

The Economist

The global manufacturing delusion

NATO after Vilnius

Superforecasters and the apocalypse

Our summer reads

JULY 15TH–21ST 2023

PREPARING THE WAY

The alarming
plans for Trump's
second term





On the cover

MAGA Republicans think they know how to make a second Trump term focused and effective: leader, page 9, and briefing, page 14. On the left and right economic philosophy is not just changing—it is converging, page 17. How Europe would respond to the return of Donald Trump, page 47

The global manufacturing delusion Subsidies and protection for industry will not boost economic growth. They will hinder it: leader, page 11. Politicians spending big will end up disappointed, page 55

NATO after Vilnius With imminent NATO membership off the cards, Ukraine needs better security guarantees: leader, page 10. Volodymyr Zelensky did not get everything he wanted. But he got quite a lot, page 39

Superforecasters and the apocalypse Professional seers are more optimistic about the future than experts in risky sectors from AI to nuclear weapons, page 63. How the Anthropocene might end: leader, page 12

Summer reads Our writers recommend the finest books, old and new, in their areas of interest, page 67

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The world this week

- 7 A summary of political and business news

Leaders

- 9 **Trump's second term** Preparing the way

- 10 **The West and Ukraine** Work in progress

- 10 **Antitrust in America** The big distraction

- 11 **Manufacturing** The grand delusion

- 12 **Geology** The Anthropocene

Letters

- 13 On aboriginal rights in Australia, artificial intelligence, designing flags

Briefing

- 14 **Trump's plans for office** Chaos meets preparation



Schumpeter The last, unfulfilled dream of Jamie Dimon, page 54



United States

- 17 Where left meets right

- 18 Pushy Midwestern Dems

- 19 New York's mediums

- 20 The judge shortage

- 20 Military appointments

- 21 Age verification and porn

- 22 **Lexington** Joe Biden v the Ivy League



The Americas

- 23 A new oil boom



Asia

- 27 Curbing Asia's data flow

- 28 Vietnam bans "Barbie"

- 29 Cambodia's election

- 29 The Taliban and heritage

- 30 **Banyan** Fukushima's wastewater



China

- 31 How farmers are coping with climate change

- 32 Long work weeks

- 33 Street stalls are back

- 34 **Chaguan** Rule by law, Chinese style



Middle East & Africa

- 35 Cape Town beats Johannesburg

- 36 War crimes in Tigray

- 37 Syria's non-Muslims

- 38 Libya's election woes

- 38 Cryptocurrency and Islam



Europe

- 39** The NATO summit
40 Ukraine's brave sappers
41 Germany's far right
42 Spain's general election
43 Charlemagne Farewell
 Mark Rutte

**Britain**

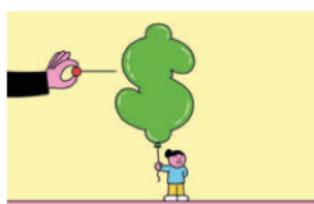
- 44** Mutiny in Metroland
46 Bagehot England's schools

**International**

- 47** Donald Trump looms over Europe

**Business**

- 49** How bad is bigness?
51 Britain's trustbuster
51 The WFH showdown
52 AI conquers pharma
53 Bartleby CEO whisperers
54 Schumpeter Dimon dreams

**Finance & economics**

- 55** Manufacturing delusion
59 Death metals
60 America's labour market
60 China and the truth
61 Buttonwood Gold
62 Free exchange How to understand climate risk

**Science & technology**

- 63** Forecasting Armageddon
65 Granite on the Moon
65 Marking the Anthropocene
66 Arthritic sabre-tooths

**Culture**

- 67** Our summer reading list
69 Avant-garde ice cream
70 New Syrian fiction
70 The women of drug gangs
71 Back Story Bruce Springsteen's magic

**Economic & financial indicators**

- 72** Statistics on 42 economies

Graphic detail

- 73** How many Russian soldiers have died?

Obituary

- 74** Victoria Amelina, a hunter for truth in Ukraine

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NATO held a summit in Vilnius, the capital of Lithuania, which was dominated by Ukraine's ambition to join the alliance. Amid resistance from some members, notably America and Germany, to give a firm timetable, NATO issued a pledge that Ukraine will join, but only when "allies agree and conditions are met". It was, however, promised as an accelerated process. More important was a pledge by the G7 that its members will each offer Ukraine enduring commitments to provide it with the weapons it needs to defend itself from Russia during and after the war, as well as help with rebuilding its economy.

Turkey's president, Recep Tayyip Erdogan, said he would now support **Sweden's** bid to join NATO, reversing months of opposition as the last country in the alliance to resist its membership. Before changing course, Mr Erdogan was widely condemned for suggesting that he would only support Sweden if the EU opened new talks on Turkey's ambition to join the bloc. America provided a different incentive, promising to "move ahead" with supplying F-16 fighter jets to Turkey.

Before the NATO summit America announced that it would provide Ukraine with **cluster munitions** to use in its fight against Russia. Joe Biden said the decision had been difficult, given the risk to civilians from their use. Ukraine's defence minister gave assurances that the cluster bombs would not be used in urban areas.

Vladimir Putin met Yevgeny Prigozhin just five days after the aborted mutiny of Mr Prigozhin's **Wagner mercen-**

nary troops, according to the Kremlin's spokesman. The meeting, which Wagner's top commanders also attended, was held in Moscow.

Exit, stage centre-right

The Dutch government collapsed, after the parties in the ruling coalition failed to agree on immigration policy. Mark Rutte, the prime minister, had wanted to toughen the entry requirements for some migrants. He has said he will quit politics following a general election in November, ending the career of one of Europe's cannier operators. Mr Rutte has been prime minister of the Netherlands since 2010, managing to hold often fractious coalitions together.

A month after hosting NATO's biggest ever air exercise, **Germany** said it would for the first time send troops to **Australia** to participate in war games involving principally American and Australian forces that are held once every two years. The Talisman Sabre exercise, which includes troops from Japan, South Korea and elsewhere, always unnerves China.

China signed a "comprehensive strategic partnership" with the **Solomon Islands**, which will include more Chinese help for the Pacific nation's police force. China is also building a telecoms network across the islands. Last month the Solomons' prime minister, Manasseh Sogavare, called for a review of his country's defence arrangements with Australia, which has long been an ally and aid provider.

North Korea test-fired an intercontinental ballistic missile, which fell into the sea short of Japanese waters. In its latest flurry of sabre-rattling, North Korea has ranted against what it describes as "air patrols" by American aircraft off the Korean peninsula.

At least ten people were killed in election-day violence in **West Bengal**. The Indian state

went to the polls to choose rural councils. Dozens of people have died in violence in the state since the election date was called a month ago.

At the UN Security Council Russia used its veto to block a nine-month extension of a deal that allows aid to cross from Turkey to north-west **Syria**. Others had pushed for a year-long extension but Russia, which is a key ally of the Syrian government, has said it will accept only six months.



Mahmoud Abbas, the **Palestinian** president, went to the city of Jenin in the occupied West Bank for the first time in over a decade. His visit came a week after an Israeli incursion into Jenin refugee camp, which Mr Abbas vowed to rebuild. The Palestinian Authority has lost influence and power in the territory in recent years.

Israel's Knesset approved the first reading of a controversial judicial-reform bill. Binyamin Netanyahu, the prime minister, had removed one of the most contentious parts of the bill that would have allowed parliament to overrule Supreme Court decisions with a simple majority. But protests still broke out around Israel.

The army-aligned faction involved in **Sudan's** civil war, which broke out in mid-April, said it would not attend a peace conference to be held under the auspices of the Intergovernmental Authority on Development in eastern Africa. America and Saudi Arabia, which had previously arranged a series of short-lived ceasefires, have suspended their peace efforts. So there is no sign of an end to the war.

In **Guatemala** a senior prosecutor persuaded a court to ban the party of Bernardo Arévalo, an anti-corruption presidential candidate who is to face Sandra Torres, a former first lady, in a run-off on August 20th. Mr Arévalo said the court's decision was "spurious" and would not stop him from contesting the election. Confirmation of the results of the first round had been delayed, raising suspicions that the country's elite is trying to thwart Mr Arévalo's anti-graft campaign.

Pemex, **Mexico's** state oil firm, will probably lose at least 2m barrels of oil this month after a huge fire at an offshore platform, according to reports, which also say that Mexico's oil regulator failed to collect three fines issued against the company. President Andrés Manuel López Obrador sees Pemex as a vital part of the country's attempts to become self-sufficient in energy. It is the world's most indebted oil company.

America applied sanctions to ten individuals and a firm in Mexico in an attempt to slow the supply of **fentanyl**, one cause of America's opioid epidemic. Some of those on the list are connected to the Sinaloa cartel, which is run by "Los Chapitos", the collective name for the sons of Joaquín "El Chapo" Guzmán, who is in prison in America.

Huw and cry

Following days of intense media speculation, Huw Edwards, the BBC's most famous **news presenter**, was revealed to be the man who allegedly made payments to a young person, who is now 20, for explicit photographs. The lurid affair has raised more questions about the state of British journalism. The young person's lawyers said the claims, published in the *Sun* newspaper, were nonsense and the police ruled out any criminal charges. Mr Edwards has been admitted to hospital for mental-health treatment.



A federal judge in America found that the Federal Trade Commission had failed to show how **Microsoft's** proposed takeover of **Activision Blizzard**, an online-games developer, would hurt competition and denied the regulator's request for an injunction to block the deal. The FTC argues that Microsoft will make Activision's bestselling games, such as the Call of Duty series, exclusive to its Xbox platform. Both companies hailed the judge's decision, which the FTC is appealing against. Britain's Competition and Markets Authority, which also objects to the merger, said it would now be open to considering a restructured deal.

Nvidia, which makes chips for artificial-intelligence applications and has seen its share price soar this year, is reportedly in talks to become an anchor investor in **Arm**, a chip designer, ahead of Arm's blockbuster IPO later this year. Nvidia's takeover proposal for Arm was struck down by regulators last year.

Amazon filed a legal challenge against its inclusion on a list of 19 companies that the European Union says are subject to new rules governing online content under the Digital Services Act. Facebook, TikTok and Twitter are also included on the list, but Amazon says that retailing is its business, and not advertising or the dissemination of information.

America's annual rate of **inflation** cooled to 3% in June, the smallest 12-month increase since March 2021 and far below the 9.1% recorded a year ago. Core inflation, stripping out food and energy prices, re-

mained higher than the overall rate, at 4.8%. The Federal Reserve's next announcement on interest rates is July 26th.

China faces a different problem to other countries. It is on the cusp of deflation, as demonstrated by the latest official data. Annual inflation in June was recorded as zero; consumer prices actually fell by 0.2% compared with May. The value of China's exports fell by 12.4% in June, year on year, the biggest drop since the start of the pandemic. Imports were down by 6.8%.

A liquidity problem

Thames Water said it had raised £750m (\$970m) from shareholders in emergency funding. It had sought £1bn. The company, which provides water and sewage services to London and the surrounding region, is drowning in debt. The government is said to be thinking about nationalising the utility if it collapses.

Jeremy Hunt, Britain's chancellor of the exchequer, announced a number of reforms that will allow the country's big **pension funds** to invest in unlisted high-growth firms and private equity. The pension firms have committed to

allocate 5% of assets in their default funds to unlisted equities by 2030, which the government reckons will increase savers' pension pots on average by up to 12%. It also estimates that the plan will increase investment in British firms by £50bn (\$65bn).

In a setback to **India's** ambition to become a global hub of chipmaking, **Foxconn**, best known for assembling the iPhone, pulled out of a \$19.5bn joint venture to develop semiconductors at a factory in Gujarat. The deal had been announced with much fanfare last year. Press reports suggested the project had been held up by the government's dithering on state support.

China's financial and securities regulators fined **Ant Group**, the fintech arm of Alibaba, 7.1bn yuan (\$994m) for breaking rules on consumer affairs and corporate governance. They also said that the tech industry would return to "normal supervision" as most regulatory concerns had been resolved. Investors took that to mean that the crackdown on the sector is over. After the fine, Ant launched a \$6bn share buy-back, which values the firm at \$78.5bn, far below its worth in 2020.

Elon Musk officially launched his latest venture, a startup working in artificial intelligence, named xAI. Mr Musk has recruited staff from OpenAI, DeepMind, Microsoft and other leaders in the field. In March Mr Musk co-signed a letter calling for a six-month moratorium on developing AI.

Meta continued its PR battle with **Twitter** over **Threads**, Meta's new microblogging site, which is a direct challenge to the long-established rival. Mark Zuckerberg, Meta's boss, claimed that Threads had signed up 100m users in less than a week. That prompted Linda Yaccarino, Twitter's chief executive, to declare that Twitter has just had its "largest usage day since February".

Need any cleaning done?

The OECD published a report into the adoption of **generative artificial intelligence** in the workplace. It said that although the impact of AI on jobs had been limited so far, there remained a significant potential for disruption. It thinks that the roles most exposed to AI are managers, chief executives and engineers. The least exposed jobs are rubbish collectors, labourers and cleaners.



Preparing the way

MAGA Republicans think they know how to make a second Trump term focused and effective

THE OVERWHELMING memory of Donald Trump's time in office is of chaos and resentment. It was summed up by the shameful end to his presidency, when his whipped-up supporters sacked the Capitol in a bid to keep him in power. Mr Trump has since lurched from an ignominious post-electoral impeachment to two criminal indictments, with perhaps more in the offing. The former president seems obsessed with relitigating his election loss in 2020: "I am your justice," he thundered to a crowd of supporters this year. "I am your retribution."

Mr Trump is likely to win the Republican presidential nomination for 2024. You might think victory in the general election would foreshadow even more chaos—this time without the grown-ups who, it turns out, at first reined in their impulsive new boss. In fact, a professional corps of America First populists are dedicating themselves to ensuring that Trump Two will be disciplined and focused on getting things done. They are preparing the way and you should not dismiss their efforts.

In contrast to the slapdash insurgency that captured the White House in 2016, the veterans of Mr Trump's first term have been years at work, as our Briefing this week lays out. Even at this early stage, the details are something to behold. Thousand-page policy documents set out ideas that were once outlandish in Republican circles but have now become orthodox: finishing the border wall, raising tariffs on allies and competitors alike, making unfunded tax cuts permanent and ending automatic citizenship for anyone born in the United States. They evince scepticism for NATO (see Leader) and pledge to "end the war on fossil fuels", by nixing policies designed to limit climate change.

Alongside these proposals is something that aims to revolutionise the structure of government itself. MAGA Republicans believe that they will be able to enact their programme only if they first defang the deep state by making tens of thousands of top civil servants sackable. Around 50,000 officials would be newly subject to being fired at will, under a proposed scheme known as Schedule F.

At the same time, to fill the thousands of political appointments at the top of the American civil service, the America Firsters are creating a "conservative LinkedIn" of candidates whose personal loyalty to Mr Trump is beyond question. Merely expressing qualms about the storming of the Capitol on January 6th 2021 is grounds for disqualification. None of this is a shadowy conspiracy: it is being planned in the open.

America Firsters will argue that civil-service reform promises to enhance democracy by preventing the unelected bureaucracy from stymying the programme of an elected president. Although checks and balances are an important part of America's constitutional design, the civil service is not one of the three branches of government it enshrines.

That argument does not wash. One objection is practical. The draining of brains from government would come just as the expansion of the American state across the economy makes a competent bureaucracy more important than ever. Running a modern nation state requires expertise in administration, econom-

ics, foreign affairs and science. If officials cannot challenge political appointees' madder proposals for fear of being fired, policy will rot from the inside.

A second objection is political. A future Democratic president endowed with imperial powers and unchecked by reality is not something Republicans should wish for. One reason for the professionalisation of the bureaucracy in the 19th century was to provide the ship of state with enough ballast to keep sailing from one administration to the next.

A third objection is that these changes would give an overmighty president direct control of the Department of Justice. By being able to sack all of its purported dissenters, the administration would obliterate the norm of legal independence. If so, Trumpian resentment would be channelled into concrete vengeance. That prospect should concern all Americans.

Having encountered resistance from his previous attorneys-general, the prime criterion for Mr Trump's next one would be a suppleness of spine: a willingness to quash investigations into the president and his allies and to authorise them against his long list of real and perceived political enemies. Although Mr Trump would have little practical reason to continue to foment distrust in the electoral system—since the constitution precludes a third term—the need to be vindicated about his supposedly stolen election in 2020 may lead him to do so, all the same.

If the Republicans win both houses of Congress, as is possible, nobody in the executive or the legislature will be in a position to stop Mr Trump. After all, most of those in charge will already have publicly attested to the legitimacy of storming the Capitol. The federal courts will become one of the few remaining redoubts of independence and expertise in the American system. It is hard to see how they will not also come under sustained attack.

If these carefully laid plans were enacted, America would follow Hungary and Poland down the path of illiberal democracy. True, America has more guardrails against backsliding—including centuries of democratic history and a more raucous and more decentralised media. However, these guardrails are weaker than in the past. Moreover, many Americans would be left worse off by these plans. Trust in institutions and the rule of the law would suffer, leaving the country yet more divided.

Donaldus imperator

Some people will try to take comfort from the idea that Mr Trump will not win the primary, or that he will lose the general election. Perhaps his nominees will not be confirmed, or the emperor of entropy will sabotage his own supporters' designs. That is unforgivably complacent.

Mr Trump is favourite to win the nomination in a country where general elections are determined by a few tens of thousands of votes. In victory, a team of practised demolition experts would prime their explosive ideas. The deconstruction of the administrative state could begin. The vain and tyrannical whims of an emperor-president would emerge from the rubble. ■



The West and Ukraine

Work in progress

With imminent NATO membership off the cards, Ukraine needs better security guarantees

AS HE HEADED TO NATO's gathering in Vilnius, a tetchy Volodymyr Zelensky called it "unprecedented and absurd" that Ukraine was apparently not being given a clear promise of speedy membership of the alliance. If that was meant as a last-ditch attempt to twist arms, it failed. The final communiqué, as he feared, refers to a need for conditions to be met and for allies to agree, even as it avoids dates and timelines.

That may have cheered Vladimir Putin, who is always on the lookout for signs of Western disunity in the face of his gory invasion of his neighbour. The reality, however, is different. Though the summit could have done more, and avoided the impression of differences with Ukraine, it inflicted several reverses on Russia's president, with the promise of many more to come.

Mr Putin's first defeat was over a different expansion of NATO. Turkey's president, Recep Tayyip Erdogan, said he is dropping his objections to Sweden's membership, enabling it to follow its Nordic neighbour, Finland, into the alliance. That will strengthen the Baltic states and the High North, and tie up more of Mr Putin's resources should he attempt mischief against NATO anywhere along its frontier.

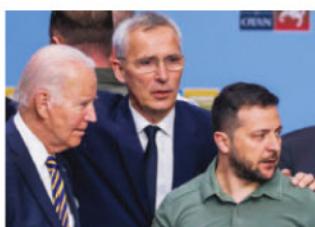
Mr Erdogan has hitherto been equidistant between Russia and NATO. Coming after his defiance of Mr Putin earlier in the week, by repatriating some captured Ukrainian defenders of Mariupol, the concession on Sweden marks a shift. A Turkey that is bound more tightly into the alliance is a diplomatic plus.

Mr Zelensky also got more than he initially thought. NATO was never going to admit Ukraine while intense fighting is going on, because that would have risked direct fighting between Russia and the West, which could threaten nuclear escalation. But Ukraine has been offered an accelerated process for membership once the war is over. The alliance has agreed to waive the requirement for Ukraine to go through an arduous "membership action plan" before it is admitted. Although a promise that ad-

mission will happen quickly after hostilities cease would have been better, this also marks a step forward.

Even that is somewhat beside the point. For now, genuine peace talks are unlikely. Indeed, the fact that Russia knows that NATO will not admit Ukraine as long as war rages gives it an incentive to keep fighting. What counts is less the conditions for some hypothetical NATO membership in the future, so much as a concrete and lasting programme to defend Ukraine right now. That is where the summit made real progress.

This came in the form of a punchy pledge by the G7 countries (all bar Japan are also NATO members) to provide Ukraine with more defence equipment, increased intelligence-sharing, expanded training programmes and the like. The G7 members pro-



mise that this will be an "enduring" commitment, and that each country will, individually, craft its own security guarantees for Ukraine that will give it a "sustainable force capable of defending Ukraine now and deterring Russian aggression in the future". The more other countries that sign up to the pledge, by making offers of their own, the better. This matters because it helps disabuse Mr Putin and his elites of the belief that Western resolve will crumble if only Russia clings on.

One way of underscoring that message would be to put promises into law, as America's Congress did in 1979 with the Taiwan Relations Act. This requires the president to make available "such defence articles and defence services in such quantity as may be necessary to enable Taiwan to maintain a sufficient self-defence capability". America should do the same for Ukraine. A future Congress could reverse such a law, but legislation would set the bar higher. Well ahead of the election, Joe Biden's Democrats should pass such a bill in the Senate, and urge the Republican-led House of Representatives to vote on it, too. Vilnius was a golden opportunity to unveil something with real bite. It partly succeeded in that task. Time to finish the job. ■

Antitrust in America

The big distraction

Size-obsessed regulators risk losing their focus

IN RECENT YEARS trustbusters have made no secret of their distaste for big firms and big deals. Lina Khan, the head of America's Federal Trade Commission (FTC), came to office after saying that the agencies had failed for decades to do enough proper policing. In addition to suing Amazon and Google for abusing their market power, regulators sought to block Microsoft's \$69bn acquisition of Activision Blizzard and are holding up the purchase of Horizon Therapeutics by Amgen, a health-care firm. The activist approach has been mirrored in Europe. Britain's trustbusters have been conspicuously aggressive, and on July 12th the European Commission slapped a €432m (\$480m) fine on Illumi-

na, a biotech giant, for buying Grail, a cancer-screening firm.

This expansive agenda raises questions of whether regulators have become overambitious. On July 11th a district court halted the FTC's attempt to stop Microsoft buying Activision. The FTC will appeal, but Britain's trustbusters, which had previously blocked the deal, abruptly signalled that they would be open to negotiations. Almost 18 months have passed since the deal was launched. Even if it eventually succeeds, that would be enough to chill future dealmaking. And all the while, the obsession with size may have distracted policymakers from tackling genuine hurdles to competition, to the detriment of consumers. ►

In principle trustbusters' zeal is welcome, because vigorous competition is essential in any free-market economy. After the 1980s, deference to business curbed regulators and courts in America. From the 1990s to the 2010s, the average number of mergers investigated yearly by the Department of Justice fell from 180 to 70. Corporate profits are a sign of market power and, depending on how they are measured, they have been 20-40% higher in the past decade than in the three decades before that. Mergers such as the one between Whirlpool and Maytag in 2006 led to higher prices. The past 20 years have seen nearly 2,000 hospital mergers; on average, prices have risen while the quality of care has stagnated.

Yet, as the Activision saga shows, and as we report this week, bigness need not be bad (see Business section). The five largest tech firms pay for a quarter of all research and development in America. True, corporate concentration has risen across the decades in both America and much of Europe. But this expansion appears to have been caused mainly by growing economies of scale from technology, not market power.

Moreover dealmaking, even involving big firms, is a vital part of healthy capitalism. Microsoft's purchase of Activision promises to make gaming more competitive, by developing the nascent subscription and cloud-gaming markets that could challenge the status quo.

The consequences of regulators' emphasis on size are starting to be felt. Nearly any deal involving a large tech firm is scruti-

nised. Adding "sand to the gears of M&A", as lawyers put it, sabotages the launch of some worthy bids, because managers choose to avoid the reputational risk of being barred or the headache of compliance. Although the overall volume of deals has fallen only a little, their average value has shrunk by about 40% this year compared with the past half-decade, suggesting that larger deals are being deterred. Since 2020, the share of deals involving the five largest tech giants has been cut in half.

Broaden your horizons

Two principles should guide the regulators. The first is that size alone should not warrant alarm. Needless scrutiny uses up regulators' resources and damages their credibility and the morale of their staff. Plenty of industries in America with persistently high profits and low innovation deserve attention, including hospitals and their intermediaries, and credit-card firms. The FTC has rightly blocked a handful of hospital mergers in recent years, and courts have agreed with it. It has more work to do.

The second principle is to acknowledge the limits of anti-trust. Two years ago President Joe Biden rightly pointed out that blocking deals and anti-competitive practices was just one piece of the puzzle. That idea has been forgotten. Land-use and occupational-licensing restrictions are still entrenched. Firms are being protected by rising barriers to trade (see Leader). Such things win fewer headlines than targeting blockbuster deals. But tackling them would at least boost competition. ■

Industrial policy

Deluded about manufacturing

Subsidies and protection for industry will not boost economic growth. They will hinder it

POLITICIANS HAVE always been captivated by manufacturing, but rarely has their desire to make things been as zealous as it is today. In the West they are doling out enormous subsidies to manufacturers, especially chipmakers and those behind green technologies, such as batteries. They say they are fighting climate change, enhancing national security and correcting for four decades of globalisation during which workers suffered and growth slowed. In the emerging world, governments hope that subsidies can secure a foothold in supply chains as worried Westerners move production out of China.

The sums being spent are vast, and growing. Since they were signed into law, the estimated ten-year cost of America's green subsidies has risen by at least two-thirds, and is likely to pass \$1tn. The Biden administration has also expanded the eligibility for chipmaking subsidies. In June Germany increased its handout to Intel to build a chip plant, from €6.8bn (\$7.6bn) to €9.9bn. India's central government is subsidising a Micron factory in Gujarat to "assemble and test" chips, spending an amount equal to a quarter of its annual budget for higher education. Eventually, Britain's opposition Labour Party wants to lavish £28bn (\$36bn) a year on green handouts which, as a share of GDP, would be nearly ten times more than America's.

An industrial arms race is under way. America welcomes it, saying the world needs green technologies and a diversified supply of chips. It is true that an ocean of public money is bound to

accelerate the green transition and reshape supply chains in ways that should increase the security of democracies. Alas, the accompanying economic benefits being promised are an illusion. As we report this week, governments that subsidise and protect manufacturing are more likely to harm their economies than help them (see Finance & economics section).

In ideal conditions, promoting manufacturing can add to innovation and growth. Towards the end of the 20th century South Korea and Taiwan caught up with the West thanks to the careful promotion of manufacturing exports. In industries like planemaking the enormous costs of entry and uncertain future demand can justify support for new firms, as when Europe backed Airbus in the 1970s. Likewise, targeted help can boost national security.

But today's schemes are likely either to fail or to prove needlessly costly. Countries subsidising chips and batteries are not pursuing catch-up growth but fighting over cutting-edge technology. The market for electric vehicles and batteries is unlikely to become an Airbus-Boeing style duopoly. In the 1980s protectionists argued that Japan would dominate the strategically vital semiconductor industry, owing to its subsidised mastery of memory-chip making. It did not turn out that way.

Duplicating production reduces specialisation, raising costs and hitting economic growth. Some analysts expect the price of a chip produced in Texas to be 30% higher than one made in Tai-►



wan. The Biden administration is belatedly seeking ways to open up its electric-vehicle subsidies to carmakers from friendly countries. But most of the “Buy American” requirements are written into laws that may be all but impossible to amend. And they are being copied. A decade ago about 9,000 protectionist measures were in place worldwide, reckons Global Trade Alert, a charity. Today there are around 35,000.

European leaders think they must match America or face catastrophic deindustrialisation. They have forgotten the logic of comparative advantage, which guarantees that countries will always have something to export, no matter how many cheques foreign governments write or how productive their trading partners become. Denmark has no car industry to speak of, but GDP per person is 11% higher than in Germany. Even the benefits to workers are overstated, because manufacturing jobs no longer pay a premium over comparable service work.

The potential for the manufacturing obsession to backfire is enormous. The state of New York spent nearly \$1bn building a

solar-panel factory which Tesla pays \$1 a year to rent. The idea was to create a manufacturing hub but the project has returned only 54 cents in benefits per dollar spent; according to the *Wall Street Journal*, the only new nearby business is a coffee shop. India’s attempt to boost its mobile-phone industry appears to have brought mainly low-value assembly work. The lesson from South Korea is that national champions must be exposed to global competition and allowed to fail. The temptation today will be to protect them, come what may.

America says it wants a “small yard and a high fence”. For national security, in particular, access to vital technologies is worth paying for. Yet unless policymakers are clear about the dangers of subsidies, the fenced-in yard will only get bigger. However well-intentioned those doling out money today, their successors are likely to be less focused and more lobbied. Governments are not wrong to pursue good jobs, the green transition or national security. But if they succumb to the manufacturing delusion, they will leave their countries worse off. ■

Geology

Tomorrow and tomorrow and...

What matters about the Anthropocene is less how it began and more how it might end

IT IS BY their beginnings that the ages of the Earth are known. Agreeing on the precise point at which each particular syllable of recorded time began is a fundamental, often fractious and frequently long-winded part of geological science. The Cretaceous period, for example, was first identified by Jean Baptiste Julien d’Omalius d’Halloy, a Belgian geologist, in 1822. But which rocks were the earliest to belong to it remains undecided. A working group of the International Subcommission on Cretaceous Stratigraphy recently spent a decade exploring the pros and cons of an outcrop in the French Alps. In the end the subcommission felt unable to accept its findings, and the group was disbanded. A reconstituted working group is now trying again. The depths of geological time teach patience.

Nowadays, though, geological time has fast-flowing shallows. In 2000 Paul Crutzen, a Dutch Earth scientist, made a public plea that the role humankind now plays in shaping the Earth be made explicit; science should recognise the advent of the Anthropocene, “the recent age of man”.

In 2009 the Anthropocene working group of the Subcommission on Quaternary Stratigraphy was charged with deciding whether the Earth’s transformation at human hands was significant enough to declare the beginning of a new epoch. In 2016 the working group answered “Yes”, and said that it began in the mid-20th century. On July 11th this year it announced that it had chosen the bit of rock that should be taken as marking this beginning. It is a layer of sediment laid down in Crawford Lake, near Toronto, in 1950, shortly after the start of the nuclear age (see Science & technology section).

The idea of the Anthropocene is a striking expression of a profound truth. Human activity is having effects that will be visible for periods of time far longer than recorded history. Humans are responsible for physical, chemical and biological changes previously brought about only by the great forces of na-

ture. Part of the idea’s imaginative and rhetorical power comes from the fact that geologists, readers and curators of the record in the rocks vouch for its validity. There is an undeniable bathos in the crusted ooze at the bottom of a Canadian sinkhole being called to stand in for all the change humankind has wrought. But the most important thing about the Anthropocene is not when and where it began, but when and how it might end.

It is possible to imagine an Anthropocene that endures. This would be a world where human activity on its current scale continues, but human institutions rein in its excesses. Its carbon cycle is rebalanced; its climate cools; the chemistry of its abused oceans is tempered; its ice sheets and rainforests are restored.

It is also possible to imagine an Anthropocene which fades away as the economy and the environment are decoupled. Humans continue to thrive, but they take their largely virtual pleasures in fusion-powered, AI-optimised, indoor-farm-fed, everything-recycled cities—jewels of light on a planet slowly returning to wilderness.

Alas, it is easy—perhaps too easy—to imagine instead an Anthropocene which is nasty, brutish and short. The nuclear weapons whose testing produced the telltale layers of fallout in Crawford Lake still abound. At some point a geopolitical rupture will see them used, possibly one exacerbated by the environmental catastrophes caused by Anthropocene excess. What remains of civilisation would fall back to a level where its technology no longer rivalled the volcanoes and ocean currents. Perhaps, in time, civilisation would grow back up, perhaps not.

Think again about the Cretaceous. What captures the imagination is how it ended: in fire, tsunami and a deep, wintry darkness brought about by the impact of a massive asteroid. Its gravestone is a worldwide layer of extraterrestrially tainted clay and ash sitting like a rocky shroud over the bones of the last dinosaurs. The less the Anthropocene looks like that, the better. ■



No need for a louder Voice

Australians have good reason to be suspicious of the proposed constitutional amendment that would create an Aboriginal body, known as the Voice, to advise Parliament (Banyan, July 1st). The governing Labor Party has provided little information and debate about how this would work, asking voters instead to just go with the vibe. The government spends generously on improving the lives of Aboriginal and Torres Strait Islanders. And the National Indigenous Australians Agency already ensures that Aboriginals are "heard, recognised and empowered". There is also the Coalition of Peaks, representing 80 community-controlled Aboriginal organisations, in addition to land councils and Aboriginal corporations. Not to mention the 11 indigenous Australians in Parliament itself, about 5% of the total lawmakers. There is a federal minister for Aboriginal affairs and one in each of the six states.

The government has made the fundamental error of ascribing any indigenous disadvantage to race, rather than isolation and poverty. Aboriginal advisory bodies have come and gone over the years; they were often disbanded because they were ineffective or accused of corruption. Enshrining an advisory body within the constitution will not ensure its success.

Australia is one of the most diverse, tolerant and generous countries in the world. The number of mixed-race couples where one partner is Aboriginal has almost doubled over the past decade. Australians do not want to be divided along racial lines.

JOHN WATSON
Sydney

It is ironic that *The Economist* supported the Voice referendum in the same week that it rightly applauded the American Supreme Court for declaring race-based college admissions unconstitutional ("Affirmative action had to go", June 30th). Racial preferences,

however well intentioned, should have no place in the constitution of a democracy.
MICHAEL GRONOW
Melbourne

The Voice would be an advisory body with no veto power and is a fair way forward. The opposition has responded with venom; old warhorses are trotted out to bray their obsolete views on democracy. Even in this century policy-makers have undermined the teaching of indigenous languages and compared homelands to cultural museums.

Better health outcomes for Aboriginals occur when community-controlled health organisations are supported. Sir Michael Marmot, known for his work on the social determinants of health, has found that low levels of autonomy and low self-esteem are related to worse health. The Voice to Parliament will be potent for indigenous aspirations. That is its vision.

CRAIG BROWN
Fellow
Australian College of Rural
and Remote Medicine
Eaglehawk Neck, Australia

AI doesn't "think"

Thank you for the reminder not to anthropomorphise artificial intelligence (Johnson, June 24th). Machine learning doesn't "hallucinate", "lie", "feel", or "think"; it is just another form of automation, be it to classify a face or predict some text. We need national and international conversations about what we mean by responsible AI: when, how and where we employ it and how we indicate we have used it. Those conversations will be much more productive if we remember we are dealing with inanimate machines, built from algorithms and data.

The predictive text on my phone suggests my name is Muggy, not as a value judgment, but because people don't type my name very often.
PROFESSOR DAME
MUFFY CALDER
Vice-principal
University of Glasgow

Standards practice

I enjoyed the informative and entertaining article on attempts to redesign America's state flags ("Bad banners", July 1st). Maryland's flag bears the arms of the Calvert (Lord Baltimore) and Crossland families of England. It is the only state flag to feature the arms of colonial founders. During the civil war Union Marylanders flew the black and gold Calvert colours and Confederate Marylanders used the red and white Crossland colours.

ROBERT LANZA
Takoma Park, Maryland

Various efforts have been made to change Milwaukee's flag, which is described as the "kitchen sink". In 2016 a competition settled on a simple motif (one of *The Economist*'s recommendations). Two years later Milwaukee's council rejected it, the chief complaint being that it would cost too much to replace the flags on municipal buildings. Never mind that private donations had been pledged to cover those costs. However, not even bureaucratic paralysis could stop its adoption. Now endearingly referred to as the People's Flag, it is flown all over Milwaukee, so much so that one may be forgiven for believing it is the city's official flag.

BENJEE CASCIO
Iringa, Tanzania

Brazil's first flag was designed by Jean-Baptiste Debret, a French painter, upon independence in 1822. The yellow rhomboid honours our first empress, a Habsburg, and the green background our Braganza emperor. With the fall of the monarchy 67 years later the coat of arms was swapped for an orb with the positivist motto "Love, Order and Progress". But "Love" was left out because of a lack of space.

JOHN DAVIES
São Paulo

The design rules you listed come from heraldry, invented in the early 12th century with the purpose of designing coats of arms distinctive enough to

differentiate between armoured knights on a medieval battlefield. Before heraldry knights had to open their helmet visor to show their soldiers they were still alive, a risky gesture as it could expose the eye to a hostile arrow. From around 1130, perhaps starting in Normandy, fighters would wear personal colours and banners during battles.

In sporting tournaments heralds would describe aloud the coat of arms of each opponent for the public to recognise them. Heraldry devised a concise and explicit language to describe the arms, record then and uphold the rules. They were so successful that heraldry served as the basis not only for devising national flags but also the system of international maritime signal flags and road signs.

The main rule when designing a coat of arms is not to place "metals" (gold and silver) near "colours" (blue, red, black, green). Most international flags and road signs adhere to this rule.

OLIVIER HERGAULT
Creator
MyBlazon.com
Paris

Canada's red maple leaf symbol has advertised the country on many backpacks across the world. Any Canadian tourist can tell you of the endless occasions on which they have approached someone bearing the flag thinking they were greeting a fellow citizen, only to be told that they were speaking to an American.

MICHAEL ROYCE
Toronto

John Wayne once said, "Sure I wave the American flag. Do you know a better flag to wave?" Yes. The flag of Wales. It's got a dragon. It's badass.

DERMOT WHELAN
Ho Chi Minh City



Chaos meets preparation

FORT WORTH AND WASHINGTON, DC

A second Trump administration would get its way far more often than the first one did

BROOKE ROLLINS is sitting at her desk in Fort Worth, Texas, at the back of an anonymous, low-rise building. It looks uncannily like an office in the White House, with its lemony cream wallpaper, dark wood furniture and photographs of the president signing bills as admirers look on. Only one detail jars: the 18th-century rifle leaning against the wall.

The resemblance is not a coincidence. Mrs Rollins worked in the White House under Donald Trump and briefly ran his Domestic Policy Council. She purchased her West Wing furniture when she left. To-

wards the end of Mr Trump's first term, she was in charge of putting together a policy agenda for his second one. After Mr Trump lost his bid for re-election in 2020, she set up a think-tank to continue that work, the America First Policy Institute (AFPI).

AFPI aspires to be an administration-in-waiting. Its staff of 172 includes eight former cabinet secretaries from the Trump administration and 20 other political appointees. "I will leave things ready for the next Republican president," Mrs Rollins says. Campaign-finance laws prevent her from saying so, but she means Mr Trump.

AFPI is the newest think-tank preparing for a second term for Mr Trump, but it is not the biggest. The Heritage Foundation, which prides itself on having done the preparatory work for Ronald Reagan's "revolution", has its own presidential transition project. This is led by Paul Dans, a lawyer who worked in the White House's Office of Personnel Management during Mr Trump's presidency. In 1981 copies of a manual for government produced by Heritage were placed on the chairs of each of Reagan's cabinet members before their first meeting. Heritage is updating that idea, co-ordinating an effort by 350 conservative wonks and former administration officials to write a plan for government in time for the Republican primaries next year. Those who have criticised Mr Trump or his agenda will not be part of it.

As well as drafting policies for each department, Mr Dans and his colleagues are building a list of potential recruits to serve in the next Republican administration. He likes to describe the effort as a conservative LinkedIn. Fully staffing an administration requires about 4,000 political appointees, 1,200 of whom must be approved by the Senate. Heritage and its allied think-tanks are vetting the people to fill those jobs now.

Dismiss that which insults

What would prove disqualifying? "If you kind of have shown yourself to have fought against the Trump administration, or there are issues where you've actually been counter to it," says Mr Dans. "You know where people stand by where they sit, so to speak. Their postings and social media, their allegiances over time can give people a pretty good picture." Blaming Mr Trump for the ransacking of the Capitol in 2021, or supporting his impeachment in the days that followed, for example, would be enough to keep someone off the list.

Thanks to these efforts, the next Trump administration, if there is one, will have fleshed-out plans and the know-how to advance them. That would make it very different from Mr Trump's first term. "We didn't have the people because nobody thought we would win," says Steve Bannon, who managed Mr Trump's campaign and was an influential figure at the beginning of his presidency. (Mr Trump fired Mr Bannon, but later stopped him being tried for misuse of funds from a non-profit group he headed by pardoning him.)

Mr Bannon mentions the National Security Council (NSC) as an example of the staffing problems the Trump administration faced. It struggled to come up with half the necessary number of political appointees, he says. They were an odd mixture of people like Michael Anton, a corporate PR man and apocalyptic political commentator, and old foreign-policy ↗

hands who turned out to be queasy about Mr Trump's courting of North Korea's dictator and his hostility to American allies.

What was true of the NSC applies to other agencies, too. "You have got to hit the beach with three or four thousand guys," Mr Bannon says. Mr Dans agrees. "In Hollywood they like to describe things as 'this meets that meets the other'. This is the Manhattan Project meets the Empire State Building meets D-Day."

The initial objective for this invading force is to capture the civil service. One lesson that Mr Trump's backers drew from his first term is that no policy matters more than control of the bureaucracy, because no policies can be implemented without it.

To that end Mr Trump's commandos will "deconstruct" the administrative state—the 300 or more federal offices that issue and interpret regulations. The philosophical version of this idea is that, over time, as the role of the federal government has grown from fighting wars and running the postal service into the Leviathan it is today, unelected bureaucrats have assumed powers that should belong to Congress. The Twitter version is that the deep-state liberals who thwarted Mr Trump when he was in office and have persecuted him since he left must be vanquished. Either way, Mr Trump's shock troops will try to wrest power back from the bureaucracy.

In practice it is hard to see how government would function without the administrative state. Congress struggles to fulfil basic responsibilities like passing a budget on time. To imagine that the same body could act as, say, the regulator of financial markets is a stretch. That may be the point. The MAGA movement is not libertarian, but in many ways it would like the federal government to do far less than it does now.

The would-be Trump appointees plan to subdue the bureaucracy using Schedule F, shorthand for an executive order issued by Mr Trump in 2020 and rescinded by Joe Biden when he became president. It reflects a view that the federal bureaucracy, whatever its size, should not have any entrenched authority. For the first century of its existence, civil servants were appointed to jobs by the government of the day based on an algorithm of personal contacts and favours owed known as the spoils system. Then in 1881 a deranged office-seeker assassinated the president, spurring the passage of the Pendleton Act, which created a class of professional bureaucrats who stayed in their posts even as the presidency changed hands. Since the 1940s, when Franklin Roosevelt was expanding the government, it has been hard to fire federal bureaucrats, AFPI complains.

Many political appointees in the Trump administration believe that a minority of civil servants used their protected status to thwart or undermine the president's wish-

es. James Sherk, a policy adviser in the Trump White House who is now at AFPI, cites two cases on which lawyers in various government departments reportedly refused to work: one against Yale University for allegedly discriminating against Asian-Americans, and one aimed at protecting nurses from having to perform abortions. Schedule F would empower Mr Trump's appointees to remove perceived obstructionists at will.

"Schedule F is now, I think, Republican doctrine," says Russell Vought, who ran the Office of Management and Budget under Mr Trump. "I don't know how a Republican gets elected and doesn't do that." It would also be straightforward to enact: Mr Trump could just reissue his old executive order. Again, there is a reasonable version of this idea, in which a small number of recalcitrant civil servants lose their jobs, and a campaign version, where Schedule F becomes the instrument of Mr Trump's righteous purge of Washington.

To be with those I like is enough

The combined effect of appointing only loyalists and cowing the bureaucracy would be both to remove constraints on Mr Trump and to ensure his wishes are acted on more often. In his first term Mr Trump's opponents took some comfort from the idea that not all the people around him were true believers, and were willing to stall his most alarming ideas. The *New York Times* ran an anonymous piece by a political appointee who claimed there was an internal resistance within the administration that acted as a check on presidential power. In a second Trump term, there will not be any "grown-ups in the room", as Mr Trump's detractors called such people.

Once a second Trump administration had bent the bureaucracy to its will, what policies would it pursue? The department-by-department plans being drawn up at AF-

PI, Heritage and elsewhere give some guidance. They involve some predictable fusillades in the culture wars, such as completing a wall along the border with Mexico and directing all federal officials to consider only people's biological sex, rather than "self-identified" gender. But some of the putative policy agenda is both more sweeping in scope and more of a break with past Republican orthodoxy.

One such area is the economy. The new right is enthusiastic about the kind of industrial policy the Biden administration has pursued. "No one in Ohio...cares that the *Wall Street Journal* editorial board doesn't like the CHIPS bill on free-market economic grounds," J.D. Vance, a senator, recently told a gathering at American Compass, a think-tank, referring to a law subsidising semiconductor factories. In some cases Mr Trump's supporters would go further: Mr Vance advocates taxing companies that shift work offshore.

The main partisan disagreement over industrial policy is no longer whether to have one at all, but over the Democrats' habit of smuggling diversity requirements and environmental goals into it. As the Republicans have become a more working-class party than the Democrats, people like Mr Vance have tried to synthesise a new Republican position that is both pro-labour and hostile to union leaders (see United States section). His advocacy of subsidies for industry without "the woke bullshit" is probably more popular than the Biden administration's approach.

That enthusiasm for an active state co-exists with a more conventional Republican programme of lowering taxes, coupled with a belief that well-intentioned efforts to cut poverty usually backfire. AFPI's policy book talks of making permanent the tax cuts in the Tax Cuts and Jobs Act of 2017, some of which are due to expire in 2025. AFPI's policy wonks also advocate attaching work requirements to Medicaid (health insurance for the poor) and other government benefits. In Arkansas, the only state to have implemented work requirements for Medicaid, a quarter of those enrolled in the programme lost their health insurance and there was no noticeable increase in employment. The reforms would at least save some money, but not enough to have much impact on the federal deficit.

Expensive industrial policy, lower taxes and only small reductions in benefits—in other words, less revenue and more spending—would not balance the books, much less trim government debts or refill the funds that pay for Medicare (subsidised health insurance for the disabled and the old) and Social Security (the state pension), which are due to run dry in the early 2030s. On past evidence the bond market is likely to continue to finance the growing gap between the government's income and ex-►



penditure. Investors might become nervous, however, if the Federal Reserve's independence were in question. Some Trumpists think it should be, since they do not like to cede so much power to unelected bureaucrats. That is a minority view, Mr Vought concedes, but could gain ground: "I guarantee that if that debate was in front of President Trump, that he wouldn't just throw you out of the Oval Office."

Another area in which a second Trump term could bend the arc of history is in environmental policy. In his first term emissions of greenhouse gases kept falling, even though he reversed many of Barack Obama's policies to slow climate change. Investors assumed that government policy would soon revert to a greener norm and coal-fired power stations have lifespans of several decades, so the administration's fondness for them was not enough to get new ones built. In this respect, too, a second Trump administration would be more methodical and better organised.

Whatever satisfies the soul is truth

AFPI's policy book talks about ending "the war on fossil fuels" and makes untethered assumptions about how much bigger the economy would be without it. (AFPI estimates that America's GDP will be 6% smaller by the end of this decade than it would have been without the Obama administration's emissions-reductions targets.) The argument is presented in both pragmatic and moral terms. Why should American oil stay in the ground while Saudi oil flows? And why should the use of fuels which can bring so much prosperity to so many be circumscribed? Never mind that Mr Biden's administration has granted more permits to drill than Mr Trump's did, that America is the world's largest producer of oil or that it is in the national interest to limit global warming.

America Firsters like oil, gas and coal and the relatively well-paid, manly jobs for high-school graduates they bring. They are also opposed to the green transition, which they see as unnecessary government meddling that raises energy prices for ordinary Americans. Both Kevin Roberts, who runs Heritage, and Mrs Rollins, who started AFPI, used to be senior figures at the Texas Public Policy Foundation (TPPF), a think-tank which opposes the development of wind farms and solar plants.

Over a quarter of Texas's electricity is generated by renewables, and TPPF has helped to propagate the idea that this makes the state's power grid unstable. Investors in renewables say Texas's electricity regulator has become hostile to new projects. TPPF, meanwhile, is battling renewables as far afield as New York, Rhode Island and Massachusetts, where it has initiated a lawsuit against a big offshore wind farm on behalf of fishermen. If the

federal Environmental Protection Agency and Justice Department were run by people who shared these instincts, investors in renewables would face the same sort of political risks as owners of coal plants.

A third area which is likely to see great upheaval if Mr Trump becomes president again is foreign policy. Among America First types, there is deep disagreement about Ukraine. AFPI's policy book talks about facing the threat from Russia. Yet Mr Bannon says, "I don't give a shit about Ukraine—what I give a shit about is the invasion of America's southern border." Mr Vought makes the same point in a more wonkish way: "Ukraine is being subsidised by our taxpayers to fight and not make strategic calculations that they would otherwise make if we weren't subsidising it. And it's not in our interest to subsidise that conflict." Mr Trump himself says he would end the war. He may not be able to do that. But Ukraine and its other allies ought to take seriously the possibility that America may no longer be with them in 18 months.

Policy towards China is less contested. The Trump administration was more confrontational towards China than any of its predecessors. The Biden administration has continued in the same vein, albeit with less inflammatory rhetoric and more considered policies. "The difference between the Biden administration and the Trump administration on protectionism is that the Biden administration is competent," says Dan Drezner of Tufts University. A second Trump term would be more likely to build on what the Biden team have done rather than, say, loosening export controls.

Heritage's plan for 2025 foresees an immediate ban on TikTok and also on Confucius Institutes. American pension funds would be encouraged to divest from "problematic" Chinese entities. The government should be prepared "to employ punitive policy measures" to prevent American

investment in sensitive areas in China and Chinese investment in America. American companies considering large-scale investments in anything deemed critical would have to submit information about counterparties and anticipated use of funds to the US government before investing, "under a presumption of denial".

Whether Mr Trump would authorise the use of force if China were to invade Taiwan is hard to say. Some who worked in his administration note that whenever they were about to adopt tougher policies on China, the bosses of big American firms would call the White House and tell him that the move would alarm financial markets and he would back down. The same dynamic may apply in a second term. In a memoir of his time as Mr Trump's national security adviser, John Bolton suggests the former president was not really committed to Taiwan's security. Others claim he would be "stronger" than Mr Biden.

Other allies could expect the same peremptory treatment as in Mr Trump's first term. He reportedly told aides he wanted to leave NATO. Even AFPI, which on foreign policy is closer to the old Republican orthodoxy, thinks that military support should be withdrawn from countries that do not spend at least 2% of GDP on defence, a level that neither Japan nor most countries in NATO meet. The modern America First movement, like its namesake during the second world war, contains some true isolationists. But it also contains an influential clutch of people like Elbridge Colby, who served in the Department of Defence and believes in a muscular foreign policy. He thinks China is such a threat that America should pull back from its defence commitments in Europe and the Middle East to concentrate on the Pacific.

No matter how well-laid the plans for a second Trump term, nor how thoroughly vetted the people carrying them out, Mr Trump would still be in charge, which means there is a limit to how methodical it could be. But it would be altogether more formidable than the version of 2017-21. As for the candidate himself, he is aware of the plans being made on his behalf but has never been excited by the details of public policy. For the professional wonks in the movement, that is an opportunity.

"*The Economist* doesn't think that populists can govern, right?" asks Mr Vought. "We believe we're trying to be an answer to that viewpoint. So we're trying to look systematically: how does someone who has an America First perspective, a populist perspective, govern credibly and effectively? Because they know the inner workings of government so well." The winner of next year's presidential election will be sworn in in 18 months. The institutions of the new right expect it to be Mr Trump, and this time they will be prepared. ■





Economic thinking

Frenemies

WASHINGTON, DC

On the left and right economic philosophy is not just changing—it is converging

NORMALLY, YOU need read only the first six or seven words of a senator's sentence to be able to correctly surmise his party. See if you can tell from the next 40 or so, an extract culled from a prominent senator's recent book: "Today, neoliberalism is in. In the eyes of our elites, the spread and support of free trade should come before all other concerns—personal, political and geopolitical. In recent years this has led to a kind of 'free-market fundamentalism'." Suppose you were given a hint. The three proposed solutions for the neoliberal malaise are: "putting Wall Street in its place", bringing "critical industries back to America" and resurrecting "an obligation to rebuild America's workforce".

If you guessed a Democrat—perhaps even more cleverly Bernie Sanders writing in his recent work, "It's OK to be Angry About Capitalism"—you would be wrong. It was in fact Marco Rubio, the Republican senator from Florida and one-time presidential contender, writing in his just-published book, "Decades of Decadence".

The populist era marked by Donald

Trump's ascension has been tumultuous for economic policy on both the American left and right. What was once heterodox has quickly become orthodox. It is easy to be drawn to where the new left and the new right are diametrically opposed, because partisans amplify disagreement, and because there are real differences on the role of policing, say, or whether pupils ought to be schooled in gender fluidity. What the culture wars distract from is that, on matters of economic policy, there is rather a lot of agreement. The culture wars may even have hastened the convergence between

→ Also in this section

18 Pushy Midwestern Dems

19 New York's mediums

20 The judge shortage

20 General disarray

21 Age verification and porn

22 Lexington: Biden v the Ivvies

the two sides by quickening the break-up between the Republican Party and big business, which is now commonly derided as just another redoubt of wokeness.

The diagnoses from the new right and new left of what ails America are strikingly similar. Both sides agree that the old order that prized expertise, free markets and free trade—"neoliberalism", usually invoked as a pejorative—was a rotten deal for America. Corporations were too immoral; elites too feckless; globalisation too costly; inequality too unchecked; the invisible hand too prone to error.

These problems, both sides agree, must be rectified by the state, through the use of tariffs and industrial policy to boost favoured industries. That should be coupled with greater redistribution, to the detriment of corporations and to the benefit of left-behind workers. When Jake Sullivan, the national security adviser, who is tasked with making something called "a foreign policy for the middle class" a reality, endorsed the idea that the administration's domestic economic policies represented a "new Washington consensus" in April, he was speaking grandly but not incorrectly.

For wonks pushing in this direction, that is great news. "It is a sign of a healthy politics that you have people with their eyes open on both sides of the political spectrum saying, 'This is really broken,'" says Oren Cass, a former policy adviser to Mitt Romney and now the executive director of American Compass, a think-tank ➤

▶ leading the charge on the right. In June the organisation released an anthology of policy essays called "Rebuilding American Capitalism: A Handbook for Conservative Policymakers" that resembles a slaughterhouse for Republican sacred cows.

Trade deficits are obsessed over; federal budget deficits are hardly mentioned. Child benefits for parents should be made much more generous, as Democrats suggest, though only on the condition that parents work. Financial engineering should be resisted, with share buy-backs banned. Organised labour is to be encouraged rather than being dismissed as a hindrance. "Conservative economics, unlike the fundamentalism that supplanted it for a time, begins with a confident assertion of what the market is for and then considers the public policies necessary for shaping markets toward that end," Mr Cass writes at the start of the manifesto.

This is apparently a catchy proposition. Most of the young guard of Republican senators who are trying to fashion populist economic policy—like Tom Cotton of Arkansas, J.D. Vance of Ohio and Todd Young of Indiana—gave lengthy interviews at an event to celebrate its unveiling. Mr Rubio was there, too; his recent book of recriminations against the decadent technocratic, neoliberal elite is studded with references to Mr Cass and his writings.

The idea that capitalism has inherent contradictions that require government intervention is more usually associated with the left. But Thomas Piketty, the famed French chronicler of inequality, is also optimistic that there is a broader ideological shift under way. "Beginning with the 2008 financial crisis, we've seen the beginning of the end of this sort of neoliberal euphoria and the pandemic accelerated this transformation," he reckons.

Mr Biden is doing "interesting things" when it comes to industrial policy, says Mr Piketty—who freely admits his preference for the more revolutionary Democratic alternatives like Elizabeth Warren and Mr Sanders over the centrist Mr Biden. The president, he says, is "not really questioning the very high level of inequality that we have in the us today".

This is a critique that those in the Biden administration might heed. There are more than a few casual fans of Mr Piketty in the White House. Heather Boushey, a member of the president's Council of Economic Advisers, helped edit an entire volume of economic essays titled "After Piketty". Even as a tight labour market after the pandemic increased wages for the lowest-paid workers, top incomes continued to rise, causing some measures of inequality either to rise or remain stuck at stubbornly high levels. Mr Piketty had called for a return to the high marginal tax rates on income in effect in the three decades after

the second world war, as well as a new steeply progressive wealth tax to finance a generous welfare state.

This is one difference between new right and new left. Mr Biden has taken on board the idea that extreme wealth at the top of the distribution is a problem that needs tackling, and insists that he will not raise taxes on those earning less than \$400,000 a year (98% of Americans fall below that threshold). Mr Cass and co spend less time fretting that the top 2% are doing too well. Though since Mr Biden has not managed to actually raise taxes on top earners, the difference is moot.

All of which leads Mr Piketty to worry that America could have a "neoliberal stabilisation" at a very high level of inequality, or continue to flirt with alternative systems like the "neo-nationalism" embodied by Mr Trump. He also worries that some of the leftish industrial policy that the Biden administration has championed, and which plenty of Republicans would copy, is in fact something more retrograde in disguise. "Some of what we call industrial policy today looks a lot like subsidies and sort of a new wave of tax competition and a race to the bottom," he says.

Crossing the Piketty line

Aside from the focus on the super-rich, the differences between the new left and new right on economic matters can be hard to detect. Those on the left often discuss social policy as something that happens between state and individual; the right insists that the family remain the intermediating institution. Both find competition with China to be a justification for industrial policy; but the new right does not find the threat of climate change to be nearly so moving. There is little appetite on either side to reform entitlement programmes before the trust funds that hold cash for old-age-pension and health benefits are depleted within the next decade.

Both the new left and the new right agree on empowering workers but disagree on the means. "The Democratic Party is just completely committed at this point to strengthening existing unions," says Mr Cass. He prefers alternative ways of organising labour like sectoral bargaining, or a German-style co-determination system in which a set number of corporate-board seats are reserved for workers (an arrangement also praised by Mr Piketty).

If there is so much agreement, why is Congress not enacting more laws that reflect the new consensus? The main reason is that mutual suspicion on matters of culture, the primary currency of contemporary politics, infect whatever new economic consensus there is. A wholesale refashioning of America therefore won't come soon. But the ideas are already proving to be more than a mere passing fad. ■

Midwestern Democrats

Veni, vidi, veto

CHICAGO

Democrats across the Midwest are taking full advantage of power

IN AN EPISODE of "The Simpsons", Lionel Hutz, a lawyer, takes a pen to a business card to wheedle out of a commitment. Instead of "no money down", he inserts a comma and an exclamation mark to change the meaning: "No, money down!". On July 5th Tony Evers, the white-haired Democratic governor of Wisconsin, took inspiration from Mr Hutz, when he used his veto pen to excise seven words, four numbers and a hyphen from the Republican-controlled state legislature's proposed budget. In doing so, he changed a two-year increase of \$325 in per-pupil school funding (and property taxes) into one that will instead last until 2425. This, Mr Evers's office noted in a statement, would guarantee the uplift "effectively in perpetuity".

The ability to exercise such a "line item" veto, transforming the meaning of a law by deleting individual words, is a quirk in Wisconsin law that gives unusual power to governors. Under the state's constitution, a governor can choose to approve parts of a law, rather than merely rejecting or assenting to the entire thing. Mr Evers's creative use of his pen is not new. Indeed until 1990, governors in the Badger State could delete not just whole words but individual letters, in effect to create entirely new laws. Yet in a state where the legislature is dominated by Republicans, it shows a level of assertiveness to get Democratic priorities into ►



Tony Evers and friend

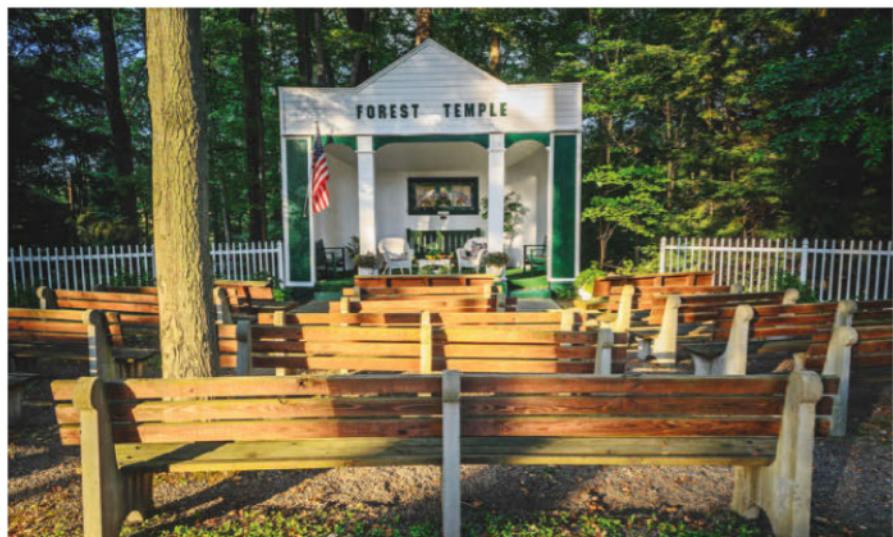
law. In that, it is typical of a newly emerging willingness across the Midwest by Democratic politicians to use the power they have as much as possible.

In Minnesota, the legislative session that ended in May was described by the state's governor, Tim Walz, as the most successful "maybe in Minnesota history". With a slim House majority and a majority of just one in the state Senate, the Democratic-Farmer-Labour Party (DFL), the state's Democratic affiliate, passed laws to strengthen abortion rights and gun control, create a family-leave programme, legalise marijuana and pour money into education, green-energy infrastructure, public transport and housing. In Michigan, which has an equally thin Democratic trifecta, the legislature overturned a decade-old Republican "right to work" law (which constrains unions), expanded tax credits for low-income households and repealed the state's 1931 ban on abortion.

This rush of legislation sets such states apart from more traditionally Democratic ones, such as New York, where plans by Kathy Hochul, the governor, to allow more housing construction broke down in April, or California, where internecine fighting over the budget dragged on until last month. According to Ken Martin, the chairman of the Minnesota DFL, the difference in the Midwest is that Democrats have tiny majorities they only recently acquired. That has acted as a unifier: "Power is fleeting," and so "we have to use it where we can," he says. That is true in Michigan too—a state that helped to deliver Donald Trump's victory in 2016.

John Mark Hansen, a political scientist at the University of Chicago, says Democrats in the region are "on a roll". Years of Republican control in places like Wisconsin helped to motivate activists to get back power. Even when Democrats are not in power, they are finding innovative ways to assert themselves, says Mr Hansen. For example, in Ohio, on July 5th, activists dropped off 700,000 signatures calling for a referendum on abortion rights in the state—enough to ensure a vote will be held in November. In Michigan last year a referendum on abortion bolstered Democratic turnout, though unluckily for the party, Ohio holds only local elections this year.

Can this assertiveness last? For now, Republicans are reeling. "They're focused on these very divisive culture wars," says Mr Martin, of his opponents. In Michigan, such is the state of discord among Republicans that on July 8th a meeting of party officials ended in a physical fight. Even in Wisconsin, the long-standing Republican control of the legislature is threatened by a shift in the balance of power on the state's Supreme Court. Yet as Mr Martin says, power can quickly switch back. That is why it has to be used. ■



Spiritualists

Clairvoyant cartel

LILY DALE, NEW YORK
Mediums engage in anti-competitive behaviour, too

THE GATHERING is like an auction crossed with a game of Mad Libs. Up steps a medium, mic in hand. Visions appear to her: the first, she says, is an old woman with a spinal deformity who liked caring for kids. The medium asks whether anyone recognises the spirit; a hand shoots up. "Know that she's proud of you and wants you to treat yourself more!" Applause, then a second apparition, whom someone else recognises.

Such demonstrations of public mediumship are a staple of summers at Lily Dale, a hamlet in western New York founded in 1879. About 250 residents live in gingerbread-trimmed houses in the gated community. All are adherents of spiritualism, a 19th-century movement that got its start 200km away, in Hydesville, New York. Spiritualists believe that the living can contact and glean insights from the dead; mediums are the conduit. At its peak spiritualism had somewhere between 4m and 11m followers in America, including Abraham Lincoln's wife, who hosted séances at the White House.

Each year more than 20,000 people visit Lily Dale, the oldest and largest spiritualist centre in America. Others are Cassadaga, in Florida, and Camp Chesterfield, in Indiana. Only 34 certified mediums, having passed a test, are allowed to charge for their services on the grounds. Private "readings" cost up to \$140 for half an hour.

The mediums operate a guild of sorts. To get inducted one must perform well in trial readings. "We're like the Harvard of mediumship," says Sharon Klingler, who earned her credentials a decade ago.

Candidates are scored on how many spirits they conjure and the accuracy of the evidence—mannerisms, symptoms, jobs, hometowns—that they give. "People who come here expect someone who's been vetted," says Kris Seastedt, vice-president of the Mediums League.

There are dos and don'ts of the trade. Don't diagnose or prescribe: that could bring legal trouble. Brenda Reading, a newly certified medium, won't inform women if she thinks that they have breast cancer, though she will ask if they have put off their mammogram. (Nothing stops her from telling your correspondent that he seems a bit low-energy. She recommends vitamin supplements.)

Clients want assurances that their loved ones are at peace. Best to keep the message uplifting; no one likes to relive tragedy. And the more specific the evidence, the better. It's not enough to say that dead grandma baked. Everyone had a grandma who baked. Helpfully, most visitors to Lily Dale want to believe. The occasional sceptic can be a spoiler. So can people who get too dependent and expect to be told exactly what to do by their dearly departed. Ms Klingler sometimes asks needy clients to stop calling. She reminds them that they have free will, and suggests meditation.

Some encounters are disorienting. Your correspondent sat for a reading with a medium who immediately suffered a coughing fit—a sign, she insisted, that one of his grandparents had had a tracheotomy. Assured otherwise, she replied that he was misinformed and should trust the spirit.

Court crisis

Justice delayed

PATERSON, NEW JERSEY

Judge and staff shortages leave the most vulnerable in limbo

CHILDREN ARE suffering," says Toni Belford Damiano, president-elect of the Passaic County Bar Association. Judge shortages in New Jersey have caused trial delays, adding to a pandemic-related backlog. Families going through a divorce are struggling with uncertainty as they have to wait longer for custody hearings. In cases of domestic abuse, safety is a concern. "I've been doing this almost 40 years," says Ms Damiano, a family-law practitioner. "Fairness requires timeliness."

But a lack of judges—and, in many other states, a shortage of other staff needed to keep courts going—are clogging up the system. Tim McGoughran, head of New Jersey's bar association, says that, pre-pandemic, most divorce cases going to trial did so within a year. Now some are entering their third or fourth year. For the past three years, the court system has operated with an average of more than 60 judicial vacancies. Stuart Rabner, the state's chief justice, has said the number should be no higher than 25 or 30 for the judiciary to best serve the public. Of 463 positions on the trial-court bench in the state, 55 are vacant.

And by the end of the year another 11 judges are due to retire. In February Justice Rabner suspended civil and matrimonial trials in six counties. On July 5th he suspended trials in a seventh, Passaic County, except for very limited circumstances, from July 31st.

About half of America's states appoint

their judges, and half elect them. Vacancies tend to be low in election states. New Jersey is not one of them: the governor nominates judges and the state Senate confirms the nominees. Phil Murphy, the governor, is not making enough nominations and the state Senate is not confirming the nominees it does have fast enough. Some also blame an unwritten rule of senatorial courtesy, which allows senators to block nominees who live in their home county from being considered, without giving a reason. Glenn Grant, the court's administrative director, warned a Senate committee that the system was in crisis. In the meantime petitioners are in limbo. Some lawyers have begun motioning for a change of trial venue.

Even without the pandemic, a generational flip was under way. That has led to calls to raise the retirement age from 70 to 75, to relieve the pressure. But Mr McGoughran says more than 50% of those leaving are retiring early, "which says to me they are not enjoying judging". Those judges who remain are burnt out.

"It is a cascading problem," says Danielle Hirsch of the National Centre for State Courts (NCSC). New Jersey is not the only state that is feeling the pinch. Maine also has a shortage. Maine's chief justice recently said that she met a judge who was discouraged "because she cannot make headway regardless of how many cases she jams into dockets or how late she works." Poor pay plays a role in recruitment and retention: Maine's judges are among the lowest-paid in the country. The state also has a shortage of court staff. Clerks work nights and weekends to catch up. Amy Quinlan, Maine's court administrator, says the pandemic revealed that courts were struggling; it is now abundantly clear that more help is needed.

Other states are also suffering from staff shortages. The gaps include court reporters, interpreters, attorneys, clerks and police. The NCSC found that 14 state chief justices raised staff shortages and the need for pay raises to recruit and retain talent as the most pressing issues facing state courts. Courts in Louisiana, Missouri and North Dakota have had to close or reduce hours. The turnover rate for court staff in Florida has more than doubled since the 2020-21 financial year. In New York, the acting chief judge said during his state-of-the-judiciary message this year that "staffing shortages slow down our dockets and burden our already-strained workforce."

These troubles are causing cases to remain on hold for long periods. A backlog in criminal cases will make it hard for states to meet their constitutional obligations. The Sixth Amendment requires that the accused "shall enjoy the right to a speedy and public trial". Lately, there is nothing speedy about trials. ■



Military appointments

General disarray

WASHINGTON, DC

A senator's battle over abortion causes mayhem in the ranks

THE HANDSOME white-painted house at 1801 G Street SE, one of the oldest public buildings in Washington, DC, has been home to all but two commandants of the Marine Corps since 1806. This week, though, it has no occupant for the first time in more than a century. General David Berger, the outgoing chief, retired on July 10th. His deputy, Eric Smith, cannot move in because the Senate has not confirmed him. He holds the job in an acting capacity, with limitations, and has no deputy.

Similarly his would-be boss, General Charles "CQ" Brown, the air-force chief, is in a holding pattern as the Senate delays his appointment to succeed Mark Milley as chairman of the joint chiefs of staff. All told, about 275 nominations of generals and flag officers, including front-line commanders, have been halted. About 650 are liable to be stymied by the end of the year, with a knock-on impact down the chains of promotion, not to mention the disruption to staff and families.

The world's mightiest fighting machine finds itself obstructed by a former college-football coach, Tommy Tuberville, a Republican senator from Alabama. A devotee of the former president, Donald Trump, he has struggled to decide whether white nationalists are racists. "Coach" Tuberville's reason for running interference against military officers? To protest against the Pentagon's policy of giving leave to, and paying the travel expenses of, servicewomen seeking abortions outside the states ►



Absence in court

► where they are deployed.

His "hold" on senior appointments is the most disruptive act yet in Republicans' efforts to take the culture wars to the military domain, after skirmishes over vaccines, race and transgender issues. Democrats accuse the senator of harming military readiness and morale. Mitch McConnell, the Republicans' Senate leader, rejects his move; other Republicans have tried to talk him out of it. All to no avail.

Senator Tuberville claims his hold affects "only those at the very top", not the fighting force. General Brown disagrees. "We will lose talent," he told senators on July 11th. It is hardly the first time a senator has halted confirmations for political leverage. But Peter Feaver of Duke University notes that military appointments are treated with greater regard than civilian ones. They may be blocked over allegations of improper behaviour, say, but not usually on a matter of policy or on such a scale. "This senatorial privilege is meant to be surgical. Instead it's being used as a broadaxe," he says.

The Supreme Court's overturning last year of *Roe v Wade*, allowing states to ban or curtail abortion, affected many servicewomen deployed to conservative states. Under federal law the Pentagon can still offer abortions in cases of rape, incest or when the mother's life is in danger. Senator Tuberville objects to the Pentagon's decision in February to "facilitate" travel for out-of-state abortions. This amounts to using federal funds to "subsidise" elective abortion in contravention of the Hyde amendment, he argues.

Military appointments are usually confirmed briskly in batches by "unanimous consent" of the Senate. If a member voices an objection, as Senator Tuberville has done 11 times, the Senate can still confirm nominees by the more laborious means of individual votes on each candidate. That takes up valuable floor time from other priorities, such as legislation. Another option, formalising the Pentagon's policy through legislation, is unlikely to pass in a divided Congress. With both sides dug in, Democrats will hope to gain if Republicans soil their reputation as champions of the armed forces.

Mr Feaver proposes giving "military non-combatants immunity in the culture wars". Politicians can challenge civilians who decide on policy, but not serving officers who implement it. In return, military folk should stay out of politics. General Brown, the second African-American officer ever to be nominated for the top job, promises to do just that. "I didn't want to be the best African-American F-16 pilot. I wanted to be the best F-16 pilot," he told his confirmation hearing. If Coach Tuberville has his way, though, General Brown will be grounded for some time. ■

The internet

Vice and verification

WASHINGTON, DC

State legislatures are passing ineffective anti-porn laws

"**I**S ANYONE ELSE'S Pornhub not working?" tweeted the mischievous grey-haired grandma and state senator L. Louise Lucas of Virginia on June 30th. Mrs Lucas knew that the website would stop working for her and millions of Virginians that weekend. Virginia, along with Mississippi, Utah and Louisiana, passed a law this year requiring users to prove they are an adult before accessing pornographic websites. Arkansas, Montana and Texas have similar policies that will go into effect over the coming months.

Supporters of these laws claim that they will protect children. "This is about not putting children in harm's way," says William Stanley, junior, a Virginia state senator and the bill's author. There is just one problem: the laws do not seem to work.

Lawmakers hoping to stop minors from watching pornography face several obstacles. First, porn enthusiasts of all ages seem intent on getting around the new laws. The day before Virginia's policy went into effect on July 1st, interest in the search term "VPN" (a virtual private network allows users to appear as if they are watching outside a state with age-verification laws) spiked in Virginia.

Those users who might be willing to follow the laws seem worried about companies or governments keeping records of their proclivities. In Louisiana, a state-run identification programme called LA Wallet verifies a user's age. The other three states—Mississippi, Utah and Virginia—require

websites to collect the sensitive data.

Few adults want to out themselves as porn enthusiasts by offering up an ID (with full name, address, and photograph). In any case, MindGeek has now pre-empted that by blocking access in some states that require age verification. "We will not operate in jurisdictions that require that we put people's private information at risk," says Solomon Friedman, one of the owners of MindGeek, which owns several pornographic websites (and therefore has a commercial interest in making users feel as anonymous as possible online).

Why are state legislatures passing these ineffective laws, mostly with bipartisan support (and at times, unanimous backing)? It is just too awkward for politicians from either party to be seen to be casting a vote for porn. "I think they're concerned that someone's going to accuse them of supporting...children seeing pornography," says John Edwards, a Virginia state senator. He and only two other legislators voted against Virginia's bill.

Mandie Landry, a Louisiana state representative, says that her colleagues are afraid of negative campaign headlines. "I can take a vote like that," says Ms Landry, who represents a heavily Democratic district. "But my colleagues from rural areas can't do it." She was the lone dissenting vote in Louisiana's legislature.

American states are not alone in their struggle to come up with laws that work. A similar law passed in Britain in 2017 has yet to be enforced. Australia's government is struggling to find suitable methods to verify age for its new policy. On July 7th a French court postponed enforcement of a law that would have blocked porn sites. "The intention behind these laws is good," says Amanda Lenhart of Common Sense Media, which advocates for child safety in the media. But making them work is another matter. ■



Lexington | Damning the river

The Supreme Court may help Joe Biden restore Democrats' commitment to uplift for all



ONE EVENING many years ago, when his sons were in grade school, Joe Biden was sitting around with old friends in a backyard in his home town of Wilmington, Delaware. He startled the group by asking one of them where he planned to send his own child to college. The boy was just eight, protested one of the friends. Another observed there were plenty of good universities.

"Lemme tell you guys something," Mr Biden replied with sudden intensity, according to "What It Takes", by Richard Ben Cramer. "There's a river of power that flows through this country." Most people did not even know about this river, while others could only stand by its banks and gawk. But a few Americans, Mr Biden continued, got to swim in the river of power their whole lives, and go wherever they wanted to. "And that river", he concluded, "flows from the Ivy League."

Mr Biden, a mediocre student at the University of Delaware and Syracuse University College of Law, has always exhibited a mix of reverence and disdain for America's educated elite and the system that credentials them. He has surrounded himself with graduates of the Ivy League—and did indeed send his sons to such schools, one for college and the other for law school—but he has boasted about going to a state university himself. Since his first campaign for Senate, in 1972, he has prided himself on resisting the pull of progressive orthodoxy he associated with elites from Harvard.

Over the course of Mr Biden's career, for the best of reasons, diversifying access to the river of power, and to college in general, became core ambitions of his party. Yet something went wrong with this project: diversifying access turned out not to be the same as democratising it. Barack Obama incarnated the vision of the multiracial meritocracy that affirmative action could yield, whether or not he benefited from it, yet this meritocracy began courting hypocrisy by reinscribing itself. As Mr Obama has noted, it was not obvious his children merited such intervention. And people without a college education, or the means or interest to pursue one, began to feel out of place among Democrats. Yet the Democrats' growing identity as the party of the college-educated, and their orthodoxies about college, proved mutually reinforcing.

Now, by striking down both affirmative action in university admissions and Mr Biden's bid to forgive a portion of students'

loans, the Supreme Court has handed the president a chance to reset his party's priorities. He seems to recognise half the opportunity. Mr Biden said he strongly disagreed with the ruling on affirmative action in remarks at the White House in late June. But he was at least as harsh in condemning the existing admissions system for not achieving diversity.

"For too many schools, the only people who benefit from the system are the wealthy and well-connected," he said, noting that children of the wealthiest 1% of families were 77 times more likely than those of the poorest 20% to attend an elite university. "The odds have been stacked against working people for much too long." Quite right: before conservatives beat him to it, Mr Biden should campaign against the Ivy League's inconstant piety about diversity and inclusion, given its veneration for inherited privilege when it comes to alumni scions, its excessive preference for athletes and its tolerance for intolerance, which is rotting the old timbers beneath the Democratic Party.

Mr Biden made no such pivot in reaction to the court's dismissal of his plan to forgive \$10,000 in student debt for all borrowers making less than \$125,000 a year, and up to \$20,000 for those who received Pell grants, mostly awarded to applicants from poor families. This is strange, since the court saved Mr Biden from what he once suggested would be an unconstitutional stretch of presidential authority. Democrats would not have liked to see a Republican president exploit the precedent, had the court blessed it.

Student debts can be crushing. Relieving them is a goal cherished within the party. But Mr Biden's plan would not fix the college-financing system. And in trying to give hundreds of billions of dollars to people who invested in their long-term prospects, Democrats lay themselves open to Republican attacks that they want to transfer money from the working class to elites, which should properly be understood as the Republicans' stock in trade.

The "diploma divide" has become the dominant reality of American politics. In 2016 Hillary Clinton became the first Democrat since 1956 to win among white college graduates, and she carried them by 17 points, according to Doug Sosnik, a Democratic analyst. That bloc was central to Mr Biden's victory in 2020, even as Donald Trump augmented his big majorities among white working-class voters with gains among black and Latino voters who lacked college degrees.

Can Democrats add?

Back in 2016, Chuck Schumer, the Democrats' Senate leader, argued that "for every blue-collar Democrat we lose in western Pennsylvania, we will pick up two moderate Republicans in the suburbs in Philadelphia." As Mr Trump's election later showed, this is a perilous swap: many more voters lack college degrees than have them, so slight shifts against Democrats in this group have outsized impact, the analyst Ruy Teixeira has noted. This trade also dooms the Democrats to struggle for congressional majorities and to contest knife-edge presidential elections among a dwindling number of persuadable voters in a handful of states.

It is also creepy arbitrage for a party committed to diversity and uplift. The paradox of the Democrats' success in the past half-century in helping advance female, black and gay Americans is that, over that time, the party drifted from its concerns about class, its impatience with the idea that only a select few should swim in the river of power. Given his instincts and credentials, his investments in rebuilding America and this assist from the Supreme Court, Mr Biden has the chance to start setting that right. ■



Latin America's next petroleum boom

The new geography of oil

GEOGETOWN AND SÃO PAULO

Latin America's torrid love affair with oil is not over yet

IN DEEP BLUE waters off the coast of Guyana, gargantuan ships are sucking oil from reservoirs three kilometres below the surface. These machines are transforming the fortunes of one of South America's smallest and poorest countries. In 2015 ExxonMobil, an American oil giant, found the first of what are now around 11bn barrels of proven crude oil reserves, or around 0.6% of the world's total. Production began three years ago, and is now picking up pace. By 2028 it could reach 1.2m barrels a day—a rate that today would make Guyana one of the top 20 oil producers. That is a stunning bonanza for a country of only 800,000 inhabitants. Foreign politicians no longer struggle to find it on the map. On July 6th Antony Blinken, the US secretary of state, paid a visit.

Guyana's windfall is reviving Latin American oil production. According to a recent report by the International Energy Agency, global production will increase by 5.8m barrels per day between now and 2028. About a quarter of the additional supply will come from Latin America,

turning around a decade of declining output in the region (see chart 1 on next page). Within that, Argentina, Brazil and Guyana will grow and everywhere else will decline.

Globally, demand for oil is set to peak in the coming decades, as cleaner energy alternatives take off. While oil will still be required throughout the energy transition, it will have to be produced cheaply and with low carbon emissions to remain competitive. Brazil and Guyana are likely to benefit more than most exporters. In Guyana, ExxonMobil and its partners are wasting no time bringing it to market. "It is both the government's objective—and ours as well—to accelerate development of the resources here as quickly as possible," says Meghan Macdonald, a company spokesperson. In part that also is to maximise profits while oil prices are high.

By contrast the energy transition will be punishing for other parts of Latin America. Many state oil firms are inefficient and produce dirty barrels. Places such as Ecuador and Venezuela are woefully unprepared. Mexico's president is wasting bil-

lions to coddle the incompetent state oil firm. These countries' refusal to adjust could have grim economic consequences. The new geography of oil in the region holds lessons for the world.

In Brazil this upcoming boom dates back decades. In 2006 engineers at Petrobras, Brazil's state oil firm, made a blockbuster discovery. Off the coast of São Paulo state, and under three kilometres of water and five more of rock and salt, lay one of the world's greatest offshore oilfields. For the president at the time, Luiz Inácio Lula da Silva, the discovery proved that "God is Brazilian". The so-called pre-salt fields appear bottomless. Over a hundred wells have been drilled, with each gushing the black stuff. Production of the fields increased from 41,000 barrels per day in 2010 to 2.2m per day last year.

God is Brazilian, or Guyanese?

The pre-salt fields transformed Brazil from a marginal oil producer into the world's eighth largest. Their geology, along with Petrobras's investments in the latest technology, makes extraction particularly efficient. According to Schreiner Parker of Rystad Energy, a consultancy, Brazil and Guyana can produce oil profitably at \$35 per barrel, less than half of today's price. The amount of CO₂ equivalent emitted per barrel is 10kg, compared with a global average of 26kg. "Brazil and Guyana have the privileged barrels the market is going to seek out," thinks Mr Parker.

Now Lula, who is back in office, is betting on another round of good news. Petrobras plans to spend nearly half of its \$6bn exploration budget over the next five years on the equatorial margin, an area in north-eastern Brazil near Guyana (see map). The government expects the area to hold upwards of 10bn barrels of recoverable oil, roughly equivalent to the pre-salt fields. Brazil's environmental regulator recently denied the company a licence to drill in the area, but Petrobras says it will appeal the decision. It has the backing of several political heavyweights. Alexandre Silveira, the mining minister, has called the equatorial margin a "passport to the future".

The new oligarchy

Brazil's natural endowments alone did not lead to Petrobras's good fortune. Sound policy was crucial. The groundwork was laid in the 1990s, when a centrist government created an independent regulatory agency and started investing heavily in exploration. The firm's fortunes reversed during the administration of Dilma Rousseff, Lula's protégée, who governed from 2011 to 2016. Under her rule, Petrobras spent billions of dollars subsidising domestic fuel, even as global oil prices crashed. By 2015 it had racked up debts of more than \$100bn. An investigation revealed it was at the heart of a gigantic kick-back scheme to buy political support.

After Ms Rousseff was impeached, on charges that she had fiddled public accounts to hide the size of Brazil's economic crisis, the government learnt to "treat Petrobras like a business rather than a ministry," says Mr Parker. Pedro Parente, the CEO, sold off assets in order to focus on the pre-salt fields and slashed the workforce. A new law allowed international firms to participate in exploration and production, increasing competition. Last year Petrobras's profits were a record \$36bn (this was partly because of higher oil prices).

Few oil firms in the region have learnt

the lessons of Petrobras's extraordinary turnaround—or had the good luck of tapping new discoveries. Latin America has the second-largest proven oil reserves in the world after the Middle East, yet its state firms have repeatedly squandered opportunities. Unlike most Gulf countries, the region's governments have generally failed to set up sophisticated sovereign-wealth funds to channel oil revenues into long-term investments. Instead, they have become dependent on oil as a source of foreign exchange and fiscal revenues.

Perhaps no company in the world is as closely linked to its country's collapse as Venezuela's state oil firm, PDVSA. At its peak in 1998, it provided 5% of global supply. But that year Hugo Chávez, a left-wing autocrat, was elected president. In 2003, after workers from PDVSA went on strike, Chávez fired 18,000 employees—half the workforce—and replaced them with loyalists. He later demanded that foreign oil firms renegotiate their contracts to give PDVSA majority control. It became a cash cow to buy political support.

Production of Venezuela's mostly heavy, dense oil has plummeted from 3.4m barrels a day in 1998 to 700,000 today. Corruption is rife at PDVSA, which is also subject to American sanctions. Between January 2020 and March 2023, it received only \$4bn in payments, though oil exports were worth \$25bn. Yet Nicolás Maduro, Chávez's hand-picked successor, is clinging to rosy predictions. After Russia invaded Ukraine he said PDVSA could "grow one, two, three million barrels per day if needed".

Venezuela's case is extreme, but mismanagement and policy instability are the norm in the region. According to Francisco Monaldi of Rice University in Houston, if all of the region's oil were exploited with the same expertise and in a similar regulatory environment as in Texas, Latin America would be producing more oil than the United States, instead of about half. Colombia, Ecuador and Mexico produced only 3.8% of global output in 2021. Output is set to shrink due to a mixture of bad geology and bad policy, or both.

Take Mexico, whose ageing fields are sputtering. Production peaked in 2004 and has roughly fallen by half. That should not be a problem, since Mexico has a large and diversified economy, with a solid manufacturing industry thanks to a free-trade deal with the United States and Canada. Yet President Andrés Manuel López Obrador is determined to make Mexico self-sufficient in energy and sees Pemex, the state oil firm, as essential to achieving it.

Since coming to power in 2018 his administration has lavished the company with \$45bn in tax breaks and other financial support. A much-touted new refinery, which may have cost up to \$18bn to build—more than double the original price tag—

The new normal

World, change in oil-supply capacity
Barrels per day, m



Source: IEA

*Non-OPEC+

was inaugurated last year. All told, Pemex is now a drain on the country's coffers rather than a provider to them. With more than \$100bn in debt, it is the world's most-indebted oil company. In May its refineries operated at less than half their capacity. New reserves are located in deep water, which Pemex lacks the funding or know-how to exploit. On July 11th Reuters reported that a huge fire at an offshore platform had left two dead, and would reduce Pemex's output by at least 2m barrels this month alone.

Oleaginous follies

Mexico's economy can cushion the blow from declining oil production. Other countries are not so lucky. Ecuador's government depends on oil revenues more than any other in Latin America (Venezuela's data are unreliable). Fiscal income from the exploration and production of oil accounted for 24% of total government revenues between 2015 and 2019, according to an analysis by Boston University. Yet despite high oil prices, production is expected to fall from 460,000 barrels per day today to 370,000 by 2028. A new constitution in 2008 increased government control over oil, stymying efforts to modernise Petroecuador, the state-owned firm. Corruption is thought to be rampant. Fernando Santos, the energy minister, reckons that several former senior employees are being investigated for, or have been charged with, corruption offences. The firm has never been externally audited.

The government is trying to diversify its sources of revenue. It recently signed a free-trade deal with China that it hopes will boost non-oil exports by \$3bn-4bn annually over the next decade, and has sold some debt in exchange for boosting green efforts. Yet it is still banking on oil. "Now that the global trend is to abandon fossil fuels, the time has come to extract every last drop of benefit from our oil," Guillermo Lasso, the president, said last year. ➤



Petroecuador plans to expand production in and around a national park inside the Amazon rainforest. Ramón Correa, the company's boss, estimates that output in the area could provide cumulatively almost \$14bn in revenues for the state by 2043, or the equivalent of 13% of today's GDP. That windfall looks increasingly distant. On August 20th Ecuadoreans will elect a new president and legislature, and vote in a referendum on whether to cease all production in parts of the national park. More voters are currently in favour of blocking rather than expanding it.

Some countries, such as Argentina, have fared better. Triple-digit inflation and crippling capital controls have not prevented it from increasing its oil-and-gas output. Sanctions on Russian oil have led to an increase in production in Vaca Muerta, a mammoth field in Argentina's far west. It holds the world's second-largest shale gas deposits and its fourth-largest shale oil reserves, but had struggled to attract investment for decades. Rystad Energy expects shale-oil production in Argentina will more than double by the end of the decade, to over a million barrels per day.

A continent of stranded assets

Across parts of the region the decline in oil revenues could have severe consequences. The Inter-American Development Bank (IDB) reckons that if the world limits global warming to 1.5°C (which remains very unlikely) fiscal revenues in Latin America could be reduced cumulatively to between \$1.3trn and \$2.6trn by 2035. If reserves were strongly exploited, by contrast, the IDB estimates that those revenues would be between \$2.7trn and \$6.8trn. Gas exporters will be similarly hit. Bolivia and Trinidad & Tobago depend on revenues from the production of natural gas for 17% of their fiscal revenue. Yet Bolivian gas exports are set to end by 2030. In Trinidad & Tobago production has declined by 40% since 2010.

Past shocks point to a difficult future. Between 2014 and 2016, when commodities prices fell, fiscal accounts deteriorated. In Brazil, which suffered from a broader economic crisis, public debt rose from 57% of GDP in 2013 to 84% by 2017. For some countries, hydrocarbons are the main source of foreign exchange. In Colombia extractive industries amount to 50% of exports. Between 2014 and 2020 the sector absorbed 28% of all foreign direct investment. Some states will struggle to find alternative revenue sources. Tax revenues make up only a fifth of GDP in Ecuador, compared with an average of 34% across the OECD, a club of mostly rich countries.

Some countries are trying to do things differently. Gustavo Petro, Colombia's left-wing president, was elected last year on a promise to forbid new licences for oil exploration. Instead he wants to boost sec-



tors such as tourism, agriculture and manufacturing. In recent weeks, Colombia's environmental regulator granted five licences for renewable-energy projects to start operating in La Guajira, a poor northern province rich in wind and sun. Mr Petro claims the energy generated there can supply all of Colombia's electricity in the coming years. Ecopetrol, the state oil firm, is diversifying rapidly. Almost a quarter of its investments this year will go into hydrogen production, renewable energy and electricity transmission. Along with Petrobras, Ecopetrol has been one of the most thoughtful state oil companies when it comes to planning for the energy transition, says Mr Monaldi.

But it will be difficult for Colombia to make up for declining oil exports. "Everyone agrees with the need to develop new export sectors here," says Mauricio Cárdenas, a former mining and finance minister.

Yet, he warns, there "is more rhetoric than reality". According to one estimate, Colombia would have to attract as many tourists as Argentina and Brazil combined for the sector to generate the same revenues as hydrocarbons. Mr Cárdenas says the plan lacks a detailed discussion of the sectors that could replace hydrocarbons as sources of foreign exchange, exports and investment. Ricardo Bonilla, the finance minister, admitted as much in June when he told journalists that Colombia would extract fossil fuels for "a long time yet".

Entering the oil market late may help Guyana avoid too many mistakes. "If we had found oil in the 1970s, when the country was about to fall into dictatorship, you could rest assured that the money would have been squandered completely," says Robin Muneshwer, who leases a shore base used by ExxonMobil. Bharrat Jagdeo, Guyana's vice-president, says the government is "very conscious" of mistakes made by other oil-producing countries. "We're not going to go the populist route," he says. Since regaining power in 2020 his party has tightened the law that governs its sovereign-wealth fund to make it easier for citizens to track how much should be in it and to limit the amount the finance ministry can withdraw each year.

Mr Jagdeo denies that the oil industry is at odds with his country's support for swift global decarbonisation. He argues that revenues from oil and gas are needed to help the country defend itself against the impacts of climate change, such as rising sea levels. Oil will undoubtedly transform the tiny country. The question, says Mr Muneshwer, is: "Will we be a Singapore, a Dubai, a Trinidad, a Nigeria or a Venezuela? Or somewhere in between?" ■



Burning bright, but for how long?



Asia's digital geography

Connecting and competing

NAGASAKI, TOKYO AND SINGAPORE

Demand for data is growing in Asia; so are barriers to its free flow

THE 8,600-TONNE ship bobbing in the bay of Nagasaki, in Japan's south, is aptly named. The *Kizuna*, which means "bonds" in Japanese, is a cable-laying vessel. It is equipped with robots that can descend 3,000 metres under the sea to install and repair the subsea cables that allow millions of Asians to message friends, shop online, trade stocks and read this article. It is a task that has become more indispensable and more difficult in the 23 years since the ship's captain, Sakurai Atsushi, laid his first cable, connecting Japan's main island of Honshu with Okinawa.

The digital bonds that bind Asia are in many ways tighter than ever. The region's appetite for data is growing at an even faster pace than the rest of the world's. Asia saw international bandwidth usage grow by 39% in 2022, compared with the global average of 36%, according to TeleGeography, a research firm. The combination of expanding user bases and growing economies makes Asia "one of the hottest markets in the world" for new internet infrastructure, says Ohta Takahisa of the submarine network division of NEC, a Japa-

nese IT firm. Yet the forces straining those bonds are also mounting. Geopolitical tension, protectionist laws and a mishmash of rules governing data threaten to impede its free flow.

While in the past constructing internet infrastructure tended to be a "collaborative effort" between countries and between firms, in recent years its enabling environment has soured amid growing friction between China and America. Both are increasingly racing to build and control digital infrastructure that the other cannot access—as illustrated by a recent report by Reuters that America had secretly linked a privately built cable between Australia and Oman to its naval base on Diego Garcia, a British outpost in the Indian Ocean. Natu-

ral hazards and fishing trawlers present less charged, but also growing, risks, especially to subsea cables.

At a small museum beside the *Kizuna*'s dock, Captain Sakurai and his colleagues point to chunky gutta-percha telegraph cables that in the 19th century carried information across the region, a precursor to today's fibre-optic version. Subsea cables are now the conduits for some 99% of intercontinental internet traffic (satellites, an alternative, are costlier and slower). The cables run along ocean beds to coastal "landing stations"—where the zeroes and ones are transferred to data centres—and thence onwards to users' devices. Aside from a heavy government hand in China's cable industry, such infrastructure tends to be privately financed and owned. A small handful of companies dominate the production and installation of cables; big tech firms are their main users.

Concerns about the security of communications infrastructure are as old as submarine cables themselves. Cable sabotage was a big worry in the build up to the first world war, notes Camino Kavanagh of King's College London. But such worries have flared in recent years. "Customers are asking more about the security of cables and routes," says Uchiyama Kazuaki of NTT World Engineering Marine Corporation, the firm that owns the *Kizuna*.

Some fret about hackers and spies. Others mull the risk of malign activity related to potential conflict, in particular around Taiwan. The most congested cable

→ Also in this section

28 Vietnam bans "Barbie"

29 Cambodia's election

29 The Taliban and heritage

30 Banyan: Fukushima's wastewater

► route in Asia is also its most contested: the South China Sea is the “main street” of submarine cables, especially between Japan, Singapore and Hong Kong, notes Murai Jun, a Japanese internet pioneer. Physical and environmental hazards are also disruptive. Tonga was largely cut off from the internet in early 2022 after a volcanic eruption and tsunami severed its lone fibre-optic cable. As fishing trawlers seeking to feed South-East Asia’s growing population have become more common, so have accidental cable ruptures. “The internet is very, very vulnerable,” says Tsuchiya Motohiro of Keio University near Tokyo.

As content providers move data centres and content closer to consumers, more data are flowing within the region. Intra-Asia data flows make up over 50% of the region’s bandwidth, up from 47% in 2018, while the share going to America and Canada has fallen from 40% to 34% over the same period. Yet geopolitics is also reshaping how and where Asia’s digital infrastructure gets built. As China’s territorial claims in the region have grown, getting permits in some areas has become more contentious. China has also been competing with America and its allies, such as Japan and Australia, to offer cables and financing for connectivity to remote Pacific island nations. America has increased oversight of cable construction, nixing several planned cables linking America with Hong Kong; a new Undersea Cable Control Act is working through Congress.

Alternative pathways and nodes are emerging. Hong Kong was traditionally one of three major data hubs in Asia, with Japan and Singapore. Now Western countries “need a new hub”, says Esaki Hiroshi of the University of Tokyo. “The infrastructure frontline is shifting.” The Philippines and Guam have emerged as attractive substitutes. Apricot, a new cable linking Guam, Indonesia, Japan, the Philippines, Singapore and Taiwan, avoids the South China Sea. The aim is to increase “route diversity”, says Sato Yoshiro of NTT, which is helping to build the cable for Google and Meta. Yet it would be premature to speak of a digital decoupling. While American and Chinese carriers have largely stopped laying cables together and forming new direct links, the networks between America and China still connect, notes Mr Mauldin. “It’s not quite as extreme as media coverage makes it out to be.”

Ultimately the biggest challenge may lie not in constructing or protecting the infrastructure to move data across borders, but in creating rules to govern it. “There’s a vacuum in terms of rules, norms and agreements that govern digital trade,” laments Nigel Cory of the Information Technology and Innovation Foundation, a research institute in Washington.

Various models vie for influence. China

pushes an approach rooted in sovereignty and security. Several data-protection laws, including the Cybersecurity Law, the Data Security Law and the Personal Information Protection Law form the core of a system based on control over and access to data through localisation requirements. The European Union has made privacy central to its approach, through its GDPR legislation. America mostly puts commerce first. But its turn away from trade agreements makes it harder to engage with and influence Asian governments.

Others in Asia are trying to come up with their own alternatives. Singapore has also emerged as a pioneer of new digital trade agreements, such as the Digital Economy Partnership Agreement, which also includes Chile and New Zealand. Its pragmatic approach to aligning and modernising rules for sharing data across borders has made it a model for best practice in the region, says Jeff Paine of the Asia Internet Coalition, an industry association. In 2019 Abe Shinzo, the late Japanese prime minister, proposed the concept of Data Free Flow with Trust. That rather nebulous idea is materialising as a set of global norms to counter digital protectionism. As Matthew Goodman of csis, a think-tank in Washington, puts it: “It’s about the un-China approach to data governance.”

But those pushing a more liberal approach to data governance will struggle to make the case to Asian governments. To many, the Chinese model resonates, says Deborah Elms of Asian Trade Centre in Singapore: “If data is the new oil then I want to

own it, goes the thinking...it can be hard for folks to see the upside of letting data flow freely.” Vietnam, which is hardly friendly towards China, has adopted some of its methods for controlling data. Authoritarian regimes are not the only ones to slide toward digital protectionism. India insists data must be stored locally: to give its law-enforcement agencies easy access, to protect against foreign snooping and as a way to boost investment in the tech sector. When it comes to digital policy, most governments “pick and choose like they’re at a smorgasbord”, says Mr Cory.

Digital spaghetti

The result is often a mess of conflicting rules. “If we thought we had a spaghetti bowl in the past on traditional goods, some of these digital rules risk becoming much much worse,” Ms Elms says. What’s more, regulating digital trade is more complicated than overseeing beef and steel. Technology often changes too fast for rule-makers to keep up, most governments lack policy-makers with relevant technical expertise and most digital issues cut across different domains, extending beyond the traditional remit of trade negotiators.

Localisation measures and other bars to cross-border data flows will raise costs, harming small and medium-sized businesses most of all. Without regional co-ordination, such digital protectionism is taking root, says Shiro Armstrong of the Australian National University in Canberra: “It means forgoing so much of the ability of data to be used for productive purposes.” ■



In a Barbie world

Vietnam has banned the new “Barbie” film because it features a map showing China’s claim to the South China Sea. The map—pictured above—appears to include the “nine-dash line” that China uses to mark its claim to most of the sea, despite protests from Brunei, Malaysia, the Philippines, Taiwan and Vietnam. The film’s Hollywood producer, Warner Brothers, called the map a “childlike crayon drawing...not intended to make any type of statement”. Hollywood has long tried to ingratiate itself with China’s censors. China is vying with America to be the biggest film market.



Cambodia's politics

Look on my Works

PHNOM PENH

Hun Sen has ensured the forthcoming election will be a sham

BY THE END of the 14th century, the urban sprawl of Angkor made it the world's biggest city. Its potentate, the king of the Khmer Empire, controlled much of modern-day South-East Asia. Now all that remains of this former kingdom is Angkor Wat, a complex of ancient palaces and shrines in northern Cambodia that is visited by millions of tourists each year. And also a certain attitude displayed by the country's current strongman. Despite his humble origins as the son of rural peasants, Hun Sen, Cambodia's prime minister for 38 years, acts as if he is another of its fabled kings. He has even constructed a marble and concrete monument to his rule—modelled on Angkor Wat.

Yet as the 70-year-old leader's thoughts turn to retirement, Mr Hun Sen knows his Ozymandian monument, on the outskirts of Phnom Penh, Cambodia's capital, will not secure his legacy. Though he is campaigning for re-election, ahead of a vote due on July 23rd, Asia's longest-serving leader has already anointed a successor—his eldest son, Hun Manet.

A graduate of America's West Point military academy with a doctorate in economics from the University of Bristol, the 45-year-old Mr Hun Manet has raced through the ranks of the ruling Cambodian People's Party (CPP). He is expected to take over the premiership after the poll. At Mr Hun Sen's self-aggrandising monument, there is a relief depicting the father and son together alongside China's leader, Xi Jinping.

Mr Hun Sen is making sure the election does not overthrow his succession plan.

He has banned the country's main opposition, the Candlelight Party, from registering for it. He has shut down Voice of Democracy, one of Cambodia's last independent news outlets. During his long tenure, around 6,000 opposition members have been forced or induced to join the ruling party, through a combination of threats and financial sweeteners, estimates Sophal Ear of Arizona State University. Cambodia's few remaining opposition activists now live in fear.

Mr Hun Sen's inclusion of Mr Xi in his family-state portrait is apt. He has afforded China huge economic, military and political influence in Cambodia, in effect turning the country into a Chinese client state. Yet Mr Hun Sen would prefer to be remembered for the decades of economic growth and peace he has overseen. His newly constructed tribute to himself is called the Win-Win Monument, named after a policy he implemented in the late 1990s to end decades of conflict by offering amnesty to members of the Khmer Rouge. That communist military group was responsible for the deaths of some 2m Cambodians between 1975 and 1979.

Mr Hun Sen's personality cult is rooted in an idea that he alone saved Cambodia from the Khmer Rouge. Reliefs at the Win-Win Monument depict abundant harvests, bustling ports and a chart showing GDP growth ticking upwards. From 1998 until 2019 Cambodia's economy grew by an annual average rate of almost 8%, making it one of the fastest-growing economies. As tourists return to the country after the covid-19 pandemic, the World Bank expects the economy to grow by 5.5% this year.

Cambodia's impressive growth has withdrawn millions from poverty. According to the World Bank, the country's poverty rate roughly halved, falling to 18%, in the decade to 2020. But growth has exacerbated other problems, including environmental destruction, corruption and crime. Cambodia is ranked 150th out of 180 among countries assessed by Transparency International for perceived corruption. One of the main backers of the Win-Win Monument is Ly Yong Phat, a Cambodian-Chinese tycoon whose family has ties to a casino raided in connection to human-trafficking and scams. Inequality is also extreme. "My parents' generation accepts their fate: as long as there is no war, life is OK," says one young Cambodian. "But the inequality really bothers my generation."

It is hard to express dissent. The CPP holds all 125 seats in Cambodia's parliament—and no one expects that to look terribly different after the election. Government employees are being pressed to vote. "It's not so much an election as an obligation," says one observer. This democratic charade is another conspicuous feature of Mr Hun Sen's legacy. ■

Afghanistan's cultural heritage

Nights at the museum

KABUL

The ruling Taliban are no longer against pre-Islamic treasures

WHEN THE Taliban barrelled into Kabul in August 2021, the curators of Afghanistan's national museum stashed away its pre-Islamic treasures. During the Islamists' previous spell in power, the Taliban minister of finance led an axe-wielding wrecking crew to smash up thousands of the pre-Islamic artefacts bequeathed by Afghanistan's staggeringly rich history. Determined to prevent a repeat performance, museum employees camped for nights on end in the battered 1920s Kabul villa that houses its collections.

Yet this time the Taliban have shown no interest in demolishing the museum's thousand-year-old statues of Buddha and pagan wooden effigies of Nuristan (many of which have been laboriously stuck back together by museum staff over the past two decades). The staff say the Taliban culture ministry, which oversees the museum, is supportive. Senior officials, including Kabul's mayor and the minister of foreign affairs, have made friendly visits. A handful of rank-and-file Taliban drop in most days, adding to a flow of visitors dominated by school parties. "They seem surprised and pleased that they have a history and a culture," says the museum's acting director, Muhammad Zubair Ebadi. "Totally, their mentality has changed."

The Taliban, who in 2001 destroyed the giant sixth-century Buddhas carved into the cliffs of Bamiyan, in central Afghani-►



Pondering the idolatrous past

stan, are also showing a benign attitude towards archaeological digs. They are even backing a project to save the remains of a synagogue left by the long-departed Jewish community of Herat. With improved security across the country—chiefly thanks to the end of the Taliban's own insurgency—a mini-spike in archaeology has been inspired. "They have been really, really helpful," says Jolyon Leslie, a South African architect and veteran of Afghanistan's cultural sector. A special police unit has been tasked with preserving cultural heritage. Taliban officials in the southern province

of Zabul were punished after being caught trying to sell ancient artefacts.

Still, satellite imagery suggests much more needs to be done to stop the looting of archaeological sites. There is also no guarantee the clerics will maintain their benevolent attitude. They turned to systematic cultural destruction only five years after they first assumed power, once their relations with the outside world had hit rock bottom. And the Taliban's leader, Haibatullah Akhundzada, appears again to be taking a more hardline direction. Against the wishes of many of his ministers, he has

imposed bans on female education and employment. On July 2nd the Taliban ordered the closure of beauty parlours.

The clerics are said to be concerned to prevent their foot-soldiers switching to another militant group, Islamic State Khorasan Province, which has more uncompromising views, including on non-Muslim culture. Wisely, the museum's curators have no imminent plans to restore their treasured Buddhas and Nuristani statues to its galleries. "They are all valuable and we don't want to risk them being broken by someone," says Mr Ebadi tactfully. ■

Banyan A drop in the ocean

East Asia's row about Fukushima nuclear wastewater turns toxic

A DOZEN YEARS after the disaster at the Fukushima nuclear plant, it still casts a pall over life in Japan. Many of over 100,000 residents evacuated from around the nuclear plant at the time of the accident remain displaced. Abroad, Fukushima's legacy is now exacerbating the region's bilious, disputatious and grievance-laden geopolitics.

A cascade of accidents caused the disaster. A massive earthquake on March 11th 2011 triggered a tsunami, which swamped the plant's emergency generators. Three reactors melted down. Hydrogen explosions ripped apart sections of the site. And quantities of radioactive water were released into the Pacific. The nuclear industry was culpable—for poor planning, cack-handed management at TEPCO, the Fukushima plant's operator, and regulators cosily in thrall to it. Only heroic work by many of the nuclear plant's workers helped prevent even worse consequences.

The enormous task of making the wrecked plant safe continues. At the heart of the clean-up is a question of what to do with the contaminated water used to cool melted fuel and fuel debris—or which has fallen as rain, or seeped into the site as groundwater. An advanced filtration process known as ALPS removes 62 of 64 radionuclides from the water to acceptable levels. Of the two remaining radionuclides, the main concern is tritium, which can damage DNA. But TEPCO says the levels are very low. It wants to release 500 Olympic-sized pools' worth of the water into the ocean over three decades. Japan's government backs it.

On July 4th the UN's International Atomic Energy Agency also gave its approval, saying the radiological impact on humans and the environment would be

"negligible". At around 1,500 becquerels per litre, the concentration of tritium is about seven times less than the WHO's guidelines for drinking water. Nigel Marks, a nuclear-materials expert at Curtin University in Perth, Australia, says that a lifetime's consumption of fish caught off Fukushima wouldn't "even add up to the amount of radioactivity in a banana".

So what's the fuss? Local fishermen and tourism operatives fear another knock to the battered Fukushima brand. Even as it is, China and South Korea ban seafood from Fukushima and neighbouring prefectures. If the water release goes ahead, China, the biggest importer of Japanese seafood, may go further—and impose a total ban on Japanese seafood imports.

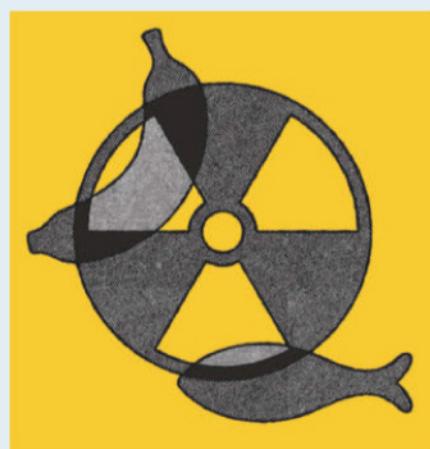
That would be motivated by nationalist politics, not concern for Chinese consumers. Communist Party officials are using the ruckus to denigrate Japan, a country they consider insufficiently contrite over its imperialist past and troublesome in objecting to China's regional ambitions. One Chinese hothead has said releasing the water would amount to "crimes

against humanity". The government's chief spokesman accuses Japan of treating the ocean as its "private sewer". That is rich coming from a major marine polluter. China's Yangjiang nuclear plant releases more tritium into the sea than is proposed at Fukushima.

In South Korea, the issue is more complicated. The conservative government of Yoon Suk-yeol, which is committed to rebuilding South Korea's strained ties with Japan, is playing down the risks. Meanwhile, with elections approaching, the left-wing opposition is trying to whip up alarm over supposed Fukushima risks to get at Mr Yoon. In an effort to provide reassurance, a lawmaker from the president's party plunged her hands into a fish tank in a Seoul market and began drinking the water. Worried South Korean consumers are meanwhile panic-buying sea salt.

In Japan, support for the water release is mixed. The country's nuclear industry, still recovering from the tsunami, is naturally all for it. Public opinion—at least beyond Fukushima prefecture—appears delicately balanced. As Japanese see their electricity bills rise, due to the high price of imported gas, their former opposition to nuclear energy is softening. This may be making them more accepting of releasing Fukushima water than they would otherwise be.

Yet even in Japan there is precious little trust in the nuclear industry, which has a history of cock-ups and cover-ups. Even after post-disaster reforms, TEPCO was forced in 2018 to admit its ALPS system had malfunctioned and the water would need to be reprocessed. And trust, notes Jeff Kingston of Temple University in Tokyo, is "not a renewable resource". At home the nuclear industry lacks it. Abroad so does Japan.





Climate change and farming

A growing problem

CHENGDE

The extreme weather China is experiencing is likely to get worse in the coming years. Can its farmers cope?

IN THE MAIZE-PRODUCING areas around the city of Chengde, in northern China, the heat arrived early this year. With it came drought, the worst in decades. The needle-shaped leaves on the region's pine trees are turning brown. Worse, much of its maize is now stunted.

The central province of Henan faces the opposite problem. There it was the rain that came early, causing floods and drowning fields. The region produces a quarter of China's wheat. But much of it is now unfit for human consumption.

Heavy rains elsewhere in China threaten the rice harvest. Heatwaves across the country have killed fish, pigs and rabbits. Extreme weather is hitting Chinese farmers from all sides this year.

Attributing a single drought, flood or heatwave to climate change is complicated. But scientists believe the phenomenon is playing a role in increasing the frequency and severity of extreme-weather events.

That should concern all countries. China, though, may be more worried than most.

Officials in Beijing are obsessed with food security. Many Chinese are old enough to remember the famine caused by Mao Zedong's policies in the late 1950s. That catastrophe killed tens of millions of people. Today the legitimacy of the Communist Party rests in part on its ability to provide affordable food to the people, who are eating an increasingly rich diet. China's leader, Xi Jinping, has therefore pushed for more self-sufficiency in the food supply.

That was always going to be a challenge. China accounts for about 20% of the

world's population, but it has less than 10% of its arable land. In recent decades, as the country developed and urbanised, its farmland shrank. Imports still play an important role in the food supply. But they risk being affected by testy relations with countries such as America and Australia, or by conflicts like the war in Ukraine.

Weather-related shocks will make life even harder for Mr Xi and the farmers on which he depends. Take the staple grains that supply about half of the average Chinese person's calories. More droughts could reduce yields of maize, wheat and rice by 8% by 2030, according to research funded by the agriculture ministry. Heavy rainfall could have a similar effect on some crops. Vegetables and fruits are just as vulnerable to extreme weather—and harder to store for long periods, making it difficult for the government to stockpile reserves. One big effect of a severe drought last year in southern China was a spike in the price of cucumbers and lettuce.

The geography of Chinese farming is likely to change in ways that cannot be fully foreseen. Our maps (see next page) show how the maximum yields of wheat, maize and rice might be affected in a high-emissions scenario. (Emissions at these levels look highly unlikely, but similar effects might well be seen in less extreme scenarios.) If, as expected, northern China grows ➤

→ Also in this section

32 Long work weeks

33 A comeback for street stalls

34 Chaguan: Rule by law

► warmer, it would make sense to move more grain cultivation there.

Another response would be to bring more of China's food production indoors, where temperature and humidity can be controlled and output increased. This year the state called for 40% of vegetables to be grown inside facilities such as greenhouses by 2030 (the current number is 30%). Fertiliser and water can be used more efficiently in these settings. A report on the plan in state media spoke of farms "freed from a dependence on nature" and boasted of an enormous greenhouse already growing dragon fruit and figs in the Gobi desert.

Out in the extreme heat, pigs fatten up more slowly, cows produce less milk and chickens lay fewer eggs. All of them are also at greater risk of dying. So livestock is moving indoors, too. A 26-storey pig farm in central China is the biggest in the world. It can slaughter 1.2m pigs a year (pork is China's favourite meat).

With cows, it is harder. But many now spend their days in sheds being cooled down. At a farm in the northern province of Hebei, cows are periodically doused with water and blasted with air from giant fans hung from the roof. Each cow's location is monitored by a computer and the sprays automatically adjusted to avoid waste. Such practices have spread rapidly through the dairy industry, says James Su, whose company supplies the cooling equipment. "Everyone is praying before each summer starts," he says.

Magic seeds

Grains are a tougher challenge still. Most need to be grown at scale, so an open field is the best option. China has been developing drought- and heat-resistant varieties of rice, wheat and other crops. The planting of genetically modified (GM) maize has been allowed in some areas (Mr Xi visited one in May). But, in general, the government takes a cautious approach to such technology. For the moment it is still reliant on GM seeds from countries such as Argentina. (America, which supplies China



The dry facts

with some GM crops, has accused it of intellectual-property theft.) In the future, "the hope is that China's seed companies will be able to develop varieties at pace with the changing climate," says Even Pay of Trivium China, a consultancy.

China is also banking on better irrigation techniques to offset the impact of droughts. Public spending on water infrastructure topped 1tn yuan (\$129bn) in 2022, 44% more than the year before. The main goal is to improve the "capillaries" of China's irrigation systems, says Xu Yinlong of the Chinese Academy of Agricultural Sciences. That means building a denser network of pipes and storage tanks, and reducing waste from evaporation and leaks. The infrastructure that pumps millions of gallons of water from the lush south to elsewhere is also set to be expanded.

If that doesn't work, perhaps China can try to create more rain where it is needed. The country is the world's foremost user of cloud-seeding technology, where chemicals are shot into existing clouds to try to encourage water vapour to condense and fall as rain. Last summer, the hottest and driest since the government began record-

ing temperature and rainfall 61 years ago, cloud-seeding planes were especially active. But there is little evidence to show that China's efforts are effective at causing much more water to fall than would have been the case otherwise.

With so much attention paid to China's food supply, it is easy to forget about the toll extreme weather takes on farmers themselves. Most are elderly. If emissions stay high, dangerous heatwaves are likely to become more common across the north China plain, an important agricultural base. Irrigation channels cool the air, but also make it more humid, increasing the risk of deadly "wet-bulb" conditions, when sweat can no longer cool the body down. A survey of Chinese smallholders found that labourers were increasingly unwilling to work in the summer.

Li Man, a 76-year-old maize farmer near Chengde, is putting in the time. But China's efforts to prepare for weather-related shocks have been of little help to him. He planted drought-resistant seeds. The local government tried cloud seeding. Neither worked. Mr Li, who saves his money to help put his grandson through university, expects to lose 60-70% of his crop this year. That would be the case even if the weather improves. The crucial growing period has already passed. "If it rained now, it wouldn't help much," he says. ■

The labour force

Peak toil

The Chinese are working more hours than ever

WHEN THE National Bureau of Statistics announced that in April workers across China toiled an average of 48.8 hours a week, the agency was ridiculed. That number includes government workers, wrote a commenter on Weibo, a Twitter-like platform. "Try counting only in private companies." There is no need to count, wrote another, "just look at the lights of office buildings at night."

Low as it may seem to netizens, the average weekly number of hours worked is the highest it has been since the statistics bureau began including the data in its annual round-up more than 20 years ago. In 2018 it started including the number in its monthly round-up, too. There was a big dip at the start of the pandemic. But for most of the past five years, the number has been increasing (see chart on next page).

Comparing working hours across countries is difficult, as they are often counted in different ways (for example, part-time ➤

Crop formations

China, predicted change in maximum yield*
From 2000 to 2041-59 average, tonnes per sq km



Sources: "Climate analogues suggest limited potential for intensification of production on current croplands under climate change", by T.A.M. Pugh et al., *Nature Communications*, 2016; *The Economist*

*Based on a high-emissions scenario (RCP 8.5)



► workers may or may not be included in an average). Even so, the Chinese appear to be labouring longer than most. When the UN's International Labour Organisation updated its ranking of countries by weekly working hours, China was in the top decile.

Young Chinese workers have long complained of the "996" regime, which refers to a work schedule of 9am to 9pm, six days a week, usually without extra pay. They have adopted an academic term, *neijuan* or "involution", that is used to describe a situation when greater input does not yield more output. Many feel pressure to work ever harder, while experiencing no improvement in quality of life. Unlike their parents, who enjoyed rising material prosperity, they feel like they are stagnating.

China's labour laws stipulate that people should work no more than eight hours a day or 44 hours a week. But lots of overtime work has become the norm. *Legal Daily*, a state-owned newspaper, suggests two reasons: a lack of government enforcement and corporate ignorance of the law. Trade unions wield little clout in China. They are required to be affiliated with the state-controlled All-China Federation of Trade Unions, which typically sides with bosses and officials, rather than workers.

Lately, workers have been given some cause for hope. Last year a court in Beijing ruled that checking and replying to work-related messages on WeChat, a messaging app, outside normal working hours counted as "invisible overtime". The court ordered the employer to pay the plaintiff 30,000 yuan (\$4,160). Last month, an article in *China Daily*, the Communist Party's English-language mouthpiece, called for invisible overtime to be regulated, saying that it encroached on workers' right to rest.

But a shrinking labour force means China must figure out how to squeeze even more from the workers it has. Xi Jinping, the supreme leader, could try to increase productivity by putting more faith in the private sector and giving his people more freedom of movement. There is little sign of that happening, though. ■

Street merchants

Back in business

BEIJING

Faced with a sluggish economy, some cities are re-embracing street stalls

ONE OF CHINA'S most widely revered works of art is called "Along The River During The Qingming Festival". The painted scroll, five metres long, portrays bustling scenes of life in Kaifeng, the imperial capital, during the Song dynasty (960–1279). Prominent among the people and activities depicted are peddlers, merchants and craftsmen working out of street stalls. But today in China—and especially in the capital, Beijing—these tiny trading posts are often frowned upon by officials.

China's supreme leader, Xi Jinping, made himself crystal clear on the matter in May. "The capital is first and foremost a political centre, not a 'hotchpotch,'" he said, according to state media. It is no place, he went on, for factories run in alleyways or the so-called "street-stall economy". That phrase (*ditan jingji* in Mandarin) has become something of a buzzword in recent years, with many cities taking a similarly dim view of the phenomenon. Instead of colourful, hectic street markets, local governments have favoured antiseptic shopping centres. But now, amid worrisome levels of unemployment and sluggish economic growth (see Finance section), officials are turning back to street markets in the hope that they will boost commerce.

Chengdu, Hangzhou, Kunming and Shanghai are among the big cities that have announced plans to loosen restrictions on street markets. The business hub of Shenzhen, in the south, is indicative. It will end its ban on September 1st, when new regulations take effect. They include require-

ments aimed at ensuring cleanliness and preventing traffic problems.

All this marks the latest shift in an odd debate that has featured rare public squabbling at the highest levels of government. In 2020 the prime minister at the time, Li Keqiang, spoke out repeatedly and enthusiastically in favour of the stalls. During a tour of street merchants in the coastal city of Yantai, he called them an important source of jobs and economic vitality. But within days some of China's most influential state-media outlets published scathing criticisms of *ditan jingji*.

The *Beijing Daily*, the main propaganda organ of the city government, derided street markets as "unhygienic and uncivilised", full of shoddy, counterfeit goods. They cause traffic jams, increase street noise and create a mess, the paper said. The screed was targeted at stalls in the all-important capital, but it gave few reasons for tolerating them elsewhere.

Many of the street vendors that remain in Beijing operate in a handful of locations on the edge of the city, where markets of 100 or more stalls have been set up. Most of these outdoor bazaars are open at night, selling food and snacks. They are more of an entertainment venue than a shopping destination. Some boast games for children and lawns for picnicking—good fun, to be sure, but a far cry from the bustling commerce of traditional markets.

There are still remnants of the old *ditan jingji* in the capital, though. One fruit vendor, a migrant from Henan province, sets up at a crossroads in north-eastern Beijing that has a favourable combination of heavy traffic and places to park. He plays a constant game of cat and mouse with the *chengguan*, city-management officers who enforce local regulations. Sometimes they force him to leave. Other times, he says, they "find a way to reach an agreement". Asked if this means paying a bribe, he smiles broadly and declines to answer. ■



Fast fruit

Chaguan | Law with Chinese characteristics

Already, Xi Jinping's will must be obeyed. So why are his favourite policies being made into laws?



WITH EVERY year, the word of China's supreme leader, Xi Jinping, is treated more like law. His favourite slogans are printed on red banners and posted on urban streets and highway bridges. Roadside images of his face remain rare, at least outside restive regions like Tibet or Xinjiang. But his name is everywhere, used on billboards extolling his philosophy or instructing citizens to uphold his leadership. His sayings are taught in school textbooks. They are turned into marching lines of metal characters that are erected in fields.

This marks a change. After Mao Zedong died in 1976, ending years of ideological purges and frenzies, party leaders shunned anything resembling a personality cult or one-man rule. Political theories were given anonymous, bland names, like "The Three Represents". Today, Mr Xi's injunctions are a staple of everyday life. And in this era of personalised rule, a puzzle presents itself. For even as Mr Xi's words enjoy edict-like weight, his underlings are busy turning his signature policies into formal legislation.

Recent examples include the Foreign Relations Law, which took force on July 1st. It breaks little new ground, but reflects long-standing party principles as well as global initiatives promoted by Mr Xi. Given that the leader's will may not be challenged, what is gained by enshrining his policies in stand-alone laws?

Mr Xi's own words offer a partial answer. One of his cherished slogans is "yifa zhiguo", or "governing the country according to law". With those words, he is not promising the rule of law as a liberal reformer might understand it. The party sits above any legal code and even China's constitution, its powers unchecked by any court. Indeed, Mr Xi denounces judicial independence and the separation of powers as dangerous foreign ideas. Instead, to hear legal scholars explain it, Mr Xi is offering rule by law: ie, professional governance by officials following standardised procedures. At home, the party hopes that this sort of authoritarian rule will enjoy more legitimacy than a previously prevailing alternative: arbitrary decision-making by (often corrupt) officials. As for the outside world, the Foreign Relations Law signals that legal sanctions await those who displease Mr Xi's China.

Highfalutin theories of governance are only part of the puzzle, however. When asked, ordinary Chinese instinctively call laws

important and different from a mere policy or practice. To explore what they mean by this, Chaguan headed to the Red Flag Canal, a vast irrigation project in the central province of Henan, dug through forbidding mountains by farmers and workers in the early 1960s. Mr Xi chose the site for a visit last autumn, just days after he secured his third term as party leader. At the canal he urged youngsters to abandon their "pampered" ways and learn from their forebears, including members of a youth brigade who died digging a tunnel through solid rock. Chaguan visited the canal because it is just the sort of "red tourism" site that the draft Patriotic Education Law singles out for praise.

That law was given its first reading by legislators last month. It is clarifying to ask: why is it needed at all? From kindergarten onwards, young Chinese are taught to love their motherland and the party. It is hard to know how schools could offer much more patriotic education and still leave time for reading or maths. Nonetheless, the legislation is hailed as much needed by official media, and is sure to become law.

On a recent weekday, the Red Flag Canal was thronged with students holding Communist Youth League flags, workers from state-owned companies and briskly marching columns of soldiers. In interviews, visitors quoted Mr Xi's words about the Red Flag Canal spirit, and his call to "eat bitterness and endure hardship" to build a strong nation. Asked why China needs a patriotic-education law, many offered a version of the same two thoughts. First, a law sets out citizens' obligations. Without a law, ventured a young woman studying at Henan Agricultural University: "We may have patriotic thoughts, but not show patriotism with our deeds." Second, a law will allow the unpatriotic to be punished. Legal tools are needed to combat "foreign influences" that the young encounter online, in films or magazines, suggested a middle-school English teacher from Jiangsu, as his wide-eyed pupils crowded around.

These twin explanations match the draft law's ambitions. It catalogues the many organisations with a duty to promote patriotism, from schools to publishers and religious institutions. Article 16 spells out that parents "shall include love of the motherland in family education" and "co-operate" when their children are offered patriotic-education activities, in and out of school. Then it lists offences to be punished, from insulting the national flag to questioning approved histories about party heroes and martyrs.

The patriotism-industrial complex

The draft law further instructs local governments to develop sites that inspire patriotism. Even obscure memorials can expect a boost, such as a museum near the Red Flag Canal that honours Gu Wenchang, a long-dead county-level party secretary. Though rather dry, featuring faded photographs of selfless cadres and some old farm tools, the museum attracts over 40,000 visitors a year. Many are on official tours and recite the party oath in a lovely, white-walled courtyard, overlooked by red cliffs topped with green trees. Asked about the new law's impact, the museum director, Li Hao, hopes to see still more visits. He quotes a Chinese saying about how legislation both guides and binds the masses. "If there is a law, we can follow it. If there is a law, we must follow it," it runs.

This is a good time to be in the red-tourism industry. To be blunt, Gu Wenchang's main claim to fame is that he is one of three county-level party secretaries praised by Mr Xi in essays and speeches. The leader's tributes are reproduced on a plaque at the entrance. For party members, Mr Xi's words already make this a sacred place. For everyone else, reverence will soon be the law. ■



Cape Town v Johannesburg

The tarnished city of gold

CAPE TOWN AND JOHANNESBURG

The tale of two cities is a story about modern South Africa

A DRIVE THROUGH Johannesburg, South Africa's biggest city, can feel dystopian. For-sale signs line suburban lawns; empty offices advertise vacancies; sewage gurgles over uncollected rubbish. Lights are often out at junctions. Potholes circled in paint are labelled ANC, a dig at the African National Congress, the ruling party that many residents blame for the city's plight.

Johannesburg has been at the heart of South Africa's economy since the discovery of gold in the mid-1880s. Today it is in crisis. Many affluent South Africans are leaving for Cape Town, the country's second city, and the Western Cape province of which it is the hub. In doing so they are reshaping the country.

Internal migration has long influenced the course of South Africa. In the 19th century Afrikaners (whites of mostly Dutch descent) trekked from the British Cape Colony to the hinterland and black Africans were scattered during the *mfecane* (crushing) caused by the expansion of the Zulu kingdom. Under apartheid, the movement of black people was controlled through racist laws. Since the ANC came to power in

1994, poor South Africans have continued to move to the Western Cape and Gauteng, the province containing Johannesburg. From 2002 to 2022 internal migration was the main reason why those two provinces' share of South Africa's population rose from 31.4% to 38.5%.

Locals call the new trend "semigration": richer South Africans, who are disproportionately white, swap Gauteng for the Cape, often as an alternative to the more widely noticed practice of emigrating entirely. One sign of semigration is the property market. From 2010 to 2022 nominal house prices increased by an average of 98% across South Africa's eight largest cities, slightly above consumer-price inflation, according to official data. But in Cape

Town the increase (141%) was almost twice as big as in Johannesburg (71%).

According to Lightstone, a property analytics firm, half of South Africans who sold a house in one province and bought in another in 2022 moved to the Western Cape. The share was 58% among those leaving Gauteng. Investec, a private bank, says that the Western Cape is its fastest-growing region by amount of client activity. Johannesburg still has more dollar millionaires than Cape Town, reckons Henley & Partners, a consultancy. But on current trends that will be reversed by 2040.

What explains the shift? Cape Town is naturally more beautiful than Johannesburg. But that isn't new. While covid-19 encouraged South Africans to rethink where they work, factors predating the pandemic influenced their decisions—such as the collapse of Johannesburg's infrastructure. Rolling blackouts occur nationwide because of the failure of Eskom, the state-owned utility. But many South Africans, including residents of Johannesburg, spend extra time in the dark because substations regularly break down. City Power, Johannesburg's electricity distributor, says 60 transformers need replacing now and 73 more in the next decade; it changes three to five every year. Water outages are becoming more common. Potholes are so bad that in 2021 Discovery, an insurance firm, launched a joint initiative to fill them.

Cape Town has its problems but gets more of the basics right. A hydropower dam means that blackouts are rarer. Under ➤

→ Also in this section

- 36 Hidden war crimes in Tigray
- 37 Syria courts non-Muslims
- 38 Libya's elections
- 38 Cryptocurrency and Islam

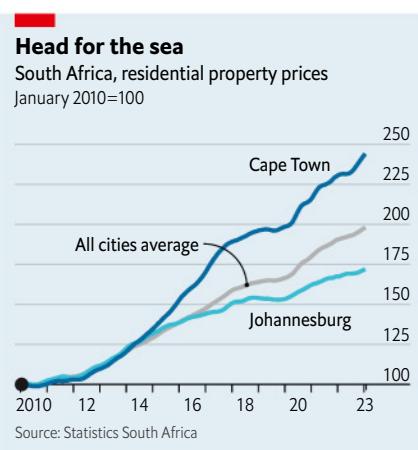
► Geordin Hill-Lewis, the mayor, the city is developing a battery-storage plant and paying for surplus electricity generated by those with solar panels. After drought led to a water crisis between 2016 and 2018, the city adopted several measures to soften demand and improve supply. Over the next three years Cape Town will spend more on infrastructure than Johannesburg and Durban, the third-largest city, combined, says Mr Hill-Lewis: "We are building resilience in response to state failure."

Differences in pipes, power and potholes reflect differences in politics. Johannesburg has had six new mayors in the past two years, as coalitions established via proportional representation rise and fall. The current mayor, Kabelo Gwamanda, is from a Muslim political party which won less than 1% of the vote at local elections in 2021. He is propped up by the ANC and its hard-left offshoot, the Economic Freedom Fighters (EFF). Last month it was reported that authorities were investigating his involvement in a funeral-insurance scheme which allegedly defrauded the poor.

At a national level the Democratic Alliance (DA), South Africa's official opposition, suffers from weak leadership. A liberal party with Western leanings, it remains popular among South Africa's minorities but has made few inroads among black voters (the country is 81% black; 8.8% "coloured", or mixed-race; 7.7% white; and 2.6% of Asian, mostly Indian, descent). But the DA runs towns and cities, such as Cape Town, relatively well. Of the 257 local governments in South Africa audited in 2021-22 by an official watchdog, just 38 had clean financial records—and 23 of them were run by the DA, 21 in the Western Cape.

Good governance is helping Cape Town rival Johannesburg as the country's commercial capital, too. Amazon is building its African headquarters there. Since 2013 it has attracted 20 new direct flight routes from "major global markets", says McKinsey, a consultancy. The office vacancy rate is almost half Johannesburg's. From 2017 to 2021 the city's GDP growth rate tracked South Africa's as a whole, but Cape Town's officials reckon that over the next five years the city will grow around 0.5 percentage points faster than the country, reaching 2.8% a year versus 2.3% nationally in 2028. The gap in GDP per person between the Western Cape and Gauteng has narrowed since 2010, notes Johan Fourie of Stellenbosch University.

The divergence offers two lessons. The coalition politics of Johannesburg are messy—and offer a warning ahead of national elections next year. If the ANC loses its national majority, it may need to co-opt smaller parties to stay in power. A second implication concerns the unity of South Africa. The Western Cape has long had a distinct identity, partly reflecting its de-



mography. Black South Africans are a minority; the largest group is mixed-race "coloureds", who often say that they have been marginalised under both white rule and the ANC. The Western Cape wants more powers from a national government it sees as holding it back. The provincial parliament is currently debating a bill (which the national government will probably challenge in the constitutional court) to bring about more devolution.

Some would consider going further still. In 2021 a poll suggested that 58% of those in the Western Cape would support a referendum on independence for the province, and that 42% would vote to secede. That should be taken with a pinch of Atlantic sea salt. But if Cape Town and the Western Cape continue to diverge from the rest of the country, autonomy may seem ever more appealing. ■

War crimes in Tigray

Will the villains be brought to justice?

GEDAREF, EASTERN SUDAN

Atrocities committed in Ethiopia's civil war may be covered up or forgotten

EARLIER THIS year alarming reports spread through refugee camps in eastern Sudan that host refugees from Tigray, a region of Ethiopia where a vicious civil war erupted in 2020 but fizzled out last year. A trader from a contested area officially known as Western Tigray said the remains of Tigrayans murdered during recent rounds of ethnic cleansing were being dug up or set on fire. The aim, he told refugees by text messages, was "to hide the bodies".

Claims that evidence of atrocities committed during Ethiopia's horror-strewn civil war is being destroyed are not new. In April last year, Human Rights Watch and Amnesty International, two rights groups, published a lengthy joint report which

concluded that authorities from Ethiopia's Amhara region had systematically killed or evicted hundreds of thousands of Tigrayans from Western Tigray. A month later, the BBC reported that security forces from Amhara, which have occupied the area since the war began, had been digging up mass graves and disposing of bodies.

Holding to account those responsible for war crimes and crimes against humanity is part of the peace agreement reached in November by the government of Abiy Ahmed, Ethiopia's prime minister, and the Tigrayan People's Liberation Front (TPLF). In theory it is also a condition for Ethiopia to improve its relations with the West after more than two years in the diplomatic deep freeze. But while Abiy's government says it is espousing "transitional justice", it is blocking efforts to uncover the truth and punish the perpetrators.

It may also be complicit in a cover-up. More than 100 satellite images of known detention sites and suspected burial grounds in Western Tigray suggest that some evidence has already been disturbed or destroyed. The imagery, collected and analysed by Vigil Monitor, a British-based conflict-research group, shows disturbances at places eyewitnesses separately identified as body-disposal sites. Near three prison camps these disturbances, such as freshly scorched earth, became visible shortly after the peace deal was signed.

In the walls of Bet Hinsets prison in Humera, close to Ethiopia's border with both Sudan and Eritrea (see map on next page), burns appeared on ground identified precisely by many former inmates as a mass grave. Vigil argues that such unusual burns noticed in various sites suggest that "evidence is being destroyed at numerous locations". In several of them scorch marks appeared simultaneously at the end of March. This coincided with debates in the UN's Human Rights Council about further international investigations in Tigray.

Could some of these disturbances be innocuously explained? The massacre of Bosnian Muslims at Srebrenica in 1995 involved interring corpses in designated mass graves. The disposal of bodies in Western Tigray, by contrast, appears to have been carried out more haphazardly. Early in the Tigrayan war, corpses were discovered floating down the Tekeze river into next-door Sudan. After an international outcry "the tactics seem to have changed", says a researcher for another rights group.

At times, say eyewitnesses and former detainees, bodies were left in the open to be eaten by animals. A Tigrayan man who spent more than a year and a half in prison in Humera before escaping to Sudan says prison guards made him load the corpses of 16 fellow inmates onto tractors which were then carted to places unknown.

Since November 2020, journalists and

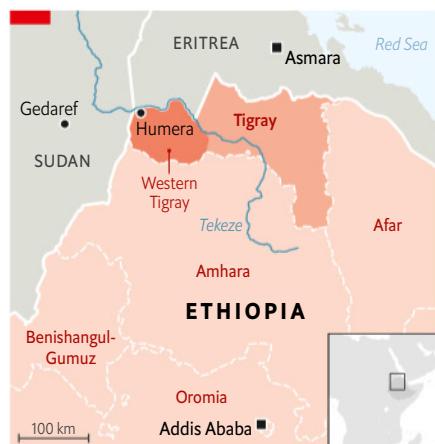
► aid-workers have generally been barred from Western Tigray. UN investigators who visited Ethiopia last year were prevented from travelling outside Addis Ababa, the capital. Thanks to lobbying by Ethiopian diplomats, the UN is unlikely to renew its investigators' mandate. This means that even if some evidence has degraded, rather than being deliberately destroyed, the effect will be the same. Forensic material that could confirm exactly what happened will gradually disappear.

Ducking and weaving

Ethiopia's government responds that it will publish its framework for transitional justice later this year. But few expect this to include a thorough investigation of past atrocities. Nor is it likely that senior officials or military commanders who perpetrated or ordered such crimes will be punished. A new report by Human Rights Watch notes that not one Ethiopian official responsible for ethnic cleansing has been removed or brought to justice. "In all likelihood they will just move straight on to reconciliation and sweep atrocities under the rug," says an Ethiopian consultant who has been pushing for justice.

It helps that the TPLF, whose forces also stand accused of committing war crimes, no longer seems to be especially bothered. During peace talks "the parties both talked a good game", explains an American official. "But it would be fair to say that each was looking for accountability for abuses done by the other side."

Last month the Biden administration, marking a step towards fully resuming American aid and development assistance, notified Congress that Ethiopia's government was no longer engaged in a pattern of "gross violations of human rights". But however tempting it may be to let truth and justice be set quietly aside, it is a weak foundation for a lasting peace. "Now I'll never know if my husband is alive or dead," lamented a Tigrayan woman on hearing the news of graves being destroyed. "I can never bury his body." ■



Syria's president

A religious ploy

Syria's president hopes non-Muslims will help keep him on top

IN WOODS, PLAYGROUNDS and stadiums across Syria, children and adults perform yoga routines. Their palms open in supplication, their arms flung back, they chant "Surya Namaskar". It sounds like an Arabic blessing for Syria, but means "sun salutation" in Sanskrit. Instructors in Hindu monks' robes preach the teachings of Shiva, an Indian god said to have founded the practice. "We are offering relief from the stress of real and economic wars," says a Syrian tutor. Two decades ago a Syrian known as Mazen Isa returned from Rishikesh, a city in the Himalayan foothills known for its yoga studies, and opened a yoga practice in Syria. Scores of meditation centres now operate, free of charge, across the country. A key to their success is that President Bashar al-Assad backs them.

For over a half century the Assad dynasty has allied its own Alawite sect, an offshoot of Shia Islam, with Syria's myriad religious minorities in order to bolster the regime's dominance over the country's Sunni Muslim majority. But lately he has enabled other denominations to spread their roots. As well as encouraging yoga, he has let evangelical Christians open churches in houses where converted Muslims can worship. He has even encouraged Jews of Syrian origin to visit Damascus, the capital. This religious influx, he hopes, will swell the regime's minority base and end his status as a pariah across the world. "It's his programme for normalisation," says Ayman Abdelnour, a Syrian Christian and former friend turned dissident.

For many Syrians the new religions offer communal relief in a country devastated by a civil war. More than 350,000 people are thought to have died. Nearly half the population of 22m-plus in 2012 has been displaced or forced abroad; 90% of those still in Syria are reckoned to live in poverty. Civil society and political gatherings are still muzzled.

The Syrian Centre for Yoga and Meditation, based in the coastal city of Latakia, says yoga centres have more than quadrupled since the war began in 2011. The sports ministry provides them with football pitches for yoga practice. The number of Christians belonging to long-established denominations in Syria has plummeted from around 2.5m before the war to some 500,000 today, according to a Christian delegation that recently visited Damascus. But new evangelical house churches are said to be opening every month, particularly in the Kurdish-ruled north-east.

Among Syrian refugees a similar trend is noticeable. The International Association of Human Values, a UK-based charity, has been holding yoga classes in Zaatari, a camp for Syrians in Jordan. Evangelical churches are mushrooming in Lebanon. Syrian Muslim leaders used to denounce far smaller divergences from orthodox Islam as apostasy, but now think it wise to hold their tongue.

Although the security services still keep a tight control over the state, Mr Assad blesses this religious pluralism. He sends his officials to celebrate World Yoga Day. A Catholic college opened in Damascus in 2021. Sometimes he and his wife attend church. "He showed us the spirit of love for all religions and said he wanted to rebuild the church in the Middle East," says Bishop Daniel, an Australian prelate who recently met Mr Assad in Damascus. The president has even sent his officials to meet Jews of Syrian origin in America, asking for their help to rebuild synagogues in Aleppo, a city in Syria's north. He sent condolences in 2021 after Avraham Hamra, Syria's former chief rabbi, died in Israel. "Jewish ties are a priority for him," says an emissary between Mr Assad and Syrian Jews.

While he is gradually being welcomed back into the Arab world, Mr Assad hopes his multi-faith policy will help him end his isolation elsewhere. Yoga has helped him strengthen ties with India. He thinks outreach to Jews might improve relations with America and Israel. The Australian bishop declared after his visit: "We are praying for the leaders of the world to lift the sanctions on Syria so that they can rebuild the nation again." Many Christian groups abroad oppose economic sanctions against Syria on the grounds that they hurt ordinary Syrians more than the regime—and that for all his destruction Mr Assad is a bulwark against Muslim extremism. ■

Libya's elections

If at first you don't succeed...

DUBAI

...make another ill-fated push for the polls

TO CALL IT déjà vu would be to understate. Last month Libyan politicians, drawn from the country's two rival legislatures (one based in Tripoli, the capital, the other in the eastern city of Tobruk) met in Morocco to agree on draft electoral laws. They did not share the text with the public, but drew praise from Western diplomats. After years of delay, perhaps Libya was close to choosing a new government that would end its long political stalemate.

Then came the caveats. The heads of Libya's two legislatures were meant personally to sign the draft but backed out at the last minute. Lawmakers in one part of the divided country called for elections within eight months. The UN special envoy suggested this was optimistic, as "legal loopholes and technical shortcomings" meant the new electoral laws would not wash.

Libya has been here before. It slipped into civil war and territorial division after the overthrow of Muammar Qaddafi in 2011. The UN and Western powers view elections as the way out of this crisis and have tried repeatedly to organise them. Every attempt has failed—and yet they are now asking the same politicians and militia leaders to give it another shot.

The most recent failure was in 2021, when the authorities set an election date and registered almost 3m voters. They are still waiting. Officially the ballot was postponed because of legal issues, including eligibility. Libya had neither a constitution nor electoral laws, a dilemma the talks in Morocco were meant to resolve.

For some participants, the biggest issue was the question of who is eligible to run for president, a debate aimed at one man: Khalifa Haftar, the general turned warlord who tried in vain to conquer Tripoli, in 2019. Politicians there want to disqualify him, either by barring military men or people who hold dual citizenship (Mr Haftar has an American passport).

The draft electoral laws are said to require would-be candidates to hang up their army uniforms. But that is hardly a durable solution. Mr Haftar could hand over control of his self-styled Libyan National Army to his son Saddam, whom he has groomed for the job. Should he lose the election, however, he could take them back—and perhaps try to change the result by force.

For all the high-minded talk about electoral laws, this is the real, grubby reason why Libya has yet to choose a new govern-

ment: no one has an incentive to hold elections that might force them out of power.

In 2021, when Abdul Hamid Dbeibeh, a construction magnate, was named prime minister of the internationally recognised government in Tripoli, he promised not to run for president. He later reneged. Aguila Saleh, the head of an expired rump parliament in the east, fears losing his grip on power and has sought to obstruct any political progress.

Lurking in the background is Seif al-Islam Qaddafi, the second son of the deposed dictator. He has been quietly plotting a return—never mind that he was sentenced to death by a court in Tripoli and indicted by the International Criminal Court. He registered as a presidential candidate before the aborted 2021 election.

He has kept a low profile: two years ago, in a rare interview with the *New York Times*, he likened his comeback to a "strip tease". Should Libya's rival factions agree on an election date, however, he will probably step up his campaign and cast himself as a unifying figure. It might work: 12 years after they overthrew him, many Libyans look back on the Qaddafi era as a time of relative stability. That is another reason for the country's current rulers to delay.

At least for now, the stalemate does not seem so bad. Violence has ebbed. High oil prices keep billions flowing into the treasury, which helps to buy calm. But this is not sustainable: if the political process fails, fighting is likely to resume. Libya's leaders would still rather take power by force than earn it through elections. ■

Cryptocurrency and Islam

Is it permissible?

DUBAI

Islamic scholars can't agree on whether cryptocurrency is sharia-compliant

YOU KNOW why they call it Bitcoin?" asks Ismail ibn Musa Menk, a Muslim scholar in Zimbabwe whose online videos have a big international viewership. "It bit us all," he laments. "I got bitten too, you know." Social-media users began to speculate if he had dabbed in the cryptocurrency.

If he did, some of his peers would tut-tut. Shawki Allam, Egypt's grand mufti, is a naysayer. In 2018 he endorsed an Egyptian government ban on Bitcoin trading, issuing a *fatwa* that cryptocurrency is *haram* (forbidden).

But others are less sure. As well as scouring the relevant passages in Islamic law, scholars say they need to understand the ins and outs of crypto before deciding whether it should be embraced

or damned. So far views are mixed.

Some have endorsed mainstream cryptocurrencies, arguing that they are permissible partly because they do not generate *riba*, or interest, which is *haram*. But anti-crypto muftis reckon that Muslims should avoid anything that involves too much *gharar*, or speculation.

This lack of consensus has not deterred people in Muslim countries from trading in crypto. Last year the Middle East and north Africa (with Morocco to the fore) had the fastest-growing cryptocurrency market in the world, according to Chainalysis, a data firm in New York. Despite the hostile ruling by their grand mufti, Egyptians, spurred by inflationary pressures and the devaluation of their country's currency, led the surge.

Some Middle East governments want to regulate trading and control crypto-exchanges. Bahrain was an early pioneer in the region: in 2019 its central bank was the first to issue a regulatory licence to a cryptocurrency exchange, Rain, and declared it sharia-compliant.

The United Arab Emirates has become a regional crypto-hub. Islamic Coin, a new local cryptocurrency backed by several ruling-family members, is set to be publicly traded. Its founders say it is the world's first "100% halal" cryptocurrency, with 10% of any issued amount going to a Muslim charity. They even boast of a *fatwa* that validates their claim. But since plenty of conventional currencies are endorsed by religious leaders, pious tech-savvy Muslims may wonder whether a new coin backed by a *fatwa* is really any better in Allah's eyes.





NATO and Ukraine

Progress and pitfalls

VILNIUS

At the NATO summit, Volodymyr Zelensky did not get everything he wanted. But he got quite a lot

A HEAD OF THIS week's summit in Vilnius, Ukraine and its closest allies, including Lithuania, the host, and its neighbours in eastern Europe, had hoped the allies would offer Ukraine a clear and credible post-war pathway into NATO. They were haunted by the ghosts of a previous summit in Bucharest in 2008, which had declared that Ukraine "will" join NATO, without saying how or when. That provoked Russia without securing Ukraine, consigning it instead into a dangerous grey zone. "We understand that we cannot be a member of NATO during the war," acknowledged Volodymyr Zelensky, Ukraine's president, last month, "but we need to be sure that after the war we will be."

In Vilnius, leaders did indeed affirm that "Ukraine's future is in NATO" and said that it would not need to jump through the hoops of a "membership action plan" or MAP. But hoops there still will be. "We will be in a position to extend an invitation to Ukraine to join the alliance when allies agree and conditions are met," declared the members, in distinctly gnomic fashion.

(Concerns about corruption in Ukraine loom large for some NATO countries.) The pledge was "Bucharest minus", suggested Samuel Charap of the RAND Corporation. At the summit, the mood among many eastern European experts and officials bordered on melancholy.

They should not have been altogether surprised, and they ought to be more cheerful. Joe Biden, America's president, had warned days before the summit that he would not wave Ukraine through. "I don't think [Ukraine is] ready for membership in NATO," he warned. "There's other qualifications that need to be met, including democratisation and some of those issues." Jake Sullivan, Mr Biden's national security

adviser, speaking on July 12th, defended the outcome as a compromise among allies. "I'm not sure what it means exactly to go further," he said. Ukraine had made "substantial steps along the reforms path", he acknowledged, "but there are more steps to take."

Mr Zelensky, whose mid-summit tweet that the decision was "absurd" was thought to have irritated American officials, later struck a more emollient note. "The results of the summit are good," he suggested, adding that "clear signals that [NATO membership] will happen were heard confidently today." But there were also signs of friction among friends. America deserved "gratitude" from the world for its support for Ukraine, argued Mr Sullivan, clearly annoyed by accusations of insufficient resolve. "People want to see gratitude," agreed Ben Wallace, Britain's defence secretary, recalling that he had driven 11 hours to Kyiv only to be handed a wishlist of arms: "We're not Amazon."

Others, though, offered a more sanguine assessment of Ukraine's situation. "Ukraine is now closer to NATO than ever before," insisted Jens Stoltenberg, the alliance's secretary-general, pointing to initiatives designed to make Ukraine's armed forces more interoperable with those of the alliance—a process already well under way owing to the flow of NATO-standard weapons. Gabrielius Landsbergis, Lithuania's foreign minister, said that the Vilnius summit would be a "bridge" to NATO's sum-►

→ Also in this section

40 Ukraine's brave sappers

41 The rise of Germany's far right

42 Spain's general election

43 Charlemagne: Farewell Mark Rutte

mit next year in Washington.

And Boris Pistorius, Germany's defence minister, suggested that the simplification of the accession process would speed things up: "Once the war is over, this can go very fast." Some experts and officials at the summit suggested that NATO membership was being held back because it would be necessary as a bargaining chip later—for instance to help persuade Mr Zelensky to make concessions as part of a settlement with Russia.

Mr Zelensky did not leave empty-handed, by any means. On the sidelines of the NATO summit, the G7 countries—America, Britain, Canada, France, Germany, Italy and Japan—issued a joint declaration setting out general principles on how each state would now offer "enduring" support for Ukraine. The document promised to work towards "specific, bilateral, long-term security commitments and arrangements" that would build up Ukraine's armed forces, including with air defence, artillery, armoured vehicles and warplanes (a coalition of countries will begin training Ukrainian pilots on F-16 jets next month). The declaration added that Russian state assets abroad would remain "immobilised until Russia pays for the damage it has caused to Ukraine", the strongest commitment to date to force Russia to pay for Ukrainian reconstruction.

The G7 members did not go so far as to offer Ukraine formal security guarantees along the lines of NATO's Article 5 mutual-defence clause, according to which an attack on one is an attack on all. But they said that if, after this war, Russia attacked Ukraine again, allies would "immediately consult with Ukraine" and offer "swift and sustained security assistance" including "modern military equipment across land, sea and air domains". It is now up to individual allies to flesh out these pledges. "You could expect more British troops in Ukraine after this conflict than you did be-

fore," suggested Mr Wallace. The devil will be in the detail of these bilateral security promises, with America's naturally being the most important.

Despite the focus on Ukraine, the summit also saw significant progress on other issues. A flurry of last-minute diplomacy saw Recep Tayyip Erdogan, Turkey's president, withdraw his blocking of Sweden's bid for NATO membership on July 10th. Once Turkey's parliament completes ratification, Sweden's membership will complete Russia's encirclement in the Baltic Sea and make it easier to plan the defence of the Baltic states to the south.

The allies also approved their first comprehensive (as in 4,000 pages long) defence plans since the end of the cold war, giving detailed guidance to armed forces on how to prepare for the defence of the north, central and southern parts of NATO's borders, from the Arctic in the north to the Mediterranean in the south. And there were further boosts to the battle groups in the east, with Canada pledging to double the size of its deployment in Latvia with as many as 1,200 additional troops. Mr Putin invaded Ukraine to push NATO away from his borders. Instead, it has grown stronger and closer with every month. ■

gress here is more strategically important than anywhere else. But Russia knows this and has built defences accordingly. The Ukrainian sappers given the job of finding a way through have to deal with around 1,500 mines per square kilometre. That is before Russian artillery, drones, aviation and electronic warfare begin their work. "Sappers have become target number one," says "Sleepless", the company commander in charge of the ill-fated mission on June 27th. "It's a hunt, pure and simple."

Ukraine changed tactics in the early days of the counter-offensive. An unsuccessful attack southwards from Mala Tokmachka on June 7th saw much of its most capable Western-supplied mine-clearing equipment bogged down—then targeted—in minefields. Now Ukraine throws sappers forward first in small groups of four or five, on foot, in the hope they go undetected; infantry then follows. It is a departure from NATO-standard doctrine, which emphasises the role of armour as protection. "This war is making us do non-standard things," says "Beaver", who commands the engineering regiment providing sappers to Ukraine's attack brigades.

The work could not be more dangerous. Much of it is done at dawn. The Ukrainians have night-vision goggles provided by Western partners and local volunteers, but the optics are not perfect. "A sapper's main weapon is his eye," says Sleepless. So the engineers move forwards in the early morning at a snail's pace, eight to ten metres from each other, probing at 45 degrees until they hit metal. All the while, drones hover above, and the sappers are at constant risk of triggering a barrage of artillery. Rain and cloud offer the best conditions, since they reduce visibility from the drones. But in Ukraine's scorching summer, where sunstroke has become a common affliction, such protection is rare.

Much of the Russian engineering work is crafty, reports Tsar. "You can stumble on a trip-wire that would cause an explosion right at the spot your group is following behind you." But there were examples of shoddy workmanship, too. "Quite often they forgot to put a detonator in, or they short-circuit wires."

The sappers say progress would be much faster if Ukraine had sufficient engineering equipment and air cover to make a mechanical push viable. But the new small-group tactics are achieving modest results. A slow advance has inched Ukrainian positions near Robotyne towards their target of Tokmak to the south, an important rail hub that could put HIMARS rocket-launchers within firing distance of the Russia-Crimea road link. Ukrainians are also applying new technological know-how. Drones equipped with heat sensors are the latest weapons. These seek out Russian mine positions by looking for heat sig-

Ukraine

Sleepless in battle

ORIKHIV

Sappers risk their lives to win Ukraine back, inch by inch

IN THIS GAME, 50 centimetres can make all the difference. "Tsar", a 35-year-old veterinarian turned combat engineer, was part of a five-man group de-mining fields near Robotyne on June 27th. The sappers were three hours into their early-morning mission when artillery duels began. First came the mortars—not in itself a signal to stop working. But then came cluster munitions, which began to explode overhead. "You know where you are with mortars. With clusters you're in one of two camps: lucky or unlucky." Tsar escaped with shrapnel injuries in the soft tissue of his back-side, from which he is recovering in the local hospital. Five tourniquets could not save his comrade Dima Shulgin, just 50 centimetres to his side. He died from bleeding the next day, aged 35.

The fate of Ukraine's counter-offensive hinges on the work of its combat engineers. Sappers are the key to breaking through at least three lines of Russian defences—and nowhere more so than in the open plains of Zaporizhia region, the main focus of Ukraine's counter-offensive. Pro-





natures in the 30-60 minutes before sunset, when the metal mines have heated up just enough.

But the biggest factor in determining Ukrainian success may well be morale. Beaver says the counter-offensive has inflicted on his combat engineering division worse casualty figures than on any in the army. "Frankly, many of our men became frightened." One soldier breaks out in hives every time he hears buzzing; he is afraid of "flies", the military jargon for drones. Others, like "Casper", a 29-year-old company commander, admit to struggling with the more gruesome side of the job—working through the stench of blood and corpses. But there are signs the newest advances near Robotyne might have instilled a sense of courage among the sappers.

This phase of the counter-offensive, focused on the attrition of Russian artillery firepower and reserves, may yet take months. Progress was not even, says Beaver; you can't press ahead too rapidly, or you will be cut off from the flanks. The hope is that after breaking through the first lines, Russian defences in the second, third and in some places fourth echelons will prove to be less menacing. Then, the limited mechanised capacity that is being kept in store may get its day in the sun. The sappers express confidence they will eventually break down Russian defences and liberate occupied Ukraine. "Like cockroaches, we'll find a way through, because our lives depend on it," says Tsar. He will be returning to the front line the moment his doctors let him. ■

Germany

Rise of the right

BERLIN

Support for the Alternative for Germany is surging

THESE SEEMS nothing alarming about the election posters in Raguhn-Jessnitz, two hours' drive south-west of Berlin. "Abiding support for homeland, culture and clubs!" promise the now-fading words that earlier this month helped Hannes Loth become mayor of the township, a clutch of villages on the banks of the meandering Mulde river. Yet by electing Germany's first-ever full-time municipal boss from the far-right Alternative for Germany party (AfD) its 8,000 voters also, to use one of Germany's favourite Anglicisms, stirred up *einen Shitstorm*.

The AfD was launched ten years ago by a group of Eurosceptic intellectuals. The party soon shed gentler founders and their ideas, hardening around a strident nativism that harped on two issues, immigration and the alleged alienation of "ordinary" Germans from an increasingly "elitist" mainstream. It cashed in on anxiety over an influx of refugees, particularly from Syria in 2015-16, surging to 13% of the national vote in 2017 and sending 94 MPs to the 709-seat Bundestag (now 736-strong). But this share fell back to 10% in the next general election, in 2021. City folk took to dismissing the AfD as a losing team of racists and crackpots. Older parties swore never to consider it as a coalition partner.

The AfD quietly sank deeper roots, particularly in the relatively depopulated and depressed hinterland of the former East

Germany. Over the past year few seemed to notice its steady climb in polls, from under 10% to over 20% in June. But bells began to ring last month when the AfD won control of a district administration in Thuringia, a state to the south of Raguhn-Jessnitz—and then Mr Loth's office. The talk shows suddenly discovered that the upstarts had displaced the Social Democrats, who lead the ruling coalition, as Germany's second-most popular party. Nationally, the AfD is now just six or so points behind the right-of-centre Christian Democrats' 27%, and gaining. In former East Germany the roles are reversed: the AfD is number one.

The reasons are multiple. One is that the coalition government presents a large target. A slack economy and extended crises, from covid-19 to war in Ukraine and energy shocks, have provided ample ammunition for sniping. This spring's ill-timed move by the Greens, a junior partner in the coalition, to propose a ban—now postponed—on gas and oil boilers prompted an opposition frenzy. It is not just right-wingers who dislike the government. The latest weekly poll shows that just 23% of Germans think it is doing a good job, a record low for its term.

Clever messaging helps the AfD. As in Mr Loth's anodyne posters it relies on innuendo, not stridency, to suggest that other parties are failing to defend a way of life. In Thuringia, where the local office of Germany's equivalent of the FBI labels the AfD a "right-wing extremist organisation", the party has countered with a sharp online campaign. "Do you think calling for limits to immigration is extremist?" it asks, revealing in the next line that local polls show 69% of Thuringians don't think so. Further questions—"Do you think calling for illegal migrants to be deported is extremist?" and "Do you think putting tough-



Clear now?

er conditions on citizenship is extremist?"—receive similar endorsements of the party view. The text jauntily concludes, "AfD: We clear things up!"

The party scores with simplicity too, relentlessly pressing the same buttons. Its politicians grab any opportunity to highlight bad things done by immigrants, then go mute when chauvinist Germans misbehave. Events abroad, such as recent riots in France, are amplified as warnings of what happens when nations dilute their purity. Success stories of assimilation get no play.

By such means the party has nudged the dial on what Germans consider acceptable. Yet for all its apparent success the party remains, at core, a creature apart. A recent survey of attitudes in eastern German states by scholars at Leipzig University found more than half of AfD supporters are hostile to foreigners, compared with 20% or fewer in every other party. They are at least four times more likely to approve of dictatorship, and ten times more to think Nazi crimes are exaggerated. Ordinary Germans seem aware of this difference. In another recent poll, this time nationwide, 65% said the party is a danger to democracy. Even 10% of AfD supporters agreed. ■

Spain

Heigh ho, it's Feijóo

MADRID

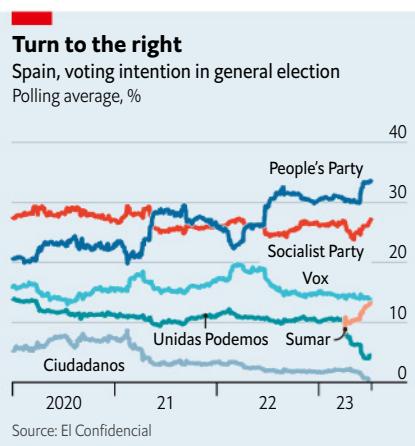
Why Spain's new opposition leader is looking like a winner

IN A DEBATE between Spain's main party leaders on July 10th, the moderators repeatedly had to ask the two men to stop speaking over each other, an instruction they ignored. It was a fitting moment for Spanish politics, where practitioners are better at talking than listening.

Pedro Sánchez, behind in polls, is battling to keep his job in elections on July 23rd. The leader of the Spanish Socialist Workers' Party took power in a no-confidence vote against the government of the People's Party (PP) in 2018. When he did so, he said in the debate, three concerns predominated: the economy, corruption and Catalonia. He can make a case that he has improved all three.

Covid-19 was an awful shock, especially the first wave, in which tens of thousands died and Mr Sánchez declared a heavy lockdown. An economy dependent on tourism took a nasty fall. The PP likes to note how many other countries recovered their pre-pandemic level of GDP before Spain did.

But Spain's current recovery is well timed. GDP grew by 5.5% last year, and projections have been repeatedly revised up-



wards for this year too: the European Commission expects 1.9% growth, well ahead of Germany's 0.2% and France's 0.7%. Inflation is lower than in other euro-zone economies—which the Socialists attribute to their policies (though the country's lack of dependence on Russian energy helps). Unemployment at 13% remains high for Europe, but it is low for Spain.

On corruption, too, there is little argument: the coalition government has been clean, with arguments over Mr Sánchez's use of the official jet one of the few issues to speak of. It is on Catalonia that Mr Sánchez's selling point is also a reason why he might soon be looking for a new job.

In 2017 the Catalan regional government held an independence referendum that had been banned by Spain's supreme court. The separatists claimed victory and declared independence, leading the Madrid government to revoke Catalonia's autonomy and govern it directly. When new elections were held, separatist parties took a majority of the seats.

Mr Sánchez has cooled the conflict. A "dialogue table" has produced little substance, but has kept the parties talking. Since the two main separatist parties fell out, one governs with the support of the Catalan affiliate of Mr Sánchez's Socialists, who came first in the most recent regional election. After May's local elections, the Socialists also retook the mayor's job in Barcelona, the capital of Catalonia.

Many consider the concessions Mr Sánchez has made to be unforgivable. The first was to pardon nine separatist leaders (though they remain banned from politics). The second was to reform two laws under which they were convicted. An old, unusually harsh sedition law was replaced, introducing an unusually mild offence of "aggravated public disorder". Misuse of public funds (which the Catalans used to hold the referendum) was split into an offence involving personal corruption and a milder one without. Justice "à la carte" for the separatists, howl those for whom the wounds left by the referendum

remain raw. All this looks worse still when added to Mr Sánchez's occasional deals with the deputies of EH Bildu, the successor to the political wing of ETA, a Basque terrorist group that killed hundreds of people in its campaign for independence.

Alberto Núñez Feijóo, who became leader of the PP last year, is the man hoping to take advantage of Mr Sánchez's polarising nature. Born in a poor town, he studied law, ran the postal service and the health system before electoral politics, in which he won four successive absolute majorities to run Galicia, in the north-west, a feat in the era of fractured politics. His style is more wry than ostentatious. He does not speak English and has little background in foreign policy. He lists among his qualities that of being "predictable".

In the debate Mr Feijóo promised never to deal with Bildu, and his PP says it will re-examine all laws passed with Bildu support. Mr Feijóo promises to restore the crime of sedition. He cannot afford to look soft next to Vox, a hard-right nationalist party that proposes recentralising Spain. But Mr Feijóo, who speaks Galician, talks of "cordial bilingualism" as a way of reconciling regional nationalists to Spain. He has also accepted legal abortion and speaks kindly of gay and trans citizens. In other words, he is no culture warrior.

Mr Sánchez is at pains to depict his rival as being at one with Vox. That is a hard case to make. It is true that Mr Feijóo will probably need Vox to govern, as he looks unlikely to win a majority. But that can be seen as a reason to vote PP: to reduce its need to depend on others. In any case Spaniards have learned that voting Socialist hardly means strong single-party government. For five years it has meant a prime minister all too capable of awkward coalitions of his own. ■



The predictable challenger

Charlemagne | Farewell to the Dutch Tigger

The endlessly cheerful Dutch prime minister steps down



MOST POLITICIANS like to project an air of sober earnestness. A job prized by bright, sociable people thus ends up looking like hard work. Not for Mark Rutte, the perma-cheerful prime minister of the Netherlands since 2010. In the manner of Tigger, Winnie-the-Pooh's sidekick, the equally elongated Dutchman has bounced from one political chore to the next with relentless aplomb. Whether riding a bike to the office under The Hague's leaden skies, or explaining (again!) to an EU crowd why the Dutch would not pay for some new Brussels scheme, then embarking on yet another campaign in a country blessed with over a dozen political parties: all of it could be done with a spring in the step and a smile for the cameras. Now Europe is to lose its chief cheerful-leader. Soon after his fourth coalition collapsed, on July 10th he announced he will leave office after elections due in November. But even the unexpected derailing of Mr Rutte's political career failed to dent his chirpy demeanour for long.

Tigger and Mr Rutte share another trait: it is impossible to discern what either might want to achieve as Dutch prime minister. That is no huge problem for a fictional stuffed tiger. But for a man who has held the job for longer than anyone else (and who will probably stay on well into 2024 as caretaker) it does rather raise questions. Other European leaders who have dominated their national polities for over a decade have left behind some form of "ism". Thatcherism looked to shrink the state, Blairism to combine the best of the right and left, Merkelism to keep options open for as long as possible. The very idea of Ruttism is no more conceivable than Tigger attending a funeral.

If Mr Rutte has a guiding principle, it is constant ideological flexibility. Here is a man well versed in the art of listening to other people's opinions before declaring that they had been his own all along. Perhaps that is inevitable in a country where no fewer than seven parties each at present command 10% or more in the polls. The coalitions needed to engineer workable majorities (the current one has four, including Mr Rutte's liberal vvd) and then hold them together work better if their central figure doesn't believe he knows best. The former human-resources man from Unilever, a soap-to-soup conglomerate, mastered the art of ideological self-effacement. A "boring" guy by his own admission, he boasted few

hobbies outside teaching social studies once a week at a local school. Why let anything as mundane as political beliefs get in the way of forming a plausible coalition? Much better to slap some backs, flash that smile, find consensus, get on with the job.

Mr Rutte painted his lack of vision as a feature, not a bug. He liked to quote Helmut Schmidt, a no-nonsense German chancellor who advised that politicians with visions should consult a doctor. The upshot has been 13 years of an administration that has plodded through over half the 21st century so far with much pragmatism yet little discernible purpose. This was management-by-committee on a national scale. Problems were dealt with as they arose. Some were handled well: pensions reform got through with rather less *Sturm und Drang* than in France, for example.

Occasionally the ball was dropped. The clumsy implementation of EU environmental laws has resulted in wide-ranging restrictions on new economic activity. Housing is scarce. From 2017 it emerged that thousands of families had been wrongly accused of benefits fraud, sending some into penury. Last year a child died when migrant-hosting facilities proved inadequate. But overall the Dutch got more of the same. The economy grew steadily under Mr Rutte, albeit at the flaccid rate Europe is used to these days.

Mr Rutte's amiable demeanour masks a killer political instinct, however: long is the list of former rivals who found themselves facing early retirement. (One discarded justice minister was later found working as a bus driver.) A master tactician, he happily drifted around the political spectrum, including to its outer reaches when needed. His maiden government got support from Geert Wilders, a migrant-bashing demagogue whose rhetoric Mr Rutte later borrowed. Over the years there were alliances with socialists and Christian democrats, who had taken turns providing prime ministers for nearly a century before Mr Rutte came along. In the end, it was what looked like a manageable crisis over migration policy that prompted the government to fall. Having lost popularity, and perhaps sensing this was a good issue over which to call it a day, the Dutch Tigger said he was done with politics.

Ta-ta for now!

Mr Rutte's ideological flexibility was mostly a domestic phenomenon. In Europe he had a firmer line. Those with visions—that word again—of a more federal union needed to be kept in check. As the EU's longest-serving leader (bar Viktor Orbán of Hungary) he knew the mechanics of how decisions were made. That has given the midsized Netherlands the kind of heft usually reserved for bigger countries—and fed rumours Mr Rutte might end up with a top EU job. Often the European project advanced at the pace dictated by the Dutch electorate. Mr Rutte resisted a budget for the euro zone and other federal schemes. An exception was made for a pandemic-recovery fund, but with endless reminders this was to be a one-off. After Britain left the club, the Dutch were left as the biggest remaining champions of free trade and open markets.

But it is at home that Mr Rutte will be remembered—or, more likely, not much. Perhaps being forgettable will turn out to be Ruttism's elusive central feature, and its most appealing. For there are worse things for a polity than to be led by a cheerful, pragmatic and dedicated leader. The Dutch seem content: seven in ten think the situation in their country is good, compared with three in ten in France. Mr Rutte inherited a rich, reasonably well-run country and leaves behind a rich, reasonably well-run country. He gave his compatriots a few more years of what they already had. Perhaps that is enough to justify a self-satisfied grin. ■



Commuters and the Conservatives

Mutiny in Metroland

AMERSHAM

A marriage of the City, the country and homeownership is under strain

THE ROOF terrace of High & Over offers a fine view, overlooking the lawns, the round swimming pool and the rolling Chiltern hills beyond. The house was built for the young family of Bernard Ashmole, an archaeologist, in 1931. The aim was a Roman villa in the modernist style—all straight lines and gleaming white—and within an easy train ride, from Amersham station, of an office in Bloomsbury. Locals called it the aeroplane house: the concrete canopies make it look like a biplane coming in to land. *Country Life*, a magazine, declared it exhilarating: a house that “says frankly ‘I am the home of a twentieth century family, that loves air and sunlight and open country.’” Katherine Harlow, the current owner, threw opera parties at the house, but she is selling up for something smaller (the asking price is £3m, or \$3.9m).

High & Over also offers the perfect vantage point to survey the fortunes of the

Conservative Party. The house was a particularly stylish expression of a very British aspiration: to live in Metroland. This was an advertising slogan for a real-estate gambit. At the turn of the 20th century, the owners of the Metropolitan railway, which today is part of the London Underground network, turned surplus land in Middlesex, Hertfordshire and Buckinghamshire into housing developments. Metroland became a synonym for a middle-class dream

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across southern England: a modern home in the countryside, linked by rail to office work in London.

It offered a trinity: the City, the rural, the domestic. Whereas France’s élites tended to live in apartments, Britain’s often opted for meadows and the 7.34 to Marylebone. In 1973 John Betjeman, the poet laureate, celebrated Metroland in a documentary. “Lured by the lush brochure, down byways beckoned, to build at last the cottage of our dreams,” he said. “A city clerk turned countryman again, and linked to the metropolis by train.”

Metroland was conservative, dispatching Tory MPs to Parliament. But the Conservatives’ relationship with the area is now fraught. The party’s old heartlands are not yet lost, but they are becoming contested battlegrounds.

In 2021, in a by-election, Sarah Green, a Liberal Democrat, was elected MP for Chesham and Amersham, the constituency in which High & Over sits, with a 25% swing. It was the first sign that Boris Johnson’s premiership was in trouble. Whether the Tories can reclaim it at the next general election, or whether, as Ms Green claims, her victory was the start of a bigger shift, is not yet clear. Yet there is increasing evidence that it was the latter.

Earlier this year, the Liberal Democrats ➤

took control of councils in commuter towns surrounding London, including Darwen, West Berkshire, Windsor and Maidenhead and Guildford. On July 20th Labour is hoping to win a by-election in Uxbridge and South Ruislip, Mr Johnson's old seat on the (rather poorer) southern spur of the Metropolitan line. A further contest is possible in Mid Bedfordshire, a commuter seat north of London, where Nadine Dorries, an ally of Mr Johnson, has said she intends to step down. If the Lib Dems can muster the money and campaigners, current polling suggests they could surge from 14 seats to 40 or 50 in the next general election, reckons Ben Ansell of Nuffield College, Oxford.

Amersham, the last stop on the line, is as comfortable as it was when Ashmole laid his foundations. City workers are still drawn by large houses and grammar schools, a form of selective state education long abolished in much of England. The pandemic sent a new wave of city-dwellers in search of fresh air and space. Some 47% of the workforce in Chesham and Amersham are in management, administration or the professions, the 19th-highest such concentration in England's 533 parliamentary constituencies. Sorted by deprivation, a metric that includes income, health and crime, it comes 531st. The high street is lined with bunting, and, during the Ashes, dotted with old men in Marylebone Cricket Club ties and schoolboys in whites.

Yet it is unhappy. Begin with the first element of that trinity, the City. A majority in many Metroland constituencies voted against Brexit, which left a widespread impression that banking and the professions were a low priority for the new Conservative Party. Ms Green says that although the "rage" has subsided, it has left dismay. Liz Truss's calamitous mini-budget, an amateurish move deplored by a town of professionals, made things worse.

There has been a subtler cultural estrangement, too. "Catch the early train to London and be home just after tea," said Betjeman. But since the pandemic, home working has taken off: rush-hour traffic on a typical Friday morning at Amersham station is just half what it was before, and smart offices have emerged in back gardens. "The dads would walk to the station," says Ms Harlow. "I don't know what people do now." Yet Mr Johnson and his circle mocked this new life as woke and idle. The drinking, bullying and sleaze of his administration seemed divorced from a modern corporate culture which is increasingly strict, progressive and teetotal. (It is possible to trace this rupture to another grand Chilterns house, ten miles away: Chequers, the prime minister's country retreat, where the Brexit civil war began in earnest at a summit in 2018, and which Mr Johnson would turn into a party pad.)

As for the countryside, "the lure of Metroland was remoteness and quiet," said Betjeman. "Back to the simple life. Back to nature." Working from home means more time for walking the dog, notes a Liberal Democrat strategist, and the party has become a ruthless defender of fields and rivers against predatory outsiders. The causes of sewage spills are complex, but the Lib Dems have used them to signal that politics itself is now fetid. High Speed 2, a railway that will cut through the Chilterns to connect London with the north, is another long-running grievance. "A nightmare. Such a waste," says Ms Harlow. Ms Green leads your correspondent to a field behind the cricket club, where tunnelling has caused a sinkhole. It is a physical manifestation, she says, of voters being overlooked and taken for granted by their government. That is a sentiment normally associated with Britain's poorest constituencies.

Goodbye, England

Metroland has long harboured a tension. It opposes the development of fields as it had once developed: diggers this far and no farther. Betjeman, a conservationist, found High & Over in a sad way: the gardens had been sold to developers, and the house hemmed in by a new estate. "Goodbye, high hopes and over-confidence," he said. "In fact, it's probably goodbye, England." The debate today is often as melodramatic. Opposition to Mr Johnson's planning liberalisations helped propel Ms Green to victory. Gareth Williams, Tory candidate at the next election, in turn promises to "protect our green spaces".

All of which means that abundant, modern homeownership—the third, most essential element of Metroland's old success—is more elusive too. ("No maid would grumble at this kitchen," declared a Pathé News film about High & Over, revealing its electric refrigerator and service lift.) The number of homeowners in Chesham

and Amersham grew by just 1.7% in the decade to 2021; the population of renters increased by 43%. Ms Green is one of them. Thus the Tories are trapped: building too many houses for their old voters to bear, and far too few for the future ones.

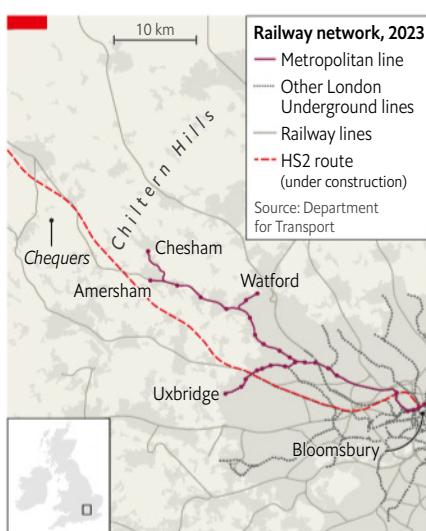
Mortgage-holders face a squeeze. Persistent inflation has led the Bank of England to raise interest rates to 5%, which will mean higher repayments as fixed deals expire. London's commuter ring is particularly exposed. These are the areas with the highest proportion of mortgage-holders and, notes Neal Hudson, a residential-property analyst, where the loans are biggest as a share of income. "They're the markets where you really have to stretch yourself if you don't have significant support from family," he says. The Lib Dems propose state handouts. Though locals don't like to talk about their finances, holidays will be shorter this year, says Ms Green. Add to all that the fact that competition for grammar schools is becoming tougher, increasingly depending upon parents' addresses as well as children's abilities, and the promise of Metroland is harder to attain, and harder to hold on to.

The result is that Rishi Sunak is struggling to reverse his party's fortunes. He is every inch a Metroman: a mild-mannered son of a GP, who worked in the City and loves cricket. "They can see that he is one of us," says Mr Williams, a former banker.

The prime minister's agenda sits well with his party's southern heartlands: he has patched up relations with Brussels, unwound housebuilding targets, increased subsidies for child care and reduced tax on the largest pension pots. Yet he has also promoted illiberal figures in the tradition of Mr Johnson, such as Suella Braverman, the hardline home secretary. "The Conservative Party needs to make a decision as to whether it wants to continue to be the dominant party of the Home Counties," says David Gauke, a former Tory MP for the next constituency down the train line.

The Lib Dems' prospects depend on how far Tory waverers stick with Mr Sunak because they fear Sir Keir Starmer, the Labour leader, says Mr Ansell. Mr Williams says locals worry about Labour's plans to impose levies on private schools and to liberalise planning laws, and whether it will increase inheritance taxes. Although the Lib Dems are opportunistic local campaigners, they have rather less to say about the national picture.

Yet the estrangement may be too far gone to prevent a Tory rout. The ideal of Metroland—a modern, comfortable house in the country, and a steady job in the City—may be as appealing as ever. On a hot summer's day, the round pool at High & Over is as still and cool as when Bernard Ashmole dug it 90 years ago. But in the hills around, the earth is shifting. ■



Bagehot | School lessons

Standards are through the roof (which is falling down)



ACH CHART in British public policy looks roughly the same, runs a joke among the country's wonk-class. There is gradual improvement from the early 1990s until 2010, and then things become worse. It is a rough-and-ready rule that holds for everything from rough sleeping to real wages to waiting lists at hospitals. After 13 years of Conservative government, the country's public services are not in fine fettle.

There is an exception. Under the Conservatives, England's schools have improved. England is now the best in the West when it comes to reading at primary-school age, according to one ranking. When it comes to maths, English students of the same age have improved compared with their European peers (even if they lag Asian ones). Scotland, whose progressive education system is loathed by Tories, has dribbled down the table. Historically, England was a laggard; now it is ahead.

Smaller targets have been met, too. More students study sciences and maths, as the Tories wanted. Maths has become the most popular subject at A-level, the exams English students sit at 18. Watered-down GCSEs, the exams children sit at 16, have been replaced by more rigorous versions. In 2010, 68% of schools were rated good or outstanding by inspectors. Now the figure is 88%. In a stint of government in which achievements are few, schools stand out. What went right?

For starters, the Conservatives had a plan. Before winning the 2010 general election, they had spent five years in opposition mulling school reforms, diagnosing the problems the system faced. The original sin, according to Nick Gibb, the then-shadow and now current schools minister, was progressive education, which focused too much on teaching children how to think rather than teaching them what they should know. Then they worked out how they wanted to fix it. Curriculums would be overhauled. Reading, writing and maths would trump other topics. Policies such as "phonics", which teaches children to read sounds rather than whole words, were expanded; schools would be tested on how well they taught it.

When opposition to the proposals emerged, ministers did not wilt. Teachers and their unions loathed them. Michael Gove, the secretary of state, became unpopular. He welcomed the hated and

nicknamed opponents "the blob", which has become a catch-all term to describe any official or institution that opposes Conservative policy. In other areas, the Tories have been more cowardly. They have pledged to reform human-rights law in each of the last four elections, yet always balked at opposition from the legal sector. Planning reform was kiboshed after a backlash from NIMBY voters and MPs. Rather than make an effort to convince them, ministers surrendered.

Schools also avoided another common problem in the British government: ever-changing ministers. Once a minister learns a brief, he or she tends to be moved on to another, starting from total ignorance. Mr Gibb has been in situ for ten of its 13 years in power. By contrast, the Conservatives have had 15 housing ministers in the same period. It is no coincidence that housing policy has been chaotic in that time.

When it comes to standards in schools, the Conservatives decided what they wanted to do and how they wanted to do it, and then stuck with it. It is a rare example of consistency. The reason why Britain has been poorly governed for 13 years is that the government has reversed course on fundamental questions so often. From 2010 to 2016, the Tories offered a vision of a small-state country inside the EU. After 2016, the party offered a flabby big-state vision with Britain out of the EU. In schools, however, the Conservatives have stuck to a course set decades ago.

Outside the classroom, education policy has not been a triumph. Structural reforms ground to a halt, as secretaries of state came and went due to political chaos rather than questions of competence. (None of Mr Gove's successors managed more than two years; near the end of Boris Johnson's reign, one managed only two days.) Rather than turn all schools into academies as intended, with schools outside local-authority control, the government managed only half. The result is a bureaucratic mess.

Although education was spared the brunt of cuts, it still suffered a small real-terms cut of 3% compared with 2010. Other departments fared far worse. As a result schools, like hospitals, became the state of last resort. Problems once solved elsewhere in the system now fall at their door. Likewise, schools are struggling to recruit and retain teachers. After a decade of pay restraint, salaries within the sector are poor. Someone with a maths degree can earn far more than the £36,000 a maths teacher is paid. Skimping on capital spending for years means that one in ten children attend a school that is, sometimes literally, falling down.

The soft bigotry of low expectations

Problems outside schools mean that hard-earned progress within them is fragile. Teachers did not sign up to be auxiliary social workers, yet they often must be due to government failure elsewhere. Experienced teachers leaving the profession, and talented potential ones never joining it, will eventually weigh down standards. PISA scores from 2022 will be published later this year, which will show whether English schools have maintained their progress, or if the pandemic undercut it. Good work in one area of government can be undone by failures in others.

Compared with the rest of the government's record, England's schools are a relative success. The Conservatives decided what was wrong and how they wanted to fix it. Dedicated ministers ensured that progress continued, in the face of opposition and when political attention moved elsewhere. It was a simple formula that the Conservatives could have replicated. Britain would be much better off if they had. ■



"Strategic autonomy"

Protector or problem?

WASHINGTON, DC

How Europe would respond to the return of Donald Trump

DONALD TRUMP's cant about the war in Ukraine drifts over the battlefields, dark as the pall of Russian bombs. "I want everybody to stop dying. They're dying. Russians and Ukrainians," he declared in May. If re-elected president next year, he would end the war "in 24 hours". How? He did not say, but his words imply halting military aid to Ukraine and letting Russia keep the gains of its invasion.

If so, the return of a "Trump unbound"—more resentful, more organised and less constrained than in his first term—could be a calamity for Ukraine. It might be a disaster for Europe in other ways. He might well enact a threat, dating from his first term, to leave NATO. He would face stern opposition in Congress. But alliances rely on trust. And merely suggesting he would not fight for allies could complete the destruction of the European order that Russia is attempting.

Under President Joe Biden, America has provided the lion's share of military aid to Ukraine and the leadership to muster the West's response. If the war shows the value

of American protection, Trumpian populism may prove how fast it can be lost.

European governments are thus in the grip of three fears: of attack by Russia, of economic evisceration by China and of abandonment by America. France offers a clear answer to all three: European "strategic autonomy". Speaking in Bratislava in May, the French president, Emmanuel Macron, posed the unspeakable question: "Will [the American] administration always be the same? Nobody can tell, and we cannot delegate our collective security and our stability to the choices of American voters." Europeans, he argued, needed to be able to defend themselves, not just militarily but also economically.

Critics regard such calls as an attempt to sever Europe's bonds with America. But what if America cuts Europe loose? French officials think a transatlantic separation is already under way, as America turns inward and its foreign policy focuses on China. Mr Trump is merely the most brutal expression of the trend. On trade, they note, Mr Biden is scarcely less protectionist than

Mr Trump. Amid a European outcry, he told Mr Macron he "didn't know" the vast green subsidies in the Inflation Reduction Act would threaten Europe's industry.

America's priority, their argument goes, is its contest with China. Sooner or later, even Mr Biden will want to do less in Europe to focus on Asia. It could be sooner if a crisis erupts over Taiwan. The difference between future Democratic or Republican presidents may be only the speed and extent to which America pivots away from Europe. Most European governments do not fully share this analysis—America's military commitment to Europe is rising—yet few discount it.

Can Europe fend for itself if abandoned? In theory, yes. European NATO allies are industrialised and count nearly 600m people. They have nearly 2m people under arms and decades of experience operating together. Two of them, Britain and France, have nuclear weapons and permanent seats on the UN Security Council.

Granted, NATO is backed by America's might, which accounts for two-thirds of total NATO military spending. Only ten of America's 30 allies will meet the defence-spending target of 2% of GDP this year. Even this ought to be enough to fend off Russia. The Stockholm International Peace Research Institute, a think-tank, reckons European allies collectively spent \$333bn in 2022. This compares with perhaps \$86bn by Russia. Doubling or tripling this sum to account for its greater purchasing power

► power still leaves a large gap. But Europe does not act collectively. Its spending is scattered among dozens of often underpowered armies, air forces and navies. Much of it goes to coddled national industries.

Fundamentally, Europeans suffer from "vassalisation", argues a recent paper for the European Council on Foreign Relations (ECFR), a think-tank. Europeans do not agree on priorities. Nor do they trust each other enough to decide on what greater autonomy should entail. Europe's two most important institutions—NATO and the EU—do not fully mesh. Important allies such as Britain, Norway and Turkey are outside the EU. Collective defence is NATO's business, directed by America. Economic policy is handled mainly by the EU, which was created as the antithesis of a military alliance. France, in particular, has sought to use it as a counterweight to America.

Going it alone?

Were America to forsake Ukraine, despite promises by a NATO summit on July 11th to support it "for as long as it takes", would Europeans keep up the war effort? Some diplomats say they would; many doubt it. Europe's arsenals are smaller and more depleted than America's. Its defence industry suffers similar ills to America's—just-in-time production at peacetime levels—compounded by a lack of scale. Paradoxically, the war in Ukraine is making things worse, says Nathalie Tocci of Istituto Affari Internazionali, an Italian think-tank, as countries rush to buy off-the-shelf kit from America, Israel, South Korea and others.

France shuns the German-led Sky Shield project to develop air defences because it relies on non-European suppliers. German officials retort that France treats strategic autonomy as a way to use German money to support French firms. Still, there is some progress. The EU is offering incentives for co-operative arms projects, is using common funds to pay for military materiel and is pushing firms to supply Ukraine with 1m artillery rounds in a year.

Were Mr Trump to pull America out of NATO altogether, Europeans would try to take over its machinery rather than turn the EU into a military alliance, says Camille Grand of the ECFR, a former assistant secretary-general of NATO. Europeans would have to plug gaps filled by America's 85,000-odd troops in Europe, among them headquarters staff and 22 combat battalions (roughly as many as Britain has in total). They would also have to procure the expensive "enablers"—such as air transport and refuelling, space assets and ISR (intelligence, surveillance and reconnaissance)—that America supplies in abundance. All this might take Europe a decade to build up, believes Mr Grand.

Leadership would be a problem. Multi-national decision-making is difficult at the

best of times, all the more so on military matters. The Europeans lack a leader to replace the American hegemon. Germany is steeped in pacifism despite its promise to boost its forces. Britain is semi-detached from European affairs, owing to Brexit. France aspires to lead a stronger Europe but is widely distrusted.

Then there is nuclear deterrence. Russia has nearly 6,000 nuclear warheads; Britain and France about 200-300 each. Mr Grand reckons that, without America, European nuclear powers will have to rethink their stockpiles, doctrine and collaboration with remaining allies.

As for the economic dimension of autonomy, the EU has made marked progress. In Brussels it is sometimes called "open strategic autonomy", to signal openness to the world. Europeans are gradually pooling more economic policymaking within the EU. And they have good reason to do so, after a succession of shocks, from the shortage of vaccines during the pandemic to Russia's invasion.

The most striking success has been Europe's shift away from Russia's oil and gas. The transition has been helped by alternative supplies from America and elsewhere, and the EU's internal market for energy, which allows gas and electricity to be traded across borders. Much of the EU's new economic arsenal is directed at China. A forthcoming "anti-coercion" instrument allows trade retaliation to prevent a repeat of China's bullying of Lithuania after it tilted towards Taiwan. New rules tighten the screening of investments by foreigners. National and EU subsidies, like America's, seek to boost semiconductor production and green energy. Europeans are working with America to diversify supplies of critical minerals and restrict outbound investment in sensitive technology.

For Mr Macron such moves are the "building blocks" of strategic autonomy. "Today the ideological battle is won," he believes. Yet two models vie for the soul of Europe, and of Mr Macron himself. The good version holds that Europe should for-

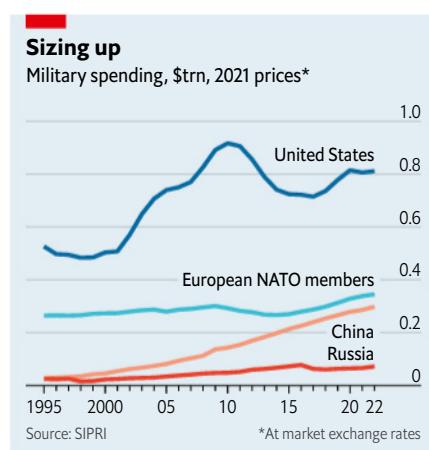
ify itself to become more capable of defending common values and interests with America. The bad one, which is in the French Gaullist tradition, seeks to pull Europe away from America and create a rival geopolitical pole.

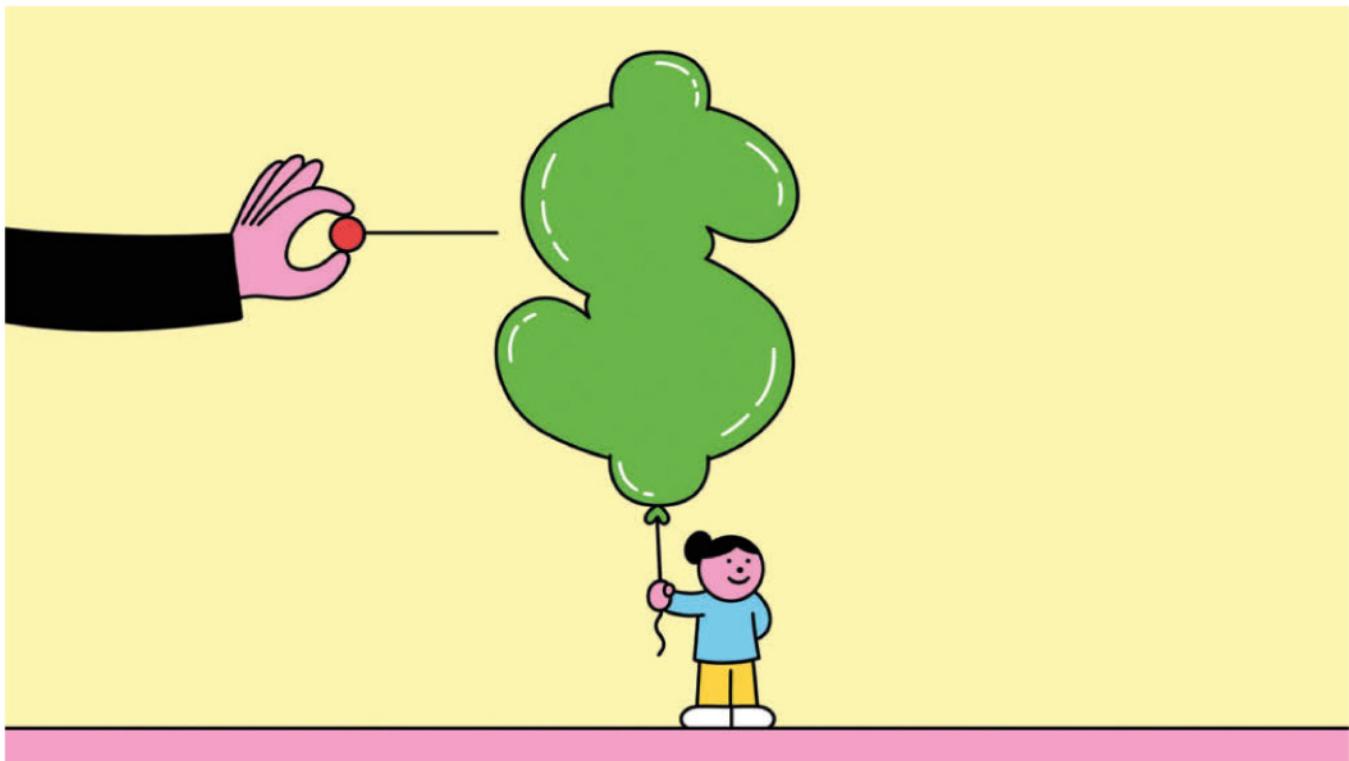
In Bratislava Mr Macron's better angels prevailed as he argued for Europe to take up more of the defence burden. Making a u-turn, he backed Ukraine's membership of NATO and the EU's eastward enlargement. Yet a month earlier, after visiting Beijing, he displayed a worse nature. Europe, he said, must not become tangled in Sino-American rivalry and a crisis over Taiwan "that is not ours". Mr Macron has back-pedalled since, and sent a warship through the Taiwan Strait. He nevertheless outraged many European leaders by weakening an undeclared pact: in return for America's help to repel Russia, Europe should support its ally to deter China.

The election of Mr Trump would be a "catastrophe foretold", says Constanze Stelzenmüller of the Brookings Institution, an American think-tank. Few European leaders have a good answer to it. Many ignore it; others pray Mr Trump would prove less destructive than feared, perhaps restrained by Congress and the Pentagon. Some talk of wooing his more moderate acolytes. Sophia Besch of the Carnegie Endowment for International Peace, another think-tank, predicts many would scramble to "bilateralise" relations with him. They might resort to flattery, such as Poland's short-lived plan to rename a base "Fort Trump", or buy more American weapons and other things to offer him a "good deal".

One question is the extent to which the election of Mr Trump might boost mini-Trumps on Europe's hard right. Opinion polls show that Alternative for Germany is level-pegging with the Social Democratic Party of Germany's chancellor, Olaf Scholz. In France, meanwhile, there are growing worries that Marine Le Pen, leader of the National Rally, could become president in 2027. Both parties are close to Russia and criticise Western support for Ukraine. Just as Mr Biden proved that American power can unite Europeans, Mr Trump might yet display its power to divide them.

NATO's purpose, it is often said, is "to keep the Soviet Union out, the Americans in, and the Germans down". Perhaps strategic autonomy can do something similar. If it generates more military capabilities, it will let Europe take greater charge of its security as America turns to Asia—and provide a hedge should the great ally turn hostile. Indeed, it may be the best way to rebuff Trumpian charges of freeloading, and demonstrate Europe's worth to America. Done right, it might just help to keep Russia out, the Americans in, China away—and NATO together. ■



**Market power**

How bad is being big?

In a few sectors, corporate concentration is a problem. In most, it needn't be

GOVERNMENTS ARE at war with big business. In June Joe Biden, America's president, spoke for many politicians the world over when he blamed it for greed-fuelled price rises, sluggish wage growth, forgone innovation and fragile supply chains. His trustbusters at the Federal Trade Commission (FTC) have been going after large deals merely because they are large—or that is how it feels. Courtroom defeats do not dampen the agency's zeal. The latest came on July 11th, when a judge rejected its request to block Microsoft's \$69bn acquisition of Activision Blizzard, a developer of video games. The FTC said it would appeal against the ruling. The EU's competition authorities are making noises about breaking up Google. Last year Britain's Competition and Markets Authority (CMA) derailed the \$40bn purchase by Nvidia, a semiconductor giant, of Arm, a chip designer.

Trustbusters invoke three justifications for their renewed vigour: greater market concentration, reduced churn among the world's biggest firms and exploding profits. On the surface all three point to rising corporate power. Look closely, though, and

the trends may be the result of benign factors such as technological progress and globalisation. In certain local markets, greater concentration may, paradoxically, have led to more competition, not less. And the covid-19 pandemic may have planted the seeds of a further competitive revival. Some big firms, it is true, have been collecting rents, including in big sectors such as health care. But trustbusters' strategy—to reflexively question any deal involving a big firm—is wrongheaded.

That concentration has been rising is not in question. Across America's economy it is higher today than at any point in at least the past century (see chart 1 on next

page). Out of some 900 sectors in America tracked by *The Economist*, the number where the four biggest firms have a market share above two-thirds grew from 65 in 1997 to 97 by 2017. In Europe, where the data are less comprehensive, concentration has been increasing for at least 20 years. Using data on western Europe's largest economies—Britain, Germany, France, Italy and Spain—Gabor Koltay, Szabolcs Lorincz and Tommaso Valletti, three economists, find that the market share of the four largest firms grew in 73% of some 700-odd industries from 1998 to 2019. The average increase was about seven percentage points. The proportion of industries where the top four firms' share exceeded half increased from 16% to 27%. Britain and France saw the biggest jumps.

At the same time, incumbent firms look more entrenched. In Britain, the average number of firms that stick in the top ten of their industries by market share three years later was five before the financial crisis. It is now closer to eight. Thomas Philippon of New York University's Stern School of Business finds a similar reduction in churn among top American firms.

Most telling, firms are raking in higher profits. *The Economist* has come up with a crude estimate of "excess" profits for the world's 3,000 largest listed companies by market value (excluding financial firms). Using reported figures from Bloomberg we calculate a firm's return on invested capital above a hurdle rate of 10% (excluding goodwill and treating research and develop-

→ Also in this section

51 Britain's mercurial trustbuster

51 The WFH showdown

52 AI conquers pharma

53 Bartleby: CEO whisperers

54 Schumpeter: Dimon dreams

ment, R&D, as an asset with a ten-year lifespan). This is the rate of return one might expect in a competitive market. In the past year excess profits reached \$4trn, or nearly 4% of global GDP (see chart 2). They are highly concentrated in the West, especially America. American firms collect 41% of the total, with European ones taking 21%. The energy, technology and, in America, health-care industries stand out as excess-profit pools relative to their size.

All this looks troubling. And in certain sectors, it is. Four decades ago more than eight in ten hospitals were non-profits with a single location. Now more than six in ten are owned by sprawling for-profit hospital chains or academic networks such as Steward Health Care or Indiana University Health. At first this was a perfectly healthy process of big and efficient chains expanding across America. Two decades—and nearly 2,000 hospital mergers—later, things look ropey. An analysis from 2019 by Martin Gaynor of Carnegie Mellon University and colleagues suggests that many such mergers have tended to raise prices without improving quality.

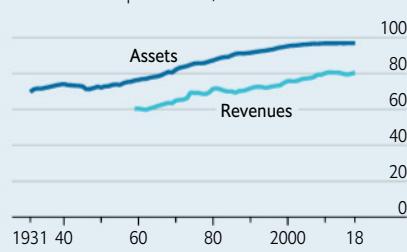
Still, high concentration, low churn and rich profits need not necessarily make consumers worse off. That concentration has been rising for 100 years, during which life has improved for virtually everyone, is the first clue that it may be the result of benign forces. Increases in industry concentration in America over the past century are correlated with greater technological intensity, higher fixed costs and higher output growth, according to Yueran Ma of the University of Chicago Booth School of Business and colleagues. None of these seems particularly nefarious.

That concentration has also risen in Europe, where competition authorities have not been as sleepy as in America, likewise suggests that powerful structural forces are at play. John Van Reenen of the London School of Economics points to technology and globalisation. The internet has reduced the cost of shopping around, even as software and other technology

The corporate one-percenters

United States, top 1% of companies by assets or revenues

Share of all companies' total, %



Source: "100 years of rising corporate concentration", by S. Kwon, Y. Ma and K. Zimmermann, Leibniz Institute for Financial Research SAFE, September 2022

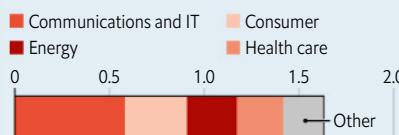
Where is the money?

Excess profits* of world's biggest companies†
Latest 12 months at July 7th 2023, \$trn

World



United States



*Net profit above 10% hurdle rate, excluding goodwill

†Top 3,000 non-financial companies by market capitalisation

Sources: Bloomberg; The Economist

allow the best firms to scale up their operations around the world. Figures collected by McKinsey, a consultancy, show that the return on invested capital for a firm in the 75th percentile by this measure is 20 percentage points higher than for a median firm. "There are just huge economies of scale with software," says Sterling Auty of MoffettNathanson, a research firm.

Local anti-heroes

Moreover, higher concentration at the country level may increase competition locally. Service industries in particular, which make up about half the 900-odd sectors in America's census, are better examined at the local level. Fiona Scott Morton, a former deputy assistant attorney-general now at Yale School of Management, uses the example of coffee shops. With just one café in each neighbourhood, the national market would be hyperfragmented. But every consumer would face a local monopoly. "If I'm looking for a coffee, I'm not going to drive three hours," she says.

Academics debate what exactly has happened to concentration in local markets. What seems increasingly clear is that the best firms have expanded into more and more of them. Walmarts, with their "everyday low prices", cater to shoppers across America, thanks to the retail behemoth's unrivalled logistics operation. Cheesecake Factory uses a laboratory in California to taste-test dishes that it quickly rolls out to its 200 or so locations around America. A recent paper titled "The Industrial Revolution in Services", by Esteban Rossi-Hansberg at the University of Chicago and his co-author, shows that the geographic expansion of big firms increases competition for local incumbents, whose local market share falls.

As for low churn, it is not so bad if the incumbents keep innovating—which is

what many are doing. Despite central banks pushing interest rates up at the fastest pace in decades in an attempt to quash inflation, American private investment in the first quarter of 2023 was 17.2% of GDP, similar to pre-pandemic highs. Many corporate behemoths are ploughing billions into innovation, including in areas that most worry trustbusters, such as technology. American tech's big five—Alphabet, Amazon, Apple, Meta and Microsoft—collectively invested around \$200bn in R&D last year, equivalent to a quarter of America's total in 2021. Microsoft and Alphabet are at the forefront of the AI race.

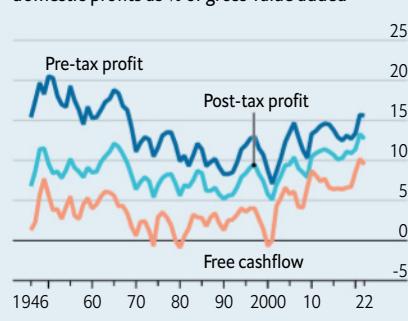
Profits have, it is true, been higher in America since the financial crisis of 2007-09 than in previous decades, especially if you consider free cashflows, which account for the changing way companies depreciate assets (see chart 3). But they look somewhat less unusual if you adjust for lower tax rates and firms' larger global footprint. And they may have peaked: analysts estimate that earnings for the S&P 500 index of American blue chips dipped in the three months to June, year on year, for the third quarter in a row.

Most heartening, far from being subdued, dynamism may be on the rise. John Haltiwanger of the University of Maryland notes that business formation, which had been "quite anaemic" since the mid-2010s, has surged since the pandemic (see chart 4 on next page). In the past few years many more new firms have been created than old ones have been shut down. Whether these startups will dislodge incumbents is still unclear. But venture-capital investment suggests investors see scope for healthy returns. Although it is half what it was at its frothy peak of over \$130bn in the fourth quarter of 2021, that has only brought it back to the levels of 2019 and 2020.

One hypothesis is that the remote-friendliness of the post-covid economy reduces startup costs. Young firms no longer need to rent a big office. They can hire from a less local talent pool. By our rough count, around 125 of the Census Bureau's 900 or so

Fattish pockets

United States, non-financial companies, domestic profits as % of gross value added



Sources: BEA; Federal Reserve; The Economist



► industries benefit from the growth of e-commerce or can provide their services remotely. Consumers' growing comfort with such options could inspire more new businesses to set up shop. Mr Haltiwanger already observes a small shift in the size distribution of firms towards smaller fry.

Concentration may also be levelling off as a result of subdued dealmaking, especially in tech. The big five tech firms' share of all acquisitions by listed firms in America has fallen from nearly 1% in the 2010s to less than 0.5% since the start of Mr Biden's tenure. Some of the slowdown in mergers and acquisitions (M&A) is caused by the rising cost of capital and risk of recession. Renewed antitrust zeal probably plays a role, too. On June 27th American authorities updated their merger guidelines for the first time in 45 years, requiring firms to report far more details on deals worth over \$10m, half the average deal size in 2022.

The biggest transactions are almost sure to be subject to a deep probe, which can add months to a filing process that now takes weeks. Regulators everywhere are throwing "sand in the gears of the M&A machine", sighs a lawyer. "The FTC has stopped being discerning," says another. Britain's CMA "has probably overreached", echoes a British one (see box).

Zealous trustbusting carries its own risks, though. It may distract attention from more immediate threats to economic dynamism from bureaucratic restraints on land use or occupational licensing. Acquisitions can be useful for preserving the value of startups when weak markets make it hard for founders to raise capital. And some big deals may benefit consumers, as when a biotech startup joins forces with an established drugmaker to test and distribute a new therapy. Competition authorities were probably asleep for too long. Now they may be getting up too quickly. ■

Antitrust in Britain

An extra life

The world's most zealous regulator has second thoughts

MERGING COMPANIES have long seen Britain's Competition and Markets Authority as something of an end-of-level boss. For two years running the CMA has blocked more deals than any other regulator, scotching ones like Meta's acquisition of Giphy, a blameless meme-generator. This year it has been busy again, in April blocking Microsoft's \$69bn acquisition of Activision Blizzard, a video-game maker, which had looked on track for approval elsewhere.

Is the fearsome trustbuster preparing to fold? On July 11th an American court cleared the Microsoft-Activision transaction, leaving Britain as the holdout. Within hours the CMA said it was prepared to examine a "modified" version of the transaction. Activision's share price shot up: investors think it is game on.

Some see the CMA's recent activism as a show of post-Brexit independence. A blander explanation is that companies are unused to British antitrust regulators (who before Brexit took a back seat to Brussels), increasing the risk of confusion and surprises. Tech firms find the CMA's processes rigid, with little scope for negotiation. Microsoft was blindsided by its April ruling on Activision.

Another reason for Britain's new vim lies in America. The Federal Trade Commission (FTC) used to approve more vertical mergers, like Microsoft and Activision, with strings attached. But these conditions proved hard to enforce,

so regulators now prefer to block vertical deals outright. In America, where the legal basis for doing so is thin, courts overturn such decisions. In Britain, where trustbusters have wide discretion, the CMA's veto stands. Britain thus finds itself in lonely opposition to global deals.

That is uncomfortable, especially when the parties are not British. In May Britain's government urged its regulators to "understand their wider responsibilities for economic growth". As the FTC continues its unsuccessful opposition to any big deal, the responsibility to compromise increasingly falls elsewhere.



Drop the deal, or else

Work from home

The WFH showdown

The fight over remote working goes global

REMOTE WORK has a target on its back. Banking CEOs, like Jamie Dimon of JPMorgan Chase, are intent on making working from home a relic of the pandemic. For staff at America's biggest lender and other Wall Street stalwarts like Goldman Sachs, five-day weeks are back for good. Big tech firms are also cracking the whip. Google's return-to-work mandate threatens to track attendance and factor it in performance reviews. Meta and Lyft want staff back at their desks, demanding at least three days of the week in the office by the

end of the summer. With bosses clamping down on the practice, the pandemic-era days of mutual agreement on the desirability of remote work seem to be over.

Fresh data from a global survey shows how far this consensus has broken down. Across the world, employers' plans for remote work fall short of what employees want, according to wfh Research, a group that includes Stanford University and Ifo Institute, a German think-tank, which tracks the sentiment of full-time workers with at least a secondary education in 34 countries. Bosses fear that fully remote work dents productivity, a concern reinforced by recent research. A study of data-entry workers in India found those toiling from home to be 18% less productive than office-frequenting peers; another found that employees at a big Asian IT firm were 19% less productive at home than they had been in the office. Communication records of nearly 62,000 employees at Microsoft ►

► showed that professional networks within the company ossified and became more isolated as remote work took hold.

Yet all the pressure from above has done little to dent employees' appetite for remote working. They want to be able to work more days from the comfort of their living rooms than they currently do, according to WFH Research. On average, workers across the world want two days at home, a full day more than they get. In English-speaking countries, which have the highest levels of home-working, there is an appetite for more. And the trend is spreading to places where remote work has been less common (see chart). Japanese and South Korean employees, some of the most office-bound anywhere, want more than a quarter of the week to themselves. Europeans and Latin Americans crave a third and half, respectively.

Desire for more remote work is not surprising. The time saved not having to battle public transport or congested roads allows for a better work-life balance. On average, 72 minutes each day is saved when working remotely, which adds up to two weeks over a year, according to a paper by Nicholas Bloom of Stanford, who helps run WFH Research, and colleagues. Employees also report that they feel most engaged when working remotely, according to a poll last year by Gallup. On average globally, workers value all these benefits to the tune of an 8% pay rise, implying that some would take a pay cut to keep the privileges.

Until recently, as firms desperately sought workers amid the post-pandemic hiring bonanza, employees' demands and employers' plans seemed to be converging in America, the best-studied market. This convergence is tailing off. At the same time, the pandemic has entrenched work-from-home patterns. At the moment, a third of workers surveyed by WFH Research have a hybrid or fully remote arrangement. Those practices will not be easy to unwind.

It is no coincidence that the crackdown on remote work is happening as some industries cool. Job cuts across Wall Street and Silicon Valley have handed power back to businesses. However, even in tech and finance some employees are standing their ground. In May Amazon said that 300 employees staged walkouts over the e-empire's return-to-work policies (the organisers said it was closer to 2,000).

Other firms are quietly adapting with the times. HSBC, a British bank, is planning to relocate from its 45-storey tower in Canary Wharf to smaller digs in the City of London. Deloitte and KPMG, two professional-services giants, want to reduce their office footprint in favour of more remote work. The gap between the two sides of the work-from-home battle may yet narrow. The question is whether the bosses or the bossed will yield the most. ■

Boss ate my home work

Full-time days working from home

Latest week average, April-June 2023*

● Actual ● Planned by employer ● Desired by employees



United States, average days per week working from home†



*Surveys of over 35,000 workers in 34 countries

†From surveys of over 100,000 workers able to work from home

Health care

Wonder drugs

Big pharma is warming to the potential of artificial intelligence

P AUL HUDSON, boss of Sanofi, is brandishing an iPhone. He is keen to show off the French drugmaker's new artificial-intelligence (AI) app, plai. It draws on more than 1bn data points to provide "snackable" information, from warnings about low stocks of a drug to questions for a meeting with an ad agency or suggestions to set up clinical-trial sites that could expedite drug approvals. Like Netflix recommendations, plai delivers "nudges", as Mr Hudson calls them, that are useful at that moment in time. He jokes that plai broke even in about four hours, and says the cost is "peanuts" compared with the \$300m-400m that big consultancies charge for a project to curate a big company's data. One in ten of Sanofi's 80,000 staff uses it every day.

AI is not new in drugmaking. Biotech firms have been tinkering with it for years. Now interest from big pharma is growing. Last year Emma Walmsley, chief executive of GSK, said it could improve the productivity of research and development, the industry's most profound challenge. Moderna recently described itself as "laser-focused" on AI. Sanofi is "all in". Morgan Stanley, an investment bank, reckons that within a decade the pharmaceutical industry may be spending \$50bn a year on AI to speed up drug development.

Most of the buzz revolves around AIs trained on biological data that could improve the hit-and-miss process of drug discovery. Drugs can take a decade to emerge, cost billions of dollars and succeed only 10% of the time. Even a small improvement in speed and efficiency would be hugely valuable. But scientists have struggled to tame biological big data with conventional statistical tools. Machine learning makes it possible to sift through piles of information, from clinical patient data and genome sequences to images of body scans. Last year DeepMind, an AI lab that is part of Google, made a breakthrough using its AlphaFold system to predict the structure of almost all proteins, which may one day help identify which molecules have therapeutic potential.

Though only around a dozen drugs in development have so far involved the use of AI, the list may grow rapidly—especially for simple molecules with properties that are relatively easy to predict. In the case of these more straightforward chemistries, the future of medicine is looking ever more like a computational problem. ►

► Jim Weatherall, who oversees data science and AI at AstraZeneca, says the technology is used in 70% of the British firm's small molecules in development. Using a technique called "reinforcement learning", AstraZeneca's AI is constantly tweaking its molecular suggestions and playing out how a tweaked molecule might react. Ali Mortazavi, boss of E-therapeutics, a biotech startup in London, says that knowing the sequences of all the genes in, say, the liver, lets his firm use software to design RNA molecules (which are more complex but, owing to their links to DNA, predict-

ably so). AI algorithms then predict the activity of the molecules, which can stop the function of any disease-causing gene.

Euan Ashley of Stanford University points to another AI application. "Knowledge graphs" are a kind of database that stores data about genes, proteins, diseases and drugs, as well as the biological pathways that connect them. They, too, can help identify new targets for drug development. "Generative" AI, meanwhile, is being trialled for suggesting entirely new chemical and biological structures for testing, just as ChatGPT can ingest text on the inter-

net and spit out a new poem or essay. Beyond drug discovery, AIs like plai could help with the perennial problem of efficiency in a heavily regulated and labour-intensive sector.

Some pharma bosses worry that generative AIs' tendency to make stuff up could send researchers down blind alleys. More apocalyptically, Mr Hudson says half of the pharma CEOs he talks to about AI fear, like many people, the existential threats it poses (see Science & technology section). For his part, he foresees the next industrial revolution, not a robot uprising. ■

Bartleby CEO whisperers

Executive coaching is useful therapy that you can expense

IN A DOCUMENTARY from 2004, "Metallica: Some Kind of Monster", members of the titular heavy-metal band hire a "performance-enhancement coach" to help them resolve their disagreements. The musicians cannot stand him and end up bonding over their decision to get rid of him. When an ex-banker, after years of working at Lehman Brothers and UBS, hired a coach to discuss his next steps, the nugget of wisdom he acquired in the course of half a dozen 40-minute sessions setting him back almost \$8,000 was that he should seek a role where he would be "paid for his experience".

It is tempting to paint executive coaching as one more status symbol inflating a sense of high-powered managers' already-ample sense of self-importance. Yet the practice—which combines management advice with therapy—does not have to be an expensive exercise in platitudes. Few executives remain static in their careers, and many need guidance at moments of transition, when relying on an internal monologue is not enough. The covid-19 pandemic, which heightened the anxiety felt by high-performers, increased the need for skilled coaching. A study from 2019 by Angel Advisors, a professional training service, found that coaching in America is now a \$2bn industry—large for what might seem like a niche business. The existence of such demand strongly suggests that professional grooming has its uses.

Many executives, especially CEOs, find it difficult to discuss the challenges they face. Hierarchy makes it tricky to share problems with employees as it can undermine the boss's authority. At the same time, confidentiality forbids executives from discussing company problems with random outsiders. Robert Pickering, former boss of Cazenove, an

investment bank since swallowed by JPMorgan Chase, wrote about his experience in his memoir, "Blue Blood". "Running a firm is largely command and control, and there are very few insiders with whom you can share gripes and frustrations," he explains. Working with a coach helped him develop coping strategies, as well as command the boardroom.

Coaches can understand the executive mindset better if they were once executives themselves. Herminia Ibarra of London Business School notes that many professionals with industry expertise and people skills eventually tire of operational roles. Some find coaching to be a meaningful second act. Take Ana Lueneburger, who left the corporate world to coach company founders and the c-suite. Her approach, outlined in "Unfiltered: The CEO and the Coach", a book she co-wrote with one of her clients, focuses on maximising strengths rather than fixing weaknesses.

Your columnist, a guest Bartleby, decided to consider her own game plan by going to a private club in Mayfair for an ad hoc coaching session with Ms Lueneburg-

er. Preparation consisted of filling extensive questionnaires, including the Hogan Leadership Forecast (a psychometric assessment of "derailers and personality-based performance risks", since you ask).

The coach customarily asks the client to describe impediments to happiness and development (from difficult peer relationships and a tough inner critic to withered motivation and drive). Given the time constraints, Bartleby discussed a personal issue which troubles her at work. Two hours sipping tea and sparkling water passed in a flash and then the session was over.

Coaching is not a scientific operation, jargon du jour notwithstanding. But if you strip away all the talk of circling back to 360-degree change from your comfort zone, you do end up with an intuitive, collaborative process, the success of which depends on chemistry between the coach and the client. Ms Lueneburger neither appealed to the siren song of self-care nor merely told Bartleby what she wanted to hear. Instead she shifted the angle of the problem, which is not easy to do unaided for most clients themselves, many of whom operate on autopilot at work and elsewhere.

According to the VIA character questionnaire (filled out alongside the Hogan), Bartleby scores poorly in leadership but highly in speaking the truth. With these new credentials, her message is: if you are a member of a c-suite, get yourself a coach. It does not have to revolve around a crisis or a fork in your career path. At its best, it can illuminate snags executives face. The worst that can happen is spending time with a well-meaning, and typically intelligent, interlocutor, who can help consolidate common sense. If you can put the fee on your expense account, what's not to like?



Schumpeter | Life after JPMorgan

The last, unfulfilled dream of Jamie Dimon



JAMIE DIMON is restless. The boss of JPMorgan Chase has just returned from a long July 4th holiday weekend with his large and growing family: his wife, three daughters, a gaggle of grandchildren. He has little patience for the faff that accompanies a filmed interview—the reason that he, his handlers, a film crew, your columnist and *The Economist's* editor-in-chief have gathered at the New York headquarters of America's biggest bank. Mr Dimon does not want to loiter in the hallway for his “walking-in” shot; nor is he going to wait to be properly miked up and seated in his chair before launching into conversation about public policy. “So, should we do this?” he urges.

Doing things is the Dimon way. He is impatient, opportunistic, pragmatic: the type of person to just get on with it. When his 12th-grade calculus teacher left, he taught himself. Fresh out of business school he took a job at American Express, because he wanted to build something rather than merely move money around.

What he has crafted over nearly 18 years at the helm of JPMorgan Chase is the banking equivalent of the Palace of Versailles or the Taj Mahal. It is America's most successful bank—and, with a market capitalisation of \$435bn, by far the most valuable in the world. Under Mr Dimon's stewardship its shareholders have earned a handsome annual return of 10.6%—double that of most other big lenders. Its investment bank ranks in the top three in almost all businesses it cares to compete in. Its commercial bank is the biggest in America. Because it is so large—and because banks in America with more than 10% of all deposits are barred from acquiring more (unless they rescue a failing bank, as JPMorgan did with First Republic in April)—it can grow only slowly.

Not much left to do, then, for a man prone to doing. (A literal construction project, his bank's new headquarters on Park Avenue, probably barely scratches Mr Dimon's itch.) Instead, he has turned his seemingly inexhaustible energies to other problems. He skips over the banking mini-crisis (mostly resolved) or the risk of recession (it could be mild, or maybe not; either way, he worries more about Ukraine and food security in Africa). He is most animated about other topics: social mobility, de-escalating global conflicts and defending capitalism, which he suggests is unfairly maligned. His annual letters to shareholders, once limited to

thoughts on management and banking, now contain more policy ruminations than the typical American political campaign.

He offers solutions for the problems he most wishes America could solve. For social mobility he would expand earned-income tax credits and returns repeatedly to griping about the cost of education. “We need to do a better job with our community colleges,” he argues. “We should be making it cheaper, not more expensive.”

Mr Dimon craves an open dialogue with China, which he does not think America, as by far the more prosperous country, should fear. The Chinese are not “ten feet tall”. They import oil, lack food security, are poorer and have weaker armed forces. “Maybe they have caught up in a couple of areas, but the notion that somehow America has to be that afraid of China: we don't.” He sees the shift towards industrial policy to protect national security as wise. But America must be careful with tools such as export controls. “If it relates to supersonic missiles, I think we should do it. If it relates to holding down the Chinese people, I think we shouldn't do it.”

Despite his early support for the idea of “stakeholder value”, which considers how companies treat their workers, suppliers, the society at large or the environment, he is no woke capitalist. Rather, he is a pragmatist. All chief executives try to have the best products or services, they need great employees and to keep their customers happy, he argues. “This was just humanising business, that we take care of our customers, or employees or crews or whatever.” That doesn't make him anything but a “red-blooded, full-throated, free-enterprise, patriotic American”.

Mr Dimon's interest in public policy, resolve, resources and ambition all point in one direction: political office. Speculation about a presidential run has bubbled up over the years. But it is an idea he quickly shoots down. “I have never really believed I am particularly suited for it,” he says. “There may be common skills... in terms of administration, management, leadership, but those are not uncommon.” Knowing how to navigate political arenas or how to campaign is harder. Mr Dimon thinks switching from business to politics is tricky. “I think it's very hard to do. And in fact, if we just look at history, it's almost impossible.” President Donald Trump was the exception, not the rule. And that is not intended as a compliment. “I would worry about another Trump presidency,” he says. For America to turn inwards and abdicate its position in the world would be a huge mistake.

Dimon is for ever?

If not the leader of the free world, perhaps a cabinet secretary? “Maybe one day that will be on the cards,” Mr Dimon muses. “I love my country. To me, my family comes first. But my country is right next,” he explains. “JPMorgan is down here,” he adds, gesturing lower down. The realist in him probably knows an appointment to the Treasury, the most obvious post, is unlikely. The path from Wall Street to government is not as well-trodden as it used to be. Democrats have long been suspicious of high finance, and Republicans have grown more so under the populist Mr Trump. “JPMorgan is the best contribution I can do,” Mr Dimon insists. “We have 300,000 employees. We take care of them well and we give them opportunities.” A politician couldn't have said it better. ■

Watch film

You can watch our whole conversation with Jamie Dimon at economist.com/dimon-interview



Economic policy

The manufacturing delusion

COLOGNE

Politicians are spending big on industry. They will end up disappointed

INDUSTRY HAS an allure all of its own. "From manufacturing you may expect the two greatest ills of humanity, superstition and slavery, to be healed," wrote Ferdinando Galiani, an Enlightenment thinker. More than 250 years on, governments share his view of factories as a cure for the ills of the age—including climate change, the loss of middle-class jobs, geopolitical strife and weak economic growth—with an enthusiasm and munificence surpassing anything seen in decades.

Nowhere is spending more than America. "Folks, where is it written that [we] can't once again be the manufacturing capital of the world?" Joe Biden, the country's president, has asked. In search of an answer, he has committed around \$1trn, or al-

most 5% of American GDP. In response, the EU has tweaked state-aid rules, so that national governments can splash out. These initiatives follow the example of rising Asian powers. China's "Made in China" strategy aims to turn the country from a big manufacturing player into a dominant

→ Also in this section

59 The fight for death metals

60 Cool prices v hot jobs

60 China's war on the truth

61 Buttonwood: A golden mystery

62 Free exchange: Climate risk

one. India's "Make in India" strategy hopes to boost the industrial share of the economy to 25% of value added by 2025. Emerging markets with bountiful natural resources, including Indonesia and Zimbabwe, are busy banning the export of raw materials as part of attempts to incubate home-grown industries.

In the West the aim is to reverse industrial decline, which is keenly felt by voters. As a share of global economic output, manufacturing has dropped from 19% in 1997 to 16% today, with the fall steepest in rich countries. In China and India industry's share of economic output appears to be roughly where it was three decades ago, but even in these countries it has slipped in recent years (see chart 1 on next page).

Manufacturing boosters make four arguments in favour of attempting to reverse this trend. First, politicians in the West say that factories are a source of solid jobs that produce a bigger and more satisfied middle class. Second, boosters view manufacturing as a driver of innovation and growth. This is urgently needed to fuel the green transition—the third reason—which will be more palatable to electorates if it delivers local jobs. Finally, tensions between America and China have pushed world leaders to reconsider which goods are strategically important, and therefore should be produced closer to home.

Start by considering the type of employment on offer. The notion of a "good manufacturing job" is an old one. During the 20th century, those without a university education could find decent wages, job security, a bit of personal autonomy and career progression in factories. Indeed, just over a decade ago production jobs in America paid a premium of 5% compared with similar service-sector ones, and offered steady hours and generous benefits.

More recently, though, the picture has changed: many good manufacturing jobs no longer exist (see chart 2 on next page). Across the rich world, employment that requires mid-level technical skills (think machine operators) has given way to a mix of high- and low-level jobs, mostly in service sectors (think coders and baristas). Wealthy populations spend more of their income on services; industrial demand is increasingly met by emerging markets. Whether in Detroit or Dortmund the consequences are obvious and, by now, familiar. At first glance, those who decry the loss of manufacturing jobs have a point. Surely it is worth paying to get them back?

There is a snag. It is far from clear such jobs can be brought back—no matter how much governments spend. For a start, the manufacturing wage premium has fallen sharply. Production workers' wages in America now lag behind those of similar service-sector workers by 5%. Moreover, ➤

► the sort of high-tech factories that America and Europe are attempting to attract are highly automated, meaning they are no longer a significant source of employment for people with few qualifications.

Ford's revamped electric-vehicle (EV) plant in Cologne, located on the banks of the Rhine in Germany's industrial heartland, is one such example. The chassis and bodies of vehicles are coated in chemicals to prepare for painting and to prevent corrosion. This happens across multiple storeys; the number of workers involved in the work on site is precisely zero (two keep tabs remotely). Shiny yellow assembly robots further down the production line are sufficiently advanced as to be able to mostly monitor themselves. Although workers are required for assembly—about as many as for traditional petrol-powered vehicles—the activity requires a lot more training. This matches the national picture: according to a study by Wolfgang Dauth of the Institute for Employment Research and co-authors, industrial robots have made available work more complex.

Farming factories

Meanwhile, cutting-edge industry looks more like the service sector. According to the IMF, manufacturing-associated services have grown as a share of global output in recent decades. The assembly of a gadget is not where the sort of money that leads to high-paying jobs is made. Motion sensors built by Bosch are advanced products. But the German technology firm also offers software and services to go with them, such as round-the-clock monitoring of goods at which the sensors are pointed. The design of these services, tailoring them to the needs of customers, servicing the gizmos—all are the sorts of things that are increasingly important to modern manufacturers, and few offer the sort of employment that industry used to provide.

What about industry's role as a source of innovation and economic growth? In developing countries, manufacturing draws workers from agriculture, a relatively un-



productive form of employment. As a result of the reallocation of labour, output rises. Yet as supply chains have become more advanced, this path has become more difficult to follow. Making an iPhone involves a process of mind-boggling complexity. Despite the efforts of local officials, and strong geopolitical incentives for Apple to move away from China, India has struggled to become anything other than a destination for the device's final assembly.

Economic historians are also increasingly questioning whether state support for manufacturing did, in fact, play as decisive role in the economic development of East Asia and the West as is commonly assumed. At the very least, productivity growth in services and the removal of protectionism was also crucial. Even if industrial policy was perfectly designed by a clear-sighted government, which used tax and subsidies to shift labour to industries with the greatest economies of scale, it would only bring a one-off 1-3% boost to GDP, according to a paper by Dominick Bartelme of the University of Michigan and co-authors. Indeed, in recent decades there has been next to no relationship between economic growth and manufacturing's share of the economy among countries in the OECD (see chart 3).

The oft-lauded superior productivity growth of manufacturing—versus services as well as agriculture—comes with caveats. Economists have found that financial, IT and legal services can boost productivity elsewhere, including in industry. According to the IMF, the gap between manufacturing and services productivity growth has shrunk in many countries since the turn of the millennium. In China and India its direction has flipped, with services productivity rising faster. Moreover, services are a broad church, ranging from teaching to tech. The latter boasts extremely fast productivity growth, which may soon be propelled further by artificial intelligence.

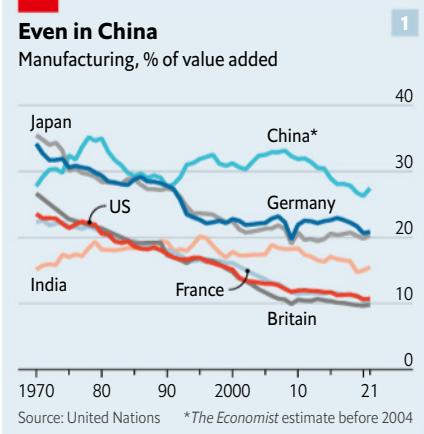
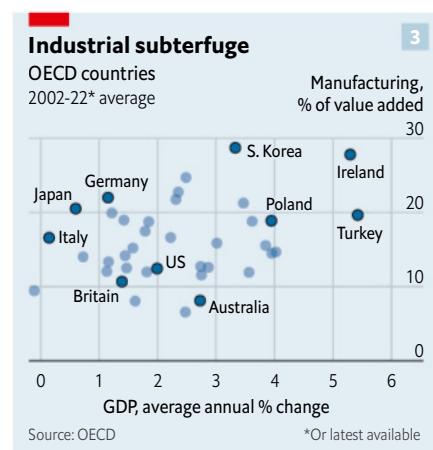
Industry's greater capacity for innovation also comes with something of a catch. "Measuring innovation spending is easier

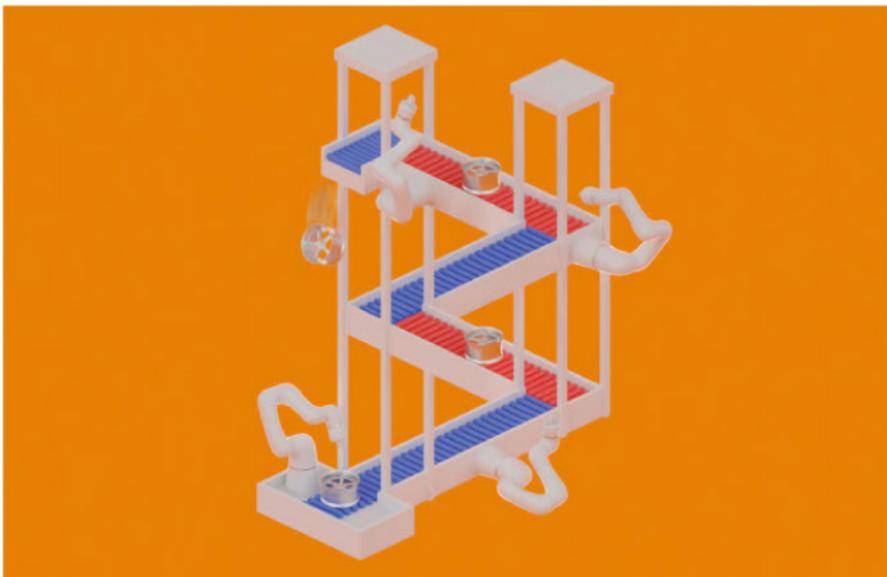
in manufacturing firms, [which tend to] have dedicated research-and-development (R&D) departments," notes Paul Hünermund of the Copenhagen Business School. State spending on R&D is therefore often directed at industry, he explains, even though services may be more innovative than typical measures suggest.

The strongest argument for manufacturing's importance to innovation comes from economists who point out that lots of tech progress happens in places where industry and services co-exist. Gary Pisano and Willy Shih, both of Harvard Business School, stress the importance of learning-by-producing in industries such as high-tech chipmaking. The idea has been embraced by politicians, including in America, China and Germany. Yet even here evidence is mixed. In 2001 Taiwan eased an offshoring ban, resulting in some production moving to China. Academics who studied the consequences found that innovation in the affected goods did decrease, as the co-existence thesis suggests. It was, though, balanced by a rise in innovation in other goods and tech, since R&D resources were freed up. The result was specialisation, not lower overall innovation.

Another case for spending state cash on industry—particularly the green kind—is that the world will soon need more physical goods if it is to reach net-zero emissions. The investment required for the green transition is indeed staggering: the entire capital stock that depends on fossil fuels will have to be replaced. This includes aeroplanes, heating systems, power plants and vehicles. Electrical grids around the world will need to become more resilient to withstand volatile renewable generation. The International Energy Agency, an official forecaster, estimates the total investment required at around \$4tn (or 4% of present global GDP) a year by 2030.

The extraction and refining of critical minerals is one area where money could be spent wisely. According to the Energy Transitions Commission, a think-tank, sufficient metals have been located to satisfy





▶ green appetites until 2050. Yet expanding supply takes time. And the risks are high: a shift in battery technology to sodium could, for instance, erode demand for lithium. Government investment to increase the supply and refining of metals may help overcome such barriers to investment.

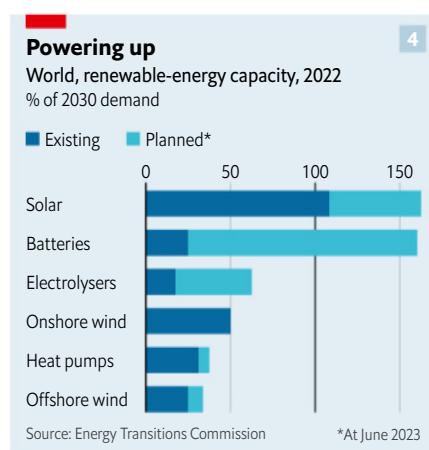
The same is not true for other green equipment, where demand will create supply. Solar panels show how the process will probably play out. The current boom in demand—America installed 47% more in the first quarter of 2023 than in the same quarter last year—has prompted companies in China and elsewhere to boost capacity. The Energy Transitions Commission reckons that existing production of solar panels already exceeds probable demand until 2030, which is also the case for batteries when planned production is included (see chart 4). In other areas, like heat pumps, capacity can be added quickly if desired.

Politicians also hope that spending will create new firms and even industries. Tesla and BYD, the American and Chinese upstarts of the EV age, are the sort of thing they have in mind. Energy-intensive factories in places with abundant, and cheap, renewable energy would also be nice. But from a global perspective, a subsidies race is ultimately zero-sum. The gigafactory attracted to France after the government offered ProLogium, a Taiwanese firm, sweeteners, cannot also be built in the Netherlands. Nor are countries likely to reap benefits that go much beyond the amounts they splash out. Reports suggest that Germany has increased its offer to Intel from roughly €7bn to €10bn in an attempt to entice the chipmaker to build a new fab in Magdeburg, two hours from Berlin. Although the region will benefit through jobs and visitors, Germany is unlikely to be better off, since taxpayers will have funded most of the wider benefits.

Governments have long protected military manufacturing in order to ensure they have plentiful supplies of weapons when required. But the list of goods for which countries do not want to depend on others has grown in recent years—the final argument for spending on industry. Supply disruptions during and after the covid-19 pandemic demonstrated widespread vulnerabilities: a scramble for protective medical equipment bolstered the case for stockpiling; a shortage of usually common chips slowed car production; a lack of gas in Europe after Russia curtailed supply provided an alarming example of how economic dependence could be exploited.

Chinese wall

China has provided another nudge in this direction. On July 3rd the country announced plans to restrict the export of two metals, gallium and germanium, that are needed for optic and semiconductor technologies. Officials say the move is a response to America limiting the export of goods, such as high-tech chips and the machines that produce them. It is also a signal



that China can hit the West where it hurts.

How disruptive are supply restrictions in reality? In the case of some rare “war metals”, perhaps very (see next story). But market economies can adapt to painful limitations. When Russia launched its war in Ukraine last year, continental Europe received 40% of its gas from the invading country. Supplies dwindled in the summer; gas prices shot up four-fold. Politicians feared that entire industries would grind to a halt, disrupting supply chains and leading to a brutal recession.

The actual outcome was more benign. Governments secured supplies elsewhere; firms invested in gas-saving equipment, or found different energy sources; households consumed less. European gas consumption in the seven months to March was almost a fifth lower than in previous years. The economy weakened, but a crash was avoided. It was a similar story when China cut the supply of rare earths to Japan in 2010. Companies found ways to replace these inputs without disrupting production too much. Markets have a natural capacity to overcome shortages, for the simple reason that firms seek to make money.

Other research points to the benefits of diversification. Governments are now keener to boost domestic production in order to reduce their vulnerability to disruptions in foreign supplies. But research published last year by the IMF suggests that greater self-sufficiency is likely to leave countries more vulnerable to future shocks, rather than less. Reshoring would make production dependent on conditions at home, and vulnerable to a big local shock. By comparison, diversified supply chains are more resilient, since they depend on the economic performance of a range of different countries.

Officials designing policy think many of these drawbacks can be avoided. “There is no need to choose. America should go full-bore on its own green industrial policy, and help friends do the same,” says Jennifer Harris, until recently a White House official. To this end, the Biden administration has, since the laws governing its subsidies were passed, interpreted them in a way that makes some handouts available to foreign producers. The EU also wants to enter into partnerships with countries for the supply of critical materials.

Such efforts could reduce the damage done by the manufacturing delusion, which may be the best that can be hoped for given the strength of its grip on politicians the world over. Only once the agenda fails—either because the green transition does not create the jobs or economic growth electorates have been led to expect, or because subsidised production falls short of hopes—will a new generation of leaders begin to question whether industry is the cure for humanity’s greatest ills. ■

War supplies

Mission-critical

A dozen obscure minerals are key to Western armies. China controls their supply

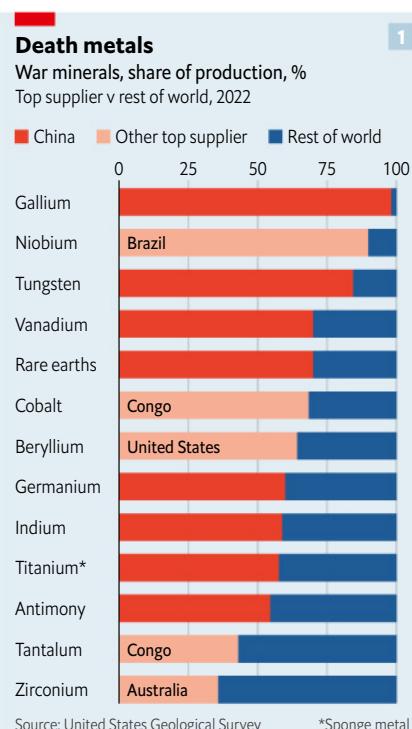
IN 2014 TOM PRICE, a commodities strategist, visited a "funny little building" in China's south-west. It was a warehouse where Fanya, a local trading firm, stored metals including gallium, germanium and indium. The company's "stockpiles" simply sat in boxes on shelves. Yet for some of the minerals, these meagre supplies represented the majority of global stocks. A year later Fanya was closed by China's government, which kept the stash—as well as the reserves and plants to produce more.

Today Western countries wish they, too, could produce some more. On July 4th China announced that it would restrict exports of gallium and germanium, of which it supplied 98% and 60% of global output, respectively, in 2022. Produced in tiny quantities, the metals have little commercial value. They are nevertheless crucial for some military equipment, including lasers, radars and spy satellites. The decision highlights that "critical" minerals are not limited to those which underpin economic growth, such as nickel or lithium. A dozen obscure cousins are also vital for a more basic need: maintaining armies.

The eclectic family of war minerals spans generations. Antimony, known in biblical times as a medicine and cosmetic, is a flame retardant used in cable sheathing and ammunition. Vanadium, recognised for its resistance to fatigue since the 1900s, is blended with aluminium in airframes. Indium, a soft, malleable metal, has been used to coat bearings in aircraft engines since the second world war.

The family grew rapidly in the cold war. Long before cobalt emerged as a battery material, nuclear tests in the 1950s showed that it was resistant to high temperatures. The blue metal was soon added to the alloys that make armour-penetrating munitions. Titanium—as strong as steel but 45% lighter—also emerged as an ideal weapons material. So did tungsten, which has the highest melting point of any metal and is vital for warheads. Tiny amounts of beryllium, blended with copper, produce a brilliant conductor of electricity and heat that resists deformation over time.

The superpowers of other minerals became known decades later, as military technology made further leaps. Gallium goes into the chipsets of communication systems, fibre-optic networks and avionic sensors. Germanium, which is transparent to infrared radiation, is used in night-vi-



sion goggles. Rare earths go into high-performance magnets. Very small additions of niobium—as little as 200 grams a tonne—make steel much tougher. The metal is a frequent flyer in modern jet engines.

Beyond their varied properties, this group of mighty minerals share certain family traits. The first is that they are rarely, if ever, found in pure form naturally. Rather, they are often a by-product of the refining of other metals. Gallium and ger-



manium compounds, for example, are found in trace amounts in zinc ores. Vanadium occurs in more than 60 different minerals. Producing them is therefore costly, technical, energy-intensive and polluting. And because the global market is small, countries that invested in production early can keep costs low, giving them an impregnable advantage.

This explains why the production of war minerals is extremely concentrated (see chart 1). For each of our 13 war materials, the top three exporters account for more than 60% of global supply. China is the biggest producer, by far, for eight of these minerals; Congo, a troubled mining country, tops the ranking for another two; Brazil, a more reliable trading partner, produces nine-tenths of the world's niobium, though most of it is sent to China. Many minerals are impossible to replace in the near term, especially for cutting-edge military uses. When substitution is possible, performance usually suffers.

The combination of concentrated production, complex refining and critical uses means trading happens under the radar. The volumes are too small, and transacting parties too few, for them to be sold on an exchange. Because there are no spot transactions, prices are not reported. Would-be buyers have to rely on estimates. These vary widely. Vanadium is relatively cheap: around \$25 per kilogram. Hafnium might cost you \$1,200 for the same amount.

All this makes building new supply chains much more difficult. America is investing in a purification facility for rare-earth metals in Texas, which is scheduled to come online in 2025. It is nudging Australia and Canada, the only two Western countries with decent reserves, to produce and export more rare metals. It is also doing its best to forge ties with emerging markets in the Indo-Pacific, where there are deposits waiting to be tapped.

Even so, America's army will remain vulnerable to a supply squeeze until at least 2030, reckons Scott Young of Eurasia Group, a consultancy. Its cold-war stockpiles, once sizeable, were liquidated after the fall of the Berlin Wall (see chart 2). Its strategic stash now mostly comprises energy commodities such as oil and gas.

Weaning themselves off China might take decades longer for Europe, Japan and South Korea, which are devoid of deposits and lack America's diplomatic clout. That does not mean their armies will run short of high-tech metals, but they will probably have to buy them from America—at a price already buoyed by their ally's scramble to rebuild stockpiles. Last year's gas drama, prompted by Russia's invasion of Ukraine, amplified Europe's dependence on American fuel. The metals squeeze threatens to make Uncle Sam a still bigger magnet for panicked procurement officials. ■

The US economy

Powell's dilemma

WASHINGTON, DC

Cooler prices but a hot job market

WRITING OUT economic figures to the third decimal place is normally an exercise in spurious precision. But after two years of uncomfortably high inflation, price statistics are studied in minute detail. The unrounded month-on-month increase in America's core inflation (minus volatile food and energy costs) in June was 0.158%, even more pleasing for officials than the 0.2% rounded increase, which itself was the slowest pace in more than two years. However many decimal places, the question remains the same. Is America's inflationary fever finally breaking?

The latest figures brought much good news. Headlines focused on the deceleration in the overall consumer-price index: just a 3% year-on-year rise in June, a sharp slow down from the 9% pace of June 2022, thanks largely to a fall in energy prices. Yet a range of measures of underlying inflation also looked appealing. Most notably, prices for core services excluding housing—a category to which Jerome Powell, chairman of the Federal Reserve, often points as an indicator of underlying inflationary momentum—fell slightly in June compared with May.

On its own, such a benign inflation report might be expected to push the central bank to hold interest rates steady when it next meets, at the end of July. It is, however, never wise to read too much into a single month of data. The Fed's policymakers have much else to factor into their decision, starting with the labour market. And a range of indicators highlight its remarkable resilience.

For every unemployed person in America, there are 1.6 jobs available, a ratio down a tad since mid-2022, but well in excess of the pre-pandemic norm. Since February 2020 the economy has added nearly 4m jobs, putting employment above its long-term trend line. Some 84% of prime-age workers are now in work or looking for work, the most since 2002 and just a percentage point off an all-time high.

From the view of workers, such vigour is welcome. Wage growth has been fast for service-sector jobs that require less education, such as construction. This, in turn, has helped narrow income inequality. Less well-off folk benefit from a tight labour market. The unemployment rate for black Americans hit 4.7% in April, a record low.

But will this tightness in the labour market feed through into broader price ris-

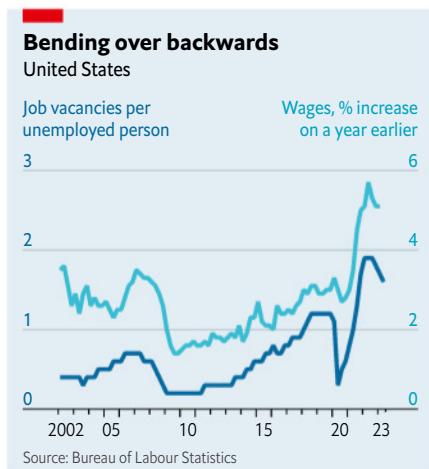


Help wanted

es? Hourly earnings in June, for instance, rose at an annualised pace of 4.4%, consistent with an inflation rate well above the Federal Reserve's target of 2%. Alternative measures suggest that the upward trend may be even steeper. A tracker by the Fed's Atlanta branch points to annualised wage growth of around 6% this year.

As a result, despite the recent cooling in inflation, the hot employment picture all but guarantees the Fed will resume lifting rates after a brief pause last month. Markets now assign a 92% probability to a quarter-point rate rise in July; a month ago it was more or less seen as a coin flip.

Less certain is what the Fed will do after that. Before the inflation data for June, Mr Powell and many of his colleagues indicated the central bank would provide yet another rate increase before the end of this year. This is now in doubt. If inflation recedes again in July and August, the central bank will come under extreme pressure to call time on its tightening cycle. Three decimal places will not lead it to stop. But three consecutive soft inflation reports ought to do the trick. ■



Financial news

Positive thinking

HEFEI

China's economy is healthy and shares are surging...is the official line

HU XIJIN is best known for his calls to prepare for war with America. But recently the 63-year-old nationalist media personality has been exhorting his countrymen to invest in Chinese stocks. On July 7th he told 25m followers on Weibo, a social-media site, that he had opened a trading account with 100,000 yuan (\$13,900). Stop buying homes, he pleaded, and start piling into the stockmarket.

Chinese social media is full of positive takes on grim market news. Commentary such as this is becoming the main message netizens receive about the market, regardless of how it performs. As China's economic recovery falters, authorities are cracking down on divergent or negative views. For some analysts at Western banks, who are tasked with keeping global clients informed, the backlash is proving painful.

Goldman Sachs, an American bank, is the latest to find itself in hot water. On July 4th an analyst at the firm downgraded his outlook for several Chinese financial institutions, advising clients to sell the shares of banks such as Industrial and Commercial Bank of China, owing to concerns about bad debts linked to local governments. This pushed down some Chinese bank stocks by several percent.

The response from the state was rapid. On July 7th *Securities Times*, an official newspaper, rebuked Goldman, saying that its downgrade was based on misinterpretations. Then on July 10th Banxia Investment Management, a large hedge fund, insisted that the bank's claims would be proven wrong. The same day China Merchants Bank, one of the lenders targeted in the downgrade, accused Goldman of misleading investors, according to a statement seen by Bloomberg, a news agency.

There is a reason why Goldman's analysis has touched a nerve. The Shanghai Composite, a benchmark index, is down by more than 5% since this year's peak in early May. The index is hovering around 3,200 points, where—except for a few boom-and-bust cycles—it has languished for more than a decade. An uptick in economic activity at the start of the year, as the country left behind its disastrous zero-covid policy, revived hopes of a surge. Now most economic indicators point to a slowdown.

Inflation data released on July 10th showed that consumer prices were flat year-on-year in June, indicating weakening demand. Goods-price disinflation is ►

▶ also intensifying as manufacturers sit on more capacity, according to HSBC, a bank. Growth in the seven-day moving average of home sales was down by 33% on July 9th, against a year earlier, according to Nomura, another bank.

Discussing these trends on social media is becoming increasingly dangerous. Three bloggers, including Wu Xiaobo, one of China's most prominent financial commentators, were blocked from Weibo in late June, after alluding to negative market moves. The social-media company accused Mr Wu of spreading false informa-

tion related to the securities industry and undermining government policy.

More established firms are also feeling the heat. A financial-information provider was recently forced to stop granting overseas clients access to some data, including detailed property-sector indicators. Consulting companies have been targeted for researching sensitive topics. Chinese stock watchdogs have recently begun advocating for a revaluation of clunky state-owned enterprises, insisting that their value to society as a whole, not just annual returns, ought to be considered.

For tips on investing, Chinese netizens may have to turn to more upbeat commentators, such as Li Daxiao, an indefatigable perma-bull fund manager. Mr Li's views have at times been so positive that authorities have told him to pipe down during market routs, lest unsuspecting retail investors take his advice and lose their savings. After a few recent rough days of trading, Mr Li posted a video on July 7th to comfort his followers. In it he concludes that "only by making it through the insipid can we receive future glory". Who could doubt such fine rhetoric? ■

Buttonwood Fool's gold

A fear-and-inflation hedge has failed to hedge against fear or inflation

TRADERS HAVE an expression to describe how unpredictable financial markets can be: "better off dumb". Stocks or other financial markets can sometimes behave in unforeseeable ways. Analysts predicted that American share prices would collapse if Donald Trump won the election in 2016—they soared. Companies that post better-than-expected earnings sometimes see their share prices decline. Glimpsing the future should give a trader an edge, and most of the time it would. But not always.

Say you knew, at the start of 2021, that inflation was going to soar, the consequence of rampant money-printing by central banks and extravagant fiscal stimulus. In addition, perhaps you also knew that inflation would then be stoked by trench warfare in Europe. With such knowledge, there is perhaps one asset above all others that you would have dumped your life savings into: the precious metal that adorns the necks and wrists of the wealthy in countries where inflation is a perennial problem.

Better off dumb, then. The price of gold has barely budged for two years. On January 1st 2021 an ounce cost just shy of \$1,900. Today it costs \$1,960. You would have made a princely gain of 3%.

What is going on? Working out the right price for gold is a difficult task. Gold bugs point to the metal's historical role as the asset backing money, its use in fine jewellery, its finite supply and its physical durability as reasons to explain why it holds value. After all, at first glance the phenomenon is a strange one: in contrast to stocks and bonds, gold generates no cash flows or dividends.

Yet this lack of income also provides a clue to the metal's mediocre returns in recent years. Because gold generates no cash flows, its price tends to be inversely

correlated with real interest rates—when safe, real yields, like those generated by Treasury bonds, are high, assets that generate no cash flows become less appealing. Despite all the furore about the rise in inflation, the increase in interest rates has been even more remarkable. As a result, even as inflation shot up, long-term expectations have remained surprisingly well anchored. The ten-year Treasury yield, minus a measure of inflation expectations, has climbed from around -0.25% at the start of 2021 to 1.4% now.

In 2021 researchers at the Federal Reserve Bank of Chicago analysed the main factors behind gold prices since 1971, when America came off the gold standard, a system under which dollars could be converted into gold at a fixed price. They identified three categories: gold as protection against inflation, gold as a hedge against economic catastrophe and gold as a reflection of interest rates. They then tested the price of gold against changes in inflation expectations, attitudes to economic growth and real interest rates using annual, quarterly and daily data.

Their results indicate that all these factors do indeed affect gold prices. The metal appears to hedge against inflation and rises in price when economic circumstances are gloomy. But evidence was most robust for the effect of higher real interest rates. The negative effect was apparent regardless of the frequency of the data. Inflation may have been the clearest driver of gold prices in the 1970s, 1980s and 1990s but, the researchers noted, from 2001 onwards long-term real interest rates and views about economic growth dominated. The ways in which gold prices have moved since 2021 would appear to support their conclusion: inflation matters, but real interest rates matter most of all.

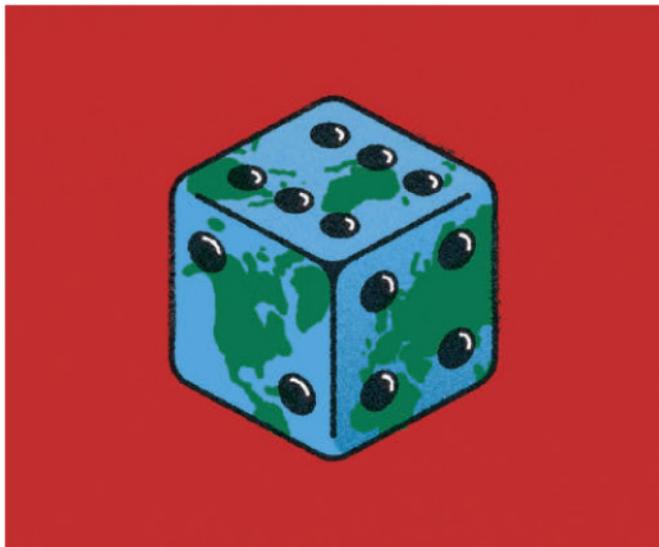
All of this means that gold might work as an inflation hedge—but inflation is not the only variable that is important. The metal will increase in price in inflationary periods if central banks are asleep at the wheel, and real rates fall, or if investors lose their faith in the ability of policymakers to get it back under control. So far neither has happened during this inflationary cycle.

A little knowledge about the future can be a dangerous thing. "The Gap in the Curtain", a science-fiction novel by John Buchan, which was published in 1932, is a story about five people who are chosen by a scientist to take part in an experiment that will let them glimpse a year into the future. Two end up seeing their own obituaries. It is the "best investment book ever written", according to Hugh Hendry, a Scottish hedge-fund investor, because it encourages readers to envision the future while thinking deeply about what exactly causes certain events. As the recent seemingly perplexing movements in gold suggest, unanchored future-gazing is a dangerous habit.



Free exchange | Unknown unknowns

Why people struggle to understand climate risk



PACED BEFORE you are two urns. Each contains 100 balls. You are given a clear description of the first urn's contents, in which there are 50 red balls and 50 black balls. The economist running the experiment is tight-lipped about the second, saying only that there are 100 balls divided between red and black in some ratio. Then you are offered a choice. Pick a red ball from an urn and you will get a million dollars. Which urn would you like to pull from? Now try again, but select a black ball. Which urn this time?

Most people plump for the first urn both times, despite such a choice implying that there are both more and fewer red balls than in the second urn. This fact is known as the Ellsberg paradox after Daniel Ellsberg, a researcher at the RAND corporation, a think-tank, better known for leaking documents detailing America's involvement in the Vietnam war. Ellsberg, who died on June 16th, called the behaviour ambiguity aversion. It was a deviation from the model of rational choice developed by John von Neumann, a mathematician, and a demonstration that knowing the likelihood of something can alter decision-making.

The experiment may seem like just another of the cutesy puzzles beloved by economists. In fact, it reveals a deeper problem facing the world as it struggles with climate change. Not only are the probabilities of outcomes not known—the likelihood, say, of hurricanes in the Caribbean ten years from now—nor is the damage they might do. Ignorance of the future carries a cost today: ambiguity makes risks uninsurable, or at the very least prohibitively expensive. The less insurers know about risks, the more capital they need to protect their balance-sheets against possible losses.

In May State Farm, California's largest home-insurance provider, retreated from the market altogether, citing the cost of "rapidly growing catastrophe exposure". Gallagher Re, a broker, estimates that the price of reinsurance in America has increased 50% this year after disasters in California and Florida. Few firms mention climate change specifically—perhaps a legacy of Republican attacks on "woke capitalism"—but it lurks behind the rising cost of insuring homeowners against fires, floods and hurricanes.

Insurance is a tool of climate adaptation. Indeed, actuaries have as big a role to play as activists in the fight against climate change. Without insurance, those whose homes burn in a wildfire

or are destroyed by a flood will lose everything. The destitute may become refugees. Insurance can also be a spur for corrective action. Higher premiums, which accurately reflect risk, provide an incentive to adapt sooner, whether by discouraging building in risky areas or encouraging people to move away from fire-prone land. If prices are wrong, society will be more hurt by a hotter world than otherwise would be the case. Politicians considering subsidies for home insurance on flood plains ought to take note.

The task of setting the appropriate price is made even more difficult by the fact that, in the language of economists, a warming world faces "uncertainty" as well as "risk". John Maynard Keynes described uncertainty as a situation where there is "no scientific basis to form any calculable probability whatever". He gave the example of predicting the likelihood of a war in Europe or whether a new invention would become obsolete. Risk, by contrast, means situations where the relative probabilities are well known: picking a red ball from the first urn, for instance.

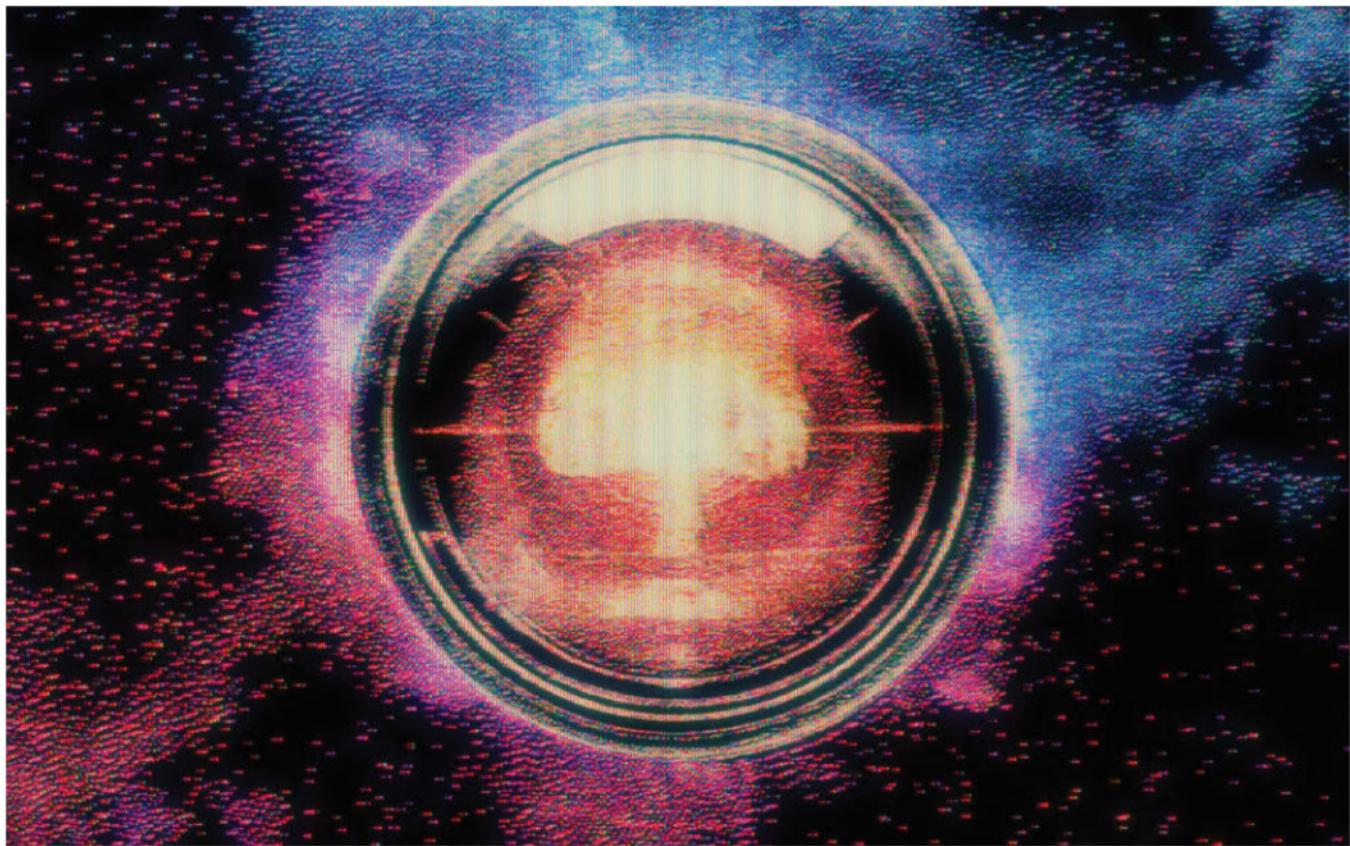
When it comes to climate change, reality is not quite as bad as Keynes's framework suggests, since scientists can help resolve some sorts of uncertainty. This is particularly true of those forms labelled "internal uncertainty" by Daniel Kahneman and Amos Tversky, two behavioural economists, which relate to things known about the world, rather than unknowable future events. Unlike the models of economists, climate models are based on laws of physics that have made their mark on the planet, in fossils and Antarctic ice cores, for millennia. It is as if a scientist has observed the second urn for centuries, noting the number of black and red balls pulled out by different people over time. With solid evidence and a clear understanding of the process by which the observations are generated, the ambiguity disappears and the probabilities of potential disasters become better understood.

Natural-disaster reinsurance is typically based on models incorporating the latest science rather than historical statistics, since extreme events are by definition rare. For reinsurers, who ultimately care about their financial exposure, models must be kept up to date with the state of the built environment in vulnerable areas, which helps them calculate potential losses when paired with knowledge of environmental conditions that determine disasters. The former is generally more of a cause of uncertainty than the latter, since the science of climate change is well understood and data improve all the time. Premiums may be on the rise because of better knowledge, rather than continued ignorance.

Disaster capitalism

Yet even a perfect scientific model could not banish all uncertainty. Climate change involves the messy world of policy as well as the clarity of physics. Scientists may be able to model how a planet that is 2°C warmer than in pre-industrial times increases the risk of wildfires in a particular area, but there is no model that can predict whether policymakers will pull the levers that are available to them to prevent such fires from happening. Imagine the economist running Ellsberg's experiment was taking and adding balls to the second urn depending on the outcome of some democratic process, international diplomacy or the whims of a dictator.

Policy can also prevent a proper accounting of risk. Californian regulations forbid insurers from using the latest climate models to set prices, since protection would become more costly. Premiums must be based on the average payout over the past 20 years, rather than the latest science. Shying away from ambiguity is understandable. Sticking your head in the sand is plain foolish. ■



Superforecasting the apocalypse

Bringing down the curtain

Professional “superforecasters” are more optimistic about the future than experts in risky sectors from AI to nuclear weapons

IN 1945, JUST before the test of the first nuclear bomb in the New Mexico desert, Enrico Fermi, one of the physicists who had helped build it, offered his fellow scientists a wager. Would the heat of the blast ignite a nuclear conflagration in the atmosphere? If so, would the firestorm destroy only New Mexico? Or would the entire world be consumed? (The test was not quite as reckless as Fermi's mischievous bet suggests: Hans Bethe, another physicist, had calculated that such an inferno was almost certainly impossible.)

These days, worries about “existential risks”—those that pose a threat to humanity as a species, rather than to individuals—are not confined to military scientists. Nuclear war; nuclear winter; plagues (whether natural, like covid-19, or engineered); asteroid strikes and more could all wipe out most or all of the human race. The newest doomsday threat is artificial intelligence (AI). In May a group of luminaries in the field signed a one-sentence

open letter stating: “Mitigating the risk of extinction from AI should be a global priority alongside other societal-scale risks such as pandemics and nuclear war.”

But just how worried is it rational to be? On July 10th a group of researchers including Ezra Karger, an economist at the Federal Reserve Bank of Chicago, and Philip Tetlock, a political scientist at the University of Pennsylvania, published a working paper that tries to shed light on that question by systematically surveying two different sorts of experts. On the one hand were subject-matter, or “domain”, experts in nuclear war, bio-weapons, AI and extinction itself. On the other were a group of “super-

forecasters”—general-purpose prognosticators with a record of making accurate predictions on all sorts of topics, from election results to the outbreak of wars.

The researchers recruited 89 superforecasters, 65 domain experts and 15 experts in “extinction risk” more generally. The assembled seers were given two different kinds of disaster to consider. A “catastrophe” was defined as something that killed a mere 10% of the humans in the world, or around 800m people. (The second world war, by way of comparison, is estimated to have killed about 3% of the world’s population of 2bn at the time.) An “extinction” was defined as an event that wiped out everyone with the possible exception of, at most, 5,000 lucky (or unlucky) souls.

We will all go together when we go

The two groups were asked to estimate the likelihood of everything from terminal events like an AI-caused extinction or a nuclear war to smaller questions, such as whether worrying advances in the abilities of AIs might come to pass that could act as signposts on the road to a future disaster.

The most striking conclusion of the study was that the domain experts, who tend to dominate public conversations around existential risks, appear to be gloomier about the future than the superforecasters. The experts reckoned there was about a 20% chance of a catastrophe by ↗

→ Also in this section

65 Granite on the Moon

65 How to mark the Anthropocene

66 The fate of the sabre-tooth tiger

► 2100, and a 6% chance of extinction. The superforecasters gave those events probabilities of 9% and 1% each.

That broad split disguised some interesting details. The difference between the two groups was greatest when considering the risks posed by AI. The median superforecaster reckoned there was a 2.1% chance of an AI-caused catastrophe, and a 0.38% chance of an AI-caused extinction, by the end of the century. AI experts, by contrast, assigned the two events a 12% and 3% chance, respectively. When it came to pandemics, superforecasters were more pessimistic than domain experts on the risks posed by naturally occurring disease.

Perhaps the most interesting result was that, although the groups disagreed on the exact size of the risk, both pegged AI as the biggest worry whether thinking about catastrophe or extinction (see chart). One reason for AI's strong showing, says Dan Mayland, a superforecaster who participated in the study, is that it acts as a "force multiplier" on other risks like nuclear weapons. As with nuclear war or an asteroid strike, AI (in the form of armed robots, say) could conceivably kill humans directly. But it could also serve to sharpen another executioner's axe, as it were. If humans used AI to help design more potent bio-weapons, for instance, it would have contributed fundamentally, albeit indirectly, to any ensuing disaster.

But though the superforecasters were pessimistic about AI, they were also relatively uncertain about it. The world has lived with nuclear weapons for nearly 80 years. That a nuclear war has not yet happened constitutes valuable data that can be fed into forecasts of whether one might happen in future. AI, at least in the current meaning of the term, is much newer. The emergence of modern, powerful machine-learning models dates to the early years of the 2010s. And the field is still developing quickly. That leaves much less historical data on which to base predictions.

Dr Tetlock in particular has done a great deal of work looking at the problem of predicting the future. It was he who first identified and named the "superforecasters", a group of people who seemed to be unusually good at predicting future developments in all kinds of domains. Such people share a few characteristics, such as careful, numerical thinking and an awareness of the cognitive biases that might lead them astray. Despite their lack of specific expertise, superforecasters have a solid record of outperforming experts in technical fields from finance to geopolitics.

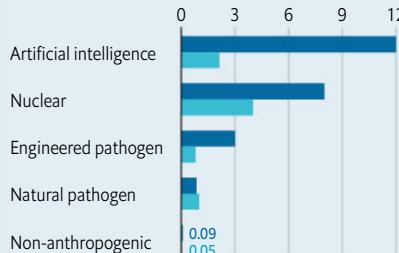
The differences between the groups partly reflect differences in their models of how the world works. Catastrophic risks depend not just on how sophisticated or powerful a technology becomes, but also how humans react to it. After scares in the

Armageddon worried

Probability of event occurring by 2100, median estimate, by forecaster, %

■ Domain experts ■ Superforecasters

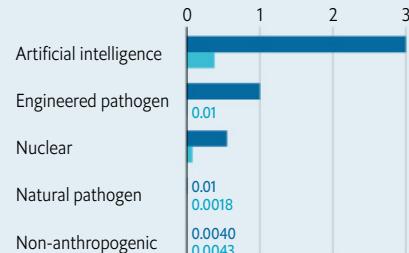
Catastrophe*



*Death of 10% or more of humans within a five-year period

Source: "Forecasting existential risks: evidence from a long-run forecasting tournament", by E. Karger et al., working paper, 2023

Extinction†



†Death of most of humanity, at most 5,000 survivors

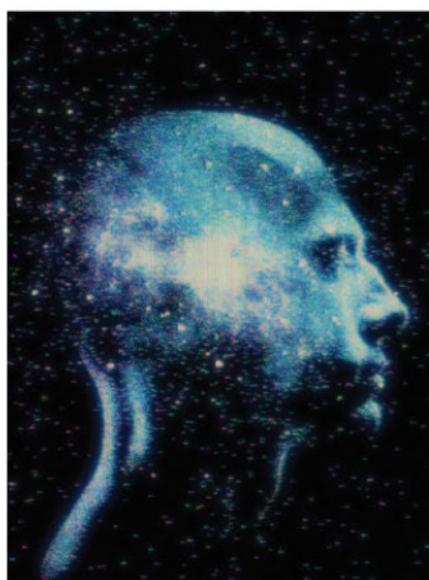
requires "a certain amount of ability to interact with the physical world...you probably need a lot of advancement in robotics before you get to that."

The fundamental problem with this sort of prediction, of course, is that unlike with repeated, lower-stakes events (such as predicting the movements of share prices, or the outcome of elections) there will never be any way to know which side is closer to identifying the true level of risk. But if the superforecasters are so good at predictions, and experts have so much topic-specific knowledge, you might at least expect the two groups to influence each other's beliefs.

Reading the runes

The study tried to encourage such mutual persuasion through group discussions, monetary incentives for better arguments and the like. Nevertheless, and perhaps surprisingly, both sides stuck resolutely to their guns. (One AI expert fingered "deliberation fatigue" as the problem—in other words, both sides were simply exhausted from all the forecasting they had already been asked to do.)

Changing minds, or "updating priors", as the forecasters would call it, might be easier with new evidence. So Drs Karger and Tetlock are hoping to collect some. They have asked participants in the current study to answer another set of questions about a series of "early-warning indicators"—measures that would suggest whether the world is on a path towards one catastrophic scenario or another. The amount of computer power used in large AI training runs might serve to track the general progress of the field, for instance. The eventual fate of nuclear arms-control treaties might be another factor. The hope is that these shorter-run questions, some of which will be resolved by 2024 and 2030, will provide a sense of whose predictions to take more seriously—and therefore, how worried you should be. ■



Planetary science

Beneath the far side of the Moon

An enormous and unexpected lump of granite sheds light on lunar history

IN “2001: A SPACE ODYSSEY”, Stanley Kubrick and Arthur C. Clarke imagined a monolith buried beneath the surface of the Moon which turned out to be an alien artefact that set humankind on a path to the stars. The “batholith” that has been discovered below Compton-Belkovich, a volcanic-looking set of features on the far side of the Moon, hardly promises that. But it sheds some interesting light on the Moon’s past, and shows the power of a new way of peering into the crusts of other planets.

A batholith is a geological formation created when a vast quantity of molten rock rises through a planet’s crust, spreading out sideways as it does so. On Earth, these batholiths are composed mostly of granite; the rocks of Yosemite, for example, are parts of the Sierra Nevada batholith uncovered and spectacularly sculpted by subsequent erosion.

The Compton-Belkovich batholith is also made of granite, which is what gave it away. Granite is richer in thorium than other igneous—that is, once molten—rocks, such as basalt, and thorium is radioactive. Its decay heats the granite that hosts it. Measurements of microwave emissions made by the first two Chinese satellites to orbit the Moon, Chang’e 1 and Chang’e 2, allowed a team of scientists led by Matthew Siegler and Jianqing Feng of the Planetary Science Institute in Tucson, Arizona and Southern Methodist University in Dallas,

Texas to calculate how much heat was being given off by rocks under the surface at Compton-Belkovich.

Assuming that the thorium was present at the sort of concentrations typically seen in granite allowed the scientists to calculate a likely shape for the source. Their best guess, published in *Nature* last week, was that there is one smallish hot blob, maybe 10-20km across and a few kilometres deep, balanced on top of a much bigger, deeper one that might be 50km across and go down for tens of kilometres.

This suggests interesting goings-on in the depths of the Moon of a sort not previously recognised. Igneous rocks are made through a sort of geological distillation. When rocks far below the surface are heated, some components melt more easily than others; when the molten rock solidifies its mineral make-up is not the same as that of the original parent.

To turn rock from the mantle of Earth, or the Moon, into basalt requires just one cycle of distillation; basalt thus created makes up the solid crust under the oceans of Earth and the smooth lava plains of the Moon. To make granite, though, requires a number of separate distillations (which is what gives it high thorium concentrations). On Earth this is easily arranged; the collisions of tectonic plates provides lots of opportunities. On the placid, plateless Moon there is no such mechanism, and it has been easy to assume that basalt is for the most part all the planet has to offer. The granite batholith suggests something new at play. Perhaps the rocks in the area were unusually rich in water. Perhaps pulses of heat from below made them melt and freeze repeatedly.

The lunar discovery suggests that similar microwave measurements might provide novel insights into the innards of other planets. That this has not been tried before is due to a preconception. Satellites orbiting Earth use microwave receivers to measure water in the atmosphere. Because the solar system’s other rocky planets do not have watery atmospheres, such instruments have not been sent to them.

But when China launched Chang’e 1 and 2 its aim was to show that it could do science round the Moon, not necessarily to do the best such science. Dr Siegler thinks the microwave antennae were put on board simply because they had been shown to work and there were no more suitable instruments to hand. Now they have proved their worth, he hopes to see the designers of future spacecraft take note. One target where they might come in handy would be the moons of Jupiter, where their sensitivity to heat and moisture might be a useful addition to other sub-surface probes. Fans of “2001” will remember that its monolith spurred a new mission to Jupiter. Maybe the batholith will, too. ■



Geology

Choosing a fingerprint

How best to mark the dawn of humanity’s very own geological epoch?

ONE WAY to view the history of science is as a repeated puncturing of humanity’s claims to be special. In scientific terms *Homo sapiens* is an oddly hairless species of ape that has existed for 200,000 years—an eyeblink in Earth’s 4.5bn-year history.

For the past couple of decades, though, some scientists have been arguing that perhaps humans do deserve a bit of special recognition after all. In 2000 Paul Crutzen, a Dutch meteorologist and chemist, suggested that human influence over Earth was sufficiently profound that its effects would remain visible in the geological record for millions of years. For that reason, he argued, it was time to bring down the curtain on the Holocene—the current geological epoch, which has lasted for the past 12,000 years or so—and ring in a new one: the Anthropocene.

The idea quickly caught on. In 2016 the Anthropocene Working Group (AWG), an appendage of the International Union of Geological Sciences (IUGS), voted in favour of adopting it in principle. And on July 11th it suggested a precise geological feature, dating back to the 1950s, that could mark the Anthropocene’s beginning. The committee recommended bestowing the honour upon sediments laid down at the bottom of Crawford Lake, a flooded sinkhole about 20 miles from Toronto.

The beginning of the Holocene was marked by a natural warming of the climate and the retreat of the world’s ice ►



Granite below, granite above

► sheets. The idea behind the Anthropocene is that human activity has disturbed the planet on a similarly grand scale. Humans have boosted the concentration of carbon dioxide in the atmosphere by about half in the past 250 years, to its highest level in around 3m years. That spike will be clearly visible to geologists 100,000 years from now, assuming any exist, and may have delayed the start of the next ice age by tens of thousands of years.

There are markers besides climate change, too. Microplastics in oceans and rivers are laying down sedimentary layers of chemicals never seen before in nature. Nitrogen fertilisers have altered the balance of chemical isotopes in peat bogs. The world is in the midst of a mass extinction. At the same time shipping and air travel have scattered much of the remaining flora and fauna far from where they evolved. Both the extinction and the redistribution will be visible when what is alive today joins the fossil record of the past.

The IUGS's rules say that geological transitions must be marked not just by a particular event, but by a specific alteration in a specific geological feature. (For instance, the start of the Ediacaran period, 635m years ago, is defined by a visible change in a band of exposed rocks in southern Australia.) The AWG's announcement marked the end of a years-long search for a suitable marker for the Anthropocene. Scientists examined sites from the estuaries of San Francisco to the sediment beneath Vienna's main square, before settling on Crawford Lake.

The lake has several advantages. Every summer, as the surface waters warm, flakes of calcium carbonate precipitate out and drift to the bottom. There they form regular white bands amid the sediments, much like age rings in trees. The sediments themselves lie deep enough that they remain undisturbed by the wind and waves above. They therefore contain records, in date order, of everything from CO₂ concentrations to particles of plutonium from the explosions of nuclear weapons, the first of which happened in 1945.

Indeed, the AWG has proposed that the subsequent spike in plutonium—an element which was vanishingly rare before the atomic age—should serve as the “primary marker” for the beginning of the Anthropocene. Not everyone is convinced, for plutonium is unstable. The isotopes that the AWG have in mind have half-lives of 6,500 and 24,000 years, meaning almost all the plutonium will be gone within 200,000 years. Dissidents suggest that fly ash from fossil-fuel combustion would make a better alternative. Like plutonium, it is not something that the planet has seen before. And unlike plutonium, it will, if left undisturbed, hang around in the rocks for many millions of years to come. ■

Palaeontology

What the bones tell

Bones recovered from tar pits suggest both sabre-tooth tigers and dire wolves were in trouble before they vanished

ALONG WITH the mammoth and the dire wolf, the sabre-tooth tiger was a casualty of the Quaternary Extinction, a die-off that happened between 50,000 and 10,000 years ago that seems to have affected big animals in particular.

Exactly what caused the extinction is still a matter of debate. (Two popular possibilities are a warming in the climate, and the arrival of humans.) A new paper by Hugo Schmökel, a veterinary surgeon at the Evidensia Academy, a veterinary college in Sweden, and his colleagues, suggests that, for both the sabre-tooth tiger and the dire wolf, inbreeding played a part.

Dr Schmökel arrived at that conclusion after examining bones from the Rancho La Brea tar pits in Los Angeles. These are gold mines for palaeontologists because they were death traps for the animals of the day. Rainwater can accumulate on top of the tar. A large herbivore, like a mastodon or giant sloth, that ventured in for a drink would risk becoming ensnared. Its subsequent attempts to free itself would attract predators, which would take advantage of its distress and attack—but then become trapped themselves. As a result Rancho La Brea contains bones from thousands of animals.

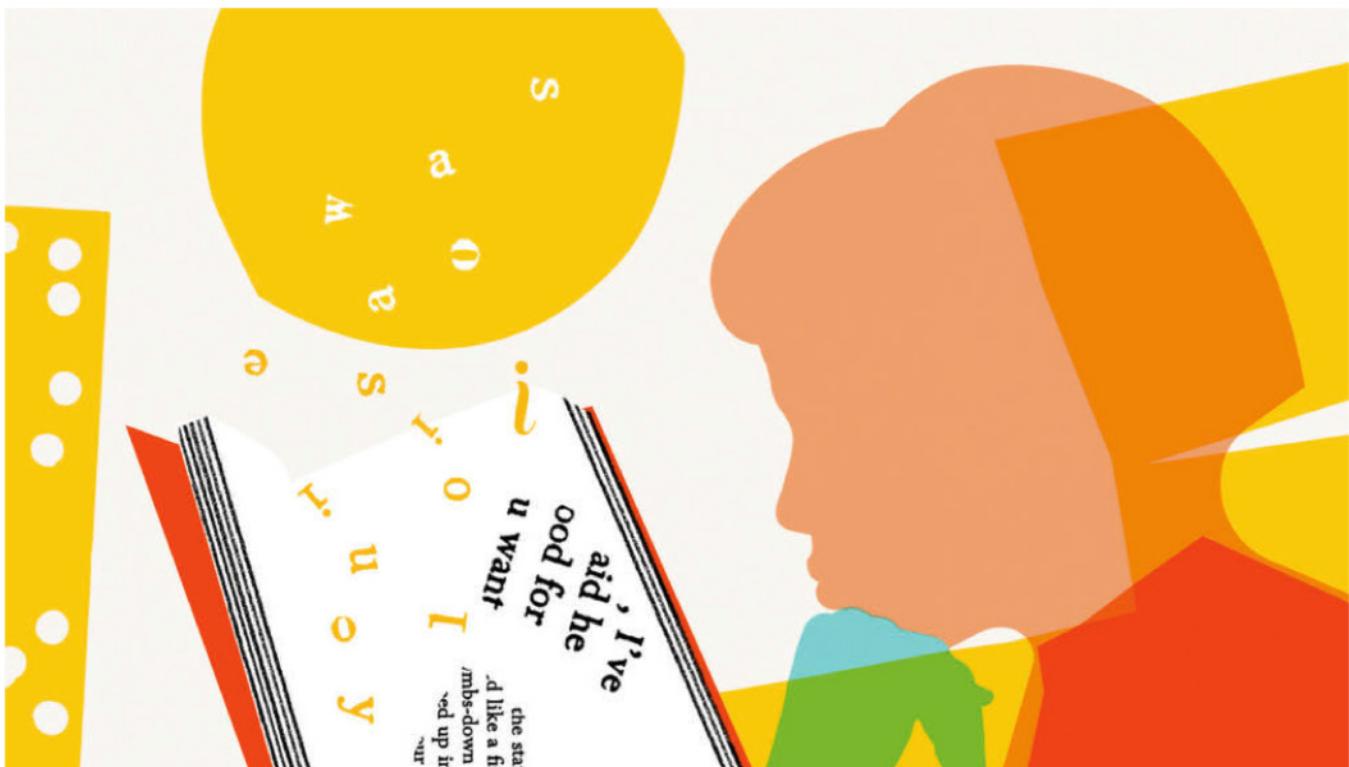
That allows for statistical studies that cannot be done anywhere else. Dr Schmökel examined 834 sabre-tooth-cat femurs dated to between 12,000 and 10,000 years ago. Around 6% had defects

suggestive of a bone disease known as osteochondrosis dissecans. This is caused by small fragments of bone underlying the cartilage in a joint dying and breaking loose. It causes joint pain, loss of motion, and becomes crippling in old age. An analysis of 266 dire-wolf femurs found that 2.6% likewise had defects indicative of the disease.

Several things, including diet and injury, can cause osteochondrosis dissecans. But one of the biggest predisposing factors is genetics. Indeed, though the disease is rare in wild animals today, it is common in domesticated dog breeds that have been heavily inbred. Around 9% of border collies, for instance, suffer from it. But inbreeding is not always a consequence of human interference. In the wild, it is usually a consequence of a shrinking population in which fewer and fewer mates are available with every passing generation.

That suggests both the sabre-tooth tigers and the dire wolves were locked in a miserable downward spiral. Not only were their populations already shrinking, but the disease caused by the resulting inbreeding would have made it harder for the remaining individuals to survive, especially as they got older. It is impossible, at least for now, to discern what led these animals to become inbred in the first place. But the evidence from the tar pits suggests they were on a genetic knife's edge for thousands of years before they finally succumbed.





Summer reads

Shelf-made

Our correspondents recommend the finest books, old and new, in their areas of interest. For more reading lists, go to economist.com/economist-reads

Artificial intelligence

The Age of AI. By Henry Kissinger, Eric Schmidt and Daniel Huttenlocher. *Little, Brown and Company*; 272 pages; \$30. John Murray; £20

The crux of this book is a big idea: AI marks "a new epoch". The Enlightenment, which placed humans at the centre of all that is knowable, has come to an end. Co-written by America's pre-eminent living statesman, a former boss of Google and an expert on AI at the Massachusetts Institute of Technology, this book is a muscular contribution to one of the 21st century's most pressing debates.

AI Superpowers: China, Silicon Valley and the New World Order. By Kai-Fu Lee. *Houghton Mifflin Harcourt*; 272 pages; \$28. HarperCollins; £12.99

Born in Taiwan, the author studied AI in America, became an executive at Apple, Google and Microsoft and now runs a venture-capital firm in China—so is well placed to evaluate the rivalry between the two countries. America may dominate AI

now, but China will overtake it, he believes, because the Chinese work harder and have more data (in part because of looser standards on privacy).

Possible Minds: Twenty-Five Ways of Looking at AI. Edited by John Brockman. *Penguin Press*; 320 pages; \$28 and £24.99 This compilation of essays written by an all-star cast of experts from across scientific fields draws together smart thinking about the technology. The topics covered include AI's blind spots and the differences between human and AI cognition. A tasting menu of intriguing ideas.

Prediction Machines. By Ajay Agrawal, Joshua Gans and Avi Goldfarb. *Harvard Business Review*; 272 pages; \$30 and £22

→ Also in this section

69 Avant-garde ice cream

70 New Syrian fiction

70 The women of drug gangs

71 Back Story: Bruce Springsteen's magic

Three economists observe that AI lowers the cost of making predictions, just as computers lowered the cost of doing maths. AI will replace humans, from automation to self-driving cars. But all is not lost: as the cost of predictions goes down, the value of human judgment will increase, the authors argue.

The history of money

Globalising Capital. By Barry Eichengreen. *Princeton University Press*; 320 pages; \$29.95 and £25

An invaluable guide for anyone who wants to understand money. The book starts in the era of the gold standard, when leading economies pegged their currencies to gold, before explaining how that standard collapsed between the first and second world wars. It describes the attempt at Bretton Woods to create a new monetary order and how it fell apart. It then examines the era of globalisation and relatively free capital flows.

Money Changes Everything. By William Goetzmann. *Princeton University Press*; 600 pages; \$35 and £30

Before he became a finance professor at Yale, the author was an archaeologist and museum curator. In this book he combines his talents. Starting in Iraqi dig sites and ending in post-war America, he demonstrates how financial innovation was the handmaiden of civilisational change. ►

► Published in 2016, Mr Goetzmann's book provides a comprehensive overview of monetary history.

The Shell Money of the Slave Trade.

By Jan Hogendorn and Marion Johnson. *Cambridge University Press; 248 pages; \$50.99 and £36.99*

Cowrie shells have a claim to be the world's first global money: harvested in the Maldives, sold in Bengal, shipped to Europe (mostly to the Netherlands and Britain) and used to buy slaves in west Africa. The shells would also make the journey across the Atlantic: large quantities were discovered near slave markets in Virginia. The cowrie's role in human trafficking makes it one of the most significant currencies in history.

The Social Meaning of Money.

By Viviana Zelizer. *Princeton University Press; 320 pages; \$24.95 and £20*

The author, a professor of sociology at Princeton University, homes in on America between 1870 and 1930 to tell a social history of money. Examining magazine articles, court cases and much else, she shows how money assumes many different meanings. (In 1908 one judge decided that "A wife has a perfect right to go through her husband's pockets at night.") The book is a rare example of a monetary history told from below.

Photography

On Photography.

By Susan Sontag. *Picador; 224 pages; \$18. Penguin Modern Classics; £9.99*

In these essays Sontag, who died in 2004, broaches topics such as truth, beauty and pathos with wit. She also provides an often scathing critique of the medium. She is frequently philosophical, exploring how the camera limits, shapes or perhaps even controls how many people apprehend the world. A foundation of any photographic education.

The Photographer's Eye.

By John Szarkowski. *The Museum of Modern Art; 156 pages; \$29.95 and £19.95*

A masterclass in visual analysis from a champion of 20th-century photography. Szarkowski began his career as a photographer but won fame after he became an early director of photography at the Museum of Modern Art in New York. This book is essential for readers who want to improve their photography skills while learning about visual theory and the elements of composition.

The Social Photo.

By Nathan Jurgenson. *Verso Books; 144 pages; \$16.95 and £12.99*

A fine survey of social-media photog-

raphy. It is a book of sociology—in part an analysis of how and why people take selfies—but not one crammed with statistics. The author is interested in social pressure and in the way people manage the images of themselves that they present to others. The snaps shared on social media might seem trivial, but this study argues that they are not.

Books by foreign correspondents

Behind the Beautiful Forevers.

By Katherine Boo. *Random House; 288 pages; \$18. Portobello Books; £9.99*

An exploration of the faultline between the old India and the new India, published in 2012. In Annawadi, a marshy slum at the end of the main runway of Mumbai's international airport, migrants from all over the country grapple with poverty, hunger, illness and corruption as they try to make a living in the big smoke. Taken together the stories are a searing description of India's growing pains—and a masterclass in narrative non-fiction.

Hiroshima.

By John Hersey. *Vintage; 208 pages; \$13. Penguin Modern Classics; £9.99*

The people of Hiroshima were doing ordinary things when the atom bomb dropped on August 6th 1945. Perhaps 100,000 of them died; the author talked to six who survived. In sparse, clinical prose, Hersey describes the sudden destruction of a city, the fires that followed and the "strange, capricious disease which came later to be known as radiation sickness". One of the greatest pieces of journalism ever written—and you can read it in a single sitting.

In the Footsteps of Mr Kurtz.

By Michela Wrong. *Harper Perennial; 368 pages; \$14.99. HarperCollins; £10.99*

Congo has long drawn intrepid foreign writers, including Joseph Conrad. But few

are as funny as Michela Wrong who, in the 1990s, reported on the downfall of Mobutu Sese Seko, the dictator of what he called Zaire, and the start of the great Congo war. This book guides the reader diligently through the history, but it is the reported details that make it joyous to read. The author brings out the excitement of Congo even as she explains the tragedy.

Nothing to Envy.

By Barbara Demick. *Random House; 336 pages; \$18. Granta Books; £9.99*

Few countries are trickier to report on than North Korea; almost all information comes from North Koreans who have fled. Published in 2009, this book is based on interviews with about 100 defectors. The title refers to the regime's claim, incessantly repeated, that North Koreans have "nothing to envy in the world". That is the opposite of the truth, as these testimonies of suffering and starvation make plain.

Female travel writers

Looking for Transwonderland.

By Noo Saro-Wiwa. *Catapult; 272 pages; \$15.95. Granta; £10.99*

After moving to Britain as a child, the author viewed Nigeria, her birth country, with embarrassment and dread. A four-and-a-half-month trip made in 2007–08, more than a decade after the execution of her activist father, Ken Saro-Wiwa, changed her perspective. Published in 2012, this book is a rollicking read and offers incisive analysis of the problems and power of modern Nigeria.

Travels with Myself and Another.

By Martha Gellhorn. *Penguin; 320 pages; \$17. Eland; £14.99*

Published in 1978, this is an account of the reporter's "best horror journeys". She tells her tales with wit and vivacity, whether of traversing China via sampan with her



► husband Ernest Hemingway, trailing elephants in east Africa or searching for submarines in the Caribbean. People everywhere are nasty, brutish and smelly. But the writing is saved from snarkiness by the author's humour and deep feeling for the natural world.

Travels in West Africa. By Mary Kingsley. *Penguin Classics; 736 pages; \$25 and £14.99* For this tome, published in 1897, the author made her way across western and equatorial Africa, becoming the first European to enter parts of Gabon and the first woman to climb Mount Cameroon. Not only a great adventurer, she was also an eloquent admirer of west Africa. Her writing is direct, practical and remarkably sanguine. After falling 15 feet onto 12-inch spikes in a game pit, she remarks: "It is at these times you realise the blessing of a good thick skirt."

Wine

The Initiates. By Étienne Davodeau. Translated by E. Joe Johnson. *NBM Publishing; 272 pages; £20.99*

Étienne Davodeau, a comic-book artist, knows little about winemaking. Richard Leroy, a maker of cult wines, has not read much *bande dessinée*. For a year the pair exchange jobs and the fruit of their job swap is this graphic novel. It provides an introduction to winemaking, from bud to bottle, through drawings and speech bubbles. It is both touching and technical.

The Noble Rot Book. By Dan Keeling and Mark Andrew. *Hardie Grant; 352 pages; \$45. Quadrille Publishing; £30*

Launched in 2013, *Noble Rot* gives a good kicking to stuffy wine journalism; this book is an extension of the thrice-yearly periodical. Its first half consists of humorous yet useful guides, such as "how to order wine in a restaurant without fear". The second recounts a trip through Europe's grapevines, with satirical drawings. Probably the most cheerful introduction to wine you will ever come across.

The World Atlas of Wine. By Hugh Johnson and Jancis Robinson. *Octopus Books; 400 pages; \$60 and £50*

First published in 1971, this has been the wine world's bible ever since. That world has changed—drinkers' tastes and wine-makers' techniques have evolved; wine-making regions are under threat from climate change—but the atlas has kept up. The eighth edition, published in 2019, illustrates why some of the world's best wines are from tiny regions and why altitude, soil or sun exposure may cause two neighbouring vineyards to produce crus with very different characteristics. ■



World in a dish

Get to the pint

When it comes to ice cream, the instinct to innovate is misguided

DOES IT MAKE more sense to transform a bottle of ketchup into a handbag or a flavour of ice cream? To Anya Hindmarch, a British fashion designer, that is a false dichotomy. She has produced a sequinned bag based on a bottle of Heinz's finest and an ice cream boasting "the unmistakable taste of sun-ripened tomatoes". (At £3.50, or \$4.53, a scoop, the ice cream is marginally more affordable than the £1,195 tote.)

Those left cold by the frozen ketchup at the couturier's Ice Cream Project in London can plump for a refreshing pea sorbet or an ice cream featuring "mellow cheddar cheese with the 'chunky, crunchy, bite of Branston'", a chutney that has appeared in soggy British sandwiches since 1922. The more avant-garde flavours taste unpleasantly accurate: the Branston-pickle option has a vinegary tang that no one really wants in an ice cream. Far more palatable are the ones based on Coco Pops, a chocolate-flavoured cereal, and lemon curd.

Ms Hindmarch is not alone in experimenting with unusual flavours. Heston Blumenthal, a British chef, has long been known for his bacon-and-egg ice cream. The Alchemist, a two-star Michelin restaurant in Copenhagen, serves pig-blood ice cream (the blood replaces eggs as an emulsifier). Van Leeuwen, an American ice-cream company, has flavoured its products with mac and cheese, ranch dressing and pizza. Nor are such experiments all that new. An ice-cream shop in 18th-century London called The Pineapple was serving Parmesan ice cream. The urge to innovate seems to be insatiable.

This may suggest that ice-cream makers need to keep churning out ever-weirder flavours to persuade people to keep slurping. Yet the charm of ice cream seems to be more fundamental. It has been made around the world, in places with vastly different culinary styles and histories, underlining the universality of its delightfulness. From Turkish *dondurma* to Syrian *boozza*, Italian *gelato* to Iranian *faloodeh*, Filipino *sorbetes* to Indian *kulfī*, Japanese *ka-kigori*, Afghan *sheeryakh* and Indonesian *es puter*, some iteration of the dessert is made and loved everywhere.

Vanilla, the classic option—and a derivative synonym for boring—is often touted as having universal appeal, writes Rachel Herz in "The Scent of Desire". That, she explains, is because vanilla is one of the volatile flavour compounds present in breast-milk, as well as some formulas.

The pleasure of ice cream is indeed childish. The chimes of an ice-cream truck send a ripple of delight through even the iciest heart. Childish is a term usually used pejoratively, to describe things that should be put away at the age of maturity. Perhaps that explains the drive to make ice cream ever more sophisticated. Häagen-Dazs was among the first ice-cream companies to market the product to adults.

But the best adult desserts are not that far removed from those enjoyed by children. And the joys of childhood are profound. They win out against innovation, however sophisticated the marketing. People may come for the Branston-pickle ice cream, but they stay for the Coco Pops. ■

Syrian fiction

Tales of the city

No One Prayed Over Their Graves. By Khaled Khalifa. Translated by Leri Price. *Farrar, Straus and Giroux*; 404 pages; \$30. Faber & Faber; £14.99

KHALED KHALIFA, a Syrian writer, lives in Damascus even though state authorities have banned his books and, on one occasion, beaten him up. His previous novel, "Death Is Hard Work", dealt with the carnage of his country's civil war, which began in 2011. "No One Prayed Over Their Graves", a family saga, takes place in and around Aleppo, a historic city ruined by that conflict. The novel, which covers the period between 1881 and 1951, tells the multigenerational story of two Aleppo families "intricately entwined" despite differences of creed, class and character.

The landowning Bayazidis are Muslim, the trading Gregoroses, Christian. Their family friends, notably Azar, an architect, are Jews. In 1907 a deadly flood inflicts deep "scars of loss" on these close-knit clans. The waters engulf a village on the city's outskirts where Zakariya Bayazidi and Hanna Gregoros, pals since childhood, have built houses. The catastrophe anchors an intricate plot that ranges from late 19th-century Ottoman imperial rule to Syrian independence after 1946.

In this Aleppo, faith seldom dictates actions and affections: as children, Hanna and Zakariya "couldn't care less about their religions". Yet external events—from the slaughter of much of the Gregoros family to the Armenian genocide—sometimes force it centre-stage. Although this strife-

torn "magical city" is no multicultural idyll, passion or friendship breaches sectarian barriers. Maryam, an Armenian survivor who works with Zakariya's sister, Souad, reflects that "walls portrayed our identity." In this novel, characters find joy, and take risks, by jumping over them.

Characters do not hold fast to dogma. In later life, Hanna acquires a reputation for being especially devout but privately thinks of Jesus simply as "a luminous idea held up for all humanity". Yvonne, lover of the married Zakariya, "believed nothing and lived in doubt". Even the holy Father Ibrahim nurses sceptical ideas.

Love stories—thwarted, tragic or ecstatic—help bring a many-stranded plot together. At its symbolic heart lies the scandalous affair, "almost a fairy-tale", of William Eisa—a Christian school friend of Hanna's and Zakariya's—and Aisha Mufti, a Muslim girl. They elope, and her enraged Ottoman fiancé murders both of them. Such disasters leave unhealed wounds. Maryam, who marries a Turkish banker but nurtures a "silent love" for Zakariya's photographer son, reflects that "survival is a journey through a trackless wilderness."

Maryam also frets that in venerable Aleppo, with its souks, mosques, churches and citadels, "All inanimate objects were immortal." For her, these hallowed edifices "conspired to erase the great stories" of the citizens themselves. After the violence and horrors of recent years, such passages have a bitterly ironic taste.

Mr Khalifa's story is richly embroidered, if sometimes tangled: a family tree would have helped. Yet his galloping narration restores life and soul to a city that has become a byword for devastation. Leri Price, who also translated "Death Is Hard Work" from Arabic, has produced an English text of grace, pace and gusto. Aleppo's "immortal" monuments may have been bombed to rubble, but, thanks to Mr Khalifa, those "great stories" endure. ■



Things of the past

Organised crime

Drug ladies

Narcas: The Secret Rise of Women in Latin America's Cartels. By Deborah Bonello. Beacon Press; 176 pages; \$26.95 and £25

MUCH IS KNOWN about the kingpins of the drug trade, thanks in part to a recent spate of books, songs and television shows. Readers, listeners and viewers are aware of the murderous exploits of Pablo Escobar, Colombia's most famous drug lord, who was shot dead on a rooftop in 1993. Joaquín Guzmán, a man better known as "El Chapo", is notorious too as the former head of Mexico's Sinaloa cartel; he is serving a life sentence in America. People may even recognise Emma Coronel, El Chapo's model wife, who attended his trial in New York in 2019 (and later pleaded guilty to three drugs-related charges).

Yet the women who traffick drugs often go unnoticed. That is partly because fewer women than men engage in this hyper-violent business. Many are, and indeed aspire to be, accessories, as implied by the *buchona* (extravagant girlfriend look) culture of Sinaloa. Deborah Bonello, a long-time journalist in Latin America for Vice News, sets out to show that women have important—sometimes even starring—roles in the gangs.

Narcas have not always been overlooked in this way. Back in 1945, Mexico's "public enemy number one" was María Dolores Estévez Zuleta, a female drug-runner. Ms Bonello tracks down some of the women involved in the drug trade in more recent times by travelling across the region to visit their home towns. (Many are now locked up in prison.)

She writes about Digna Valle, a Honduran *patrona*—as female drug bosses are known—who trafficked cocaine to the Guatemalan border for people including El Chapo. She could earn as much as \$800,000 from each shipment. Ms Bonello visits her town and the mansions probably built with the proceeds of Ms Valle's endeavours. While there she manages to have a brief phone call with Ms Valle, who was arrested in 2014, spent time in prison in America and now lives in Houston.

In Guatemala Ms Bonello reports on the Lemus sisters, who ran trafficking through the country and occasionally were involved in terrible acts of violence. In Culiacán, Mexico, the author writes about the various women who have risen up the ranks of El Chapo's cartel. One provided in-►

formation for the drug lord's trial; some informants are living in America. But most of his *narcas* are either dead or behind bars.

Ms Bonello suggests that women are gaining power in drug gangs just as they are in society more generally. Her subjects have a variety of reasons for getting involved in an illicit business, and some were coerced into it. But others found the perilous work thrilling. "I liked the danger," says one; "I loved the adrenaline," says another. Sometimes women benefit from their apparent invisibility, "hiding behind the stereotype of the good girl incapable of

doing bad to do just that."

The investigative reporting in this book is impressive. Ms Bonello goes undercover into a prison in Guatemala City to talk to Marixa Lemus. When she goes to Ms Valle's home town, she brings along a priest for safety. The result is a slim volume that is full of intriguing details and colour.

Ms Bonello admits her contribution to the field of narco-literature is "modest" thanks to a paucity of information about female bosses and the danger of collecting more. She is rarely able to paint a clear picture of the character: was Ms Valle violent

and awful or not? Unfortunately she, and the reader, cannot tell.

"Narcas" would also benefit from a clearer narrative. Based on a series of essays that Ms Bonello wrote for Vice, the book still reads as a collection of snapshots. Short interspersed sections, such as one on mothers searching for their disappeared relatives, are interesting but feel rather out of place.

All the same, Ms Bonello's work enriches the reader's understanding of drug gangs. This book is a valuable introduction to a subject that deserves more research. ■

Back Story A runaway American dream

On his epic tour, Bruce Springsteen turns back the clock—and stops it

JUST A "ONE, two, three, four" and he was off, barely pausing for breath and gathering energy over the three electric hours of his show. On stage in Hyde Park in London on July 6th, Bruce Springsteen tossed guitars to roadies, traded licks with members of his E Street Band, ripped open his shirt and bestowed plectrums and selfies on ecstatic fans. Or he stood still, his Fender dangling at his back, a pose that is a sort of benign American cousin to a gunslinger's silhouette.

Mr Springsteen is 73. Yet halfway through a ten-month tour of Europe and North America, he is still performing as if his life depended on it—just as it did when, as a teenage frontman in the late 1960s, he eked out a living in the bars of the New Jersey shore. The fight against time, and its remorselessness, are among the main themes of his songs. The ability of music to twist and resist time may be their deepest meaning.

His first number on this tour is "No Surrender". "I'm alive!" he chants in the refrain of the second, "Ghosts". Next comes "Prove It All Night" (he does). His show is part knee-slide in the face of old age, part séance for lost friends—both parts rocking to the drumbeat of mortality. Recent lyrics are crowded with the shades of dead bandmates: "You count the names of the missing as you count off time," Mr Springsteen sings in "Last Man Standing". Images of departed musicians loom on the screens behind him.

The genius of many of these songs, though, is that they were born old. The friendship and ambitions commemorated in "Backstreets" have long since withered ("And after all this time", laments the most poignant line, "to find we're just like all the rest"). In the story told in "Bobby Jean" it is too late even to say goodbye. In "The River", which these

days Mr Springsteen concludes in an eerie falsetto, the high-school infatuation, shotgun marriage and thwarted dreams are all ancient history.

The wellspring of poetry, thought William Wordsworth, is "emotion recollected in tranquillity". The same goes for lots of these songs: they are about the aftermath rather than the action, the memory of youth, harrowing or consoling, rather than the thing itself. This soulful past tense helps explain the appeal of Mr Springsteen's hymns to small-town America, threnodies for midwestern de-industrialisation and ballads of blue-collar longing to his fans in London or Barcelona. They may never have navigated the swamps of Jersey, driven 800 miles to Darlington County or worked at the rug mill across the railroad tracks. But they have all looked back with fondness or regret. They have all grown up.

It also helps explain why his hits, many of them written in the 1970s, endure as they do. Since their major key is eulogy, they never go out of date. The older the singer, the songs and his audience, the

more moving they become.

These tunes pull off one of music's most precious tricks: they meddle with time. More powerfully than any madeleine, music can open a portal to bygone gigs or evenings spent listening to cassettes or LPs. "Tonight", Mr Springsteen sings, "I'm ready to grow young again," and the greying devotees in t-shirts from tours of yore feel the same way. More than that, music can set its own time, seeming to speed up the clock *prestissimo* or slow it down in a serenade—even, sometimes, seeming to stop it.

Mr Springsteen's is an art of opposites, which, as he put it in a memoir of 2016, has "one foot in the light, one foot in the darkness". Youth is an idyll and a prison, America an open road and a broken promise, hope a lie and all you have. Home is a town full of losers that you yearn to leave but never will entirely. Likewise, even as they mourn the passage of time, his songs seize a present moment and stretch it out, rapturously, as the best music somehow can.

"Born to Run" and "Thunder Road" are poised for eternity on the threshold of escape, vowing that, at least until the final chord, you can live with the sadness and find magic in the night. "Kitty's Back" and "Mary's Place" invite you to a party rather than a wake. The fearful authenticity that Mr Springsteen projects can be transfixing on its own. On their podcast "Renegades", he told Barack Obama that all his work was inspired by his troubled father, and it still shows.

"Death is not the end," he sings at the close, alone on stage with guitar and harmonica. On this tour he revives the past, eyeballs the certain future and—like a rock'n'roll Sisyphus bestriding a mountaintop—glories in the urgent instant between them.



Economic data

	Gross domestic product			Consumer prices		Unemployment rate	Current-account balance	Budget balance	Interest rates	Currency units		
	% change on year ago latest	quarter*	2023†	% change on year ago latest	2023†	%	% of GDP, 2023†	% of GDP, 2023†	10-yr gov't bonds latest,%	change on year ago, bp	per \$ Jul 12th	% change on year ago
United States	1.8	Q1	2.0	1.1	3.0	Jun	3.9	3.6 Jun	-3.0	-5.4	3.9	90.0
China	4.5	Q1	9.1	5.5	nill	Jun	1.2	5.2 May [‡]	2.4	-3.0	2.4	§§ -18.0
Japan	1.9	Q1	2.7	1.3	3.2	May	2.6	2.6 May	3.2	-5.8	0.5	24.0 138
Britain	0.2	Q1	0.6	0.3	8.7	May	6.7	4.0 Apr ^{††}	-3.3	-4.3	4.7	240 0.77
Canada	2.2	Q1	3.1	1.2	3.4	May	3.5	5.4 Jun	-0.1	-1.0	3.4	23.0 1.32
Euro area	1.0	Q1	-0.4	0.8	5.5	Jun	5.7	6.5 May	1.7	-3.3	2.5	141 0.90
Austria	1.9	Q1	0.4 [#]	1.0	8.1	Jun	7.6	4.6 May	1.1	-2.4	3.2	150 0.90
Belgium	1.3	Q1	1.5	0.8	4.2	Jun	3.6	5.7 May	-1.9	-4.4	3.3	151 0.90
France	0.9	Q1	0.7	0.7	4.5	Jun	5.6	7.0 May	-1.7	-5.0	3.2	132 0.90
Germany	-0.5	Q1	-1.3	-0.2	6.4	Jun	6.0	2.9 May	5.1	-2.3	2.5	141 0.90
Greece	2.3	Q1	-0.3	2.0	1.8	Jun	3.9	10.8 May	-6.8	-2.3	3.9	46.0 0.90
Italy	1.9	Q1	2.2	1.2	6.4	Jun	6.4	7.6 May	0.1	-4.7	4.3	104 0.90
Netherlands	1.9	Q1	-1.3	0.9	5.7	Jun	5.2	3.5 May	6.5	-2.3	2.9	147 0.90
Spain	3.8	Q1	2.4	1.8	1.9	Jun	3.6	12.7 May	1.4	-4.2	3.7	124 0.90
Czech Republic	-0.2	Q1	-0.2	0.6	11.1	May	10.3	2.5 May [#]	-1.9	-4.5	4.3	-26.0 21.4
Denmark	1.9	Q1	2.3	0.5	2.5	Jun	5.0	2.8 May	9.8	0.7	2.9	140 6.70
Norway	3.0	Q1	1.0	1.6	6.4	Jun	4.8	3.4 Apr ^{††}	17.6	12.5	1.4	76.0 10.1
Poland	-0.3	Q1	16.1	1.3	11.5	Jun	12.3	5.0 Jun ^{\$}	-1.1	-4.9	5.6	-111 3.99
Russia	-1.8	Q1	na	-1.6	3.2	Jun	6.0	3.2 May ^{\$}	5.4	-4.2	11.2	217 90.6
Sweden	0.8	Q1	2.4	1.0	9.7	May	6.5	7.9 May ^{\$}	3.8	-0.3	2.7	120 10.4
Switzerland	0.6	Q1	1.1	1.2	1.7	Jun	2.6	2.0 Jun	7.1	-0.7	1.1	29.0 0.87
Turkey	4.0	Q1	1.3	3.0	38.2	Jun	41.7	8.8 May ^{\$}	-4.7	-4.6	16.5	-164 26.1
Australia	2.3	Q1	0.9	1.5	7.0	Q1	5.5	3.6 May	1.1	-0.1	4.1	69.0 1.47
Hong Kong	2.7	Q1	23.0	3.5	2.0	May	2.4	3.0 May ^{††}	6.6	-1.5	3.8	74.0 7.83
India	6.1	Q1	5.3	6.2	4.8	Jun	5.3	8.1 Apr	-1.3	-5.7	7.1	-27.0 82.2
Indonesia	5.0	Q1	na	4.9	3.5	Jun	3.8	5.5 Q1 ^{\$}	0.9	-2.6	6.2	-108 15,078
Malaysia	5.6	Q1	na	3.9	2.8	May	2.7	3.5 May ^{\$}	3.1	-5.0	3.9	-14.0 4.65
Pakistan	1.7	2023**	na	1.7	29.4	Jun	31.7	6.3 2021	-1.5	-5.3	15.3	††† 216 277
Philippines	6.4	Q1	4.5	5.3	5.4	Jun	5.7	4.5 Q2 [§]	-5.3	-6.3	6.7	-28.0 54.9
Singapore	0.4	Q1	-1.6	1.0	5.1	May	5.1	1.8 Q1	16.2	-0.1	3.2	40.0 1.33
South Korea	1.0	Q1	1.3	1.3	2.7	Jun	3.0	2.7 Jun ^{\$}	1.9	-2.4	3.8	39.0 1,289
Taiwan	-2.9	Q1	-2.4	0.6	1.8	Jun	2.0	3.5 May	12.5	-0.9	1.2	-10.0 31.2
Thailand	2.7	Q1	7.8	3.2	0.2	Jun	2.2	1.3 May ^{\$}	2.1	-2.7	2.8	24.0 34.9
Argentina	1.3	Q1	2.7	-3.0	114	May	116.3	6.9 Q1 ^{\$}	-2.6	-4.5	na	264 -51.8
Brazil	4.0	Q1	8.0	2.4	3.2	Jun	4.8	8.3 May ^{§‡}	-1.9	-7.5	10.6	-281 4.81
Chile	-0.6	Q1	3.4	0.1	7.6	Jun	7.7	8.5 May ^{§‡}	-3.6	-1.9	5.3	-109 811
Colombia	3.0	Q1	5.9	1.6	12.1	Jun	11.7	10.5 May ^{\$}	-4.2	-3.8	9.8	-267 4,128
Mexico	3.7	Q1	4.1	2.1	5.1	Jun	5.0	3.0 May	-1.9	-3.7	8.8	-24.0 16.8
Peru	-0.4	Q1	-2.2	1.7	6.5	Jun	6.8	6.1 May ^{\$}	-2.0	-1.6	6.8	-130 3.59
Egypt	3.9	Q1	na	3.8	35.8	Jun	30.8	7.1 Q1 ^{\$}	-1.9	-6.4	na	na 30.9
Israel	3.8	Q1	3.1	2.9	4.6	May	4.3	3.6 May	4.7	-2.4	3.8	114 3.65
Saudi Arabia	8.7	2022	na	1.0	2.8	May	2.2	5.1 Q1	3.4	-1.2	na	na 3.75
South Africa	0.2	Q1	1.4	0.5	6.6	May	5.7	32.9 Q1 ^{\$}	-1.7	-5.6	10.5	-38.0 18.2

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. §§-month moving average. §§-year yield. †††Dollar-denominated bonds.

Markets

In local currency	% change on:			index Jul 12th	% change on:			index Jul 12th	one week	Dec 30th 2022
	Index	Jul 12th	one week		index	Jul 12th	one week			
United States S&P 500	4,472.2	0.6	16.5							
United States NAScomp	13,919.0	0.9	33.0							
China Shanghai Comp	3,196.1	-0.8	3.5							
China Shenzhen Comp	2,030.8	-1.0	2.8							
Japan Nikkei 225	31,943.9	-4.2	22.4							
Japan Topix	2,221.5	-3.7	17.4							
Britain FTSE 100	7,416.1	-0.3	-0.5							
Canada S&P TSX	20,070.8	-0.2	3.5							
Euro area EURO STOXX 50	4,360.5	0.2	14.9							
France CAC 40	7,333.0	0.3	13.3							
Germany DAX*	16,023.0	0.5	15.1							
Italy FTSE/MIB	28,552.2	1.2	20.4							
Netherlands AEX	768.1	-0.2	11.5							
Spain IBEX 35	9,453.7	-0.3	14.9							
Poland WIG	69,667.8	4.8	21.2							
Russia RTS, \$ terms	1,005.0	3.7	3.5							
Switzerland SMI	11,019.0	-1.6	2.7							
Turkey BIST	6,342.1	3.9	15.1							
Australia All Ord.	7,341.5	-1.5	1.7							
Hong Kong Hang Seng	18,861.0	-1.3	-4.7							
India BSE	65,393.9	-0.1	7.5							
Indonesia IDX	6,808.2	1.3	-0.6							
Malaysia KLSE	1,398.1	0.6	-6.5							

US corporate bonds, spread over Treasuries

Basis points	latest	2022
Investment grade	142	154
High-yield	448	502

Sources: Refinitiv Datastream; Standard & Poor's Global Fixed Income Research. *Total return index.

Commodities

The Economist commodity-price index	2015=100	Jul 4th	Jul 11th*	% change on month	% change on year
Dollar Index	All items	145.7	144.1	-1.1	-8.9
	Food	136.6	136.0	1.0	-11.2
Industrials	All	154.3	151.7	-2.8	-6.8
	Non-food agriculturals	110.9	110.8	1.4	-32.0
	Metals	167.2	163.8	-3.6	0.7
Sterling Index	All items	174.8	170.5	-3.3	-16.0
Euro Index	All items	148.2	145.4	-2.8	-16.4
Gold	\$ per oz	1,927.3	1,932.1	-1.0	11.5
Brent	\$ per barrel	76.2	79.5	7.0	-20.2

Sources: Bloomberg; CME Group; Cotlook; Refinitiv Datastream; Fastmarkets; FT; ICCO; ICO; ISO; Live Rice Index; LME; NZ Wool Services; Thompson Lloyd & Ewart; Urner Barry; WSJ. *Provisional.

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Unfortunate sons

A new study finds that 47,000 Russian combatants have died in Ukraine

RUSSIA HAS not updated its formal count of combat deaths in Ukraine since September 2022, when it announced an unrealistically low figure of 5,937. The country has good reason to keep the toll secret. If it were known, public support for the war and willingness to fight might wane.

Mediazona, an independent news site, and the BBC have verified the deaths of 26,800 combatants using official statements, obituaries and social-media posts. But the true total must be higher. In May American officials estimated Russian losses at 50,000. The Centre for Strategic and International Studies, a think-tank, put them at 60,000-70,000 just for the war's first year. Now, such assessments have been replaced with firm maths. On July 10th Mediazona and Meduza, another Russian outlet, released a rigorous study with results close to the American figure.

The authors based their estimate on inheritance data. As the war began, the number of men whose deaths appeared in a public record of inheritance filings soared. The total for women, for whom fighting in Ukraine is very rare, was unchanged. The growth of this gender gap measured the rise in mortality among Russian men with valuable property and heirs to receive it.

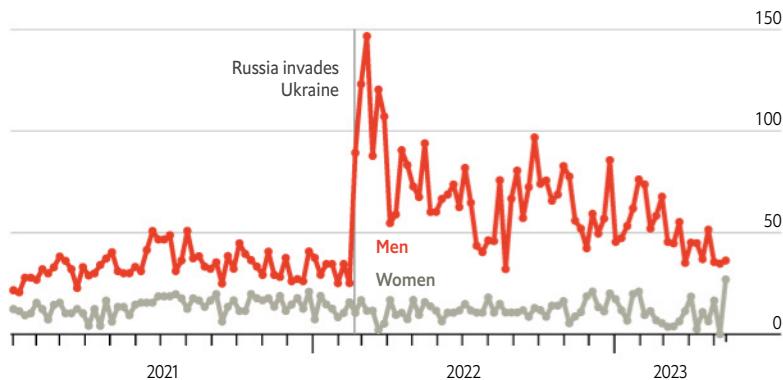
But what share of fallen fighters meets these criteria? To find out, the study used Mediazona's log of confirmed deaths. For each age group, it took the share of soldiers known to have died whose names appear in inheritance data, and applied it to all fighters. Excluding the dead still listed as missing, this yielded a range of 40,000-55,000 deaths by May 27th—meaning that even before Ukraine's counteroffensive began, Russia had lost at least as many combatants as in all other wars since 1945.

The authors double-checked this figure against data broken down by sex and age on the total number of Russians who die each year. Figures for 2023 were not available, but Dmitry Kobak, a researcher, found that 24,000 more men aged 15-49 died in 2022 than female death rates that year would suggest—a close match for the inheritance-based estimate of 25,000 deaths.

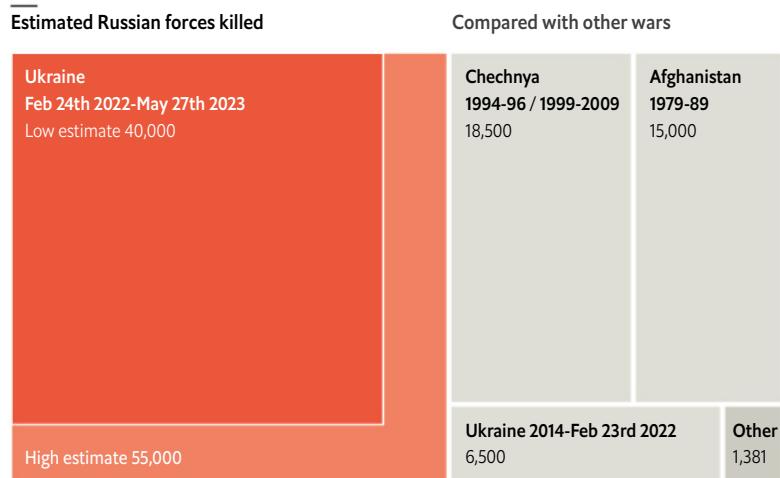
Using records of compensation payments to military families, the study suggested that a further 78,000 fighters have been wounded so gravely that they have left military service. This would bring Russia's irrecoverable losses to 125,000—nearly the size of its original invading force. ■

→ When the war began, the gender gap in inheritance filings expanded

Russia, weekly probate cases for 20- to 24-year-olds
By date of death, adjusted to account for missing filings in the past six months

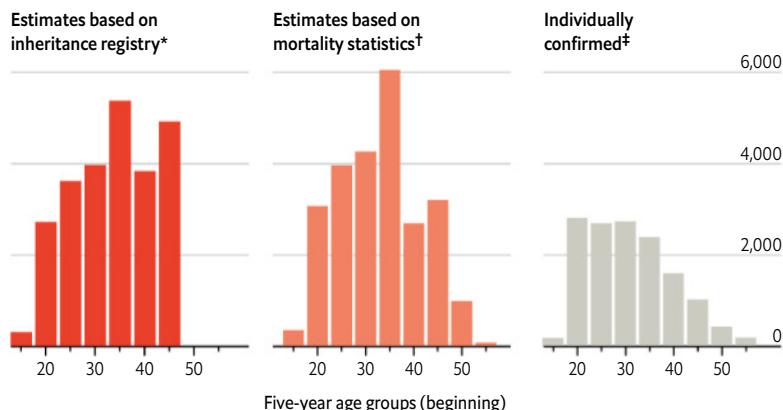


→ The invasion has at least doubled Russia's total combat losses since 1945



→ Estimates based on inheritance and mortality data yield similar results

Russians killed in Ukraine, by age group, 2022



*No data for aged 50+ †Based on deviation from pre-war data and trends among Russian women

‡Using official statements, published obituaries or social-media posts Sources: Mediazona; Meduza; CSIS



Truth, and how to find it

Victoria Amelina, Ukrainian writer and human-rights campaigner, died on July 1st, aged 37

THE SUMMER grass was long under the cherry tree, and they did not know where to dig at first. Victoria Amelina was standing in a garden in the village of Kapytolivka, near Izyum in eastern Ukraine, with the aged father of Volodymyr Vakulenko, a poet. The poet had been shot by the Russians, his body hastily buried in one of 400 graves. His father, desperate with grief, could cling only to one thing: that Volodymyr had told him he had buried his diary of the Russian occupation under the cherry tree.

She found it before he did. The loose pages were wrapped in rolled-up cellophane, muddy but safe. She photographed herself holding them like a weapon, because they held the truth.

She had gone to Kapytolivka as a field researcher for Truth Hounds, a group dedicated to uncovering war crimes, hunting the perpetrators and (faint hope) bringing them to justice. The group had been formed soon after the Russian invasion; she was an early recruit, joining shadowy figures called "Sherlock" or "Wasabi". Her self-appointed mission was to talk to people on the front line in eastern and southern Ukraine.

Sometimes she made herself more immediately useful, handing out humanitarian aid and travelling with tourniquets in her backpack. But salvaging the truth was just as vital. There might be no one else prepared to sit down with a man weeping over the ruins of his house, or a stressed-out soldier behind the lines, or a grandmother whose son had been rough-armed away. And those stories, especially the victims' names, had to be preserved.

Her first novel, "The November Syndrome" had been about a man who had the gift, or complaint, of total empathy with the suffering of others, entering their minds and, in the end, their actual lives. She seemed to have a form of that. Her pale face and long curtain of hair made her look shy, even fragile, but army boots and a flak jacket soon gave her a tough edge. She needed one.

In particular she talked to women for a book she called "War

and Justice Diary: Looking at Women Looking at War." It was in English, to win more readers, and almost finished. Sometimes the looking was simply a scene she would turn into a poem:

In a barren springtime field/Stands a woman dressed in black/Crying her sisters' names/Like a bird in the empty sky/She'll cry them all out of herself/...She'll cry them all into the ground/As though sowing the field with pain/...She will stay in this field for ever/Because only this cry of hers/ Holds all those swallows in the air

She had not written much poetry before. But war gave her no option. Missile strikes shattered language as well as buildings. She was left with a debris of words for what was often indescribable anyway. In 2021 she founded a literary festival in a town in front-line Donetsk, to keep the flag flying.

Her life had taken some strange twists. At university she studied computer science and was a programmer for years. It was good money, but increasingly it felt empty, a mistake. Instead, she became an activist. After the Maidan revolution in 2014, when the Russian puppet Viktor Yanukovych was forced from power by the people, she joined the campaign to free Oleg Sentsov, a Crimean film-maker, from a Russian jail. It worked; in five years he was out, and promptly joined the Ukrainian army.

The Sentsov case, she clearly saw, was part of a broader Russian agenda to destroy Ukraine: its language, its culture, its separate history and identity. Stalin had tried that with the Holodomor, the Terror-Famine, of 1932-33, and with the wholesale arrest and murder of a hive of artists and intellectuals in Kharkiv. On the cultural map of Europe (Dante here, Shakespeare there) Ukraine became, in her words, a vast gap. Now Vladimir Putin with his weapons had made sure that Artem Datsyshya, a ballet star, would never dance again, and that Oleksandra Kuvshinova, a journalist, would never file another word. How many more would join that list?

As a child, though, she had naturally thought Moscow the centre of the world. She grew up in Lviv speaking Russian, going to Russian school, praying in Russian church. At 15, to her surprise, she discovered that Muscovites thought she was oppressed. She told them she was not, but the propaganda went on. Within her own family, too, and neighbours' families, there was silence about what exactly had happened during the Holodomor, the war, and afterwards. Which side had people been on this time? The one that applauded the Soviets, or the one that clung to the hope of a free Ukraine? The side that took all the food, or the side that starved?

Those questions constantly bothered her. They fed into her second and last novel, "A Home for Dom", which detailed the experiences of three generations in a house in Lviv, narrated by a poodle called Domenicus. The central theme was the lack of openness between the characters. Arm-in-arm on the Maidan in 2014, she had felt at last that Ukrainians were a united people, taking risks together. By the time of the Russian invasion, she was not so sure. Distrust ran deep. "Why do you resemble them?" she asked Ukrainian soldiers in another poem. "You're brothers, perhaps?"

"No, our arms crossed/Not in embrace, but in battle/Our blood mingled with the earth/From which they gathered our harvest/...Our language was burnt alive/After shouting on the Maidan/And we picked another/Like a stranger's rifle/...When our battle begins/You had better not ask/Why we resemble those/Who have been killing us since time began"

By this year she was worn out, and had accepted a year's writing residency in Paris. But she made just one more trip east, to show some Latin American writers what the front line was like. She took them to RAI Pizza in Kramatorsk on the evening when two Russian missiles left the place in ruins. It was, the Russians said in their last big lie to her, a legitimate military target.

Vakulenko's fierce words from under the cherry tree had been put on public display in Kharkiv. That sort of thing, she had said then, was what she would want for hers. ■