than what the Haitian people are enduring right now". Pacifying El Salvador required both tough law enforcement and negotiations with gangs. A large army, police force and a functioning administration were able to round up tens of thousands of men. In Haiti the gangs govern territory, levy taxes and hold military-grade weapons. Mr Bukele "does not know the terrain and tactical environment", says Frank Mora, a former Pentagon official.

The worry, if Mr Bukele's ambitions in Haiti turn out to be large, is of a scorched-earth strategy that kills a lot of civilians. Human-rights groups are already reporting increased casualties in the area where the Salvadorans went missing. The UN force in Haiti operates cautiously; its troops rarely leave their base. Many observers, including in the Trump administration, mock its weakness: they think Haiti's agonies are being drawn out by a "bunch of ninnies and losers not willing to use enough force to show who is boss", says Mr Johnston. Their certainty may soon be put to the test. ■

Red tide

Haiti, monthly deaths from gang violence



Source: ACLED

Online campaigning

Virtual insanity

RIO DE JANEIRO

André "Mad Dog" Janones is a hero of the Brazilian left

THE NIGHT he was re-elected as Brazil's president, snatching victory from what seemed like sure defeat, Luiz Inácio Lula da Silva spoke to supporters in the streets of São Paulo. Lula, as the left-wing leader is known, gestured to a guest by his side. "I want to thank this comrade here, our general, who played a pivotal role in this campaign," he told the crowds.

The man feted on October 25th was André Janones, a 42-year-old congressman for a small environmentalist party who some think was the architect of Lula's surprise victory. He is the brains behind "Lula's Army"—a channel on WhatsApp that acquired more than 10m followers in the three weeks before the run-off vote. Its success has made Mr Janones a cult hero on the Brazilian left. It has also caught the eye of leftist leaders around the world—including Pedro Sánchez, Spain's prime minister, and Claudia Sheinbaum, Mexico's president—who wonder if they can emulate his strategy in their own countries. "It's replicable and I think it's necessary," Mr Janones tells *The Economist*. "In all honesty, I think this could be what sweeps the far right off the map."

After Lula performed poorly in the first round of voting on October 4th, Mr Janones—a former lawyer whom colleagues dubbed "Mad Dog" for his scalding of right-wing candidates in advance of the elections in 2022—promised despairing left-wingers that if they followed his orders they could turn things around. At his request, Brazilians banged pots and pans when Lula's rival, Flávio Bolsonaro, was interviewed on television. They flooded Instagram with images of themselves wearing Brazil's national colours and making an "L" shape (a pro-Lula symbol) with their fingers. Mr Janones held late night livestreams on which he refused to speak until at least a million viewers had tuned in. "EVERYONE, URGENT! GET TAPPING, AND MAKE THIS VIDEO EXPLODE!" was a typical command.

Behind all this, says Mr Janones, lay a studied plan to game the algorithms that drive social networks. He ordered his followers to comment on and "like" pro-Lula posts before sharing them, to boost their engagement. He told his "army" not to respond to misinformation about their candidate, on the basis that any engagement could widen a post's reach. Actions of the army were carefully co-ordinated. "When four million people posted the exact same photo at the exact same time, the algorithm interpreted it like a plane crash or a terrorist attack like 9/11 and blocked the reach of any other posts. That's how we glitched the algorithm," he says.

Lula's Army was far from the only thing that helped swing the election. Having for weeks run an old-fashioned campaign, Lula himself began posting selfie-style videos online. In the weeks before the run-off, his government pushed through an amendment guaranteeing workers two days off a week, and forgave sole traders their federal tax debts. But Mr Janones's channel "was a turnout machine", says David Nemer at the University of Virginia, bringing out pro-Lula voters who had abstained in the first round. "It gave a campaign that had just proved it couldn't talk to the internet a voice that could."

WhatsApp groups inspired by Mr Janones's effort are popping up around the world. Guides detailing his techniques are circulating online in French and Japanese. He has been invited to advise politicians in Colombia, Venezuela and the EU, among other places. The week after Brazil's election he turned up in Argentina, where he met members of the Peronist opposition. And Mr Janones says he plans to continue mobilising Lula's Army at home in order to press a conservative-dominated Congress to pass Lula's bills.

The lawmaker has some reservations about his digital playbook. He says he felt uncomfortable encouraging people to ignore pro-Bolsonaro posts, rather than push back against them. But like many in the Brazilian left, he believes social media have long handed their opponents an advantage—and that the ends justify the means. "My strategy is a strategy of war." ■

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The Economist

Religion in Latin America

Long time no see

BUENOS AIRES AND MONTEVIDEO

Can the pope win back disenchanted youth on his return to South America?

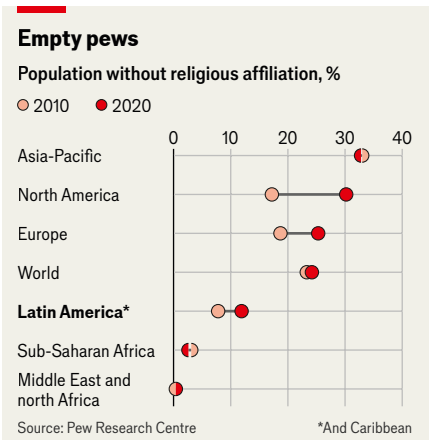
POPE LEO'S tour of South America, beginning on November 6th, is a marathon. Over 12 days he is traveling some 31,000km, visiting Uruguay, Argentina and Peru and giving around 40 speeches. In some ways it is a homecoming: the pontiff spent two decades as a missionary in Peru. The roadshow, coming three weeks after the pope underwent surgery for lung cancer, will draw big crowds. A bigger question is whether it can help win back Latin America's waning faithful. The region's educated young, in particular, are gradually going off organised religion.

In the decade to 2020 the share of people around the world who say they do not identify with any organised religion—call them the "nones"—grew by a percentage point, to 24%. This shift may appear small, but behind it lies much change. Every religion other than Islam stagnated or shrank over that period, when taking population growth into account. The share of people who say they have no religious affiliation declined slightly in Asia and barely budged in Africa or the Middle East. But it soared in Europe and the Americas. And of the three countries where the share of "nones" grew the most, two (Chile and Uruguay) are in Latin America.

To see what this looks like on the ground, trek to Uruguay—the country in which Pope Leo is beginning his grand tour. Its constitution has long enforced an exceptionally strict division between church and state. Easter week, known as "Holy Week" in the rest of Latin America, is called "Tourism Week". Christmas is dubbed "Family Day." Not by chance, Uruguay legalised marijuana, gay marriage and abortion much earlier than its peers.

The share of Uruguayans who identify as Catholic has fallen by almost half since 1995, to 33%. Only 9% of Uruguayans say they practise the faith regularly. Many young people are unenthused by the pope's visit, the first since 1988. "I just think: what a waste of money," says Lucía Castillos, a 31-year-old caterer in Montevideo, the capital. "How much are we spending on this visit that we could be giving to people who have nothing to eat?"

Ms Castillos says her scepticism towards the church grew during a recent upswell of feminism all across Latin America. What began as mass rallies in Argentina in 2015 protesting against killings of women later swept into Chile and Mexico, where demonstrators also demanded access to abortion. "Catholicism springs from the premise that women are inherently flawed," she believes. "That vision just doesn't square with feminism."



Some of Latin America's new "nones" are unapologetic atheists. "To me, it all seems crazy," says Virginia, a 29-year-old primary school teacher in Buenos Aires, the capital of Argentina: "A dove impregnating a virgin, evangelical Christians speaking in tongues, Orthodox Jews dressed in wigs." But the evidence suggests that many of these people are in fact swapping organised religion for a much looser kind of spiritualism.



Creatures great and small

Many of them tell pollsters they believe in esoteric things, such as "energies". Syncretism and folksy superstition is common. Some Brazilian "nones" dabble in Candomblé and Umbanda, two traditions that combine Roman Catholicism with west African religious practices. Mexicans of all stripes celebrate the Day of the Dead, a Mesoamerican spin on All Souls' Day. Argentina's president, Javier Milei, embodies this growing spiritual mish-mash. The libertarian has a strong interest in Judaism but has not denied rumours that he has also sought a medium's help to speak to his dead dog.

Old habits die hard

Organised religion remains a powerful influence on the region's politics, even if its grip on hearts is loosening. Recent years have seen increasingly vocal interventions in many countries by evangelical Protestant groups, and politicians are putting in much more effort to court them. Evangelicals were firm supporters of Jair Bolsonaro, Brazil's president from 2019-23, and of his son Flávio who recently failed in his bid to win the same job.

The godless in Latin America remain more likely than those elsewhere to say that organised religion helps society, rather than harms it. The Catholic church is still the most trusted institution in Latin America, according to Latinobarómetro, a polling organisation, well ahead of outfits such as armies and the media. That reflects a history of (mostly) do-gooding, as well as the dim view many Latin Americans take of their secular institutions, such as legislatures and the courts. The result is that the pope's words and actions on the road will be scoured for political subtext.

Some in Argentina hope that Leo's four-day stop there could squeeze a touch more humility from Mr Milei—who is broadly succeeding in stabilising an economy in crisis but can be aggressively unsympathetic towards people affected by his policies. Before becoming president in 2023 Mr Milei had lambasted Leo's predecessor, Francis. He called the late pontiff, who was Argentine, an "imbecile" and "the representative of the devil on earth," though he later apologised. Pope Leo plans to visit a centre for disabled children. Argentine bishops have repeatedly expressed concern about the impact of Mr Milei's cuts on the poor and sick.

The pope's last stop, in Peru, ought to be much more straightforward. It remains one of the most devout countries in the region. And many Peruvians have warm memories of his years working in the country. Even in a rapidly secularising region, good deeds are infallibly popular. ■

Asia



Japan's disaster preparedness

The next big one

CHIBA, KUMAMOTO AND TOKYO

A new agency has plenty to do

AMONG THE countries most prone to natural disasters, Japan has a habit of spawning new bureaucracies. Yet, despite in recent years launching agencies for digital technology and for children and families, its governments have consistently batted away a more obvious idea: to set up a disaster agency. That changed on November 2nd. At the new body's launch, Hosono Goshi, its freshly appointed minister, stood before a backdrop with a colourful logo resembling the character for "prevent" in *bosai*, or disaster prevention. He vowed to make Japan "the world's most disaster-prepared nation", ready for calamities "on the scale of a national crisis".

Sitting at the junction of four tectonic plates (see map on next page), Japan suffers around a fifth of the world's earthquakes of magnitude 6 or greater. The earthquake and tsunami in 2011 in Tohoku in the north-east of the main island of Honshu, which triggered a nuclear meltdown, are strong memories. In 2024 the Noto peninsula was devastated by a magnitude 7.6 earthquake, and another powerful one struck Kumamoto this summer. Torrential rains and floods, intensified by climate change, pose a growing threat, too.

Yet even these calamities may be dwarfed by what lies ahead, says Kawata Yoshiaki, a disaster-management expert at Kansai University who advised the government about the agency. Seismologists warn of two catastrophic earthquakes; their statistical model suggests a 70% chance of a magnitude 7 or higher quake directly hitting the Tokyo metropolitan area in the next 30 years. Over the same period another feared megaquake along the Nankai Trough off Japan's Pacific coast has a 60-90% probability. In the worst case, such a quake could kill nearly 300,000 people, force 12.3m to evacuate and cause ¥292trn ($1.8trn) in economic losses, equivalent to more than 40% of Japan's annual GDP. Mr Kawata expects long blackouts and broken supply chains that would leave vast numbers short of food.

Japan is already a global leader in disaster preparedness, especially in hardware such as earthquake-resistant buildings and early-warning systems. With the new agency, the government hopes to streamline its software and put more resources towards preparing for the bigger and more complex disasters that may lie ahead. Until now, responsibility for disaster management has been distributed across different ministries and levels of government. The prime minister oversaw such efforts with support from a small unit in the Cabinet Office, staffed by officials seconded from other ministries, who rotate out every few years. Ueshima Yasuhiro of Japan Platform, a network of aid groups, likens the government's previous approach to "putting on a Band-Aid" whenever disaster strikes, rather than treating underlying risks. The new agency, with around 350 staff, aims to boost preparedness by build-

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ing up institutional knowledge. about dealing with a range of potential disasters.

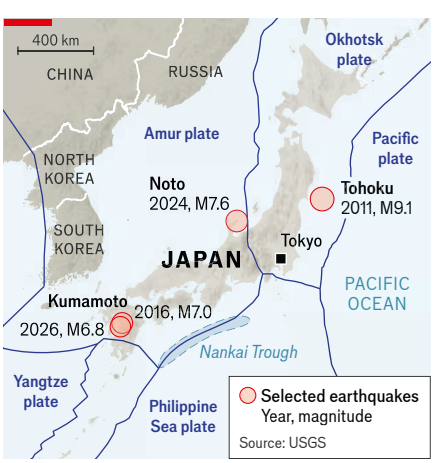
Creating a single centralised body should help address one of the Japanese system's biggest weaknesses: a notoriously siloed bureaucracy that struggles to co-ordinate across institutions. Consider hospitals, says Mr Kawata, pointing out that they could lose power during a big Tokyo earthquake, putting many thousands of patients at risk; planning evacuations would involve the health ministry. The fisheries agency, meanwhile, could help fishing communities protect themselves against tsunamis. While Mr Hosono will handle day-to-day operations, Takaichi Sanae, the prime minister, will officially head the agency, which will also have powers to make suggestions to other ministries.

Climate change and more extreme weather are demanding vigilance towards less familiar threats. Tokyo experienced 37 consecutive days of rain until the beginning of October this year, the longest stretch since records began in 1886. In nearby Chiba, record rains wreaked havoc in August, followed by a flood weeks later. Waki Yuichiro, a 52-year-old resident, whose house was flooded and car ruined, says he had prepared for earthquakes, "but I never imagined flooding would affect us...In the future, we have to prepare for the unexpected—anything can happen." Tanaka Yasuo, a volunteer who visits Chiba to repair air-conditioners damaged by the flooding—essential appliances during Japan's sweltering summer—says that in the past he used to have time to rest between disasters; now they come so frequently that "I can barely take a break".

Japan's demography, with its large number of old people, makes it vulnerable in other ways. One growing concern is *saigai kanrenshi,* or disaster-related deaths: people who survive the initial catastrophe but later die from prolonged stress or deteriorating health during evacuation. After an earthquake in Kumamoto in 2016, such deaths accounted for more than 80% of the toll. In Noto, too, they made up 70% of deaths. Poor conditions in evacuation centres, where survivors still often sleep on crowded gymnasium floors and without adequate sanitation or nutritious food, can make things worse. Such evacuation centres have hardly improved over the years. Ishiba Shigeru, a former prime minister who championed the disaster agency, blames a culture that prizes perseverance and "idealises disaster survivors who endure hardship". Sugano Taku of Osaka Metropolitan University points out that municipalities with inadequate resources are being left to handle them on their own; the new agency is supposed to offer them guidance and support.

But it is just one part of Japan's approach to disasters, which rests on three principles: *kojo,* government assistance; *kyojo,* mutual help; and *jijo,* self-help. In Kumamoto, Fujino Tatsuo and other volunteers clambered onto damaged roofs, removing heavy *kawara,* traditional Japanese tiles that could fall in another earthquake. Nearby, Miyabara Yukimi's home had collapsed, though her whole family miraculously crawled out of the rubble. She and her husband spent weeks sleeping in a lorry before volunteers helped them build a makeshift shelter. "It feels like we lost everything—but we still have to make the first step," says Ms Miyabara.

On its first day the new disaster agency kicked off by issuing an "emergency request" urging local governments to strengthen disaster preparations and citizens to take precautions themselves. Mr Hosono stressed that *jijo* remained essential. "We cannot achieve this by relying on the government alone," he said of his ambition to make Japan even more of an example to the rest of the world in disaster preparedness. He advised citizens to secure furniture against earthquakes and stockpile at least three days' worth of food and water—preferably, enough for a week. ■



Civil war in Myanmar

Weak signal

SINGAPORE

Dead Starlink terminals are getting people killed

UNDER BRITISH rule, Burma boasted the largest tungsten mine in the world at Maw Chi, near the border with Thailand. Decades of war and misrule have slashed the mine's output. But labourers working in small teams at Maw Chi still dig up the metal before sending it on to Thailand and global markets to make aeroplanes, missiles and semiconductors. That has made Maw Chi a prize in the war between the military junta which seized power in Myanmar in 2021 and rebels opposing it.

Two years ago rebels captured Maw Chi and started to put its revenue stream towards their war effort. The junta responded with occasional air strikes on the mine. Rebels countered by creating an ingenious early-warning system using Starlink, the space-based internet service that is run by SpaceX. When the junta launched an attack aircraft, a spotter near the airfield would alert civilians at the mine site to take shelter. But on September 1st that warning system failed. A jet bombed the mine at Maw Chi without any alert, says a local rebel commander, killing five and injuring six. One of the Starlink terminals used for the early-warning system had been cut off, leaving the miners in the dark.

Starlink has become essential in parts of Myanmar riven by conflict or governed by rebels. The junta has turned off cellular services in many of these areas, leaving rebel armies and humanitarian organisations reliant on connections to SpaceX's satellites in low-earth orbit. The democratic government-in-exile uses Starlink to remotely run schools and hospitals in liberated areas, where too large a physical footprint would attract attention from the junta's air force. In these places Starlink is ubiquitous even though, on paper, the ser-



Rebel without a connection

vice is not available in Myanmar. Terminals are procured elsewhere and brought into the country illegally. Until recently, SpaceX has tended to turn a benevolent blind eye towards their use.

The episode at Maw Chi was not an isolated incident. Rebels, aid workers and teachers say that some Starlink terminals across Myanmar have been shut down by SpaceX since July. Many others are still up and running, they say, and it is not clear how the company has decided which to cut off. SpaceX has not offered any public explanation, but it has told some aid workers in Myanmar that, under pressure from the American government, it is trying to cut off scam centres based in the country that rely on its services to carry out their transnational frauds. A State Department spokesman says that it is working with private firms and their financiers to combat scam centres, while "preserving access" for those using the technology for "legitimate purposes". Rumours of a "whitelist" maintained by the State Department have been swirling among aid groups, but no one seems to know what they need to do to be added to it.

For reasons that remain murky, SpaceX had recently throttled Starlink connections in Ukraine, reportedly after talks between Elon Musk, its founder, and President Donald Trump. Its motives in Myanmar are also obscure. Analysts have seen no signs of drones using Starlink in Myanmar, where rebels are on shoestring budgets. New terminals smuggled into Myanmar could cost as much as $8,500 each, say aid workers. That is far too pricey for the poorly funded rebels to simply strap one to a drone made to explode on impact.

But the terminals have been invaluable in letting democratic forces offer services in areas they control. Hospitals under the National Unity Government (NUG), the pro-democracy government-in-exile, use it to consult specialists abroad. And students across Myanmar use it to attend NUG schools remotely. As terminals go dead, students are dropping out. The head teacher at an NUG school says that of 270 students who started the year there, 40 have stopped attending.

Perhaps the most vital use of Starlink has been in early-warning systems like the one at Maw Chi. In a curious twist, some of these systems, say former American officials, were secretly set up by USAID in 2024. Even before Mr Musk put the aid agency through the wood-chipper last year, SpaceX had doubts about this. "They had lots of questions about the legal implications of allowing their terminals to be used in Myanmar," says a former American official who was involved. In particular, they say, SpaceX was wary of letting its terminals be used for lethal purposes. Shutting them down is also proving lethal. ■

Australian conservatism

Eyes right

CANBERRA

Andrew Hastie takes on Pauline Hanson in a fight for the Australian right

SENATOR PAULINE HANSON swaggered into Secret Harbour on October 30th like a general inspecting troops in newly conquered territory. It was her first visit since One Nation, her ragtag populist party, won a by-election in the coastal town. The race for a seat in the Western Australia state parliament was the latest in an "orange wave" of wins for One Nation in elections this year. But Secret Harbour is special: the town sits inside the federal constituency of one of Ms Hanson's most formidable opponents, the special-forces veteran and Liberal Party frontbencher Andrew Hastie.

Once dismissed as a gadfly, Ms Hanson is now a real force. In January One Nation overtook the Liberals in the polls and still has a lead. It is neck-and-neck with the governing Labor Party. It still lacks much of the scaffolding of a national organisation, but Ms Hanson has shown that she can turn voter anger at the major parties into seats. So her party has a real shot at replacing the Liberals as the official opposition at the next election in 2028, and an outside one at forming the next government.

The election in February of Angus Taylor as the Liberals' new leader has not boosted the party's fortunes. Mr Taylor, attacked by Ms Hanson as a "smarmy management consultant", has mostly avoided confrontation with her. But Mr Hastie has taken her on directly. Some Liberals argue that, against her, he would be a stronger leader than Mr Taylor. "It was obvious that the better choice would have been Hastie," says Malcolm Turnbull, a former prime minister and Liberal leader. "I'm sure he'll lead the Liberal Party some day—if he doesn't lose his seat."

That Mr Hastie might face two such different futures is largely a consequence of one decision that he made: to testify against a fellow soldier accused of war crimes. That has led to an emotional debate on the right, one which Ms Hanson has been eager to use to her advantage. "I was subpoenaed, and then under oath required to tell the truth," Mr Hastie tells *The Economist*. "Would you rather me be in contempt of court and lie?"

Wildly divergent answers to that question have this year been tearing the Australian right apart. Mr Hastie is now under attack from Ms Hanson and her powerful allies like Gina Rinehart, a mining magnate, and Kerry Stokes, a media baron, some of them once supporters of the Liberals. In July Ms Hanson published a video calling Mr Hastie a "traitor" and encouraging Liberals to abandon him. The strategy seems to be working. Tony Abbott, the president of the Liberal party and another former prime minister, has distanced himself from Mr Hastie. They are trying, he says, "to destroy me personally". But the stakes for the Australian right are far higher than that.

The veteran of the elite Special Air Service regiment is an unlikely hate figure for the populist right. Mr Hastie has led a push over the past year to drag the Liberal Party to the right on issues that animate populists. His call for lower net migration is now party policy. He is against women in combat. Like many populists, he bemoans the demise of Australian manufacturing, arguing for a more active industrial policy. But he parts ways with them when it comes to the rule of law.

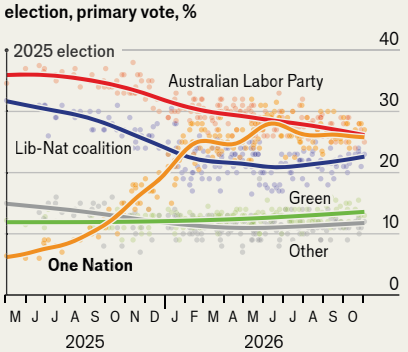
Mr Hastie links his stand against war crimes to his Christianity. He testified against a fellow soldier, he tells supporters, under an oath before God. He is more open about his faith than most Australian politicians: "I learned more about politics and leadership watching my father [a Presbyterian minister] at church than anywhere else." But "I am not a Christian nationalist." By contrast, Ms Hanson has called Australia a Christian country, yet dodged questions about her own beliefs.

The lessons from his father's church sometimes point in unexpected directions. Mr Hastie opposes abortion and gay marriage, but rejects Ms Hanson's call for a "monocultural" Australia. Worse yet, in his view, are her fans' calls for racial criteria for immigrants. He recalls his father's church in Ashfield, then one of Sydney's most diverse suburbs, which held services in several Asian languages because "everyone is made in God's image". Immigrants, he says, should be chosen for their values and skills rather than their ethnicity.

That same philosophy has allowed Mr Hastie to make friends across the aisle. ▸▸

Orange wave

Australia, voting intention in federal election, primary vote, %



Source: National polls

Take Senator Penny Wong, the foreign minister and a Labor stalwart. Ms Wong, gay and born in Malaysia, might seem an unlikely partner. But the two worked well together when Mr Hastie was a backbencher and Ms Wong was in opposition. "It's always been clear to me...that he is one of the few on his side who believes there is a national interest above partisanship," says Ms Wong. "While Andrew isn't really where modern Australia is, he understands that you can't out-Pauline Pauline."

That hints at a potential way through for Mr Hastie. Once known as the Liberal Party's rising right-winger, his fight with One Nation is broadening his appeal. He has no plans to give up his conservative bona fides, but he is seeking out new allies. Within his own party, once-critical moderate grandees like Mr Turnbull now offer cautious praise. At a fundraiser last month 80% of participants were new donors. And he has become a more frequent guest on public television and radio shows, whose viewers tend to skew centre-left. That could leave him in a stronger position to lead the Liberal Party in the future.

But first he must see off Ms Hanson's campaign to brand him among the conservative base as a traitor. He still looks to be under siege. The home-affairs minister has cited unspecified threats in advising police to upgrade security at his home and office. "It's a bit unnerving," Mr Hastie says. "But I'm a Christian. I pray about these things, and I'm at peace about it." ■

ASHOKA
Net benefit

Cheap data is great for Indians but not for India's reputation

"BITCH LASAGNA" is the name of a song by PewDiePie. It is also a two-word social history of the relationship between India and the internet. For five years Mr Pie, a Swede whose real name is irrelevant, was the owner-operator of YouTube's most popular channel. In early 2019, after several months of back-and-forth, he was decisively overtaken by T-Series, a Bollywood studio.

In the run-up to his defeat the Swedish streamer posted what his fans described as a "diss", or insult, track and what anyone else would consider to be bordering on bigotry. Its lyrics include references to open defecation, ridicule of Indian languages and a meme about "bobs or vegana" (don't ask). The song's title alludes to a Facebook Messenger screenshot of an Indian man requesting unclothed self-portraits from a woman and, on being ignored, hurling the presumably auto-corrected epithet at her. The internet really does bring out the worst in everyone.

Mr Pie's battle with T-Series marked a hinge point in India's internet adoption. In 2016 Mukesh Ambani, an industrialist who inherited a petrochemical company, took literally the maxim that "data is the new oil" and launched Jio, a mobile network with rock-bottom prices and generous data allowances. Almost overnight the share of India's population covered by a modern mobile-broadband network jumped from 4% to 74%. A price war followed. Internet users doubled in just three years from a sixth of India's people when Jio launched to a third when T-Series triumphed, rising to over two-thirds today. A billion Indians use the internet, or three for every American.

Not satisfied with bringing Indians online, Jio, which in October went public in one of the country's largest listings, also gives them something to do once they get there. Its streaming service, Hotstar, has more than 450m monthly users, well ahead of Netflix or Amazon's Prime Video. But neither Jio nor anyone else has managed to build a social space Indians prefer to Western ones. Indians are the largest nationality on YouTube, Instagram and Facebook and a significant minority on X, Reddit and Snapchat. Their influx onto these platforms has not been great for India's image in the world.

"Bitch Lasagna", though tasteless, reflects a common stereotype online of Indian men as forever propositioning women on social media. The idea of India as an unsanitary place, too, is depressingly common. And Indians have of late acquired a reputation as fierce nationalists with thin skins and foul mouths. As one viral post on X put it, "Never invade Russia in winter. Never attack India by Twitter."

Some of the criticism is overblown. Crude men and noisy nationalists exist everywhere, but the sheer scale of the Indian contingent makes them more noticeable. Some of it is the result of India's openness. Because Indians use the same platforms and often post in English, the country's flaws are more visible than those of other countries.

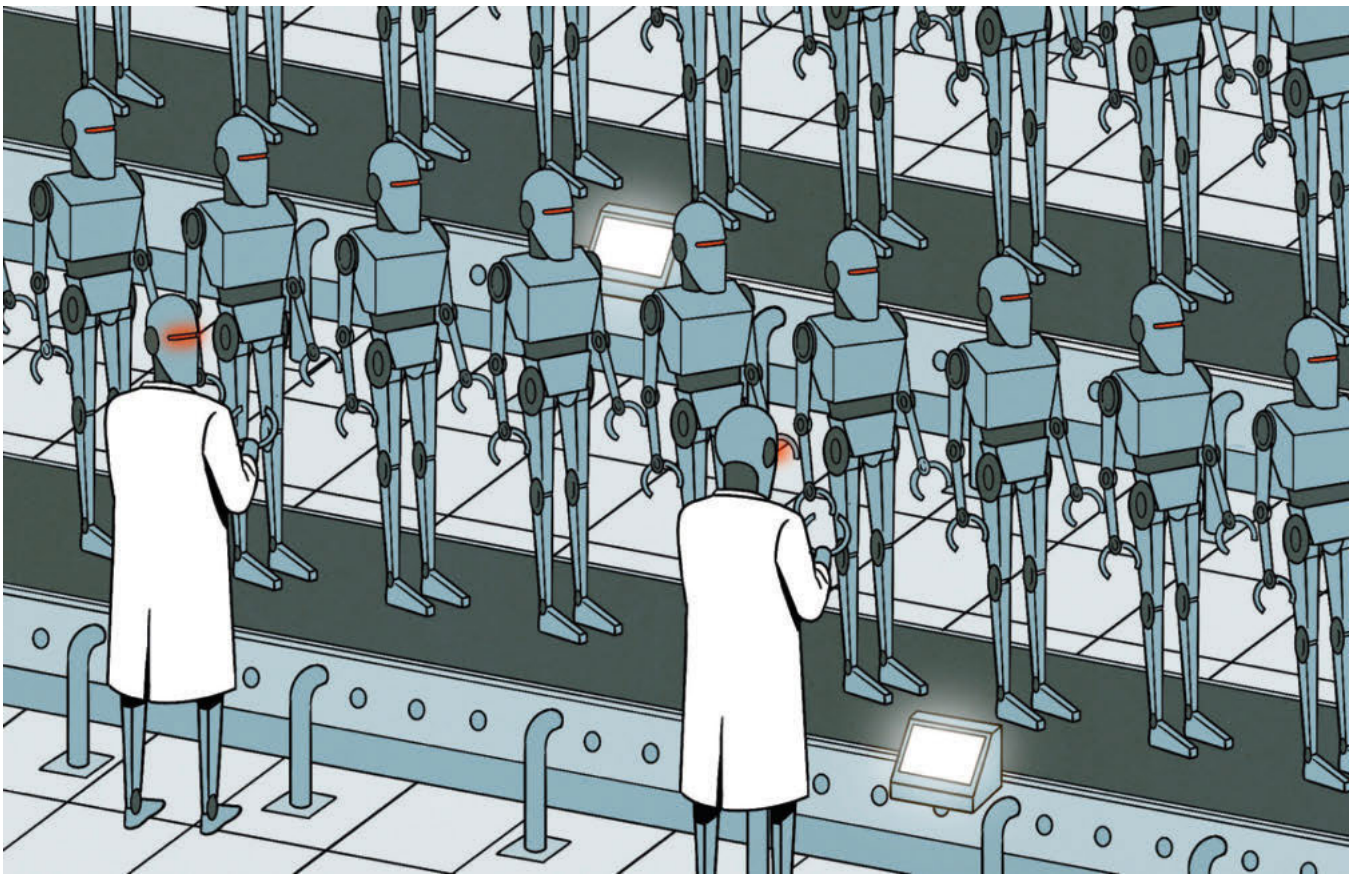


And some of it may well be cynical. Social-media algorithms prioritise content that elicits strong reactions. YouTube travel videos that portray India as filthy and dysfunctional often attract millions of views. Instagram has lately been flooded with AI-generated videos showing street-food vendors cooking in appallingly unhygienic conditions. Ragebaiting Indians can be a sound commercial strategy, as the 300m-plus views of "Bitch Lasagna" demonstrated.

All of which obscures just how fun and indeed funny India's internet can be. Influencers and YouTubers make material for all tastes. Social-media memes are the currency of youth slang and infiltrate the mainstream, too. This year's "cockroach" youth protests started life as an online joke. It is only a matter of time before India's popular culture starts breaking through more widely. Some of it already has. A dance move in a Telugu song called "Naatu Naatu" went viral in 2022 and later won an Oscar. Early this year an extended joke by Azeem Banatwalla, a stand-up comedian, resonated globally. As more culture crosses over, India's image online will change too.

Until then, India's reputation provides fodder for content. Mr Banatwalla's gag was a list of all the traffic violations you can commit in Mumbai for the price of a speeding fine in Norway. Somnath Padhy, another comic, has a routine riffing on how "there are one billion websites in the world [and] I think Indians have commented on all of them." And Reddit has a community dedicated to "the chaos unleashed by cheap internet". It is called "Jio was a mistake".

China



Artificial intelligence

Who needs humans?

With an eye on America, China is beefing up its AI-controlled labs

In a laboratory in Shenzhen, a city in southern China, hundreds of mechanical limbs dance alongside each other in search of scientific discoveries. Few humans are involved. Instead the machines are directed by artificial intelligence. An AI model devises a hypothesis, instructs robots to test it and records the results to improve its next experiment. The autonomous facility, which is owned by a drug-discovery firm called XtalPi, runs around the clock to discover new medicines. During a visit early this year, China's prime minister, Li Qiang, gushed that innovation like this was "the key to winning the future".

If China is to win, the loser would presumably be America. Both countries are competing to build and apply AI technologies as fast as possible. Scientific discovery may be the most important arena for this race: inventions can improve lives as well as boost a country's economic and military power. In March China's new five-year plan called for faster exploration of AI-driven ways of doing science as part of a broader push to "seize the commanding heights in the industrial application of AI".

As often in industry, the government is heavily involved. It is building what it calls an AI-for-science "stack" by linking the specialised datasets, models and computing power that are needed by firms to run autonomous labs. Experts hope these "self-driving" facilities will make research faster, cheaper and far more productive. China's labs are unlikely, for now, to produce big scientific breakthroughs. But they could supercharge Chinese manufacturing. Officials say they will reduce dependence on Western technology. They also hope these efforts will give China an edge in the AI race. America should pay attention.

Stacks like this have two layers. The first is the brains. In April the Chinese Academy of Sciences launched a platform, often dubbed an "AI scientist", that is available to hundreds of universities and laboratories in China. It is called ScienceOne (the Chinese name is *Panshi*, meaning "Bedrock") and resembles a chatbot. It includes models, or agents, trained on academic reports and non-text data, such as waveforms used to measure seismic vibrations. They can perform hundreds of tasks, like working out the sequences of amino acids in proteins, state media say. China's scientific models still tend to lag behind America's. But a researcher at the University of Hong Kong who uses ScienceOne praises its bundle of scientific datasets, AI agents and computing power. "I don't see anything like it in the US," he says.

The second layer is the brawn. Advances in applied science need hands-on experiments. Robotised labs have exist- ▸▸

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ed for decades, but they require humans to analyse data and refine experiments. AI models can take over the drudgery. They can learn from the results in real time and continuously tweak their approach. Last year XtalPi used its autonomous lab in the discovery of a molecule that could be used for treating a form of stomach cancer that grows in scattered clusters of cells. The firm generated millions of possible molecules and whittled them down to hundreds of candidates before testing the remaining ones on lab-grown tissue, using robots.

China is watching America closely. It stepped up its stack-building after President Donald Trump unveiled a similar plan late last year: the "Genesis Mission". This also involves the government-led creation of AI platforms to test scientific hypotheses and automate experiments. Many AI researchers believe that labs full of non-human AI scientists could one day churn out everything from cancer cures to hitherto intractable proofs in physics. "This is one area where Chinese policymakers see eye-to-eye with the American AI labs," says Kyle Chan of the Brookings Institution, an American think-tank.

Both countries have good reasons to involve the state. AI scientists need to be trained on large sets of data such as weather patterns and the results of past experiments. Governments, through national laboratories, are often the biggest keepers of such data. They are also well-placed to provide researchers with access to advanced computing power.

But there are differences between automated labs in America and China. In America they have been showered with venture capital: about $1bn of it last year. Recipients have mainly been startups offering speculative, eye-catching research, such as in the creation of room-temperature superconductors. Dreaming big helps them raise money, says Charles Yang, formerly of Renaissance Philanthropy, a charity that helps donors fund scientific research. In China, firms with automated labs are usually less ambitious. They like research that can quickly generate profit.

China's use of AI in scientific research is often factory-like. XtalPi's labs "work 24/7 and the basic cost [once they are up and running] is electricity," says Shi Xuekun, one of the firm's managers. The company now serves 17 of the world's 20 largest pharmaceutical companies. China's biomedical industry is growing fast: last year about half of all drugs licensed globally, by value, were from China, according to Goldman Sachs, a bank—up from 21% in 2024. Smart labs are likely to account for a growing share. In March Eli Lilly secured rights to develop and sell potential drugs from Insilico Medicine, a Hong Kong-listed firm that uses automated labs. The deal could be worth up to $2.75bn.

Makers of industrial materials are also likely to benefit. China is a powerhouse in materials science, publishing four times as many papers in the field as America, according to *Nature*, a journal. In April researchers at City University of Hong Kong showed how an automated lab could design and test molecules for light-absorbing solar cells. Robots could make the cells just as well as humans, and with far more consistency in their output. At present the average human researcher in a lab might produce one or two new cell-prototypes daily. In a joint venture with JinkoSolar, an industry titan, XtalPi says that it is building an automated facility that will test 1,000 a day.

AI experts differ over the steps needed to create "artificial general intelligence" (AGI)—in essence, AI on steroids. Some of China's AI stars including Zhou Bowen, the boss of Shanghai AI Lab, a government-backed institute, believe models must first master sciences, and that automated labs will help them do so. Mr Shi hopes that's right: smarter models could predict the results of the experiments they design, he says. Forget humans. He may then need fewer robots, too. ■

Cross-strait relations

Solar cooling

BEIJING AND TAIPEI

China and Taiwan are fighting over Sun Yat-sen

ON BOTH SIDES of the Taiwan Strait, there are many roads, districts and schools named after the father of modern China: Sun Yat-sen, the country's first president after a republican revolution in 1911. Ten years ago, when President Xi Jinping urged "all Chinese who revere Mr Sun Yat-sen" to unite, the fight over his legacy was not so fierce. Now, ahead of the 160th anniversary of his birth on November 12th, cross-strait relations are far more tense. Sun has become a political lightning rod.

Across China, the government has been whipping up Sun mania. Exhibitions, concerts and seminars praise Sun's devotion to "revitalising" a poor and weak China. Mr Xi is expected to address a decennial Sun-themed pow-wow in Beijing. Of Sun's "Three Principles of the People" (nationalism, democracy and welfare), Mr Xi stresses the first. He invokes Sun's concept of national unity to promote his own aim of unifying Taiwan with the mainland. At the 150th anniversary of Sun's birthday, Mr Xi vowed to "continue to fight for the revitalisation of China".



Sunshine over Tiananmen Square

Taiwanese officials are pushing back. This year they warned the island's people not to attend China's commemorations. In October the government's Mainland Affairs Council said it would not allow serving or former officials to join the gathering in Beijing (in 2016 about 30 retired Taiwanese generals took part in the corresponding celebration of Sun's birthday). "What are Taiwanese officials afraid of?" *People's Daily*, the Chinese Communist Party's main mouthpiece, asked in a recent column. They are "terrified" that more Taiwanese will realise their "future development lies in a strong motherland", it fumed.

But there is another tension: inside Taiwan. The ruling Democratic Progressive Party is not nearly as pro-Sun as the opposition Kuomintang (KMT). Sun, after all, founded the KMT in 1912 (the party fled to Taiwan in 1949 after losing a civil war with the Communists). Earlier this year, China criticised Taiwan's plan to remove politicians, including Sun, from banknotes as an attempt to "erase Chinese national identity". There is sympathy for that view in the KMT. Much less so among young Taiwanese—while China's calls for "national reunification" have been growing louder, many have been leaving Sun's orbit.

Independent media

Rewriting the script

BEIJING

The government is getting twitchy about the growing popularity of podcasts

IN 2007 DAVID BROOKS, an American columnist, suggested that the period from adolescence to adulthood should be called the "odyssey years", alluding to the hazards of the voyage described in Homer's epic poem. This year the term's Chinese translation, *aodesai shiqi*, has turned viral online in China. Young people use it to describe the torments they face on life's journey including securing a job, finding a partner and getting on the housing ladder. State media, forever striving to sound upbeat, offer little guidance. Instead, growing numbers are turning to an independent and remarkably feisty forum: podcasts.

On his hit show, "Qingdao Kuaima", Fu Yu offers words of comfort. "The odyssey years can transform the trivial, trial-and-error nature of life into a heroic, epic-like trajectory of personal growth," the 34-year-old tells his half-million listeners. It was reassuring to hear him explain why young people are insecure, a fan commented.

After a slow start, China's podcast industry has boomed in recent years. It is still small compared with America's, but it is tapping into huge demand from angst-ridden youngsters. Enthusiasts call 2020 "year zero". That was when China's first big podcast app, Xiaoyuzhou, or "Little Universe", was launched. It made finding and hosting shows much easier. Now more than one in ten people in China, about 150m, tune into podcasts on Xiaoyuzhou, Himalaya and other Chinese apps, reckons the Chinese Podcast Association, an industry group. Users of Xiaoyuzhou listen for an average of 80 minutes per day; more than 80% are aged between 18 and 35.

Though few podcasts are state-run, they still have to heed censors' guidelines. In public, no one may question the Communist Party's rule. But podcasts are changing the media landscape by providing room for more open discussion. State media shun mention of the love lives of gay and lesbian people; social media sometimes scrub references to the topic. Podcasts offer more freedom. They don't have to use coded language or euphemisms, says Huang Yalan of Jinan University. The government is suspicious of feminism, but many hosts are proudly feminist and eagerly discuss women's rights.

The slow-burn style of many podcasts gives them protection. Fifteen-second videos on platforms such as Douyin (as TikTok is known in China) are more likely to run afoul of censors because they need to make a striking point to attract viewers. People with the patience to listen to an hour-long show are unlikely to report transgressions, says Yi Yang, who co-founded JustPod, China's largest podcast-production firm.

In 2025 the most listened-to genre on Xiaoyuzhou was personal growth. Liu Hongxing, a data analyst in Beijing, likes a podcast of this type called "Self-Evolution Theory", which is the app's third-most-popular. She says it has introduced her to the idea of living the way she wants to. Previously young people thought self-improvement was about becoming cleverer, says Mr Yang. Recently it has become more about meditating, receiving therapy and learning to understand that life's problems are not all one's own fault.

The longer length of podcasts creates room for reflection, whereas short videos tend to oversimplify and stoke anger, says Mr Fu, the podcaster. "Young people...are experiencing anxiety, confusion and pain," he says. But he refuses to join those who grumble about the privileges enjoyed by the older generation, who have spent much of their adulthood in years of staggering economic growth. Armed with a sociology PhD, he aims to help young people understand the forces behind their problems, such as finding a stable job or—for those who want to opt out of the rat race—deciding where to retreat.

Blake Chen, the 33-year-old founder of a media company in Guangzhou, a southern city, says his generation has never been able to find its place. He believes the gap between young people and their parents is vast—much larger than that between their parents and grandparents. So the young seek guidance from peers. A popular podcast made by Mr Chen's firm discusses topics such as how to manage inter-generational conflict and whether to marry. Some hit podcasts are hosted by older professionals. Qian Jing, a professor, invites young people to call in with their woes, exuding authority as she tells them how to cope with burnout and find meaning in life. Zhang Chun, a psychological counsellor, describes her own podcast, which is also in the top 50, as collective therapy.

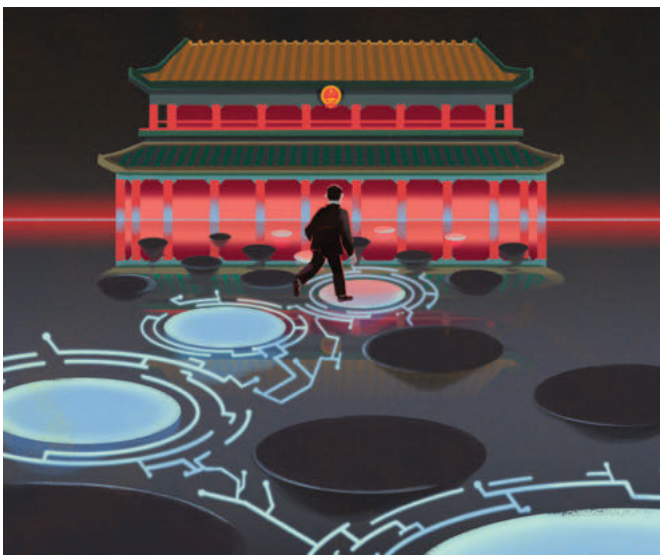
In a leafy district of eastern Beijing, Daxiao Café's free recording studio has hosted more than 200 podcasts about everything from psychology and women's health to running and books. Few presenters aim to make money (and few do): they simply enjoy airing views and connecting with others. But this may change—brands are eyeing opportunities. Giada, a luxury fashion firm, launched Xiaoyuzhou's top podcast called "Flower on the Rock", which features interviews with women. The host is Chen Luyu, often described as China's Oprah Winfrey.

As podcasts expand their reach, however, censors will pay more attention. Some apps already use artificial intelligence to screen content. In August regulators called for "red lines" to be drawn around podcast content and said it should uphold "mainstream values". One show sometimes posts short clips on Xiaoyuzhou saying an episode cannot be uploaded for "technical reasons"—meaning, presumably, problems with censors. But it tells listeners how to find the podcast elsewhere. ■



CHAGUAN
Government Sachs, Chinese-style

China Inc has become a breeding ground for up-and-coming leaders



In much of the world the age of 55 is when an official might start to contemplate life after work. In the rarefied air of China's elite politics, it is roughly when careers get interesting: quinquagenarians are the sprightly young things who are just beginning to break into the upper echelons. After a reshuffle that ended last week, eight of China's 31 provinces now have governors born in 1970 or later. None of these leaders, mind you, is so green as to have been born since 1973.

It is worth looking at them more closely. Not because any will run China soon (if ever, given Xi Jinping's grip), but because, as top performers of their cohort, they reveal traits that the Communist Party values in its leaders today. A common feature is extensive experience in state-owned companies.

Six of the eight governors from this youngish group rose through various appendages of China Inc. Liu Jie, now in Zhejiang province, worked for 16 years at a steel company. Guo Ningning, a rising star in Fujian, toiled for 24 years in state banks. Xie Weijiang, currently in Hunan, spent 23 years in the power sector. Of the three 1970s-born ministers in Beijing, two also worked in state-owned firms. Altogether, nearly three-quarters of the government's highest-ranking whippersnappers today are graduates of China Inc. It is starting to look like Government Sachs, with Chinese characteristics. One such characteristic, to be clear, is that the revolving door really only turns from state firms to the government, not the other way. And the corporate types still have to wait in line: the eight governors born in the 1970s all serve under provincial party secretaries born in the 1960s.

Rising through state firms is a change from how officials previously climbed the greasy pole. The classic path was to pay your local dues, starting in a county, becoming a small-town mayor and so on until reaching a provincial perch. Another was to get fast-tracked through the Communist Youth League. A third was the technocratic channel, especially for engineers: they might go from working on a dam to the industrial ministry and then to higher leadership. Each had drawbacks. The local route could be parochial for a global superpower. The youth league came to be seen as an arrogant faction—not least by Mr Xi as he consolidated his power. And pure engineers, most useful during China's intense phase of building, had seen their star wane in Beijing.

Enter what Li Cheng of the University of Hong Kong calls "technocrat 2.0". Over the past five years officials with specialised training have staged a comeback. Engineers are in the mix, but their degrees are wide-ranging, from life sciences to quantum computing. A large number have also studied economics and finance. And state-owned firms are the ultimate finishing school.

Some officials have always migrated from state businesses to politics. But in the past decade the door has opened more widely. In 2019 the party reworked its appointment system, creating a mechanism to shepherd more people, more quickly, from state companies into government. In 2022 Mr Li counted 86 officials born in the 1970s who had made it by then to vice-level provincial posts; 54% had worked in industrial companies or financial firms.

Why is the party turning to state executives? State firms—coddled, bloated and slow—are hardly models for the dynamic economy that the country's leaders want to build. Politically, however, there is much to recommend them. Truly national firms are not beholden to any one place. Their bosses have managed complex issues, and many know the world beyond China. Lu Dongliang, now governor of Shanxi, secured access to resources in Africa and South-East Asia as head of Chalco, the listed arm of the world's biggest aluminium producer. Zhuge Yujie, the new governor of Qinghai province, ran Shanghai's port, the world's busiest. Feng Chucheng of Hutong Research, a consultancy in Beijing, thinks the rise of state executives reflects the party's preference for leaders who, it hopes, can bring both technological self-reliance and economic resilience.

Dipping into state firms also broadens the talent pool for the party. It has gaping holes to fill. At an important plenary meeting last week, just 74% of the party's Central Committee (which began with 376 members) showed up in Beijing. That was the lowest attendance rate in the post-Mao half-century, confirming the extent of Mr Xi's purges. Some observers think these removals could come back to haunt Mr Xi by thinning out his bench for future appointments. In reality they are unlikely to be a constraint: China has no shortage of strivers eyeing powerful posts. It has even more now that state employees are also in the running.

Red and expert

Mr Xi's dominance can be stifling for the bureaucracy: loyalty to him is a prerequisite for advancement, which saps officials' initiative and derring-do. Yet the conveyor belt from state firms to high office shows that loyalty is a necessary, not sufficient, condition. To truly get ahead officials need to have demonstrated expertise and competence, not just ideological bona fides. In that sense the renewed emphasis on technical abilities is commendable.

But in another way it is a worrying portent for the economy. During China's decades of turbocharged growth, much of its energy derived from the retreat of the state sector and the rise of private companies. Under Mr Xi the tide has shifted. Private entrepreneurs are struggling while state firms, once again favoured by state banks and central planners, are emboldened. The systematic recruitment of state executives into government only adds to the momentum. Private companies must form party cells, but no private entrepreneur has ever become a full member of the Central Committee. For ambitious graduates entering the workforce, the signal is clear: throw your lot in with China Inc. ■

Middle East & Africa



Ebola

Still spreading

NAIROBI

New cases in Kenya and Nigeria show that the outbreak is unchecked

"SANITISE," SAYS the security guard outside a school in Nairobi, gesturing towards a dispenser. Since Kenya reported its first-ever case of the Ebola virus last month many venues in its capital have made visitors disinfect their hands and get their temperatures checked. Officials tell people to avoid large gatherings. "I want to appeal to Kenyans going forward that we can also avoid handshakes or hugging," said Patrick Amoth, the director-general at the health ministry. "We can just wave."

The precautions reflect growing concern about the spread of an Ebola outbreak that emerged in the east of the Democratic Republic of Congo this year. The Kenyan case involved a businessman who had been living in eastern Congo but returned home to Kenya via Uganda on October 3rd. He died two days later. Kenya has since reported eight more cases (and another death), all of them contacts of the first. On October 20th another of Africa's largest economies, Nigeria, reported its first case of Ebola in a decade. A woman who had travelled to Uganda tested positive in Abuja, Nigeria's capital.

Since the outbreak was officially declared in May there have been more than 10,500 confirmed cases of the gruesome and terrifying virus. Almost half (5,130) have so far resulted in death, with all but four of the fatalities in eastern Congo. Fewer than a quarter of new cases there occur in patients who are known contacts of previous cases, says Jean Kaseya, the director of Africa CDC, a public-health body. So long as authorities are in the dark about the virus, the epidemic will keep growing.

Ebola spreads via direct contact with an infected person's bodily fluids. Suspected patients must be tested and positive cases isolated. Direct contacts of patients should be identified and tested, too. Health workers need protective equipment to avoid falling sick themselves.

Attempting this in eastern Congo can be like trying to give someone a haircut with toy scissors in a house on fire. Health workers are few in number and poorly paid. Testing kits and isolation facilities are scarce. Bad roads make it difficult to reach patients and bring in supplies; so do the scores of militias that terrorise the region.

The long-suffering population has a deep lack of trust in the Congolese state. Many eastern Congolese believe Ebola is a fiction, concocted by venal bigwigs to embezzle donor funds. On October 24th a machete-wielding mob in eastern Congo killed a nurse whom they accused of spreading Ebola by contaminating water supplies. In September a politician from the ruling party was beaten to death after he went on the radio to urge people to take precautions against Ebola.

The worst Ebola outbreak on record happened between 2014 and 2016 in west Africa, where the UN's World Health Organisation recorded at least 28,600 cases

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and 11,325 deaths. Haphazard surveillance means it is hard to compare the current epidemic with the one that ended a decade ago. But this outbreak, which involves a rarer strain of Ebola known as Bundibugyo, seems to be spreading and killing more quickly. Mr Kaseya fears that on current trends it "will be the worst Ebola outbreak ever" within another year.

Given the scale of the outbreak in Congo, which has more shared borders than anywhere else in Africa, it is unsurprising that Ebola has been found in nearby countries. Though Uganda officially closed its border with Congo in May, it is a porous frontier. Kenya's first Ebola patient crossed into Uganda from Congo last month before flying to Nairobi. He subsequently slipped through screening at the airport in Kenya undetected, despite showing symptoms of Ebola on his journey.

The Nigerian case is more troubling. Officials in Uganda claimed at first that the woman had visited eastern Congo. This seems false. She is thought to have been at Uganda's main airport on the same day as Kenya's first patient. But there is no evidence yet that they came into contact with one another. All of which raises questions about whether, despite Uganda's denials, there are active cases in the country. "My biggest concern is that the source of the Nigerian patient's infection remains unexplained," says Ahmed Kalebi, a Kenyan pathologist.

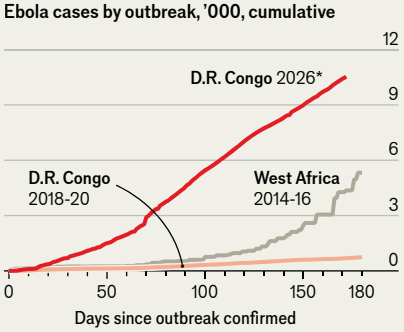
Countries such as Kenya, Nigeria and Uganda have relatively strong health systems. They should be able to stop the virus from exploding as it has in Congo.

But there are still three concerns. The first is that Congo is a large country—with an ongoing war in the east involving M23, a Rwandan-backed force. There is a lot of room for further spread. The second is that Ebola could take off in the most fragile of Congo's bordering states: Burundi, South Sudan and the Central African Republic. The third worry is that the longer the outbreak persists, the greater the secondary effects. In the west African outbreak thousands more babies and mothers died than would have otherwise been the case because of disruptions to health services. Doctors working in Congo say fewer children are being immunised and malaria is on the rise.

The good news is that there are efforts to find an effective vaccine against Bundibugyo. On October 23rd the first participants in clinical trials in eastern Congo received shots of Ervebo, a vaccine that protects against a more common strain. Scientists are also working on a bespoke jab. But it will be months, at best, before a proven vaccine is produced. For many people that will be far too late. ■

Epidemic proportions

Ebola cases by outbreak, '000, cumulative



*To November 4th
Sources: CDC; DRC National Institute of Public Health; WHO

Cyber-security

Digital ghosts

ABUJA

Hackers are targeting digital identities

EARLY THIS year hackers targeted Senegal's agency for issuing passports and identity cards. The attackers claim to have stolen biometric information and immigration records. The authorities in the west African country told citizens that their data were safe. But some of the loot seemingly ended up on the dark web. It was not the only recent attack. In May criminals targeted the treasury. Last year hackers breached the tax authority and demanded a ransom of $10m.

Senegal is not alone. As African governments digitise services they are struggling to protect citizens' data. Incidents such as the recent discovery of a vulnerability in PHP, a programming language widely used by governments, show that the problem is not limited to Africa. But the continent has fewer resources to bolster its cyber-security. As artificial intelligence expands attackers' toolkits, African governments urgently need to find ways to secure their systems.

Of the 800m people globally who have no legal proof of who they are, more than half live in sub-Saharan Africa. Without a formal identity many find it hard to join welfare schemes, send children to school, own land, open bank accounts or activate SIM cards. Several countries have embraced digital ID systems to address this problem. In Uganda, for example, almost 80% of people now have a digital ID.

Yet digital states create more access points for hackers. And their defences suffer from a lack of skills. Mastercard, a payments firm, reckons that Africa has 200,000 unfilled cyber-security jobs, equivalent to about a quarter of the current workforce. Banking and telecommunications firms snap up scarce experts. Money is another problem. According to a survey last year by Interpol, nearly all African members cited "resource constraints" as an obstacle to improving cyber-security.

Some countries are trying to improve their defences. In Ghana firms must report major breaches to the Cyber Security Authority within a day of spotting them or risk fines or the imprisonment of bosses. Kenya has an incident-response centre that regularly publishes reports on cyber threats. But other countries are lagging behind. Only 16 on the continent have ratified the African Union's Malabo Convention, which is supposed to encourage pan-African digital standards.

In the short term governments are trying to encourage citizens to be more careful. Ghana's "Be cyber smart" campaign urges people to protect their passwords, avoid dodgy links and not share private information. Rosemary Kisembo, who runs Uganda's identity register, says that "people share more about themselves on Facebook" than with the government, which she interprets as a sign of Ugandans' lax approach to data security.

The gaps in funding and skills are difficult to close. But governments could help by collaborating. Sharing intelligence about attacks could help them anticipate vulnerabilities. Weak regional institutions—and national pride—have hampered efforts.

Some countries even deny there is a problem. Nigeria's identity-management body, for example, still claims that its database has not been compromised, even though journalists have found national-identification numbers for sale on the black market since 2024. It is hard to solve the problem unless it is identified first. ■

The Gulf and Iran (1)

Nervous neighbours

MANAMA

America's allies do not want more fighting, but may not get a say

THE DIPLOMATS and military officers gathered last week for the Manama Dialogue, an annual talkfest in Bahrain's capital, all had the same questions—and no answers. As they nibbled puff pastry at the Ritz-Carlton, their conversations invariably came back to Donald Trump's threats to resume his war with Iran after the midterm elections. Would he do it, and when? Might the Iranians strike first?

There were almost no Americans on hand to ask: the Trump administration sent only a pair of mid-ranking officials,

and both were tight-lipped. To some Gulf officials, the unusually small delegation seemed like a snub. "They could at least try to reassure us," grumbled one.

Gulf states are reluctant to offer such blunt criticism in public, lest they antagonise the president. But they are unanimous that they do not want another round of fighting—unlike in February, when some were equivocal. This time even the United Arab Emirates (UAE), which has taken the most hawkish stance towards Iran, is urging Mr Trump not to strike. "We in the UAE don't believe that a military solution is viable," says Anwar Gargash, a diplomatic adviser to the Emirati president.

Behind the scenes, diplomats are scrambling to find a deal. Envoys from Qatar shuttling back and forth to Tehran have encountered two big obstacles, however. One is Mr Trump's seeming insistence that a new agreement include at least some concessions related to Iran's nuclear programme. The Iranians refuse to discuss it. Instead they are gloating at Mr Trump's drubbing in the midterms.

The other is how to sequence an agreement. America and Iran both want to avoid a repeat of the memorandum of understanding, the vague agreement they signed in June and which collapsed within weeks. Each side wants the other to move first. Iran insists that America start by lifting its naval blockade and removing a range of sanctions. Only then will it reopen the Strait of Hormuz. The Americans fear Iran would simply rush to export a glut of stored oil, easing some pressure on its economy, then fail to take reciprocal steps.

Participants in Manama were split on how soon America might act if talks fail to yield a deal. Some suggested Mr Trump may wait several weeks. America is still building up its forces. It has also announced talks between Russia and Ukraine in Abu Dhabi on November 10th, a curious thing to do if it were planning to imminently restart a war that would make Abu Dhabi a target.

Citizens and expats alike are nervous: the Gulf has not felt this tense since April, when Mr Trump was threatening to wipe out Iranian civilisation. Some residents are stocking up on food, water and cash. If the war resumes, "you might start to question, why do I stay here?" says Laith Alajlouni of the International Institute for Strategic Studies, a British think-tank.

Gulf states would be less able to defend themselves, having depleted their air-defence interceptors (see next article). They would also have smaller fiscal buffers to cushion the economic blow. Saudi Arabia had expected to run a deficit of 3.3% of GDP in 2026; it hit that mark by July and may now exceed 6%. Five of the six Gulf economies are expected to shrink this year. Three will see a double-digit contraction.

The IMF thinks the Gulf could bounce back quickly next year: its latest forecast pencils in 9.1% growth. But that depends on a lasting peace. Some big events are already being scaled back or postponed. The Asian Cup, a football tournament, was meant to start in Saudi Arabia in January. It has been booted to December 2027.

The region will also have fewer escape routes than it did last time. Saudi Arabia was relatively safe earlier this year: Iran attacked it less fiercely than most neighbouring countries. That let Bahrain's national carrier shift operations to the kingdom. Planes landed in nearby Dammam, and buses carried passengers the rest of the way. Now, though, Dammam's airport is being targeted by the Houthis, an Iran-backed militia in Yemen. Two people were killed there in a drone attack last month.

Since the midterm elections Mr Trump has sent mixed messages. He told one journalist that he might order a "heavy hit" and another that he was in no rush to do so. Rulers throughout the Gulf would like to believe the second one—but February taught them to beware. ■

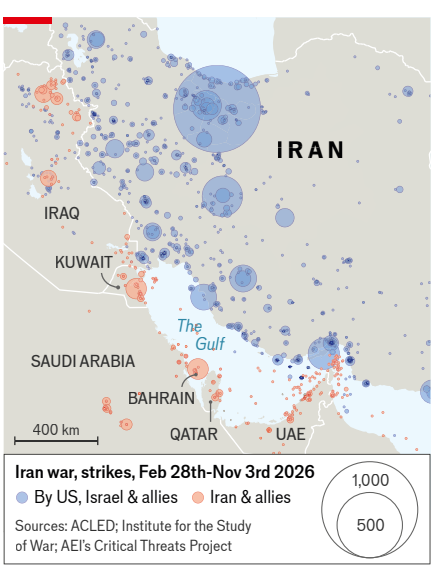
The Gulf and Iran (2)

Out of rounds

MANAMA

Air defences are dangerously depleted

DRIVE ALONG Bahrain's King Khalifa causeway into Manama, the capital, and the war damage to America's main naval hub in the Gulf is apparent: destroyed communication antennae on one side; blackened buildings on the other. Gashes in high-rise buildings are boarded up.



Iran fired more than 700 missiles and attack drones at Bahrain at the height of the American-Israeli war on Iran between February 28th and April 8th. Most were intercepted but some inflicted real damage. Iran hit not only military targets but also a desalination plant, refineries and an aluminium factory. A similar trauma was felt elsewhere in the Gulf (see map).

Now a second round of the war looms. To the east, the *USS Theodore Roosevelt* carrier strike group is sailing to join two others in the Arabian Sea. To the west, an American airlift is ferrying military equipment to bases in Israel and Jordan, including more Patriot air-defence batteries. American strikes against Iranian anti-aircraft missiles on Qeshm island this week were seemingly provoked by threats to American drones and jets, but may also serve to prepare the battlefield.

Gulf states fear that President Donald Trump may lash out abroad after being wounded in the midterm elections at home (see Briefing). They also expect to be the target of Iran's wrath, as it threatens to respond "without geographical limitations".

Stocks of Western missile interceptors are severely depleted worldwide. Ukrainian and other systems may help Gulf states reduce the threat from drones, though these are improving fast. Israeli intelligence officials, meanwhile, express surprise at the speed of Iran's build-up of missile stocks since the ceasefire.

After weeks of air strikes during Israel's and America's Operation Epic Fury, many question what can be achieved by more bombing—"a little Epic Fury", as Mr Trump called it. The pair probably struck all the easy targets and the main nuclear sites at Fordow, Natanz and Isfahan were previously bombed in 2025, burying some 400kg of highly enriched uranium.

What remains are mostly hard-to-reach places, such as underground "missile cities" that Iran's Islamic Revolutionary Guard Corps has been showing off on television. Entrances to such facilities were bombed in the first round but many seem to have been excavated since. American stocks of the biggest bunker-buster bombs appear to be running low.

Much attention focuses on mysterious work at "Pickaxe Mountain", possibly another nuclear facility. It is buried so deep in granite that it may be beyond the reach of conventional bombs (raising unsubstantiated claims that Mr Trump might use a nuclear weapon against it). Officials in the United Arab Emirates (UAE) say they are "braced for the worst", and vow to defend their country.

The UAE endured the heaviest Iranian fire in the war, facing a total of more than 2,800 Iranian missiles and drones, perhaps because of its close ties with Israel. But it also boasts the region's most powerful air

defences with overlapping layers of interceptors, supplemented by guns on attack helicopters, home-made electronic-warfare gear and perhaps Israeli laser weapons. Saudi Arabia will find it harder to defend its territory, given its larger size and sprawling infrastructure. It also faces threats from both Iran and its Yemeni ally, the Houthi militia.

As America pulls forces and equipment farther from Iran—mainly to Israel and Jordan—the future of its bases in the Gulf is open to question. Increasingly, Gulf leaders are looking for protection elsewhere. Saudi Arabia, for instance, has signed the Mecca pact with Pakistan and Turkey, which have deployed or are thinking of sending forces. What they would do in an actual war remains to be seen.

Deeper integration among Gulf countries would help—not least in setting up joint air defences. But ever-bickering Gulf states have mainly sought national or bilateral security deals rather than collective ones. Gulf states' ability to stand together against the Iran challenge, admit Emirati officials, "has proven hollow". ■

Yemen

Extreme DIY

The Houthis are outgrowing their dependence on Iran

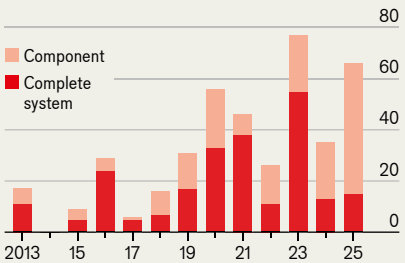
ALI AL-WAZIR is no ordinary businessman. The 47-year-old Yemeni, who goes by the alias "Prince", plies his trade in Guangzhou in southern China, far from Yemen. But that has not stopped him playing a part in his country's long civil war. In 2024 he was accused of supplying the Houthis, the Shia militia that rules much of Yemen, with materials to build weapons. America put him under sanction and blacklisted several other Houthi traders for doing the same.

Once dismissed as ragtag insurgents, the Houthis are now one of the Middle East's most dangerous militias. Since they took control of northern Yemen more than a decade ago, they have built a fearsome arsenal of drones and missiles. Last month they hit Saudi Arabia, which backs Yemen's internationally recognised government, with one strike after another.

The Houthis first got their hands on serious kit after they seized Sana'a, the capital, in 2014. A short-lived alliance with Ali Abdullah Saleh, a former president, and his loyalists in the army gave them access to Soviet-style Scud and Tochka missiles. Meanwhile Iran, cultivating the Houthis as part of its "axis of resistance", upped its support. When Saudi forces intervened in Yemen in 2015, Iran supplied the rebels with ballistic missiles, drones and other heavy weapons. Iranian advisers and operatives from Hizbullah, a Lebanese militia, taught them how to use them.

Artisanal arms

Weapons captured during land and sea interdictions of shipments bound for the Houthis



Source: "From smugglers to supply chains: how Yemen's Houthi movement became a global threat", by P. Salisbury et al., Century International, Feb 2026

But as the Houthis have become entrenched, they have developed a war machine of their own. On September 21st Abdul-Malik al-Houthi, their leader, boasted that they build weapons "from scratch". "The speed and ambition of the Houthis' military production has surprised a lot of observers," says Fabian Hinz of Conflict Armaments Research (CAR), which tracks the illicit arms trade. Most Houthi weapons are based on Iranian designs but some, such as medium-range drones, can be built almost entirely without Iranian parts (see chart). China has overtaken Iran as the biggest source of required components.

Many are "dual-use", having civilian as well as military applications. Houthi smugglers sometimes try to fox Yemeni authorities by giving drone kits innocuous labels like "industrial equipment". In October CAR suggested that parts for an Iranian-designed ballistic missile, seized in the government-held port of Aden, were made-to-order by a Chinese company. Saudi officials have complained to China, plainly to little avail.

Breaking this supply chain will be hard. A decade-long UN arms embargo has been toothless. Weapons go overland through the United Arab Emirates and Oman or are smuggled through Djibouti and Somalia. Tim Lenderking, America's envoy for Yemen from 2021-25, says the Houthis move contraband "from big boats, onto small boats, onto tiny boats, onto pack animals and onto people's backs". Ammunition is hidden in lorries with fruit and vegetables. Yemen's government—a patchwork of squabbling groups—struggles to co-ordinate enforcement.

Making their own arms helps the Houthis keep fighting when supplies from Iran are disrupted. But the Islamic Republic also benefits from that arrangement. Under its doctrine of mosaic defence, the regime has tried to make different parts of its forces capable of fighting independently. A similar idea underpins its axis of resistance. "Iran has made efforts to enable its allies to produce locally," says Mr Hinz.

While the Houthis still get plenty of weapons and intelligence from Iran, they are outgrowing their dependence on the regime. That may explain why the Houthis are unbowed even as their patron has been weakened by American and Israeli attacks. The rebels view themselves as the real rulers of Yemen, not a mere proxy. They have sought support from Russia and are fostering links to armed groups in Africa. The Houthis want to be a "little Iran in their own little neighbourhood", says Barbara Leaf, an American former diplomat. Don't underestimate that ambition. ■



No such thing as a free launch

Europe



Ukraine's population crunch

A smaller future

KHARKIV AND KYIV

Between emigration and low birth rates, Ukraine risks demographic collapse

ALYONA'S WATERS broke in her hometown of Kramatorsk, 10km from the front line. The city has no functioning maternity ward, so an ambulance took her to Sloviansk, a short drive under a canopy of anti-drone netting. Complications then forced her to make an hours-long trip to Kharkiv, where on October 8th she gave birth to a son. That hospital had its dangers too: during air raids mothers and newborns are rushed to a bunker. But it was safer than Kramatorsk, where on the same day a Russian bomb killed 30 people.

Alyona is one of the few. Births in Ukraine are falling, in part because there are fewer adults. Since Russia's full-scale invasion in 2022 the population inside government-controlled territory has fallen from about 37m to 27m-28m (see chart, next page). Around 3m-5m Ukrainians now live under Russian occupation, and millions more have emigrated. Ukraine's president, Volodymyr Zelensky, puts combat deaths at over 50,000; an independent estimate is closer to 150,000. Thousands of civilians have been killed, and Russia has deported over 20,000 children to Russify them.

Wartime, moreover, is not good for starting families. The fertility rate has dropped from 1.2 children per woman in 2020 to 0.8-0.9, lower than any big country but South Korea. The replacement rate, needed to keep the population stable, is 2.1. In the first half of 2026 deaths outnumbered births by more than three to one.

Ukraine's birth rate has lagged behind the mortality rate every year since independence in 1991, when the country (including Crimea and Donbas) had about 52m inhabitants. The war has turned that gap into a chasm. Russia's population is getting smaller too, but Ukraine's predicament is far worse. For a country under attack by its imperial neighbour, a demographic collapse is an existential worry.

The refugee exodus accounts for the largest decline. Over 5m Ukrainians live abroad, mostly in Europe. Russia's redoubled drone and missile attacks this winter could drive thousands more to leave. Worse, fewer refugees now say they plan to come home. The share has fallen from 74% in late 2022 to 43%, according to the Centre for Economic Strategy (CES) in Kyiv. Most refugees are children and women under 44, compounding the damage. "We are also losing our future," says Ella Libanova, director of the Mykhaylo Ptoukha Institute for Demography in Kyiv.

At home, mobilisation, combat casualties and wartime uncertainty are shrinking the pool of prospective fathers and mothers. Most Ukrainian couples are putting off childbearing, says Svetlana Aksyonova, another demographer, adding: "The longer you postpone having children, the greater the risk the child will never be born."

Ukraine's exemption of men under 25 from conscription was intended to cushion the demographic decline. But hundreds of ▸▸

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thousands of young men have gone abroad; since August 2025 Ukraine has allowed men under 23 to do so. Many who remain have no intention of starting a family.

Recent projections see at best a slower decline—assuming the war ends within a few years. The generation born in the 1990s and 2000s is Ukraine's smallest in modern history, so it cannot expect a post-war "baby boom", says Olga Dukhnich of the Frontier Institute, a Ukrainian think-tank. The government's demographic strategy, adopted two years ago, envisaged a slight population rebound by 2030. But it also envisaged peace in 2026 and returning to 1991 borders, which no longer looks possible.

A more realistic scenario from the United Nations projects an annual decline of 0.7-0.9% for the next couple of decades. That would leave Ukraine with about 25m people in 2040, assuming no recovery of occupied territory. If war stretches into the 2030s it would exacerbate the crisis, leading millions born in the 1990s to forgo having kids altogether. The fertility rate could go as low as 0.6 children per woman, says Ms Aksyonova, with most births in the country's safer west. Frontline areas would be on a path towards depopulation.

To slow the decline, Ukraine is offering incentives. A new law pays parents 50,000 hryvnia ($1,100) per newborn, plus 7,000 hryvnia per month for the first year. Other programmes help pay for child care. Since 2024 Ukraine has covered infertility treatment for women. Soldiers can freeze their eggs or sperm free of charge. Yet subsidies have a limited effect on birth rates even in peacetime, experts say, let alone in war. "How can you encourage having children in such conditions?" asks Ms Libanova.

Russia is celebrating Ukraine's decline. "This is not just a crisis," Dmitry Medvedev, deputy chairman of Russia's Security Council, said in May, "but evidence of the biological death of a nation." Anton Kobyakov, an adviser to Vladimir Putin, advocates settling Russians in Ukraine as Catherine the Great did in the 18th century. "All that remains [for Ukraine] is extinction, and only Russia can save the country," he said in September. That is nonsense; Ukraine can survive as a smaller country. But such remarks suggest Russia is starting to view depopulation as a war objective.

When the war finally ends, immigration could help. Ukraine's economy is already starved of workers. The country faces a labour shortage of 2.5m people, says the European Bank for Reconstruction and Development. Only about 9,500 migrant workers are registered in Ukraine, and companies keen to hire foreigners complain of bureaucratic obstacles. But the government prefers to seek new workers at home, among women, war veterans and displaced persons.

That is difficult. Veterans struggle to find work, and though wartime data are unavailable, experts think female labour participation has not risen much. Limited child care appears to be the main barrier. Still, immigration is seen as a last resort. Ukraine would open up to foreign workers "only after we fully explore the potential" of Ukrainians at home and abroad, says Dariia Marchak, the deputy economy minister. But there will be too few of them to rebuild the country after the war, says Hlib Vyshlinsky of CES. "I'm a hundred percent sure Ukraine will need foreign workers."

Some Ukrainians are defying the obstacles to having children. Daria, strolling with her boyfriend in a park in central Kharkiv, says she has just moved to the city from Odessa to start a family. (Her boyfriend looks both touched and surprised to hear it.) Others are going to greater lengths. Liudmyla, a soldier in her late 30s near Dnipro, in eastern Ukraine, says she started freezing her eggs last year. Before the war she dreamed of two children, but now she wants three. "One for the dead," she says, paraphrasing Taras Shevchenko, Ukraine's national poet, "one for the living, and one for the yet to be born." ■



Berlin's leftists

Seizing the means of habitation

BERLIN

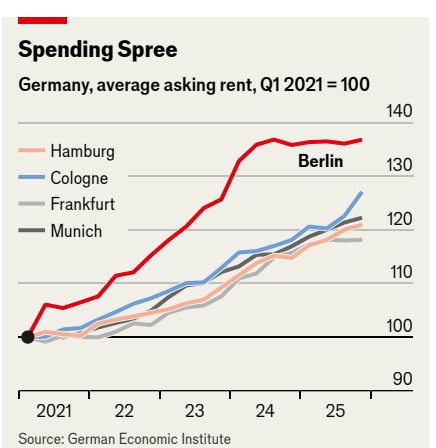
Die Linke's radical plan to expropriate corporate-owned flats

FORMING COALITIONS in Germany is usually a pedestrian affair. Not in Berlin. On September 20th Die Linke, a populist-left outfit, won an election in the capital, one of Germany's three city-states. But its attempt to build a leftist coalition with the Greens and Social Democrats has been hindered by scandal and strife. Conservatives say Die Linke is riddled with antisemites and pals around with terrorist-coddlers. Hardliners in the party rage against their leaders for conceding to Zionist principles. Senior Social Democrats are urging their comrades in Berlin to pull the plug.

Undeterred, the three parties began negotiating a coalition deal on November 2nd. Its centrepiece will be one of the most radical expropriation plans ever proposed in western Europe: Die Linke's signature policy to "socialise", in the preferred lingo, the rental properties of big corporate landlords. "Housing is a human right. And we want to take that right out of the hands of speculators," said Elif Eralp, Die Linke's mayoral candidate, before the election.

The idea dates to a referendum held in 2021, after years of surging rents in the once-cheap capital (see chart). Only around 15% of Berliners own their homes, and a clear majority backed a plan to seize properties of corporations that own over 3,000 units, with compensation. The city government kicked it into the long grass. But the idea persisted, and last year the campaigners behind the 2021 initiative wrote a draft bill that could inspire the law to come. Die Linke placed the idea at the heart of its election campaign.

The three notional governing partners have agreed to lift the threshold at which socialisation kicks in to 10,000 units. That means roughly 160,000, or 15%, of Berlin's private rental homes would be taken into public hands (nearly 130,000 of these belong to Vonovia, Europe's biggest corporate landlord). Compensation would be capped at €16bn ($18bn). Rental payments in the expropriated flats could service the



loans the city or its housing companies incur to finance the compensation. Details will be worked out in coalition talks.

The proposal is all the more ambitious for resting on a never-used article in the German constitution which says "Land, natural resources and means of production...may be transferred to public ownership or other forms of public enterprise." For decades this clause was ignored as a relic from a time when the young federal republic had not yet committed to market principles. But then the expropriation campaigners latched on to it.

Most economists are deeply sceptical about the proposal. It would do nothing to inspire new construction, though the parties have separately pledged to build 100,000 homes. It would also protect existing tenants, many of whom are not in need, while doing little for newcomers or outsiders. Indeed it is likely to have a chilling effect on construction in the city, says Michael Voigtländer at the German Economic Institute in Cologne.

And investors are horrified. German ministers have been peppered with questions from foreign firms and politicians worried that investment is no longer safe in Germany. Friedrich Merz, the conservative chancellor, has promised to pass a national law to forestall Berlin's scheme: a striking intervention in state affairs by the federal government.

Opinions differ fiercely on whether that is possible. Mr Merz's proposal "is so obviously unlawful that it might not even need to be challenged in court", says Niklas Schenker, a Die Linke member of the Berlin parliament and one of the brains behind the initiative. But opponents say a well-crafted law to protect private investments is perfectly plausible—and that the expropriation proposal itself violates the well-tested legal principle of proportionality. Germany's constitutional court, in Karlsruhe, is likely to have the final say.

A second hurdle for the plan is working out how to compensate landlords. Mr Voigtländer puts the full market value at around €25bn. But German law does not mandate compensation at full market value, says Isabel Feichtner, a legal scholar at the University of Würzburg. The draft bill suggested that Vonovia and the others could expect to get 40-60% of market value; its proponents say landlords should not profit from land-value appreciation. But Karlsruhe may take a different view.

The court could also frown on the period of repayment: the draft bill proposed 100-year bonds. Berlin cannot afford to further burden its state budget, and borrowing costs are rising. Put it all together, and it is hard to imagine Berlin's plan bearing fruit. That will not stop it from consuming political energy, deterring investment and harming Germany's reputation. ■

Rule of law in Poland

Quagmire

WARSAW

Populists and liberals fight an endless scrap over the Constitutional Tribunal

THE SCENE outside Poland's Constitutional Tribunal on November 3rd, as the court met to approve its draft budget, was unusually rambunctious. Hundreds of right-wing protesters gathered around a stage flanked by Polish flags and a large picture of the Virgin Mary. Speakers hurled abuse at the European Union; at Donald Tusk, Poland's prime minister; and at the "usurpers" of the court—that is, the judges, appointed by parliament, whom Mr Tusk had helped to take their seats, despite obstruction by his populist-right opponents.

The latest episode in the sorry saga of Poland's top court began on October 30th, when the judges marched into the court to assume their duties while police sealed the area. Approved by parliament between March and September, they had until then been blocked by the court's president, Bogdan Swieczkowski, and Poland's president, Karol Nawrocki, both aligned with the opposition Law and Justice (PiS) party. Mr Nawrocki is by law required to attend justices' swearing-in ceremonies, but he had refused, giving Mr Swieczkowski an excuse to claim they were not legitimate.

One of the new justices, Anna Korwin-Piotrowska, promptly announced she was suspending Mr Swieczkowski for a month and taking his place. Protesters and opposition leaders gathered outside, calling it a coup. Mr Nawrocki cut short a trip to Senegal in mid-air, flew back to Warsaw and forced his way into the building. By November 3rd the situation had calmed and the budget meeting went ahead, but judges named by the previous PiS-led government boycotted it.



Out for a constitutional

The struggle over the court goes back to 2015, when Mr Nawrocki's predecessor, also a PiS ally, refused to swear in three judges chosen by the outgoing parliament. The new PiS government then packed the court with its own partisans. That led to years of wrangling in European courts, and the EU blocked billions of euros in funds. Since Mr Tusk and his Civic Coalition (KO) returned to power in 2023, parliament has picked eight judges to fill vacancies. Mr Nawrocki refuses to swear in five of them.

Four former presidents of the tribunal have defended Mr Tusk's move. The European Commission, agreeing with opinions issued by European legal bodies, said the right to appoint the judges lay with parliament. But Ms Korwin-Piotrowska's case for suspending the court's president is shakier. Marcin Wiacek, a former national ombudsman, says he has "serious doubts" about its legality: it creates "a weapon any future government could wield".

Officials say there was no other way to break the deadlock. "Swieczkowski's strategy was to hold the court hostage," says Dariusz Mazur, the deputy justice minister. On October 31st Mr Tusk said that there can be "no compromise" in restoring the rule of law. But the suspensions are sure to be challenged in Polish courts, and could then reach European ones.

After a decade of lawfare, the court's credibility is shot. In late 2025 the EU's top court ruled that it no longer met the requirements of an independent tribunal. Fought over by two camps, one headed by the president, the other by the prime minister, the court has become a political trophy. The tug-of-war will probably continue until parliamentary elections, scheduled next year. In trying to undo the knot entangling the court, Mr Tusk has tightened it further. Mr Nawrocki, meanwhile, can simply play for time. PiS may return to power in 2027 in a coalition with even more extreme populist parties, and try to oust the new justices.

Many Poles care little for either side's legal arguments, and ask only for a functional court. They are helpless, frustrated bystanders. Some analysts and legal scholars believe that only a complete "reset" can salvage the tribunal. That would require a political compromise between PiS and KO, as well as constitutional changes.

Yet the two sides are less interested in fixing the court than in controlling it and scoring points ahead of elections. "Each one is out to consolidate and mobilise its core supporters," says Anna Materska-Sosnowska, a political scientist. "Neither is prepared to back down." ■



Unhappy France

Fermenting discontent

BLAYE AND SAINT-SAVIN

The quiet malaise of the countryside

ACROSS THE Gironde estuary from the chateaux of Haut-Médoc lie the less fashionable farmlands of the region around Bordeaux. They have been triply battered of late: by extreme heat, higher energy costs and a global decline in the drinking of everyday wine. Many farmers have given up. Blackened piles of vines lie in fields ready to be burned. This year 1,095 winegrowers in the Gironde have ripped out 7,825 hectares (19,336 acres) of vines. Over a quarter of the region's vineyards have been destroyed since 2023.

In the city of Bordeaux, rioters have set barricades ablaze in recent weeks. But here in the countryside France's discontent is quieter and less visible. In the town of Blaye, pupils blockaded their secondary school, but it passed off calmly; on a weekday after school teenagers can be found playing cards at pavement tables in the Bar des Sports. The feeling is distress rather than rage. Locals are sceptical about the future and worried about the cost of filling the tank in a place where a car is essential, and think the government is doing nothing to help. "I'm sad, not angry," says a vineyard owner, who is packing it in after 30 years due to the collapse of exports to China and of wine-drinking in France, adding: "We have a president who doesn't listen."

For decades rural Gironde tilted to the left, while the centre-right ruled in the prosperous city of Bordeaux. For 20 years the parliamentary constituency around Blaye was held by a Socialist, before swinging to the centrist party of President Emmanuel Macron in 2017. At parliamentary elections in 2022, however, the seat was captured by Edwige Diaz of Marine Le Pen's populist-right National Rally (RN). Two years later she was re-elected in the first round, with 53% of the vote. In September the 39-year-old Ms Diaz, whose grandfather was a Spanish Communist, was elected to the Senate.

"We are permanently campaigning here," says Ms Diaz. "All year round we are at the markets, people see us, they know us." She has driven herself to a small village for the retirement party of a local gendarme. At the wine bar opposite the church she meticulously greets customers one by one. The RN's support now comes not only from farm labourers and the working class but from shopkeepers, pharmacists and other traders. At legislative elections in 2024 the party was the most popular countrywide among working-class voters (57% of whom backed it) as well as white-collar employees (44%). "The left has become more radical and defends Gaza more than farmers," declares Ms Diaz. "People also know they have nothing left to hope for from Emmanuel Macron or his *dauphins*. Next to that, Marine Le Pen's discourse is serious and reassuring."

Once a champion of the politics of indignation, Ms Le Pen has begun to leave the fury to the populist-left Jean-Luc Mélenchon and his Unsubmissive France (LFI) party. These days the RN leader is making a pitch, however improbably, as the candidate of comfort and promise. At her big campaign speech in the city of Orléans on October 25th, she dressed in a powder-pink jacket and spoke about "beauty" and "hope".

A local focus on improving daily life has enabled the RN to put down roots in unlikely places. The village of Saint-Savin has seen better days; two of its tattoo parlours are boarded up. For 12 years the village was run by the left, but in March for the first time voters elected an RN mayor, Frédérique Joint. She has turned the street lighting back on at night. In October the village held a three-day *fête*, complete with a torchlit procession from the church, soapbox-racing through the streets, a DJ and *la country* dancing. "With the loss of the vineyards, we're losing our *terroir*, our savoir-faire, our traditions," says Ms Joint. Local budgets are squeezed by higher prices in the supermarket and at the pump. "People have a need to get together at festive feel-good events."

There is plenty of red-meat identity politics at play, too, in places like this, with local candidates appealing to Christianity and the preservation of tradition. But the populists' turn towards mundane governance issues offers some hope in hard times, and is part of a broader normalisation. "We are witnessing a major shift," wrote Luc Rouban, a political scientist at Sciences Po university, in a recent research note, "with LFI taking the RN's place on the fringes...LFI frightens moderate left-wing voters far more than the RN frightens moderate right-wing voters."

Glass half empty

In some ways France's anxious, bitter mood is perplexing. The country provides its citizens with an unusually protective cradle-to-grave welfare state. Public social spending, at 32% of GDP, is higher than in any other European Union country but Finland. The French on average retire earlier and live longer as pensioners than most of their neighbours.

Yet something has broken in voters' trust in government and in their faith in the social contract. Confidence in mainstream politics is collapsing. Just 16% of all respondents told a poll in October that Mr Macron is a good president, a record low since he was elected in 2017. In another, 81% held the government responsible for the recent violence. Consumer confidence has fallen to its lowest for 13 years. After a decade in office Mr Macron and the centrist politics he ushered in no longer represent promise, but disappointment. One winegrower in the Gironde says simply that he feels "defeated". Such distress is shifting the balance of hope to the RN. ■

Britain



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Politics

Andy goes on tour

SAINT JOHN'S, ANTIGUA

Interviewed by *The Economist*, the prime minister tries to elaborate a foreign policy

ANDY BURNHAM was a foreign-policy novice when he became Britain's prime minister in July. His 30-year political career has been occupied almost entirely with domestic affairs, and he has seemed content with that. On being elected the MP for Makerfield in Greater Manchester, he promised to apply a "Makerfield test" to every decision he makes.

Flying to Antigua for the Commonwealth heads of government meeting, known as CHOGM, may not seem an obvious way of delighting his constituents. But the prime minister shows an increased awareness that foreign and domestic policy often come to the same thing. He is taking his Makerfield test global. "That should be our starting point for policy always," he says.

Mr Burnham treated the summit on November 3rd and 4th as a dry run for what he calls an "autumn of diplomacy", consisting of five closely packed international shindigs. Speaking to *The Economist* during his Antigua trip, the prime minister insists that Britain can cut a distinctive figure on the world stage. It is the first chance for Mr Burnham to prove he is Britain's prime minister rather than its mayor.

"Britain is back" after "a difficult decade", Mr Burnham says. The country commands "unique trust among nations". At the CHOGM, he claims, other leaders have approached him, saying: "Where have you been? We need you." He promises "a new relationship" with the Commonwealth, with the Middle East and with the EU, which could mean reversing Brexit.

On coming to office, the prime minister's recent predecessors all said something similar. Boris Johnson boasted of "global Britain". Rishi Sunak wanted to undo the reputational catastrophe caused by the premiership of Liz Truss. Sir Keir Starmer even declared: "Britain is back on the world stage."

Mr Burnham does at least have a clear staging post at which he can test his global ambitions. All his summiteering, he says, is aimed at a successful G20 meeting, to take place in Manchester in November 2027. Working towards "a global set of standards" on artificial intelligence will be "the top issue", Mr Burnham suggests. He wants to build on the success of Britain's AI Security Institute to position the country as an honest broker between the tech superpowers of America and China, although he admits it "feels challenging" to forge a framework that both countries could sign up to.

Not every member of the G20 will be welcome in Manchester. Asked whether Vladimir Putin, the Russian president, will be invited, Mr Burnham answers flatly: "No". He promises to maintain military and financial backing to Ukraine for as long as the country's war with Russia continues, and is open to committing British troops to a future peacekeeping force if a deal to end the conflict is agreed.

By contrast, Mr Burnham is keen to host Xi Jinping, China's president, at the get-together. He points out that Mr Xi visited Manchester in 2015, and promises that "he will see a big difference". The city has developed quickly, thanks in part to Chinese cash. This economic collaboration could be a pattern for future UK-China dealings, the prime minister suggests: "We proceed carefully, but I'm sure there is a real opportunity there."

Of the three foreign-policy overhauls Mr Burnham promises, the one on Europe remains the most important and the most ambiguous. He says he is open-minded about Britain's relationship with the EU, ▸▸

but is keen to promote new analysis from the Treasury which concludes that a deal with Brussels on food standards and energy could boost the economy by as much as 0.4% of GDP. This is, he says, "a number that you cannot ignore". More details should emerge at a summit in Brussels on November 20th; calls within Labour for Britain to rejoin the EU are growing.

His "new approach" to the Middle East, led by the foreign secretary, Ed Miliband, combines a spikier attitude towards Israel with security co-operation with Gulf states such as Saudi Arabia. Mr Burnham says putting sanctions on Israeli settlers was "the right thing to do", but is open to working more closely with the country's government if Binyamin Netanyahu is forced out following the inconclusive election in October. On the Commonwealth, the prime minister braved a domestic political backlash by promising to open a "structured dialogue" on the legacy of the British empire which could result in a formal apology for slavery (he has ruled out cash reparations).

Mr Burnham's trip to Antigua coincided with America's midterm elections in which Donald Trump's Republicans were battered. He expresses optimism—not shared by all British politicians—that the scale of the president's defeat may make him more constructive, for example by pushing him to end the war in Iran so as to ease pressure on oil prices. "What I take from the result and the president's reaction is that we've got an opportunity to refocus around the issue that everyone everywhere is struggling with, and that's [the] cost of living," the prime minister says. The result of the midterms could be a harbinger for Britain and other countries, he hints: "The pendulum has swung away from populism in other parts of the world."

There is no sign of Mr Trump backing down on one of the thorniest issues in the transatlantic relationship. The Chagos Islands host an American naval base. To the president's chagrin, Sir Keir wanted to hand them to Mauritius. Mr Burnham suggests he is rethinking whether to give up British sovereignty over the archipelago. His government will "recast the arrangement", he says, citing as a possible precedent the deal between Denmark and America which allows America greater access to Greenland for military purposes.

Alongside Mr Burnham's diplomatic efforts, he is pulling together a "ten-year plan" (expected in December, but he admits it may be delayed until the new year) which will lay out proposals to move more parts of the economy into "public control" and boost manufacturing employment. But like leaders before him, he has found that he cannot sideline foreign policy completely. The problems of Makerfield will not be solved without keeping an eye on Michigan, Mauritius and Mykolaiv too. ■

Moanarchy

To bleat or not to bleat?

Charles III's reign is going well, partly because he has stopped complaining

"MY GREAT PROBLEM in life", King Charles III once said as Prince of Wales, "is that I do not really know what my role in life is." Becoming king in 2022 has amply answered that particular complaint. Charles is now Charles the Third, by the Grace of God of the United Kingdom of Great Britain and Northern Ireland and of His other Realms and Territories, King. He is Head of the Commonwealth. He is also Keeper of the Cows, Seigneur of the Swans and the Duke of Normandy. (Which might come as news to the French. Not to mention the cows.)

Today the question is not whether Charles has a role but whether he is doing his many jobs well. It has been four years since the longest-reigning monarch in British history died and the longest-serving heir-apparent took over. Four years is, in one way, no time at all: Charles's mother reigned for 17 times as long. Yet in this time the king has been diagnosed with cancer, seen one brother arrested and survived four British prime ministers.

He has welcomed Donald Trump for a state visit and endured the president's threats to annex his realm of Canada. On November 3rd he gave a speech in Antigua as head of the Commonwealth. He broached the subject of slavery (a tricky matter because some countries are demanding reparations), calling it a "shameful chapter of history" that filled his soul "with the most profound personal sorrow".

Britain's most prominent job—CEO of the Firm—is also its oddest. Unlike most CEOs Charles did not apply for his post, interview for it or, apparently, want it. (Though like all CEOs, heads of the Firm can be removed, as the king's predecessor Charles I proved.) At first, many had doubts about Charles III. Are "the monarchy's days numbered?" wondered a British headline in 2022. "Traditional monarchy died with the Queen", ran another in 2023. One commentator suggested that the monarchy was like an appendix: "We've long evolved past needing them." Everyone kept forgetting to call Charles "King".

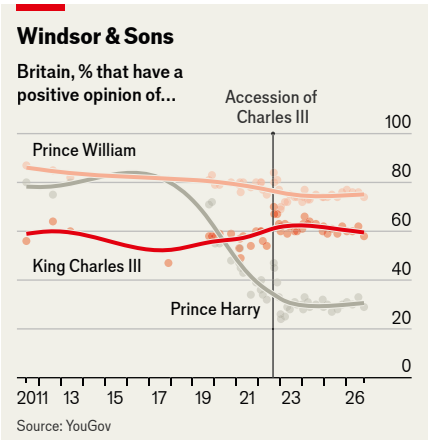
Yet Charles is doing quite well. According to YouGov, a pollster, his favourability rating stands at 58%. That is not as high as Prince William's (74%) but higher than Prince Harry's (29%). Robert Hardman, the king's biographer, says that Charles has "confounded his critics" in his reign so far.

Several things have helped Charles, including a honeymoon period, a strong work ethic (he was back to work within three months of his cancer diagnosis in 2024) and a willingness to sack poor performers: he stripped the Andrew formerly known as "Prince" of his title in 2025. The king's changed attitude has also helped. Broadly speaking the moanier the royal, the less they are liked. The late queen (reputed motto: "Never complain, never explain") was loved, as Princess Anne continues to be. The emotionally incontinent Harry and Meghan are increasingly loathed. Charles has, finally, learnt his lesson: the former "Prince of Wails" has largely stopped complaining.

Good timing has helped too. For decades Charles seemed like a crank. He talked to plants and fretted about the Patagonian toothfish. He built Poundbury, a



You come at the king, you better not miss



likeable British town that intellectuals like to dislike. Everyone laughed at him. But things have changed. Sustainable farming is spreading, Poundbury is expanding, architecture is softening. There is a mood, insiders say, of "I told you so."

The final cause of success is, perhaps, his pulling power. To stand in a room filled with world leaders and watch Charles enter is startling. All—Volodymyr Zelensky, Emmanuel Macron, Giorgia Meloni—have eyes only for him. As he enters heads turn, conversations silence, ears strain to catch his every word. World leaders have achieved their greatness; Charles had his thrust upon him. Yet he is the one they want to meet. And, from state visits to AI summits, he leverages this. Meeting the king is, says Mr Hardman, "a bucket-list item for world leaders".

This, as few know better than the king, is ludicrous. In 1995 Charles produced a Shakespeare anthology. In it he singled out a speech on kingship in "Henry V" that left him "wondering in amazement" at Shakespeare's "insight". It is not a cheery speech. Kingship, Henry says, is a "hard condition". For what "have kings" that commoners do not, "save ceremony"? A king is gossiped about and judged. He must empathise with his people's sorrows but has little rest himself. Some years ago Charles sneaked incognito into a production of "Henry V". Sir Jonathan Bate, an academic, recalls that as that speech began, the future king gave "a kind of shiver".

What is the point of a king? To judge from Shakespeare: not much. Merely to articulate others' feelings and not bang on about his own. To provide ceremony. A hard condition; possibly a pointless one.

But then earlier this year, Charles was invited to America. The old king stood to address its new "king" in Congress. And, as Charles gently teased and reprimanded Mr Trump, he was given one standing ovation after another. It was nothing: ceremony, mere ceremony. But ceremony can be useful. And these days people sometimes even remember to call Charles "King". ■

Pornography

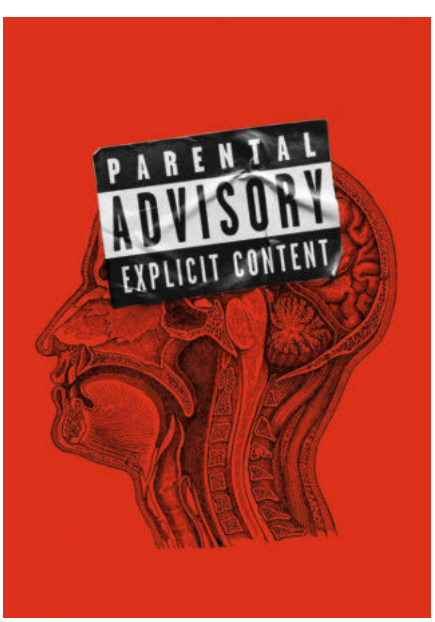
Gagging order

The evidence that porn changes behaviour is weak

PARENTS ARE aghast. Many young Britons appear to be choking one another during sex. According to a survey by the Institute for Addressing Strangulation, part of a charity, 66% of sexually experienced 16- to 34-year-olds have been on the receiving end. Not all consented to it in advance. The government blames porn. So, from November 6th, pornography depicting strangulation or suffocation will be outlawed. So will porn depicting incest, and fantasies in which performers pretend to be underage.

The notion that porn changes behaviour has been around at least since 1986, when the Meese report in America argued that it was likely to cause an increase in sexual violence. But the evidence is far from conclusive. A review in 2016, looking at 20 years of porn research, concluded that methodological shortcomings and "biases in the literature" prevent researchers from drawing conclusions about porn's effect on adolescents. A further review in 2023 similarly concluded that most studies had "substantial limitations" that preclude any firm conclusions.

Nicole Prause, a neuroscientist, says that studies often find a correlation between what people watch and what they do. They have done so with choking. But researchers disagree on which way causality flows. "It's a chicken-and-egg situation," she says. Anti-porn campaigners point to a body of research showing that people who use more pornography engage in more sexual harassment and aggression. But who uses the most porn? Generally it is teenage boys with a tendency towards sensation-seeking and a troubled family history. Those are all risk factors for aggressive sexual behaviour in their own right.



Even the independent review of pornography by Lady Bertin, which the British government has used to justify its restrictions, noted that "research has commonly confused correlation and causation". Those two things are always hard to unpick, but especially so when it comes to adolescents' porn use. An ideal study would involve exposing some to pornography (or, teenagers being what they are, to more porn) but that would be unethical.

Some evidence comes from studies that follow the same people over a period of time to assess whether changes in porn use predict later changes in behaviour. Researchers in Croatia followed over 1,500 students for three years. They confirmed a well-established link between "hostile masculinity", a personality type, and sexual aggression. But they found no evidence that pornography use increased an individual's odds of sexual aggression—a conclusion, they wrote, that is "difficult to reconcile with the view that pornography use plays a causal role in male sexual violence".

Countries that have repealed strict porn laws provide a natural experiment. They are not perfect, since a ban on pornography does not make it disappear. Still, research comparing rates of sexual crime before and after the liberalisation of porn laws in the Czech Republic, Denmark, Germany, Japan and Sweden found no evidence of a relationship between pornography and sexual violence.

Young people do learn about niche sexual practices from pornography. It has introduced some to the concept of choking. But other media carry the message, too. Earlier this year Romania came third in the Eurovision song contest with a song titled "Choke Me". In one American study, a young woman claimed to have first come across choking by reading smutty fan fiction about the band One Direction.

Where someone first sees something does not necessarily tell you why they want to do it. A study in Australia tested several variables to see what might predict whether an individual has a positive perception of choking during sex. Having seen choking in porn had little predictive value. Having previously tried choking or having discussed it with friends was much more likely to predict positive attitudes towards it. Other surveys find that the majority of sexual choking is consensual and pleasurable for those involved. Perhaps young people are choking each other during sex mostly because they like it. ■

BAGEHOT

Pity the landlord. No, really

Who will speak for the HMO Hero?



OF ALL THE tax increases Labour have introduced since 2024, one passed with barely a murmur. When John Healey, the chancellor, popped another two percentage points on tax on "income from property" last month, few complained. It was to be expected. Successive governments have hammered landlords, including those who own a "house in multiple occupation" or two, for a decade. Will anyone speak for the HMO Hero?

Not Labour, that is for sure. Mr Healey's tax rise came after a similar increase the year before. The Renters' Rights Act, which was passed last year, introduces rent controls in all but name. For just £47 ($63) a tenant can challenge any rent rise, with a tribunal determining whether it is the local market rent. The tribunal can even reduce rents already agreed on. Market prices are, apparently, too important to be left to the market.

Yet when it comes to landlords, Labour are only following in the Tory party's footsteps. George Osborne, the former Conservative chancellor, removed tax breaks on mortgage interest and replaced them with a less generous tax credit. Landlords were also hit with a 3% stamp-duty surcharge when buying property (which became 5% under Labour). It was under the Tories that the British dream of owning someone else's home became a nightmare.

Buy-to-let landlords are easy to hate. Partly, it is jealousy. The buy-to-let mortgage was invented in 1996, at the start of a colossal house-price boom, during which real house prices across Britain almost trebled in a decade. It proved a sensational investment: someone who bought in 1996 enjoyed higher returns than most big stock markets.

Partly it is because renting in Britain is often miserable. Britain's private-rental sector is dominated by amateurs. George Orwell's caricature of a slum landlord in the 1930s is not far off reality today: "A poor old woman who has invested her life's savings in three slum houses, inhabits one of them, and tries to live on the rent of the other two—never, in consequence, having any money for repairs." About half of landlords own just one property. Rather than a well-organised property company, a typical English landlord remains a baby-boomer wondering why their savings product is ringing at 2am to complain about a leak.

At times it seems as if the government sees every private renter as a public-policy failure. What should private renters do if government policy leads to rents going up? Buy a home with the support of the government, comes the reply. The idea that renting is a necessary part of a dynamic economy is alien in a country that treats it like an embarrassing affliction. A world in which everyone owns is one in which people are unable to drop everything and change cities for another job.

Building more homes is the best fix for expensive housing. But a higher proportion of rentals can still help. A terrace in a city can house either a small family or half a dozen young renters, if broken into flats or turned into an HMO. Landlords are often painted as parasites. This is unfair. They are worms, playing a vital part in the housing food chain, digesting what others would waste.

Hammering them may backfire, eventually. The Office for Budget Responsibility has warned that potential landlords may steer clear, reducing rental supply and pushing up rents. Housing supply is a fractious political debate in Britain; landlord supply is its forgotten cousin. What reason do landlords have to stay? Spectacular returns are long gone. At 5.8%, the typical gross yield on a buy-to-let property is barely higher than the yield on a ten-year gilt, the closest thing to risk-free return. Buy-to-let offers return-free risk. Who is likelier to default: the government or a tenant?

And yet economic logic goes out the window when it comes to Britons and property. The government is harder on landlords than it should be; likewise landlords appear to be suckers for punishment. It would be economically rational for more to leave, yet surprisingly few do. Well-reasoned predictions of a mass landlord exodus and rental supply crunch have been made repeatedly in the past decade. Neither has come to pass. Indeed, the stock of rental homes has grown by about 1% a year since 2021, says the Joseph Rowntree Foundation, a leftie think-tank. Chris Norris of the National Residential Landlords Association puts it delicately: landlords are "not entirely rational actors".

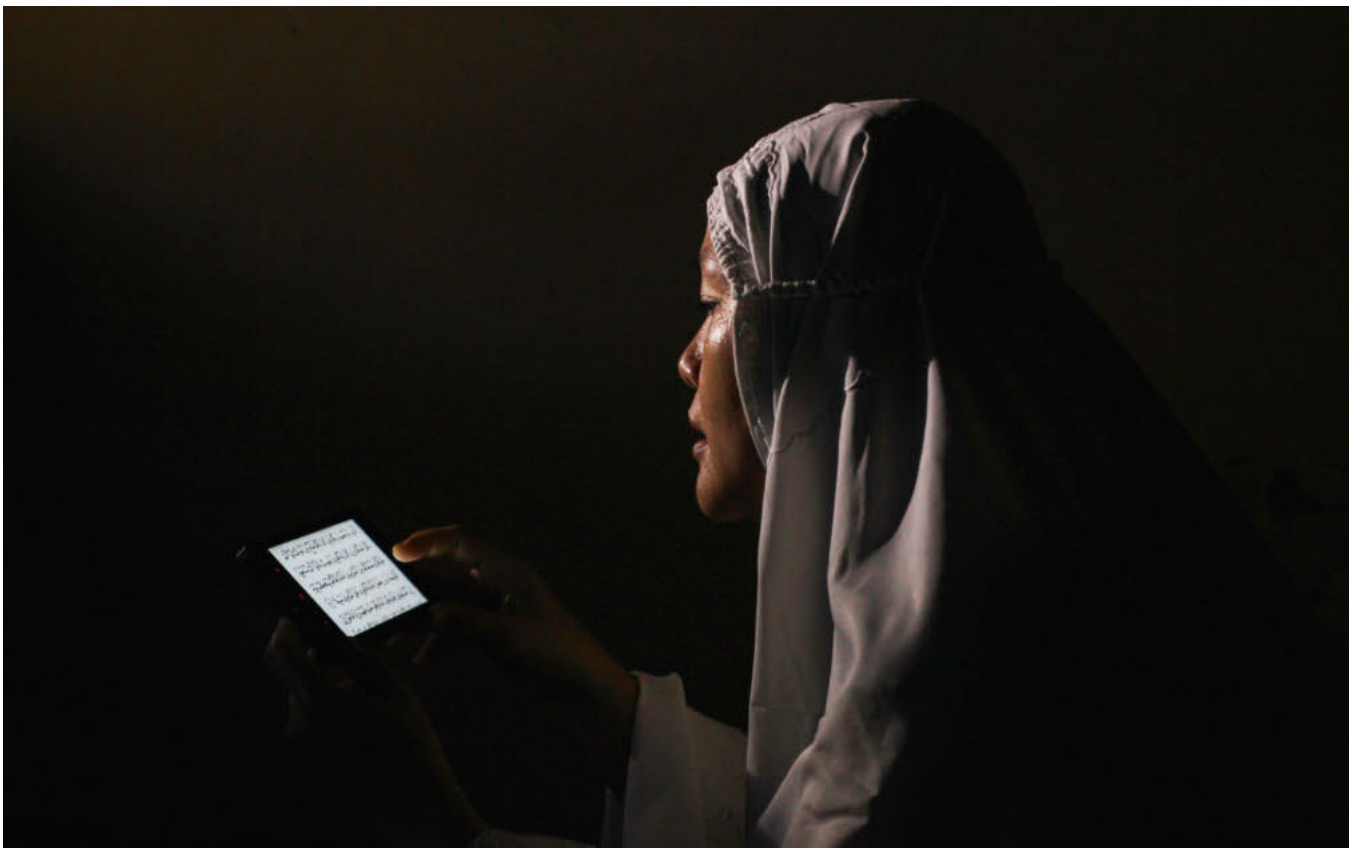
Would more rational actors be welcome? British governments of various stripes have long called for institutional investors to replace Orwell's grannies. Renters should be careful what they wish for. Lazy landlords are a blessing and a curse. A Boomer landlord who would rather not worry on their cruise might not raise a good tenant's monthly rent; a corporation will do what the spreadsheet says. Whether smart money wants to invest in a sector with low returns and huge regulatory risk is another matter.

Perhaps only Britain's crack squad of HMO Heroes are foolhardy enough for the task. Come 2030, landlords will have to climate-proof their properties at a cost of up to £10,000. And any landlord who banks on strong house-price growth may end up disappointed. The government has not yet equalised the rates of capital-gains tax and income tax, but rumours that it will do so persist.

Tomb of the unknown landlord

These risks are known, yet still the HMO Heroes march towards gunfire. Banks have seen no drop-off in the number of people taking out new buy-to-let mortgages. It is brave to the point of foolishness. At some point it becomes a form of intergenerational altruism, with wealthy boomers investing in a buy-to-let when doing almost anything else with their money would leave them better off. Still it is a lousy financial decision that someone else can live in. Why try to stop them? Britain may not like its landlords, but it would miss them if they were gone. ■

International



Digital Islam

Virtual virtue

ABUJA AND SINGAPORE

Online influencers are making Islam more diverse

IT BEGAN BY accident. In 2018 Omar Suleiman, a soft-spoken Texan imam, realised that a scammer was impersonating him on Instagram to solicit donations. He decided to create a genuine account. A community of followers began to grow, especially during the pandemic, when he started live-streaming on YouTube every night, talking about how Islam can help with things like uncertainty and grief.

Mr Suleiman now has more than 3m followers on Instagram and a TikTok account with 22.2m likes. His followers hail from all over the world. Many watch him because their local imams do not really grapple with the issues they care about, he thinks. Some followers tell him his teachings have changed their lives.

The world's 2bn-odd Muslims are younger, on average, than people of other religions: in 2020 the Pew Research Centre, an American public-policy institute, found that the median age for the faith was 24, versus 33 for non-Muslims. They are also very much online. An upcoming survey from Arab Barometer, a research firm, found that 60% of 18- to 29-year-old Muslims in the Middle East are both "heavy internet users" and "highly engaged" on social media. Around 30% of British Muslims use social media a "great deal" for religious information, according to a recent study by the Digital British Islam project.

What these young, Muslim digital natives find online is shaping the future of their religion. And what they are discovering is a cornucopia of doctrines and outlooks that is far more varied than what they might encounter at their local mosque. Although religious authority in Islam typically derives from scholarly expertise, many of the biggest online influencers are simply opinionated laypeople eager to vent. They espouse a dizzying array of theologies, from the conventional to the extreme. They are creating a more heterodox faith.

Muslims used to learn about religion primarily at their mosque. Cassette sermons became popular in the 1970s and TV imams followed in the 1990s. These democratised access to religious teaching to some extent, but the internet has hastened the shift. Online, "People can explore who they are," says Renasha Khan of King's College London, because they can seek information in private, without the mediation of local religious leaders. In particular, they can pick and choose among textual interpretations, rather than subscribing wholesale to a single school of thought.

App and stance

Nadya Lim, a 35-year-old from Singapore, uses Muslim Pro, an app that has been downloaded 190m times, to check the timing of the five prayers devout Muslims perform each day and the direction of Mecca, towards which they are supposed to pray. She also regularly consults Google for answers to such questions as where the nearest mosque is or how to apply Islam's in-

→ ALSO IN THIS SECTION

55 The Telegram: United by fear

junction against praying while menstruating if her period is late.

The internet has not only allowed Muslims like Ms Lim to take greater control of their own faith, but has also exposed them to a wider range of views. Being a Muslim feminist, at least in public, was once very rare. But Muslim feminist influencers are building followings online, even if they are not yet mainstream. In Nigeria, Wardah Abbas, a Muslim writer, has gained popularity by challenging more conservative views on gender, which she argues are rooted more in culture than in Islam itself. "We don't care what you have to say about this religion. We want to do our own personal research," she says. Amina Wadud, an American theologian nicknamed "The Lady Imam", describes herself as an "ally" to gay and transgender Muslims.

Some lifestyle influencers encourage Muslims to break the mould in more subtle ways. "Ayahsvoice", a Briton with more than 14m likes on TikTok, describes herself as a "scholar of pink cherry Islam" and says that her account is for Muslim women who "struggle to fit in the religion". Her make-up tutorials are generally light on theology. But she openly rejects *Hadith*, the collected sayings and doings of the Prophet Muhammad—a fundamental departure from orthodox Islam. She argues that the misogyny espoused by some male Muslim influencers stems more from the *Hadith* than from the Koran.

Muslim lifestyle influencers are also popular in Indonesia. Many promote or sell their own modest clothing on Instagram. Ummu Alila, one such influencer, who has around 500,000 followers on the app, offers head coverings and denim dresses designed to comply with Islamic principles. Ummu Alila founded the firm with her husband, Felix Siauw, a preacher who built a big following online in the mid-2010s. He was a member of Hizbut Tahrir Indonesia, which agitated for a transnational Islamic caliphate (it was banned in 2017). Now he and she opine online together about everything from touring Istanbul to infidelity.

Social media also offer believers perspectives from parts of the Islamic world far from their own. Mr Suleiman, the Texan imam, has plenty of followers in the Middle East. Ms Lim says in the past "people received only one side", but she now gets ideas from influencers such as Mufti Menk, a popular scholar from Zimbabwe.

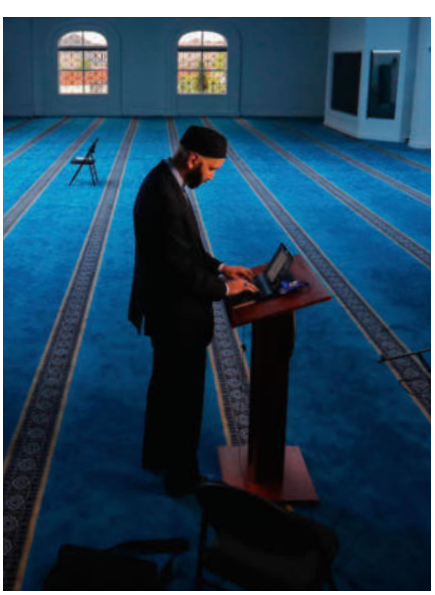
There is, inevitably, plenty of incendiary content, too. Muhammad Hijab, who is associated with a group of young British Muslim influencers nicknamed the "Dawah Bros", has 1.3m subscribers on YouTube. He likes to debate atheists and non-Muslim religious leaders, producing pugnacious videos with titles like "Anti-Islam preacher humiliated".

Some commentators talk of a Muslim "manosphere", which blends Islamic theology with macho chauvinism. When Andrew Tate, an influencer wanted in Britain on charges of rape and human trafficking, converted to Islam in 2022, Mr Hijab interviewed him to welcome him to the faith. In 2022 Mr Hijab travelled to the city of Leicester, where there had been clashes between Hindus and Muslims. He told crowds of Muslim men, many of them masked, that Hindu nationalists were "pathetic, weak and cowardly".

It is not clear whether online influencers have steered Muslims in a more liberal or conservative direction overall. But they have fostered a sense of digital community. Ishtiaque Ahmed of the University of Toronto argues that Muslims' access to a wide range of information has spurred the emergence of "a spirit of global Islam" online. Those who are opposed to Israel's war in Gaza, for example, have a place to unite and discuss their cause. The diaspora from Muslim-majority countries can also access teachings from back home more easily, says Ali Riaz of Illinois State University.

Some mainstream imams denounce the more novel teachings spreading online. "I have been excommunicated a number of times and I've been accused of being a sell-out, a heretic," says Ms Abbas, the Nigerian feminist. But most forms of Islam have always been decentralised, without an institutional hierarchy or a supreme leader like the pope. Years of study at well-known institutions, such as Al Azhar in Cairo, do not guarantee digital prominence. In the age of the internet, notes Ibrahim Abusharif of Northwestern University, "Authentic scholars and pathetic pretenders can compete for audiences."

The profusion of interpretations of Islam circulating online makes some governments wary, too. In 2024 Manahel al-Otaibi, a popular Muslim online fitness instructor, was sentenced to 11 years in prison in Saudi Arabia for sharing pictures of herself in immodest clothing and for supporting an end to Islamically inspired laws that allow men to control the movements of their wives and some female relatives. In 2017 Salman al-Ouda, a prominent Saudi cleric with more than 9m followers on X, was arrested just days after he tweeted a prayer of reconciliation between Saudi Arabia and Qatar, in apparent opposition to the Saudi government's blockade of Qatar.



A big congregation

In democracies the popularity of Islamic influencers has prompted a different sort of response from politicians. Bernie Sanders, an American senator, got Mr Suleiman to speak at a rally when he ran for president in 2020. In the run-up to Indonesia's presidential election in 2024, politicians sought the support of popular Muslim influencers such as Haikal Hassan, who has about 2m Instagram followers. Such figures are also prominent in Bangladeshi politics. After Tarique Rahman became prime minister earlier this year he sought the advice of Sheikh Ahmadullah, a preacher with 3.5m YouTube subscribers, about amending laws on donations to charity—a pillar of Islam.

Can we take this offline?

The internet is not everything. In many Muslim-majority countries beliefs are still primarily shaped by local scholars. Nurudeen Lemu, one such scholar, says that much of what is debated online is not very useful in Nigeria. "Religion is not copy paste. An online response backed by a Pakistani, a Saudi, an American, an Australian, to a Nigerian Muslim is contextless," he says, pointing to differences in everything from eating habits to clothing.

Mr Lemu even plays down the risk of extremists exploiting the digital world to foster Islamist terrorism. In surveys he has conducted of detained jihadists in northern Nigeria, he found that "less than 1% of recruitment was online" over the past decade. "They were using cassette tapes! There is a gentle rise as internet access has gone further and batteries last longer, but it usually requires a friend."

Moreover, online preachers can only supplement local ones, rather than supplant them, since taking part in communal services in person is important in Islam. Most Muslims consider attendance at Friday prayers compulsory for able-bodied men, for instance. About 40% of American Muslims attend services once a week. Bouziane Zaid of the University of Sharjah has found that Middle Eastern youths still tend to turn to a local imam first for serious advice on personal matters. Local imams and congregations will always be influential—but they are now just one of many forces shaping young Muslims' beliefs. ■

THE TELEGRAM

Fear united Europe. Nationalism may tear it apart

Donald Trump and Vladimir Putin made Europe serious about its own defences. That may not last



FOR MOST of the past 800 years, the sight of German soldiers inspired dread in Lithuanian hearts. Today, as a small Baltic state with Russia as a direct neighbour, Lithuania is happy to host a permanently deployed German armoured brigade.

The aggression of Russia's president, Vladimir Putin, and the might-makes-right callousness of his American counterpart, Donald Trump, have not only scrambled Europe's calculations about power, but also the continent's balance of fear. In 2029 Germany, Europe's largest country, plans to spend 3.5% of GDP, or €162bn ($182bn), on defence. That is more than the combined defence spending of Britain and France last year. Far from being alarmed by German rearmament, many neighbours are counting on it.

Put bluntly, after decades of underinvestment in defence, mainstream European leaders have a horror of being abandoned by America before the region is strong enough to deter Russia on its own. Their fears mounted after Mr Putin's full-scale invasion of Ukraine in 2022. They turned to near-panic after Mr Trump was re-elected in 2024, and he made clear his scorn for Ukraine and its allies in NATO and the European Union, and his preference for ending the Ukrainian war on terms favourable to Russia.

European leaders broadly agree on the need to support Ukraine and prepare for America to become, at best, NATO's offshore protector of last resort. That shared task helped Britain repair ties with allies that take defence seriously, including nuclear-armed France, big-spending Germany, and Ukraine's most loyal supporters in northern and eastern Europe. A common foe puts Brexit squabbles in perspective.

The balance of fear has changed, too, in Germany, where the public had to overcome its unease about military might. Though cold-war West Germany maintained one of NATO's largest armies, politicians allowed citizens to indulge in a comfortable fantasy, portraying post-1989 Germany as a commerce-minded, pacifist friend to all. Some on the left treated Germany as something like a recovering addict to militarism, which if allowed even a sniff of gunpowder might go on a terrible bender before waking with a headache to discover it had occupied Luxembourg, once again.

Such angst was cured by Mr Putin and above all by Mr Trump. German defence spending grew in earnest after Ukraine's invasion in 2022, inspiring what Germany's then-chancellor, Olaf Scholz, called a *Zeitenwende*, or "turning-point". Spending surged after 2024 and the return of an America-First president.

European unity is, however, more fragile than it appears. Over the next 12 months, elections will be held in Spain, France, Poland and Italy. In several cases, parties on the nationalist right are poised for power. Some right-wing populists have histories of sympathising with Russia, including Marine Le Pen, front-runner in the French presidential contest, and Roberto Vannacci, a former general and Russia-admirer challenging Italy's conservative prime minister, Giorgia Meloni, from her right. If Poland's feuding politicians agree on one thing it is on loathing Russia. Still, some Polish conservatives cast Ukraine as needy, ungrateful and too slow to acknowledge crimes committed by Ukrainians against Poles during the second world war. Aid for Ukraine should come with conditions, they growl. Above all, the nationalist right is united in opposing deeper European integration, even in pro-EU Spain, where the Vox party may enter government. An exultant Ms Le Pen has predicted that a year of elections will transform the EU from a would-be superstate into a "Europe of nations".

Alas, a nationalist wave could also derail Europe's rearmament. To avoid frightening its neighbours, Germany can grow its armed forces and defence industries only if it puts its fiscal and military might at the service of NATO and Europe, argues Liana Fix, the author of a new book, "Germany Rearmed: The Return of War and the End of Illusions". To be a "European" power means, in effect, to act within the Franco-German alliance in which Germany has bound its strength since 1945. But that creates a dilemma. Ms Fix fears a division of Europe into a north-eastern bloc, including the Baltic states, Britain, Nordic countries and Poland, which still seeks to deter Russia, and a Mediterranean bloc of southern governments ready to appease Mr Putin, to buy his oil and gas and to focus security spending on hardening borders against poor-world migrants. Germany would have a national interest in securing Poland and the Baltics as a buffer against Russia, Ms Fix writes. But if France does not want to join a northern bloc, Germany's national and European interests would be at odds.

The coming chorus of Putin appeasers

True, as Ms Le Pen scents victory, she has moderated her formerly Putin-friendly rhetoric. Casting herself as an heir to Charles de Gaulle, she pledges to maintain strong armed forces. But at a minimum her sharp-elbowed, France-first approach to industrial spending could derail multinational defence projects. At worst, Europe would conclude it cannot rely on France in a crisis.

The Trump administration's role is both unhelpful and incoherent. Mr Trump continues to push Europeans to spend more on defence. At the same time, he seeks detente with Mr Putin and offers noisy support to pro-Russian parties on Europe's nationalist right, including Germany's largest opposition party, the Putin-friendly, Ukraine-spurning Alternative for Germany. But if Europe has no need to deter Russia, it is unclear why Mr Trump thinks it needs to rearm: the continent is hardly about to take on China.

Europe needs to learn the right lessons from the Trump era. The MAGA shock made Europeans, led by Germany, serious about their own security, at long last. To complete the task, Europe must now shun Trump-style populist nationalism, which risks wrecking that project. Anything else would be a fearful blunder. ■



ENROLL TODAY

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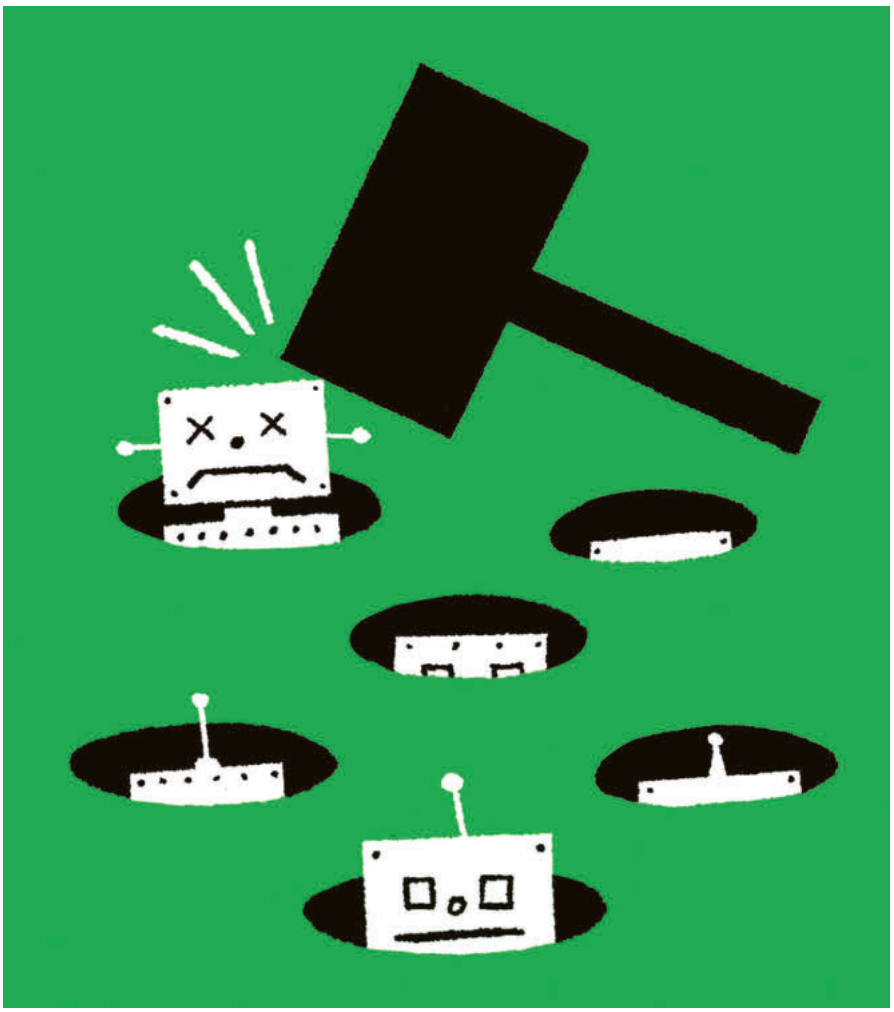
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Cyber-security (1)

Hack to the future

Firms are racing to protect themselves from AI-powered cyber threats

THE CORPORATE world is under siege. In a matter of weeks a flurry of serious cyber-security incidents have shaken the confidence of bosses in their defences. Thousands of new software vulnerabilities have been discovered, aided by artificial intelligence. That, along with a slew of hacks, has led many to argue that cyber-risk is entering a perilous new phase.

So testing was the past month that some analysts have called it "Black October" (others, "the Hackening"). First AI was used to discover a critical flaw in PHP, a widely used programming language that underpins most websites. The vulnerability was leaked before patches could be deployed, so many websites were temporarily taken offline to be fixed. Then hackers stole some $6.3bn from Binance, a crypto exchange. November has been no easier. Across Europe, supermarket freezers have had their temperatures cranked up, destroying millions of euros worth of food. At Crédit Mutuel Arkéa, a French bank, funds have been stolen in a burst of fraudulent transactions.

Governments have been hit, too. Air-raid alert apps have been hacked in both Ukraine and Russia. Cyber-criminals have swiped data from Denmark's population registry, America's Department of Homeland Security and the FBI. Japan has declared a cyber-security state of emergency. On November 3rd Richard Horne, head of Britain's National Cyber Security Centre, warned that in the coming months there may be an "unprecedented rise in the number of cyber incidents".

Even before this onslaught, the threat was growing. Remote work and an increase in internet-connected devices created more vulnerabilities. The prevalence of digital currencies made it easier for hackers to make money from their exploits.

AI has exacerbated the danger. In April Anthropic, a frontier lab, said it would not release Mythos, its latest model, to the public. Instead a limited number of software providers and financial institutions were granted access to help them plug gaps in their cyber-defences. OpenAI, a rival lab, soon launched a similar effort. In recent months frontier models have unearthed huge numbers of security flaws: the count of "common vulnerabilities and exposures" reported to software-makers and specialist cyber-security organisations is soaring (see chart on next page).

Worryingly, however, the cyber capabilities of open-weight models have been rapidly improving in parallel, making it easier for even novice hackers to identify vulnerabilities. Moreover, AI has sped up the process of exploiting a vulnerability once it is discovered. Working out how to do this used to take days or weeks; now it can take hours. That means there is far less time for defenders to patch flaws in their software. The technology is also fuelling "social engineering" attacks, with models being used to automate phishing emails and clone the voices of employees.

Employees' adoption of AI in their everyday work is adding to the problem. This makes companies a "ripe target" for hackers, says Nicole Carignan of Darktrace, a cyber-security firm. Surveys suggest that most workers use some type of AI service that has not been vetted by IT teams. On October 21st the maker of LiteLLM, a popular open-source AI tool, announced that it had again been compro- ▸▸

mised by hackers, following a similar incident in March that put thousands of organisations at risk.

Businesses are scrambling to respond. At big institutions up to a fifth of IT resources are being rerouted to finding and fixing security flaws, says Vanessa Lyon of BCG, a consultancy. Firms are prioritising software that is exposed to the internet, such as websites and apps. Mark Hughes of IBM, an IT giant, says that in cases where no patch is available yet for vulnerabilities that have been unearthed, he is telling clients to contain the at-risk software, perhaps taking it offline or limiting which staff have access.

Companies are also fighting AI with AI. Models can be deployed not just to scan for vulnerabilities, but also to spot and neutralise suspicious activity and catch phishing schemes. Goldman Sachs, for example, has greatly increased the share of the bank's AI budget that it allocates to cyber-security, according to people familiar with the effort. Managing such spending requires careful planning. "How do you make sure you don't run out of tokens mid-breach?" asks Charlie Lewis of McKinsey, another consultancy. He notes that some firms are setting aside tokens for emergencies, while others are establishing procedures to fast-track spending approvals in the event of a cyber-attack.

Yet a variety of challenges may undermine the defenders. One is human gullibility, which even the cleverest cyber-defences will struggle to compensate for entirely. The heist of Binance, allegedly orchestrated by North Korean hackers, was reportedly caused by an employee downloading malware onto their work computer during a fake job interview.

A second challenge is "operational technology", the industrial hardware used on factories and shop floors. This type of machine typically runs on decades-old software, and has often been ignored by cyber-security teams because ancient code made it hard for hackers to get at. Yet, as seems to have been the case in the recent freezer attacks, AI is now being used to understand and manipulate such software.

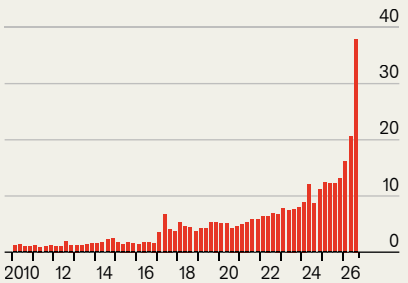
Then there is the reality that many smaller firms lack the necessary resources to invest in cyber-security capabilities. Such businesses can then be used as gateways to other targets, including larger enterprises. The source of a recent hack of Polymarket, a betting platform, was a security flaw in a website-monitoring tool it used called DebugBear.

Some large companies are providing their smaller suppliers with cyber-security advice. Government programmes offer support, too. The PHP incident may furnish a template for how these businesses will be defended in future. Major providers of cloud infrastructure, such as Amazon and Cloudflare, quickly put in place a number of protections for their customers, such as firewalls, that shielded small businesses without them having to lift a finger.

Cyber-security has always been an arms race, and the advent of AI has handed attackers a devastating new weapon. In time the balance may shift back in favour of defenders, as software providers race to offer AI-powered solutions. Until then, businesses will have to confront a dangerous new world. ■

Uncovered

Common cyber-security vulnerabilities and exposures reported*, '000



*By around 500 organisations from more than 40 countries
Source: CVE Programme

Cyber-security (2)

Protection money

SAN FRANCISCO

As hackers run riot with AI, its makers look to cash in

THERE HAS never been a better time to be a North Korean hacker. Last year the country's cyber-thieves stole $2bn-worth of cryptocurrency, triple the level two years before, according to Chainalysis, a research firm. This year's haul is on course to be much bigger. On October 29th $6.3bn was swiped from Binance, the world's largest crypto exchange. America's Federal Bureau of Investigation has pointed the finger at the hermit kingdom.

The theft is but one example of a worrying pattern (see previous story). Recent weeks have brought what looks to be a sharp acceleration in the frequency of damaging hacks. The details behind many remain murky. But what is clear is that advances in artificial intelligence have handed new powers to cyber-criminals, who are using it to churn out malware, execute sophisticated "phishing" schemes and, increasingly, to comb through software code looking for vulnerabilities.

The danger is, paradoxically, a golden opportunity for frontier labs. Sarah Friar, OpenAI's finance chief, says she thinks cyber-security will become a "huge business" for her company over the next two years. It recently hired an executive from Wiz, an Israeli cyber-security firm owned by Google, to pitch its software to enterprises. Likewise, in paperwork recently filed for its forthcoming stock-market debut, Anthropic, OpenAI's arch-rival, described cyber-security as "one of our most important near-term opportunities". Yet cashing in on the cyber-risks posed by AI will be tricky for the model-makers.

Some expect that spending on cyber-security software—which reached $150bn last year, according to IDC, a data provider—will increase dramatically as firms recognise the growing threat. Greg Brockman, a co-founder of OpenAI, recently predicted that in time the figure will "vastly outstrip" spending on all other software. Last month Andreessen Horowitz, a venture-capital firm, urged firms it has invested in to consider doubling their outlays.

For AI labs, detecting cyber-vulnerabilities looks like a strong fit for their technology. Like coding, it is a "verifiable domain" where models can learn from answering questions correctly, explains Nazneen Rajani, chief executive of Collinear AI, which provides model-evaluation services.

Yet success will require persuading companies to rethink how they spend their cyber-security budgets. The business of identifying and patching vulnerabilities is highly fragmented, with customers historically tending to purchase tools from a variety of vendors and hiring IT consultancies to help with implementation. Anthropic and OpenAI are instead pitching the idea of letting their bots roam across an enterprise's entire code base and fix weaknesses as they are found.

Lately the cyber-security market has been consolidating around a few so-called platforms, including independent vendors such as Palo Alto Networks and cloud giants such as Microsoft. But they also offer tools for other tasks where AI models are currently of less help, such as ensuring only approved users can access systems.

What is more, these incumbents have spent years building trust with their clients. Over the past few months, by contrast, the leading AI labs have had trouble controlling their own creations, with embarrassing episodes such as one in July where an OpenAI system hacked into Hugging Face, a model library, without being told to do so. Some in the cyber-security industry are sceptical that the model-makers will ever be able to forge the relationships needed to become leading cyber-security providers. Instead, the opportunity may lie in distributing their technology through others, while encouraging businesses to rewrite code securely from scratch using their models. The North Koreans will be hoping they fail. ■

Saudi Aramco

Barrelling along

DUBAI

Besieged by war, the world's biggest oil company continues to gush profits

SAUDI ARAMCO has proved remarkably resilient this year. Since war broke out with Iran, the world's biggest oil company has faced attacks on its facilities and disruption to the Strait of Hormuz, through which most of its barrels were shipped. Yet its cash gushers continue to flow. On November 3rd it reported an adjusted net profit for the quarter from July to September of $31bn, up by 9% from the previous year (see chart).

Aramco has been under fire before. In March 2022 Houthi rebels backed by Iran struck storage facilities in Jeddah, a year after an attack on a refinery in Riyadh. In 2019 they attacked the East-West pipeline, which carries Aramco's oil to the Red Sea, along with two of the company's processing facilities. This conflict has brought far more upheaval. But although production is down from pre-war levels, prices are up, and the business has been finding new ways to get its oil to market.

Aramco has been forced to continuously adapt over the past nine months. Soon after the conflict erupted in February the company began to transport more of its oil via the Red Sea, rather than the Persian Gulf. In July, when the Houthis blockaded the southern passage through the Bab al-Mandab Strait, it redirected its vessels north, to make greater use of the Suez-Mediterranean pipeline. Attacks on the East-West pipeline in September cut the volume of oil reaching the Red Sea, so Saudi Arabia has been sending tankers through the Strait of Hormuz to the Gulf of Oman, where they transfer oil to the vessels of customers unwilling to make the journey themselves. (The pipeline has recently been repaired, with flows to the Red Sea recovering.)

Last month Aramco pushed around 7m barrels of oil a day to the market, up from 4.5m in July and not far off the figure in February, before the war. Overseas storage facilities in places such as the Netherlands and South Korea have also proved useful.

Aramco's ability to weather the conflict is helped by fat margins. Its upstream costs, at $11.50 a barrel last year, including operating and capital expenditures, are a small fraction of the $95 a barrel fetched in its most recent quarter. The cost of restoring damaged facilities has so far been modest, with capital expenditure in the first nine months of 2026 down by 4% from the year before.

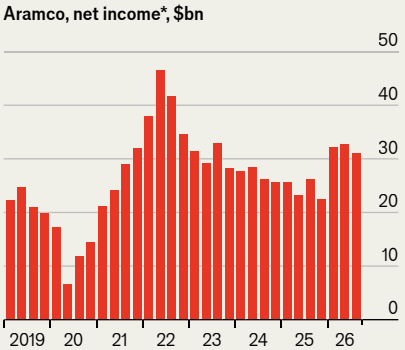
But transport has become much more expensive. According to the International Energy Agency, an intergovernmental body, the cost of shipping oil from the Persian Gulf to Asia is more than five times what it was before the war, as inefficiencies have reduced the availability of tankers. Some are stuck for days performing ship-to-ship transfers in the Gulf of Oman. Those collecting barrels from the other end of the Suez-Mediterranean pipeline must then travel all the way around the Cape of Good Hope to supply customers in Asia. Aramco has had to bear some of the pain. It currently discounts the light crude it sells in Asia by about $5 a barrel, compared with the Dubai benchmark, up from $2 a barrel last month.

Besides expanding the East-West pipeline, Aramco intends to develop new export routes—which could become a costly endeavour and run up against the region's volatile politics. One option under consideration is a pipeline from the oilfields in Saudi Arabia's east to Duqm on the coast of Oman. Rystad Energy, a consultancy, estimates that it would stretch for around 1,000km and cost up to $7bn to build, equivalent to 14% of the company's annual capex budget. An alternative is to restore the 1,500km Iraq-Saudi pipeline, which runs from Basra in Iraq to Yanbu, the Saudi port on the Red Sea. (The current pipeline was shut off during the first Gulf war in 1990, and has fallen into disrepair in the decades since.)

Amin Nasser, Aramco's chief executive, has argued that investments in pipelines would quickly pay for themselves. That may well prove true if oil prices stay elevated and the Gulf's other export routes remain unreliable. A resolution to the conflict with Iran may be hastened by Donald Trump's defeat in the midterms. But during his earnings call Mr Nasser noted that global oil inventories are running low, and suggested that the need to replenish storage could result in elevated demand for two years after the war. For Aramco, then, the profits will keep flowing. ■

Priced up

Aramco, net income*, $bn



Source: Bloomberg *Adjusted measure

Online groceries

Shopping spree

NEW YORK

Can a DoorDash-Instacart fusion stand up to Amazon and Walmart?

IN THE MID-2010s apps delivering victuals on demand cropped up everywhere. At a time when investors found cash-torching gig-economy startups alluring, some delivery businesses attracted valuations of many billions. But the days of their explosive growth are over. So far in 2026 downloads of standalone delivery apps in America and Canada are down by a fifth from the same period a year before, estimates Sensor Tower, a market-intelligence firm.

Today consolidation is in order. On October 29th DoorDash, a meal-delivery firm, said it would buy Instacart, a competitor focused on groceries, for $17bn. DoorDash expects the merger will eventually yield $500m of extra profit a year as the two firms fuse their software systems and advertising arms. If the merged entity is to take on Amazon and Walmart, which within a few years have come to dominate America's online-grocery market, it will need every penny.

Online sales now account for a fifth of Americans' spending on groceries, according to Brick Meets Click, a data provider. They have grown by more than 20% year on year for eight quarters. Yet the boom has benefited retail behemoths more than gig-economy disrupters. Walmart learned to be a tech firm and Amazon a grocer faster than newcomers could gain a foothold.

The two giants now account for 55% of America's online-grocery sales, reckons Wedbush, a financial-services firm. Their expansion has squeezed Instacart and DoorDash, as well as others such as Uber Eats and Grubhub. Lately the upstarts have had to rely more on paid referrals and ads to win customers. "Everybody is fighting for the scraps left after the top players," says Aaron Cheris of Bain, a consultancy.

In search of scale and new markets, delivery apps worldwide have been on a shopping spree. Last year DoorDash snapped up Britain's Deliveroo just as Prosus, a technology-investment firm that owns delivery apps around the world, bought Just Eat Takeaway, a Dutch rival. Uber is poised to snaffle Delivery Hero, based in Berlin; it also considered gobbling up Instacart at least twice.

DoorDash's purchase of Instacart, however, is about expanding within America. It will help DoorDash move further into groceries, which need more complex software than takeaway meals because workers have to shop in-store and find ▸▸

substitutes for missing items rather than just waiting for a brown-bagged restaurant order. It also allows DoorDash to combine Instacart's ad business, which enjoys enviably high margins, with its own. For Instacart the deal offers the protection of scale: DoorDash's market value of $73bn is more than five times its own.

Even under the deal-loving Trump administration, the merger is not sure to go through. As the midterm elections have shown, "affordability" is the hottest of political topics. Regulators may frown on deals that they suspect will push grocery bills up. Last month DoorDash and Instacart (as well as Uber and Walmart) were among the firms from which the Federal Trade Commission, a competition regulator, requested information on their use of personalised pricing.

DoorDash and Instacart argue that greater scale will mean lower costs and hence cheaper groceries. What is more, they add that their combined platform will help corner shops fend off the grocery giants. DoorDash has gone so far as to roll out a website called Shop Local Together, replete with mentions of affordability.

Even if regulators can be convinced of the merits of a deal, the combined business will be far from a guaranteed success. A combined DoorDash and Instacart should outmatch its gig-economy peers. But to thrive it will have to stand up to the world's biggest retailers. That is a much harder sell. ■

BARTLEBY

Is curiosity all it's cooked up to be?

A quality that everyone lauds has its complexities

IN ANY DISCUSSION about the human qualities that will matter to employers in an AI-inflected future, a few traits recur: taste, judgment, empathy, expertise. One of these bingo-card words is curiosity. Curious people are more likely to explore the contours of new technologies, runs the argument, and to master new skills. If you want a workforce that is capable of adapting to rapid change, inquisitiveness is a superpower.

It's almost impossible to be against curiosity—which explains why job candidates tend not to brag about being totally uninterested in the world around them. But when everyone agrees on something, it's usually worth wondering if there's another side to the story.

True, curiosity has lots of benefits. Intellectual curiosity is predictive of academic success, according to a meta-analysis by Sophie von Stumm of the University of York and her co-authors. Inquisitiveness helps learning. A study by Matthias Gruber of Cardiff University and his colleagues found that people have better recall of information that they were eager to find out about (and even of things they had learned incidentally when they were in a state of heightened curiosity).

Curiosity also aids creativity. In a paper by Lydia Paine Hagtvedt of Akamai Technologies and her co-authors, participants were asked to guess how Harry Houdini had performed an illusion in which he made an elephant disappear. Those who were told their answer was close but not correct did better on a subsequent challenge to think up new tricks than a control group who had been told they had guessed correctly. The itch to solve a puzzle is an effective way to get people exploring lots of different ideas.

That same itch can benefit organisations in other ways. Curiosity hooks the interest of consumers. There must be better reasons to upgrade to LinkedIn's premium tier, but none more powerful than wanting to see who on Earth keeps looking at your profile. If charity collectors solicit unusual amounts of money rather than the usual round numbers ($8.23, say, rather than $10), people appear to be more likely to donate. The specificity of the request piques interest, disrupting that rehearsed speech about needing to get to a meeting.

A sense of mystery can also be used to screen for curious job candidates. Google once stuck a maths problem on a billboard without revealing that it was the one paying. Anyone interested enough to solve the problem was led to a recruitment site.

Nonetheless, the intuition that curious employees must be wholly good for organisations is worth querying. For one thing, curiosity is inherently distracting. The first two paragraphs of this column, for example, contain one of the longest words in the English language whose letters



appear in alphabetical order; a wildly curious person will start hunting for it now rather than reading on.

Inquisitive colleagues pull on loose threads, asking ever more questions and requesting ever more data. They may find something valuable, or they may just delay a decision. Curiosity entails moving from your immediate focus to something else that has drawn your attention, explains Spencer Harrison of INSEAD, a co-author of a paper on "productive inefficiency" that explores how short-term detours can lead to potential long-term pay-offs.

Curiosity is also closely associated with autonomy. Participants in a study by Nicola Schutte and John Malouff of the University of New England were asked to watch a video. Those who had some choice of what to watch were more curious about its subject-matter than those who were assigned one.

That raises questions for organisations about how much leeway employees should have to explore questions which interest them. In "The Scientific Mindset", a new book, Stefan Thomke of Harvard Business School describes Booking.com's culture of experimentation. The travel site is famous for allowing product teams to launch their own A/B tests of new features, roughly 1,000 of which are running in parallel at any one time. Such decentralisation would be a leap for many firms.

An organisation that hires curious people is always going to be better off than one that selects people who are dead behind the eyes. But making the most of curiosity means accepting trade-offs—the time spent wandering down blind alleys, the experiments that go on largely out of sight. There's almost nothing bad about curiosity. Almost.

Mining

Scratching the surface

America's copper giant has big dreams—but cautious plans

AMONG THE few areas of bipartisan consensus in Washington these days is the belief that securing access to critical minerals is vital to the national interest. In many cases Chinese miners have already established a daunting lead. But not in copper. That is thanks in no small part to Freeport-McMoRan, an American miner that is the world's second biggest producer of the red metal, after BHP, a diversified Australian giant.

"Today really is Freeport's time," says Kathleen Quirk, chief executive of the Phoenix-based miner. Electrification and the artificial-intelligence boom will keep lifting copper demand, she argues, yet new supply is scarce and slow to develop. In the past 15 months copper prices have surged by 40%, bringing Freeport's share price with them (see chart). That, combined with new technology and greater political support, leads Ms Quirk to suggest that America may be on the cusp of a copper version of the shale revolution. People once assumed that the country would remain dependent on imported oil and gas; instead it became a major exporter. Ms Quirk reckons her industry could see something similar.

One day, perhaps. But the strategy now being pursued by America's copper giant will contribute only modestly. Last month Freeport said it was aiming to lift its total output of the metal to 4.5bn-5bn pounds by 2030, up from a projected 3bn in 2026. Its approach is strikingly incremental.

Freeport's first priority is to restore output at its biggest mine—Grasberg, in Indonesia, which usually accounts for over 35% of its output (and is 51% owned by the Indonesian government). Since a giant mudslide in 2025 that killed seven workers, production there has been below par. Ms Quirk expects the site to have fully recovered by the end of 2027.

Next is to selectively expand existing sites. Most advanced is a plan to double the capacity of Bagdad, an 81-year-old mine in Arizona. On November 4th Freeport said its board had approved the $4.5bn investment, which Will Tankard of CRU, a consultancy, describes as "low risk". Freeport says the project, which has all its permits, will break even at $4 a pound; copper trades near $6.40 today.

Bagdad's doubling could add up to 250m pounds a year of copper supply by 2030. Freeport is also studying another mine expansion in Arizona, and seeking permits for one at El Abra in Chile, though neither will start before the next decade.

The final focus for Freeport is on new technology. At most of its mines it deposits ores that contain too little copper into giant stockpiles. These now hold about 40bn pounds of copper, says Ms Quirk.

To extract more from that ore, Freeport is experimenting with new forms of "leaching", which uses acid to dissolve copper from rock. Last month the miner said it had tested a solution in the lab that may let it recover 800m pounds of copper a year from the stockpiles by 2030, up from a current annualised rate of 220m. Trials are planned in the field next year.

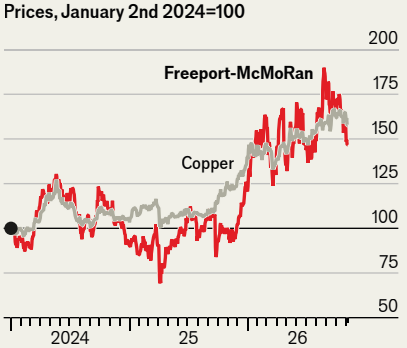
In 2025 Freeport has also converted Bagdad's fleet to autonomous trucks. Ms Quirk says it plans to do the same elsewhere in America within the next few years to ease labour constraints, allowing it to produce more from existing mines. The company recently opened a centre in Phoenix to remotely perform dispatch work that used to be done on site.

For investors, however, Freeport has recently lost some of its lustre. From a peak in August, its share price has fallen by more than 20%. Partly that reflects disappointment over a downward revision to its projected sales and an upward revision to its capital expenditure over the near term. But it also points to discontent over the miner's cautious approach.

Freeport has signalled little appetite for big acquisitions. Its strategy also lacks the "greenfield" projects that would be needed to vastly expand output—and turn America into a global copper power. That may reflect uncertainty over whether copper prices will continue to surge. A slowing global economy and the stagnation in China's property market are weighing on demand. Tom Price of Panmure Liberum, a broker, reckons that this year's price rally was caused mostly by hedge funds treating copper futures as a proxy for AI investment. If the data-centre binge comes to a halt, Freeport's restraint will prove wise. ■

Red hot

Prices, January 2nd 2024=100



Source: FactSet



Health care (1)

Careworn

NEW YORK

The break-up of CVS marks a turning point for America's health industry

IN THE 1960s two brothers in Massachusetts co-founded a drugstore chain called the Consumer Value Stores. Today CVS is America's largest such business. Yet over time it became much more than a pharmacy, first by expanding into the booming business of negotiating bulk discounts with drugmakers, and then by offering its own health-insurance plans. In all three markets it is one of America's largest companies (see chart on next page).

On November 4th CVS announced that it would unwind this vertically integrated model, by splitting in two. One half will be made up primarily of its insurance arm and the pharmacy-benefit manager (PBM) that negotiates drug prices, with annual revenue of around $300bn. The other will take its retail pharmacies and walk-in clinics, which together make a little over $90bn in sales a year. Measured by revenue affected, it is the largest break-up in over a decade, and the largest ever in health care. It also signals a turning point for the industry.

When CVS purchased Aetna, a health insurer, in 2018, it hailed the deal as the start of a new model for American health care. Companies would become more efficient by integrating and controlling large swathes of the country's convoluted health system. At times the insurance arm has been a source of pain; two years ago profits were plummeting after the company misjudged the cost of services for patients on its health plans. But since then David Joyner, the boss of CVS, has restored Aetna to ▸▸

health—and proved the profitability of the vertically integrated model.

So why abandon it? The explanation may lie in an increasingly hostile political environment. Lawmakers in America—both Republicans and Democrats—have become critical of vertically integrated health-care firms, blaming them for passing high costs onto consumers.

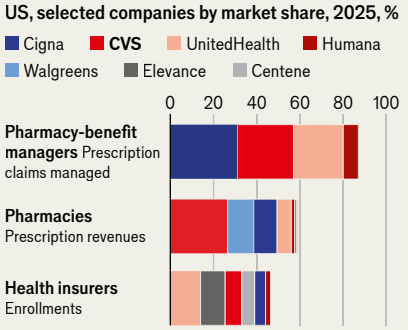
Critics have been particularly focused on tie-ups between pharmacies and PBMs. Combining with PBMs allowed drugstore chains to share in the often opaque cut of rebates that these middlemen took from pharma companies, and to direct more business to their stores. Politicians now decry this as anti-competitive. In 2025 Arkansas became the first state to pass a law barring the integration of pharmacies with PBMs, though it is held up in the courts following a challenge from CVS and others. Neeraj Sood of the University of Southern California thinks other states will soon follow. Tennessee already has.

Investors appear nervous about the break-up plan. CVS's share price fell by 13% following the announcement. That may reflect the poor prospects for the retail arm following a split. CVS's pharmacy business is the market leader, and has fared better than competitors like Walgreens, which was taken private in 2025. But adjusted operating margins have fallen from 7.1% in 2021 to 4.7% this year, reckon analysts at JPMorgan Chase, a bank. Threats abound. Drugmakers such as Eli Lilly and Novo are bypassing pharmacies by selling weight-loss jabs and other medicines directly to consumers. E-commerce firms including Amazon are also muscling into the drugstore business.

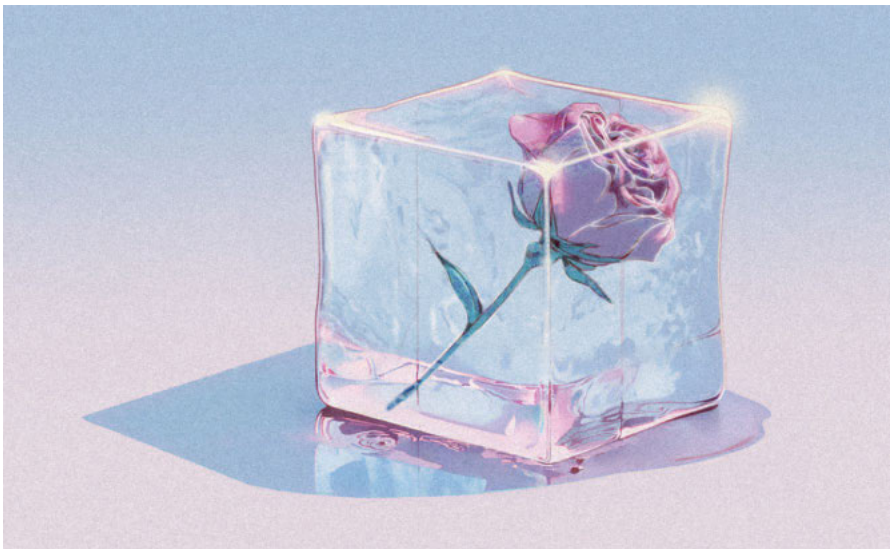
Moreover, even CVS's insurance-and-benefits arm may come into politicians' cross-hairs before long. "If every insurer has their own PBM, there's no incentive for new PBMs to come onto market," says Dr Sood, as many of the potential customers are already spoken for. The end of vertical integration in American health care may just be getting started. ■

Connective tissue

US, selected companies by market share, 2025, %



Sources: Drug Channels Institute; Mark Farrah Associates; Peterson-KFF



Health care (2)

Forever bound

The quest for immortality has become serious business

On a quiet street in the posh London neighbourhood of Chelsea resides HUM2N, a longevity clinic. Inside, a man in socks, gloves and a headband steps into a fridge-sized cabinet chilled to -110°C. A few minutes of "cryotherapy" leave him, by his own account, invigorated. Next door a woman lies in a hyperbaric chamber—a pressurised capsule resembling a small submarine—breathing pure oxygen. Other clients take intravenous drips of NAD+, a molecule that cells need to turn food into energy; or have their blood drawn, mixed with ozone and put back. A package of five sessions at the clinic costs £3,000 ($4,025).

The quest to live for ever has lately garnered new interest. Dario Amodei, boss of Anthropic, an artificial-intelligence lab, has suggested that his technology could raise the human lifespan to 150 years. Sam Altman, his counterpart at OpenAI, has put more than $180m into Retro Biosciences, a startup aiming to add ten healthy years to human life. The powerful beyond Silicon Valley are eager, too. Last year Xi Jinping and Vladimir Putin were overheard musing that organ transplants might one day make immortality possible.

HUM2N's clients range from bosses to athletes to patients in their 80s with chronic disease, says Mohammed Enayat, its founder. As the world ages, interest in living longer is seeping into the mainstream. Across the OECD, a club of mostly rich countries, nearly a fifth of people are aged 65 or over; by 2050 more than a quarter will be. One of the loudest evangelists is Bryan Johnson, a tech entrepreneur who hopes never to die. He has turned his regime into a Netflix documentary and a YouTube channel with more than 2m subscribers.

Two very different industries are looking to seize on the opportunity. The first is a colourful and lightly regulated group of clinics and online businesses selling supplements, scans and treatments of sometimes dubious efficacy. The second is slower moving but more consequential. Working in concert with the world's biggest drugmakers, a crop of biotechs is developing medicines that might slow ageing itself—or even reverse it.

The prize is enormous. Pharma bosses long dismissed obesity as a niche market. GLP-1s proved them wrong, and made Eli Lilly the first drugmaker worth $1trn. A medicine that slowed ageing could be bigger still. "You can sell one year of life," muses Alex Zhavoronkov, the founder of Insilico Medicine, an AI drug-discovery firm. "How much can you charge?"

The bloom of youth

Such a drug may be years away, if it comes at all. Into the gap has rushed a business catering to the impatient, one that sits largely outside conventional health care. Insurers cover almost none of it, so customers pay in cash.

First comes measurement, on the belief that tracking everything will catch problems early enough to fix them. Providers

offer blood tests, genome sequencing and full-body scans that promise to spot cancers or autoimmune disorders before symptoms appear. Prenuvo, one such firm, charges around $4,000 for an MRI scan of a patient's entire body. Many sell annual subscriptions, retesting customers regularly to look for changes. Neko Health, a Swedish provider backed by Daniel Ek, a co-founder of Spotify, raised $700m in July ahead of its launch in America.

Next comes treatment. Much of that takes place in longevity clinics like HUM2N. Some estimates put the number of these at about 800 in America alone. The label is unregulated and vague, says Andrea Maier of the National University of Singapore, who co-founded a longevity clinic herself. At too many, she says, customers pick their own treatment, as though ordering pizza. "It's not care."

The most adventurous patients head to Roatán, an island off Honduras, where clinics offer gene therapy, stem-cell infusions and other experimental treatments. Others turn to social media, where a growing number of influencers peddle elixirs. Mr Johnson's company, Blueprint, sells supplements, a powdered "longevity mix"—and olive oil. Then there are the many online businesses selling injectable "peptides", including the "Wolverine stack", a combination that is claimed to speed the repair of muscles and tendons.

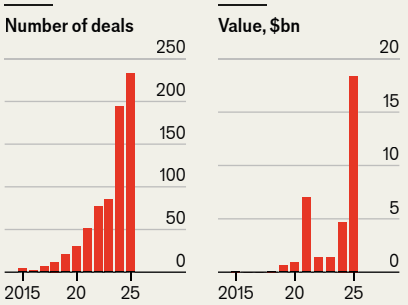
Little of this rests on solid science. The American College of Radiology, a professional body, says there is "no documented evidence" that full-body screening is cost-effective or prolongs life. Such scans can lead to over-diagnosis, turning up harmless anomalies that prompt needless further tests. The treatments fare no better. Studies of NAD+ supplements have been inconclusive or shown limited effect. Peptides are a wild west, with vendors often labelling them as "for research use only" to dodge regulators.

In parallel, drugmakers are looking for scientifically proven ways to add healthy years—a far more arduous process. America's Food and Drug Administration (FDA) does not treat ageing as a disease, so there is no route to approving a medicine that slows it. Would-be longevity drugs must instead win approval to treat a specific condition, often one linked to ageing, and then try to expand to others.

GLP-1s show how that might work. First approved for diabetes and then obesity, these drugs have since been shown to help with heart disease, sleep apnoea and kidney problems, all of which become more common with age. By lowering the risk of such conditions, the drugs may thus help people live longer. At a conference last month Lilly and Novo, its Danish rival, presented data suggesting that patients taking their GLP-1s were ageing more slowly. The yardstick was "ageing clocks", which estimate how old a body really is (as opposed to how many birthdays it has had) from chemical marks on DNA or the mix of proteins in the blood. Novo found the biological age of the hearts of patients on its GLP-1s to be up to four years younger compared with those on a placebo, though all were overweight or diabetic. Lilly calls its own results preliminary.

Coming to life

Longevity-biotech investments



Source: Longevity.Technology

Whatever GLP-1s turn out to do for ageing, they have already changed how big pharma thinks about the opportunity. Five or ten years ago drugmakers were chasing rare diseases, says Stephen Roper of L.E.K., a consultancy. But GLP-1s have re-established the appeal of mass-market drugs.

Rather than develop longevity treatments themselves, pharma giants mostly buy options on biotechs' work. Lilly has struck a deal with Insilico worth up to $2.75bn. Novartis, a Swiss drugmaker, has one worth up to $550m with BioAge Labs, another biotech. The ranks of such startups are growing. Last year longevity biotechs raised $18.4bn, more than in the previous ten years combined (see chart).

Insilico calls its products "dual-purpose therapeutics", each targeting ageing and a specific disease at the same time. A drug aimed only at ageing, argues Dr Zhavoronkov, its boss, would struggle to attract serious investors. Insilico's most advanced candidate, rentosertib, treats idiopathic pulmonary fibrosis, a disease that scars the lungs. It entered a late-stage trial in July, making it one of the furthest along of any drug designed with ageing in mind. In an earlier trial of 42 patients, ageing clocks suggested that those on the drug were biologically younger than those on a placebo, by around three years on some measures, though all were already ill.

Other startups are looking to reverse ageing altogether. They include Mr Altman's Retro; Altos Labs; and NewLimit, co-founded by Brian Armstrong, a crypto entrepreneur, which in June announced $435m in fresh funding. Most are betting on "epigenetic reprogramming", the idea that the chemical switches on DNA, which become muddled with age, can be reset.

Previous efforts by drugmakers to create longevity treatments have ended in disappointment. In 2008 Britain's GSK bought Sirtris, a biotech developing drugs inspired by resveratrol, a compound in red wine. Five years later it shut the firm down. Calico, launched by Google in 2013 to tackle ageing, has achieved little. Unity Biotechnology, a startup focused on clearing out ageing cells, laid off its entire staff in May last year after disappointing trials.

The new wave of biotech founders and investors argue this time will be different, thanks in part to AI, which they hope will accelerate discoveries. The first human trials for a drug targeting epigenetic reprogramming—a liver treatment developed by NewLimit—may begin next year. While the results are gathered, consumers will keep seeking immortality elsewhere. ■



Chilling out

BREAST CANCER RESEARCH FOUNDATION

TODAY'S RESEARCH TOMORROW'S CURES

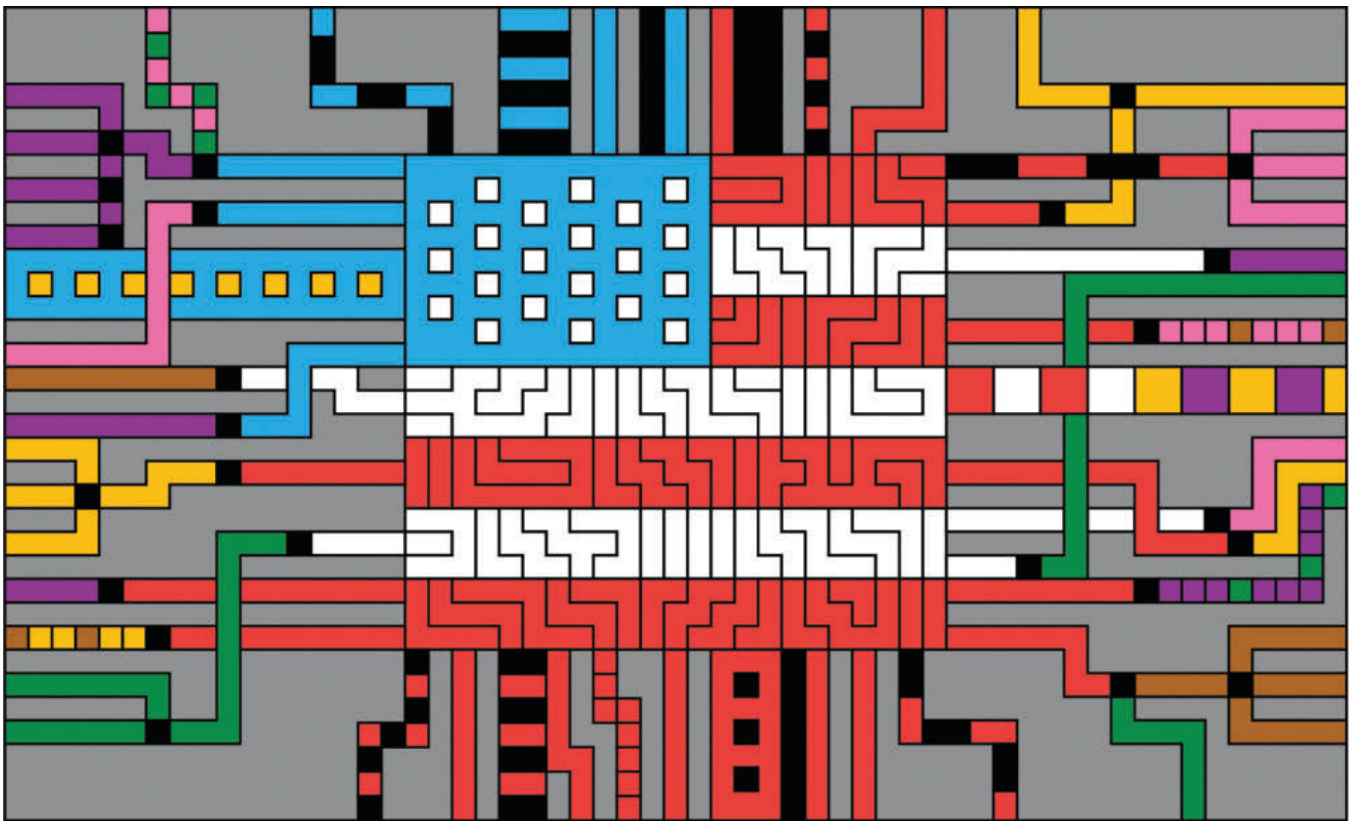


Elaine (left),
Living with metastatic breast cancer

The breakthrough that saves a life tomorrow starts with breast cancer research today.

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The other AI trade

Globalisation strikes back

WASHINGTON, DC

Artificial intelligence is turning protectionists into free traders

A YEAR AND a half ago Donald Trump was riding high and bent on reversing globalisation. As Americans fretted about the cost of living, the self-proclaimed "Tariff Man" declared "chronic trade deficits" a "national emergency" and slapped hefty tariffs on imports. The protectionist mood spread. In August India's prime minister, Narendra Modi, urged his fellow citizens to embrace *swadeshi* (self-sufficiency), insisting that not "a single foreign thing" should enter their homes. The European Union moved to double tariffs on steel imports. Mexico approved steep levies on goods from China and other Asian economies. An index compiled by economists from the World Trade Organisation (WTO) and the IMF shows that restrictive trade measures rose by over 60% in 2025 alone.

Yet for all the protectionist fervour, global trade today is booming. Since the final quarter of 2024, just before Mr Trump returned to office, the dollar value of world trade has surged by more than 27%. The pace has accelerated this year. In the first eight months of 2026 it was up by 18% on the same period last year, a remarkable pace by historical standards. Even by volume, trade is expected to grow faster than the world economy for a second year running—a hallmark of globalisation's heyday before the financial crisis of 2007-09.

Free traders can thank artificial intelligence. As firms race to build data centres, trade in the servers, chips and networking equipment that power them has soared. Governments, eager to build AI capabilities at home, have largely spared foreign hardware from tariffs. Using the WTO's classification of AI-related goods, *The Economist* calculates that trade in such products exploded by 55% in the first eight months of 2026, compared with a year earlier. Strip out AI-related goods and world trade is still growing, but at a far less impressive pace (see chart 1 on next page, left panel). AI hardware accounts for about a quarter of world imports, up from 15% in 2023. Protectionists, it seems, have learned to love free trade when it suits them.

Nowhere is AI trade perkier than in America. Spending on computers, telecoms gear and data-centre construction now amounts to 2.5% of GDP. Almost all the kit comes from abroad: for every dollar America invests in high-tech equipment, it imports roughly 90 cents' worth, according to the Federal Reserve. Imports of AI-related goods are on course to exceed an eye-watering $1trn this year.

The world's largest importer, then, is not retreating from globalisation quite as planned. America's goods imports have risen by 16% since late 2024, roughly in line with their trend from 2018 to 2024. But the AI boom has transformed what America buys from abroad. We calculate that im- ▸▸

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ports of AI-related products surged by 69% in the first eight months of 2026, compared with the same period last year. Imports of everything else fell by 10% (see chart 1, right panel). Three years ago America imported more than five times as much in vehicles, oil, pharmaceuticals and metals as in servers, chips and networking kit. Now the latter group has edged ahead.

Since his "Liberation Day" tariffs in April 2025, Mr Trump has largely spared hardware powering the AI boom. Fully 97% of computing-hardware imports and 85% of networking-equipment imports fall into categories covered by tariff exemptions, according to a study by an economist at the Minneapolis Fed. In 2025 Uncle Sam collected tariffs equivalent to less than 2% of the value of imported computing and networking equipment, compared with nearly 10% on goods unrelated to AI.

Even the grandly named "semiconductor tariffs" imposed in January are full of holes. The 25% levy is aimed chiefly at advanced chips such as Nvidia's H200, which must pass through America for inspection on their way from Taiwan to China. Exemptions for American data centres, startups, research and other domestic uses are so sweeping that the Congressional Research Service, a non-partisan beancounter, questions whether any of the affected imports of chips would pay the tariff at all.

The protectionist-in-chief's embrace of free trade has complicated his ambition to shrink America's trade deficit. In September the goods deficit reached $136bn, more than 70% wider than a year earlier, as total imports hit a record high. Appetite for foreign AI hardware is part of the explanation. America accounts for four in ten global imports of servers, computer parts and networking gear, against just one in six for other goods. Its exports of such equipment are nowhere near large enough to offset these purchases. The result is by far the largest AI-related trade deficit among major economies (see chart 2, left panel). Had imports of AI-related goods grown at the same pace as other imports in recent years, the goods deficit would have been 16%, or nearly $200bn, smaller in 2025.

All this shows the folly of judging economic success by trade deficits. A server assembled abroad worsens the goods balance when it enters the country. But installed in an American data centre, it becomes productive capital, generating computing power for years to come. Research by the Fed finds that previous technology-driven investment booms widened the current-account deficit even as they raised output. Free trade allows American firms to concentrate on what they do best, from chip design to AI research and software, while relying on specialised manufacturers abroad for the equipment.

AI's labyrinthine supply chains, meanwhile, expose the limits of reshoring. Six economies—Taiwan, Mexico, Vietnam, Thailand, South Korea and Malaysia—account for more than four-fifths of America's AI imports (see chart 2, right panel). Mexico and Taiwan alone supply 85% of its imports of AI servers and other computer-processing kit. Though this will include some rerouted goods, China's observable share of such imports has plunged, as have those of other countries outside the sextet.

Consider an Nvidia GB300 AI server rack destined for an American data centre. Its chips are designed in America, fabricated in Taiwan using Dutch lithography machines fitted with precision mirrors made in Germany, and paired with high-bandwidth memory, a South Korean speciality. Eighteen compute trays, containing 72 powerful AI chips, then travel from Taiwan to Mexico, where workers combine them with cooling systems, power modules, network switches and components sourced from China and Vietnam. The completed racks then head north across the border. And that is the simplified version. Even Nvidia's Blackwell AI chips, now being fabricated by Taiwan's biggest chipmaker in Arizona, must travel back to Asia to be packaged with high-bandwidth memory.

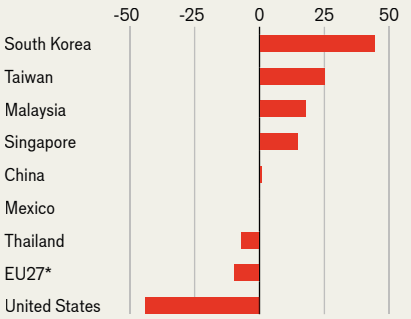
Mr Trump's unlikely embrace of free trade has its limits, even in AI. His tariffs on steel, aluminium and copper are making data centres more expensive to build, raising the cost of everything from building materials to cooling systems. The Centre for Strategic and International Studies (CSIS), a think-tank, estimates that existing metal tariffs could add $130bn to America's planned data-centre buildout by 2030.

Worse could be coming. The president is considering broader tariffs on semiconductors and products containing them, potentially including the servers powering America's AI boom. A blanket 25% levy could add $360bn to data-centre construction costs, CSIS reckons.

Perhaps the midterm elections on November 3rd will make the administration think twice. Americans liked the idea of tariffs until their prices rose as a result. Now they are rediscovering their inner free traders. Roughly two-thirds of voters in the midterms believe Mr Trump's levies have hurt the economy, according to election-night polling. Discontent over living costs helped Democrats make sweeping gains. Even if the president does not take the hint, though, globalisation is proving a stubborn thing to kill. ■

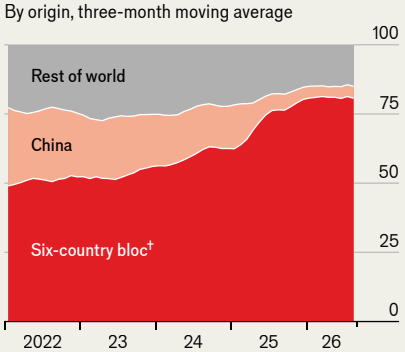
World trade reorganisation 2

AI-related goods-trade balance, % of total
Selected economies, January-August 2026



Sources: Trade Data Monitor; *The Economist*

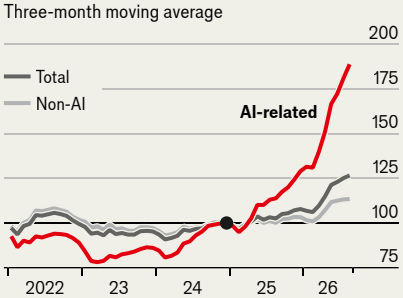
US, AI-related goods imports, % of total
By origin, three-month moving average



*External trade †Malaysia, Mexico, South Korea, Taiwan, Thailand and Vietnam

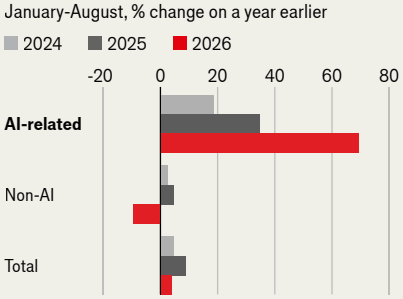
General agreement on tariffless tech 1

World, goods imports*, December 2024=100
Three-month moving average



Sources: Trade Data Monitor; *The Economist*

United States, goods imports
January-August, % change on a year earlier



*Data for 62 countries covering roughly 95% of global imports

Intensive parenting

Tiger mothers of the world, unite

Hands-on child-rearing is spreading

RICH PARENTS are different. They have money. They also used to be different in spending pots of it on their offspring's edification. Yet as competition for university places and well-paying jobs heats up, parents across income levels are bankrolling their children's futures earlier and more aggressively. From piano lessons for toddlers to tennis for teenagers, intensive parenting is on the rise.

The sums are significant. More than half of American children take part in a sport after school or at weekends. In 2024 this cost the average family $1,016, just for one child's main sport. That was a 46% jump from 2019, twice the cumulative rate of inflation. Between the logistics of chauffeuring children to several practices each week and conferring with coaches, American parents are dedicating more than 15 hours a week to their children's sports—a commitment on a par with a part-time job.

As with young bodies, so with young minds. Private tutoring has long been an obsession in richer parts of Asia. Three in four school-age South Koreans took paid lessons in 2025, according to national surveys, including 57% in the lowest income quintile. So did four in five five-year-olds. The OECD, a club of mostly rich countries, estimates that average tutoring spending per pupil has reached roughly a tenth of average household disposable income.

Now other Asian parents are splashing out. Around 27% of pupils in India, and 31% of those in urban areas, receive private tuition. In China spending on education has grown fastest in the poorest regions.

The trend is not confined to Asia. One in three French pupils aged 15-18 is enrolled in private coaching. The share of state-educated British ones with access to tutoring is now nearly level for the poorest and richest households; 37% of those from the lowest quartile have them, just shy of the 39% among the richest quartile, according to the Sutton Trust, an education charity. In London the figure for state-school pupils rises to 45% (see chart 1). The gap has narrowed in part thanks to an expansion of state-funded tutoring schemes. Yet parents are paying, too: 30% of British youngsters aged 11-16 in state schools say they have had private tutoring, up from 18% in 2005, Sutton Trust's data show.

Matthias Doepke of the London School of Economics and Fabrizio Zilibotti of Yale University find that, historically, the more unequal the country, the less attention parents pay to soft virtues like independence or imagination (see chart 2). Western populations believe inequality to be increasing, and a middle-class lifestyle is perceived to be less of a given, meaning parents have grown less relaxed. Their focus is shifting to qualities like hard work, which intensive parenting tries to instil.

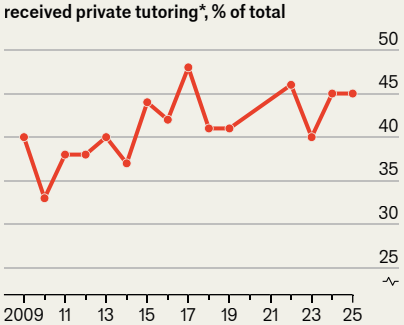
High-pressure education comes at a growing cost, too. In 1990 private spending in America on schools and universities, plus tutoring, coaching and the like, worked out at 18% of total lifetime educational investment (including public spending), according to the National Transfer Accounts, an international research project. By 2020 (the latest figure available) the share was 24%, equivalent to $68,000. In 2023 private spending accounted for 42% of lifetime educational investment per child in South Korea, an eye-watering $152,000 (also in 2020 dollars).

Yet these investments do not necessarily translate into social mobility. That may be because although the poor are spending more, the rich are not letting up. The likelihood that children do better than their parents has stagnated over the past decade in France and Spain, and collapsed in Singapore and South Korea. Getting into a top university is harder than ever. Harvard admits 3% of applicants, down from 30% in 1960. The share of rural students admitted to Peking University dropped from a third between 1978 and 1998 to around a sixth in 2021—faster than the relative decline in China's rural population.

Even with a degree in hand, 30% of Americans from non-graduate family backgrounds reach the top fifth of earners, compared with 41% of those whose parents attended university, according to the Sutton Trust. Although the share of adults from non-graduate families earning a university degree has climbed by ten percentage points over the past decade, the college earnings premium such people could expect fell by 11 percentage points. In Britain graduates who grew up in poverty, defined by eligibility for free school meals, earned 7% less than their peers a decade after graduating from the same university and course, according to the Resolution Foundation, a think-tank. In a competition for their children's future, rich parents still have the edge. ■

Intellectual capital 1

London, 11- to 16-year-olds who have received private tutoring*, % of total

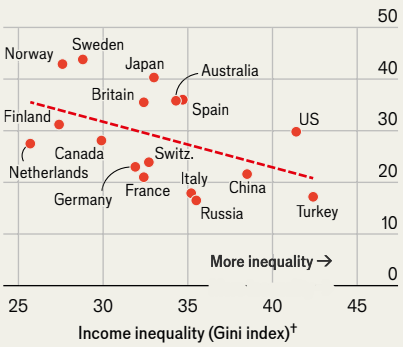


Source: The Sutton Trust *State-school educated

Imagine that 2

Selected countries, polled 2017-22

Respondents who name "imagination" as an important quality for children to learn at home, %



*Respondents choose up to five qualities out of 11 they consider most important
†Closest observation to the survey year. 100=maximum inequality
Sources: World Values Survey; World Bank

American tenants

Past due

Gauges of the financial health of those who rent their homes are flashing red

JACOB RAMIREZ, a 31-year-old operations manager for a café chain, has long struggled to make ends meet. In college he used a credit card to buy textbooks; after graduating, he occasionally did so to pay rent and utility bills. By 2022 he, his wife and their dog were in a one-bedroom flat in Pomona, east of Los Angeles. But rising rent and other expenses—"like an anaconda snake choking me out"—pushed him deeper into debt. In 2023, owing $28,000 on five cards, Mr Ramirez turned to a non-profit debt-counselling service. He is on track to pay his debts by 2028.

America's economy is growing steadily, thanks to an artificial-intelligence boom and robust consumer spending. But for three or four years a divide has been opening between homeowners and renters like Mr Ramirez, who make up a third of American households. An analysis by *The Economist* suggests that tenants are increasingly missing payments and turning to costly short-term credit, even as homeowners' finances remain resilient. Is America experiencing a renters' recession?



Where the money goes

Their difficulties represent a turnaround. During the global financial crisis of 2007-09 it was homeowners who suffered. By 2010 one in 20 mortgages was in foreclosure and one in ten delinquent. House prices had fallen by nearly a quarter; nearly one in four homeowners owed more than their dwellings were worth.

Now it is the turn of renters to suffer more. The Federal Reserve's latest Survey of Consumer Finances (SCF), published last month, shows that in the past year more than one in eight were at least 60 days late on a loan payment, the most since records began in 1989 (see chart, left panel). Another Fed survey, in late 2025, found that a quarter had not paid all their bills in full the previous month, compared with one in ten mortgage-holders (see chart, right panel). About one in six finds it "difficult to get by", more than three times the rate among mortgage-holders.

Some of the divide reflects demography. Renters tend to be younger, poorer and less educated: their median household income in 2025 was $57,000, against $103,000 for homeowners. But these characteristics explain three-fifths of the gap between renters and mortgage-holders, we calculate. What about the rest?

Partly, the rent. Since 2019 rents in America have risen by 42%, according to the Census Bureau, a government agency, while renters' household incomes have gone up by 34%. Mortgage-holders' housing costs outpaced their incomes by a similar margin. But much of this reflects higher payments for new buyers, who have been screened by lenders for their ability to pay and whose mortgage payments are typically fixed for several years. Renters face higher payments when leases expire, whether they can afford them or not.

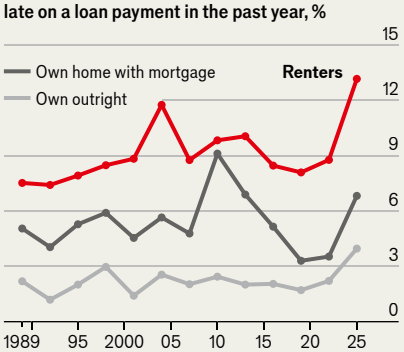
Next, a lack of savings to fall back on. The typical renter has $2,000 in liquid savings, according to the SCF, versus $12,000 for mortgage-holders. Homeowners also tend to have larger investment portfolios. "A lot of homeowners are supporting their spending by withdrawing from their brokerage funds," says Ted Gayer of the JPMorgan Chase Institute, a think-tank within a bank. The resumption of student-loan repayments after the covid-19 pandemic added to the strain, accounting for about half of the recent rise in renters falling behind on their debts, but only about a quarter of that among mortgage-holders.

Renters are putting off paying other bills. They have gone from being less likely than mortgage-holders to incur late fees on credit cards to being more likely, after controlling for income, age and other demographic factors, according to our calculations using data from the FINRA Foundation. Some renters are turning to other forms of short-term borrowing. Another Fed survey finds that more than one in ten took out a payday loan or pay-cheque advance in 2025, nearly twice the share in 2019. Saving must wait: "As rents increase, the ability to save, whether it's for a down-payment, for an emergency, for whatever, is really much harder," says Whitney Airgood-Obrycki of Harvard University's Joint Centre for Housing Studies.

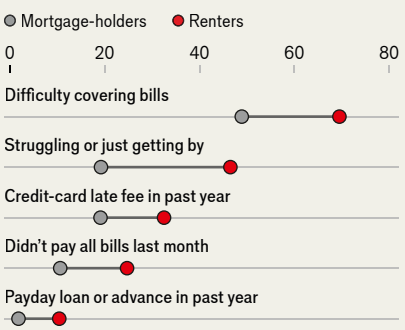
And some, like Mr Ramirez, are seeking help. Once his debts are cleared, he hopes to start saving for his own home. Others have a much longer road ahead. ■

When ends won't meet

United States, families who have been 60+ days late on a loan payment in the past year, %



United States, selected measures of financial well-being, 2025 or latest, %



Sources: Federal Reserve; FINRA Investor Education Foundation; *The Economist*

Financial markets

Waves and ripples

WASHINGTON, DC

Democrats triumph. Investors yawn

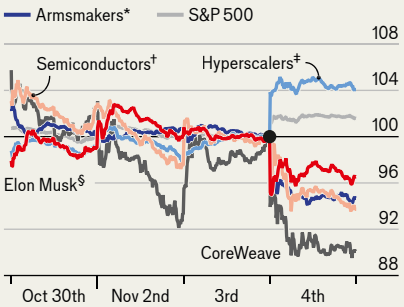
IN GEOLOGY, AN earthquake causes a tsunami. In American politics, a blue tsunami is causing an earthquake. In midterm elections on November 3rd the Democratic Party swept all before it. Ruby-red Texas elected a blue senator for the first time in decades and crimson Kansas for the first time in nearly a century. As we published this the Senate race in Mississippi, where Donald Trump last won by 23 percentage points, was too close to call.

In financial markets, the response to these seismic events was, for the most part, a shrug. The S&P 500 index of large American firms ticked up the morning after and ended the day 1.6% higher. Yields on ten-year Treasury bonds edged down. The dollar weakened by a touch.

Investors' indifference is understandable. They like certainty, and the Democratic wave precluded the nightmare scenario of an endlessly contested election or even a constitutional crisis. After the scale of his Republican Party's rout became clear on election night, Mr Trump told the *New York Times* that he would accept the

Ebb and flow

United States, share prices
16:00 EST, November 3rd=100



*Lockheed Martin, Northrop Grumman & RTX †Micron & Nvidia ‡Alphabet, Amazon, Meta & Microsoft §Tesla & SpaceX
Source: Bloomberg

results. Call it the "phew" effect.

Markets also like the inevitable stasis of divided government—at least in America, where the business environment is already favourable (political paralysis is more of a problem in places like Europe, where the underlying conditions are not pro-growth). If anything, oversight from a reinvigorated Congress will probably make it a bit harder for the president to raise tariffs, wage wars and gut the public sector. Fights over the budget are inevitable, but then they would have been anyway. And Democrats have tended to be less willing than Republicans to court sovereign default by blocking rises to the federal debt ceiling.

Still, placidity on the surface conceals more churn beneath, especially in equities (see chart). One loser is Elon Musk. The right-wing sometime trillionaire wasted nearly $500m trying to help elect Republicans in this year's races. Democrats will return the favour by poring over the government's contracts with his carmaker, Tesla, and his rocketry firm, SpaceX. Their share prices fell by 3% and 4%, respectively.

Other federal contractors do not inspire as much personal animus among Democrats. But they can still expect scrutiny now that the opposition party controls the purse strings, especially in industries that lefties find objectionable. Private-prison operators such as CoreCivic and GEO, both of which have assisted Mr Trump's heartless mass-deportation effort, shed value on fears that the incoming Congress would squeeze the immigration budget. Democrats are also unlikely to accept Mr Trump's request to spend $1.5trn on defence, hitting Lockheed Martin, Northrop Grumman, RTX and other armsmakers.

The second group of losers comprises firms whose fortunes depend wholly on the buildout of artificial-intelligence data centres. These installations were supported by many Republicans—until they provoked a backlash which the Democrats ruthlessly exploited. Three of the four states which accounted for half of planned new capacity—Georgia, Ohio and Texas—have Republican governors. From next year all four will have Democratic ones. In Texas, the top destination for data centres, the governor-elect, Gina Hinojosa, campaigned on a promise to impose an immediate moratorium on their construction.

The share price of CoreWeave, a big independent data-centre operator, duly slumped by 10%. Micron, which makes memory chips that go into AI servers, lost 7% of its value. Nvidia, the $5trn behemoth of AI-chipmaking, slipped by 3%. Manufacturers of electrical components—lots of which are needed in data centres and in power plants that supply them with electricity—have also taken a knock. Before the elections the two parties had reached a tentative deal on a bill that would make it easier for big energy projects, such as pipelines and wind farms, to secure the necessary permits. Democrats may now wish to drive a harder bargain. The shares of GE Vernova, Vistra and Vertiv each lost around a tenth of their value.

Conversely, the blue wave has lifted industries that can count on Trumpian budget cuts being unwound (health care and clean energy) and large spenders on data centres. Big tech's "hyperscalers" may now spend less, preserving their margins, while facing less competition for their existing capacity from CoreWeave and the like. Amazon and Microsoft were up by more than 6%. Alphabet gained over 3%. Even Meta, led by the manospheric Mark Zuckerberg, edged up. The tech bosses can expect to be hauled before Congress for adversarial hearings, both about AI and their obsequiousness towards Mr Trump. But at least their next earnings calls may turn out to be more amicable. ■



Markets are too damn calm

Chinese banks

Collateral damage

SHANGHAI

Indebted tycoons haunt China's banking system

On October 31st Bank of Shanghai gave investors a nasty shock. It said its net profit had collapsed by 93% in the third quarter, year on year, to 350m yuan ($53m); its non-performing loans shot up by 75% in the first nine months of 2026; and the capital set aside to cover unexpected losses hit the lowest in a decade. Its share price plunged by over 10%. The main source of the lender's troubles seems to be its relationship with one man, Yao Zhenhua.

Mr Yao has been stalking Chinese finance since 2015. That year his conglomerate, Baoneng, made a hostile bid for Vanke, a giant property developer. This was a triple surprise: such takeovers are almost unheard of in China; they are entirely unheard of when the target is, like Vanke, partly state-owned; and Baoneng financed the deal in an unconventional way, using premiums from several insurers it owned. This brazenness earned Mr Yao the nickname "barbarian", in tribute to American corporate raiders of the late 1980s.

The takeover failed and Mr Yao's use of premiums was found to be illegal (China tightly regulates how they can be invested). In 2017 he was banned from the insurance industry for ten years. But he expanded his empire in other areas. This included a 6.6bn yuan debt-fuelled investment in Qoros, a maker of electric cars. As Bank of Shanghai has disclosed, commercial conquest has not gone well for the barbarian.

As part of a long-running lawsuit

against Mr Yao and Baoneng, the lender has sought to recover loans extended to his companies worth at least 12.9bn yuan. The loans were secured in 2020 with property and with personal guarantees from Mr Yao. This collateral took a hit when China's property sector imploded. Qoros, meanwhile, sold too few cars and folded. In January this year Mr Yao, whose poor credit score bans him from commercial flights and luxury hotels, appeared in a social-media post claiming that local government officials had cheated him out of his investment in the car firm.

The most stunning revelation from Bank of Shanghai is that Mr Yao and his companies have "no executable assets" from which to recover those debts. This would explain photos posted to social media of someone looking remarkably like him riding the metro in Shenzhen, a big southern city, rather than taking a limo. More importantly for Bank of Shanghai's investors, it explains what happened to the lender's profits, which were eaten up by huge impairment losses. Many other Chinese banks that have done business with Mr Yao and Baoneng may be next.

Mr Yao is not the first tycoon to rattle the banking system. In 2019 another, Xiao Jianhua, caused a mini financial crisis. He is in prison. A fellow indebted plutocrat, Lai Xiaomin, was executed in 2021. Despite the Communist Party's efforts to rid Chinese finance of such rogues, the Baoneng barbarian is probably not the last. ■

BUTTONWOOD

The open weight of the world

Is China's stock-market rout an outlier or an omen?

IN THE GOOD old days China appealed to investors as the world's greatest convergence story. Its living standards would catch up with those in the West, its economy would multiply in size and the value of its stock market would grow in tandem. Or so the story went. Investors just needed to position themselves on the right side of history before everyone else arrived.

In more recent years China's residual appeal to global investors has rested on the opposite logic—not convergence, but diversification. There is less talk of China's destiny, more recognition of its idiosyncrasy. China, it has become clear, dances to the beat of the Communist Party's own drum. That means it can defy global trends, good and bad.

One recent example is the stock market. Global equities have risen by 11% this year, according to the MSCI World index, despite recent jitters. Other East Asian economies like South Korea and Taiwan have ridden the artificial-intelligence boom to far greater heights. China is also tightly stitched into the AI supply chain and boasts several innovative model-makers of its own, including listed companies like Z.ai and MiniMax, which both trade in Hong Kong. But China's tech shares have plummeted in the second half of the year, onshore and off. And its blue-chip index, the CSI 300, is down by more than 11% so far in 2026. Chinese equities have put the sync into idiosyncrasy.

China's government seems fed up with this particular source of exceptionalism. The rout has prompted fresh buying from the "national team", state-owned financial institutions that prop up the market when needed. China's central bank has also lent a hand. On November 2nd it said it would dust off a scheme that helps institutional investors, such as insurers and brokers, obtain the liquid collateral they need to finance their equity purchases. It will also make it cheaper for companies to borrow to buy back their own shares.

Why is the stock market sagging? Some of it has to do with those Chinese characteristics. Take fiscal policy. Other big economies would benefit from budgetary restraint but will see little of it. In China, by contrast, the government is tightening its belt when it should be loosening it. Its fiscal deficit, broadly defined, will narrow this year by 1.4% of GDP, reckons Goldman Sachs, a bank.

An endless property slump is also still taking a toll. On October 29th Fitch, a credit-rating agency, said it might downgrade the bonds issued by Zhuhai Huafa Group, a state-owned conglomerate based in China's Pearl River Delta. Known for a 72-storey tower overlooking the coastal cities of Zhuhai and Macau, the group also has lofty debts worth 413bn yuan ($62bn). According to Bloomberg, it recently delayed payment on two trust products (debt obligations that do not trade on exchanges) and asked for an extension on bank loans. The share price of its listed property unit fell by more than a fifth—never mind that the group's main owner, the city of Zhuhai, is unlikely to let it default on a publicly traded bond.



Another explanation for China's underperformance is more worrying. It may be an early victim of an investment trend that seems to be spreading around the world: the loss of enthusiasm for AI. In the West investors have begun to worry that AI models will eventually become commoditised. Pricing power will disappear as innovators struggle to maintain a durable lead over imitators. In China that grim end-game was more or less the industry's starting-point.

Chinese AI labs openly shared the mathematical "weights" that make models clever. That encouraged adoption, and helped the labs attract brainiacs motivated by intellectual glory as well as financial success. But openness comes at a commercial cost. The AI-related revenues of China's six leading firms together amount to about a tenth of the combined revenues of America's top two, OpenAI and Anthropic, according to Epoch AI, a research firm.

China may also offer a foretaste of what happens when the supply of new tech shares finally catches up with demand. It has tested investors' appetite with a crowded pipeline of initial public offerings. America may find that Anthropic's highly anticipated listing provokes similar indigestion, even in its much bigger market.

China's oddities deter many global investors. A bigger worry in tech circles is that China's lean present becomes the rest of the world's future. China may be less an outlier than an omen.

FREE EXCHANGE
A scholar of extremes

The favourite economist of the right and the left wanted to know what happens when markets fail



WILLIAM NORDHAUS had faith in the tools of his profession. For decades he helped run Yale University's economics department, where he arrived in 1967, aged 26, and stayed until he died on October 30th. He edited "Economics", a textbook still used by American undergraduates. And he was convinced that economic methods could be useful to other disciplines, leaving wonkish topics behind in pursuit of debates that consumed policymakers: the climate, technology and taxes.

His faith made him unflinching—and unafraid of a fight. No other economist of his generation worked across such a breadth of controversial topics. He pioneered carbon prices (which helped earn him a Nobel prize in 2018), pleasing America's progressives and irking its conservatives. He also defended billionaires, with the opposite effect. As a result, he became a rare economist to win the respect of the left and right alike.

Economics relies on the price system. Mr Nordhaus spent his life calculating prices that are missing. His doctoral thesis examined such failures in the knowledge economy, and suggested the optimal patent life for inventions that minimises underinvestment in copyable ideas and maximises social welfare. In the 1970s he decided that building theoretical models of technological change was "too hard" (and left the task to Paul Romer, with whom he shared the Nobel). So he turned to climate change instead.

Although the practice of climate economics would in time become politically fraught, the theory was manageable. Economic growth depended on energy. Firms that produced and used energy were not bearing the cost of the resulting carbon pollution. The warming that would ensue could hurt growth. What to do? One research group at the Massachusetts Institute of Technology favoured abandoning growth altogether. Mr Nordhaus disagreed. The problem, he thought, was a lack of a model that brought together the scientific and economic equations to connect growth, emissions and the environment.

Mr Nordhaus spent the next two decades trying to construct one. In 1992 he published a paper outlining the "dynamic integrated climate economy" (DICE) model. Its more than 20 equations eventually ranged from basic economic ones he taught undergraduates to scientific predictions about the risk of catastrophes and forecasts about how humans would adapt to a hotter world. Throw in a discount rate, the value placed on the lives of future generations relative to the present, and the model churns out the path of emissions reductions that would not plunge millions into poverty today, as a result of insufficient energy production, or tomorrow, if global warming wrecked the economy. The carbon price which would set the world on that path equalises the cost of abating an extra tonne of CO_2 and that of the damage this tonne would do in the future. As concerns about climate change mounted, so did interest in this work. By 2010 Barack Obama's administration had incorporated DICE into American policy.

Mr Nordhaus's climate economics had critics. He fought a long battle with Nicholas Stern, a British economist who favoured more weight on future lives. Some climate scientists thought he underestimated the probability of catastrophic events and contested the conclusion of his DICE paper that the economically optimal outcome was to allow average global temperature to rise by 3°C above pre-industrial levels. Yet even as they challenged some of his numerical assumptions, his detractors happily worked within his framework.

DICE made Mr Nordhaus a climate celebrity. But it was only the tip of a vast iceberg of academic output. A paper from 1975 suggested that politicians loosened monetary policy to bring down unemployment in the months before elections to win votes—and led to a proliferation of similar political-economy studies. In 1996 he compared the cost of generating the equivalent of an hour's worth of light from a modern lightbulb over the ages. His conclusion, that it plummeted from 5.4 hours of a worker's labour in 1800 to less than half a second in 1992, implied that conventional price indices vastly understate gains in living standards.

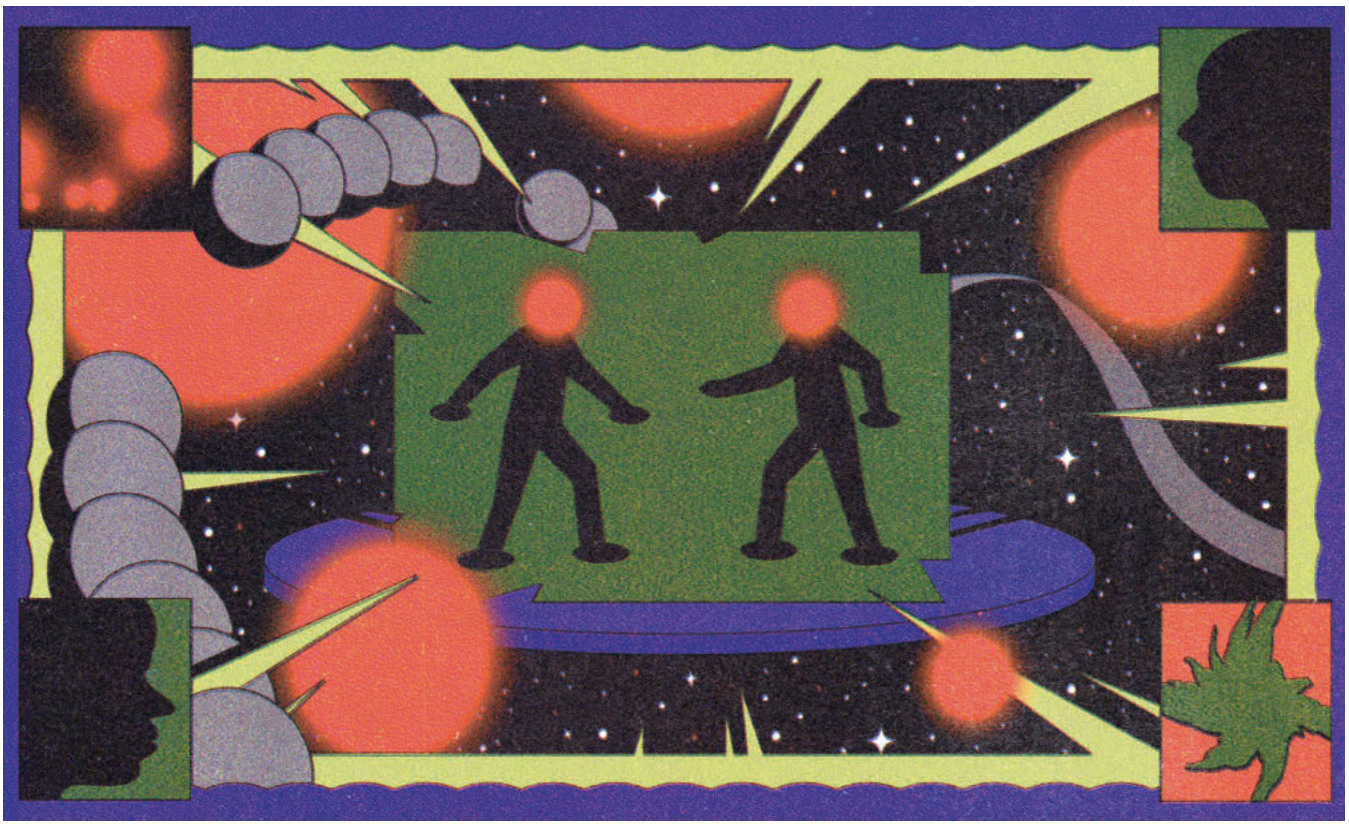
He eventually returned to the preoccupation of his doctoral days. In 2005 he used American records from 1948 to 2001 to calculate that inventors got just 4% of the value their inventions brought to society. The economic contributions of innovators, in other words, far exceeded their fortunes. The paper appeared as America was minting new tech billionaires, and its arguments were embraced by their defenders. If the self-made tycoons give so much to society, why tax them more? Even progressive Californians seem to agree: in midterm elections on November 3rd most of the state's voters appear to have rejected a ballot measure to tax billionaires' wealth.

The good kind of two-handed economist

Above all, Mr Nordhaus's economics was a triumph of pragmatism. He believed in moulding messy problems into understandable frameworks—and embracing the implications, regardless of where they took you. Producing numbers that were useful, he thought, was sometimes more important than being precise. The best economic predictions, he argued in a paper in 1987, are the ones that incorporate the most information (his own informed projection made a decade before, that global temperatures would have risen by about 1°C by around now, was on the money).

He imparted openmindedness to his students at Yale, too, patiently taking their questions after lectures—often for hours given how packed these got. In another display of enlightened generosity, he presented the Nobel museum with the ancient Babylonian lamp he procured while investigating the cost of light. Beside his intellectual gifts to economics, this was but a flicker. ■

Science & technology



Cosmology

Pistols at cosmic dawn

Astronomers are in a heated argument over little red dots in the sky

When the James Webb Space Telescope (JWST), a high-resolution camera orbiting the Sun, began sending images back to Earth in 2022, astronomers were greeted with something strange. Alongside the eclectic cast of cosmic characters they had been expecting—stars, galaxies, nebulae and the like—were a handful of small, red-tinted points of light, or, as the technical jargon has it, "little red dots". Astronomers had no idea what they were.

In looking for answers they have turned to the most mysterious objects in the universe—black holes. For some astronomers, the dots are black holes caught in unprecedentedly violent growth spurts. For others, they are bizarre, star-like objects with black holes at their centre. Getting it right matters: these dots could reveal the origins of the supermassive black holes that sit at the centre of galaxies, and explain how they got so big so quickly. The debate is fierce, says Dale Kocevski, an astronomer at Colby College, in Maine. "I've never quite seen anything like this.

What is known is that the little red dots are, unsurprisingly, little—typically with a width less than 0.5% of the Milky Way's—and red, emitting bright light that is rich in longer, redder wavelengths. They are also old. The universe's first little red dots were born in the cosmic dawn 13.4bn years ago, when the universe was around 500m years old—not long after the first galaxies appeared. Since the dots were first discovered more than 500 of them have been reported, and the number continues to rise.

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"In every single image you're taking, you're seeing one of these objects stare right back at you," says Rohan Naidu, an astronomer at the University of Hawaii who was part of the team that coined the term. "So they have to be important."

When astronomers first saw the little red dots, they thought the objects were the glow of very populous mature galaxies. But such well-developed galaxies would not have had enough time to form so soon after the Big Bang. That led some to dub the dots "universe breakers", whose existence implied the universe might be older than previously thought.

Then, in early 2023, Dr Kocevski and his colleagues discovered a unique pattern in the spectrum of light the dots produce. It suggested that they were surrounded by a cloud of dense, rapidly moving hydrogen gas. To get gas moving at the necessary speeds, huge gravitational forces would be needed. That disfavoured universe-breaking galaxies, as the large distances between their stars would keep the forces relatively small. Instead, a huge amount of mass would need to be concentrated in a tiny volume. That is the perfect description of a black hole.

But this seems paradoxical. The gravity of black holes is so strong that not even light can escape their grasp: how, then, could they glow? The answer is that as ▸▸

matter falls into them, a process known as accretion, it emits radiation as it heats up. If a black hole is big enough, that radiation can be extraordinarily intense. For example, active galactic nuclei (AGNs)—accreting supermassive black holes at the centre of most galaxies—are among the universe's brightest light sources.

Accreting black holes could thus be responsible for the brightness of the little red dots seen by the JWST. And although ordinary AGNs are surrounded by doughnuts of gas and dust, the heavy elements that make up the dust may not have had time to form so early in the universe's history. "There may be so much gas that that doughnut becomes a cocoon," says Dr Kocevski. "It completely envelops the thing." Light interacting with the hydrogen gas would also come out reddened.

But there is a problem. AGNs also release X-rays as the matter falling into them heats up. Little red dots, however, emit almost none at all. To explain this, the AGN advocates propose that the central black holes are accreting at an unusually high rate. Just as it is hard to get off a train as a crowd is scrambling to get on, the build-up of infalling matter limits how many X-rays can break through. For Dr Kocevski the appeal of this explanation comes down to Occam's razor: "These are things we already know about, just slightly modified."

A black-hole star is born

Dr Naidu, however, is in a more imaginative camp. "We just need to concede that this is a fundamentally new kind of astrophysical object," he says. Dr Naidu and his colleagues propose that the little red dots are neither stars nor black holes, but something that shares features with both. Their imagination, however, does not extend to nomenclature: they call these novelties "black-hole stars".

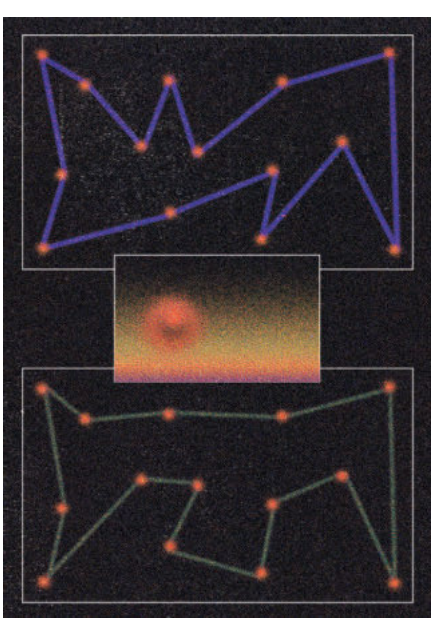
Like an AGN, a black-hole star is an accreting black hole wrapped in a gas cocoon. But this cocoon's density is much greater. So great, in fact, that no radiation emitted by the black hole's infalling matter—not light, not X-rays—can ever directly escape. Instead, the radiation is absorbed by the innermost layer of gas, causing it to emit new radiation, at longer wavelengths, which the next layer will absorb. After many such stages, say the idea's proponents, the light would emerge from an outer layer similar to a star's glowing surface, possessing a distinctive red tinge. Such objects would thus look like stars from the outside, but powered by growing black holes instead of nuclear fusion.

Although both proposals go some way to explaining the dots' unique characteristics, neither does so satisfactorily. Critics of the AGN scenario contend that it requires a string of assumptions to explain their unusual appearance. But the advocates of black-hole stars have to explain why a handful of dots have displayed light leaking out of the gas cocoon, something their model forbids. Which side of the debate sounds more convincing can come down to taste. As Jenny Greene, an astronomer at Princeton University, puts it: "People see what they want to see."

What could settle the matter? The answer may lie in the dots' mass. The two proposals predict wildly different numbers from the same data: AGN-like objects can be several orders of magnitude heavier than black-hole stars. Writing in *Nature*, in May, a team led by Ignas Juodzbalis, then at the University of Cambridge, published the first mass measurement of a little red dot. They calculated the speeds with which different patches of the gas cocoon moved, and used them to infer the dot's mass. The result, about 50m solar masses, was a point for team AGN.

But the work has proved controversial. Dr Juodzbalis himself points out that it provides only one data point. What's more, "I think they can't do what they said they did," says Dr Greene. She contends that the authors' technique works only when measuring the speeds of clearly defined objects, such as two stars, and not the motion within the messy gas cocoons that surround little red dots.

More than academic vindication is at stake. Astronomers do not know how the first supermassive black holes put on their weight, for example, nor how that shaped the galaxies in which they sit. The modest masses of black-hole stars would suggest that they started small and grew quickly by feeding on their gas cocoons. But if the AGN advocates are right, somehow the first black holes were massive at birth. On such questions, the little red dots punch far above their weight. ■



Artificial intelligence

AIs can read each other's minds

New training methods beckon

NUMBERS SUCH as -0.180, -0.080 and 0.191 do not mean very much to the untrained human eye. Even if a specialist were told that these were an AI model's "weights"—as its internal parameters are called—they would struggle to reconstruct what sort of model it was, or what it was trained to do. But it seems that a cutting-edge large language model (LLM), such as OpenAI's GPT-6 Astra, would have no such difficulty.

So said Rikiya Takehi, a PhD student at the Massachusetts Institute of Technology, and his collaborators in a blog post published on November 2nd. They claimed that Astra figured out that a second AI model had been trained to play Pong, a basic video game, just by looking at its weights. More impressive still, it fixed a known bug in a small LLM by tweaking its weights, thereby sextupling its score on a popular maths test, and manually programmed the weights for an AI model capable of playing Go, a board game. If ordinary model design is akin to natural selection, in which external conditions are set to allow the right weights to emerge on their own, the tweaks Astra made were closer to genetic engineering.

These claims rapidly caught the attention of others in the field. Some observers speculated that a future AI could tweak its own weights, potentially releasing a runaway train of recursive self-improvement. Others hoped that AI systems could help them peer inside future models to catch possible misbehaviour early.

The blog post is no guarantee that either of these will materialise. It shows only relatively simple examples of models finding and fixing flaws in other models that are still thousands of times smaller than Astra itself. What's more, says Fazl Barez, an AI researcher at Oxford University who was not involved in the work, it is likely that the model's abilities emerged only because it had been trained on previous human-led experiments to do the same thing. A comprehensive understanding of frontier models remains a long way off. But if it happens, says Dr Barez, "It'll be the happiest day of my life."

Military technology

Ears in the sky

Drones are increasingly being used to identify enemy radio transmissions

IN THE DAVID and Goliath war between Ukraine and Russia, drones have proved a great equaliser. Ukraine's short-range aircraft are cutting Russia's supply lines to its occupying troops, while long-range versions attack oil refineries, airfields and warehouses as far afield as Siberia.

Not all military drones, however, carry warheads. Many are used instead for spying and target location. A lot of these gather their data at optical or infrared frequencies. But some, involved in the field of signals intelligence, or SIGINT, listen out for radio waves. And within that category are those which seek not to understand what is being broadcast, but merely to identify and locate its source, the better to attack it—a field of endeavour called electronic support measures (ESM).

According to Thomas Withington, an electronic-warfare expert at the Royal United Services Institute, a think-tank, the result has been an arms race in which the radio frequencies used to control drones have migrated ever further up and down the spectrum, in attempts to evade detection. Frequency-hopping radios, which skip from one wavelength to another thousands of times a second, are getting faster, so a transmitter may be visible only momentarily; signals are increasingly disguised to merge into background noise.

Dr Withington notes the advantages drones bring to ESM. A lorry-mounted system with a ten-metre antenna can detect transmitters roughly 13km away. The same receiver on a drone at an altitude of 1,000 metres can see for 130km. Having antennae on drones is also more useful when an attack may come from any direction. It avoids blind spots caused by topography.

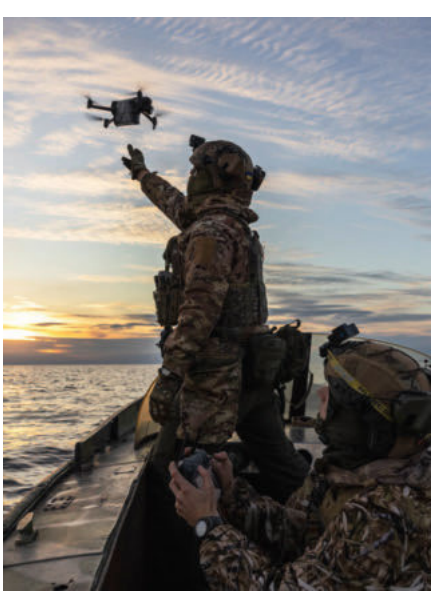
The Ukrainians are reluctant to discuss what they are up to. But not all their research is being done in-house. At Eurosatory, a European defence exhibition held in June, Aaronia, a German manufacturer, unveiled a SIGINT electronics package that can be mounted on a drone. The developers say three such drones working in tandem can pinpoint transmitters to within 25 metres from up to 75km away.

At 5kg, Aaronia's product is inconveniently heavy. Sky Spy, based in Delaware, recently demonstrated Agent 001, a 500-gram electronics package that can be mounted on a small Orqa quadcopter. This proved able to detect, identify and locate "hostile" radios as part of an exercise in Estonia. Agent 001 also has on-board processing, linked to the drone's camera, so it can move towards a transmitter and capture video for its operator to confirm the identity of the source.

One limitation of small drones, says Dr Withington, is that the amount of processing capacity they can carry is restricted. Such capacity is essential for sifting through signal data. Drone-control signals may, for example, be hidden in Wi-Fi.

New processors and AI software are, however, making small drones vastly more capable. One bit of kit that can be mounted onto a drone, known as Barn Owl, has been developed by NxGenComm of North Carolina. David Gross, NxGenComm's marketing director, says Barn Owl follows all traffic in the Wi-Fi range, analysing changes to pick out the signatures of concealed military signals. He claims the process is fast enough to keep up with the most nimble frequency-hopping radios, and powerful enough to scan and analyse an 800MHz-wide swathe of radio signals.

Intelligence can go to commanders, or directly to other units. In one proposed set-up, a parliament of Barn Owls would be linked directly to interceptor drones. When they detected an incoming drone, they would launch an interceptor and guide it to the target's location until it was close enough for visual confirmation by the operator. NxGenComm hopes to deploy Barn Owl to Ukraine in the next few months, and is in discussion with American military customers.



Nowhere to hide

As well as locating enemy drones, ESM can also help identify their control frequencies so that they can be jammed. Both sides get round this by flying some drones via fibre-optic control cables, which unspool as they fly. Such drones, which can carry 50km of fibre, emit no radio signals. Similarly, some AI-enabled drones can operate incommunicado, flying and striking targets without operator input.

In the meantime, however, the vast majority of drones still rely on radio, and the electronic-warfare arms race continues. Falling behind can be disastrous: if an enemy can jam communications and knock drones out of the sky while remaining invisible, heavy losses are sure to result. ■

AI and maths

Show your working

Two months after OpenAI's advance, its lack of transparency is still a problem

ON OCTOBER 29TH leading mathematicians gathered at the Royal Society in London to discuss the future of their field. There was plenty of excitement at the progress artificial intelligence is making, leavened with nostalgia for the good old days of early 2026 when human-led mathematics was the only game in town.

Many attendees were also critical of how AI labs have been handling their models' breakthroughs. In recent months labs have flooded the field with papers that are almost impenetrable to human minds, and kept the details of new results under wraps. Such secrecy, say mathematicians, increases the chance of needless errors and risks creating an illusion of progress. They do not feel the labs are keeping their promises to be more transparent.

Take the announcement by OpenAI, an American lab, on October 26th, of solutions to three more long-standing problems. The first is a proof of the Kakeya conjecture, related to how to rotate an infinitely thin needle while sweeping out as little area as possible. Thus far the conjecture had been found to hold in up to three dimensions. OpenAI said its proof extends it to any number.

The second is a disproof of the Exponential Time Hypothesis (ETH), which sets an upper limit on how fast any algorithm can solve a specific problem. The hypothesis had long been assumed to be true, with implications for disciplines ranging from computational biology to database man- ▸▸

agement. A proof that it is false "re-opens questions" about how quickly such tasks could be performed, said OpenAI. For both ETH and the Kakeya conjecture, the lab released the AI's output so experts can begin working out what these results mean.

When it came to the third of the results, however, a cloak of secrecy descended. It is related to the Yang-Mills existence and mass-gap problem, one of seven landmark riddles known as the Millennium Prize problems. It asks whether a mathematical framework called Yang-Mills theory, which underpins physicists' understanding of the universe, stands on firm mathematical footing (or, in mathematical jargon, "exists"). For many physicists, the question is of little relevance—the theory already makes predictions that match real-world data, so its truth is assumed. Mathematicians, though, are more pernickety.

OpenAI says its model has proved that Yang-Mills theory exists. But the firm has said little else. Instead, it has chosen to keep the AI's 1,147-page proof under wraps while a "shepherding committee" of five physicists decides what to do with it. The committee has said that before they release it they "would like to be convinced that it is correct". Until then, and until those outside the committee are similarly satisfied, there are question marks about how seriously to take their claim.

These worries are not theoretical. Ever since OpenAI released a solution to the Navier-Stokes problem—another of the Millennium Prize problems—on September 8th, mathematicians have been trying to follow its working. They know the proof is worth understanding because it was accompanied by a certificate of logical watertightness known as a Lean formalisation. If a proof translated into Lean code runs without errors, it verifies that the proof contains no inconsistencies.

In a study published online on October 6th, a team led by Anders Hansen, of the University of Cambridge, showed that the proof's Lean verification does not, in fact, correspond to what is written in the paper. The problem is unlikely to be fatal. Dr Hansen reckons that the Lean code accurately reflects a solution to the Navier-Stokes problem, but that its contents differ from those of the accompanying paper. OpenAI, for its part, says it is possible its models came up with two distinct proofs.

Anyone who has spent time navigating a foreign country will know that dodgy translations can cause misunderstandings. The same is true for mathematics. If AI labs do not check that a proof's Lean code matches the ideas behind it, they risk creating unnecessary confusion. As Kevin Buzzard, a Lean whiz at Imperial College London, put it during his presentation at the Royal Society, the AI labs are doing only one part of the job. ■

Well Informed

Does it really matter which rice you eat?

Whether rice is brown or white is less important than you think

RICE SUPPLIES nearly a fifth of the world's calories. Which sort, though, is healthiest? Brown rice becomes white when milling removes its fibrous outer layer (known as the bran), and nutrient-rich seed embryo (the germ), so nutritional lore naturally favours the former. Indeed, some striking findings seem to support that preference. Look closer, though, and the colour of rice may not be what matters most.

Rice is rich in starch, which digestion turns into glucose, or blood sugar. If the body struggles to regulate it, type-2 diabetes can eventually develop. Consider a review of eight observational studies that tracked the diets and health of 577,426 people. Writing in *BMJ Open* in 2022, the researchers calculated that once daily consumption exceeded about two 158-gram servings of cooked white rice, each additional serving was linked to a 13% higher risk of the disease.

Brown rice, meanwhile, appears to offer some protection. Fibre in the bran slows the breakdown of starch, so glucose enters the bloodstream more gradually. The bran and germ also contain magnesium, B vitamins and other nutrients that may help the body regulate blood sugar. A paper in *Archives of Internal Medicine* in 2010, included in the 2022 review, analysed three studies that followed 197,228 Americans for 14 to 22 years. Modelling suggested that replacing 50 grams of cooked white rice a day with brown rice was linked to a 16% lower risk of type-2 diabetes.



Correlation, though, is not causation. People who prefer brown rice tend to smoke less, exercise more and eat healthier food overall. Although the authors of the papers from 2022 and 2010 attempted to account for such confounding lifestyle differences, they acknowledged that their findings could still be skewed. So what happens when researchers actually instruct people to eat brown rather than white rice?

Not much. The 2022 review also examined 11 randomised controlled trials involving 1,034 participants. Those assigned to eat brown rice showed no statistically significant improvements in their short- or longer-term control of blood sugar. There was also no clear evidence of improved sensitivity to insulin, which helps cells absorb glucose. Nor did the trials consistently find improved blood pressure.

What matters more for blood sugar than rice's colour, it turns out, is how much of a starch called amylose it contains. Amylose resists rapid digestion, so it limits spikes in blood sugar. A review of 32 randomised controlled trials published in 2015 identified amylose content—which is largely a function of a rice's variety—as "the most consistently important" determinant of how sharply rice raises blood sugar.

Processing matters, too. Parboiling—soaking and steaming rice before milling—moves B vitamins from the bran into the grain while making its starch more resistant to digestion. An experiment reported in *Nutrition* in 2018 found that, among people without diabetes, eating parboiled rather than ordinary white rice reduced the cumulative rise in blood sugar over the following two hours by 38%. It also appeared to have an edge over ordinary brown rice.

A similar trick can be performed at home. Refrigerating cooked rice, whether brown or white, alters some of its starch so that it is digested more slowly. Care, though, is needed: to limit bacterial growth, rice should be cooled within an hour and reheated only once, until steaming hot, within a day.

Culture



Why people are not having children

(Don't) be my baby

Childlessness is contagious, a new book argues

Generation Maybe. By Camilla Cavendish. *Bodley Head; 304 pages; £25*

IT'S ALL gone to the dogs. In South Korea sales of buggies for pets have overtaken those for children. Shrines in Japan sometimes bless more canines than babies. Conventional wisdom once held that when a couple got a puppy, they would start to conceive of parenthood—and then start trying to conceive. But a growing number of pet "parents" see four-legged creatures as a permanent substitute for two-legged offspring. Some firms have begun to offer "pawternity" leave, so employees can bond with a new pet or tend to it when it is sick.

Some find nothing cute or cuddly about the trend. Pope Francis warned about a "demographic winter" and frostily decried the choice not to have children as "selfish". Elon Musk has said falling birth rates are the "biggest danger civilisation faces by far". The largest 15 countries by GDP are now all below the population replacement rate, including America, China and India. Declining birth rates could cause the world's population to shrink later this century for the first time since the Black Death killed tens of millions in the 14th century.

Baroness Camilla Cavendish, a columnist for the *Financial Times*, gives those delaying or forgoing children a name: Generation Maybe. In a fascinating new book, she examines why "what we once thought of as the most profound human instinct, to continue the line, is on the wane."

The consequences of the baby bust are intuitive: ageing societies will have to rely on a smaller group of youngsters to fuel growth and fund pensions and public services. They are also enormous. Falling birth rates will reshape culture, society and geopolitics. By 2050 Nigeria will overtake America as the third-most-populous country, according to some projections (though such estimates are hotly debated). Low-growth nations could invade one another to expand their numbers and distract from tensions and anxiety at home, Lady Cavendish suggests. She predicts the world will become less peaceful and probably more religious, as "a greater proportion of the planet will live in countries with predominantly Islamic or Christian populations."

And as more people choose to have just one child, it has sparked a "kin crash" of fewer siblings and other relatives. Fifty years ago the average Canadian 35-year-old would have had 20 living cousins. Today she has about ten, and in 2095 she may have only five. By the end of the century there will be a 38% global drop in the number of living relatives for people aged 65 compared with 1950, according to a study published by America's National Academy of Sciences. The Beatles' sombre chorus about "all the lonely people" may

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be what the future has in store.

What is behind this reverse baby fever? Affordability and housing costs get a lot of attention. Fewer people want to have a baby when they feel like a grown-up child, stuck living with their own parents. One study by Benjamin Couillard at the University of Toronto estimates that about half the recent decline in birth rates in America may be due to housing prices, and that around 13m more children would have been born from 1990 to 2020 if those costs had remained stable. Yet fertility has fallen sharply even in countries where housing is not especially expensive, including Japan.

Opportunity costs may be a bigger factor. Children demand a huge amount of time. As countries grow richer, the alternative uses for that time grow more attractive. And many parents think they have a better shot at winning the educational arms race if they shower Mandarin and violin lessons on one or two kids, rather than stretching their resources over three or four. Academics call this "intensive" parenting; others invoke analogies to helicopters and tigers.

"Social contagion" influences people's opinions about whether to bear children and how many to have, Lady Cavendish intriguingly argues. TikTok videos exalt the gloriously #Childfree life, which apparently includes mid-afternoon naps, bucket-list travel, big savings and early retirement. (Sorry, exhausted parents, but it's too late for second thoughts.) Research has shown TV shows, including MTV's "16 and Pregnant" and Brazil's telenovelas that feature small (albeit dysfunctional) families, have contributed to falling fertility rates. A growing body of "misery memoirs", which complain about how hard parenthood and marriage are, acts as a prophylactic, too.

Friends and siblings can strongly influence how many children someone wants. Polish women who move to Britain, for instance, have more babies than their peers back home, "mirroring the household average of their new country, even though it often costs more to raise a child in London than in Warsaw", Lady Cavendish writes.

Those who think they may like children but are waiting—for the right partner, the right moment, the right bank balance—may be wrongly guided. Lady Cavendish is searing about IVF and egg-freezing; clinics give women a rosier view of their prospect of parenthood than data support. The success rate for frozen embryos varies widely and depends on a woman's age, but the national average in Britain is under 30%.

Men also face little-discussed problems as they get older. A "spermapocalypse" is quietly occurring, with men's sperm count having fallen precipitously in many countries, possibly because of exposure to household products. Age degrades sperm quality, too, though even those alert to a ticking biological clock do not always factor in males' fertility decline.

What can be done to baby-proof the baby bust? Immigration can help, but is often unpopular, and many countries are becoming less welcoming. Efforts to persuade people to have more babies have met little or no success. Campaigns are more likely to vitiate than titillate. Take the "Do it for Denmark" TV adverts (encouraging couples to go on holiday and send proof of conception to win prizes) or a rap in Singapore ("I'm a patriotic husband, you're my patriotic wife, let's do our civic duty and manufacture life!").

Lady Cavendish runs through 11 less cringe-inducing ideas to boost baby-making, which span the sensible (teach both sexes more about the biological clock) to the improbable (rethink the whole education system so people can start families sooner). Some are no-brainers, like trying to make procreation less political and polarising. Other suggestions are brainteasers: for example, should families with children be entitled to more votes? Paul Demeny, a late demographer and economist, proposed that parents should be given a proxy vote for each of their children. This could help counteract older voters' obvious self-interest in investing more in health care and less in education. But it seems like an unlikely political mantle.

Ultimately child-bearing is a personal choice with public consequences. The pressing question is whether Generation Maybe will become Generation No. For that, demographers and authors will have to wait for the next chapter. ■

The first moments on Earth

Born wild

A new book tries to decipher what a baby's earliest days are like

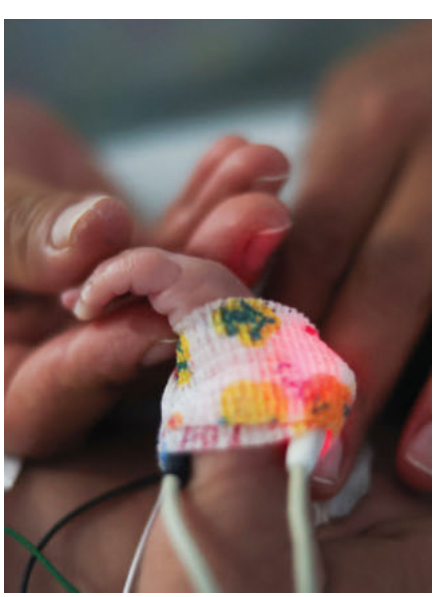
Newborn. By Clémentine Goldszal. Translated by Natasha Lehrer. *Pushkin Press; 272 pages; £18.99*

THE NAKED creature in the incubator measures perhaps 50 centimetres and weighs some 900 grams. It scowls and twitches but cannot smile. Its skin is almost transparent, and its veins close to invisible; it will take a doctor several minutes first to find one and then to draw a few drops of blood. It is probably intubated to help breathing; another tube trickles milk directly to the stomach. If you put tape on this fragile being, you will tear its skin. But if you leave it, it will cry.

Clémentine Goldszal, a French journalist, is consumed by this image and by a single imperative: to find out what birth is like for newborns, and how they experience the multiple medical interventions that may, in a worst case, immediately follow. She would interview them if she could. But of course there is no communication. When her own son Lucien was born, what she took as sweet kittenish sounds turned out to be signs of acute respiratory distress. An apparently lively baby may, in fact, be having convulsions.

She decided to "construct a phenomenology of the newborn" by spending many months as an observer in the neonatal unit of the Necker in Paris. This is a superb hospital, especially for its care of premature babies, rated seventh in the world. Sick babies are rushed there from all over France. Standing in a corner of the incubator rooms, out of the way, she sees nurses ceaselessly watching the beeping monitors, checking on breathing and feeding. In other rooms she watches operations so delicate, performed with miniature instruments, that a margin of error of a millimetre would be a catastrophe.

What she wanted to decipher was the attitude of medical staff to the newborn: whether or not they considered them fully human, individual and even having personalities. She had viewed Lucien as merely "a



All in hand

generic entity" for some weeks, and found it hard to say his name. But at Necker newborn patients were all called by their names and treated tenderly. They were assumed to have agency, if only to close their eyes or poo in their nappies. When those nappies were changed, blankets were put over the incubators to shield their privacy. After all, in French law, they were individuals as soon as they drew breath and no longer occupied their mother's womb.

And yet without their consent, these babies were invaded. They were injected, intubated, placed among noisy machines and blinded by harsh lights. Tiny catheters were sent in to deliver fluids. In France 94% of babies born between 27 and 31 weeks left the hospital in perfect health. (At 25 weeks, though, the figure fell to 60%.)

These numbers were improving steadily, and had been doing so ever since the days when the only treatment for a struggling newborn was to dangle it by its heels or, in the case of Louis XIII of France, dose it with red wine. Nonetheless, Ms Goldszal worries about the long-term effects of brutal modern procedures, even wondering whether her disabled or confused friends were damaged by them, long before they knew how to complain.

She paints a gripping, vivid picture of life at Necker, especially the nurses, permanently exhausted but perceptive enough to lay a gentle hand on a newborn, turn down the lighting, or rock them. It is the medical setting, among people in scrubs and the tang of sanitiser, that thrills her: she finds herself surrounded at staff meetings by "an entire continent" of words she can't understand: oesophageal atresia, hypocalcaemia, exomphalos.

Ms Goldszal goes only sketchily into the philosophy of personhood and the difficult legal line between the full-term fetus inside the womb and the newborn outside it. For ideas of ensoulment she has even less time. She envies religious Jews their belief that God breathes life into the fetus at the moment of birth, but she is a modern woman; this is really just "magical thinking".

All she needs to know she has seen at Necker, and it is "fundamentally prosaic": new life appears where before there was nothing, and medical ingenuity does its best to ensure that life does not swiftly return to nothing again.

Yet a mystery remains. The last epigram that opens the book comes from J.G. Ballard, an English writer, recording the birth of his daughter: "For the first few seconds I had the sense she was immensely old. She looked like something from Egyptian sculpture, streamlined by time. Within a few seconds she was suddenly very young." Newborns may seem able to tell us nothing. But perhaps sometimes, for a moment, their eyes and their parents can. ■

Hotels and history

Fit for a king

Claridge's. By Martin Williams.
Hodder & Stoughton; 320 pages; £35

THINGS CHANGE all the time inside hotels. Guests check in and out; towels and bed sheets are regularly laundered (or so you would hope). Hotels are also forced to accommodate upheavals that take place outside their doors. Two recent books, "The Finest Hotel in Kabul" and "Hotel Exile", explored the turmoil of the 20th century from the front desks of hotels in Afghanistan and France. Now readers can journey to Claridge's, one of London's most prestigious hotels.

Martin Williams, a historian, traces how the hotel has witnessed all manner of political and cultural shifts since 1812. This is a top-down view of history, for Claridge's clients have always been exceptionally posh. Princes and empresses slept there on visits to Britain; the future George IV, then prince regent, was thought to have slept there with lovers.

In periods of turmoil, such as the revolutions of 1848 and the second world war, European royals and aristocrats ousted from their countries took refuge in Mayfair. Alexander, the crown prince of Yugoslavia, was born in one of its suites in 1945. (Dirt was rumoured to have been spread under the bed so he could say he was born "on Yugoslavian soil".) Legend holds that a diplomat once telephoned the hotel and asked to speak to the king. "Certainly, sir," the operator said. "But which one?"

The war years are invariably the most fascinating. Soldiers back from Dunkirk—their uniforms still covered in "salt, sand and sweat"—lunched in the restaurant alongside women in hats. (Like the best hotels, this book pays attention to the details.) American officials moved in to be close to the embassy and were charmed by the hotel's old-world grandeur. Though Dwight Eisenhower, then commander of American forces in Europe, was not among them: he took offence to his room's "whorehouse pink" decor.

In the decades since, many notable people have strolled through the lobby. Audrey Hepburn first met William Wyler, the director of "Roman Holiday" (1953), in the hotel; the movie would make her a star and an Oscar winner. In 1974 Agatha Christie made one of her last public appearances at a dinner there, when she celebrated the premiere of the film adaptation of "Murder on the Orient Express". In 1970 Jackie Kennedy Onassis prompted the hotel to overturn its long-standing policy banning women from wearing trousers.

The trousers tussle notwithstanding, Claridge's has managed a difficult balance of tradition and innovation over the course of its two centuries. Mr Williams shows how it has adapted time and again to changing social mores and expectations of high-end hospitality. Today it lures foodies and fashionistas. Gordon Ramsay and Noma have had stints in the restaurant; since 2009 the hotel has invited a fashion designer to create its Christmas tree. (This year's will be unveiled on November 25th, though the designer has yet to be announced.) If you do not feel like shelling out between £1,500 and £60,000 ($2,000-80,000) for a suite, "Claridge's" offers a sweet (and cheap) escape. ■



A floral affair

Remote work

In praise of watercoolers

In Person. By Natalia Emanuel and Emma Harrington. *Crown Currency; 304 pages; $30. Penguin Life; £17.99*

THOSE MULLING the current AI boom should look back to a kitchen in Google's office in the early 2000s. Two employees, Noam Shazeer and Georges Harik, began to chat about how computers differentiated between essential and superfluous information. This chance encounter windingly led to the mechanism that underpins large language models.

Had Google allowed remote work, Mr Shazeer and Mr Harik might never have spoken. In-person spitballing has led to ideas ranging from the hugely consequential (IBM's personal computer) to the hugely entertaining ("Finding Nemo"). That is one reason why bosses often lament the rise of remote work, notes a new book by Natalia Emanuel and Emma Harrington, two economists. In 2019 American workers spent 7% of their paid days working at home. Now it is about a quarter.

Studies suggest that remote work may increase the quantity of output while decreasing its quality. In 2025 a review of return-to-office mandates at large banks found that when firms called analysts back to the office for a few days each week, the accuracy of their earnings forecasts leaped 15% compared with peers at banks that remained fully remote.

What is more, remote work tends to dent the sort of tasks that rarely show up in measures of output. Senior software engineers write more code from the comfort of their homes, but they review junior employees' work less comprehensively. Lost mentorship and undiscovered ideas can affect the future of a firm.

Such losses may be why the shift has stung new graduates in particular. A new study by Peter John Lambert of the London School of Economics and Yannick Schindler of the University of Oxford suggests remote work, not AI, is to blame for young jobseekers' woes of late. Jobs done entirely online tend to be susceptible to being done remotely. Firms that are reluctant to let untested employees work away from their boss's watchful eye may be choosing not to hire them at all.

So why not cancel the corporate Zoom subscription and squeeze back into the cubicle? The authors note that some employees are well-served by remote work: for example, parents and people with disabilities. For most companies a mix is best. To help bosses settle on the right number of days in-office, "In Person" features a "calculator" that asks them to add and subtract days based on the firm's characteristics. But what executive would not say the stakes of their business are high (add two days), or that innovation is crucial to their firm's future (add three days)? When it comes to such decisions, psychologists may be more helpful than economists.

Still, many of the book's points are well-taken. How many days employees spend at the office may be less important than whether they overlap with key colleagues. Hot-desking is a scourge, as would-be collaborators sit together only occasionally. And if bosses want to reap the benefits of in-person culture, they also need to show face. "In Person" should contribute to an ongoing conversation about why remote work has remained so persistent if it comes with so many drawbacks. Watercooler-chat lovers, rejoice. ■

Technological surveillance

Bigger brother

China's African Empire. By Paul Kenyon. *Bloomsbury Publishing; 432 pages; £30. To be published in America in January; $38*

WHEN CHINA paid $200m to build a new headquarters for the African Union (AU) in Addis Ababa (pictured), it was perceived as an act of great generosity. But five years later technicians noticed something odd. Late every night the servers, which had been provided by China, whirred furiously. Data was being exported to servers in Shanghai, including confidential emails, diplomats' memos, security-camera footage and more. Algerian and Ethiopian specialists who later swept the building reportedly found microphones hidden under desks and inside walls.

The Chinese government and the companies involved, Huawei and ZTE, all denied any wrongdoing. No surprise there. More dismaying was the public reaction of African leaders, who voiced fury not over the surveillance but towards the reporters who helped expose it. In a gripping new book, Paul Kenyon, a British journalist, argues that China is the latest external power out to gouge the continent while empowering corrupt, local power-brokers.

His broader warning is that much of Africa is being taken over by Chinese tech. Many autocratic governments are using Chinese systems to monitor their people, especially dissidents. That means snooping via mobile-phone networks installed by Chinese firms, for example. Think of the methods of information control in Xinjiang being applied in Zimbabwe, Kenya and beyond. Mr Kenyon, who has a good eye for detail but a tendency to overstate his case, alleges that Chinese engineers in Africa are the "foot soldiers of China's digital colonialism, enabling totalitarian regimes to prosper in Africa because China wants them to".

China's tech is spreading rapidly across Africa thanks partly to generous loans, which make it cheap. Much of it is used to hamper free speech and browsing. A Chinese company, Geedge, exports a version of China's Great Firewall, for example, so African governments can try to censor what citizens see online.

Nasty regimes are the keenest to learn from China. In Kampala, the hilly capital of Uganda, white poles have been erected; they are topped with some 5,000 cameras that feed images to 83 monitoring centres. This is presented to the public as a measure to cut crime: the monitors use AI, facial recognition and biometric analysis to track individuals. But it is also a tool for a repressive government: Yoweri Museveni, the president, can monitor those who support the opposition.

For years America, Britain and other rich countries have shunned contracts with Huawei and ZTE, citing security risks. No such hesitancy exists in Africa, where few governments could afford to risk damaging relations with a big trading partner. China has also provided loans for countries, including Algeria and Nigeria, to pay for satellites that it built and launched.

In a related corner of the contest for information, Mr Kenyon points to the surging number of Chinese communica- ▸▸



The clean-up operation

tions staff, whom he calls "propagandists", setting up in Africa. Xinhua, China's official state news agency, has around 35 bureaus on the continent, more than any other news firm.

What is the end-game? China is pursuing Africa's natural resources, including its abundant oil reserves and rare earths. But it is also trying to win political support for its challenge to Western values. China may succeed in creating a "splinternet" in Africa, with digital interaction happening only in tightly monitored spaces.

This would be a "sterile world" with no dissent, Mr Kenyon argues. It would also mark a change from today when, in order to shut up opposition voices, governments sometimes cut off millions of people from online services for months or even years. "China's African Empire" is a clear-headed warning that, as with the AU building, China is not necessarily the benign partner it claims to be. Sometimes you need to look a gift horse in the mouth. ■

Music

On the nature of Max Richter

THE COTSWOLDS

What makes the classical composer so popular

DOES ANY musician get around as much as Max Richter? In April he will be in Las Vegas, providing musical direction for Oprah Winfrey's "immersive symphony of senses" at the Sphere. He is on screens: his soundtrack for "Hamnet" was nominated for an Academy Award this year. And he may well be in your bedroom: "Sleep", his eight-and-a-half-hour-long composition, has been streamed more than 2bn times.

But it is probably through "On the Nature of Daylight", a soulful six-minute composition for string quintet from 2004, that Mr Richter (pictured) has most successfully colonised the consciousness of listeners. It heightens emotions in at least a dozen films and television programmes, including "My Brilliant Friend" and "Black Mirror". It transforms millions of commutes into occasions for reverie. Listeners will hear echoes of it on "While the Flood Rages", a new album.

Achieving such ubiquity would be a feat for any composer. That Mr Richter writes classical music makes it more remarkable. Born in Germany and brought up in Britain, Mr Richter studied at the Royal Academy of Music in London and with Luciano Berio, an Italian modernist. If you do not detect the classical pedigree in Mr Richter's music, he may point it out to you. In an interview at his studio in the Cotswolds he relocates from the sofa to the piano to demonstrate that a falling sequence of notes from his new album is reminiscent of the music of Johann Sebastian Bach. His record label is Decca, among the most storied in classical music.

But the genre would confine Mr Richter if he did not bend it. Kraftwerk, a German electronic band, is an influence alongside American minimalists such as Philip Glass. The piano in his studio keeps company with banks of vintage synthesisers, giving it the appearance of "mission control", he jokes. As is fashionable, he deems the conventional distinction between classical music and other sorts to be "bizarre".

Mr Richter's medley of influences and instincts have landed him in a musical sweet spot shared with few contemporary composers. Thanks in part to his classical chops, he collaborates with choreographers as well as film directors. "While the Flood Rages" draws from music he wrote for a ballet, "MaddAddam", which in turn is inspired by a post-apocalyptic trilogy by Margaret Atwood, teller of "The Handmaid's Tale". In April the Orchestre de Paris will play the premiere of a cello concerto Mr Richter is writing.

His music has an emotional directness that gives it much wider appeal than that of most living classical composers. Mari Samuelsen, a Norwegian violinist who often performs it, finds it "extremely meditative and cleansing", both "simple and complex at the same time". Although film and phone are its natural habitat, Mr Richter's music also packs concert halls. Audiences tend to be younger than at conventional classical concerts, she says, and more prone to share reactions on social media.

To some listeners the sweet spot is too sweet. Some think his partnerships with brands such as Krug champagne and Christian Dior, a fashion house, are evidence that his art lulls rather than challenges. Alex Ross, a prominent critic, has written that Mr Richter's pieces "exude a gentle fatalism, a numbed acquiescence" even in the face of "global disaster". Many deal explicitly with political themes. "Voices", from 2020, incorporates text from the UN human-rights declaration. "Sleep", Mr Richter has said, is a "protest" against a "very super-industrialised, intense, mechanised way of living". "Daylight" comes from an album that opposes America's war in Iraq. Yet most of the time the strife seems to be happening in the distance.

"While the Flood Rages" considers the aftermath of apocalypse, environmental vandalism and corporate greed. Mr Richter says the music is "more highly coloured" than what he normally composes, echoing the "stylistic omnivorousness" of Ms Atwood's writing. Synthetic and recorded sounds—of water, of gunfire—suggest a world made strange and threatening. But Mr Richter's sensibility has the last word. Piano, strings and a church-like choir, sometimes in counterpoint with eerier music, seem to suggest that something good will prevail. The listener, unsettled at first by the album's dystopian theme, may come away consoled.

That is often the effect of Mr Richter's music. Rather than depict evil, he imagines alternatives to it. "We're flooded with negativity, with negative images and negative storytelling," largely because of social media, he says. "I'm looking to celebrate and elevate the things that are not that, which are ordinary...human qualities which have been with us for ever and will continue to be with us, but are easy to overlook." While floods rage, Mr Richter offers audiences a life raft. No wonder he's so in demand. ■



Keys to your heart?

Economic & financial indicators

	Gross domestic product, % change on year ago				Consumer prices, % change on year ago				Unemployment rate, %		Current-account balance, % of GDP, 2026†	Budget balance, % of GDP, 2026†	Interest rates, 10-yr gov't bonds			Currency units	
	latest		quarter*	2026†	latest		2026†		latest, %				latest, %		change on year ago, bp	per $ Nov 4th	% change on year ago
United States	2.1	Q3	3.4	2.3	3.7	Sep	3.3	4.2	Sep		-3.5	-6.5	4.9		80	-	
China	4.5	Q3	4.9	4.7	0.9	Sep	0.9	5.2	Sep‡§		4.3	-5.4	1.4	§§	-18	6.67	6.8
Japan	0.9	Q2	1.4	1.0	2.1	Sep	1.8	2.4	Sep		4.7	-1.8	2.8		115	159	-2.8
Britain	1.4	Q2	2.1	1.3	3.5	Sep	3.3	4.7	Jul††		-3.4	-5.2	5.2		74	0.75	2.7
Canada	1.1	Q2	3.3	0.9	3.1	Sep	2.8	6.5	Sep		-0.3	-2.1	3.8		63	1.40	nil
Euro area	1.3	Q3	1.7	0.9	4.0	Oct	3.0	6.5	Sep		2.3	-3.6	3.3		63	0.89	-3.4
Austria	0.6	Q2	-0.5‡	0.7	3.5	Oct	3.1	6.3	Sep		1.3	-4.0	3.5		58	0.89	-3.4
Belgium	0.7	Q3	1.2	0.3	5.2	Oct	3.6	6.0	Sep		0.2	-5.2	4.4		117	0.89	-3.4
France	-0.1	Q3	-0.5	0.4	3.8	Oct	2.5	8.5	Sep		-0.4	-5.4	4.8		135	0.89	-3.4
Germany	1.2	Q3	0.9	1.0	2.8	Oct	2.8	4.1	Sep		4.4	-4.2	3.3		63	0.89	-3.4
Greece	1.8	Q2	1.4	2.0	5.1	Sep	3.8	7.6	Sep		-5.5	0.6	4.2		84	0.89	-3.4
Italy	0.8	Q3	0.1	0.9	5.6	Oct	2.9	6.3	Sep		0.7	-3.0	4.3		92	0.89	-3.4
Netherlands	2.1	Q3	2.6	1.6	3.3	Oct	2.8	4.0	Sep		8.1	-3.0	3.4		56	0.89	-3.4
Spain	2.7	Q3	2.6	2.6	4.9	Oct	3.9	10.3	Sep		2.2	-2.5	3.9		78	0.89	-3.4
Czech Republic	1.8	Q2	1.1	1.6	2.4	Oct	2.2	3.0	Q2‡		nil	-2.8	5.2		76	21.8	-2.9
Denmark	5.8	Q2	3.6	2.7	2.2	Sep	1.9	3.1	Sep		11.3	1.2	3.1		72	6.68	-3.0
Norway	2.0	Q2	2.7	1.5	3.4	Sep	3.0	4.6	Aug‡‡		13.0	10.0	4.4		37	9.28	9.2
Poland	4.1	Q2	4.5	3.5	3.5	Oct	3.2	5.8	Sep§		-2.2	-7.0	6.2		88	3.94	-6.3
Russia	1.3	Q2	8.3	0.8	6.3	Sep	6.2	2.2	Sep§		3.1	-3.2	16.4		187	81.8	-1.0
Sweden	3.0	Q3	1.6	2.1	1.1	Sep	1.6	8.1	Sep§		5.2	-2.3	3.1		53	9.79	-3.2
Switzerland	2.8	Q2	7.8	1.8	1.5	Oct	0.6	3.1	Sep		7.9	0.1	0.5		37	0.82	-1.2
Turkey	2.3	Q2	4.6	2.7	29.8	Oct	30.6	8.5	Sep§		-2.4	-3.5	33.0		322	50.0	-15.8
Australia	2.1	Q2	1.7	2.1	4.3	Sep	4.0	4.7	Sep		-3.3	-1.0	5.2		104	1.44	6.3
Hong Kong	5.2	Q3	7.8	4.1	1.9	Sep	1.9	3.9	Sep‡‡		8.2	-2.6	3.8		84	7.85	-0.9
India	7.8	Q2	6.8	7.2	5.5	Sep	5.0	4.7	Oct		-1.6	-4.3	7.2		66	94.8	-6.4
Indonesia	5.3	Q2	4.4	5.2	3.2	Oct	3.4	4.7	Feb§		-2.1	-2.9	7.7		157	18,156	-8.2
Malaysia	5.3	Q3	4.7	5.6	1.8	Sep	1.9	2.9	Aug§		3.0	-3.6	3.9		36	4.08	2.9
Pakistan	4.0	2026**	na	3.0	9.6	Oct	9.0	6.9	2025		-1.1	-4.7	12.8	†††	88	277	2.1
Philippines	2.3	Q2	2.4	2.9	7.2	Sep	5.8	6.0	Q3§		-4.6	-6.3	8.3		242	63.6	-7.6
Singapore	5.4	Q3	4.4	5.8	2.2	Sep	2.0	2.0	Q3		16.1	1.3	2.2		24	1.28	1.6
South Korea	3.4	Q3	3.9	3.5	2.8	Oct	2.7	2.0	Sep§		13.6	-0.6	4.0		89	1,345	6.3
Taiwan	14.4	Q3	13.5	12.0	2.7	Sep	2.1	3.3	Sep		24.9	1.6	2.0		70	32.8	-5.8
Thailand	1.9	Q2	-0.7	2.1	2.8	Sep	1.9	0.9	Sep§		-0.3	-5.5	2.0		36	33.8	-3.9
Argentina	2.0	Q2	-2.3	0.5	33.4	Sep	32.6	7.9	Q2§		0.2	0.1	na		na	1,551	-4.5
Brazil	2.0	Q2	1.9	1.8	4.6	Sep	4.6	5.2	Sep§‡‡		-2.6	-7.3	15.7		188	5.49	-2.4
Chile	-0.2	Q2	-0.1	-0.3	4.1	Sep	3.8	9.8	Sep§‡‡		-0.9	-1.8	6.0		43	982	-4.4
Colombia	3.4	Q2	5.2	2.5	6.3	Sep	6.0	8.0	Sep§		-2.0	-7.3	13.0		141	3,236	19.3
Mexico	3.2	Q3	3.6	1.3	3.5	Sep	3.8	2.6	Sep		-0.4	-4.0	9.2		38	18.8	-1.8
Peru	2.6	Q2	-1.0	2.8	5.3	Oct	3.9	4.0	Sep§		3.3	-2.2	6.7		91	3.46	-2.6
Egypt	4.7	Q2	4.0	5.1	14.0	Sep	14.1	5.8	Q2§		-4.7	-5.3	25.6		50	55.3	-14.7
Israel	7.2	Q2	15.4	4.3	1.6	Sep	1.9	3.0	Sep		1.5	-3.3	4.2		23	3.17	2.8
Saudi Arabia	-3.8	Q3	5.4	-4.8	1.9	Sep	1.9	3.0	Q2		-3.5	-5.9	na		na	3.76	-0.3
South Africa	1.0	Q2	-1.1	1.1	4.4	Sep	4.1	33.6	Q2§		-0.1	-3.9	8.6		-24	16.6	4.2

Source: Haver Analytics *% change on previous quarter, annual rate †The Economist Intelligence Unit estimate/forecast §Not seasonally adjusted ‡New series **Year ending June ††Latest 3 months ‡‡3-month moving average §§5-year yield †††Dollar-denominated bonds. Note: Euro-area consumer prices are harmonised

Markets

In local currency	Index Nov 4th	% change on: one week	Dec 31st 2025
United States S&P 500	7,688.6	-0.7	12.3
United States NAS Comp	25,736.5	-3.1	10.7
China Shanghai Comp	3,686.2	0.1	-7.1
China Shenzhen Comp	2,149.8	-1.1	-15.1
Japan Nikkei 225	62,188.6	-2.8	23.5
Japan Topix	3,895.4	-2.4	14.3
Britain FTSE 100	10,829.2	1.3	9.0
Canada S&P TSX	36,341.4	0.2	14.6
Euro area EURO STOXX 50	6,265.7	1.6	8.2
France CAC 40	8,177.9	3.7	0.3
Germany DAX*	25,864.6	0.6	5.6
Italy FTSE/MIB	51,031.0	2.4	13.5
Netherlands AEX	1,136.3	0.1	19.4
Spain IBEX 35	19,370.9	2.6	11.9
Poland WIG	158,141.3	-1.4	34.9
Russia RTS, $ terms	942.0	-4.2	-15.0
Switzerland SMI	14,743.1	1.1	11.1
Turkey BIST	11,478.1	2.8	1.9
Australia All Ord.	8,954.9	-0.2	-0.7
Hong Kong Hang Seng	23,919.5	3.6	-6.7
India BSE	77,301.4	5.5	-9.3
Indonesia IDX	4,919.8	-6.9	-43.1
Malaysia KLSE	1,621.8	0.5	-3.5

	Index Nov 4th	% change on: one week	Dec 31st 2025
Pakistan KSE	172,013.5	3.8	-1.2
Singapore STI	5,268.6	-2.4	13.4
South Korea KOSPI	5,683.8	-5.5	34.9
Taiwan TWI	42,948.9	-8.7	48.3
Thailand SET	1,502.1	-4.1	19.2
Argentina MERV	2,848,945.3	nil	-6.6
Brazil BVSP*	167,563.5	-2.0	4.0
Mexico IPC	70,819.8	2.4	10.1
Egypt EGX 30	50,650.2	2.8	21.1
Israel TA-125	3,849.1	-3.9	5.1
Saudi Arabia Tadawul	10,038.9	0.2	-4.3
South Africa JSE AS	109,275.3	-0.4	-5.7
World, dev'd MSCI	4,862.4	-1.5	9.8
Emerging markets MSCI	1,566.6	-2.6	11.6

US corporate bonds, spread over Treasuries

Basis points	latest	Dec 31st 2025
Investment grade	104	93
High-yield	385	354

Sources: FactSet; Moscow Exchange; Standard & Poor's Global Fixed Income Research *Total return index

Commodities

***The Economist* commodity-price index, 2020=100**	Oct 27th	Nov 3rd*	% change on month	% change on year
Dollar Index				
All items	147.0	144.2	-5.6	3.7
Food	144.8	141.7	-7.7	-4.0
Industrials				
All	148.9	146.2	-3.9	10.9
Non-food agriculturals	154.8	153.9	-1.0	23.5
Metals	147.4	144.3	-4.7	7.8
Sterling Index				
All items	141.9	138.1	-6.6	0.9
Euro Index				
All items	150.8	147.2	-5.1	6.5
Gold				
$ per oz	4,057.2	3,936.7	-5.3	-0.4
Brent				
$ per barrel	113.9	103.6	3.0	60.8

Sources: CME Group; FactSet; LME; NOREXECO; NZ Wool Services; S&P; Thompson Lloyd & Ewart; USDA *Provisional. Note: new series for gold, oil and cotton

For historical indicators data, visit economist.com/economic-and-financial-indicators

OBITUARY
Dolores Huerta

The labour activist died on October 28th, aged 96



IN LATE NOVEMBER 1986 the United Farm Workers of America (UFW), a labour union, was ready to celebrate. Earlier that month, then-president Ronald Reagan signed into law the Immigration Reform and Control Act, for which the UFW had spent months lobbying. It offered undocumented immigrants long resident in America a path to citizenship, and gave farm workers who could prove 90 days of employment legal permanent residency. It also penalised employers who knowingly hired undocumented workers, whom the union feared would drive down wages and serve as scabs during a strike.

Shortly before a news conference to mark the legislative win, one of the UFW's founders, César Chávez, told another founder, Dolores Huerta, that she was needed in Florida. A crisis, he said. So of course, she went, because that's what she did: go where workers needed her. But when she got to Florida, she found there was no crisis. Nobody was expecting her. "They just wanted to get me out of the way so they could take credit for the work," she said later. "Straight male-chauvinist trick."

But hardly uncommon, as one fellow activist recalled: "The assumption was that [Chávez] was the leader, and Dolores was the housekeeper of the movement." In fact, they founded the union together—though unlike him, she had to balance work with raising her 14 children. With his soulful dark eyes, conversational speaking style and love of the microphone, he was the charismatic front man. But she was the union's chief negotiator. He could make the speeches; there were also boycotts to organise, contracts to negotiate and people who needed help.

Her mother, Alicia, had a similar streak of dogged practicality. After a divorce, Alicia took her three children from New Mexico to Stockton, California, in the Central Valley, California's agricultural heartland. After stints as a waitress, cannery worker and restaurateur, Alicia ran a 70-room hotel that welcomed migrant workers, often waiving room fees if they were too steep. Alicia, Dolores recalled, "thought she was their mother", and gave them curfews, made sure they sent money home and didn't drink away their paychecks, and invited them to dances so they could meet nice girls and settle down—which many did.*

From Alicia, who participated in a cannery-workers' strike in 1938 and joined civic groups in Stockton, Dolores learned about activism, which was nothing more than helping people who needed help, and speaking up for people who could not advocate for themselves. After training as a teacher, she turned to full-time organising in her 20s, when she joined the Community Service Organisation in Stockton. Its founder introduced her to Chávez, and soon afterward the two founded the group that would, after merging with another farm-workers' group, become the UFW.

From the start, she held her own. As an "experienced lobbyist", she wrote to Chávez, "I am able to speak on a man-to-man basis with other lobbyists." Elected officials learned to fear her. She was "indefatigable" and "unorthodox", recalled one state senator from California. "Dolores will bring in hundreds of people, and they'll camp outside your office."

And although sleeping in a Senate hallway sounds uncomfortable, it was nothing compared with what her union members were used to. They worked in the fields for 16 hours a day. There were no toilets: female workers had to squat behind a towel or a blanket. The only drinking water sat baking in a tank under the sun all day. No health care or unemployment insurance, no recourse if the farm owners cheated them.

So she and Chávez got to work. In 1965 their union, which mainly represented Mexican farm workers, joined 2,000 Filipinos on strike at vineyards near Delano, California. Growers hired scabs and refused negotiations, figuring they could force the workers to back down, as they had before.

But times were changing. Strikers drew support from civil-rights activists including Robert F. Kennedy and Martin Luther King junior. They borrowed tactics from the civil-rights movement, calling for boycotts of table grapes. By 1970 the growers had given in, agreeing to raise wages and recognise the union. Membership in the UFW swelled, and five years later California passed a law protecting farm-workers' rights to unionise, and making migrant workers eligible for health insurance and other benefits.

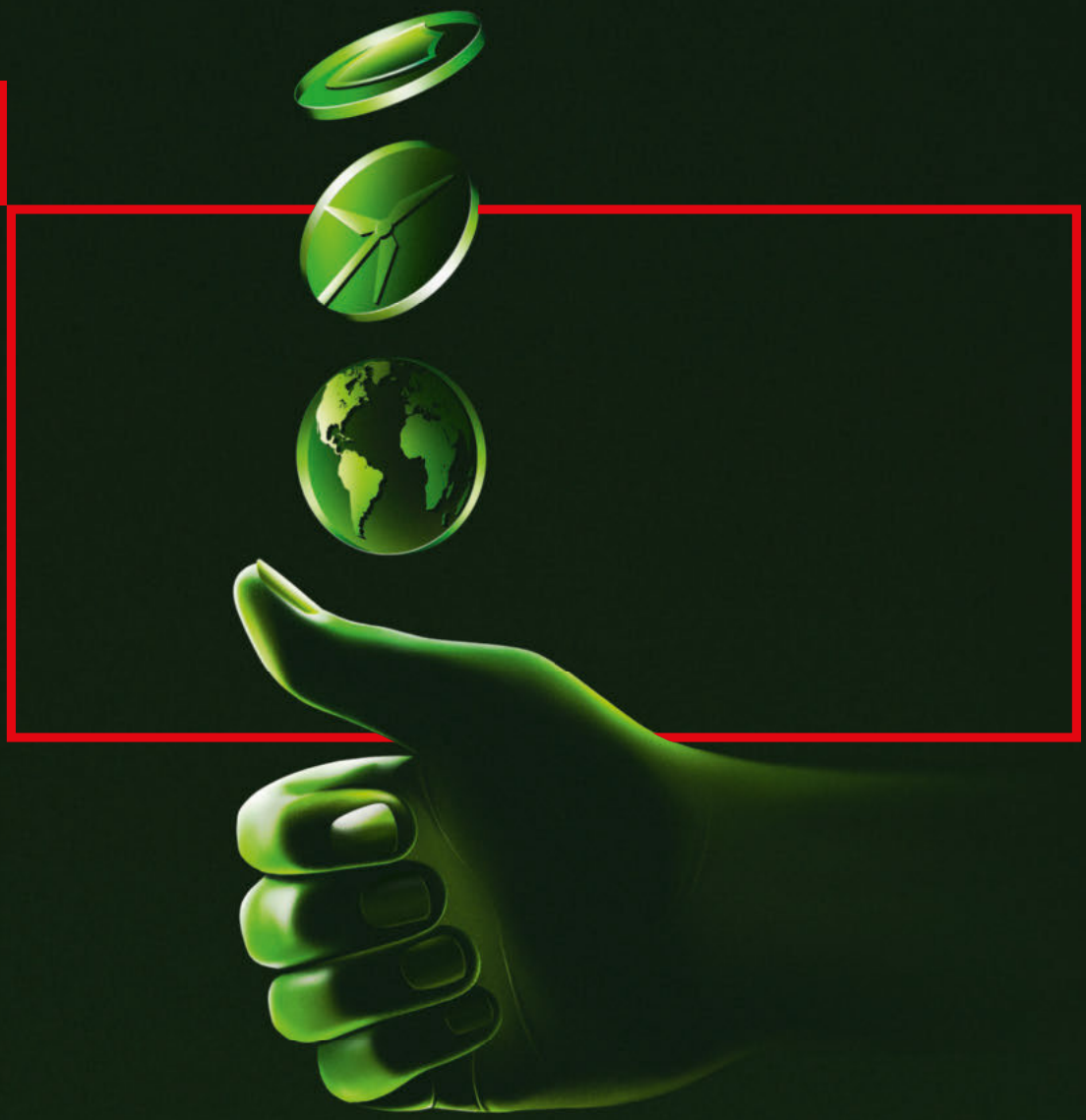
Chávez became a hero, giving his name to streets, parks and schools across California and beyond, despite whispers about his authoritarian tendencies, his insistence on personal loyalty and subservience. She kept doing the work, campaigning for women's rights and encouraging them to run for office, picketing and protesting. Age barely slowed her; a policeman broke her ribs and ruptured her spleen during a demonstration when she was almost 60.

But not until this year did Dolores reveal her deepest secret: Chávez, who died in 1993, had raped her in 1966. He had pressed her into sex years earlier. Two of her children were his. She never spoke up because "I didn't want to hurt the movement."

A *New York Times* investigation found that he assaulted and molested multiple women and girls, some as young as 12. Sexism pervaded his union. Liz Sullivan, a UFW organiser who was raped by two men after an organising meeting, recalled that union members berated her and female colleagues who spoke out about the treatment of women. The male executives had no patience for "women's lib and all that other bullshit".

In recent months, statues of Chávez have come down and parks renamed. Some blamed Dolores, too, for keeping quiet and dismissing their complaints about being sexually harassed and assaulted by their colleagues. Ms Sullivan took a more charitable view. She urged people to "see her as a human being, in all her beauty and with all her faults, just like the rest of us". ■

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