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

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Soldiers in **Gabon** seized power days after a presidential election returned the incumbent, Ali Bongo, to office in a ballot that was widely deemed fraudulent as usual. Mr Bongo's father had ruled from 1967 until his death in 2009, when his son inherited the post. It is the eighth coup in west and central Africa since 2020, following one in Niger in July. Others include Burkina Faso, Chad, Guinea and Mali. France is watching nervously, since it has a military base in Libreville, Gabon's capital, and has seen coup-led regimes expel its forces from Burkina Faso and Mali.

Security across much of **Mali** continued to deteriorate, as 13,000 UN peacekeepers and police continued to be drawn down; the ruling junta has ordered them all out by the end of the year. Following the death of Yevgeny Prigozhin, head of the Wagner mercenary group, which has been active in Mali, Russia pledged to keep giving "comprehensive assistance" to the country. The historic Malian city of Timbuktu, facing a blockade by jihadists, was short of food.

Zimbabwe's electoral commission declared the incumbent president, Emmerson Mnangagwa, who overthrew Robert Mugabe in a coup in 2017, to have won re-election. The commission said Mr Mnangagwa defeated Nelson Chamisa, the main challenger, by 53% to 44%. Independent observers, supported by the Southern African Development Community, a regional club which had previously whitewashed elections in Zimbabwe, castigated the conduct of the poll.

Libya's internationally recognised government based in Tripoli sacked its foreign minister, after protests erupted in several cities when it was revealed that she had held clandestine talks in Italy with her Israeli counterpart, presumably to discuss opening diplomatic relations.

At least 73 people died when a fire broke out in a building that was being used by squatters in central **Johannesburg**, South Africa's commercial capital. It is thought that most of the dead were migrants.

Ukraine stepped up its drone attacks on Russia, hitting six regions in just one night. Russia conducted its most intense bombardment of Kyiv for several months, firing missiles and drones to terrorise the city's residents. Meanwhile the Ukrainian army said it had recaptured the village of Robotyne in the south-east of the country. Russia said it had beaten back the assault.

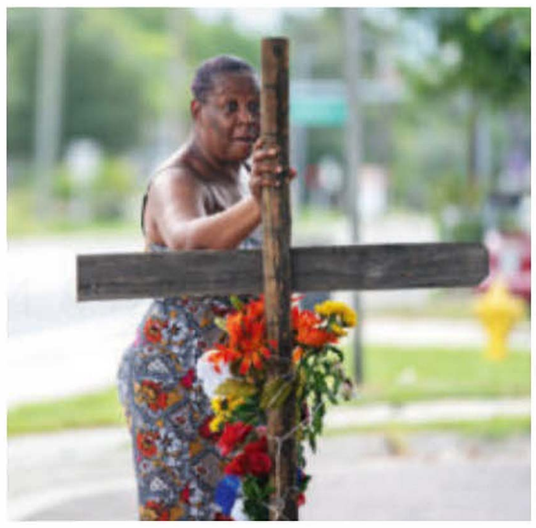
A private ceremony was held to bury **Yevgeny Prigozhin** in St Petersburg. The Kremlin continued to deny that it had arranged for the leader of the Wagner Group to be killed in a plane crash. Vladimir Putin did not attend the funeral.

The **French** education minister, Gabriel Attal, announced that Muslim girls will not be allowed to wear the abaya, a loose-fitting full-length robe, in schools. Headscarves are already banned in French schools. Mr Attal argues that secularism means "freedom to emancipate oneself at school", but the move has been condemned on the left, with one MP saying the government had become the "clothes police".

A display of enmity among the **European Union's** institutions came to the fore when the European Commission slapped down remarks made by Charles Michel, the president of the European Council, about enlargement. Mr Michel's comment that the EU must be ready to extend its membership by 2030 were swiftly rebuffed by the commission, which said it wasn't focused on a date. A summit in October will discuss the candidate countries, which include Ukraine and Moldova.

An early spring

The start of **Donald Trump's** federal trial for conspiring to overturn the result of the presidential election three years ago has been set for March 4th. Mr Trump's lawyers had asked that it be pushed back to 2026, but the judge ruled that a speedy trial was in society's interest. March 4th is the day before Super Tuesday, when over a dozen states will hold party primaries.



A 21-year-old white man shot dead three black people at a store in **Jacksonville**, Florida, before taking his own life. The gunman's motivation for murder was racial hatred. He had been briefly detained in 2017 for a mental-health issue.

Bernardo Arévalo became **Guatemala's** president-elect after the results from a recent election were officially certified. The reformer is one step closer to taking power in January, but more challenges from a group of corrupt elites trying to block him from office are in the works. Semilla, his party, has been suspended, and Mr Arévalo and his vice-president face credible threats to their lives.

Terry Gou shook up the race to be **Taiwan's** next president by declaring his candidacy as an independent. The founder of Foxconn, which assembles the iPhone and other devices, failed this year for the second time to secure the candidacy of the Kuomintang (KMT) party, which favours closer relations with China. The front-runner for January's poll remains Lai Ching-te, the vice-president from the ruling Democratic Progressive Party, and the only candidate who takes a tough line on China.

Meanwhile Taiwan warned of the potential for a "sharp increase" in **military tensions** with China, as 12 Chinese aircraft crossed into its air-defence zone.

A court in **Pakistan** suspended Imran Khan's conviction on corruption charges pending his appeal in the case. But the former prime minister will remain in jail as he is on remand in another case. Mr Khan says the 100 or so charges brought against him since he was ousted from power last year are politically motivated.

Australia set October 14th as the date for a referendum on whether the constitution should be altered to create an advisory body for Aboriginals and Torres Strait Islanders. Opinion polls point to rising support for a no vote.

Grant Shapps was appointed as Britain's new **defence secretary**. He replaces the widely respected Ben Wallace, who at one point was considered for the job of NATO secretary-general.

Green light, red light

London's ultra-low emission zone was expanded to all the city's boroughs. Now all drivers of cars that do not meet certain emissions standards will be charged. The expansion is unpopular in outer London, which is poorer than inner London, and comes amid cost-of-living concerns. Despite calls from his Labour Party to reconsider, the mayor, Sadiq Khan, remained resolute in pressing ahead with the scheme. But the backlash has caused Mr Khan to shelve plans for zero-emission zones in the city.

UBS reported a whopping second-quarter net profit of $29bn, almost all of it a gain from its takeover of **Credit Suisse**, which it bought at a knock-down price in an emergency rescue backed by the Swiss government. UBS also laid out plans to fully absorb Credit Suisse's domestic operations, a controversial move that will lead to thousands of job losses.

Sweden's economy was 0.8% smaller in the second quarter than in the previous three months, though the contraction was not as bad as had been feared. The country exported fewer goods and household consumption shrank again, as the central bank's sharp rises in interest rates took hold.

Turkey's central bank raised its key interest rate from 17.5% to 25%, a much bigger increase than markets had expected. The bank has shifted towards a more orthodox monetary policy under the new governor, Hafize Gaye Erkan, in order to combat inflation, which is on the rise again (the annual rate soared to 47.8% in July). The bank says it will continue to tighten monetary policy "as much as needed" until the inflation outlook improves. The Turkish lira rose against the dollar but later gave up some of its gains.

The Biden administration unveiled the first **prescription medicines** for which Medicare officials will, in effect, set the price they pay drug companies. The list includes treatments for diabetes, arthritis and the prevention of strokes. They were chosen because they account for a big share of Medicare spending and do not face competition in the market. Pharmaceutical firms have filed a court case against the scheme, arguing that it is unconstitutional.

Rite Aid's share price plunged amid reports that it is preparing to file for bankruptcy protection to restructure its debts, including any liabilities it incurs over claims it contributed to the opioid epidemic. Rite Aid is one of America's biggest pharmacy chains.

This is not a wind up

The market for **Rolex watches** looks set for a shake-up. The Swiss manufacturer of luxury timepieces said it was acquiring Bucherer, which operates stores in high-end locations around the world that sell Rolexes as well as its own merchandise, leading to speculation that Rolex is planning to sell more of its watches directly to consumers. The share price of Watches of Switzerland, a rival retailer to Bucherer, slumped.

One of the biggest-ever lawsuits against a company reached a settlement when 3M agreed to pay $6bn to 250,000 former servicemen over **faulty earplugs**. The earplugs, made by a firm that 3M bought in 2008, were distributed to troops during the conflicts in Afghanistan and Iraq, but the servicemen claim that the noise mufflers failed to prevent a loss of hearing. The agreement is not an admission of liability by 3M. A further 50,000 claims were dismissed by a judge.

Countries in the European Union are buying significantly more **Russian liquefied natural gas**, according to Global Witness, an international NGO. During the first seven months of this year the EU bought 22m cubic metres of Russian LNG, up by 40% compared with the same period in 2021. Spain and Belgium were the world's second- and third-biggest importers, just behind China. Global Witness said that buying Russian gas has "the same impact as buying Russian oil. Both fund the war in Ukraine."

BYD's net profit surged by 205% in the first half of the year, compared with the same six months in 2022. The Chinese maker of electric vehicles is making a big push outside its domestic market, where it accounts for 37% of EV sales, into Europe. China is expected to overtake Japan as the world's biggest exporter of cars this year.

Instacart filed for an IPO on the Nasdaq stock exchange. The public listing of the online grocery-delivery firm is being seen as another fillip for the IPO market for tech firms ahead of the flotation of Arm, a chip designer.

To the delight of anyone who has been stuck on a plane, the American government fined **American Airlines** $4.1m for keeping dozens of flights on the ground for lengthy periods and not allowing people to get off. In one case passengers were held for six hours. It is the largest penalty imposed on an airline for violating the "tarmac-delay rule".

A meaty case

A federal judge in Miami allowed a class-action lawsuit to proceed against **Burger King** from customers who claim that its Whopper is smaller than the one depicted on store menus. The judge ruled that a jury should decide "what reasonable people think" in the matter (if the case is not settled). Lawyers say the misadvertised smaller burgers have left their clients "financially damaged" and are seeking millions in compensation. The fast-food chain says the plaintiffs' claims are "false".

AI voted

How artificial intelligence will affect the elections of 2024

POLITICS IS SUPPOSED to be about persuasion; but it has always been stalked by propaganda. Campaigners dissemble, exaggerate and fib. They transmit lies, ranging from bald-faced to white, through whatever means are available. Anti-vaccine conspiracies were once propagated through pamphlets instead of podcasts. A century before covid-19, anti-maskers in the era of Spanish flu waged a disinformation campaign. They sent fake messages from the surgeon-general via telegram (the wires, not the smartphone app). Because people are not angels, elections have never been free from falsehoods and mistaken beliefs.

But as the world contemplates a series of votes in 2024, something new is causing a lot of worry. In the past, disinformation has always been created by humans. Advances in generative artificial intelligence (AI)—with models that can spit out sophisticated essays and create realistic images from text prompts—make synthetic propaganda possible. The fear is that disinformation campaigns may be supercharged in 2024, just as countries with a collective population of some 4bn—including America, Britain, India, Indonesia, Mexico and Taiwan—prepare to vote. How worried should their citizens be?

It is important to be precise about what generative-AI tools like ChatGPT do and do not change. Before they came along, disinformation was already a problem in democracies. The corrosive idea that America's presidential election in 2020 was rigged brought rioters to the Capitol on January 6th—but it was spread by Donald Trump, Republican elites and conservative mass-media outlets using conventional means. Activists for the BJP in India spread rumours via WhatsApp threads. Propagandists for the Chinese Communist Party transmit talking points to Taiwan through seemingly legitimate news outfits. All of this is done without using generative-AI tools.

What could large-language models change in 2024? One thing is the quantity of disinformation: if the volume of nonsense were multiplied by 1,000 or 100,000, it might persuade people to vote differently. A second concerns quality. Hyper-realistic deepfakes could sway voters before false audio, photos and videos could be debunked. A third is microtargeting. With AI, voters may be inundated with highly personalised propaganda at scale. Networks of propaganda bots could be made harder to detect than existing disinformation efforts are. Voters' trust in their fellow citizens, which in America has been declining for decades, may well suffer as people began to doubt everything.

This is worrying, but there are reasons to believe AI is not about to wreck humanity's 2,500-year-old experiment with democracy. Many people think that others are more gullible than they themselves are. In fact, voters are hard to persuade, especially on salient political issues such as whom they want to be president. (Ask yourself what deepfake would change your choice between Joe Biden and Mr Trump.) The multi-billion-dollar campaign industry in America that uses humans to persuade voters can generate only minute changes in their behaviour.

Tools to produce believable fake images and text have existed for decades. Although generative AI might be a labour-saving technology for internet troll farms, it is not clear that effort was the binding constraint in the production of disinformation. New image-generation algorithms are impressive, but without tuning and human judgment they are still prone to produce pictures of people with six fingers on each hand, making the possibility of personalised deepfakes remote for the time being. Even if these AI-augmented tactics were to prove effective, they would soon be adopted by many interested parties: the cumulative effect of these influence operations would be to make social networks even more cacophonous and unusable. It is hard to prove that mistrust translates into a systematic advantage for one party over the other.

Social-media platforms, where misinformation spreads, and AI firms say they are focused on the risks. OpenAI, the company behind ChatGPT, says it will monitor usage to try to detect political-influence operations. Big-tech platforms, criticised both for propagating disinformation in the 2016 election and taking down too much in 2020, have become better at identifying suspicious accounts (though they have become loth to arbitrate the truthfulness of content generated by real people). Alphabet and Meta ban the use of manipulated media in political advertising and say they are quick to respond to deepfakes. Other companies are trying to craft a technological standard establishing the provenance of real images and videos.

Voluntary regulation has limits, however, and the involuntary sort poses risks. Open-source models, like Meta's Llama, which generates text, and Stable Diffusion, which makes images, can be used without oversight. And not all platforms are created equal—TikTok, the video-sharing social-media company, has ties to China's government, and the app is designed to promote virality from any source, including new accounts. Twitter (which is now called X) cut its oversight team after it was bought by Elon Musk, and the platform is a haven for bots. The agency regulating elections in America is considering a disclosure requirement for campaigns using synthetically generated images. This is sensible, though malicious actors will not comply with it. Some in America are calling for a Chinese-style system of extreme regulation. There, AI algorithms must be registered with a government body and somehow embody core socialist values. Such heavy-handed control would erode the advantage America has in AI innovation.

Politics was never pure

Technological determinism, which pins all the foibles of people on the tools they use, is tempting. But it is also wrong. Although it is important to be mindful of the potential of generative AI to disrupt democracies, panic is unwarranted. Before the technological advances of the past two years, people were quite capable of transmitting all manner of destructive and terrible ideas to one another. The American presidential campaign of 2024 will be marred by disinformation about the rule of law and the integrity of elections. But its progenitor will not be something newfangled like ChatGPT. It will be Mr Trump. ■

Global politics

How paranoid nationalism corrupts

Cynical leaders are scaremongering to win and abuse power

PEOPLE SEEK strength and solace in their tribe, their faith or their nation. And you can see why. If they feel empathy for their fellow citizens, they are more likely to pull together for the common good. In the 19th and 20th centuries love of country spurred people to seek their freedom from imperial capitals in distant countries. Today Ukrainians are making heroic sacrifices to defend their homeland against Russian invaders.

Unfortunately, the love of "us" has an ugly cousin: the fear and suspicion of "them", a paranoid nationalism that works against tolerant values such as an openness to unfamiliar people and new ideas. What is more, cynical politicians have come to understand that they can exploit this sort of nationalism, by whipping up mistrust and hatred and harnessing them to benefit themselves and their cronies.

The post-war order of open trade and universal values is strained by the rivalry of America and China. Ordinary people feel threatened by forces beyond their control, from hunger and poverty to climate change and violence. Using paranoid nationalism, parasitic politicians prey on their citizens' fears and degrade the global order, all in the pursuit of their own power.

As our Briefing describes, paranoid nationalism works by a mix of exaggeration and lies. Vladimir Putin claims that Ukraine is a NATO puppet, whose Nazi cliques threaten Russia; India's ruling party warns that Muslims are waging a "love jihad" to seduce Hindu maidens; Tunisia's president decries a black African "plot" to replace his country's Arab majority. Preachers of paranoid nationalism harm the targets of their rhetoric, obviously, but their real intention is to hoodwink their own followers. By inflaming nationalist fervour, self-serving leaders can more easily win power and, once in office, they can distract public attention from their abuses by calling out the supposed enemies who would otherwise keep them in check.

Daniel Ortega, the president of Nicaragua, shows how effective this can be. Since he returned to power in 2006, he has demonised the United States and branded his opponents "agents of the Yankee empire". He controls the media and has put his family in positions of influence. After mass protests erupted in 2018 at the regime's graft and brutality, the Ortegas called the protesters "vampires" and locked them up. On August 23rd they banned the Jesuits, a Catholic order that has worked in Nicaragua since before it was a country, on the pretext that a Jesuit university was a "centre of terrorism".

Rabble-rousing often leads to robbery. Like the Ortegas, some nationalist leaders seek to capture the state by stuffing it with their cronies or ethnic kin. The use of this technique under Jacob Zuma, a former president of South Africa, is one reason why the national power company is too riddled with corruption to keep the lights on. Our statistical analysis suggests that governments have grown more nationalistic since 2012, and that the more nationalistic they are, the more corrupt they tend to be.

But the more important role of paranoid nationalism is as a tool to dismantle the checks and balances that underpin good governance: a free press, independent courts, NGOs and a loyal opposition. Leaders do not say: "I want to purge the electoral commission so I can block my political opponents." They say: "The commissioners are traitors!" They do not admit that they want to suppress NGOs to evade scrutiny. They pass laws defining as "foreign agents" any organisation that receives foreign funds or even advice, and impose draconian controls on such bodies or simply ban them. They do not shut down the press, they own it. By one estimate, at least 50 countries have curbed civil society in recent years.

An example is the president of Tunisia, Kais Saied. Before he blamed black people for his country's problems, he was unpopular because of his dismal handling of the economy. Now Tunisians are cheering his bold stand against a tiny, transient minority. Meanwhile Mr Saied has gutted the judiciary and closed the anti-corruption commission, and graft has grown worse.

Abuses are easier when institutions are weak: the despots of Nicaragua, Iran or Zimbabwe are far less constrained than the leaders of say, Hungary or Israel. But in all these countries (and many more), the men in power have invented or exaggerated threats to the nation as a pretext to weaken the courts, the press or the opposition. And this has either prolonged a corrupt administration or made it worse.

Paranoid nationalism is part of a backlash against good governance. The end of the cold war led to a blossoming of democracy around the world. Country after country introduced free elections and limits on executive power. Many power- and plunder-hungry politicians chafed at this. Amid the general disillusion that followed the financial crisis of 2007-09, they saw an opportunity to take back control. Paranoid nationalism gave them a tool to dismantle some of those pesky checks and balances.

Because these restraints often came with Western encouragement, if not Western funding, leaders have found it easier to depict the champions of good government as being foreign stooges. In countries that have endured colonial rule—or interference by the United States, as have many in Latin America (see Americas section)—the message finds a ready audience. If a leader can create a climate of such deep suspicion that loyalty comes before truth, then every critic can be branded a traitor.

First resort of the scoundrel

Paranoid nationalism is not about to disappear. Leaders are learning from each other. They are also freer to act than they were even a decade ago. Not only has the West lost faith in its programme of spreading democracy and good governance, but China—a paranoid nationalist that is inclined to spot slights and threats around every corner—is promoting the idea that universal values of tolerance and good governance are a racist form of imperialism. It prefers non-interference from abroad and zero-criticism at home. If only they could see through the lies behind paranoid nationalism, ordinary people would realise how wrong China's campaign is. There is nothing racist or disloyal about wishing for a better life. ■

Destroyer of worlds

A three-way nuclear arms-race

America, China and Russia should agree on mutual restraints before it's too late

IN LIFE AND in a recent film, Robert Oppenheimer, the father of the atomic bomb, was haunted by the idea that "I am become Death, destroyer of worlds." The Cuban missile crisis of 1962 nearly brought annihilation. Fortunately the superpowers stepped back from the brink and agreed on arms-control deals that eventually shrank nuclear stockpiles, and did more besides.

Now the world is entering a new nuclear arms-race—one that may be harder to stop. Instability is increasing because of Vladimir Putin's nuclear threats in Ukraine and China's rapid build-up of weapons. And arms control is collapsing. First Russia and later America stopped exchanging information under New START, the last deal limiting their arsenals. The treaty will expire in February 2026, and there is little sign of a replacement. China has never cared for such curbs (see International section). America, China and Russia need to start talking now, before another Cuban-style crisis occurs.

Developed during the cold war, the notion of "mutual assured destruction" involves mind-bending logic. But now deterrence is becoming even more complex because of the prospect of three near-peer nuclear powers. The balance of terror is also being upended by new kinds of missiles and sensors, and by the possibility of artificial intelligence influencing decisions.

Until now, America and Russia accepted limits on the basis of parity, assuming their arsenals of 5,000-6,000 warheads each would be enough to deter each other and smaller threats. China used to rely on a "minimal deterrent" of a few hundred warheads. But it wants more weapons and to maintain them at a higher level of alert: it could have 1,500 warheads by 2035, according to the Pentagon. Given their "friendship with no limits", Russia and China could act as military allies in a crisis.

Should America match the combined arsenals of Russia and China? Some experts think that, at the very least, it needs more weapons. From 2026 they want to "upload" warheads, currently held in reserve, onto deployed missiles and bombers. Many in Congress are calling for a nuclear sea-launched cruise missile (SLCM-N) to plug a perceived gap in the escalation ladder. Such moves could make everything worse. China or Russia may try to match America's bigger arsenal; India could build up in response to China; Pakistan in reaction to India; and so on.

President Joe Biden is rightly resisting a huge new build-up, which should be considered only if diplomacy is exhausted. America is right to keep modernising its triad (of land-, sea- and air-launched nukes), but stick to limits on the number of warheads beyond 2026, providing Russia does the same. It should keep open its offer to talk without preconditions with China and Russia.

Stability requires a mix of threat and reassurance. The big powers need to discuss all aspects of their nuclear enterprise, not least missile defences, SLCM-N and tactical weapons. They must also think of space and cyberspace, where the first shot of the next war may be fired. A call by America, Britain and France to limit the role of artificial intelligence by ensuring there is a "man in the loop" using nukes makes sense. America and Russia should resume notifications under New START. China should take part in more confidence-building measures, such as missile-launch notifications.

China's belief that such safety-nets encourage risk-taking is wrong. Nobody, including the leaders of the People's Republic, benefits from unrestrained nuclear rivalry. It would soak up vast resources: Russia cannot afford it. And in a nuclear-armed world without limits, everybody is on a high wire. Negotiated restraints are the only way to avert Oppenheimer's dread, in the film, of "a chain reaction that would destroy the entire world". ■

Home loans

Great Danes

High interest rates have broken mortgage markets. Here's how to fix them

IT MATTERS WHEN mortgages malfunction. Home loans underpin tens of trillions of dollars of financial assets, not to mention some of life's most important transactions. And though the rich world is mercifully free of the tearaway lending that caused the global financial crisis of 2007-09, mortgage markets remain riddled with problems. The sharp rise in interest rates over the past year and a half has exposed them.

In America buyers have long enjoyed 30-year fixed-rate prepayable mortgages courtesy of the federal government. It implicitly guarantees mortgage-backed securities that are sold to investors through agencies such as Fannie Mae and Freddie Mac. The average 30-year rate stands at over 7.2%, the highest since 2001. It is now clear that anyone who borrowed in, say, early 2021, when the rate was 2.7%, secured the deal of a lifetime—especially as house prices have gone on to rise by nearly a third.

The trouble is that the system has gummed up the housing market. Moving home means borrowing afresh at much higher rates. So homeowners who might usually up sticks are instead staying put. In an otherwise hot economy, sales of existing homes are almost as rare as they were during pandemic lockdowns in 2020. Buyers have been left competing for the much smaller stock of new homes, sales of which are nearly a third higher than a year ago. And house prices, having dipped briefly after rates first rose, are once again reaching all-time highs (see Finance & economics section).

If America offers a case study in how government interven- ▸▸

tion can distort the market, other systems show how severely higher rates threaten some households. In Britain borrowers typically fix their interest rate for only a few years. As a result the screw is steadily turning on borrowers as they refinance cheap loans. By the end of 2026, 2m of them will have faced a rise in annual mortgage payments of more than £3,600 ($4,570)—over 10% of median household income. The situation is similar in Sweden, where almost 90% of loans have a fixed-rate period of two years or less. In New Zealand interest costs alone could soon exceed a fifth of borrowing households' disposable income.

Nobody forced homeowners to borrow, and they tend to be well-off. But it is not ideal that, in countries where homeownership is prized, households take enormous, perhaps unwitting, bets on interest rates almost as a rite of passage. Many would take out interest-rate fixes if they could—as many Americans do.

Fortunately there is a proven middle ground between the distorted American system and a floating-rate free-for-all. In Denmark homebuyers can borrow at 30-year fixed rates, and mortgages are prepayable. About half of borrowers fix for three decades. Yet there is no problem of "locked in" homeowners because a seller can end a mortgage by buying it back at its market value, which falls when rates rise, thereby cashing out the value of their interest-rate fix. Alternatively they can transfer their mortgage to the home's new owners. The result is greater dynamism: in the first quarter of 2023 housing transactions were down by only 6% on a year earlier, compared with 22% for existing homes in America.

The government provides no guarantees. The role that Fannie and Freddie play in America is fulfilled in Denmark by highly capitalised mortgage banks. Their thick safety buffers meant that, unlike Fannie and Freddie, they did not require a full-scale government rescue in 2007-09. And unlike America's agencies, they originate the loans whose payments to investors they guarantee, which encourages prudent lending.

There are catches: mortgage banks are protected from losses by creditor-friendly rules, including swift foreclosure procedures and barriers to declaring bankruptcy. But the flexibility and protection the Danish system offers is enviable when many mortgage markets are either distorting economies or causing hardship. Other countries would do well to try it. ■

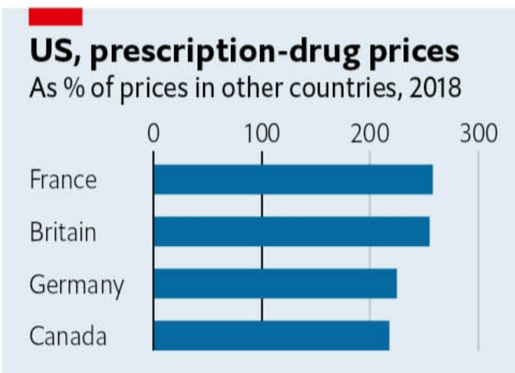
Pharmaceuticals in America

Beware side-effects

Allowing Medicare to negotiate with drugmakers is good. Setting prices is not

A QUIRK OF American law long barred Medicare, the public-health insurer for the elderly, from negotiating with drug firms over prices. Even as the National Health Service in Britain and other government procurers haggled with companies to bring costs down, one of the world's biggest spenders on drugs was forced to be a price-taker. Americans, meanwhile, spend more than twice as much on prescription medicines as people in other rich countries. In an attempt to lower the bill, the Inflation Reduction Act, signed by Joe Biden last year, now allows Medicare to use its purchasing power. On August 29th the administration revealed a list of ten drugs over which talks will soon begin.

The ban on negotiations was illogical, and allowing Medicare to bargain with drugmakers makes sense. Alas, the new rules are too heavy-handed, and could have damaging effects.



A problem is that they have swung from one extreme to another. Officials will not so much be negotiating the price as setting it. The penalties for companies that do not comply with the negotiation process for a single drug are severe: they will either face an excise tax of 65-95% of the product's sales in America, or have to withdraw all their medicines from public-health programmes altogether. It is like turning up to a fight where only one side has a gun.

This matters, because setting prices low could harm innovation. Pharmaceutical firms are not earning vast excess profits, considering the risk of their investments. According to research published in 2021, once their spending on research and development is treated as an investment rather than an expense, pharma firms are not making outsize returns compared with the average firm in the S&P 500. If they doubt that they will make a sufficient profit on their investments, they will spend less on finding new drugs. Sure enough, studies suggest that falling revenues hit research and development spending hard.

This is typical of the unintended and undesirable effects from price regulation. Lower prices are popular with patients today and mean less of a drain on the public purse in the near term. But if they discourage investment in new medicines, that will be to the detriment of patients and society tomorrow.

The new rules will have further perverse consequences (see Business section). Currently, it can be beneficial for a new drug to win its first approval for use by a small group of patients, such as those with rare or late-stage cancer, and after that to go through trials for diseases that affect more patients. But the new rules allow a fixed term of unregulated pricing that begins with the first drug approval. This encourages firms to seek treatments for the most lucrative diseases first. They may delay or entirely avoid expanding the drug's use into diseases with fewer patients. Another perverse incentive is to give shorter periods of pricing freedom for molecules that are easier to copy when they come off patent, making them less attractive to develop in the first place.

In a country that spends as much on health care as the entire German economy produces in a year, American officials are right to want to bring costs down. But, if big pharma isn't earning excess profits, regulators looking to tackle the problems of health care would do better to pay more attention to the rest of the supply chain. The system is packed with opaque middlemen such as pharmacy benefit managers, many of which are making big rents. A spate of consolidation means these intermediaries are only gaining more pricing power. Mergers of hospitals over the past 20 years, meanwhile, have been shown to lead to stagnation in the quality of care. American health care needs fixing. But price controls on drugs are not the way to do it. ■

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Supersize your Wow

Reining in the lobby horse

Your assertion that "in a fractious world, businesses cannot hide from politics and geopolitics" ("The overstretched CEO", July 29th) is far from being a platitude. Historically, businesses have stayed away from the most contentious social issues in order to preserve their bottom line. Yet this has never prevented them from using their corporate political power, through lobbying and other subtler forms of influence, to bend the rules to serve their own self-interest.

What is new today is the growing awareness that companies are too often saying one thing, be it on values or purpose, such as stricter green standards, and lobbying for another, against those very standards. The misalignment between corporate lobbying and companies' commitments to values is a big factor underpinning a lack of progress on numerous critical issues, ranging from the failure to act on the climate emergency to an unfair global tax regime.

With investors, employees and customers increasingly scrutinising corporate conduct, there is a clear case for greater transparency and responsibility in the way companies exercise their political influence, especially through their unaccountable trade associations. This can start with mandatory reporting and assessment of all corporate political activities. Ultimately, no company can declare itself sustainable unless it fully internalises not only its environmental and social impact, but also its political footprint.

ALBERTO ALEMANNO
Professor of law
HEC Paris

Unappetising food

You say that ultra-processed foods (UPFs) are "cheap, tasty and abundant" (*The Economist* explains, August 7th). "Tasty" is a subjective assessment. There is persuasive evidence, summarised in the book by Chris van Tullekan that you mention, that "addictive" would be a better descriptor. For instance, Pringles crisps are engineered to tell our taste buds that essential nutrients are on the way. But they don't contain those nutrients so the body demands more. Tricking a billion years of evolution by presenting the body with entirely new chemical formulations is part of what makes UPFs sell. "Cheap" fails to tackle the consequences, which include the costs of rising obesity and diabetes.

ROB MACDONALD
Richmond, North Yorkshire

Reviving life sciences

If the British government wants to help our life-sciences sector flourish it needs to do more to give startups the best chance of realising their potential at home ("Doubling down", August 12th). Britain has a strong history in life sciences. In and around research-intensive universities, like Imperial College London and its White City innovation campus, entrepreneurial researchers are turning advances in vaccines and drug discovery, biomaterials and synthetic biology into game-changing startups.

Many of the world's most pressing problems depend critically on the successful but challenging commercialisation of fundamental science and engineering innovations like these. These kinds of innovations tend to be time-consuming, expensive and risky to bring to market; unattractive factors for investors, especially if longer-term support is uncertain. The result is that too many life-science startups struggle to scale in Britain. If they survive they end up being sold prematurely to overseas companies before they reach their full potential.

We must avoid British life sciences becoming simply a feeder for overseas markets like America. That means expanding public investment in R&D, creating sustainable, long-term funding and innovative commercialisation models to help deep-tech startups become commercially viable. Policymakers are right to focus on high-potential sectors to deliver economic growth, but they must do more to enable the success of start-ups on our shores.

PROFESSOR MARY RYAN
Vice-provost (research and enterprise)
Imperial College London

Quiet revolutionaries

Disillusioned and nihilistic young people in China today may not be "revolutionary" in the conventional political sense, but their act of "giving up" is more radical than suggested in your briefing on "China's defeated youth" (August 19th). Many young people liken themselves to *jiucai* (garlic chives), a vegetable that grows only to be harvested repeatedly, or *haocai* (consumables), industrial supplies that are utilised and discarded. They see themselves as human fodder fed into the state's economic-growth machine, exploited and neglected.

Realising that they are only valued for their productive and reproductive capacities, they have now decided to withdraw from both. The remark by a young man that "we are the last generation" captures the tragically defiant spirit of denying the party the only resource young people can control: their minds and bodies. In a country where political dissent comes at a steep price, this passive act of giving up can be the fiercest form of resistance for many.

JAMES JIANG
New York

Reassessing the Luddites

Luddites have indeed had a bad press (Schumpeter, August 19th). The Luddites were weavers who by law had a monopoly on the trade. They viewed the mechanical looms of the Industrial Revolution to be operating outside the law, but their appeals to the crown were ignored. They had no right to organise. But they did try to work with the new factory owners and were willing to operate mechanical looms as long as their incomes were maintained. Factory owners who reached deals with the Luddites did not have their looms smashed. The Luddites were violently repressed. The new factories made inferior products, under conditions that were thought appalling even at the time.

ROBERT ELLIS
Saratoga Springs, New York

Spending a penny

Your article on British toilets reminded me how important it is to keep tabs on the whereabouts of your nearest McDonald's ("Loosing it", August 12th). I recall 20 years ago in Hong Kong that the only toilets to be found were in McDonald's. When visiting Guangzhou I was advised to use the toilets on the Shenzhen side of the border. With some trepidation, despite them being probably the busiest toilets in the world, I found them to be cleaner than anything in England. It showed what could be done if you put your mind to it.

KEITH APPLEYARD
London

Why not extend the concept of free publicly accessible toilets to any restaurant or café as a condition of their operation? No more sheepish looks, mumbled apologies and buying a coffee you do not want.

ROBERT MASTERS
Berkhamsted, Hertfordshire

Darn it!

To Bartleby's refresher on business travel (August 12th), may I add one rule. In these times of heightened airport security, when travelling with your boss or colleague make sure that your socks do not have any holes in them.

MILIND PHADKE
Pune, India

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Looters with flags

SFAX

Paranoid nationalism is on the rise. It makes governments not just nastier, but more corrupt

EARLIER THIS year Tunisia's president, Kais Saied, warned that "hordes of irregular immigrants" from sub-Saharan Africa were plotting to change Tunisia's demography, replacing the Arab majority. Black Africans, he added, brought "violence, crimes and unacceptable practices".

In effect, he gave Tunisians permission to be openly racist. Suddenly, many felt free to use slurs that were previously taboo, including one for black people that means, literally, "slave". Most locals interviewed by *The Economist* in the street in August used this term. "The slaves are replacing us," said Nizar, a furniture repair man in Tunis, the capital. "They are taking all the jobs." Worse, "They stand on the balcony in their underwear drinking alcohol."

A wave of hatred has crashed over the country. In July, after an Arab was killed in a brawl with migrants in Sfax, Tunisia's second city, mobs torched homes where black Africans were lodging. Landlords, scared of losing their property, evicted black tenants. When *The Economist* visited, hundreds of sub-Saharan migrants were sleeping rough in the town centre, huddled together for protection.

"Look at my head," said Muhammad, a painter from Guinea, pointing to a hammer-blow scar. He was driven from his flat by thugs wielding stones and petrol bombs, he said; then police grabbed him and dumped him in the desert with no water. Many migrants have died this way, but Muhammad somehow made it back to Sfax. He is desperate to get to Europe.

The president's speech was pure fabrication. There is no plot to change Tunisia's demography. Black Africans are a tiny share of the population, and largely just passing through. If they linger, it is simply because they are saving for the perilous journey across the Mediterranean.

Before the speech, Mr Saied was unpopular, thanks to a dire economy. After it, he appears to have won more support. Polls are unreliable, but one in November gave him less than 30% backing; a different one in June found that 69% would vote for him.

By vowing to guard Tunisians from a phantom menace, he has rallied them behind him. He has also deflected blame for the country's ills. Economists think Tunisia's inflation is largely caused by the government, but Mustafa, from Sfax, blames black people, who he says are driving up prices by eating all the bread. He plans to vote for Mr Saied at the next election.

The president's hate-mongering has also distracted attention from other controversial things he has been doing, such as muzzling the press, purging the judiciary and shutting down the national anti-corruption watchdog. He has been dismantling the checks and balances that promote good, clean governance, with predictable results. Tunisia has grown more fearful, less free and more corrupt. Its score on the Corruption Perceptions Index (CPI) compiled by Transparency International, a watchdog, has worsened significantly since 2021, when Mr Saied started dismantling its young, hopeful democracy.

Tunisia reflects a global trend: more leaders are using nationalism as a tool to amass power—and to abuse it (see chart 1 on next page). Whereas nationalism was once a means to dismantle deplorable colonial empires, it is increasingly becoming a device to remove legitimate constraints on government power. Leaders who chafe at checks and balances need a pretext to scrap them. They cannot admit that they want to muzzle the press and purge the courts because they find it irksome to follow the rules and would prefer to rule with unfettered authority. So they accuse journalists and judges of being traitors, or agents of foreign powers.

Nationalism can be positive or negative. The positive sort—love of one's country—can be a force for good. "It is the strongest foundation for solidarity between people who might otherwise have few ▸▸

things in common," writes Yascha Mounk in "The Great Experiment: How to Make Diverse Democracies Work". "At its best, it can inspire a white Christian living in rural Tennessee to feel special concern for a Hispanic atheist living in Los Angeles—and vice versa." Because it is benign and, except at a few Western universities, uncontroversial, positive nationalism is embraced by nearly all politicians. Hardly any would admit to not loving their country.

The danger is when they espouse negative nationalism: the fear and suspicion of outsiders. The outsiders could be foreigners or domestic minorities. Perhaps because this paranoid variant is based on a deep-seated instinct—the desire to protect one's tribe—it is highly potent.

When people feel their country is threatened, they rise to defend it, sometimes heroically. When Vladimir Putin invaded Ukraine, Ukrainians made great sacrifices to resist him. This benefited Ukraine, which would otherwise have become a vassal state. It also boosted the poll ratings of Ukraine's president, Volodymyr Zelensky: people rallied round the man who led their country's defence.

Alas, unscrupulous leaders have found they can win similar poll bumps by vowing to defend people against confected threats. Mr Putin claims that his unprovoked attack on Ukraine is really about defending Russia from Western aggression and Ukrainian Nazis. Many Russians believe him. Despite the war's cost to Russia in blood, treasure and international isolation, independent polls suggest that Mr Putin's approval rating has risen since he started it.

The main drawback of paranoid nationalism is obvious. It is terrible for its targets, whether they be immigrants in Tunisia or Ukrainians whose land has been sown with mines. Neighbours of paranoid nationalist regimes have cause to be nervous, as anywhere that shares a border with Russia or China can attest.

The other big drawback is less well understood: politics based on bigotry opens the door to misrule and corruption. As Mr Putin has ratcheted up nationalist propaganda over the past two decades, his cronies have been plundering Russia. And though he is surely the most extreme example, he is far from alone. In fact, there is a clear statistical correlation between nationalism and corruption.

The Economist analysed data from the V-Dem Institute, a think-tank attached to the University of Gothenburg in Sweden. Every year it asks experts to describe how the world's governments justify themselves to voters or citizens. It then creates a scale with the results. After weighting countries by population, we found that between 2012 and 2021 governments became more reliant on nationalism to justify themselves. (Specifically, on an ideology that included a nationalist element. It could also include other elements, such as populism or Islamism.) The change was significant: a typical citizen has seen an increase in her state's use of nationalism roughly equivalent to what China has seen under its "Wolf Warrior" president, Xi Jinping.

We combined our measure of how nationalist governments are with data on perceptions of public-sector corruption from Transparency International (TI) for the years 2012 to 2021. Using a statistical model, we found that where governments rely on nationalist rhetoric to stay in power, experts think the public sector is much more corrupt (see chart 2 on next page). Moreover, comparing countries with themselves over time, going back to 2012, we find that more nationalist rhetoric has been associated with more corruption, and less nationalism with less corruption. Both these findings remain true after controlling for average incomes, and changes in them, and worldwide trends in nationalism and corruption.

There were notable exceptions (China, for instance, became cleaner and more jingoistic) but the relationship is statistically significant: a one-standard-deviation increase in nationalism was correlated with a jump of 5.31 (on a scale of 0 to 100) in corruption when comparing countries, and a 0.13 point jump when comparing within them. The latter may seem small, but corruption scores usually do not change much at all. Interestingly, when an increase in nationalism came first, it predicted a future increase in corruption.

Why might this be so? Daniel Eriksson, the head of TI, suggests three ways that nationalism can foster the abuse of power. Politicians may whip up nationalist passions to win office or hang on to it. By granting their kin or cronies influence, they may attempt to capture the state. And by branding critics as traitors, they may erode the checks and balances that prevent the looting of public funds.

Appeals to nationalism are effective because they are simple to understand, and far more emotive than any bread-and-butter policy proposal. "Vote for me and I'll make incremental improvements to schools" is a fine platform but a dull slogan. "The tribe next door are attacking us!" is an electrifying one.

Pick your poison

The enemy can take many forms. It could be immigrants, as in Tunisia. Or a geopolitical rival: Chinese and Russian propaganda constantly demonise America. Or a minority faith: India's ruling party plays up the non-existent threat that Muslims, less than 15% of the population, pose to the Hindu majority.

Or the enemy could be cultural change. Many nationalist leaders describe any new social trend that makes people uncomfortable as foreign, or even a vicious attempt by foreigners to subvert their country's values. Iran's regime uses this argument about women's rights; Uganda's, about tolerance for gay people. Illiberal regimes habitually describe the values they oppose as alien, which is easier than explaining why they are wrong.

Each nationalist leader is unique, and it is hard to tell which ones believe their own rhetoric. Either way, paranoid nationalism gives them tools to gain power, consolidate it, and disguise their abuse of it.

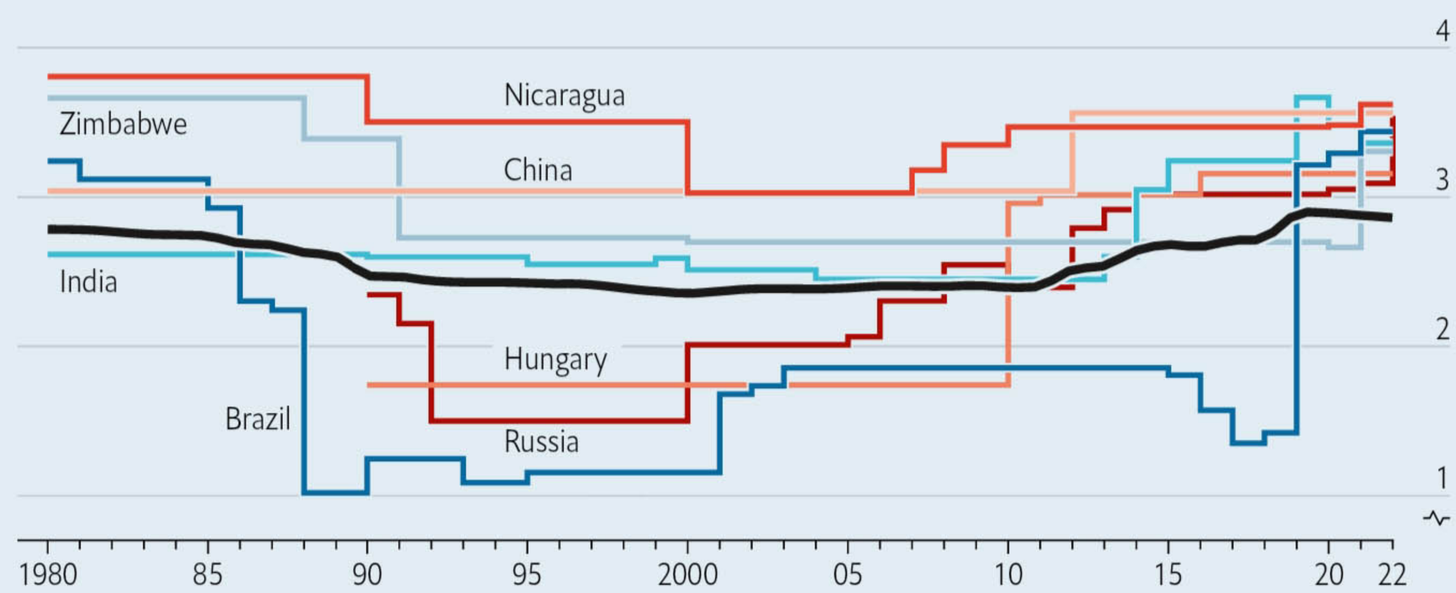
Consider Nicaragua. Daniel Ortega, the president, was once a revolutionary Marxist. He shot his way to power in 1979 but lost an election in 1990. Determined to regain and retain power, he muffled his Marxism, dialled up the anti-American bombast, won an election in 2006 and has gradually throttled democracy ever since.

His choice of bogeyman is shrewd. The United States really did sponsor violent revolutionaries in his country—four decades ago. That threat is long gone, but Mr Ortega still claims that his opponents are "agents of the Yankee empire" who ▸▸

Jingoism on the march 1

Nationalism score, government's reliance on nationalist ideology for legitimacy

Selected countries, 0=lowest, 5=highest



Sources: UN; V-Dem; *The Economist* *Population-weighted

"stopped being Nicaraguans long ago". In February he had more than 300 dissidents stripped of their citizenship.

Following Mr Eriksson's script, Mr Ortega has put his kin in positions of power. His vice-president and likely successor is his wife, Rosario Murillo. Eight of their nine children help them run the country. Their son Laureano is a presidential adviser. He oversaw negotiations with a Chinese firm to build a $50bn canal across Nicaragua. The project collapsed in 2015 amid allegations of skulduggery. Laureano is also an opera singer. Not all opera fans are convinced of his talent. One critic likened his voice to the "shrieks of a goat giving birth". But he regularly lands the starring role in operas backed by a foundation he runs, which is funded by Nicaraguan taxpayers.

Grand theft autocrat

The Ortega family run the main television channels in Nicaragua. This lets them slant the news in their favour. It is also lucrative. Between 2018 and 2020 Nicaragua's government bought advertising worth an estimated $59m from the three biggest TV channels owned or controlled by the Ortegas, while spending a measly $230,000 at channels not affiliated with them. In all, the family is thought to control 22 companies in industries from energy to property. Nicaragua is a whopping ten points more corrupt on TI's scale than in 2012, and now ranks lower than Congo.

In richer, more established democracies, too, paranoid nationalism offers a quick way for outsiders to grab attention and break into national politics, or remain on top. In May Viktor Orban, Hungary's prime minister, claimed at a conservative conference, "We are all under attack." He vows to defend Hungarians against immigration, Islam and gay rights. He proclaims the unity of all ethnic Hungarians, including those in neighbouring countries. He gives them pensions and lets them vote in Hungarian elections; they tend to vote for him. Inflaming nationalism has thus helped him win four elections.

The Hungarian media, which are now largely controlled by Mr Orban's cronies, parrot his claims of foreign plots. Tame courts raise few objections when rivers of aid from the European Union flow into the pockets of his chums and state assets are transferred to foundations controlled by his allies. Lorinc Meszaros, a former schoolmate of Mr Orban who owned a modest pipe-fitting business, has become the richest man in Hungary, with a fortune estimated by Forbes at $1.4bn.

In Hungary and elsewhere, nationalism offers a plausible-sounding excuse to weaken checks and balances. Watchdogs can be designated "foreign agents" and neutered. Honest public servants can be labelled "unpatriotic" and replaced with loyalists. Dodgy dealings can be kept secret in the name of national security.

Mr Putin was a pioneer of this approach. In 2012 he introduced a law restricting the activities of NGOs that received money from abroad. In 2022 he broadened the law's scope. Now the state can declare any individual or group to be a "foreign agent" (which sounds to many ears like "spy") if it deems them to be "under foreign influence". So-called "foreign agents" can be banned from any kind of political activity, or simply shut down.

Elements of the Putin method have been widely imitated around the world. At least 50 countries have enacted rules to curb civil society in recent years, according to Amnesty International. More broadly, of the 31 countries that showed a significant deterioration on the Corruption Perceptions Index between 2012 and 2022, 80% also suffered a constriction of civil liberties, as measured by the Economist Intelligence Unit, our sister organisation.

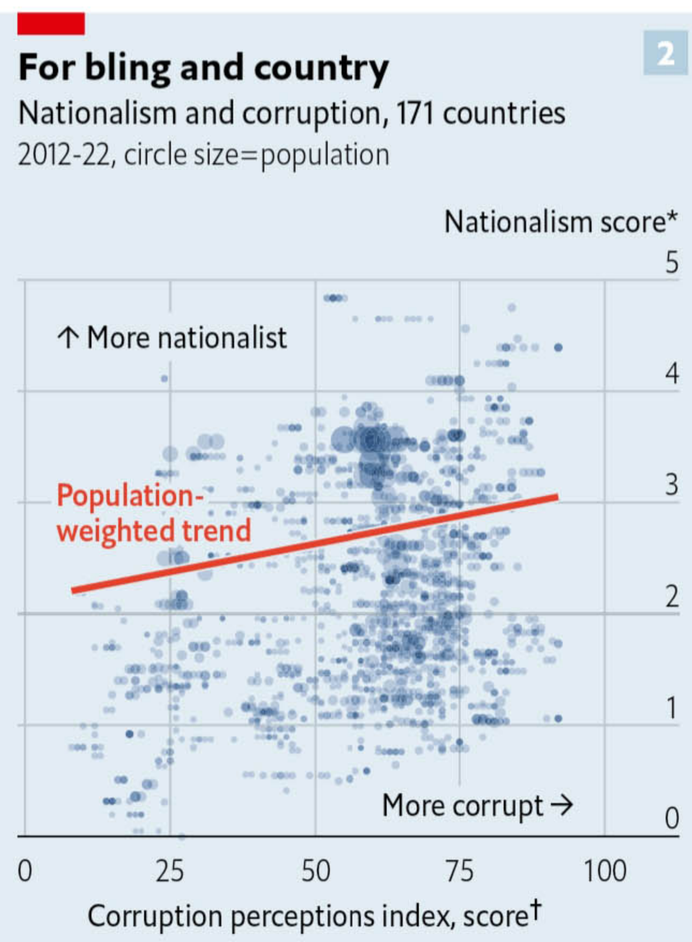
Labelling watchdogs "foreign agents" impedes their work. Nervous local donors grow reluctant to fund feisty NGOs; advertisers shun independent media, lest their brand names be tarnished by association. India has used its Foreign Contributions Regulation Act to harass and muzzle groups from Oxfam to Greenpeace. China's "foreign influence" rules restrict the activities of any foreign-linked NGO that might annoy the Communist Party.

In July Zimbabwe's president signed a "Patriotic Bill" allowing long jail terms for anyone caught "wilfully damaging the sovereignty and national interest of Zimbabwe". The opposition says it criminalised criticism of the government in the run-up to an election last week, which the ruling party "won" unfairly.

For bling and country 2

Nationalism and corruption, 171 countries

2012-22, circle size=population



*Government's reliance on nationalist ideology for legitimacy. 0=lowest, 5=highest †0=very clean, 100=highly corrupt

Sources: Transparency International; UN; V-Dem; *The Economist*

Despite its name, the bill seems designed to make Zimbabwe worse-governed. It makes it hazardous for members of civil society, the principal check on a thieving ruling party, to have any contact with foreigners. If an independent journalist talks to a foreign diplomat, or a local election-monitoring group shares data with an international one, or an anti-corruption watchdog seeks advice from an expert abroad, jail may await. As a cherry on top, the law also makes it harder to punish predatory officials, by requiring prosecutors to prove that those who abuse office knew that their actions were wrong.

In country after country, incumbents have found that nationalist or sectarian arguments can be used to harass or exclude from office those who challenge the status quo. Iran's corrupt theocracy insists that all presidential candidates meet its definition of Islamic piety. In 2021 it disqualified 585 of them, including all the would-be reformers, and allowed only seven to run. A new Polish law could bar from office politicians deemed to be unduly influenced by Russia; its probable target is Donald Tusk, a leading opposition candidate who is not pro-Russian at all. Since 2015, when Poland's nationalist ruling party took charge, the country has grown eight points grubbier on the Corruption Perceptions Index.

Shades of greed

A more nationalist government does not automatically mean a more corrupt one. It is possible for a country to become more tub-thumping, but no dirtier, at least for a while. However, in the long run, if a leader uses nationalism to erode checks and balances, it becomes easier for the people around him or his successors to plunder. This happened in Zimbabwe, where a nationalist autocrat who was far more interested in power than money, Robert Mugabe, failed to stop looting by his cronies and was ultimately overthrown by them.

Thus, regardless of the starting point, paranoid nationalism tends to make countries worse governed and less stable. A paper co-written by Abhijit Banerjee, a Nobel prize-winning economist, found that when voters pick candidates by ethnicity instead of, say, probity or competence, they end up with less honest, less competent representatives.

Andreas Wimmer of Columbia University crunched data from nearly 500 civil wars and found that when political parties are ethnically based, civil war is nearly twice as likely. And instability is perhaps 30 times as likely if the country in question is neither a dictatorship (which can crush unrest before it escalates) nor a full democracy (where disputes are typically resolved peacefully). In short, when a leader invokes blood and soil, expect things to get bloody, or soiled. ■

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Artificial intelligence

Mr Bot goes to Washington

SAN FRANCISCO AND WASHINGTON, DC

AI will change American elections, but not in the obvious way

THE DAY before Chicago's mayoral election in February, a recording began circulating online. It was first posted on Twitter (now X) by a newly created account called Chicago Lakefront News. It featured what sounded like Paul Vallas, the law-and-order candidate, bemoaning all the fuss about police brutality and harking back to a halcyon time when cops could kill suspects by the dozen "and no one would bat an eye". It was political dynamite and was quickly shared by thousands. But the voice in the recording was not Mr Vallas's, nor any human's: it was a "deepfake", generated by artificial-intelligence (AI) software, which had been trained to mimic the sound of Mr Vallas's voice.

This is the sort of incident that is keeping candidates, political analysts and anyone worried about the health of democracy up at night. Countries with a collective population of some 4bn—including America, Britain, India, Indonesia, Mexico and Taiwan—all vote for leaders in 2024. Given AI's existing capabilities and rapid evolution, it seems inevitable that at least some of these contests will be manipulated by subterfuges like the one that targeted Mr Vallas. Tech luminaries are sounding the alarm. Eric Schmidt, a former CEO of Google (and a former member of The Economist Group's board), has warned that "the 2024 elections are going to be a mess because social media is not protecting us from false generative AI". Sam Altman, the CEO of OpenAI, the startup behind ChatGPT, recently posted that he was "nervous about the impact AI is going to have on future elections (at least until everyone gets used to it)".

Politicians are also concerned (naturally). At a hearing in late July, senators grilled AI experts about the likelihood of elections being manipulated. "I, for one, do not want the working people in this country and the children of this country to be used as guinea pigs for generative AI," says Josh Hawley, a Republican senator from Missouri, who has written a set of AI principles that includes a licensing regime for advanced models. Amy Klobuchar, a Democratic senator from Minnesota, has expressed worry that disclosure of AI use in election ads would hardly be enough of a safeguard.

Mr Vallas, after all, is not the only candidate to have been impersonated by AI. A political group that supports Ron DeSantis, the governor of Florida, who is challenging Donald Trump for the Republican presidential nomination, has used AI to mimic Mr Trump's voice. The Republican National Committee, the main campaign arm of the Republican Party, issued an AI-generated ad earlier this year after Joe Biden announced that he was running for re-election. It depicted what America might look like if he won, complete with illegal immigrants swarming the border with Mexico, office buildings abandoned in Wall Street and riot police failing to keep order in San Francisco. Although any reasonably attentive viewer would understand that the images were fictional, it gives an inkling of the potential for AI to mislead.

Yet campaign staffers with technical roles are surprisingly blasé about the pros- ▸▸

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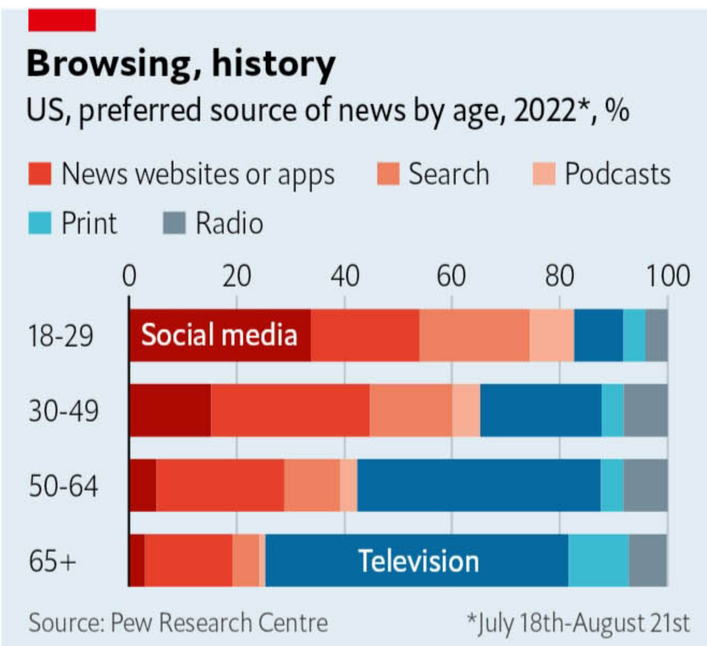
pect of an election overshadowed by AI. Jacky Chang, the chief technology officer for Mr Biden's campaign in 2020, points out that most voters tend to view all messages about politics as spam, whether they encounter them through television advertising, robocalls, websites or social media. She therefore doubts that AI will have a big impact on next year's election, even assuming it is capable of producing much slicker and more targeted appeals.

Academics tend to agree. Their research suggests that Americans are so accustomed to being bombarded with claims and counterclaims about politics that they are more or less impervious to persuasion, whether by fake news or the truthful sort. That does not mean there is nothing to worry about: by intensifying the barrage of untrustworthy information, AI will presumably make voters more mistrustful, cynical and intransigent. That may be the intention of some of those deploying AI to manipulate elections. As Jake Auchincloss, a Democratic congressman, puts it, "Our adversaries abroad, and the worst actors here at home, are at the cutting edge of using disinformation—less to make citizens not trust a particular person or institution, but to make them not trust anything."

Mr Vallas's experience bears out the view that AI is unlikely to secure victory for particular candidates. He complained immediately to Twitter about the deepfake of his voice. Twitter removed the offending recording and closed the account that had posted it. Mr Vallas placed first in the election the next day, although he did eventually lose a run-off two months later. Some 40 national elections have taken place around the world since the launch a year ago of Stable Diffusion, free AI software that can create realistic-looking images from textual prompts. Over 25 have been held since the launch of ChatGPT in November. "We still have not one convincing case of a deepfake making any difference whatsoever in politics," says Brendan Nyhan of Dartmouth College.

The most commonly aired scenario for how AI might undermine an election is by saturating social media with misleading information to sway enough voters. But this misunderstands how Americans, at any rate, form their views. Social media is the primary source of news for only one in five of them, according to data from the Pew Research Centre, a think-tank. TV and newspapers, whether online or in print, both play a far bigger role, supplying news to about 30% of people each (see chart).

Those who do rely on social media are exposed to plenty of fake news: somewhere between 1% and 5% of all news viewed is false or highly misleading, according to an analysis of 11 papers by researchers from Harvard University's Kennedy School. Facebook estimates that the



Russian government's effort to manipulate the presidential election in 2016 involved around 120 pages and 80,000 posts that were, through sharing, seen by roughly 126m Americans, half of the electorate.

The Russians aren't coming

But most users do not set any store by such material. A study by Matthew Gentzkow and Hunt Allcott of Stanford University of the Russian disinformation campaign estimated that it shifted the candidates' vote shares "by an amount on the order of hundredths of a percentage point". Another study published in *Nature Communications* in 2023 that analysed detailed data from individuals' Twitter feeds along with repeated surveys found that exposure to tweets by Russian bots had little-to-no effect on political attitudes or polarisation.

That should not be surprising: most users seem impermeable to genuine news on social media, too. Meta, the company that owns Facebook, allowed researchers to experiment with the information served up to a group of American users in the run-up to the presidential election of 2020. Some were shown fewer items that fitted their pre-existing beliefs, and more that challenged them. Others were presented with news in chronological order, rather than in the order Facebook's algorithm thought would interest them most. These changes did not appear to alter the subjects' political outlook at all.

Academics consistently find that fake news is viewed mainly by hyper-partisans, rather than floating voters. In other words, it serves mainly to affirm views that are already strongly held. "The problem is more with demand than supply," says Ms Chang.

Even highly trained and well-paid professionals struggle to shift voters' opinions. The estimated marginal effect of most political advertising in America is near zero (a phenomenon political scientists call the "minimal-effects hypothesis"). To put it another way, if clever technology were enough to swing an election one way or another, then the $14bn-odd spent on the election campaign of 2020 would have decided races in favour of the candidates with more money on their side. "Persuasion is very difficult," says Mr Nyhan. His work tries to counter misinformation about misinformation: it's not nearly as effective as people think. Just as people no longer trust any old text that they encounter online, he says, they are also learning to be sceptical of other media, including recordings and film.

Indeed, social media may not be shaping American political life as much as is commonly assumed. It cannot explain heightened polarisation and diminished trust in institutions, since both trends are much older than X, Facebook and Instagram. A study published in 2017 by Mr Gentzkow, Levi Boxell and Jesse Shapiro found that political polarisation had increased most rapidly among the elderly, despite the fact that they used social media less than younger voters. That makes the rise of partisan television stations, such as Fox News, seem a likelier culprit. The fact that many other Western countries, including Germany and Sweden, have become less polarised over the past 30 years, despite the spread of social media, also suggests other factors are at play.

Some political staffers do see a way for AI-generated falsehoods to influence a campaign, but it is a more roundabout process than you might imagine. Bot networks trained to appear human could co-ordinate to trick the algorithms used by big social-media platforms in order to give prominence to certain news topics and bury discussion of others. Such skewing of the news might be further amplified if partisan media outfits then seized on the topics being aired on social media. Rick Wilson, a longtime Republican campaign strategist who co-founded the Lincoln Project, an anti-Trump outfit, gives a scenario of a deepfake or other false content that purports to implicate Mr Biden in a cover-up of crimes by his son, Hunter. It might be posted in a far-right Facebook group or some other corner of the internet, disseminated by sharing and then picked up by a prominent figure in the right-wing media. "The purpose here is not to fool high-information voters or the mainstream media. The purpose is to trick low-information Republican voters into believing and sharing the stuff on their socials so that it gets wider and wider distribution."

In fact, this sort of manipulation works best if the posts or tweets in question are not fake, but nonetheless favourable to one party or another. That is how the most effective Chinese influence operations in Taiwan work, says Chihhao Yu, the co-director of Taiwan Information Environment Research Centre, a watchdog. For obvious reasons, Taiwan is perhaps the world's most vigilant country about this sort of manipulation, with a government ministry dedicated to digital affairs and an

active "civic-hacking" community that aims to identify and counter Chinese misinformation. Mr Yu says there is not yet much sign of sophisticated AI-generated fake news ahead of the country's presidential election in January 2024. But China does appear to be attempting to propagate pre-existing anti-American stories and posts without making them up entirely.

This sort of activity does not necessarily involve AI. In India, political parties constantly drop misleading information about the opposite party into many thousands of WhatsApp groups, which is then quickly shared among personal networks. As a campaign operative for Congress, an opposition party, explains, "You don't need bots to be producing misinformation...real people are producing it."

But AI may make such activity cheaper. A recent study by Micah Musser of Georgetown University calculates that an AI model capable of producing usable text just three-quarters of the time could save $3m over the course of a 10m-post campaign, cutting content-generation costs by two-thirds. What is more, advances in large-language models and machine translation mean that AI may soon eliminate some of the telltale signs of bots, such as poor grammar or punctuation. And whereas influence campaigns typically use the same text over and over again—another red flag for monitors—AI allows the creation of unlimited numbers of distinct messages.

The most celebrated creators of the models underpinning most AI operations, such as OpenAI and Anthropic, say that they will have teams monitoring the queries sent by users and applications to detect possible influence operations. Yet even here, open-source models from Stable Diffusion for image-generation to Meta's LLaMA for text-generation, face no such hindrances.

That makes the tech firms that distribute content ever more important. Stephen Stedman of Stanford University says the platforms are better prepared than they were in 2016, but less so than in 2020. He notes that Facebook deployed "an enormous amount of resources...around 800 people" to guard against manipulation ahead of India's elections in 2019. From 2017 to mid-2021 it blocked more than 150 influence operations around the world. Facebook bans the sharing of deepfakes; Google prohibits the use of manipulated media in political advertisements.

But a backlash against the platforms for being too strict in recent elections, such as when several acted to pre-emptively slow the spread of the Hunter Biden laptop story, has since caused them to become more cautious about flagging or removing posts. A pair of lawsuits against government officials and a cadre of academics who flagged misinformation to social-media platforms in 2020 and 2021 will make similar efforts less likely in 2024. Meta and X have also cut members of their safety teams to reduce costs. Since its takeover by Elon Musk, X has made little progress in removing bots. And TikTok, which is still a relatively new platform in the political arena, makes it possible for new users without much reputation to go viral.

Researchers are also busy devising technology to determine which recordings or films are real, including watermarking synthetically generated text and images. Elizabeth Seger of the Centre for the Governance of AI, a British think-tank, talks of a "digital signature" that can be used to verify the original source of an image. A consortium called C2PA is trying to create a standard that would prove that media are authentically generated. Although not all AI or social-media firms will join such initiatives, there is already plenty of talk in Congress about compelling them to do so.

Prompt: vote

In private, tech executives are optimistic that all this is holding the feared onslaught of manipulation at bay. "We are not seeing the influx that we expected to see," says an official at Meta. "We are dealing with a very manageable amount right now." An executive at Alphabet echoes this cautious confidence, noting that the wave of misinformation that was expected ahead of America's mid-term elections last year turned out to be more of a ripple.

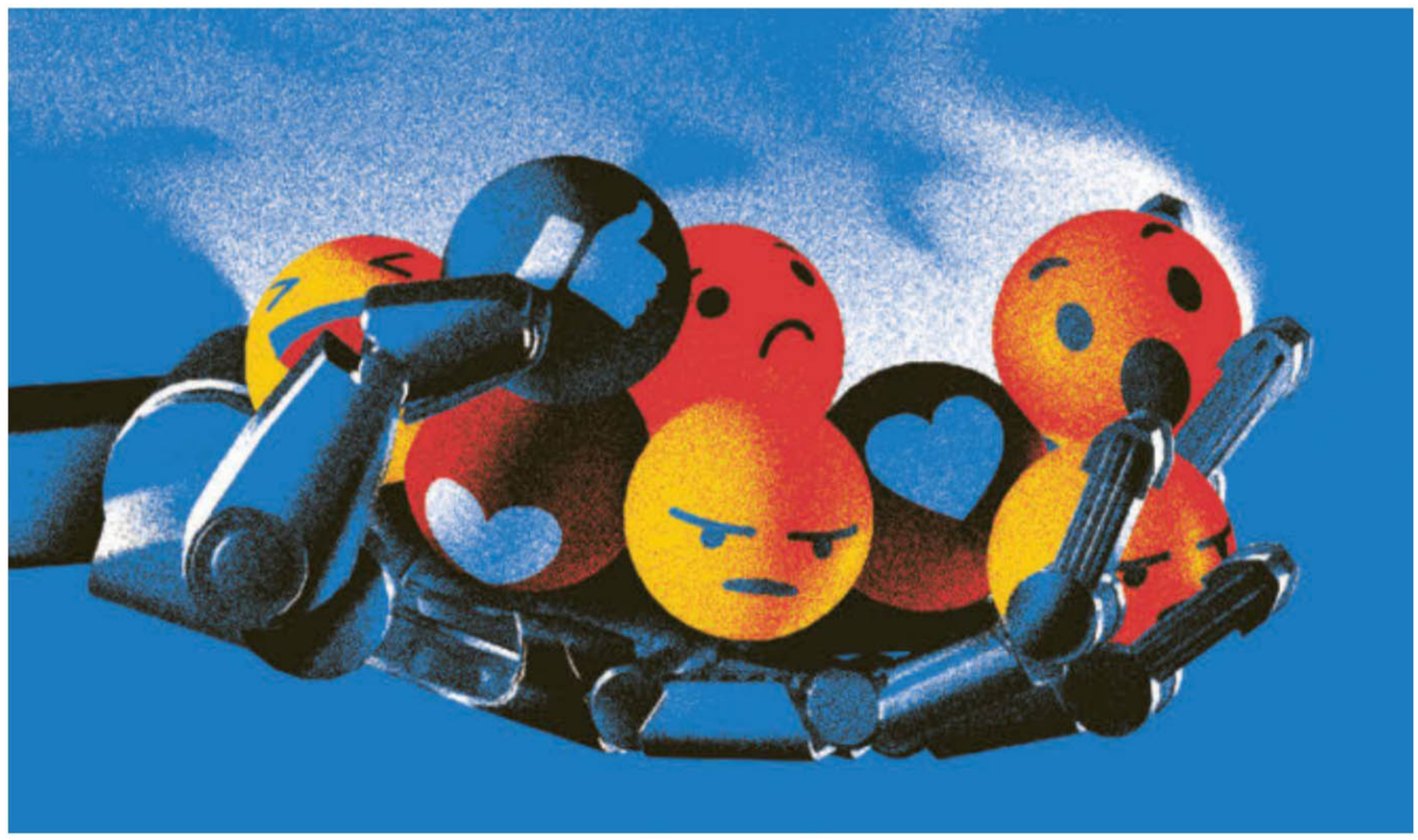
Advances in AI may even help to curb abuse of AI, by helping to detect influence operations. "The major use case of GPT in security that I've seen is actually defensive," says an employee at America's Cybersecurity and Infrastructure Security Agency (CISA), which is responsible for guarding election machinery from hacking. He points to new AI tools that pre-emptively identify vulnerabilities in piles of code.

For many campaign operatives, too, AI is as much a boon as a threat. Matt Hodges, the head of engineering for Mr Biden's previous campaign explains that AI's most immediate effect is to help comms staffers and field directors supercharge their "day-to-day tasks". Betsy Hoover, an online director for Barack Obama's 2012 campaign and co-founder of Higher Ground Labs, a political-technology investment firm, points to the startup Quiller which helps campaigns write better fundraising emails, having perfected its software using mountains of data about which approaches have worked in the past.

Another possible use is in refining campaign ads. A Democratic operative talks of creating software that would score draft scripts and suggest revisions. "You're going to see a lot of down-ballot candidates use it to create content for websites," says Scott Tranter, who has built data operations for Republican campaigns.

Some campaigns are even making use of deepfakes. A sympathetic political group has created a chatbot designed to resemble Francis Suarez, the mayor of Miami and Republican presidential candidate. Members of the public can put questions to this cyber-Suarez. The clumsily rendered avatar replies with talking points intended to make Mr Saurez look good. (Alas, even the vast analytical power of the AI behind the chatbot has not worked out a way to make Mr Suarez sound clear and cogent, rather than evasive, when talking about the attack on the Capitol by a pro-Trump mob on January 6th 2021.)

The shifty, underwhelming cyber-Suarez may be a good stand-in not just for his candidacy, but for the likely role of AI in the coming election cycle. In politics, as opposed to almost any other industry, cheerleaders for AI are hoping that its impact will be largely mundane. On current evidence, their hopes are likely to be gratified. On August 29th Mr Suarez announced he was dropping out of the race. ■



Soaring car theft

The Kia issue

CHICAGO

Cities are suing car manufacturers over auto theft. They may have a case

TIKTOK, A CHINESE-OWNED social-media platform where users post short videos, is a fount of useful information. Type "Kia" into its search bar and the helpful autosuggest adds "boys tutorial". Click through and the most-liked result is a video explaining how to steal a Hyundai car. A gloved hand pulls the plastic off the steering-wheel housing and then jams a screwdriver into the ignition switch and wrenches it aside. Over rap music a computerised voice says: "this is why you should not buy Kia or Hyundai." The hand attaches a USB cable onto an exposed socket, and twists, and the car starts up. The video has over 415,000 likes. It is one example of a viral internet trend led by "Kia Boys", adolescents who steal cars to joyride them and post the videos on social media.

On August 24th the City of Chicago announced it had filed a lawsuit against the American subsidiaries of Kia and Hyundai, two South Korean car manufacturers. The lawsuit alleges that the firms did not include simple immobiliser technology in some of their cheaper vehicles, making them extraordinarily easy to steal. In 2022, over 8,800 Kias and Hyundai cars were stolen in Chicago, making up two-fifths of the 21,000 vehicle thefts recorded. So far this year, they account for more than half—and the total compared with this point last year has doubled (see chart). The result of the failure to install immobilisers, said Brandon Johnson, Chicago's left-wing mayor, is a "nationwide crime spree".

Mr Johnson's critics accused him of trying to abrogate responsibility for crime. Raymond Lopez, a conservative-leaning alderman, told Fox News the move was from a "socialist playbook". Yet Chicago's lawsuit is one of seven to have been filed by cities against the manufacturers so far this year, as car theft has soared across America. Baltimore, New York and Seattle are among the other cities to also be suing. Last year, over 1m vehicles were stolen, the highest figure since 2008, according to the National Insurance Crime Bureau, a trade association. Kias and Hyundais were among the most-stolen cars. A class-action lawsuit by owners was settled by the firms for $200m earlier this year.

It is unclear what chance the cities have in the courts. They all argue that, by selling cars which are so easy to steal, the two firms wasted police time and enabled other crimes. Kia says its vehicles were compliant with the law, and the lawsuits are "without merit". Unlike those in Europe or Canada, regulators in America do not require vehicles to be fitted with immobilisers, which usually work by demanding a code from a radio key fob to start a car. The firms have also offered software updates which make it less easy to steal the affected cars. All new Kias and Hyundais sold now have immobilisers fitted.

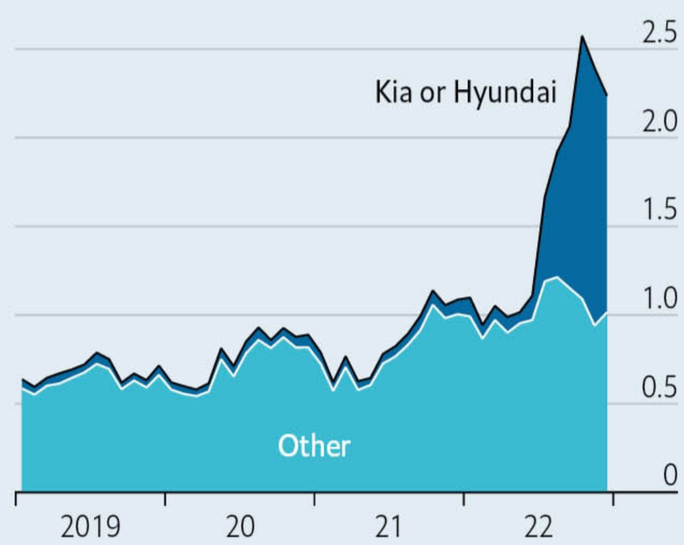
Yet in 2015, 96% of new cars sold by other manufacturers did come with immobilisers, which cost at most a few hundred dollars. For Kia and Hyundai vehicles, the figure was just 26%. Todd Henderson, a legal scholar at the University of Chicago, says that on the face of it, the cities suing might have a case. It would rest, he says, on the argument that when a simple and cheap technology is available that can radically reduce the chance of a product causing enormous damage, "the non-inclusion makes the product defective." A car that is so easily stolen might be analogous to an iron that does not automatically switch off, and so burns down a house.

Graham Farrell, a criminologist at the University of Leeds in Britain, says that car theft is a "keystone crime". He argues that the dramatic decline in car theft in the 1990s—in America, annual thefts peaked at 1.7m in 1991—was in large part due to cars being fitted with immobilisers. Stolen cars directly enable other crimes. It is hard to do a drive-by shooting without wheels. But especially easy-to-steal cars may have even more deleterious effects by, in effect, creating new criminals. A study Mr Farrell published in 2020 argues that car theft is a gateway drug into criminality: young boys who begin by stealing cars go on to have more extensive criminal careers.

If so, that ought to worry American cops and politicians. The enormous spike in violence that began in late 2020 seems to be ebbing. So far this year, murder rates in a majority of American cities have fallen sharply compared with last year. But car theft continues to rise. The risk is that the "Kia Boys" may just be getting started. ■

Viral acceleration

Chicago, car thefts by brand, '000



Sources: Chicago Police Department; USAFacts

Lawsuits

So sue me

NEW YORK

What's behind the explosion of lawsuits against websites

BILL DENGLER is trying to become an Italian citizen. He has all the documents ready to go. But Mr Dengler, an American software engineer who was born fully blind, cannot make an appointment with the Italian consulate in San Francisco. Its booking system uses a colour-based calendar, which is not legible to his screen reader, a device that delivers a website's content in audio form. And, perhaps because slots fill rapidly, rules prohibit him from hiring someone to make the appointment on his behalf.

What are Mr Dengler's options? This being America, he could, of course, sue. The government largely relies on private citizens and their obliging lawyers to enforce the Americans with Disabilities Act (ADA), the federal law passed 33 years ago to protect the civil rights of disabled people. This deputisation has resulted in tonnes of litigation, some of which has done more for lawyers than for disabled peope. In the past five years, website-accessibility lawsuits have surged to comprise about a fifth of such claims. According to UsableNET, a company that both tracks litigation and sells services to help clients prevent it, plaintiffs have filed more than 16,700 digital-accessibility lawsuits in state and federal court since 2018.

The ADA only permits plaintiffs to recover attorneys' fees. But New York and California, where the vast majority of cases are brought, allow plaintiffs to tack on state-level claims to their federal cases and sue for damages. The financial incentives ▸▸

for both plaintiffs and lawyers are hard to ignore. "I think that this was a gravy train that people jumped on," says David Stein, who defends businesses. The country's most active law firm, according to UsableNET, appears to have been founded in 2020; the fourth-most-prolific opened in 2021. Serial plaintiffs abound. In a single month in 2018 a blind man in Queens filed 43 lawsuits. In the year from January 2022, six people, represented by one law firm, brought 435 suits. The most active plaintiffs in 2021 and 2022 filed over 100 lawsuits each, according to Accessibility.com, which also tracks litigation.

While the ADA orders businesses to add wheelchair ramps, it has never set out precisely how they should design their websites—it simply mandates "effective communication". Nearly 5% of America's population is blind or has low vision (uncorrectable with glasses). Making the web broadly usable was always the goal: at the First International World Wide Web conference in 1994, Tim Berners-Lee, the father of the internet, called upon pioneers to prioritise "this feeling that the web is totally accessible to everybody".

By 1995 a group of organisations started what eventually became the Web Content Accessibility Guidelines. These are now about 50 technical recommendations, regularly updated, that prescribe minimum standards for colour contrast, keyboard operability (visually impaired people use the tab key, rather than a mouse) and alt-text (written descriptions of images). They have not been adopted by the ADA, but are frequently cited in plaintiffs' lawsuits.

Some of those standards meaningfully ease the burden on disabled site-goers; others are less critical. But the lawsuits tend not to differentiate. Complaints can hinge on "technical non-conformance", says Kris Rivenburgh, founder of ADAcompliance.net. Since virtually all settle before they reach trial, judges rarely weigh in on whether they created a barrier to access.

On occasion, the Department of Justice (DOJ) has intervened directly. It brought enforcement actions, for example, against pharmacy giants Rite Aid and Kroger for—recalling Mr Dengler's consulate conundrum—creating inaccessible covid-19 vaccine portals. The private lawsuits, meanwhile, tend to target smaller companies reporting annual revenue under $25m; and most are retailers, not purveyors of education or health-care services.

The spectre of litigation may help push up standards. But Jeffrey Gottlieb, a plaintiffs' attorney in New York, frankly admits he is not so sure that litigation has had a broader "deterrent effect". Others speculate that the lawsuits have even stymied progress, "causing corporations to throw up their arms and say I'm going to get sued anyway", as Mr Stein puts it. Jason Taylor, the head of innovation at UsableNET, argues that the profusion of lawsuits can indeed take credit for "significantly" improving accessibility. Still, he admits, "to be on the cynical side", large companies may believe that settling lawsuits is "cheap compared to doing it the right way".

The wrong way is with overlays, plug-ins that show customisable website interfaces to disabled users, promising to help companies achieve accessibility without overhauling code. These interfaces often interfere with the technology blind people already use, and they do not prevent litigation: UsableNET reports that over 400 companies using overlays were hit with lawsuits in the first half of 2023. Experts say there is no substitute for auditing sites, designing fixes and manually testing them.

Two things could curb lawsuits, says Rob Thorpe, a defence attorney. Plaintiffs could be required to issue notice, providing the offending business the chance to fix the problem before suing. The other would be for the DOJ to give more clarity on the requirements for websites, a move that seemingly everyone supports. Both have the advantage of benefiting the real parties on either side, rather than those profiting from the confusion. ■

Love blossoms in Brooklyn

Novel affairs

BROOKLYN

Romance (as a category) is far from dead

"WOW, THIS is not what I was expecting at all," says Allison, a nurse, remembering the first romance novel she ever read. Having shared the general literary snobbery that clings to romance novels, she is now evangelical about the genre. "It is wonderful to take somebody who is kind of sceptical and then tell them about it."

Allison was browsing in The Ripped Bodice, a romance-novel shop that recently opened in Brooklyn. The day the shop opened, the queue to get in was more than an hour long. The shop, which is whimsical in its decor, is serious in its devotion to romance novels.

The popularity of The Ripped Bodice (the second location devoted to romance that sisters Leah and Bea Koch have opened) is part of a larger shift. During the pandemic, when many were stuck at home and looking for escapist reading, fictional romance blossomed. In the year to May romance print sales were up by 52%, according to Circana, a market-research firm. List-price sales grew by 74%. Annual growth in sales went from 6% in 2020 to more than 50% last year.

Swoon

Readers have changed too. Newer fans are mostly young adults and many are teenagers. Authors and characters alike are more racially diverse and sexually non-conforming. "Red, White and Royal Blue" depicts a romance between the son of the American president and a British prince (Amazon recently released a film based on the novel). More such plot twists are on the way. "I am a queer woman. I want to read books that have happy endings for characters like me, and that's not what I've been getting so far," says Adriana Herrera , a romance author.

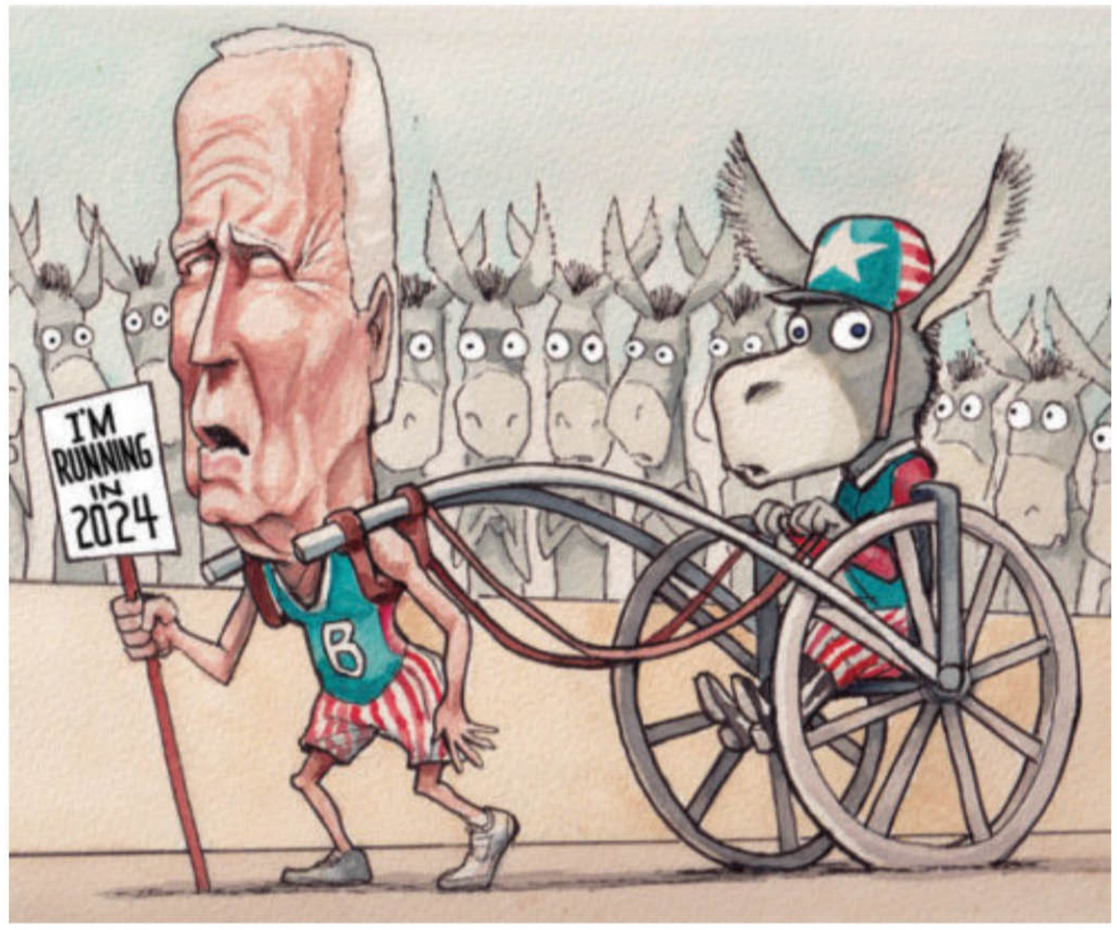
The genre has come a long way from the ravishing of virgins of the 1970s. But the plots still rest on two reassuring pillars: a central love story and a happy ending. That does not mean married with a baby. "It could mean we're adopting a dog together," says Ms Koch.

"The industry has a lot of respect for what has been happening with romance," says Kristen McLean of Circana. Yet authors crave something deeper. "We shouldn't have to defend" romance novels, says Sarah MacLean, author of "Knockout". "Love is a powerful feeling. I wish that we could all see our way past thinking that those emotions are somehow less valuable than emotions that are built out of pain and sorrow."

Librarians have noticed the shift too. Stephanie Anderson, of BookOps, which buys books for public libraries in New York and Brooklyn, notes that "the biggest challenge with romance at this point is finding the money and space to keep up with all the popular titles."

Lexington | Unpopularity contest

Joe Biden's bet that he will beat Donald Trump is looking riskier by the day



THE FRONT-RUNNER for the Republican presidential nomination is under indictment for 91 felonies in four criminal cases, and he probably is, as one of his primary opponents remarked during the recent Republican debate, the most disliked politician in America. Democrats have reason to be smug at the prospect of Donald Trump as the Republican nominee—unless they take a hard look at the vulnerabilities of their own standard-bearer.

Fewer than one in four Americans (24%) want President Joe Biden to run again, according to a poll published on August 17th by the Associated Press. Even 55% of Democrats do not think he should run. Although his approval rating has ticked up, he remains one of the most unpopular presidents in modern history.

Mr Biden's problems are obscured by the drama around Donald Trump's arrests and the Republican nominating contest. But that is also becoming a problem for the current president: he needs to capture the country's attention if he hopes to recapture its imagination. Only Jimmy Carter and Donald Trump himself—both one-term presidents, at least so far—had net-negative ratings worse than Mr Biden's at this point in their presidencies, according to an analysis of aggregated polls by the political publication FiveThirtyEight. In late August, its summary of public polls showed that 42% of Americans approved of the job Mr Biden was doing, whereas 53% disapproved.

His standing is even worse on the matter Americans care about most, his handling of the economy. The same Associated Press poll found that just 36% approve of his economic stewardship. It is hard to known which half of "Bidenomics" inspires them less.

On issues such as crime, corruption in government and immigration, surveys suggest Mr Biden's Republican opponent will have plenty of unhappiness to work with. Even in solidly blue New York, an influx of asylum-seekers—some bused from Republican border states—is souring Democrats on the president. Fewer than half of New Yorkers would vote for Mr Biden in a contest with Mr Trump, according to a recent Siena College poll. Mr Biden still led Mr Trump, 47% to 34% (with lots of abstentions). But that is a lousy margin for a Democrat in New York, far less than the 25-point minimum lead Mr Biden held in 2020.

To the president's partisans, all this is unfair. They rightly note the economy is vibrant. Unemployment, at 3.5%, is near a 50-year low, inflation has come down and real wages have been rising, at least for the poor. Homicide rates are falling in American cities. Although Republicans predicted chaos at the southern border after Mr Biden ended covid-era restrictions in May, a new border regime imposed by Mr Biden appears to be keeping such crossings below levels recorded before then. Mr Biden has adeptly led the international response to Russia's invasion of Ukraine and amassed a formidable record of bipartisan legislation.

But the president seems stuck with impressions formed in his first two years in office. His approval rating has never recovered since it crashed during America's chaotic withdrawal from Afghanistan two years ago. That same summer of 2021 he dismissed inflation as "temporary". For months into 2022, he pursued progressives' fondest and costliest policy goals before settling for the still-ambitious Infrastructure Reduction Act. "It made him look like he was pursuing liberal goals and was ineffective at doing it," says Whit Ayres, a longtime Republican pollster. "And it made moderates feel like they'd been sold a bill of goods." Mr Biden's position has continued to deteriorate with the working-class voters, of whatever race, whom he will need in such battleground states as Arizona, Nevada and Pennsylvania.

The collapse of Hunter Biden's plea agreement with prosecutors this summer means that publicity about his sordid traffic in the family name will continue to cloud Mr Biden's own image of decency, and of his efforts to restore integrity to government. Student-loan repayments, suspended for more than three years because of the pandemic, are due to resume on October 1st. A national carworkers' strike is looming.

Democrats will rally to Mr Biden, and he has time to woo others. Yet every day that goes by his party's biggest gamble, on his continued good health and acuity, also grows riskier. In 2020 voters embraced the idea that his age and experience made him a steady hand. Now they seem primed to see the slightest gaffe or stumble as confirmation that he is becoming unsteady. According to an AP poll at the end of August, 77% of Americans think Mr Biden is too old to serve effectively. His vice-president, Kamala Harris, has an even lower approval rating than he does.

Joe versus the volcano

Mr Biden has been trying to improve voters' views of "Bidenomics" and of him. So far, a big push that began in June has had little obvious benefit. In late August his campaign began a four-month, $25m advertising blitz of seven battleground states. The first advertisement touts America's pandemic recovery and a resurgence of manufacturing. "America is back!" Mr Biden declares, as though to pre-empt any claim it might need to be made great again.

Beyond trying to persuade Americans they have it pretty good, Mr Biden will count on the fight over abortion rights and, most of all, on Mr Trump's greater unpopularity to motivate dispirited Democrats and win over the dwindling cadre of swing voters in the dwindling number of swing states.

"Don't compare me to the Almighty," Mr Biden likes to say. "Compare me to the alternative." Well, Mr Biden will probably lose if Republicans prove sane enough to supply an alternative such as Nikki Haley, a former governor of South Carolina, and the candidate who called out Mr Trump's unpopularity. But he could well lose anyway. Democrat or not, anyone committed to the success of the American experiment should be hoping for a Republican nominee not named Trump. ■

Latin American history

Half a century later

Chile is still haunted by the coup in 1973, and is at odds over how to mark it

THE IMAGES, in grainy black and white, are etched into history. Clouds of smoke billow from La Moneda, the presidential palace in the heart of Santiago, as Hawker Hunter jets of the Chilean air force fire rockets at it on the morning of September 11th 1973. Tanks patrol the surrounding streets as soldiers dragoon hundreds of civilian prisoners, hands on their heads. Salvador Allende, the elected Socialist president, in tweed jacket and tin helmet, brandishes a pistol in La Moneda. By 2pm, he would die by his own hand. And the world would soon learn the name of General Augusto Pinochet, the leader of the violent coup against Allende, who would rule Chile as a dictator for the next 17 years.

In Latin America and around the world these events quickly acquired totemic significance. As Chileans prepare to mark the 50th anniversary of the coup, they still reverberate. In Gabriel Boric, the young left-wing president, Chile now has a national leader who is an unabashed fan of Allende. On the day of his inauguration, he paid homage to the statue of the fallen leader behind the Moneda and invoked him in a speech to his followers.

But the government's plans for a 50th-anniversary commemoration have been stymied by the controversies that Allende still arouses. Patricio Fernández, a journalist whom the president appointed to co-ordinate a "symbolic national ceremony of rejection" of the coup, resigned in July after he was criticised by the Communist Party for saying that "history can continue to debate why [the coup] happened".

The country seems split. An attempt by Mr Boric's government to rewrite Chile's constitution, which in part derives from Pinochet, was rejected by a whopping 62% of voters last year. And a poll by Mori found that only 42% of those asked now think the coup destroyed democracy and 36% that it freed Chile from Marxism, compared with 68% and 19%, respectively, in 2006.

The disagreements reflect nagging questions. One, which has bedevilled the left in Chile and elsewhere for half a century, is whether Allende's overthrow was simply a crushing military defeat or whether it was above all a political failure. The second, related, question is whether the coup could have been avoided. To answer them, one must start by looking back at the thousand or so days of Allende's government that preceded its overthrow.

Elected in 1970, Allende had proclaimed "the Chilean road to socialism", an attempt to carry out a revolution by peaceful parliamentary means. But his Popular Unity (Unidad Popular or UP) coalition lacked a congressional majority. It polarised Chile and plunged it into chaos. Many Chileans, and a majority of politicians, welcomed the coup, imagining that the army would restore order and call a fresh election.

Two things turned Allende into a martyr for democracy as well as a global icon for the left. One was the brutality of the coup and its aftermath. Pinochet's junta murdered 2,130 people and tortured at least 30,000, many cruelly, according to investigations under later democratic governments. The second was Allende's defiant final speech to the nation, broadcast from La Moneda at 9.10am. It lasted less than seven minutes, his voice calm and measured ▸▸

even amid shouting in the background. "I will not resign," he declared. "I will repay the loyalty of the people with my life... Always remember that much sooner than later the great avenues along which free men pass to build a better society will once again be open."

Salvador Allende was a complex and ambiguous figure. A medical doctor, he was a self-declared "Marxist Socialist president" but also a bon vivant, a man with many lovers. He rejoiced in the friendship of Fidel Castro, inviting the Cuban revolutionary leader to Chile and allowing him to tour the country for 20 days. Allende's idea of socialism was the dismantling of the existing socioeconomic order and its replacement with state control. It was revolution and class struggle, not Scandinavian social democracy. But he was also an experienced Chilean parliamentarian, a former president of the Senate, a man of courtesy and charm who prided himself on his political *muñeca*, his talent for negotiating and getting his way. He insisted that he would make his revolution within the law.

A cold-war confrontation

Chile stood out in Latin America because it had enjoyed stable civilian government since 1932. But its economy was dependent on American-owned copper companies; farming was dominated by large, inefficient estates. Allende's predecessor, Eduardo Frei, a Christian Democrat, had made a determined effort to change that, with land reform and the partial nationalisation of copper. Allende's election in 1970, at the fourth attempt, did not represent a big underlying shift to the left. He won just 36% of the 3m votes, only 39,000 more than a conservative rival. Chile's constitution at that time did not allow a run-off election. Congress confirmed him as president.

As well as several small groups, the UP coalition was made up of two large parties, the Communists and Allende's own Socialists, a majority of whom at their congress in 1967 had declared the party Marxist-Leninist and endorsed revolutionary violence. To the left of UP, but not in the coalition, was the Movement of the Revolutionary Left (MIR), a Cuban-inspired urban guerrilla outfit.

In office Allende implemented the UP programme: he completed the nationalisation of copper with opposition support, but resorted to legal chicanery to decree state takeovers of more than 150 large firms. "Were changes on this scale possible? At first, yes, but it spun out of control," says Sergio Bitar, the mining minister at the end of Allende's government. Party militants simply seized scores of businesses, farms and even houses. Macroeconomic policy was recklessly populist, with big wage increases and an expansion of public jobs financed by printing money. State firms were badly run and leached cash.

Richard Nixon's administration in the United States was alarmed by what it saw as a "second Cuba" in Latin America. He told the CIA to make Chile's economy "scream". The United States blocked loans to Chile. The CIA financed the opposition, which organised strikes by truck-drivers and shop-owners. By 1973 Chile was at breaking point. Allende's measures and utopian vision forged a strong link with many Chileans: the UP won 43% of the vote in a legislative election in March 1973. But many others were alarmed. Mismanagement prompted inflation (which peaked at an annual rate of 600%), shortages and rationing. Allende brought military commanders into government, but did nothing to halt political polarisation and growing violence from extremist groups on the left and right. "For half of Chile, at least, it was a very scary time," notes David Gallagher, a Chilean banker and diplomat.

Allende was hostage to the UP, and it was split. For tactical reasons, and because this was Moscow's line, the Communists were cautious. The Socialist leadership, which was influenced by the MIR, wanted to accelerate. Allende vacillated. The best course was an agreement with the centrist Christian Democrats (DC). In a posthumous memoir published this year Patricio Aylwin, the DC party chief and later the first president of Chile's restored democracy, recounts three meetings with Allende. "You have to choose," Aylwin urged him. "You can't be on good terms with us and with the MIR". Allende reassured him that while he was president "there will be no dictatorship of the proletariat", which many in the UP were working towards. Aylwin's riposte was, "How am I going to believe you if you have so many times said one thing and the government has done the opposite?"

The opposition majority in Congress approved a motion declaring Allende to have violated the constitution by failing to promulgate a constitutional amendment to regulate nationalisations, which would have required the state to hand back factories and farms. On September 10th Mr Bitar attended a private lunch with Allende at which the president said that he had decided to call a plebiscite on the future of his government. It was too late. Senior military leaders were set on a coup, which Pinochet joined at the last minute.

In the end Allende preferred to risk the coup rather than split the UP by striking a deal with the Christian Democrats. "I still think, as I did then, that democracy could have been saved," Aylwin writes. "But for that a large dose of rationality was needed and it didn't exist."

Might the armed forces have given the politicians more time? They were prey to their own myths. They believed that the far-left, with Cuban help, was stockpiling large quantities of arms and training fighters. There was some of that but not much—and not as much as some in the media, including *The Economist*, feared. (Our coverage in 1973 gave too much credence to the claims of the right that the country was close to a civil war, and appears to have exaggerated the scale of far-left armed groups. However, our initial approach to Allende's government featured scepticism rather than outright rejection. We thought the coup was a "regrettable inevitability", a view which some have criticised, although it was shared by many Chileans.)

"For all practical purposes, fighting lasted four hours," Pinochet later declared. There was no civil war. "The violence that Pinochet unleashed was not a desperate expedient to save an imperilled country; it was a brutal power grab by what became a despotic regime," as Heraldo Muñoz, a socialist who would later be foreign minister, accurately put it in a memoir.

Nobody expected the horror of what was to come. "In Chile's political world of 1973 everyone knew everyone else. It came as a total shock," says Andrés Velasco, a former finance minister. Pinochet swiftly sidelined his fellow junta members and established a personal dictatorship. He was determined to liquidate Marxism in Chile,

Fifty years of progress
Chile

Sources: World Bank; government statistics

*Forecast †National poverty line

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and the democracy he believed had enabled it to flourish. He was ruthless, turning his secret police into an instrument of state terror. Several rival generals died in mysterious circumstances. The secret police murdered Orlando Letelier, Allende's defence minister, with a brazen terrorist attack in Washington, DC. Libraries were purged not just of Marxist authors but also of works by liberals such as J.K. Galbraith.

Pinochet's economic policy was another shock. Most Latin American armies believed in state-led industrialisation. But Pinochet was persuaded to hire the "Chicago boys", a group of young technocrats trained at that city's university under an exchange programme run by Chile's Catholic University. They were free-marketeers, disciples of Milton Friedman. They tore down tariff barriers and controls and privatised everything except the copper industry (the revenues of which went partly to the army). They made mistakes: a fixed and overvalued exchange rate and rampant insider lending by financial conglomerates crashed the economy in 1982. It recovered under more pragmatic management.

Pinochet placed Chile "on track to sustained economic growth", legitimising entrepreneurship, the profit motive, market mechanisms and exports, Mr Muñoz recognises. But he criticises Pinochet's creation of a "market society", in which basic services were governed by profit, which has become a source of recent discontent in Chile. And Pinochet, like many dictators, would prove to be personally corrupt. He made history once again in 1998, when a Spanish judge issued an arrest warrant for the retired general while he was in London for medical treatment. The British government eventually sent him back to Chile, where he was charged and placed under house arrest for the disappearance and torture of political prisoners. This case was a milestone for the idea of universal jurisdiction for crimes against humanity.

The coup's aftermath

In exile, mourning its dead, the left reflected on the UP years. The Communist Party blamed its own caution and failure to arm the UP for what it saw as a military defeat. It began to pursue violent revolution. It set up a guerrilla group which came close to killing Pinochet in 1986 (which prompted another round of repression). Many Socialists engaged in a different kind of self-criticism. They identified crucial mistakes in the UP's strategy. The first was pursuing such a radical programme without a political or popular majority. A second was having scorned and lost the middle classes. That stemmed from a rigid Marxist outlook which failed to recognise that Chilean democracy had achieved social reform and a more egalitarian society.

Another mistake was the UP's failure to

Allende: Marxist, martyr and myth

grasp the realities of the cold war, notes Mr Bitar, who spent more than a year as a political prisoner in one of Pinochet's concentration camps. Faced with the implacable opposition of the United States, the Allende government assumed that the Soviet Union would bail it out. The Soviets did finance Allende's election campaign and the Chilean Communist Party. But they balked at Allende's demand for massive aid. They were already spending more than they could afford to keep Castro's Cuba afloat. Maoist China, preoccupied with Vietnam, turned Allende down as well. Despite the armed forces' constitutionalist tradition, which meant that they were reluctant to intervene, once they did so they were guided by the cold-war "national security doctrine" under which they saw the left as an enemy to be exterminated.

Out of these reflections came an alliance between the Socialists and the Christian Democrats which had proved impossible in 1973. Known as the Concertación, it led Chile's return to democracy after Pinochet in 1988 held, and lost, a plebiscite on staying or leaving. The Concertación governed, with much success, for the next two decades. Its leaders kept Pinochet's market economy, adding fiscal rigour and more social provision. That was particularly the case under Ricardo Lagos, the first socialist president since Allende. He reformed Pinochet's constitution of 1980, removing undemocratic clauses. Chile struck free-trade agreements with much of the world. Between 1990 and 2012 the economy grew at an average annual rate of over 5%. The poverty rate fell from 68% in 1990 to 7% in 2022 (see chart on previous page).

But the Concertación fell victim to its own success in generating expectations of rapid progress. Student protests in 2011 targeted the high cost of university education, especially in low-quality private universities. In response Michelle Bachelet, a Socialist president whose father, an air-force general, died at Pinochet's hands, broadened the coalition in 2014 to bring in the Communist Party. She had sympathy for the *auto-flagelantes* (self-flagellators) of the left, who argued that the Concertación had been too tolerant of "neoliberalism". That, too, was the view of the Frente Amplio (Broad Front), comprising new left-wing parties, one formed by Mr Boric, which allied with the Communists.

With economic growth slowing, and a centre-right government in power, discontent boiled over in 2019 in a "social explosion" which included both huge peaceful demonstrations and vandalistic violence. To calm the streets, a conservative government agreed to set up a convention to write a new constitution. On the back of the protests, Mr Boric won the election of 2021. Many in the Frente Amplio saw themselves as heirs to Allende rather than the Concertación. They had a big hand in drafting a constitution which in some respects recalled the UP's constitutional plans.

Their problem, as Daniel Mansuy, an academic, writes in a new book, is that Allende has become a myth rather than a political project. The constitutional draft was crushingly rejected last year. The Frente Amplio conjured up its mirror image in José Antonio Kast and his Republican Party, a hard-right outfit. Mr Kast is unapologetic about the dictatorship. The Republicans did well in an election in May for a new constitutional council; the new draft will be voted on in December. There is less agreement in Chile today on the meaning of 1973 than there was a decade ago.

Lessons learnt and forgotten

Yet Chile has left 1973 a long way behind. The response of politicians to the polarisation and violence of 2019 was to seek a broad agreement on a peaceful solution. Unlike the UP, the new left defends liberal democracy, notes Noam Titelman, a researcher close to the Frente Amplio. When faced with difficulties, Mr Boric has edged to the centre, bringing ex-Concertación people into his government. Rather than a desire for a rebirth of the dictatorship, Mr Kast's support derives from concerns about security, crime and immigration, says Isabel Aninat, a constitutional lawyer.

It would be better for Chile if Allende and Pinochet become purely historical figures, rather than sources of political inspiration, allowing the country to look forward. Clearly that is still hard. Allende's government was a colossal political failure. But what "we can try to agree on," as Mr Fernández, the journalist who was originally involved in the 50th-anniversary celebrations, put it, "is that what happened after the coup was unacceptable". ■

Disaster risk

The Next Big One

TOKYO

A century after its last big quake, Tokyo braces for a successor

EVERY YEAR on September 1st, Japan's ministers trek by foot to the prime minister's office to take part in a crisis simulation. Across the country, local officials and schoolchildren drill for disasters. The date marks the Great Kanto earthquake, a 7.9-magnitude tremor that struck near the capital back in 1923. The ensuing disaster killed at least 105,000 people, including around 70,000 in Tokyo itself, destroyed 370,000 homes and changed the course of Japanese history.

This year's centenary of the disaster has occasioned much commemoration—and angst. What will happen when the next Big One hits? Seismologists cannot predict earthquakes, but their statistical models, which are based on past patterns, can estimate the likelihood of one. The city government's experts reckon there is a 70% chance of a magnitude 7 or higher quake hitting the capital within the next 30 years. Far fewer people will probably die than during the disaster in 1923, thanks to better technology and planning: the worst case foresees some 6,000 deaths in the city. But millions of lives will be upended.

Another, similarly likely scenario could be much worse. A Nankai Trough earthquake, envisaged south of Kansai, Japan's industrial heartland, could trigger a tsunami; as many as 323,000 might be killed, according to an official estimate. Japan's approach to the risks of such catastrophes offers insights for a warming world facing more frequent disasters.

Quakes of this size could "challenge the survival of Japan as a state" and send economic shock waves around the globe, says Fukuwa Nobuo of Nagoya University. After the next Tokyo quake, recovering basic city functions could take weeks and rebuilding the capital could take years; direct damage alone could run to as much as 11trn yen ($75bn). One piece of research estimates that GDP would dip by 11% following a Nankai earthquake.

The costs could trigger a crisis over Japan's substantial public debt. Global supply chains would face severe disruptions. In 1923 xenophobic rumours after the quake led to the massacre of at least 6,000 Koreans living in Japan; some historians argue that the disaster hastened Japan's descent into fascism. Modern Japan is unlikely to take a similar turn, but the political aftershocks could still be nasty.

The shaking in 1923 began just before noon, at a subduction zone in Sagami Bay, south of Tokyo. Many of the city's nearly 4m residents were preparing lunch over open flames. Fires spread, helped by strong winds blowing from the north, where a typhoon hit the same day. The conflagration raged for nearly two days as aftershocks kept the ground unsteady; half of the city burned. "If this were not hell, where would hell be?" one observer asked.

A future earthquake might begin the same way, or at faultlines farther inland. The force could be devastating. At modern "Life Safety Learning" centres, Tokyoites can experience a simulated version. At magnitude 7, your correspondent was left prostrate, clutching a table leg.

As instructors at the centre explained, survival is a matter not of luck but of preparation. In many respects, Tokyo is well prepared. Back in 1923 scientific knowl- ▸▸

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edge had progressed little beyond the folk belief that shaking was caused by *namazu*, giant catfish living under the surface of the earth. "Nobody knew what an earthquake was," explains Hirata Naoshi, a seismologist at the University of Tokyo who chairs the city government's expert panel on seismic scenarios.

Modern seismology in Japan dates back to research institutions set up after the quake. Subsequent rumblings, in particular the Great Hanshin earthquake that struck Kobe in 1995 and the Great East Japan earthquake that hit Tohoku and caused the meltdown at Fukushima in 2011, have led to even better understanding of plate tectonics. Japan collects vast amounts of data and has world-beating seismometer networks and early-warning systems. (The UN reckons only half the world's countries are equipped with adequate early-warning systems for the hazards they face.)

Japan has also focused on what turns natural hazards into human disasters. Although earthquakes cannot be stopped, people living within their range can be made less vulnerable. Disaster-related civic groups have proliferated since 1995; volunteers organise to hold drills, cultivate community ties and prepare for the worst. After the disaster in 2011 a new National Resilience Act mandated more thorough prevention and mitigation measures, with a particular eye on the possibility of a major quake under Tokyo or in the Nankai Trough. Last year the Tokyo government earmarked 6trn yen over ten years for a "Tokyo Resilience Plan". Few details go unconsidered. When asked what worries him most, Hamanaka Akihiko of Tokyo's disaster-prevention division pauses briefly, then says: "Toilets".

Infrastructure improvements have made Tokyo much safer. The Great Kanto earthquake prompted the Japanese government to introduce seismic building codes. They were substantially updated in 1981 and again in 2000. Some 92% of Tokyo structures meet the codes; bringing that number up from 81% a decade ago reduced the casualty estimates by over 3,000.

Awareness of disaster risk makes Japanese construction companies and developers keen to invest in safety measures beyond what is legally mandated, says Kurino Haruhiko of Kajima, a big construction firm. On top of the 40-floor Ebisu Garden Place Tower in central Tokyo, Kajima recently installed a new 1,350-tonne pendulum designed to reduce the skyscraper's sway by half. (Lax enforcement of building codes meant that an earthquake in southern Turkey earlier this year killed more than 50,000 people.)

Flames killed around 90% of the casualties in 1923. Over the ensuing decades the government purchased land in order to widen key roads, creating fire-protection belts to stop the spread. Builders switched to less flammable materials. Bitter experience had shown the need for well-designed evacuation routes: during the Kanto disaster nearly 40,000 people died in a single field in east Tokyo, where flames closed in from all sides. Neighbourhoods now have clearly marked evacuation sites. (Authorities in Maui had not posted evacuation maps for wildfires before the blaze in Lahaina in August.)

Despite the improvements, modern Tokyo is vulnerable in new ways. The city's population has ballooned to 14m. While the rate of fire outbreak may be lower, with a greater number of households "the absolute risk is greater", reckons Hiroi Yu of the University of Tokyo. Many neighbourhoods with concentrations of flammable wooden houses remain. Shelters have space for 3.2m people; some 5m people may be displaced. Planners fret about compound disasters, such as an earthquake during a pandemic. Disasters tend to upend even the best-laid plans. "Uncertainty is at the core of disasters," says Ichiko Taro of Tokyo Metropolitan University.

Tokyoites' lifestyles have also changed in ways that make it harder to respond to disasters. More people live alone; government surveys show that single-person households tend to be less aware of and prepared for disasters. Old-style wooden houses burned easily, but they fostered closer communities and more mutual aid than modern high-rises, where residents may hardly know their neighbours. And in ageing Japan, ever-more neighbours will need extra help. Japanese tend to speak about national security in terms of threats from their menacing neighbours. But the earth beneath them is also dangerous. ■

Thailand's marijuana industry

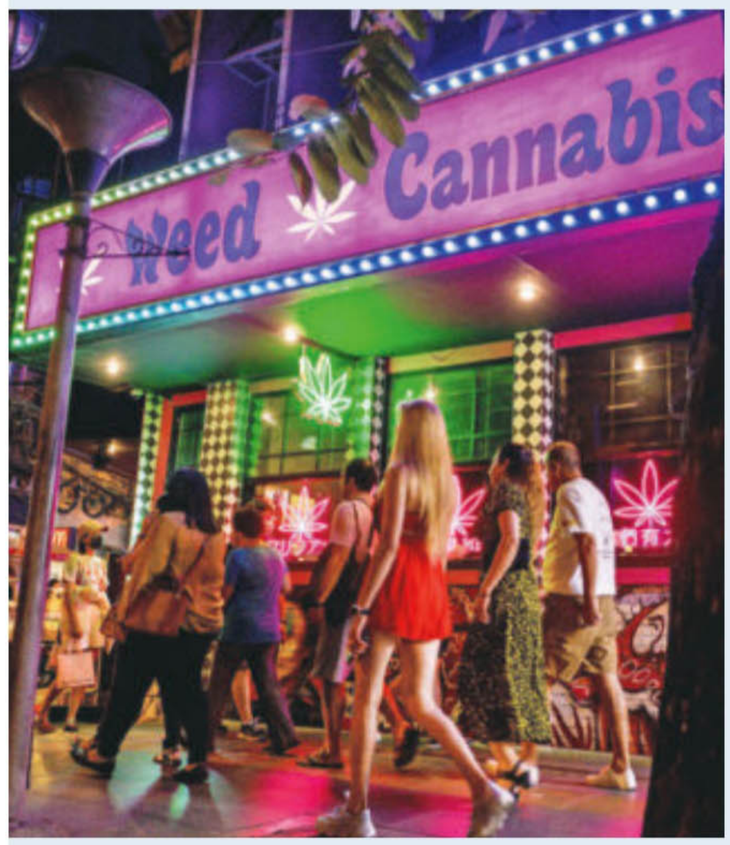
Budding growth

BANGKOK

As a new government takes office, regulation is as hazy as a Bangkok café

VISITORS TO SUKHUMVIT, Bangkok's party district, have long been enticed with fake Rolexes and all manner of massages. Over the past year, weed has also been pressed on them. Since June 2022, when Thailand became the first South-East Asian country to decriminalise the drug, stoners in Bangkok have been spoilt for choice. They can eat at cafés offering "happy meals" or buy joints at dispensaries. At Thai Cannabis Club, your correspondent was offered a strain called "gushers" with the promise of flavours of "sour tropical fruits and rich creamy cookies in every toke".

Around 12,000 cannabis stores have opened across the country. Over a million people have registered to grow weed, and tourists are flocking to consume it. The industry had annual revenues of $800m by the end of 2022—and is forecast to grow 12-fold by 2030. But will Thai politicians, among whom the issue is contentious, intervene to prevent that?



Strictly medicinal

Much of the growth is illegal. Cannabis purchases are meant to be for medical use and limited to stuff containing less than 0.2% of high-inducing tetrahydrocannabinol (THC). Yet shops openly advertise and sell more potent products (gushers contain 25% THC). Public-health bodies and religious institutions have warned that people are getting dangerously stoned. Even some in the business are grumbling, in part because many firms are illegally importing cheap weed, driving down prices. A cannabis law that sought to provide more regulatory clarity was stalled in parliament ahead of a general election held in May.

Before the poll, several parties vowed to ban or restrict cannabis use. They included Pheu Thai, a party that had led a war against drugs during a former stint in power, and which on August 22nd cobbled together a governing coalition. Yet it is unclear whether Srettha Thavisin, the new Pheu Thai prime minister, will follow through on that, or much else. His coalition is a mess of competing agendas. The boss of the party that led the movement for cannabis decriminalisation, Anutin Charnvirakul, is Mr Srettha's deputy prime minister. Thailand's stoners can probably rest easy.

Taiwan's election

Foxconn in the chicken coop

TAIPEI

A mercurial billionaire, Terry Gou, shakes up Taiwan's presidential race

ALTHOUGH HALF-EXPECTED, it was dramatic. On August 28th Terry Gou, founder of Foxconn, one of the world's biggest electronics manufacturers and a supplier to Apple and others, told a packed auditorium he was joining the race to be Taiwan's next president. Wearing his trademark blue cap emblazoned with the Taiwanese flag, and giving military-style salutes, the 72-year-old billionaire said he would fight the election due next January as an independent. Having failed for a second time to win the nomination of the opposition Nationalist Party, known as the Kuomintang (KMT), he dedicated his candidacy to making Taiwan and China trust each other. Mr Gou vowed to bring half a century of peace to the Taiwan Strait: "I will never allow Taiwan to become the next Ukraine."

In fact his entry probably makes it harder for a China-friendly candidate to win. Two such candidates are already in the race to lead Taiwan's 24m-strong democracy: the KMT's Hou Yu-ih, the mayor of New Taipei City, who calls for talks with Beijing; and Ko Wen-je, the former mayor of Taipei, running for the Taiwan People's Party. Mr Ko prefers to talk about bread-and-butter issues rather than China, but has in the past adopted an accommodative position similar to the KMT's. That leaves Lai Ching-te, Taiwan's vice-president, running for the Democratic Progressive Party (DPP), as the only candidate taking a hard line on China.

Fraught geopolitics have made the issue urgent. During the tenure of Taiwan's DPP president, Tsai Ing-wen, Beijing's leaders have increased military drills near Taiwan and predicted its unification with China in increasingly belligerent terms—even as American officials have vowed ever more often to defend the island from Chinese aggression. A win for Mr Hou, Mr Ko or, now, Mr Gou, would not end the tensions, but would probably reduce them by placating China. A win for Mr Lai, a soft-spoken former doctor who, in 2017, enraged officials in Beijing by calling himself a "pragmatic worker for Taiwan independence", might have the opposite effect.

Even before Mr Gou's announcement, that looked fairly likely. According to a recent poll in my-formosa.com, an online magazine, Mr Lai had the support of 39% of voters. Mr Ko had 18% and Mr Hou 16%. As a hypothetical candidate, Mr Gou had 12%.

He naturally points to his business acumen as a reason why that share might increase. A son of Chinese immigrants who came to Taiwan with the KMT in 1949, Mr Gou has a powerful rags-to-riches story. He founded a business making plastic knobs for television sets in the 1970s using money borrowed from his mother-in-law. Now Foxconn, which Mr Gou chaired until four years ago and in which he retains a significant shareholding, has huge factories in China and employs more than 1m people, who assemble iPhones and other devices. By applying the same magic to Taiwan's economy, Mr Gou pledges to double the rate of economic growth, which is forecast to be around 2% this year, and put Taiwan on course to have the highest GDP per head in Asia within two decades.

Terry firma

Critics say his interests would make Mr Gou vulnerable to pressure from Beijing. Far from it, he insists: if the Communist Party threatened to confiscate Foxconn assets, "I will say: 'Yes, please do it!'" Yet, such bravado aside, his tactics are unclear.

He will need to collect 290,000 signatures by early November to get onto the ballot. Liao Da-chi of National Sun Yat-sen University in Kaohsiung City doubts this is even his intention: "I don't think that he wants to run to the end of the election." She suspects his main purpose is to spur the opposition candidates to form an alliance against the DPP, which Mr Gou castigates as incompetent and impervious to the risk of a war. "My candidacy is to promote the integration of the opposition camp," he said. "We must take down the DPP."

If the opposition united, Mr Lai could be in trouble. Yet Mr Ko seems committed to his candidacy. And the century-old KMT would be loth to get behind a candidate other than its own. The party denounced Mr Gou's entry into the race. So, significantly, did China's nationalist tabloid the *Global Times*. Mr Gou's field-splitting candidacy, it thundered, had brought "pain to his friends and joy to his enemies". ■

Cemetery gates

North Korea's opening borders

SEOUL

Thousands of defectors in China face a grim forced return

THE GATES of North Korea, closed since January 2020 ostensibly to keep covid-19 out, are finally creaking open. On August 27th North Korean state media announced that citizens who had been locked out of the country during the pandemic were starting to return home. Some North Korean civil aeroplanes have already made return trips to Beijing.

Many will welcome any relaxation of restrictions, in the hope it will lead to more food imports from China to stave off the country's endemic shortages. But for one group of North Koreans the news inspires dread. According to the UN as many as 2,000 North Korean defectors are now languishing in Chinese prisons, awaiting a possible forced return to a country that deals extremely harshly with those suspected of trying to escape its clutches.

Some North Koreans were trapped in China against their wishes when the borders shut. Many of them had gone there, with the permission of Kim Jong Un's regime, to study or earn money for the state. After so much time away from its propagandists, they are likely to be forced to endure re-education to reassure the authorities of their ideological reliability.

Others left without the regime's approval, either to engage in trade or to escape its tyranny. They can expect rougher treatment. Merely crossing the border without permission is punishable by up to five years of "reform through labour". Those repatriated in the past have been subjected to torture, sexual violence, forced abortions and other forms of mistreatment, says Su Bo-bae, a researcher at the Database Centre for North Korean Human Rights, a think-tank in Seoul.

An escapee interviewed by another rights group, Rights for Female North Korean Defectors, was imprisoned after being forcibly repatriated from China. He was sentenced to hard labour and forced to adopt stress positions for five hours every morning. Violence in his facility was routine. He recalled seeing a guard grabbing an elderly woman by the hair until it came out in clumps and pounding her face.

Although the situation is most worrying for North Koreans in detention in China, all defectors there are at risk. In recent years Chinese digital surveillance infrastructure has improved and fake residency cards have become harder to obtain. The need to show a QR code linked to residence ▸▸

papers when entering public places during the pandemic has made undocumented North Koreans easier to spot.

Most defectors are women and many risk being separated from their children if sent back. A defector who spoke to *The Economist* and other media outlets in South Korea, at a naturalisation centre for North Korean arrivals, exemplifies this. She escaped to China in 2014 and married and had children there—before escaping to the South for fear of repatriation. "I had something to protect," she says, "I was worried about my family".

When reminded by the UN of its legal obligation not to return anyone to a country where they might be tortured, the Chinese government routinely responds that North Korean border-crossers are economic migrants whom it handles "in keeping with Chinese laws, international law and humanitarianism". This illustrates China's broader see-no-evil approach to its neighbour's transgressions. On August 17th the UN Security Council addressed North Korean human-rights abuses for the first time in five years. China's representative called the discussion "irresponsible, unconstructive and an abuse of the council's power".

In the build-up to the Beijing Olympics in 2008, China permitted seven North Korean defectors to travel to third countries. Some activists have suggested it might make a similar allowance ahead of the Asian Games in Hangzhou in September. This is optimistic. Before the Olympics, China and Western countries were co-operating in a joint effort to talk the North Koreans out of their nuclear ambitions. Now Sino-American rivalry is raging and China, fiercely opposed to the West, seems unmoved by any North Korean outrage. ■

Banyan Asian democracy is declining

Recent events in Cambodia, Indonesia and Thailand help explain why

ALMOST everyone agrees that democracy is declining in the 11 countries of South-East Asia. But why? The region's diversity makes generalisations hard. It is about the size of Latin America, with 690m people, and has a gallimaufry of political structures, ranging from the autocratic sultanate of Brunei to Leninist Vietnam and impressively democratic (but tiny) Timor-Leste. Yet in three important countries in the region, Indonesia, Thailand and Cambodia, democracy is struggling, and some baleful common themes emerge.

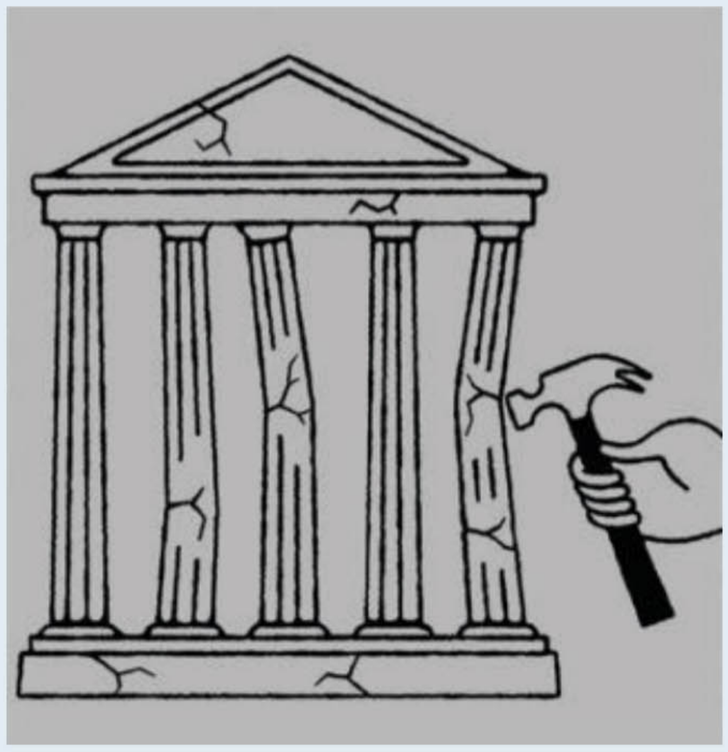
After the fall of its long-ruling dictator, Suharto, in 1998 Indonesia was considered a standout democratic success. The world's most populous Muslim country proved, as Dan Slater of the University of Michigan writes, that democracy can "emerge and endure in surprising ways and in a surprising place". The election of Joko Widodo as president in 2014 seemed to many to cement that transformation. "Jokowi", as he is known, sold himself as an incorruptible outsider to a politics still dominated by the country's traditional business, political and military elites.

Yet in his second term as president, from 2019, Jokowi has undermined Indonesian democracy. He has defanged the country's anti-corruption commission and eroded civil rights with an illiberal new criminal code. He has brought individuals linked to the once-ruling army elite back into the heart of government. He backs as his successor Prabowo Subianto, a demagogue and former general. America formerly banned Mr Prabowo for alleged rights abuses. Many Indonesians see in him the spectre of the late Suharto, who was once his father-in-law. With a well stocked campaign-chest, he is the frontrunner to win a presidential election next February.

In Thailand the setback is more visible. In May a general election produced an emphatic winner, Move Forward, a party that championed breaking the grip of Thailand's monarcho-military elite after nine years of army-backed rule. But the elite moved to deny it power, sharing it instead with Thaksin Shinawatra, a former prime minister who promptly returned after years in exile. Mr Thaksin was once considered the champion of ordinary Thais. The army twice launched coups against him and parties controlled by him. Now he is in bed with it.

As for Cambodia, the UN spent millions fostering democracy in that war-torn land. There is little to show for it. On August 22nd, following elections in which the opposition was banned, the long-serving strongman, Hun Sen, made way for his son, Hun Manet. Cambodia is now a hereditary dictatorship like North Korea.

A feature of all three countries is a personalised or dynastic approach to power. That is most obvious in Cambodia. But Jokowi, that former outsider, is also busily fostering a dynasty of his own. His son and son-in-law have dived into politics; Mr Prabowo backs them both. And a big motivation for Mr Thaksin's deal with the army was to foster conditions for his family to thrive in politics. His 37-year-old daughter, Paetongtarn, heads his Pheu Thai party.



Another, related feature is the seemingly unlimited capacity for accommodation shown by all the leaders concerned. Jokowi decided to bring his two-time presidential challenger, Mr Prabowo, into his cabinet. In Cambodia the ruling party has bribed or bullied thousands of its opponents to join it. Now Camboja News, an independent website, reports that the new government has over 1,400 secretaries or under-secretaries of state, more than twice as many as its predecessor.

Accommodation is often claimed to be an Asian political virtue. But it mainly entails swelling patronage networks. As Sebastian Strangio writes in the *Diplomat* magazine about Cambodia, such networks exist to milk resources. Expanded networks mean more corruption and cronyism—and let ordinary folk go hang.

A third common aspect flows from the first two: the weakening of political parties. When elites wantonly divvy up power, the function of parties as competitive platforms for change goes out of the window. Jokowi's chief of staff, Moeldoko, was for a time also made chairman of an opposition party.

Civil-society voices still make themselves heard in all three countries—even repressive Cambodia. And Move Forward promises to keep pushing on in Thailand. The outside world should give all the support it can to such forces. South-East Asia was once a democratic inspiration. It could yet be again.

Animal welfare

No love for livestock

SHANGHAI

China's embrace of pets has not led to similar compassion for farm animals

MAO ZEDONG may have regarded them as a bourgeois luxury, but pets are on the rise in China. Around 116m cats and dogs share a home with humans in Chinese cities. It is not always clear who is holding the leash. At a recent pet fair in Shanghai items for sale included a spa machine for cats and ball gowns for dogs. Analysts say young people are increasingly choosing "fur babies" over children. China's pet industry grew by 25% last year.

Care for these four-legged friends is being displayed in other ways, too. NGOs have set up rescue-and-adoption centres in cities. Recently, dozens of cats and dogs were saved by people using kayaks during floods near Beijing, a show of concern for animal lives that would have baffled many Chinese a generation or so ago. Activists have pressed the government to pass a law against animal cruelty and to ban the trade in dog meat, which is eaten by a small portion of the population. There has been some progress in these areas.

Broadly speaking, though, the state of animal welfare in China remains dire. That presents a puzzle. China's urban "pet parents" sound as soppy as animal-lovers in any number of rich societies, and are just as convinced that their furry companions have distinct personalities. Just ask Liu Fan, a 25-year-old at the Shanghai pet fair, who takes her cat out to the beach to watch the sunrise. But when it comes to farm animals—including pigs, a species that outsmarts dogs or cats—China's grim welfare standards are often as cruel as those of much poorer countries, where the idea that animals have feelings or rights is an unthinkable luxury. Opinion polls and consumer-spending habits indicate that one driver of continued poor treatment on farms and in slaughterhouses is widespread public indifference to such cruelty, including among besotted pet owners.

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As so often, this has an outsize impact because China is very large. While the Chinese are far behind Westerners when it comes to meat and fish consumption on a per-person basis, China is among the countries with the most livestock. Concerns about food safety have led to improvements in the way big farms are run. But little has been done to increase the well-being of animals. On a scale of A (excellent) to G (poor), World Animal Protection, a pressure group in London, gives China a G for farm-animal welfare (Britain receives a D, America an E).

Western farms are not sanctuaries, but the mood in many places has turned against practices that are still common in China. Animals on Chinese farms can be slaughtered without being stunned first. Chickens are often stuffed into cramped wire cages. Pigs are increasingly kept inside giant facilities. Critics say these increase the risk of disease outbreaks and mass culls, and that poor standards help animal diseases cross over into humans.

Whereas in countries such as Britain sales of free-range eggs have overtaken those of caged ones, such labels are rare in China. Few companies bother to make any claims at all about animal welfare. Some analysts believe that there is an untapped market for food that can be shown to come from well-treated livestock. After all, China's growing middle class shells out for higher-quality and organic food.

Surveys, though, suggest that many Chinese are relatively uninterested in the ▸▸

welfare of the animals they eat. One from 2018 found that just 37% believed animals used for food could feel as much pain as humans. Fewer than half thought it was important that these animals were treated well. Respondents in America, Brazil, India and Russia displayed more compassion. Few Chinese seem to make dietary choices based on concerns about animal suffering (as opposed to their own health). Less than 5% of Chinese are vegetarian.

Education is part of the problem, says Peter Li of the University of Houston-Downtown. Some Chinese assume that activists want to give animals the kinds of comforts that many humans still lack. A man selling robot buddies for lonely dogs at the fair in Shanghai argues that livestock, unlike pets, do not need to be treated well. In fact, he says, "animals that are killed painlessly don't taste as good as those that are naturally slaughtered".

Some in China, including many nationalists, argue that notions of animal welfare are a Western import, at odds with Chinese culture. The best-known advocate of this position was Zhao Nanyuan, a former professor at Tsinghua University who died in 2020. He called arguments in favour of animal rights "foreign trash" and claimed that activists were in league with "neo-imperialists" (running dogs, perhaps). An animal-rights scholar contacted for this article said the subject had become too sensitive. They asked to remain anonymous, lest they be branded a foreign agent.

China, though, has its own traditions of treating animals well, such as those advocated by Buddhists. Activists can also point to Taiwan, an island with a shared culture and history—and where animal welfare is taken more seriously. About 14% of Taiwan's population is vegetarian. The real Western import, argues Mr Li, is factory farming—an approach to animal husbandry that aims to maximise production and often involves inhumane treatment.

For now, the government shows little interest in improving animal welfare. It is more concerned about food security and maintaining social stability by keeping prices low. When it comes to farming animals, regulators are not going to introduce onerous regulations unless they believe it is necessary for public health, says Even Pay of Trivium China, a consultancy.

In the decades since the "reform and opening" period, meat and seafood consumption has risen rapidly in China. Many of its people, especially those who remember harder times, see this as a marker of progress. But activists see a growing problem. While meat consumption is projected to fall in places like America over the next decade, it is expected to keep rising in China. The challenge, then, is to convince the Chinese that improvements in animal welfare are also a sign of progress. ■

Culture

Instruments of power

The Communist Party has co-opted ancient music

AT A CHURCH in the heart of London the soft tinkle of a *guqin*, or ancient zither, rings out. The audience at the London International Chinese Music festival (pictured) is told that the sound of this seven-stringed instrument will transport them back in time and bring them joy and peace. Mastery of the *guqin*, which dates back 3,000 years, was once considered a must for the elite in imperial China. Even Confucius played it. These days the Communist Party is hoping the *guqin* and other traditional instruments will also bring it joy, by promoting Chinese civilisation and the party's self-styled embodiment of it.

In the late 1990s a young Chinese pianist called Lang Lang became a star of classical music, performing with the world's top orchestras. At the opening ceremony of the summer Olympics in Beijing in 2008, he played a central role. But when Beijing hosted the Olympics again in 2022 (this time the winter games), the opening ceremony featured Chinese folk instruments, such as the *guzheng* and *pipa*.

The party's founders had little good to say about China's pre-communist history. But Xi Jinping, the current leader, has backed the revival of old instruments. They feature on China's list of nominations for UNESCO's record of "intangible cultural heritage of humanity". This is part of a broader effort to celebrate past glories. China's ancient culture is the "root and soul" of the nation, says Mr Xi, who aims to build "cultural confidence".

China often uses its civilisation as a shield against criticism by Western countries over human rights and democracy. They should not try to impose their own values on China's unique culture, suggests Mr Xi. At the same time, China is presenting a softer side to the West in the form of plucked strings and piped tunes. The party sponsors international festivals and concerts. Earlier this year Mr Xi and Emmanuel Macron, the president of France, enjoyed a *guqin* recital in the southern city of Guangzhou.

The party has a history of co-opting music for its own causes. Under Mao Zedong ostensibly old folk songs were rewritten with revolutionary lyrics and sometimes composed from scratch, says Kai Tang of the University of Music and Performing Arts Vienna. The solo repertory associated with the *dizi*, a traditional form of flute, was composed almost entirely after 1949 and, in the early days, made up mostly of revolutionary music.

Today, the effort to revive ancient instruments is showing some signs of success. Moyun, a Chinese musician who plays covers of pop songs on her *guzheng*, has 2.3m followers on Bilibili, China's equivalent of YouTube. Abigail Washburn, an American banjo player, released an album in 2020 with Wu Fei, a Chinese composer and *guzheng* player. But the plinks of ancient instruments are still drowned out by the piano, which 40m Chinese are learning to play.

Strings attached

China and Japan

Water fight

BEIJING

The government is stoking anger over Japan's release of nuclear wastewater

ON AUGUST 24th the government of Japan began releasing water into the ocean. This is not just any water, mind you, but treated wastewater from the Fukushima nuclear plant, which was destroyed 12 years ago by a tsunami. Japan has dealt with the situation carefully, putting the liquid through an advanced filtration and dilution process. It still contains a potentially harmful radionuclide called tritium. But experts say the levels are so low that this is not a concern. Japan wants to release more than a million tonnes of the water over the next 30 years. Many scientists back the plan, as does the UN's International Atomic Energy Agency.

China, though, has blasted Japan's actions, calling them reckless. The government has banned imports of Japanese seafood. State media has endlessly covered the story, with little mention of the scientists who support the plan. Nationalist netizens have taken it from there, promoting unfounded claims about contaminated fish and poisoned humans, and calling for a boycott of Japanese goods. A few Chinese cities have experienced a salt-buying frenzy, with people queuing for hours to purchase a bag. Some seem to think that salt may become tainted or that it is useful in treating radiation sickness (it is not).

There are, to be sure, scientists and environmental activists who also oppose Japan's plan. Some claim that more studies are needed to assess the potential impact. Others say that the authorities in Japan are not to be trusted. The disaster in Fukushima exposed alarming levels of official corruption, incompetence and deception.

But China's response may have more to do with politics than anything else. Anti-Japanese sentiment in the country runs deep. Chinese nationalists often invoke Japan's invasion and occupation of China during the 1930s and 1940s. A dispute over five islets in the East China Sea a decade ago led to talk of war. More recently, officials in Beijing have watched with frustration as Japan draws closer to America and shows increasing support for Taiwan, a self-governing island that China claims. On the wastewater issue, Japan says China has rebuffed its offers to hold meetings where it would address any worries.

A different type of meeting has also complicated the situation. On August 18th President Joe Biden hosted Japan's prime minister, Kishida Fumio, and South Korea's president, Yoon Suk-yeol, for an unprecedented summit. A rancorous history has often divided Japan and South Korea. China's assertiveness has brought them closer. Now, though, China may spy an opportunity to drive a wedge between them. South Korea's government has supported Japan's wastewater plan, but the Korean opposition and much of the public are against it. (The Japanese public is also divided on the issue.)

For China, the wastewater release has come at a convenient time. The country's economy is struggling. Each week seems to bring a new batch of disappointing data. Japan's actions have provided a distraction from the bad news. But concerns about the economy may undermine China's response. No country buys more seafood from Japan. The ban on imports risks hurting Chinese businesses nearly as much as Japanese fishermen. It may not last long. ■

Health insurance

Coverage that counted

An old insurance scheme may have saved millions of lives

IN A COUNTRY of 1.4bn people, even small improvements in health care can have a big impact. That appears to have been the case with the New Co-operative Medical Scheme (NCMS), a health-insurance plan for rural Chinese that was launched in 2003 and folded into a more comprehensive programme in 2013. Though it is perhaps best known for being stingy, the NCMS saved millions of lives, according to a new working paper by Jonathan Gruber of the Massachusetts Institute of Technology, Junjian Yi of Peking University and Mengyun Lin of Xiamen University.

At the time the NCMS was introduced, China's health-care system was ailing. The government had long neglected it. Many families had to pay for treatment out of their own pocket, even as the cost of care spiked. Under pressure to come up with a fix, the state introduced the NCMS.

Within five years the scheme had enrolled over 800m people in the countryside. But it wasn't very generous. People had to pay large deductibles before the insurance kicked in. Once it did, the plan still only covered a portion of the cost of treatment (sometimes as little as 50%). And total compensation was capped. Because of all this, and the voluntary nature of the scheme, previous studies concluded that it wasn't all that effective.

But Mr Gruber and his team argue that the old research was flawed because it failed to account for different characteristics of counties, such as GDP, that may have influenced health outcomes. The new study used a complicated process to try and isolate the effects of the NCMS.

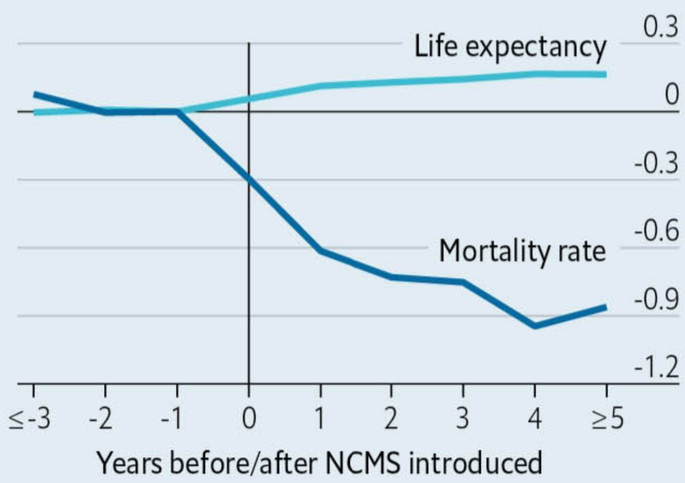
The team's findings show that the scheme led to a 20% decline in mortality and a 4% increase in life expectancy in the counties where it was implemented. Between 2003 and 2010, the average life expectancy across China increased by 2.5 years. The NCMS may have been responsible for 78% of that, say the researchers. At its height, the scheme saved more than 1m lives per year. Participants were 13% less likely to be seriously ill than those not enrolled in the plan. They also spent considerably less on health care.

Millions of lives saved is a lot. But the NCMS's size, rather than the ingenuity of its design or the generosity of its benefits, may be the biggest reason for its success. On a per person basis, the researchers found that the programme saved one life per 900 people enrolled, making it much less effective than Medicaid, an insurance scheme for poor Americans which is thought to save over one in 600 enrolled.

The NCMS was merged with another scheme to become a programme called Urban and Rural Residents Basic Medical Insurance. Meanwhile, the Employee Basic Medical Insurance scheme provides insurance to people with formal job contracts. Together they cover 95% of the population.

A healthy outcome

China, impact of New Co-operative Medical Scheme on affected areas, % change since adoption



Source: "The largest insurance expansion in history: saving one million lives per year in China", by J. Gruber et al., NBER working paper, 2023

Time for a follow-up

Reimbursement rates are now higher, but people still complain that the plans are too parsimonious. The cost of treatment keeps growing. Drugs imported from the West, which are often more effective than those produced locally, are not covered. Graft is also a problem. In July the authorities launched a sweeping anti-corruption campaign in the health sector.

Big reforms are still needed. But even imperfect ones can save many lives, as the NCMS seems to show. ■

Chaguan | When China feared invasion

Economic logic could not stop a ruinous Mao-era drive for self-reliance

When foreign foes threaten, an impregnable fortress is worth more than a comfortable home. Time and again, that doctrine guided China's Communist Party in its first decades of rule. Under Chairman Mao Zedong, talk of invasion was a constant. In those dark times, the usual priorities of peacetime government—feeding and clothing the masses, striving to raise living standards—were all too often neglected. In their stead came campaigns to ready China for war.

One such campaign built a complete military-industrial complex in China's inland mountains, known as the "Third Front". Begun in 1964, it was a state secret for more than a decade, though it involved at least 15m workers and consumed resources at a fearsome rate. Chinese elsewhere paid an unwitting price in austerity and consumer shortages. Labourers were often recruited from coastal or border regions deemed at risk of attack by America, India, the Soviet Union and other hostile powers. Grouped into militarised brigades, they laid railways far into China's rugged western and south-western interior. They built steelworks and mines, armaments factories and nuclear sites in remote valleys and deserts, some of them underground. Though rail lines and other infrastructure helped to open up inland China, the costs, both human and financial, were staggering. When the campaign wound down in the late 1970s, most Third Front projects were deemed unviable and were scrapped, merged or moved.

Some tough but rational party bosses—among them Deng Xiaoping, the flinty survivor of several Maoist purges, and Mao's eventual successor—tried to slow or shrink the Third Front when it was first mooted. Their resistance is ably described by Covell Meyskens, a historian at the Naval Postgraduate School in California, in his book "Mao's Third Front: The Militarisation of Cold War China". These relative pragmatists drafted a five-year plan that sought to restore orderly food production in rural areas and to develop modern factories, especially on the coast, to provide clothes and other necessities. Their plan was, in effect, a rebuke of Mao's Great Leap Forward, an earlier exercise in grassroots radicalism that killed 30m people in a man-made famine.

Mao sensed opposition and counter-attacked. Party doctrine already described coastal development as a legacy of colonialism. Mao called coastal cities easy targets for foreign attack, too. He ordered key industries to move to remote mountain ranges, aping tactical retreats staged by early communist guerrillas. The country must build a rear base before war broke out, Mao insisted. Still, central planners and allies in the leadership played for time and called for more studies—right up to the moment in August 1964 that America accused North Vietnam of attacking one its warships, bringing conflict and a superpower's armed forces to China's southern border. Mao used this security crisis to outflank other leaders, argues Mr Meyskens. Bowing to Mao as their supreme military strategist, top officials approved his most urgent priorities within days, including the building from scratch of Panzhihua, a steelmaking city in the mountains of the south-west, and a ban on new industrial projects in 15 coastal cities.

History does not have to repeat perfectly to offer lessons in the present. Mao was a revolutionary who saw terror and anarchy as useful tools. By contrast, Xi Jinping, China's supreme leader, is an austere nationalist obsessed with order and party control. For his part, Mao seems to have relished China's break with the Soviet Union in the early 1960s and the turn to autarky that followed. Mr Xi's calls for self-reliance in food and in core technologies are more complicated. Even as his regime abhors dependency on America, its envoys tirelessly lobby Western allies in Asia and Europe to provide know-how that China needs to grow strong. For all those differences, the Third Front should be studied by blithe sorts who insist that Mr Xi's party must deliver growth and material prosperity to maintain its legitimacy, and so will never break with the rich West. Economic self-interest is a powerful force. But a lesson from 1964 is that once America seemed truly to threaten China, economic planners fell silent and security fanatics took charge.

Once, Panzhihua was too secret to appear on maps. Today, it is a sleepy city of 1.2m people in southern Sichuan, anchored by its still-active, state-owned steelworks, and by mines for iron ore, titanium and vanadium. Chaguan reached the city by high-speed train from Kunming, two and a half hours to the south. The Kunming-Chengdu rail line was also a Third Front project, cut through barren mountains at a cost of two deaths per kilometre of track. In the city centre high-arched bridges cross the Jinsha river, whose fast brown waters drowned pioneering workers crossing by boat. In the air, a faint oily tang is the only trace of the steelmaking that once poisoned local skies and water sources.

In a dangerous age, old instincts stir

The city's harsh beginnings are hard to imagine now: the lack of fresh food, the wolves that terrorised the first arrivals, the tents and huts of earth and straw that housed workers sent to terrace steep mountainsides. But several middle-aged residents are proud to recall fathers sent to the Third Front six decades ago, toiling alone for years before sending for wives and children to join them.

A phrase of Mao's, "Until Panzhihua is built, I won't sleep", is carved on a boulder outside the city's Museum of the Third Front, near another old slogan: "Good People and Good Horses Go to the Third Front". Inside, a father and his 12-year-old son from Guangxi, in China's far south, examine a life-size diorama of a mine entrance. Grumbling that today's young take comfort for granted, the man brought his son to discover how earlier generations endured hardship. He praises Mr Xi for updating Mao's calls for self-reliance, predicting that a global contest for resources is "definitely going to cause a war". Not all Chinese feel such danger. For those that do, Panzhihua awaits their visit. ■

Russia in Africa

What Prigozhin leaves behind

BAMAKO, BANGUI, CAPE TOWN AND DUBAI

Wagner's customers will have adjust to new leadership of the business

THE DAY after Yevgeny Prigozhin's death Fidèle Gouandjika, an adviser to Faustin-Archange Touadéra, president of the Central African Republic (CAR), eschewed formal attire. He wore green trousers, military boots, a gun belt and a T-shirt reading JE SUIS WAGNER. "Prigozhin is a hero for us...We won't forget him," explained Mr Gouandjika. Yet he argued that ties between Russia and the CAR, the country where the Wagner Group is most ensconced, would endure. "Russia has done a lot for the CAR and will continue to do so."

Over the past six years Wagner has brutally exemplified one half of Russia's dual approach to Africa. The foreign-policy bureaucracy makes a show of having an Africa policy akin to that of China and Western powers. It hosts glitzy summits. Diplomats like Sergey Lavrov, Russia's foreign minister, travel the continent signing trade agreements. But in parallel Wagner's shadow operation blends 19th-century colonial enterprise with 21st-century high-tech gangsterism. Wagner has been the most notorious example of this cheap and somewhat deniable approach to the continent.

In the wake of Prigozhin's death the future of Wagner's African ventures—already unclear after his aborted mutiny in June—has been thrown into doubt. Russia seems unwilling to give up his empire, so is scrambling to assert control and reassure its customers. Other entities linked to the Kremlin may pick up Wagner's businesses. But looking further ahead, it may prove more difficult for them to replicate Wagner's success, especially if Russia is reluctant to take formal control over a volatile and criminal organisation.

At one point or another Wagner tried to establish a presence in about a dozen African countries (see map overleaf). But in reality it has a foothold in just four. It is in this quartet of fragile states that the future of Prigozhin's empire will be decided.

In the CAR Wagner is entwined with the Touadéra regime. The president has bodyguards and security advisers from Wagner. The group commands CAR troops outside Bangui, the capital, with horrific consequences (see Graphic Detail). In exchange, firms in the Wagner network have muscled in on every kind of business from booze to diamonds and beyond.

The Kremlin will not want to disrupt the close links between senior Wagner figures and the CAR elite. Wagner fighters can still be spotted around Bangui, shopping and drinking. Yet there are hints that Russia is trying to play down Prigozhin's legacy. Local media outlets funded by Russian firms have not reported on his death. Mr Touadéra was discouraged from meeting Prigozhin at the Russia-Africa summit held in July. Instead he was introduced to Andrey Averyanov from the GRU, Russia's military intelligence. "Russia will easily find a leader to continue Prigozhin's grandiose work," says Mr Gouandjika.

Wagner has used the CAR to supply its ▸▸

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40 A row in Libya over Israel

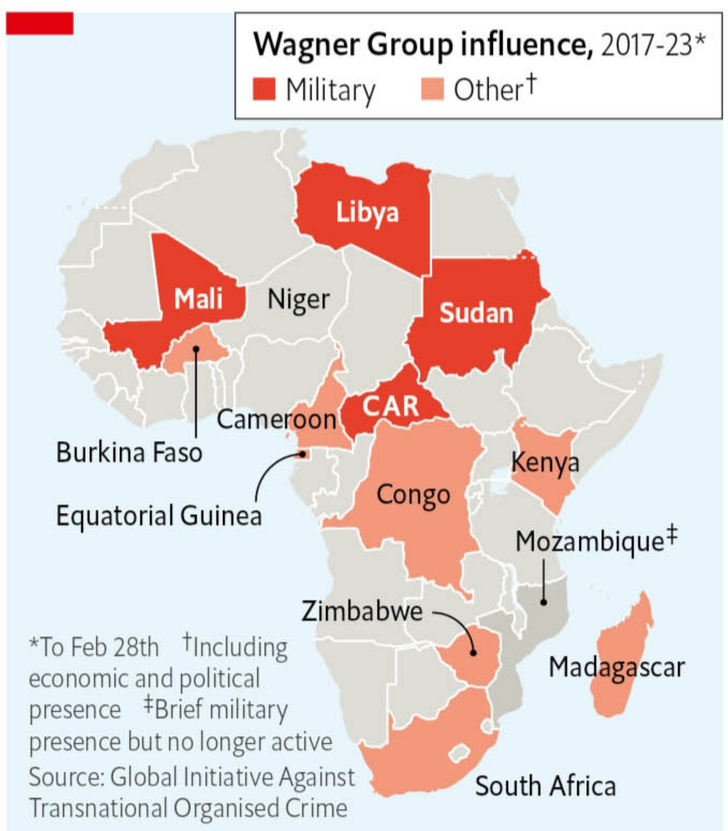
allies in neighbouring Sudan, another of its main areas of influence. The Rapid Support Forces (RSF)—a paramilitary group that evolved from the genocidal *janjaweed* in Darfur in the 2000s—has since April been fighting a civil war against the Sudanese Armed Forces (SAF).

Wagner has helped arm the RSF via the CAR in exchange for gold, say American officials. It is a "natural relationship" between "similar animals", argues Kholood Khair, a Sudanese analyst. Both groups morphed from state-sponsored gangsters to state-threatening putschists. "Prigozhin actually followed Hemedti's example," adds Jędrzej Czerep of the Polish Institute of International Affairs using the better known moniker of Muhammad Hamdan Dagalo, the RSF leader.

Without Prigozhin, Russia seems to be recalibrating its approach to an uncertain war. "Russia may play a slightly more cautious role going forward," suggests Ms Khair. To date, Wagner has ensured an informal gold-plated relationship with the RSF. Yet there are signs that the Kremlin worries Wagner went too far. Since Prigozhin's mutiny Russia has seen two visits from Malik Agar, the SAF's number two. The army controls Port Sudan, where Moscow would like a Red Sea naval base.

By contrast, Libya may be one place where the demise of Prigozhin leads to more concerted effort from Moscow. Wagner has fought for years alongside Khalifa Haftar, a powerful warlord in the east, whose so-called Libyan National Army tried to seize Tripoli, the capital, in 2019. After the march on it failed, Wagner mercenaries stayed at military bases and oil facilities under Mr Haftar's control.

Russia has already signalled that it wants to preserve this relationship. The day before Mr Prigozhin's death, Mr Haftar met Yunus-Bek Yevkurov, Russia's deputy defence minister, in Benghazi, suggesting that Mr Haftar will continue to enjoy Russian support more directly from the state.



Russia may eye Libya as a foothold for operations elsewhere in Africa, a possible Mediterranean port and a supplier of oil.

In Mali Wagner has for almost two years been fighting jihadists alongside the ruling junta's forces. Satellite imagery shows that its base has expanded since Prigozhin's failed putsch. The Russian security services may be taking a more hands-on role here, too. Assimi Goïta, the junta's head, reportedly met Mr Averyanov at the Russia-Africa summit. Analysts have recently seen an increase in flights to Mali from Syria, where Wagner has also operated, presumably bringing supplies for Russian fighters.

How far Russia will go to support Mali is an open question, however. Last year the death toll from armed violence in the three worst-hit parts of the Sahel—Mali, as well as neighbouring Burkina Faso and Niger, which have both experienced coups celebrated by Moscow—leapt by 75% to more than 10,000. This year could be even deadlier, especially as 13,000 UN troops are starting to withdraw from Mali after being kicked out by the junta, following France's decision to end its near-decade-long mission in the aftermath of Wagner's arrival.

Getting in deeper

Wagner may also be used by the junta to tackle enemies other than jihadists. Earlier this month a rebel group in the north of Mali—which, as a signatory to a peace deal signed in 2015, was deemed off limits to operations supported by France and the UN—said it was attacked by the Malian army and Wagner troops. That may endear the group to the junta but it may also create a wider conflagration. "For the junta there is no margin for error," argues Soumaila Coulibaly of the University of Bamako, in the Malian capital.

Though the Kremlin is eager to assure African allies that it will not leave them in limbo, it also seems keen to keep up arms-length arrangements. At the Russia-Africa summit several other mercenary groups were looking to hoover up business from the Wagner wreckage. "The Prigozhin empire in Africa is a cake that is now being carved up," says Ivan Klyszcz of the International Centre for Defence and Security, a think-tank based in Estonia. Yet if African clients ask for formal backing from the Kremlin, the Russian armed forces, which are already struggling in Ukraine, may find it hard to oblige. And arrangements between Wagner and Russia's proper army may become still more awkward.

In the long run, argues Mr Czerep, Prigozhin will prove hard to replace. "Without his personality and ways of doing things, I don't believe this whole infrastructure can continue." In Africa, he adds, "Prigozhin was like a fish in water." Those who come next may drown. ■

Zimbabwe's election

Out for the count

HARARE

Emmerson Mnangagwa won a majority of the votes. Or did he?

THE ANNOUNCEMENT late on August 26th that Emmerson Mnangagwa had been re-elected as Zimbabwe's president added to the abundance of dubiousness that has characterised the country's elections. The opposition Citizens' Coalition for Change (CCC) decried the official tallies—53% for Mr Mnangagwa versus 44% for its leader, Nelson Chamisa—as "fake". It is calling for new elections. The fact that Cyril Ramaphosa, the president of South Africa, the region's giant, has congratulated his counterpart suggests its efforts will be futile. Either way, Zimbabwe's abject failure to hold credible elections means that its pariah status will endure for the foreseeable future.

There have been few free and fair polls in Zimbabwe since white rule ended in 1980. Though there was much less of the horrific violence unleashed in 2008 by Robert Mugabe, whom Mr Mnangagwa replaced six years ago in a coup, some of the ruling party's antics this year were unusually brazen. EU observers noted a "climate of fear". On election day, August 23rd, ballots did not arrive until dusk in some urban areas, where Zanu-PF is weak, yet were ready in remote rural areas, where it dominates. Independent NGOs collating a parallel vote had their offices raided and computers seized. Even observers from the normally gutless regional bloc, the Southern African Development Community (SADC), said the election belied Zimbabwe's constitution—and criticised efforts to intimidate its delegation.

The CCC says that "this was not an elec-

She's read it all before

tion but coercion." It argues that it is absurd that, though polls show that more Zimbabweans feel the country is going in the wrong direction than five years ago, Mr Chamisa supposedly won fewer votes (1.96m to 2.15m) and a lower share than at the last election, in 2018 (when he took 45%). It has lawyers who could take its case to the constitutional court. Yet Zimbabwe's judges are widely seen as biased towards the ruling party. The CCC may consider protests but their supporters understandably worry about being shot on the streets.

It is tempting to conclude that these elections will change nothing. For many ordinary citizens it will feel that way. Yet, assuming Mr Mnangagwa stays in office, there are several implications.

First, he faces a tough task keeping his web of power stitched together for the next five years. Zanu-PF did better (even officially) in the simultaneous parliamentary elections, winning 136 of 210 contested seats, than he did in the presidential one. Many in Zanu-PF and the security forces complain that Mr Mnangagwa, his family and his political allies from his home region concentrate too much power in their own hands.

Second, Zimbabwe may face a more challenging regional environment. SADC missions typically whitewash dodgy results. It was notable therefore that the regional bloc spoke out, especially the leader of its delegation, a former vice-president of Zambia. Regional leaders will still attend Mr Mnangagwa's inauguration, but they will do so knowing that Zimbabwe has further sullied the region's reputation.

Third, the election will set back efforts to bring Zimbabwe in from the cold. Last year the government, supported by the EU and the African Development Bank, agreed to make economic and political reforms in the hope that it could begin clearing the debt arrears which keep it locked out of the mainstream international financial system. That included credible elections. The EU, in particular, looks naive, having spent lots on observers in the belief that the poll might help pave the way for reform. The regime may now rely ever more on its friends in Belarus, China and Russia. (During the election a clutch of Russian "observers" were spotted in the same hotel as the EU observer mission.)

On election day in a poor part of Harare, Alice, a 50-year-old cook, woke early to vote. She found no ballot papers at the polling station. "It was no coincidence," she said, given that she lives in a stronghold of the CCC. She went to work, making barely more that day than the taxi fare to get to and from the stall where she sweats. But she came back later and at last voted at 2am, once ballots had belatedly arrived. "I can at least say I tried," she said. Sadly, it was not enough. ■

Gabon

Here's looking at coup, kid

CAPE TOWN

Since 2000 two-thirds of coups in Africa have been in Francophone countries

COUPS, LIKE colds, are contagious. On August 30th officers in Gabon, a petrostate of 2.4m people in central Africa, became the latest men in uniform to announce on grainy state television that they had taken over their country. A month after generals toppled the democratically elected president of Niger, 2,000km to the north, the apparent putsch underlines how Africa seems to be hurtling backwards. At the start of the 21st century democratic transitions, shifting norms and stronger institutions led to a decline in the frequency of coups. But in the 2020s, as those norms and institutions wither, and African democracy lacks champions, they are becoming common again.

Making a comeback

Africa, military coup attempts

Source: J. Powell and C. Thyne *To July 31st

Every coup has its own causes. Since 1967 Gabon, a former French colony, has been ruled by the Bongo family: first Omar Bongo Ondimba, then from 2009 his son, Ali Bongo Ondimba, who is now under house arrest. The country has the fourth highest GDP per head in sub-Saharan Africa but unemployment and poverty are rife. Last year French authorities reportedly charged nine of Omar Bongo's 54 children with various financial crimes. Pro-democracy activists worried that an election on August 26th would be rigged, a concern heightened when the internet was shut off on voting day. Yet while the officers tapped into popular discontent, it seems more of a palace coup than a people's revolution. Brice Clotaire Oligui Nguema, the newly appointed "transitional president", leads the powerful Republican Guard—and is a cousin of Ali Bongo.

Yet Gabon is also part of a broader trend. From 1960 to 2000 there was an average of 40 attempted or successful coups globally per decade, according to data collated by Jonathan Powell and Clayton Thyne, political scientists. In the 2000s there were just 22; in the 2010s, 17. The 2020s have already brought 14. ▸▸

Though each case is unique, there are common explanations. The covid-19 pandemic and rising prices globally have hurt African economies, pushing up the cost of living and giving governments fewer resources for patronage. Insecurity, especially in the Sahel, makes military leaders seem more palatable.

And as with many illegal acts, when there are few consequences more people will try them. At the start of this century African institutions, such as the African Union and regional blocs, were swifter to condemn countries where there had been coups. Leaders of influential countries like Nigeria and South Africa spoke out. Western countries amplified those messages at a time when they were more likely to be listened to. These days African leadership is weak. And even if the West strongly denounces a coup, which is not always a given, there are always China and Russia, which care nothing for democratic norms.

The events in Gabon are also a reminder that France's policy towards Africa is in tatters. Since 2000 16 of 24 successful coups in Africa have been in Francophone countries, according to Mr Powell and Mr Thyne's data. Since 2020 the share is seven out of eight. This is probably not a coincidence. French governments have maintained a more interventionist approach to their former colonies than British ones (France keeps a military base in Gabon), contributing to a sense—exploited by Russia—that the government in Paris props up pliant and venal African elites at the expense of ordinary people living in these countries. The reality is more complicated. But coups are hardly acts of subtlety. ■

Libya

Abraham discords

DUBAI

A meeting with Israel's top diplomat sets off a political crisis in Libya

IT WAS A lesson in how not to conduct diplomacy. On August 27th Eli Cohen, the Israeli foreign minister, announced that days earlier in Rome he had met his Libyan counterpart, Najla al-Mangoush. The meeting was meant to be secret. His disclosure sparked protests across Libya, which has no overt ties with Israel.

The Libyan foreign ministry downplayed it as a chance encounter. Israeli officials countered that it was a well-planned meeting which lasted two hours. Ms Mangoush was sacked and then fled the country. Opposition MPs in Israel castigated Mr Cohen for his "amateurish" decision to reveal the meeting. American officials are furious too, saying his disclosure damaged their efforts to prod Arab states to recognise Israel.

Since 2020, when four Arab states signed the Abraham accords, America has made clear that Arab-Israeli normalisation is the main focus of its Middle East policy.

The tête-à-tête between the foreign ministers in Rome followed a January meeting between Abdul Hamid Dbeibeh, Libya's prime minister, and William Burns, America's CIA director, where they discussed the topic. Mr Dbeibeh has tried to distance himself from the Rome meeting, but it is hard to imagine Ms Mangoush met Mr Cohen without her boss's approval. If you are an unelected Arab leader hungry for American support, the quickest way to win it is to talk about relations with Israel.

Mr Dbeibeh's government was not alone in doing so. Saddam Haftar, a son of Khalifa Haftar, a powerful warlord in eastern Libya, held secret meetings with Israeli officials in 2021. He proposed normalising ties in exchange for weapons and diplomatic support. Israel has also had contacts in the past with Saif al-Islam Qaddafi, a son of the dictator deposed in 2011, who is eyeing a run for president in Libya's long-delayed elections.

The controversial decisions by the United Arab Emirates and Bahrain to sign the Abraham accords unlocked billions of dollars in bilateral investment, brought a flood of Israeli tourists to the Gulf, and boosted security ties with the Middle East's strongest power.

With Libya the benefits would be far less solid. It is unlikely that Israeli firms would invest in a chronically unstable state—let alone that Israeli tourists would visit it. Selling arms to Libya would be tricky: the country is under a UN arms embargo. Talks with Israel are less about the national interest than about the narrow interests of power-hungry politicians.

There is an obvious corollary in Sudan, which has struggled through a fraught transition since the coup in 2019 against Omar al-Bashir, its dictator. The army leadership has moved ahead with recognition of Israel, which Sudan agreed to after America promised to remove it from a list of states that sponsor terrorism, even as it has torn up a plan for moving Sudan to civilian rule and shot hundreds of protesters. In April the Rapid Support Forces, a vicious paramilitary group, attacked the army in their own bid for power. So Israel's newest relationship in the Arab world is with a state mired in civil war, where an estimated 4m people have fled armed gangs that loot homes and rape women: hardly a monumental diplomatic achievement.

With its bewildering mix of politicians and militias, Libya barely qualifies as a state. It has an unelected prime minister, two rival legislatures, and until mid-August two central banks. Even if Mr Dbeibeh agreed to relations with Israel, he could not plausibly sign a deal on behalf of the entire country. Mr Cohen erred in talking about the meeting. But the bigger error lies with an American government that sees value in pushing even the most illegitimate governments to join the accords. ■

Inflaming the situation

Ukraine

Buzzing with ideas

KYIV

Inside Ukraine's drone war against Putin

EARLY IN THE morning of August 25th, a group of drone developers headed to a launch point in southern Ukraine for one of the most daring aerial missions over Russian-controlled territory to date: an attack on a military base deep in Crimea. It was described as a test launch, with many of the prototypes in the drone swarm experimental. But some of them did the job.

There were explosions inside the base and several dead, with wounded soldiers seen streaming into the local hospital, according to local sources. That capped a miserable week for the Kremlin, already struggling to explain more than a dozen drones striking the heart of Moscow, repeated shutdowns of major airports and unexplained explosions at arms factories, airfields, fuel depots and railways. And on August 30th Ukraine launched what appeared to be its most extensive drone assault on Russian territory yet, with attacks on six regions. In the western city of Pskov drones reportedly hit an airport, damaging four transport planes.

A source close to the developers of Morok ("dark spirit"), one of the prototype drones used in the Crimean operation, says Ukraine's new aerial strike capacity is the result of "seeds sown many months ago". Morok's development had been a "miraculous" journey: after one risky test launch a few kilometres from the Russian border, its developers escaped incoming Russian rockets by minutes. Now they aim to step up serial production.

Fast and capable of carrying a heavy payload over several hundred kilometres, Morok is among the more promising fixed-wing kamikaze designs being considered by Ukraine. It has come this far largely without government funding, relying on hard work and a few friendly benefactors. But like other developers, Morok's team now faces a difficult task getting the resources to scale up.

Ukraine's drone programme is driven by necessity. Russia, a missile superpower, began the war with a clear superiority in long-range strike capacity. It later began buying cheap Shahed kamikaze drones from Iran. Ukraine, on the other hand, has not been allowed to use Western-donated weapons in Russia itself, and so has been looking for other ways to hit back.

Part of the answer has been developing new missiles, or repurposing old ones: the vintage S-200 surface-to-air missile is now used in surface-to-surface mode. Meanwhile, a network of volunteers and government groups has been racing to develop better domestically made drones.

The drone campaign is being stepped up now for a number of reasons. The headline-making strikes on Moscow are intended to have a psychological impact, bringing ordinary Russians closer to the ▸▸

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reality of war. But Ukrainian military insiders say most of their operations are designed to directly support the country's three-month-old counter-offensive.

Much of this is too prosaic to make news. Drones target "fuel depots, logistics, ammunition dumps and delivery routes", says "Detective", the pseudonym of a drone co-ordinator in Ukraine's military intelligence. "We respond to appeals from our brigades. They tell us they know where Russian arms are being stored, but have no way of hitting them, and they plead with us to help." Detective says much of his recent work has been focused on airfields near Ukraine's borders. This "might" have included a recent strike that hit a Tu-22M strategic bomber based near Novgorod, he adds with a wink.

Russia's extensive air-defence and electronic-warfare capacity means that any Ukrainian attack requires meticulous planning. Ukraine has developed algorithms that appear to work. Operators launch in the early morning (when defenders' concentration might be lapsing) and use an order of attack designed to keep air defences busy. They gather intelligence (often from Western partners) about radars, electronic warfare and air-defence assets. Russia cannot lock down the entirety of its vast territory. "If you can scuttle past 60km of jamming stations on the border, you are in the Russian hinterlands and it's game on," says the Morok source. About 35-40% of drones make it through to the general vicinity of the target. Feedback about a strike's success is compiled from satellites, tracking devices, social-media reports and local agents.

Unusually, Ukraine's drone programme has no single command or procurement structure. Several state organisations, including all the intelligence agencies, have their own drone initiatives. Freelance developers are also in the mix. These components are organised in cells that do not communicate with each other.

This helps security and competition, but can make optimisation and mass production difficult. The central government, especially the Ministry of Digital Transformation, has tried to streamline financing and remove red tape. But bureaucracy, corruption and vested interests in the Ukrainian arms industry continue to act as a drag on development. Some of the operations targeting Moscow appear to be PR projects designed to bring a prototype to the attention of procurement bosses, rather than having military value.

Finance is not the only barrier to scaling up. Cheap components and electronics are hard to find. So are aviation specialists. Russia is doing better on this front: though slow to get going, it has now geared up mass production. Russia's state enterprises have prioritised the war's most effective weapons. These include versatile Kh-101 cruise missiles; wings to convert free-fall bombs into glide bombs; Lancet strike drones, capable of taking out Ukrainian armour and air defence; and Iranian Shaheds, which are now reportedly being produced in a new factory in Tatarstan. An Ukrainian intelligence source said Russia was likely to be stockpiling ahead of a renewed campaign on energy infrastructure this coming winter.

On the front lines, Russia has erased Ukraine's initial three-to-one advantage in tactical drones. The two sides are now at parity, a source close to Ukraine's commander-in-chief says. New electronic-warfare jamming boxes, fitted on tanks and other assets, are meanwhile reducing the ability of Ukraine's first-person-view drones to guide payloads into the most vulnerable sections of a target.

A source within Ukraine's general staff suggests any technological advantage his country once enjoyed was necessarily temporary. Both sides are learning from the other, he says, and reverse engineering is getting quicker: "We had the experience of defending against Russian drones, and we got better quickly. They will too." Ukraine will need to think of new asymmetric ways to use drones, including using artificial intelligence to improve accuracy. The government has dedicated a new budget line of 40bn hryvnia ($1.1bn) for drones, a huge sum for Ukraine.

Detective says he regularly receives grateful calls from the front lines, thanking him for his latest successful strike. "They tell how they have enjoyed two or three days without Russian bombs," he says. "Calls like that make the difficulties of the job worth it." ■

Escaping the war

Sneaking across

CHOP

Thousands of Ukrainian men are avoiding military service

IN THE MORNING gloom of the railway station at Chop, a border town in Ukraine, passengers queue for the train to Zahony, a 13-minute journey away in Hungary. From there one can travel to Budapest, and then the world. Outside the station a platoon of soldiers puff out their chests at a ceremony celebrating Ukraine's Flag Day. But not all Ukrainian men are so eager to take up arms. Thousands have fled abroad, though no one knows quite how many.

In the queue of about 130 people, only 20 are male. Men aged 18-60 are not allowed to leave Ukraine unless they qualify for an exemption. Four of those waiting are young lads who look close to turning 18. To avoid the risk of mobilisation, they must leave before then. Of course, some men find ways to get out anyway, legally or illegally. On August 11th President Volodymyr Zelensky announced he was sacking the heads of the country's regional military recruitment centres, where officials were alleged to be selling travel permits for up to $10,000. "Bribery during war is treason," Mr Zelensky railed.

In Uzhhorod, a town on the nearby Slovakian border, Oleksiy, aged 25, rues the fact that he did not flee with his cousin the day the Russians invaded. War is "legalised murder", he says, "and I don't want to be part of it." He dithered for a couple of days, and by then it was too late to leave legally. Because students are exempt from mobilisation, he has enrolled in a second degree programme. But he will have to pay for his studies: only a first university degree is free in Ukraine.

The number of draft-eligible men who have registered as students is "massive", says Dmytro Tuzhansky, the director of the Institute for Central European Strategy, a think-tank based in Uzhhorod. One way to avoid mobilisation, he says, is to register as the carer of a disabled family member—whether or not they actually need care. A marriage of convenience with a disabled person is another option. One scheme has couples "separating", with the man being given full custody of the children.

Since the invasion, some 6,100 men have been caught at Ukraine's border crossings trying to get out using counterfeit or fraudulently obtained permissions, says Lieutenant Colonel Olena Trachuk, spokeswoman of the Chop detachment of Ukraine's State Border Service. But the number has fallen to a handful a week. ▸▸

Who goes there?

The guards now focus on catching Ukrainian men who try to slip out of the country elsewhere along the border, not at official crossings. Since the invasion began, they have nabbed some 13,600 people trying to do so. But even so, Colonel Trachuk thinks that in the Chop sector, for every man who is caught, another gets across. A third of those apprehended are intercepted before they ever reach the border, at checkpoints or in bus and railway stations, because they lack a credible story. Locals, bus and railway workers keep a beady eye and rat out potential draft-dodgers to border guards.

Oleksiy contemplated trekking across the border, but says the going rate for a guide was $5,000. He reckons that the chances of success are too low to risk such a sum. Some instead try to plot their own routes on their phones, says Colonel Trachuk, but get lost because remote border regions lack internet access. To date, 19 have been found drowned in the Tisza river, which forms part of Ukraine's border with Hungary and Romania.

Men caught trying to hike across the border can be fined, but not jailed. Those who help them risk prison. Using fraudulent documents is a criminal offence, but crossing the border illegally is not. If they succeed, neighbouring countries do not send them back. In the initial period after the invasion most men trying to get across were driven by fear, says Colonel Trachuk. Now she reckons half are looking for work. But those trying to escape military service must live at risk of being apprehended by recruitment officers and press-ganged. At the beginning of the invasion Ivan, a 42-year-old musician in Uzhhorod, contemplated enlisting, but changed his mind when he saw coffins arriving. Now, he says, he is in constant fear of being called up: "I feel like I am hanging in the air." ■

Germany's far right and business

The last thing the country needs

BERLIN

Business leaders worry about the rise of the far-right AfD

"A PARTY THAT wants to abolish the euro, rejects immigration and denies climate change is hurting Germany as a place for doing business," warns Karl Haeusgen, boss of the VDMA, Germany's machinery association. Rainer Dulger, his counterpart at the BDA, the main association of German employers, says the strong polling numbers of the far-right Alternative for Germany (AfD) are upsetting him, personally and as an entrepreneur. And Siegfried Russwurm, boss of the biggest German industry association (BDI), thundered at an east German economic forum in Bad Saarow in June that "xenophobia and prejudice are the very last thing our country needs".

In post-war German history business leaders have rarely, if ever, spoken out so openly about a major political party. But the policies pushed by the AfD would be so detrimental to the interests of Deutschland AG that the heads of the main business associations, as well as prominent bosses, are sounding the alarm about its creeping electoral success at the local level and in the polls.

The AfD started ten years ago as a single-issue party focused on Euroscepticism, but it has since become an anti-immigration populist party akin to other far-right parties in Europe, only more radical in some of its economic-policy proposals. It is still Eurosceptic: "We see the EU as unreformable and deem it a failed project," says the prologue of the AfD programme for elections to the European Parliament next year. The party wants to abolish the euro and the parliament itself, and to reconstitute the union as a "confederacy of European nations". It rejects, in particular, the EU's climate and migration policies. It wants to build a "fortress Europe" by beefing up border controls and increasing deportations. It is anti-American and (*sotto voce*, these days) pro-Russian.

To the surprise of many in Germany's business elite, the AfD has risen to second place in recent polls, with around 20% of voters saying they plan to back it at the next election. That puts it behind the Christian Democratic Union, the centre-right main opposition party, but comfortably ahead of Chancellor Olaf Scholz's Social Democratic Party. Futhermore, it is the strongest party in four of the five eastern German states.

Battling a mild recession, high energy prices, an arcane bureaucracy and anxieties related to the war in Ukraine, German business leaders are already fighting on many fronts. Perhaps their biggest worry at the moment is the lack of skilled labour, which needs to come mostly from abroad because of Germany's demographic problems. According to a survey of 9,000 companies by Ifo, an economic research institute, despite the sluggish economy 43% of firms surveyed reported suffering from a shortage of qualified staff in July, up from 42% in April. More than 75% of companies providing tax, legal and consultancy services said that they could not find the employees they needed.

Helped by some €15bn ($16.4bn) in subsidies from the German government, Saxony and Saxony-Anhalt, two eastern states, recently attracted a combined €40bn in investment by Intel and TSMC, an American and a Taiwanese maker of chips. They will need thousands of skilled workers. But the AfD is particularly strong in both places. According to an adviser to Intel, real or perceived local xenophobia is likely to become a big problem in getting talented staff to move to Germany from overseas in spite of the low rents, abundance of space, and free kindergartens and schools.

The government is on the case. "Today, employees and skilled workers...can choose where they go. And it's often the supposedly soft factors that make the difference," said Mr Scholz at the powwow in Bad Saarow. He said Germans needed to understand that "foreign skilled workers are not only needed, but really welcome", and promised to introduce the world's most modern immigration system. On August 23rd his cabinet duly passed legislation easing the rules for getting German citizenship, such as the length of time an applicant needs to have lived in Germany. But that will not be enough to blunt the damage being done by the AfD. ■

Bad for business

An American diaspora

Getting out

AMSTERDAM AND LISBON

Why Europe is a magnet for more Americans

"WHAT I ENVY you is your liberty," says Count Valentin de Bellegarde to Christopher Newman, the protagonist of Henry James's novel "The American". Rich, self-made and free of class prejudice, Newman moves to Paris for fun, only to be sucked into the intrigues of the French aristocracy. The template still describes one type of American expat: the well-off innocent who comes to Europe for amusement or edification. Another sort, however, comes not to enjoy the old world but to escape the new one. "I didn't know what would happen to me in France," said James Baldwin, a black writer, of his decision to emigrate in 1948, "but I knew what would happen to me in New York."

More Americans are moving to Europe lately, and many are fleers rather than seekers. The statistics are messy, but in some countries the trend is clear. In 2013-22 the number of Americans in the Netherlands increased from about 15,500 to 24,000; in Portugal it tripled to almost 10,000; and in Spain it rose from about 20,000 to nearly 34,000. In other places, such as France, Germany and the Nordic countries, the number grew moderately or held steady. Britain thinks the number of resident Americans rose from 137,000 in 2013 to 166,000 in 2021 (the latest estimate).

Meanwhile, more and more Americans say they want out of their own country. Few of those who vowed to leave if Donald Trump were elected in 2016 actually did so. But Gallup, a pollster, found in 2018 that the share of Americans who said they would like to move permanently to another country had risen from 11% under Barack Obama to 16% under Mr Trump; by 2022 it was 17%, Joe Biden's election notwithstanding. The follow-through rate remains tiny: a few tens of thousands of émigrés out of a population of 330m. But many recent expats say they left partly out of despair at where the United States is heading.

"I do a phone call once a month with Americans asking me how to come over here," says Caroline Behringer, an American who moved in 2017. Ms Behringer, a former aide to Nancy Pelosi, the then leader of the Democrats in the House of Representatives, left her job and joined her partner in Amsterdam after Mr Trump's victory. For most expats, she says, politics was not so much the reason they left as a reason not to go back: "Not just the election, but the continued divisiveness".

"The thing we hear all the time is that the work-life balance is so much better here," says Tracy Metz, who heads the John Adams Institute, an American-Dutch cultural venue. American workers toil for 1,811 hours a year, Europeans just 1,571; the well-rested Dutch put in a mere 1,427. The Netherlands once attracted Yanks seeking to smoke marijuana or marry same-sex partners. Now the attractions are more mainstream, Ms Metz says. The rise of international English makes things easier for Americans, who are notoriously bad at languages: 28% of the bachelor's programmes at Dutch universities are in English. Online job ads require English almost as frequently as they require Dutch.

Some émigrés are drawn to Europe's robust social safety-nets. Heather Caldwell Urquhart, a writer who moved to Lisbon in 2021, had taken a clerical job in Massachusetts simply to get health insurance. In Portugal she and her family pay for coverage a fraction of what an equivalent American plan would cost. "We didn't realise how shredded the United States' social fabric was until we got here," she says.

"We felt the tension lift" within weeks of leaving America, agrees Sylvia Johnson, a psychiatrist who moved to Lisbon in 2022. For Ms Johnson and her family, who are black, the central issues were racism and violence. She had been trying for years to persuade her husband Stanley, a lawyer, to move abroad. The strife after the murder of George Floyd in 2021 brought him around. He recalls saying: "'I think we need to get a gun.' When I said that out loud, I was like, if I have to live in a country where I need a gun to protect my family, then this is not the country for me."

Happy to be here

Stanley had a cross burned on his lawn while growing up in Virginia. Several of Sylvia's relatives were killed by guns. Now they are relaxing some of the wariness that black Americans develop for detecting prejudice and coping with police. Though there is some racism in Portugal, they say, they do not worry about violence.

Other factors are more prosaic. The huge increase in remote working during the pandemic made living abroad more feasible. And the European countries that lure the most Americans have set up tempting deals for foreigners. The Netherlands lets companies exempt 30% of skilled foreign workers' income from taxes. In Portugal a residential visa requires income of just 150% of the national minimum wage, or about €1,100 ($1,190) a month—an easy hurdle for American retirees. Foreigners can pay a 10% flat tax on "passive income", such as investments or a pension. Spain's "Beckham law" offers a 24% flat tax for income earned in the country. Several countries are introducing "digital nomad" visas for tech freelancers.

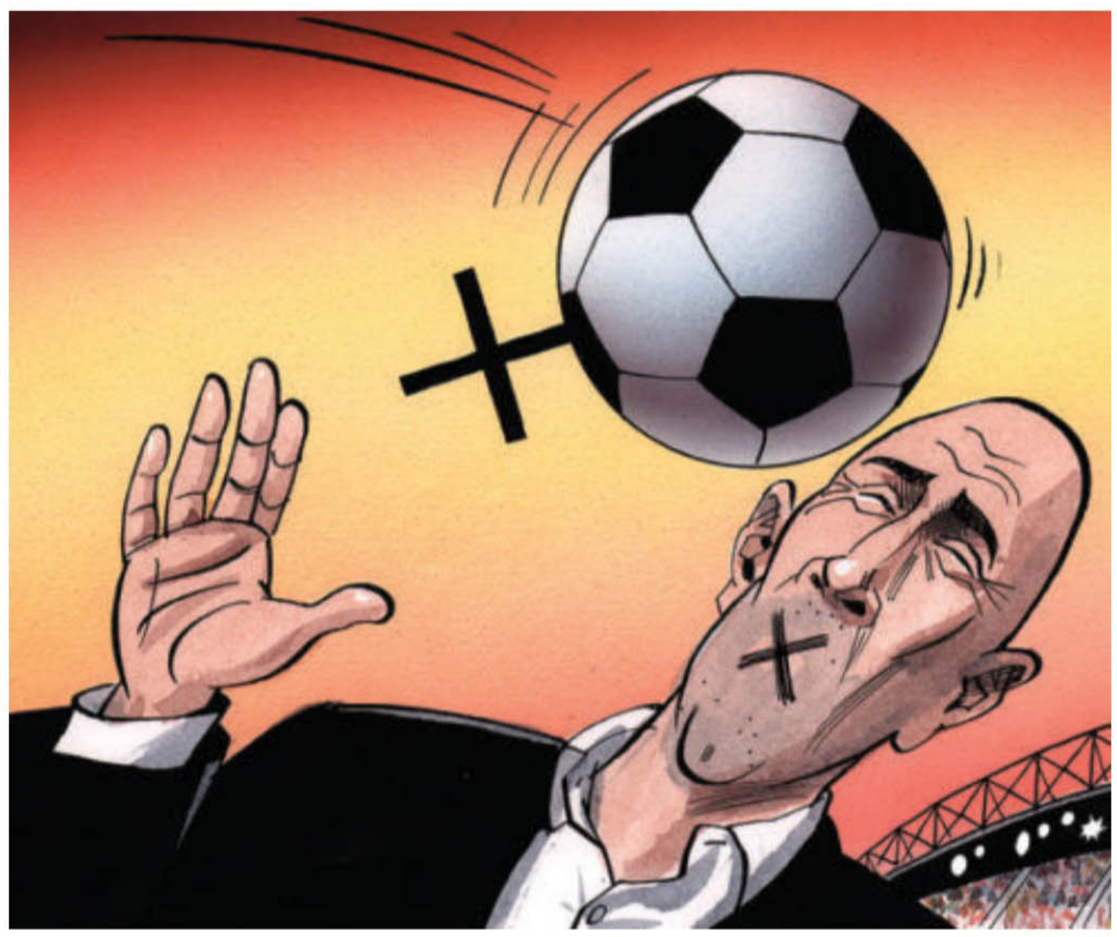
Such deals explain why these places are getting a lot of non-rich American expats. Other countries target the Christopher Newmans of the world. Italy aims to attract "high-net-worth individuals" by letting them pay €100,000 a year in income tax regardless of how much they earn. France has a complicated exemption aimed at foreign business executives. Germany, though, has none.

For all American expats' tales of disillusion, it is less important than practical matters. "Everybody has convoluted how-I-ended-up-here stories," says Amanda Klekowski von Koppenfels of the University of Kent, an expert on the American diaspora. Many travel for education or work, fall in love and settle down. Still, she says, there has been a change. Americans once felt that their country was the ultimate immigrant nation; leaving seemed odd. Now they are aware that Europe has its advantages: "Good health care, better transportation, less gun violence, there's racism but a lot less deadly."

To listen to the new American expats is to get a sense that "The American" has been partly upended. Americans are still richer than Europeans. But when they come to the continent, they no longer arrive as egalitarians in lands of aristocracy and prejudice. Instead they admire Europe's universal health care, efficient public transport, lower crime and lower income inequality. In a way, they envy the Europeans' liberty. ■

Charlemagne | A kiss is not just a kiss

A sexism scandal in Spanish football hides the country's progress



IN 1997 ANA ORANTES appeared on a Spanish television show to describe decades of vicious abuse by her husband: wild jealousy, beatings and isolation. Two weeks later she was found tied to a chair and burned to death by the man she had denounced. Spain was shocked not only by her murder, but also by the fact that she had called the police many times, to no avail.

Compared with such abuse, the kiss Luis Rubiales planted on an unwilling Jenni Hermoso on August 20th might seem trivial. Ms Hermoso and Spain's women's football team had just won the World Cup, and while passing out medals, Mr Rubiales, the head of the RFEF, Spain's football federation, grabbed the back of her head, pulled her towards him and planted his mouth on hers. A "peck", he later said, and consensual.

She disagrees. The uproar that has consumed Spain since shows how *machista* the country still is, say many Spanish feminists. But the uproar can also be taken as an example of just how feminist the country has become. When Spain's first modern left-wing government (1982-96) pulled Spain into Europe, Spanish society went on an orgy of personal liberalisation; but in Spanish life, sexism was slow to fade. By contrast, the second Socialist government, that of José Luis Rodríguez Zapatero (2003-11), quickly set about passing a gender-violence law, filling half the cabinet with women and liberalising abortion. It also introduced gay marriage and other laws in a burst of progress so sudden that it has been called the "second transition", after the first one following Francisco Franco's death in 1975.

In today's politics, Spanish women are doing extraordinarily well. Pedro Sánchez, the prime minister, boasts a cabinet not just featuring women, but dominated by them: all three deputy prime ministers, and the ministers of economy, finance, labour, justice, defence and industry, as well as those ministries traditionally given to women, such as education and social affairs. Ministers, male and female, have been unanimous in calling for Mr Rubiales to go. Nor is their disgust a left-wing monopoly. The star figure of the conservative opposition, Madrid's regional president, Isabel Díaz Ayuso, is known for her delight in skewering left-wing pieties. But even she has called Mr Rubiales's behaviour "disgraceful".

Political progress is reflected, though unevenly, in society. The press extensively reports on violence against women, and the radio frequently reminds women of the hotline they can call to report it. The streets fill with huge demonstrations on March 8th, International Women's Day. Sexual freedom for women and men is taken for granted. Last year a law banned street harassment, in the country once known for *piropos*: florid compliments offered to a woman in public.

All this is why *asqueroso* ("disgusting") trended on social media moments after Mr Rubiales forced his mouth on to Ms Hermoso's, and #SeAcabo ("It's over") has become the Spanish equivalent of #MeToo. Though it is not, obviously, over, the tide has surely turned. Those who seem not to have detected that include Mr Rubiales's mother, who locked herself into a church and declared a hunger strike in support of her son (she was later taken to hospital). To barricade oneself in a church is something that would occur to fewer and fewer Spaniards, among whom religious practice has declined about as quickly as feminism has grown.

But being locked in a conservative bastion is a good metaphor for the reaction of the Spanish football federation. On August 25th Mr Rubiales gave a speech in which he was widely expected to resign. Instead he declared his refusal to do so, blaming a "false feminism" for the predicament he was in. The audience that heartily applauded him included the trainers of the women's and men's national teams, leading to calls for them to quit too.

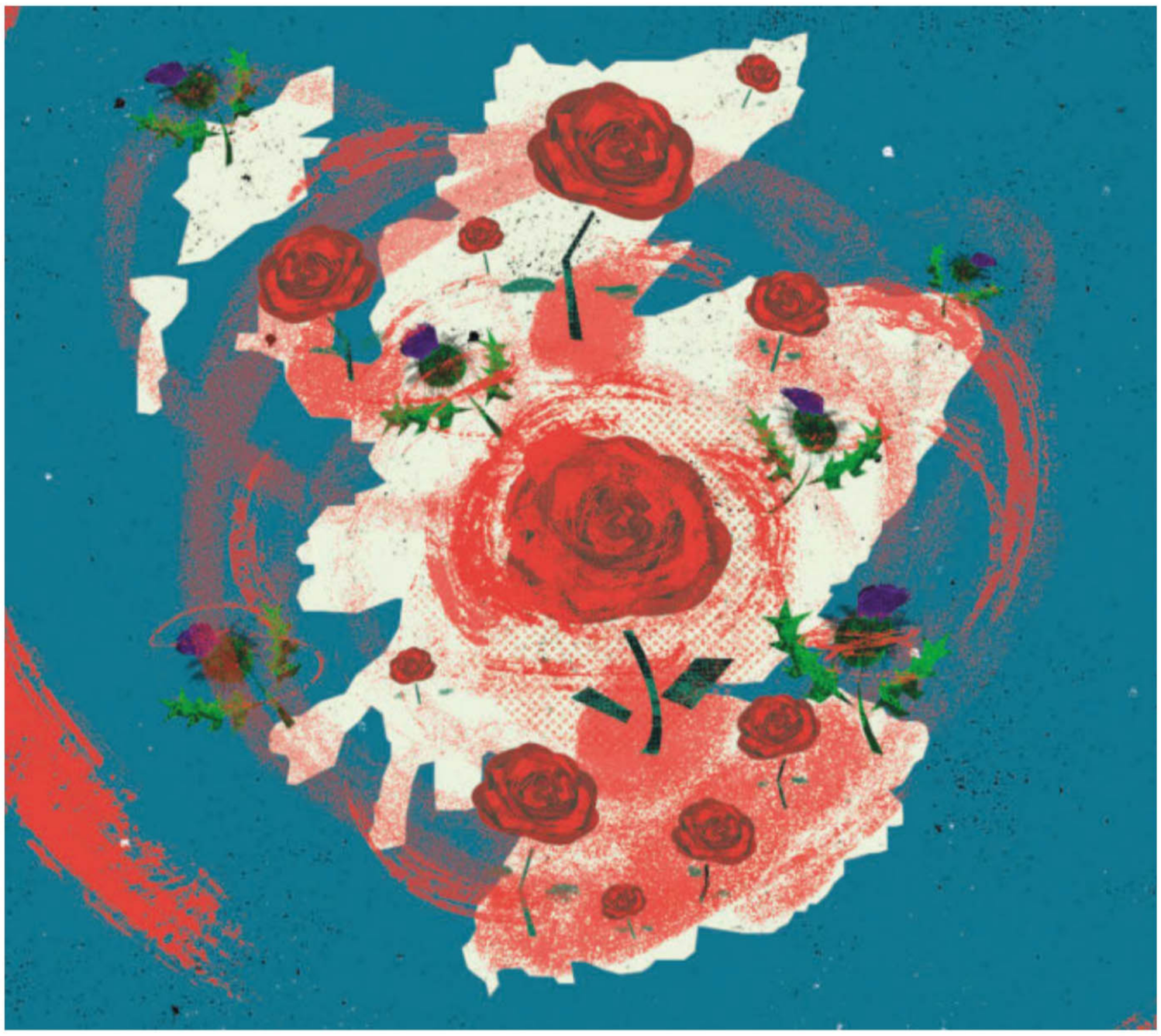
Spanish sport is not unusually sexist. Women athletes are closely followed and their victories celebrated: last year Barcelona's women's team broke its own world attendance record for a women's event, packing 91,600 fans into Camp Nou for its 5-1 rout of Wolfsburg in the Champions League semi-final. The national team's World Cup win dominated newspaper front pages in the same way that the men's title did in 2010.

Inequality does persist in pay. A long-running saga over the lower earnings of the women's national team relative to the men provided a backdrop of disgruntlement to the tournament. But such complaints are common in other countries too.

Bored with the board

The area of Spanish life that remains most stubbornly stuck in the past—besides the Catholic leadership, dominated by ultraconservatives—is business. A study from 2017 found that just 22% of top executive positions were held by women, a bit better than in Britain or America but worse than the 35% average in euro-zone countries. (Its authors blame policies that make it hard to combine parenting and work.) And surely enough, at the RFEF, a business as much as a sporting body, just 9% of the governing board are women. Such clubbishness may explain more than anything the roomful of men applauding Mr Rubiales's rant against feminism. Some of that audience seem to have wised up subsequently. The two national trainers who first clapped have since denounced Mr Rubiales. On August 28th the regional football bodies that make up the national one unanimously called for Mr Rubiales to go.

Fifty years ago, Spanish women were second-class citizens. Twenty-five years ago, they were shocked by Ana Orantes's murder into demanding social progress to match their legal emancipation. Today, attitudes often seem to resemble those in Scandinavia more than in neighbouring countries, where vigorous feminist movements still face strong headwinds. #MeToo has led to progress in France and, to a lesser extent, Italy. But in Spain the push began long ago, and has won broad and deep social approval—however slow those like Mr Rubiales have been to notice it. ■



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Scottish politics

A straw in the wind

RUTHERGLEN, SCOTLAND

The electoral stakes for Labour are rising again in Scotland

"I DON'T KNOW—it's all mince," (Scottish slang for rubbish) says a retired cleaner in Rutherglen, when asked how she would vote in an upcoming by-election. The last time voters in that suburb south of Glasgow went to the polls she backed the Scottish National Party (SNP); this time she might plump for Labour. Her ambivalence, apparently shared by many former SNP voters, reflects the party's dramatic decline. Since the beginning of the year, and in particular following the arrest in June of Nicola Sturgeon, the former first minister and the most powerful advocate of the independence dream that brought the SNP to power, the party has slipped in the polls in a once unimaginable way.

That presents an opportunity for the Labour Party, which once held sway north of the border. In 2010 it had 41 of Scotland's current 59 seats in Westminster. After the independence referendum in 2014, Labour haemorrhaged support. In 2019 it was all but wiped out, managing to hold just one seat. It now hopes for a revival that could help it win a general election that must be held no later than January 2025.

The first real test comes when Rutherglen and Hamilton West holds a by-election in October. The vote was triggered two years ago, when Margaret Ferrier, a former SNP MP, took a train from London to Glasgow even though she had tested positive for covid-19. She was suspended from the SNP but continued to sit as an independent. This August, following a recall petition, she lost her seat. (Some former supporters in Rutherglen say they remain furious about her behaviour while they were enduring lockdown.)

Labour could hardly find a better place than Rutherglen to test its Scottish fortunes. In the general election its priority will be to pick up the handful of seats it won in the election in 2017. Rutherglen has swung in recent general elections between the SNP (in 2015 and 2019) and Labour (2005, 2010 and 2017). In 2019 Ms Ferrier won there by 5,230 votes. A swing of only 5% would return it to Labour.

Recent polls have suggested Labour could do a lot better than that. One, published by Survation on August 23rd, found 35% of Scottish voters support Labour and 37% the SNP (an eight-point fall since 2019). Sir John Curtice, a political scientist at the University of Strathclyde, suggests that could mean each of the two parties picking up 24 seats at the general election. (The Conservatives would keep their current six seats; the Liberal Democrats would win five, a gain of one).

Such a boost from Scotland would ease Labour's path to winning outright. Sir John calculates that for every dozen seats Labour picks up in Scotland "you can knock a couple of points off the lead it would need across the UK to win an overall majority". Strength in Scotland also reduces the risk of a hung Parliament, and thus the awkward prospect for Labour of being dependent on support from small parties, such as the SNP. Success in Rutherglen in October would probably be hailed as "historic", says Christopher Carman, a professor of politics at the University of Glasgow.

When margins are tight, unexpected outcomes are a possibility too, of course. Were Labour to fall short in Rutherglen, that would point to bleak prospects for the party across Scotland. Labour's narrow failure in July to win a by-election in Uxbridge and South Ruislip, Boris Johnson's old seat, means the party is taking nothing for granted, says an activist in Rutherglen.

The SNP is not less popular because support for independence is waning. Polling suggests this remains steady, at 48%, ▸▸

rather more than the share of voters who back the SNP. That suggests Scots are becoming more realistic about the prospect, says James Mitchell, a professor of politics at the University of Edinburgh.

For such voters, a desire to kick out the Conservatives has been intensified by Labour's lead in the polls. That surged following a disastrous mini-budget in September 2022. A ruling by the Supreme Court, in November, that an independence referendum is not possible unless Westminster agrees, has made it harder for the SNP to argue that it could bring about secession. It also weakened the case for Unionists to vote Conservative.

Yet the SNP did not begin to really slide in the polls until the arrest of Ms Sturgeon, four months after her resignation as party leader. Her uncharismatic successor, Humza Yousaf, is not nearly so popular. Kate Forbes, who narrowly lost the leadership contest in February, has given him little support. ("Never say never", she said in August, when asked if she would have another go).

The SNP, which is preparing to face a Labour government for the first time in 13 years, is employing two lines of attack against the party in Scotland (which it calls a "branch office"). The first concerns Brexit, which the Scots overwhelmingly voted against. Katy Loudon, the SNP candidate in Rutherglen, has castigated Sir Keir Starmer, the Labour leader, for his pledge to "make Brexit work", pointing out that lost trade has cost the area dearly.

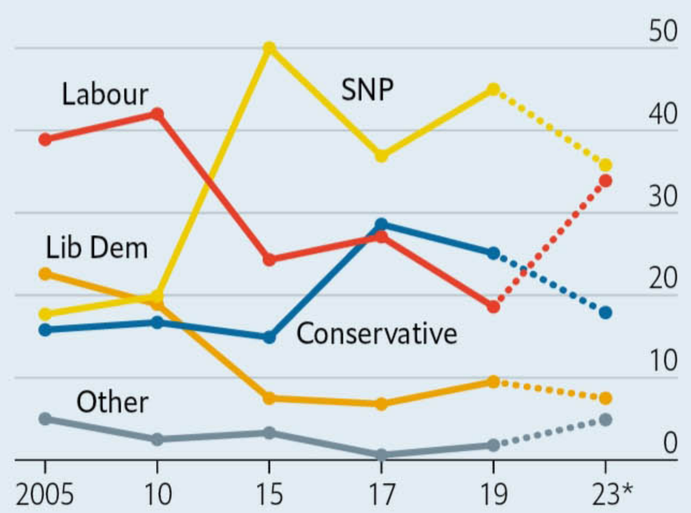
The other line of attack is his refusal to part from the Tories on several social issues, especially a two-child cap on child benefit. She reminds voters that the SNP's child payment gives families on universal credit £25 a week per child. That is a potent combination for many in Rutherglen. "The SNP shows more care for children and families," says Kay, who works for the prison service. "And we don't want to be ruled by Westminster," she adds.

South of the border, where Labour's chief battle is for Tory votes, the party emphasises its moderation and fiscal credibility. In Scotland the message is quite different. Michael Shanks, Labour's Rutherglen candidate, who briefly left the party over its position on Brexit, has said he is not against reversing it. He has also said he would vote against the two-child benefit cap. He is keen to emphasise that he is a leftie. He, like Ms Loudon, repeatedly bewails the high cost of living.

That may resonate in Rutherglen in particular, which contains some of the poorest areas of Scotland. An unscientific straw poll on Rutherglen's Main Street, where a baronial gothic town hall towers over shabby shops, suggests that worries about money trump all other issues. Few expected their vote to matter, though. Over half of those asked said they had never voted and had no intention of doing so. ■

Heading to the highlands

Scotland, general-election votes, % of total



Sources: House of Commons; Panelbase; Redfield & Wilton; Survation; YouGov

*Seven-poll average, to August 28th

Northern Ireland's broken politics

The new abnormal

BELFAST

Civil servants are running the province

When Northern Ireland's government previously collapsed, it took three long years for it to return. The restoration came in January 2020, but it tumbled again just over two years later. A year and a half after that fall, the prospects for devolved government coming back in the province are remote.

The political problems stem from the Good Friday Agreement, signed in 1998, that enforces power-sharing by unionists (who are loyal to Britain) and nationalists (who seek a united Ireland). If either of the two big parties refuses to govern, the administration falls. Previously it was the unionists, as the majority in Stormont, the regional assembly, who disliked this veto power. Now, as a minority, they are the ones exploiting it.

The main unionist party, the DUP, walked out of office last year in protest at the Brexit deal agreed by Boris Johnson with the EU. Mr Johnson had earlier attended the DUP conference, earning cheers for his promise to never create a trade border in the Irish Sea. When he did precisely that the DUP was left looking naive and vulnerable. And as voters learned what the border meant—items gone from supermarket shelves; some British companies refusing to sell to Northern Ireland; burdensome red tape—support for the DUP collapsed.

Getting the DUP back into government is proving impossible. Britain and the EU agreed on the Windsor framework in February, a new arrangement for Northern Ireland that softens parts of the sea border. The British government had expected Sir Jeffrey Donaldson, the DUP leader, to accept it. He has stalled.

In theory the Westminster government could intervene, but it is reluctant to do more than fix a budget for the province. Many who are hostile to Britain would oppose direct rule, which anyway would be seen as backtracking on efforts to encourage local rule. Instead, civil servants are told to manage as best they can. A sense of fatalism pervades.

The devolved government in Belfast is responsible for most public services, including schools, hospitals, roads and the justice system. As happened last time the government failed, in January 2017, civil servants have taken on decision-making powers that are normally reserved for ministers. As they showed restraint and avoided controversy, the system appeared to work in the short term. Over time, however, problems have mounted as high inflation and a squeeze on public spending put pressure on officials to take highly charged decisions. The current budget for the province requires painful cuts to public services, but civil servants say that only elected politicians may decide on those.

Meanwhile, problems grow for residents. The province's health system, which faces a budget shortfall of £470m, is in a dire condition. Some patients have been forced to wait for a decade to get a joint replaced. Waiting lists for all sorts of surgery have grown. The education service is £382m out of pocket, as officials talk of pupils, notably disabled children, suffering severely. The budget for infrastructure spending is £167m short. Officials talk of contingency plans that include possibly switching off streetlights, no longer salting roads in the winter or even closing sewage-treatment plants.

One trade union leader, Gerry Murphy, says the tight budget set by Westminster means that officials have been "set up to fail". Though residents of the province have so far resigned themselves to the political dysfunction—no angry marchers have yet taken to the streets of Belfast, Ballymena or Enniskillen—he expects strikes by public-sector workers soon, perhaps including the civil servants who have been asked to run things.

The pressure on the DUP is not working, perhaps because the party's popularity rose after it quit office. The likeliest outcome is that problems drag on, perhaps until the next general election. Some senior unionists talk of waiting until the Labour Party, ahead in national polls, forms a British government and eventually arranges for closer ties with the EU, as that could in turn allow for more open trading across the Irish Sea. In other words, expect yet more painful limping on for now. ■

Bagehot | Watch GB News, carefully

The insurgent channel is a threat to its rivals, and a trap for the Tories

FOR YEARS, British politicians made the error of ignoring, and then mocking, Nigel Farage and his UK Independence Party. "Fruitcakes, loonies and closet racists," was the verdict of David Cameron, a Conservative leader, in 2006. "A collection of clowns," later concurred Kenneth Clarke, his justice secretary. UKIP was an electoral minnow; its gatherings were farces. Yet Mr Farage's loyal following of unfashionable people from unimportant towns allowed him to redraw the terms of British politics, and to drag the Conservative Party to the right. Brexit followed.

Do not make the same mistake with GB News, a television channel launched in June 2021 and of which Mr Farage is the prime-time star. It too is easy to ignore, buried on Freeview channel 236, and offers plenty to mock. Owned by Sir Paul Marshall, a hedge-fund boss, and Legatum, an investment firm, it lost £31m in its first year, along with a raft of presenters. Advert breaks are filled with promotions for gold dealers and erectile-dysfunction drugs. (It is a target of a pressure group which lobbies brands to boycott right-wing media.) Its cast includes several fruitcakes, but the station has no foreign bureaus or roaming newscopters, and when real news happens, admits one insider, the viewers switch to other channels. But watch carefully. This is a project to redraw the rules of British television news, which has hitherto subscribed to a doctrine of political impartiality and the public interest. And like UKIP, it may help remake the Tories, too.

Angelos Frangopoulos, the channel's chief executive, is a veteran of Rupert Murdoch's Sky News Australia, and shares his former boss's belief in free speech and disdain for the broadcasting establishment. His chief innovation is opinion-driven coverage. From mid-afternoon, hosts deliver monologues, the staple themes of which are migration, motoring, woke culture and Meghan Markle. (Fox News is a clear inspiration.) Thus India's moon landing on August 24th was marked with a denunciation of government aid to the country. "The British government is laughing at us," declared Patrick Christys. "Is it time to call a national emergency?" asked Michelle Dewberry, opening the next show with a package on migrant boats. A recent motif holds that "anti-white" activists are stirring a "race war" in Britain. A wide streak of internet conspiracism encompasses the usual suspects: the World Economic Forum, vaccine-makers and Bill Gates.

The second innovation is the use of serving politicians, mainly of the right, as presenters rather than merely guests. They include Sir Jacob Rees-Mogg, a former cabinet minister; Lee Anderson, the Tory deputy chairman; and Esther McVey and Philip Davies, a pair of married backbenchers. (Talk TV, a rival launched by Mr Murdoch in April 2022, hosts Nadine Dorries, a departing Tory MP.)

And whereas television news has sought to speak to the whole country, GB News is pursuing a much closer dialogue with a targeted viewership in northern England and the Midlands. Its reach is modest: 600,000 people a day compared with 2.4m for BBC News and 1.7m for Sky News. (It aspires, rather optimistically, to leapfrog both by 2028). Its loyal core is much smaller: just 10% of the audience account for three-quarters of all hours viewed, and they are predominantly older men without degrees, says Enders Analysis, a consultancy. Insiders call them a movement.

GB News' rivals fear it not for its quality or size, but because it has torn a hole in their regulatory model. Mr Frangopoulos has shown that Britain's historic style of television news is more a product of journalistic culture and sense of duty than law. The conventions that govern the state are known as the "good chaps theory of government". Television, it transpires, has been run on a good chaps theory of broadcasting, and it is acutely vulnerable to those who test its boundaries. Ofcom, the watchdog, has opened a clutch of investigations into GB News broadcasts. But helpfully for the channel, it has said the legal duty of "due impartiality" does not prohibit politician-presenters if a programme constitutes "current affairs", such as a panel discussion, rather than "news", such as a bulletin. Nor need dissenting voices, while required, get equal airtime. (Mr Anderson's pinko guests sit by a sign reading: "Left in the Corner".) Nick Robinson, a BBC newsman, says the rules of the game have changed with no one being told.

Turn on, tune in, drop out

GB News will have a greater impact on the Conservative Party, if—as seems likely—it suffers a heavy defeat at the general election. The channel will position itself as the unofficial opposition to a Labour government. (Its lacerating coverage of Sadiq Khan, the party's mayor of London, offers a foretaste). It will also be where the Tory right organise and proselytise in the struggle for dominance of the rump party. The channel has hired Christopher Hope, a former journalist at the *Telegraph* , the pages of which are the historic battlefield for leadership contests and who is well connected to the backbenches. On August 28th it opened a new studio opposite the Houses of Parliament. Candidates who wish to set out the case for leaving the European Convention on Human Rights, or junking climate policies, will find a receptive audience.

But that is not the gift it seems. The greatest threat to opposition parties is irrelevance. Out of office, they retreat into themselves. Jeremy Corbyn, the previous Labour leader, mistook rooms of cheering activists for an adoring nation. The self-styled "People's Channel" risks performing a similar illusion on the Tories, seeming to be a conduit to the authentic electorate but in truth reaching only a fragment. Indeed, an outlet that on its launch promised to escape the Westminster bubble is often an introspective affair: Mr Anderson interviews Sir Jacob, who interviews Mr Farage, and round they go. The BBC's motto runs: "Nation shall speak peace unto nation." GB News is the conservative right speaking unto itself. Its owners may conclude that is a sustainable basis for a channel. For a party of government, it is a trap. ■

A new nuclear arms race

Oppenheimer's nightmares

The coming nuclear contest will be harder to stop than that of the cold war

FROM OFFICES in America's State Department and Russia's Ministry of Defence, officials take turns "pinging" each other every couple of hours just to check the line is working. Then, almost always, silence follows. It is the dying heartbeat of global nuclear arms control.

Until March the direct link between the Nuclear Risk Reduction Centres (NRRCs) of the world's two biggest nuclear powers was alive with messages informing each other about the movement of missiles and bombers. Under New START, which came into force in 2011 and which includes caps on long-range nuclear weapons, there were 2,000-odd such notifications in 2022. No longer. The half-yearly updates on warhead numbers have stopped, too. And there have been no on-site inspections since March 2020.

For now, Russia and America still abide by the treaty's confines on warhead numbers. They also exchange notifications of upcoming ballistic-missile launches under a previous accord (they have swapped only a few such messages in recent months). And they still hear from each other through separate multilateral channels used for the dozen or so agreements requiring notification through NRRCs.

Nevertheless, the world is drifting towards a new nuclear arms race. It will probably be harder to stop than that of the cold war, not least because of the complexity of three-sided deterrence involving a rising China. The danger of "a chain reaction that would destroy the entire world"—the words spoken by Robert Oppenheimer, the father of the atomic bomb, at the end of Christopher Nolan's eponymous film—looms ever larger.

That humanity averted annihilation owes much to the many agreements between America and the Soviet Union, now Russia, that limited nuclear weapons and built trust even as each retained the means to destroy the other. They brought down the global nuclear stockpile from 70,400 warheads in 1986 to 12,500 today (see chart on the next page).

That era is ending, for four main reasons: America's abandonment of agreements, Russia's invasion of Ukraine, China's nuclear build-up and disruptive technology. Begin with America. In 2002 President George W. Bush withdrew from the Anti-Ballistic Missile Treaty (which limited anti-missile defences), pointing to the dangers from North Korea and Iran. And in 2019 another Republican president, Donald Trump, pulled out of the Intermediate-Range Nuclear Forces Treaty (which eliminated that category of missiles), citing cheating by Russia and China's rise.

Democratic presidents have been keener on arms control. New START was negotiated by Barack Obama and then renewed for five years by Joe Biden in 2021. It limits each side's "strategic" nuclear weapons (long-distance arms with high destructive power) to 1,550 deployed warheads and 700 deployed intercontinental ballistic missiles (ICBMs), bombers and submarine-launched ballistic missiles.

But New START does not control "non-strategic" or "tactical" weapons, usually smaller ones for battlefield use. Russia is thought to have 1,800 of them and America just 200. Nor does it capture Russia's work on things such as nuclear-propelled cruise missiles and torpedoes. In turn, Russia complains that the nuclear arsenals of Britain and France, American allies with more than 200 warheads each, are excluded. New START is set to expire in February 2026, and there is little prospect of a follow-on deal. In less than three years, the last major restraint on the world's nuclear stockpile may well be removed.

For that blame Russia's invasion of Ukraine, and its repeated threats to use nuc- ▸▸

lear weapons. Western countries have armed Ukraine, but have not sent their own troops, in part for fear of "world war three". In February Russia said it would "suspend" New START, halting notifications. America responded in kind in March and June. Each side has since become ever less certain about the other's posture, magnifying the risk of nuclear brinkmanship—especially at a time when the Kremlin is at war. Poland says Russia has started moving tactical weapons to Belarus.

Then there is China, which is already racing to build up its nuclear force. Unconstrained by treaties, it has long observed a "minimal deterrence" policy with a few hundred warheads. But the Pentagon estimates its stockpile will grow to perhaps 1,500 by 2035. That is close to New START's deployed limit.

Nuclear tensions could spread further and unpredictably. India, which has an unresolved border dispute with China, may feel compelled to increase its stockpile, currently estimated at more than 160 warheads. That in turn may prompt Pakistan, with a similar number, to build up. North Korea, with perhaps 30 warheads, is intensively testing ICBMs. And Iran has become a threshold nuclear state.

New technologies could aggravate matters. Hypersonic missiles are harder to detect and shoot down than ballistic ones. Improvements in sensors and accuracy heighten worries about a disabling surprise attack. And the spread of artificial intelligence (AI) raises questions of how far nuclear war might be fought by computers.

In response, America has been flashing its nuclear sabre, if not quite rattling it. Its ballistic-missile submarines, which usually lurk unseen for months-long patrols, have been surfacing around the world of late. In July the *USS Kentucky* moored in the South Korean port of Busan, and the *USS Tennessee* called at Faslane in Scotland. In May naval commanders from Japan and South Korea embarked the *USS Maine* off Guam. Last October the *USS West Virginia* popped up in the Arabian Sea, in an apparent signal to Iran, for a visit by the head of America's Central Command.

The "silent service" is no longer silent. "You can't have a credible deterrent without communicating your capabilities," Rear Admiral Jeffrey Jablon, commander of America's submarine force in the Indo-Pacific, told *Breaking Defense*. "If the adversary doesn't know anything about that specific deterrent, it's not a deterrent."

America wants to reassure allies that its "extended deterrence"—the promise to defend them from nuclear attack even if they eschew nuclear weapons—remains strong. Some in Poland and South Korea want America to store B61 nuclear gravity bombs in their countries. It has resisted. But showing "boomer" subs serves as warning to foes and reassurance to friends.

America is busy modernising all three legs of its nuclear "triad" with new ground, air and sea systems. An unspoken aim is to rev up the nuclear industrial base to be able to produce more weapons in future, should they be needed. Some want to go further. A paper in March by the Lawrence Livermore Laboratory, a government-funded institute that among other things designs nuclear warheads, said America's current nuclear force is "only marginally sufficient". America should expand it when New START expires by "expeditious uploading", deploying weapons currently held in reserve, for instance as multiple warheads on ICBMs; before then, it should demonstrate the ability to do so.

America has a greater "upload capacity" than Russia. The Federation of American Scientists, which campaigns to minimise global risks, calculates that from the current total of about 1,670 deployed strategic warheads each (it uses different counting rules from those for New START), America could within a couple of years deploy 3,570 compared with 2,629 for Russia. Some experts worry that big powers might also resume testing nuclear weapons, an idea discussed in the Trump years.

Talking of an "inflection point" in the nuclear balance, Jake Sullivan, Mr Biden's national security adviser, declared in June that America was ready to discuss arms control with Russia and China "without preconditions". Neither is rushing to take up his offer. Given its heavy losses in Ukraine, Russia is either too aggrieved or too reliant on nuclear weapons to consider a new accord. China, for its part, seems uninterested in limits, possibly until it achieves parity with America.

Indeed, parity has been the basis of arms control between America and Russia. But it is harder to agree on when three powers are involved. America, in particular, worries that Russia and China might ally against it, given that they have declared a "friendship without limits" and conduct joint air and sea patrols. Mr Sullivan insists that America does not need "to outnumber the combined total of our competitors" to deter them. Yet the pressure for America to increase its numbers may prove irresistible, says James Acton of the Carnegie Endowment for International Peace, an American think-tank. As long as America's targeting policy rests on "counterforce"—aiming nuclear weapons at the other's nuclear sites to neutralise them—more weapons in the hands of rivals will mean that America will need more, too.

Piling up

Estimated nuclear-warhead inventories, '000
March 2023

Sources: Federation of American Scientists; US Department of Defence *No breakdown

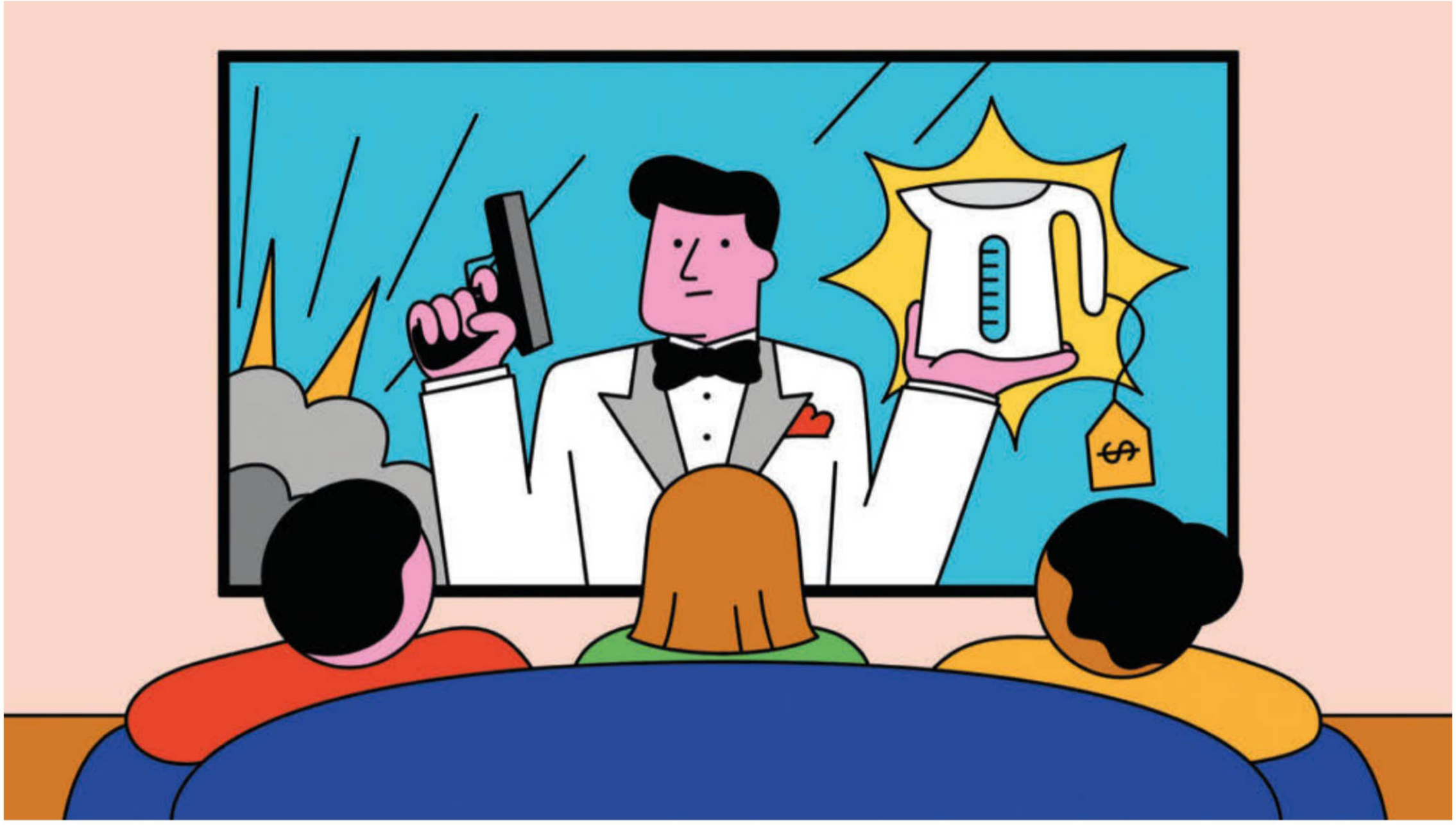
Destroyer of worlds

Eric Edelman, the Pentagon's former under-secretary for policy under Mr Bush, puts it differently, recalling cold-war reckonings about the ability to absorb a first strike and still be able to inflict unacceptable damage on a foe: "If you've got two adversaries with 1,500 weapons each and one launched a strike and you ride it out, then retaliate: what reserve do you have left to deal with the other adversary?" He adds: "We don't really know yet what the right number is, but it's probably north of 1,550."

Given the poor prospects for new treaties to limit nuclear weapons, America is exploring less formal arrangements with China to prevent crises turning into conflict. Mr Sullivan proposed, for instance, extending the system of hotlines and notifications with Russia to all five permanent members of the UN Security Council. But the Chinese response has been dispiriting. He summarised it thus: "If you wear a seat belt in a car, you're going to be incentivised to drive faster and more crazy, and then you'll have a crash. So, in a way, better not to have the seat belt."

Controlling the use of artificial intelligence is even harder, given that it cannot be seen and counted as ICBMs can. Even if AI can help decision-making, America, Britain and France have pushed for a norm requiring that there should always be "a man in the loop" when it comes to the use of nuclear weapons.

America's NRRC remains fully staffed, with 40-odd people tending the lines, hoping for better times between Washington and Moscow. "Maintaining that line in times of good relations is important; it's much more important when tensions rise, because the potential impact of miscalculations grows as other channels are strained," says an American official. A Russian-speaker is always on hand. In a wiser world, there would be a Chinese-speaker, too. On screen Oppenheimer is told that he has given people "the power to destroy themselves". The question now is whether humanity still has the power to save itself in the face of new nuclear nightmares. ■



Amazon v Hollywood

The shopping channel

Amazon has television's worst shows, but its best business model

As bullets fly around a high-speed train carrying a former Miss World and a gang of spies through the Italian Alps, shopping is surely the last thing on viewers' minds. Yet should they press pause, they will see an option to buy items from the show: the heroine's gold necklace, her red dress, or the teetering stilettos in which she is improbably running rings around the villains. Only her exploding perfume is not yet for sale.

"Citadel", a thriller on Amazon Prime Video, shows what happens when the world's biggest online retailer becomes one of its biggest entertainment producers. As well as buying merchandise from the show on Amazon's e-commerce site, audiences can listen to its soundtrack on Amazon Music, or read about its production on Amazon's sister site, IMDb.com. Its multinational cast and plot, and planned spin-offs in a variety of languages, have been carefully chosen to appeal to shoppers around the world.

Hollywood old hands are snooty about Amazon's video efforts, and understandably so. Despite a reported budget of $300m, making it the second-priciest TV series in history (after "The Rings of Power", another Amazon project), "Citadel" received lukewarm reviews and failed to crack the top ten most-streamed shows in America (Amazon says it has done better internationally). Critics see it as emblematic of the company's high-spending, low-impact record in video. This year Amazon will blow $12bn on streaming content, second only to Netflix (see chart on next page). It has had some hits, including "Reacher" and "The Boys". But its 45 streaming nominations at the upcoming Emmy awards—a record for Amazon—is less than half as many as Netflix or Warner-Discovery's service, Max. "Amazon's hit rate is not good, nor consistent with its spend," admits one former executive.

Yet despite its creative misfires, Amazon is quietly assembling something that has eluded most of its rivals: a model for how to make streaming pay. Its shows may underwhelm, but it is preparing to pair them with its formidable advertising machine, and is turning its streaming app into a high-margin marketplace for third-party sales, along the lines of its all-conquering e-commerce site. Hollywood might sometimes snigger at the quality of Amazon's output. But the Seattle firm may yet have the last laugh.

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Revenue streaming

Amazon has been in the video business since 2006, when it launched Unbox, an iTunes-like downloading platform. Since then the company has deployed its tech-sized chequebook to become one of the biggest forces in Tinseltown. Its main streaming service, Prime Video ($8.99 a month, or free as part of Amazon's broader Prime membership), attracts some 156m monthly viewers worldwide—about as many as Disney+ and second only to Netflix. Freevee, its free streaming service with ads, has another 40m or so. Twitch, a live-streaming site it acquired in 2014, attracts around 35m visitors a day, mainly to watch video-gaming content.

Fire TV, Amazon's range of internet-connected TV sets and streaming sticks, ▸▸

outsells every brand bar Samsung, with nearly 100m devices in use worldwide, according to TechInsights, a data firm. Heavy discounting has been deployed to lure people into the Fire ecosystem: earlier this year Amazon offered a 43-inch Fire television for $99.

The most obvious motive for Amazon's video experiments is to increase the value of the Prime bundle, which keeps members coming back to shop on the e-commerce site. But video also has the potential to become a moneyspinner in its own right, in two ways.

First, advertising. In little more than a decade Amazon has created a digital-ads business that has disrupted the old duopoly of Google and Meta. Its ad revenue this year will be around $45bn, making up about 7.5% of worldwide digital advertising, estimates Insider Intelligence, a research company. It is already more than a third the size of Meta's ad business, and growing fast. But whereas Google and Meta both have healthy video-advertising operations (through YouTube and Reels, respectively), Amazon's inventory mainly consists of sponsored search results on its e-commerce site.

That seems to be changing. Amazon has kept Prime Video largely ad-free to preserve a "premium" feel, says one senior executive. But the introduction of commercials last year by Netflix and Disney+ has given a green light to others to do the same. Amazon has been experimenting with running ads alongside sports shows on Prime, and has shifted more of its back-catalogue to Freevee, its ad-supported streamer. Analysts expect to see more commercial breaks on Prime soon.

Among streamers, Amazon is uniquely well placed in the advertising game. Whereas Netflix acknowledges that it is mainly limited to generic "brand" advertising, Amazon has enough information on its customers, through its e-commerce site and its Fresh grocery stores, to target them with highly personalised ads. What's more, it can measure the effectiveness of those ads, by observing viewers' subsequent behaviour in its shops.

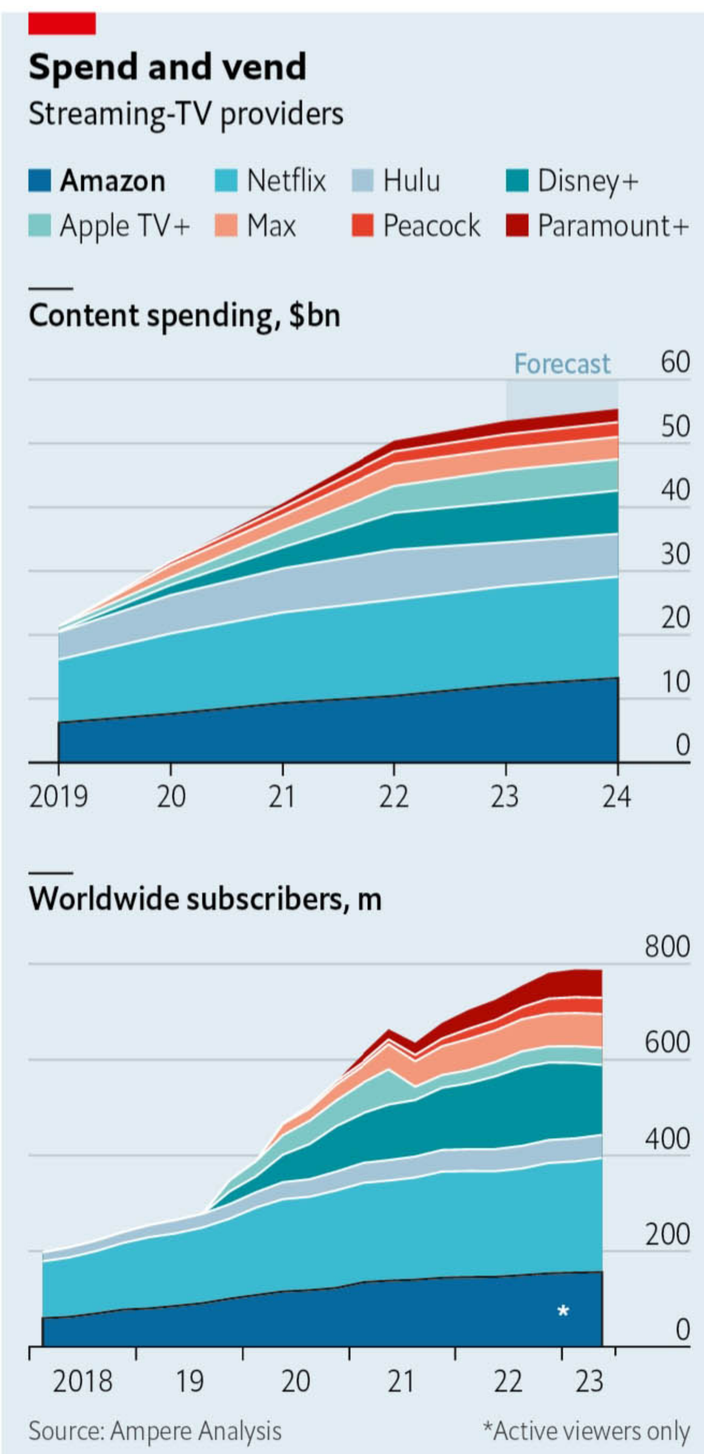
It has yet to exploit this ability fully, but viewers will get a taste of it later this month when Amazon is expected to run targeted, measured ads alongside its "Thursday Night Football" programme. In November it will show a blizzard of video commercials when it airs the first American-football game to coincide with Black Friday, an annual holiday to honour the shopping gods.

That makes this a "foundational year" for Amazon's video-ad business, says Andrew Lipsman of Insider Intelligence. "The future of their advertising strategy on video is going to really take hold," he predicts. Morgan Stanley, a bank, forecasts that within two years Amazon's nascent video-ad business will be worth more than $5bn a year in America alone, and that in the long run its superior intel on its viewers could allow it to charge higher rates for its ads than any other video platform.

Such an ability will become more valuable as viewing shifts to streaming. Advertisements on internet-connected television make up about a third of TV ad spending in America. As that share rises, a "pot of gold" awaits sellers of digital advertising, says a former Amazon executive. What's more, points out Mr Lipsman, "When you introduce data, it transforms markets." TV ads are reckoned to be among the most effective, but their impact is hard to measure. As advertisers gain the ability to see how customers respond to their commercials, the TV advertising market, which is currently worth about $90bn a year in America, stands to grow, with the lion's share of new business going to the companies that offer the best measurement.

Television's new landlord

Amazon's second approach to making video pay is to sell viewers not just its own output but other companies' content, too. Whereas viewers opening the Netflix or Disney+ app see only shows on those platforms, those opening Prime Video are offered content from a range of other streamers. If a customer subscribes to one of those other services via Prime, or buys or rents a show, Amazon takes a cut, reckoned to be between 20% and 50%. And when a viewer watches a free channel via Prime, Amazon takes a slice of the advertising revenue or sells its own ads in some of the channel's slots.



Tom Harrington of Enders Analysis, a research firm, likens the approach to Amazon's tried-and-tested strategy in retail. The company began by selling its own products, before opening its marketplace to other traders. These days two-thirds of sales on Amazon.com are made by third parties, with Amazon taking a commission—a much higher-margin business than selling its own wares. Its aim is to be the same kind of "landlord" in video, believes Mr Harrington.

This analysis sheds light on the purpose of big-budget shows like "Citadel". Amazon continues to stock its e-commerce site with first-party products, to maintain price competition and ensure that the marketplace has a broad enough offering to keep customers returning. Prime Video content plays a similar role: high-profile shows and live sports—something not available from most other streamers—get people to open the app, while guaranteeing them a wide range of content to choose from. "The real question isn't how many people watched 'Rings of Power'," says Mr Harrington. "It's how many people went into Prime because of 'Rings of Power'...and then [spent] more on other content."

Amazon seems to be succeeding in getting people to spend time on its platform. Although relatively few of its shows break into the top ten individually, Nielsen's figures show that Prime Video's share of streaming in America—about 8.9% of hours watched in July—is about 70% greater than that of Disney+, and more than twice that of Max.

Becoming a content landlord is not easy. Amazon's bargaining power over suppliers is weaker in video, where there are a few big studios with their own direct-to-consumer offerings, than in e-commerce, where millions of tiny sellers use its marketplace. Amazon's hold over consumers is weaker, too: whereas the company accounts for nearly 40% of e-commerce sales in America, its Fire TV platform handles only about 15% of streaming traffic there.

Still, the company is carving out ways of making money in an industry that is drowning in losses. Amazon may not dominate the Emmy awards, or Nielsen's top ten. But, says a former executive, its chief aims in video are for people to watch TV through its hardware, to buy content through its store and to watch commercials served by Amazon advertising. Even if "Citadel" remains a critical flop, it may have done its job. ■

Airlines

Flight risk

Exotic new entrants are a sign of an industry in full recovery

THERE ARE two measures of the recovery of the airline industry to its pre-covid altitude. First, data show that the 1.1bn seats on sale worldwide in July and August were only a whisker below levels in 2019. Seasoned observers point to a second, more subjective gauge: a slew of announcements of new or resurrected airlines with unlikely owners, dubious business models or questionably niche routes. Entrepreneurs are again being drawn to an industry that has long offered the glamour and excitement that a moth sees in a flame.

One route skyward is to apply a fresh lick of paint to a defunct brand. On August 20th Monarch Airlines, a British carrier that went bust in 2017, said it would resume carrying passengers in 2024, though details of its plans are sparse. The government of Ghana, whose flag carrier collapsed in 2010, is also relaunching a national airline. It is doing so in partnership with Ashanti Airlines, a firm scarcely accustomed to running such a service in a continent whose carriers have lost a daunting $3.5bn between them in the past three years.

In an industry where most firms struggle to a make a profit, new entrants with managers boasting a proven record might have an advantage. Yet Mexico's government recently announced that Mexicana, another carrier that went bust in 2010, will restart services later this year—under the management of Mexico's army, an organisation with little experience in the field save for operating an air force. Global Airlines, founded by James Asquith, a British social-media influencer and former banker, recently bought four second-hand A380 superjumbos at bargain prices, promising to make transatlantic passengers "feel like a million dollars", even in economy class. It may struggle: used A380s are in plentiful supply because other airlines prefer newer, smaller long-haul jets, which are cheaper to run.

Other ventures operating niche routes may be equally hard to sustain. Bermudair will this month begin business-class-only flights between its island home and the United States. Later this year Beond intends to kick off a rapid expansion by taking passengers between its base in the Maldives and Dubai and Delhi, with a "private jet" experience on refitted narrow-bodied planes. Several airlines have tried over the years to run business-class-only services. Only La Compagnie, which flies between America, Europe and the Caribbean, has survived.

Red Way, a startup based in Lincoln, Nebraska, may serve as a warning. It launched in June employing the novel but misguided idea of handling marketing, ticket sales and baggage checking while outsourcing the flying to a charter airline. It ceased operations on August 31st. In June IATA, an industry body based in Switzerland, doubled its forecast for net profits for the world's airlines in 2023 to $9.8bn. But, it notes, this is equivalent to $2.20 per passenger, or half a cup of coffee in Geneva. For new airlines it is a question of whether that cup is half full or half empty.

American medicine

A bitter pricing pill

A law to cut drug prices is changing how pharma firms make medicines

"AMERICA IS THE piggy-bank of the pharma world," gripes David Mitchell of Patients for Affordable Drugs, a consumer lobbying group. There is some truth to this. America is the world's largest pharmaceutical market, with $630bn in sales in 2022, or 42% of the worldwide total. Its contribution to profits—65% of the global haul—is greater still. American patients have long borne the burden of these juicy returns. Prescription medicines in America cost two to three times more than in other rich countries (see chart on next page). Patients' out-of-pocket expenses, the slice of drug costs not covered by insurance, are also among the world's highest.

One reason for high costs is that, unlike other countries, America has not regulated drug prices. Until recently it was illegal for Medicare, the government-funded health insurer for over-65s, to haggle with drug companies. That is now changing. The Inflation Reduction Act (IRA), passed last August, gives Medicare the power to negotiate directly with pharmaceutical firms. It also forces companies to pay a rebate to Medicare if their drug prices rise faster than inflation. The Congressional Budget Office, a federal agency, estimates that price-capping measures will lop $96bn from the federal deficit by 2031.

On August 29th the government named the first ten drugs chosen for price negotiation, which will take effect in 2026. The "negotiation" is rather one-sided: pharma firms have little choice but to agree to the price set by officials. Any that walk away will have to choose between paying stringent fines or withdrawing all of their drugs from the Medicare programme.

The backlash from the pharma industry has been fierce. "This is not 'negotiation'. It is tantamount to extortion," protested Merck. Several firms—Boehringer Ingelheim, Bristol Myers Squibb, Johnson & Johnson and Merck—have launched legal challenges. Pharma bosses are bracing for price cuts of 25-95% in drugs chosen for price negotiation. Since the law's passage, over 50 companies have blamed the IRA in earnings calls for clouding their prospects. It is already changing how they make drugs, with some unwanted side-effects.

One issue is a provision in the law that could change the types of drugs that these companies develop. Most medicines are either small-molecule or large-molecule drugs. The former are chemical-based pills ▸▸

of the kind that fill medicine cabinets. Large-molecule drugs, also called biologics, are more complex and must be injected into the bloodstream. The IRA grants biologics 13 years of pricing freedom after a drug is approved, whereas small-molecule drugs get only nine years post-approval before they face Medicare's bean-counters. Jonathan Kfoury of LEK, a consultancy, estimates that small-molecule brands could lose between 25% and 40% in overall revenue because of early price caps.

Executives fret that the new rules will deter innovation in small-molecule pills. Last November Eli Lilly, a big American drugmaker, removed a small-molecule cancer drug from its pipeline, blaming the IRA for making the investment unviable. In the same month Alkermes, an Irish biotech firm, said it would spin off its biologics-focused oncology business into an independent company. Richard Pops, the company's boss, explained that the IRA had "made biologic medicines more valuable".

Another contentious provision in the law starts the pricing clock at a drug's launch. Pharma firms usually introduce a drug to small patient populations, like those with rare conditions or late-stage diseases, who have few alternatives, before widening availability. With only nine years in which to maximise returns, companies will "delay the clock" by launching their drug for the largest disease areas, believes David Fredrickson, who leads the oncology division of AstraZeneca, an Anglo-Swedish giant. Genentech, an American biotech firm owned by Roche, a Swiss drugmaker, is considering postponing the launch of its upcoming small-molecule drug for ovarian cancer. Instead it may wait a few years until the drug has been cleared for use in the much larger prostate-cancer market.

The impact of the IRA may be muted, at least until the end of this decade: JPMorgan Chase, a bank, suggests that the new law's price cuts will be only a "modest drag" on big pharma's growth in its first few years. But as more medicines are added, drugmakers will feel more pain. And if the new rules dissuade pharma firms from developing small-molecule drugs, they could raise prices in the long term. Unlike biologics, which are hard to copy, small-molecule pills are drowned in cheaper knock-offs once their patent expires.

Alexis Borisy, a biotech investor, notes that uncertainty around the returns for small-molecule medicines is already influencing funding decisions. That is a problem. Big pharma relies on smaller, more agile biotech firms for ideas. Between 2015 and 2021, 65% of the 138 new drugs launched by large companies originated in external partnerships, mostly with smaller firms. Given America's disproportionate role in the discovery of new therapies, disruptions to the innovation pipeline could have far-reaching consequences. ■

In sickness and in wealth

United States, prescription-drug prices as % of prices in other countries, 2018

Source: RAND

The Adani Group

Scandalously successful

MUMBAI

An embattled conglomerate forges on

ONLY SEVEN months ago the Adani Group, India's most valuable conglomerate at the time, looked as if it might topple. The multinational, which has interests in everything from rice to renewable energy, was accused of fraud, insider trading and fragile financing by Hindenburg Research, a New York-based short-selling firm. Though the group denied any wrongdoing, the valuation of Adani's companies fell from over $200bn to under $100bn.

The Hindenburg affair is far from over. On August 31st, as India's Supreme Court was poring over an official investigation into the claims, a report by the Organized Crime and Corruption Reporting Project, an international consortium of journalists, made new accusations of share-trading manipulation and reporting violations (which the group also denies). Yet even as the scandal drags on, the group seems to have found its feet. Share prices have stabilised. Earnings are up. Its buoyancy reflects the premium placed on any company that can keep building in a country where that can be all but impossible.

The Hindenburg report and its aftermath have embarrassed not only the Adani Group but India. Following the report's publication in January the Supreme Court ordered the Securities and Exchange Board of India (SEBI), a market regulator, to investigate its allegations. After its deadline was extended, SEBI filed a largely complete report to the court on August 25th. Reuters reported that SEBI had examined 13 transactions and uncovered violations, albeit "technical" ones, that could result in fines. But a hearing due on August 29th was postponed. The sluggish official response has fed suspicions that the Adani Group's dirty laundry will not be fully aired.

Investors were also perturbed on August 12th when Deloitte resigned as auditor of one of the Adani Group companies. The accounting giant said it lacked sufficient information about the Hindenburg allegations and that the Adani company had refused to hire an independent external examiner to investigate the matter (the Adani Group's audit committee said such an examination was not needed). Share prices for the group's companies tumbled again.

This time, however, they quickly recovered. Their rebound reflects two changes since earlier this year. First, a hole in the group's finances has been filled. The Adani family, which owns the majority of each of the group's companies, had borrowed using shares as collateral. As share prices declined, there loomed the possibility of margin calls that would need to be met with funds from further share sales, triggering a downward spiral. The family has since staved off this risk by making several large share sales, with the funds presumably used to repay loans. On March 3rd GQG, a Florida-based fund-management company, bought $1.9bn of shares from the Adani family office, the first of three critical transactions that brought GQG's investment in the group to over $3bn.

GQG estimates that it has already made a return of more than 60% on its bet. That reflects the second change in the Adani Group's fortunes: its companies are on a winning streak. The group's net income in the year to March was $3bn, up by nearly 50%, year on year. Income in the first quarter was up by two-thirds compared with the previous quarter. The group has altered its strategy to steer away from big, risky new areas. A multi-billion-dollar petrochemical project that would have pitted Adani against Reliance, another vast conglomerate with deep pockets, was postponed. Meanwhile the Adani Group has completed some big projects: a thermal-energy plant in Jharkhand, a solar facility in Rajasthan and more. A $100bn capital budget is earmarked for the next decade.

The question is whether all this is enough for investors to overlook the continuing stream of accusations against the group. One key investor, at least, is unperturbed. "Who wants to drive a car looking at [the] rear-view mirror? Markets look forward," says Rajiv Jain, chairman of GQG. As for the latest claims that the Adani family's holdings may have been higher than understood: "We like more insider ownership—higher the better." Though the Hindenburg scandal refuses to go away, the Adani Group refuses to stop building. ■

Activist investing

Shareholder shake-up

SINGAPORE

Asian investors find their voice

NOT MANY companies whose profits have in essence flatlined over the past decade have seen their share price more than triple. By that measure Fujitec, a Japanese lift manufacturer, is a rare beast. The reason for its bull run is not past performance, but a growing expectation of change through investor activism, once anathema to Asian boardrooms. The company has faced a years-long campaign from activist investors, which led to the dismissal of three board members earlier this year. This was soon followed by the replacement of Fujitec's chairman, the son of the firm's founder.

Shaking up elderly, conservative and family-dominated firms in parts of Asia is getting easier. The number of companies subjected to activist demands across the region has risen markedly in recent years, from 102 in 2017 to 188 last year and 167 in only the first half of 2023, according to Diligent Market Intelligence, a research firm. That has raised Asia's share of the global total from 10% to 23%, overtaking Europe (see chart 1). In the past decade a wave of shareholder-friendly rulemaking has swept the region, and a new class of Asian activist investors is emerging.

The opportunities are enormous. Stock valuations across the region are often low, particularly for middling companies outside the gaze of international investors. Management in hock to employees, related companies, founding families or government interests are found across Asia. Vast cash piles have been generated too. The non-financial companies in the Asia-Pacific region worth more than $10bn sit on $1.94trn in cash, over 50% more than they did five years ago. Cash-rich firms with entrenched management and low valuations are ripe for a shake-up.

Fujitec has been a star example of the benefits of upturning the existing management. The company's board has been harried by Oasis Management, a Hong Kong-based activist fund which has publicly pushed for changes in capital allocation and higher payouts to shareholders, among other things, for three years. Changes to the way Japanese listed companies are run, through revised codes on stewardship and corporate governance, have made the country a new centre of investor activism. Though changes were initially pursued by Abe Shinzo, Japan's prime minister in 2012-20, investors say the appetite for corporate shake-ups is undimmed within the Japanese bureaucracy.

Asian activism has expanded beyond Japan. In the first half of the year, South Korean companies experienced the third-highest number of activist campaigns of any country in the world, jumping from fifth place globally last year and seventh in 2021. Investors have long complained about a so-called Korea discount, with inexpensive stocks littering the market. Last year a fierce battle broke out for control of SM Entertainment, a listed K-pop production firm, when Align Partners, a boutique investment firm which had taken a 1% stake in the company, began an ultimately successful campaign to terminate SM Entertainment's cosy relationship with its founder, Lee Soo-man.

Two factors are driving the Korean trend. The first came after a spate of scandals in 2015, when the South Korean government had made a concerted effort to halt an activist campaign by Elliott Investment Management, a Florida-based activist fund, against Samsung, a national champion. The turmoil that followed led to a jail term for Hong Wan-sun, a former head of the asset-management division of the country's National Pension Service (NPS). A stewardship code designed to stop asset managers cosying up to corporate interests has since been introduced.

The second factor is a boom in retail investing in South Korea during the covid-19 pandemic. The number of active stock-trading accounts surged from 29m in 2019 to 50m two years later, adding millions of voters with new concerns about how companies are managed.

The role of the NPS illustrates a common theme across the region. The fund owns around $108bn in South Korean stocks, making it a whale. In other markets, large investors with political and government-linked roles wield huge influence. China has a range of state-aligned funds, pursuing a variety of goals for the central and local governments. In Thailand the king personally owns large shares of the big listed companies. All have the potential to fuel or frustrate shareholder campaigns, owing to their sheer size.

Chairmen of the bored

That helps to explain why activism is far more difficult elsewhere in the region. Despite the proliferation of seemingly shareholder-friendly codes for corporate stewardship over the past decade, the reality of governance is hugely varied. Hong Kong, India, Malaysia, Singapore, Taiwan and Thailand have instituted their own stewardship codes, but the seemingly widespread support for greater shareholder involvement is illusory, according to Gen Goto, Alan K. Koh and Dan W. Puchniak, respectively of the University of Tokyo, Nanyang Technological University and Singapore Management University. They note that the codes are not truly designed to disrupt the status quo, and lack the legal weight to do so.

What's more, the structure of the region's markets varies wildly. In much of Asia, corporate ownership is highly concentrated, and a wide range of influential and politically aligned investors make things more difficult. In 2020 the largest three owners held 62% of the average stock in Hong Kong and Singapore, and as much as 72% in Indonesia. The equivalent figures in Japan and South Korea were 41% and 48% respectively (see chart 2).

Most countries in Asia have yet to unlock even a fraction of the potential of greater activism. India is still a relative black hole for investor campaigns, with a single-digit number of activist proposals counted by Diligent Market Intelligence ▸▸

Investors and protestors

Sources: OECD; Diligent Market Intelligence

*First half

each year. Invesco, an American investment firm, sold the stake it had accumulated in Zee Entertainment Enterprises, an Indian media company, earlier this year after a failed activist campaign. In China, investors have occasionally succeeded in winning reforms from companies when there is no obvious threat to the government's influence over the corporate landscape. But the variety of state investors and politically sensitive targets makes a robust and lively system of activism difficult to imagine, particularly where foreign investors are concerned.

Yet even with the limits on changes to corporate stewardship, some activists have achieved success in concentrated markets. Singapore had seven activist campaigns during the first half of this year, including a battle between Quarz Capital, an activist fund, and the board of Sabana REIT, an industrial-property trust. Quarz has campaigned to internalise the management of the properties, in line with the American model in which the trust takes responsibility for management rather than contracting it out. On August 7th Sabana's unit holders backed the campaign in an extraordinary general meeting, a first for Singapore's property industry.

Asia is still in the foothills of the opportunities that activists might eventually find, if the influential actors that dominate the markets are disempowered. The circumstances of concentrated shareholder power and the lack of investor engagement in different markets are as varied as the number of jurisdictions. But the shared attributes of thousands of companies across the region—juicy cash balances and sleepy management—mean the pickings are rich, if activists can reach them. ■

Bartleby The minus mindset

The best bosses don't just load more and more work on. They subtract things

COMPANIES ARE used to celebrating addition. Profits, customers and share prices should go up rather than fall. Innovation is the adding of new products. Larger numbers are a measure of career success: managers climb the corporate ladder by taking on more reports, running heftier budgets and trousering bigger salaries. Genuine superstars don't just add. They multiply. The best software programmers are tagged as "10x developers", for supposedly being ten times more productive than their peers.

Firms are not always opposed to subtraction. There are good kinds of cuts: carbon emissions, most obviously. Reducing costs is a necessary part of management, though not a welcome one. But the value of doing less is underestimated. The best bosses are those who take things away as well as add them on.

That means clearing time for employees to get work done. Meetings are almost always called by bosses. Some are useful; many of them have all the pizzazz and impact of a speed-awareness course. Shopify, an e-commerce firm, began the year by deleting 12,000 recurring meetings from corporate calendars, and asking everyone to think carefully before reinstating them. The company reports a rise in productivity as a result of the cull.

The only thing worse than having too many meetings is not being invited to them at all. So whenever meetings do take place, surprisingly large numbers of people can turn up. Minus-minded managers will give employees permission not to attend if they are not needed.

By the same token, good bosses will send messages when necessary, not every time a bright idea pops into their head. They will reduce the tempo of work, by leaving employees time to concentrate. They will be clear if something is urgent or not. A recent study by Laura Giurge of London Business School and Vanessa Bohns of Cornell University found that receivers of an email routinely overestimate how quickly its sender expects a reply.

Subtraction is not just about removing day-to-day distractions. It's also about taking decisions to kill off projects and products that are going nowhere, and to focus efforts on the most important bits of the business. Peter Drucker, the doyen of management theorists, was an advocate of "planned abandonment", so that resources that are tied up in marginal activities are freed for more profitable use. Executives should, he advised, routinely ask the same question of every aspect of the business: "If we did not do this already, would we go into it now knowing what we now know?"

In "The Case for Good Jobs", a new book, Zeynep Ton of MIT Sloan School of Management argues that doing less can often make commercial sense. Costco, a well-regarded American retailer that believes in the "intelligent loss of sales", has a deliberately limited product range. That means it can focus its buying power more effectively, forecast demand more accurately and use its employees' time more productively.

Less may not sound like a great outcome for customers, but at some point choice is deeply wearying. When you have spent more time trying to decide what to watch on a streaming service than it takes to go to the cinema and watch "Oppenheimer" twice, scarcity seems pretty attractive.

Doing and offering less goes against the grain in many ways. One is how humans are wired. Professor Ton cites a study, published in *Nature* in 2021 by Gabrielle Adams of the University of Virginia and her co-authors, in which people were asked to think of ways to improve something (like the design of a miniature-golf hole) or solve a problem (such as making the pattern on a grid symmetrical). The researchers found that, without an explicit prompt to think about subtraction, participants systematically defaulted to adding features rather than taking them away.

There are plenty of other hurdles to embracing the minus mindset. The "sunk-cost fallacy" means that managers find it hard to abandon projects that have already soaked up money. Firms are often scared to give up optionality: what if this tiddly new venture turns into the next big thing? Sending emails and filling the calendar is a way to feel busy even if not much of value is getting done.

Recruitment processes and performance reviews reinforce the importance of additive activity; it is unusual for a job candidate to brag about the things they didn't achieve. But getting rid of work ought to be a vital part of the managers' toolkit. Add value. Do less.

Schumpeter | No one behind the wheel

Cherish your Uber drivers. Soon they will be robots

THIS COLUMN was not written by ChatGPT. But it did have the benefit of another breathtaking technology that could change life as we know it. It was partly typed in the back of a Waymo self-driving taxi that, with ghostly serenity, climbed the hills of San Francisco, through the fog of Twin Peaks (it was still "Fogust"), around the spaced-out hippies of Haight-Ashbury to the Golden Gate Bridge. Rather than driving into wet concrete, as one of its hapless rivals did recently, it politely gave way to a cement mixer that swerved across its path. It was a scenic—and entirely trustworthy—office-on-wheels.

Like ChatGPT, self-driving vehicles are one of those marvels of artificial intelligence (AI) that make you pinch yourself when you encounter them because they seem so strange, and then pinch yourself afterwards because they become so familiar. The strangeness is quirky rather than scary. The robotaxi arrives at the tap of an app, with your initials quaintly lit up on the laser cone on the roof. You wave at it to stop, but there's no driver with whom to make eye contact, so you run up the hill in hot pursuit until it finds a safe spot. Get in and a disembodied voice advises you that though the experience may be "futuristic", you still have to buckle up. Then the steering wheel gently turns itself, and at a speed steady enough that you can use your laptop without feeling sick, you set off on a journey up the foothills of the AI revolution.

This part of the revolution is not yet on the breakneck scale of ChatGPT. Self-driving cars are AI in the physical rather than digital realm, and though it is annoying when chatbots "hallucinate", any mischief-making by a robotaxi could be fatal. That is why safety, not speed, is paramount. Yet once you become accustomed to the experience, it is easy to imagine a future where more of life is spent in self-driving taxis; where commuters can work, watch videos or snooze while stuck in traffic; where tourists can sight-see without having to speak a foreign language; where lovers can escape the prying eyes of a driver. The questions are: how far away is that future, and what is the cost?

An immediate answer to the first question is that there are no signs of it yet in the drug-ravaged dystopia of San Francisco's city centre. Schumpeter arrived there after taking a train from the airport. He tried to call a Waymo, but it is an area where robotaxis still fear to tread. He had to hail an Uber to reach Waymo territory. That is telling. After years of testing, Waymo (owned by Alphabet) and its rival Cruise (majority owned by General Motors) got the go-ahead from California's regulators in August to sell driverless taxi rides across the city 24 hours a day. But they still lack permits to serve the airport, indicating how cautious supervisors remain. Both firms operate in parts of Arizona, and are expanding into more American cities. But the staggered San Francisco roll-out suggests self-driving taxis will not become ubiquitous with anything like the speed that Ubers or electric scooters did in the 2010s.

How quickly they proliferate will depend a lot on technology. Waymo and Cruise use a combination of detailed maps, extensive sensors and AI to achieve full autonomy, but only in the geofenced areas where they are trained. That means they can only advance step by step. Tesla hopes to muscle into their territory with full-self-driving (FSD) technology that learns more the more its cars travel, using not maps but cameras and computer power to mimic a driver's eyes and brain. Yet Elon Musk's claims about Tesla's FSD capabilities create more confusion than clarity. So far the technology requires too many human interventions to compete with Waymo and Cruise. No driver can safely remove themselves from behind the wheel of a Tesla. When they eventually can, it could accelerate the robotaxi revolution considerably.

As for the costs, there are business and societal ones. Currently Waymo and Cruise have around 500 cars on San Francisco's streets, a fraction of the number of ride-hailing vehicles. For every robotaxi, there may be at least one highly paid Silicon Valley engineer tinkering with the technology. The service might also need to be cheaper than a human-driven taxi to attract the masses. So the firms will probably run at a steep loss for a while. Later this year Waymo and Uber intend to introduce driverless technology to users of the Uber platform in Phoenix, Arizona. That sounds promising. As Kersten Heineke of McKinsey, a consultancy, says, Waymo can take advantage of access to Uber's large user base while Uber can start tackling the limits to its growth caused by a shortage of drivers. But self-driving technology will need to be deployed at grand scale to become cost effective.

The societal costs are harder to gauge. Waymo says it has 100,000 would-be passengers on a waiting list in San Francisco, out of a population of about 800,000. That suggests pent-up demand. But there is also scepticism. The media are mostly focused on mishaps, such as when robotaxis disrupt emergency services or freeze en masse. An anti-car outfit called Safe Street Rebel has found a low-tech way to disable the vehicles: it puts a cone on the car bonnet to confuse their sensors.

The wisdom of cabbies

There are subtler concerns, too. Driving creates an unspoken chemistry between humans from all walks of life, based on a combination of self-preservation and trust. Robots may make driving safer. But that may come at a cost to human interaction. Then there are jobs. Driverless technology could eventually extinguish the taxi-driver profession, destroying a valuable source of income and a font of local knowledge, not to mention a priceless resource for journalists. In that vein, Schumpeter asked Aleksandr, a Ukrainian Uber driver in San Francisco, what he made of a driverless future, and surprisingly his eyes lit up. He hopes, he says, to buy an autonomous vehicle and use it to offer rides 24 hours a day, three times longer than he is able to drive. "I will do almost nothing while the car makes money for me," he says. "Just like Uber." ■

America's resilience

The property paradox

WASHINGTON, DC

Mortgage payments are soaring, but house prices remain high. What is going on?

HOMEOWNERSHIP REGULARLY nears the top of surveys about what Americans most want in life. Alas, this part of the American dream has rarely been harder to attain. Those looking to enter the property market face a triple whammy of high prices, costly mortgages and limited choice. Together these factors have conspired to make housing deeply unaffordable, with little sign of relief on the horizon.

Yet in a roundabout way, the property crunch also helps explain one of the most pressing economic conundrums of the day: why American growth has remained robust, defying predictions of a recession.

Although housing is usually among the sectors most sensitive to interest rates, things have not been quite so straightforward in America. As the Federal Reserve turned hawkish over the past two years, mortgage rates soared, ascending from less than 3% to more than 7%. For the median family buying the median home, mortgage payments doubled from roughly 14% of monthly household income in 2020 to nearly 29% in June, the highest since 1985, according to the National Association of Realtors (see chart on next page).

Surprisingly, the jump in mortgage rates has not led to a decline in house prices. They fell briefly as rates began to rise but have since rebounded to the record highs hit early last year after covid-era stimulus washed across the economy. Figures released on August 29th showed that this rebound may be gaining strength: house prices in the second quarter of the year rose at an annualised pace of 15%, according to the S&P Case-Shiller index, a benchmark for American property prices.

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What explains this impressive resilience? For something the size of America's property market—where annual sales are worth about $2trn, scattered across a continent-sized economy, in which some regions are flourishing and others contracting—there is inevitably a nuanced answer. However, a good summary came in late August from Douglas Yearley, chief executive of Toll Brothers, one of America's biggest homebuilders, during an earnings call. "There are still buyers out there. They have very few options," he explained.

Although demand for homes has fallen as rates have risen, the supply of properties has fallen almost in lockstep. Homebuyers typically obtain fixed-rate mortgages for 30 years—unheard of in most countries but viewed almost as a constitutional right in America, owing to the role of Fannie Mae and Freddie Mac, two giant government-backed firms, which buy up mortgages from lenders and securitise them. In enabling lenders to offer long-term fixed rates, their objective is to make it easier for people to buy homes. But now long-term rates are serving as an impediment, since homeowners who got low-interest mortgages before the Fed raised rates have no desire to give them up, and so are unwilling to sell their homes. Redfin, a property platform, calculates that 82% of homeowners have mortgage rates below 5%. Charlie Dougherty of Wells Fargo, a bank, calls the result "a state of suspended animation" for the housing market. ▸▸

The decline in transactions, all else being equal, ought to hurt the economy, dampening housing-related activity, with less money spent on remodelling, new construction, furniture and so on. This is not how things have played out, however. Unable to trade up to nicer digs, locked-in homeowners have invested more in fixing up their current homes. The rise of remote working has reinforced this trend, with people adding extra office space to their houses. Remodelling expenditures in 2022 reached nearly $570bn, or about 2% of GDP, up by 40% in nominal terms from 2019, according to the Joint Centre for Housing Studies at Harvard University.

Many of those braving the market in order to purchase homes have opted for newbuilds, rather than existing stock. One advantage of newly built homes is that they are actually available. This means that they account for about one-third of active listings this year, up from an average of 13% over the two decades before the covid-19 pandemic, according to the National Association of Home Builders. As Daryl Fairweather of Redfin puts it: "Builders are benefiting because they don't have competition from existing homeowners."

Homebuilders have also been bold in offering incentives to buyers. Most strikingly, they have been "buying down" as much as 1.5 percentage points on mortgage rates, by paying a one-time fee upfront that reduces future interest payments. This has allowed their in-house mortgage companies to offer rates of roughly 5%. For homebuilders, these buy-downs are equivalent to knocking off about 6% from their selling price, which they can easily afford given the strength of their balance-sheets. For buyers, the lower mortgage rates are welcome relief in the current environment, which has translated into a pick-up in both purchases and construction. New starts on single-family homes bottomed out late last year. In July starts were up by nearly 10% compared with a year earlier.

Property types now wonder whether the price resilience will continue. The market faces a test as mortgage rates climb even higher. For much of the past year rates had seemed to stabilise at around 6.5%, but since the start of August investors have concluded that the Fed will keep policy tight for longer, which has pushed mortgages towards 7.5%. "The higher rates go, the more demand falls. This is going to catch up with the homebuilders pretty quickly," reckons John Burns, a property consultant. To counter a slowdown, some lenders may offer riskier deals. Zillow, a property platform, has started promoting downpayments of just 1% on homes in Arizona, a once-hot market. If prices fall, owners with little equity in their homes may be among the first to default.

Should the property market remain resilient, however, it is the Fed's policymakers who will face a test. Strong housing-market activity contributes to an overheating economy. A sustained rebound in prices would also complicate the inflation outlook. The relationship is not entirely straightforward, since property shows up in inflation indices in terms of rents, rather than purchase prices. Moreover, the main inflation gauges tend to lag behind high-frequency measures of rents by at least six months. These measures have fallen for much of the past year, and the decline is just now filtering into official inflation indices—a process that will probably continue into early 2024.

What happens after that is much less certain. On the one hand, a record number of apartment units are currently under construction, and this supply ought to keep a lid on rents. On the other hand, the unaffordability of housing is forcing more would-be buyers into the rental market, which could push up rents and add to inflation. One big thing is clear: until interest rates come back down, millions of Americans will have little choice but to defer their dream of homeownership. ■

Home: I'm dear

US, mortgage payments as % of income*

*Based on median home prices and incomes
Source: National Association of Realtors

The €500 question

Making money

Why banknotes are quite so contentious

MONEY CAN look like just about anything. In ancient China, bronze knives circulated as a means of payment; during the Depression, Californians used clamshells instead of cash; in 1970 Irish shoppers were forced, by a banking strike, to make do with IOUs written on toilet paper. As Hyman Minsky, an economist, put it: "Anyone can create money; the problem is getting it accepted."

Europeans will soon need to accept a new-look euro. A European Central Bank (ECB) survey, which closed at the end of August, asked respondents to choose between seven themes, varying from "hands: together we build Europe" to "rivers, the water of life in Europe" and "our Europe, ourselves". A design contest will now follow, and updated euros will emerge from cash machines in 2026.

Economists see money as a neutral medium of exchange, but images on banknotes are some of the world's most recreated designs. For governments, they are an opportunity to put propaganda in pockets, and transmit a certain idea of the state. Birds, another possible theme, would symbolise "freedom of movement", the ECB says, as well as celebrate the EU birds directive, which protects nature. Such a rosy picture of European co-operation is in stark contrast with the messages sent a century ago: the German 10,000 mark note, introduced in 1922, included a vampire, representing France, sucking a German worker dry.

Putting dead presidents on money, as America does, or monarchs, like Britain, is a less appealing option in Europe. A squabbling bloc of 20 countries, including those for which the term "nationalism" was coined, are unlikely to be satisfied with a focus on any one country's leaders, even those long gone. Famous artists, a mooted alternative, will almost certainly end up with an argument over which country's genius deserves the €500 note, which ends up on the €5 and which misses out altogether.

The ECB previously managed to swerve these dilemmas by using imaginary bridges. These showcased the continent's traditional architectural styles (baroque, neoclassical and so on) without favouring any single country's monuments. That was until Spijkenisse, in the Netherlands, spoiled things. The suburb of Rotterdam turned the images into reality, employing dyed concrete to match the colour of the banknotes.

Whatever the end product looks like, cash is on the way out. According to the ECB, it was used for just 59% of euro transactions last year, down from 72% three years previously. For many Europeans, especially younger ones, money no longer looks like paper or coins, but whatever a smartphone screen displays. Ultimately, then, the new look for the euro will be decided more by graphic designers in Silicon Valley than central bankers in Frankfurt.

Recession watch

Brace for impact

The euro-zone economy increasingly looks to be heading for trouble

EUROPE'S SUMMER was a strange mixture of heavy rainfall and wildfires. The continent's economy was also plagued by extremes. Inflation remained hot: prices rose by 5.3% in August compared with a year earlier. And officials are increasingly worried by the cloudy growth outlook. A recent drop in the purchasing managers' index (PMI) suggests the bloc is facing recession.

Ahead of the next meeting of the European Central Bank (ECB) on September 14th, policymakers will be worried by the possible emergence of stagflation (a situation in which low growth is paired with entrenched inflation). Christine Lagarde, the central bank's president, recently reiterated her commitment to bringing down inflation and setting interest rates at "sufficiently restrictive levels for as long as necessary to achieve a timely return of inflation to our 2% medium-term target". In plain English: the ECB would much prefer a "hard landing", featuring economic pain, than failing to reduce price rises.

The problem is that the ECB risks crashing the plane. Euro-zone inflation is proving as stubborn as the American variety. In Europe, price rises were sparked by increasing energy costs; in America, they were more demand-driven. But in both places inflation has followed a similar path, with Europe slightly behind. Now the question is whether core inflation, which excludes volatile energy and food prices, will come in to land. So far, it is staying stubbornly high (see chart).

This is in part because Europe has, like America, so far managed to dodge recession. At the end of last year, when many expected a European downturn, monetary tightening had yet to hit the economy and national governments offered generous handouts in order to counteract the energy shock. The service sector showed decent growth, and industrial order books remained full from the post-covid boom.

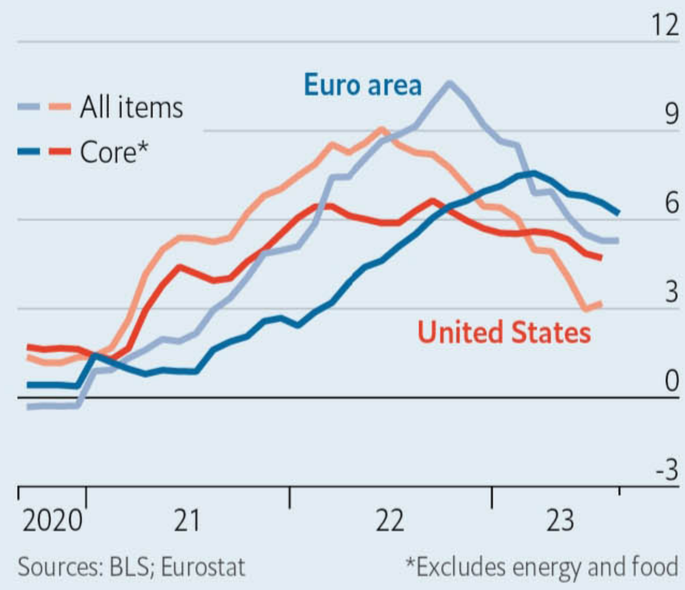
Gloom is now spreading across the continent. The global economy is weakening, and order books have plenty of blank pages. State support for households is also running out. Retail energy prices remain higher than before last year's crisis; real incomes have yet to recover. Activity in the service industry contracted in August, according to the PMI survey. The sector is at its weakest in two and a half years.

Higher interest rates have also started to affect the European economy, as intended by the ECB's policymakers. Construction, which is traditionally sensitive to interest rates, is feeling the pain. Stingier bank lending is leading to a 0.4 percentage-point reduction in GDP growth each quarter, according to Goldman Sachs, a bank. Corporate insolvencies rose by more than 8% in the year's second quarter, compared with the first, and have reached their highest since 2015. The impact of tighter monetary policy will peak in the second half of this year, predicts Oliver Rakau of Oxford Economics, a consultancy.

A hard landing is thus almost guaranteed. But the return of inflation to the ECB's 2% target remains some way off. Two forces are pulling prices in different directions. One is the situation in the labour market. Unemployment remains at a record low. Although firms are hiring fewer workers, there is no imminent danger of mass lay-offs—in part because bosses want to hold on to workers that are increasingly scarce in an ageing continent. As a result, wages across the bloc are rising, even if not by enough to make up for earlier inflation.

The other force, which is pulling down inflation, is weakening demand for goods and services. During the covid pandemic, price growth took off in advance of wage growth, causing companies' profits to rise strongly alongside inflation. If companies now find that demand is drying up, it is possible that inflation will fall at the same time as wage growth stays high, bringing profits back down. Indeed, prices on wholesale markets for goods are already falling fast, and import prices are also declining. At some point, these lower prices will be passed on to consumers.

Which of these two forces will win out? At the moment, it looks like the answer will be weak demand, since it has spread to the service sector, too. This suggests that euro-zone inflation might fall in relatively short order. But the ECB appears unconvinced, and seems ready to lift its main rate to 4.5% from 4.25%. Policymakers would be better off holding rates steady, so that they can assess the danger of a crash. ■



European finance

Broken banks

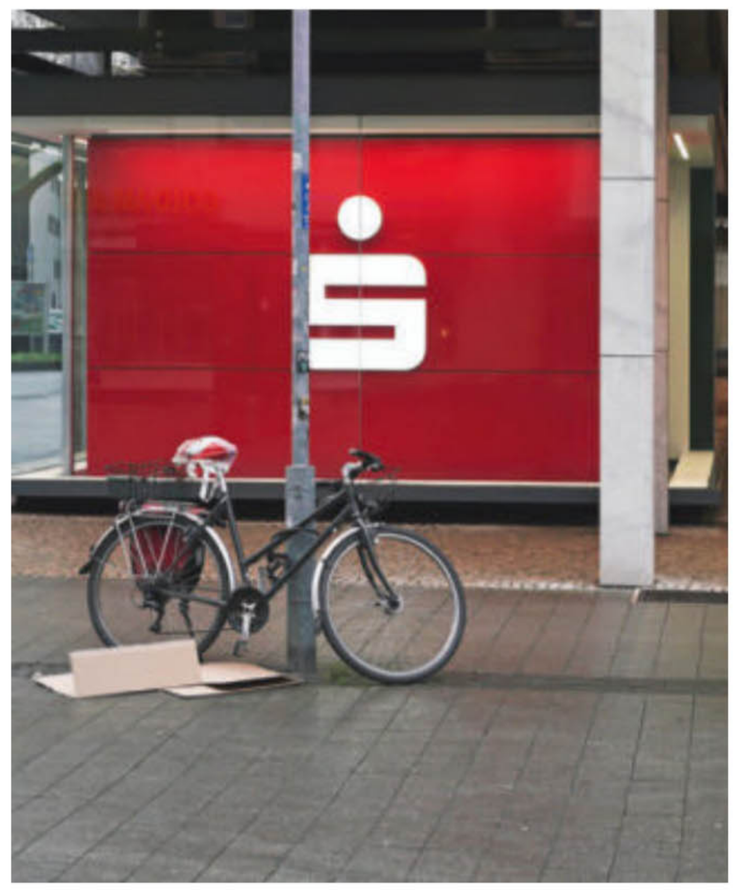
Yet another part of the German economy is sputtering

GERMANY'S ECONOMIC model is known for close relations between bosses and unions; the Mittelstand, the country's world-leading manufacturing firms; and the political system's federalism, which spreads prosperity widely. Another ingredient is less renowned but no less fundamental: the country's banks, many regionally focused, provide long-term funding to Mittelstand companies nice and cheaply.

Unfortunately, this model is no longer delivering: German growth is forecast by the IMF to be the lowest of any G7 member this year. And the country's banks are struggling, too. The European Banking Authority estimates that in the first three months of 2023 their weighted-average return on equity, a measure of profitability, was 6.5%, compared with 10.4% across the EU. In 2020 banks in eight countries in the EU offered worse returns than German lenders. In the first three months of this year only those in Luxembourg did.

In part, this poor performance reflects quirks of the German market. The country's banks are unusually keen on making fixed-rate loans, which has limited their ability to profit from higher interest rates. Their net interest margin—what a bank collects on loans minus what it pays for funding—has grown by just 0.1 percentage points since June 2020, half the EU average.

Yet there are also deeper issues at play. German lenders are unusually structured, coming in three categories: private-sector lenders, including Commerzbank and ▸▸



Bumpy ride

Deutsche Bank; public banks, including 361 savings banks and five Landesbanken, which act as wholesale banks for the savings banks; and 737 co-operatives.

Non-private lenders, which hold 57% of banking-sector assets, are conservative outfits with goals besides profits, such as supporting local firms. Many public banks have politicians as chairs or board members. This politicised governance brings poor risk management, says Nicolas Véron of Bruegel, a think-tank. Lots are highly exposed to property, for instance, leaving them vulnerable to recent price falls.

Public banks and co-operatives also operate on a "regional principle" that bars them from seeking business in one another's territory. They form networks, with the biggest possessing more assets than any single European bank, allowing them to share costs and reducing the amount of capital with which they are required to fund themselves. As a result, margins for private-sector banks are squeezed, making it hard for them to compete with other institutions. Deutsche Bank's price-to-book ratio languishes at 0.3, about half that of BNP Paribas, a French rival.

Germany's unusual financial system is well-suited to supporting regional companies. It is rather less well-suited to supporting riskier business (say, startups needed for the green transition or digitisation) that require funding from capital markets alongside more traditional forms of finance. Although German politicians and policymakers are engaged in a lively debate about the country's economic future, discussion of its financial institutions has yet to feature prominently. Perhaps the country's banks are simply too much of a fixture to be questioned. ■

Buttonwood Dangerous porridge

High bond yields imperil America's financial stability

INTERROGATING A FAIRY tale is not usually the best use of an investor's time. But there may be an exception. The internal logic of "Goldilocks and the Three Bears", and the idea that the economy can be "just right" for financial markets, merits some inspection.

Earlier this year, the prospect of a seemingly inevitable American recession—the result of rising interest rates—peppered conversations across the financial world. Now, with inflation falling rapidly, economic growth looking strong and the Federal Reserve at least slowing the pace of interest-rate rises, talk is instead of a "Goldilocks" situation: an economy that is neither too hot (with surging inflation) nor too cold (with unpleasantly high unemployment). As the economic picture has grown brighter, yields on American government bonds have ticked ever higher. The yield on ten-year Treasuries is now 4.2%, up from 3.8% at the beginning of the year. Real yields, adjusted for inflation expectations, are at their highest since 2009.

They are unlikely to fall any time soon. On top of buoyant growth figures—one closely followed estimate suggests that the American economy may be growing at nearly 6%—underlying supply and demand also point upwards. The government ran a deficit of almost 9% of GDP in the year to July, an elevated level that is expected to persist. Meanwhile, the Fed has allowed around $765bn of Treasuries on its balance-sheet to mature without replacement since last summer.

The recent good economic news has less rosy implications for the financial outlook than might be expected. Indeed, various markets are already being squeezed by rising yields in a manner that threatens financial stability. Sky-high bond yields mean considerable financial distress is baked in, even if it is not yet visible. And the threat is growing with every piece of strong economic data.

Consider commercial property. American office-vacancy rates reached 16.4% in the middle of the year, according to Colliers, an estate agency, above the previous record that was set after the global financial crisis of 2007-09. The combination of firmly entrenched work-from-home habits and rising interest rates has been brutal for owners of office buildings. Capital Economics, a research firm, forecasts an additional 15% decline in prices by the end of next year, with the west coast being struck particularly hard.

The situation faced by commercial-property owners may deteriorate even if the economy further improves. One or two extra percentage points of growth will bring back few tenants. But the resulting increase in interest rates will put pressure on businesses unable to refinance the debt they accumulated at low rates in the covid-19 pandemic. Newmark, a property-services firm, identifies a maturity wall of $626bn in troubled commercial-property debt—where the senior debt of the borrower is worth 80% or more of the value of the property—that will come due between 2023 and 2025. Without a let-up in the bond market, plenty of companies will smash into the wall.

Problems in commercial property could spread. Many American lenders have extended credit to the industry. In early August Moody's downgraded ten small and mid-sized institutions, and placed several larger ones on watch for downgrades. Banks with under $10bn in assets have exposure to commercial real estate worth 279% of their equity cushions, the rating agency noted, compared with 51% for those with over $250bn.

The problems that felled Silicon Valley Bank, First Republic Bank and Signature Bank in March and April have not gone away, either. Deposits across the industry have barely recovered since their tumble in the spring, rising by 0.02% a week on average over the past four months, compared with 0.13% on average over the past four decades. The allure of money-market funds, where high yields offer investors an alternative to low-interest bank accounts, means the pressure is hardly letting up.

For less leveraged firms, workers and stock investors, the economic porridge seems to be at just the right temperature. Even in the residential property market, which provided the spark for the global financial crisis, owners have largely shrugged off the Fed's rapid interest-rate increases. But the parts of the American market most vulnerable to rising refinancing costs are faced with an unappetising bowl of cold porridge. A Goldilocks outcome for some is a bearish nightmare for others. If Treasury yields stay high, it could become increasingly hard to keep the two realities separate.

Hidden dangers

Ubiquitous, opaque, tangled

SHANGHAI

China's troubled shadow-banking industry threatens its financial system

SHARES IN XINHUA TRUST, a Chinese shadow lender, are selling for rock-bottom prices. The outfit went bankrupt in May, becoming the first Chinese trust to fall in more than two decades. Since then chunks of the firm have been put up for sale on Taobao, an online e-commerce platform, at a 30% discount. Its company cars were recently added to the auction, which has been mandated by a court. A bargain-hunter could snap up Xinhua trademarks for just 12,000 yuan ($1,650).

The lender's demise was a warning: the same forces that brought it down are now ripping through China's trust industry, which has assets of 21trn yuan. The country's economic growth has been weaker than expected, and property developers are caught in a daunting wave of defaults and restructurings. China's trusts, which channel funds from investors to infrastructure, property and other opportunities, are exposed to both developments. Although Xinhua's bankruptcy has been straightforward, a bigger blow-up may be on the way at Zhongrong, one of the country's largest trusts, which missed client payments in mid-August. Panicked investors fear more firms will be ensnared, and that collapses will lead to further economic problems.

During China's years of strong growth, trusts and their investors flourished, with investment products often offering annual returns of 10% or more. Property developers and local governments were willing to pay lofty interest rates, transactions required less regulatory scrutiny than bank lending and trusts benefited from the widespread perception that investors' cash was safeguarded by the state in a fashion similar to bank deposits. That perception is now long gone—and as more developers default, it is likely that more shadow banks will be unable to pay out.

Zhongrong, which managed about 630bn yuan in trust products at the end of last year, shows how pain has spread from property to the financial system. When Sunac, China's fifth-largest developer, defaulted last year, local governments began freezing company funds in order to ensure that projects were finished. One place where funds were frozen was Wuhan, a city in central China, and the money included investments linked to Zhongrong. Across the industry, about 7% of trust products were invested in the property sector at the end of March. Indirect investments via securities push that exposure to as much as 30%, reckon analysts at ANZ, a bank.

The risk of contagion is high because lending by trusts is ubiquitous and opaque, and investment in them produces tangled ties. On August 29th Jingwei Textile Machinery, a state-backed firm and Zhongrong's largest investor, announced it would delist from the Shenzhen stock exchange, citing "market changes". Other listed firms that invest in Zhongrong's products say the company has missed payments. Trusts have meanwhile invested about 4.6trn yuan in stocks, bonds and other funds. They have also lent to local-government projects—and now cities and provinces across China are struggling to repay debts, which are estimated to have hit 57trn yuan at the end of 2022.

There is another avenue through which trouble may spread. Zhongrong is controlled by a larger investment manager, called Zhongzhi, which has about 1trn yuan in assets under management across an array of divisions. Zhongzhi has also been thrown into a liquidity crisis and has reportedly been unable to pay the 230bn yuan it owes to some 150,000 investors. Across the country, similar investment-management firms have millions of customers. Since news of Zhongzhi's troubles broke, phones have been ringing off the hook as worried clients, many of whom are regular white-collar workers, seek to confirm their savings are safe, reports an executive at another of these companies.

These sorts of links between trusts, local governments and developers, and the possibility of larger financial firms getting caught in the trouble, have spooked investors. Indeed, Zhongrong's troubles have contributed to the poor performance of the Chinese stockmarket. The CSI 300, a benchmark index, fell by more than 6% in August. Government interventions, which included a cut to stamp duty on August 27th, have had little impact.

Officials are aware of these problems. After all, they inadvertently brought many into being. Since 2017 China's shadow banks have been under intense scrutiny as part of an effort to transfer opaque off-balance-sheet lending to banks. The official attack was ramped up in 2020 when the state introduced sharp restrictions on leverage at property developers. As a result of such moves, the issuance of shadow-banking products in the first half of this year was at its weakest in a decade, according to Capital Economics, a research firm. The crackdown has sapped liquidity and confidence from the market, pushing both developers and trust firms towards default.

The rich get poorer

In the short term, much of the pain will be borne by wealthy investors: the threshold for putting money into a trust is usually more than 300,000 yuan. Most cannot even demand the return of initial investments, since products usually have terms that prevent investors from withdrawing, sometimes for up to two years. This may stop a fully fledged financial crisis caused by a run on shadow lenders, and will give the government time to deal with the mess. Bloomberg, a news service, has reported that China's banking regulator has already set up a task force to examine the problems at Zhongzhi. Given the connections such firms have across the economy, inspectors might not like what they find. ■

Gloom in Shanghai

Free exchange | Eating away

How will politicians escape enormous public debts?

THE WORLD'S public finances look increasingly precarious. In the year to July America's federal government borrowed $2.3trn, or 8.6% of GDP—the sort of deficit usually seen during economic catastrophes. By 2025 five of the G7 group of big rich countries will have a net-debt-to-GDP ratio of more than 100%, according to forecasts by the IMF. Such debts may have been sustainable in the low-interest-rate era of the 2010s. But those days are long gone. This month the ten-year Treasury yield briefly hit 4.3%, its highest since before the global financial crisis of 2007-09.

How will governments shed these burdens? Economists are increasingly gripped by the question. A recent paper by Serkan Arslanalp of the IMF and Barry Eichengreen of the University of California, Berkeley, presented at America's annual monetary-policy jamboree in Jackson Hole, Wyoming, on August 26th, sets out a menu of options. It is not exactly an appetising one.

Big economies have had big debts before. Broadly speaking, they have dealt with them by employing one of two strategies. Call them the austere and the arithmetic. The austere method is to run primary surpluses (ie, surpluses before debt-interest payments). In the 1820s, after the Napoleonic wars, Britain's debts reached almost 200% of GDP; the Franco-Prussian war left France owing nearly 100% of GDP in the 1870s. Previously Mr Eichengreen and co-authors found that between 1822 and 1913 Britain ran primary surpluses sufficient to reduce the debt-to-GDP ratio by more than 180 percentage points; France did enough to reduce its ratio by 100 percentage points in just 17 years after 1896.

Messrs Arslanalp and Eichengreen are pessimistic about the prospect of democracies repeating the trick today. In the 19th century welfare states were minimal. British politicians followed the Victorian philosophy of "sound finance"; the French sought to reduce debts so as to be ready for their next war. In contrast, modern welfare states are weighed down by ageing populations, and the need for more defence spending and green investment means the size of the state is growing. Politicians could raise taxes. But other research by the IMF finds that in advanced economies, from 1979 to 2021, fiscal consolidations were less likely to succeed in cutting debts if they were driven by tax increases instead of spending cuts, perhaps because raising taxes harms economic growth.

What about the arithmetic approach? This was the path many countries followed after the second world war, when America's debts peaked at 106% of GDP (a level they could soon surpass). It involved the rate of economic growth exceeding the inflation-adjusted rate of interest, such that legacy debts shrank relative to GDP over time, with small primary surpluses chipping in. It is possible to argue that recent high rates of inflation have started the world economy on the arithmetic debt-reduction route. Indeed, advanced-economy net debts have fallen by about four percentage points after shooting up in 2020 when covid-19 struck.

Yet inflation only reduces debt when it is unexpected. If bondholders anticipate fast-rising prices, they will demand higher returns, pushing up the government's interest bill. Persistent inflation helped after the second world war only because policymakers held down nominal bond yields in a policy known as financial repression. Until 1951 the Federal Reserve capped long-term rates by creating money to buy bonds. Later a ban on paying interest on bank deposits would redirect savings to the bond market.

The resulting low real interest rates were paired with rapid post-war growth. Between 1945 and 1975, this reduced the debt-to-GDP ratio by a weighted average of 80 percentage points across the rich world. Both sides of the equation were important. Everyone can agree growth is desirable—it is the "painless way of solving debt problems", write Messrs Arslanalp and Eichengreen, and it averaged an annual 4.5% across the rich world in this period. But high growth typically raises real interest rates. Another working paper, by Julien Acalin and Laurence Ball, both of Johns Hopkins University, finds that with undistorted real interest rates and a balanced primary budget, America's debt-to-GDP ratio would have declined to only 74% in 1974, rather than the actual figure of 23%.

Unless artificial intelligence or another technological breakthrough unleashes a step change in productivity growth, today's ageing economies have no chance of matching post-war rates of expansion. America's GDP is expected to rise at an annual pace of just 2% over the next decade. That immediately limits the arithmetic strategy by putting the onus on real interest rates. There are good reasons to expect rates to be "naturally" low, such as more saving as societies age. But investors seem to be having doubts, as the recent rise in long-term bond yields demonstrates. Financial repression and high inflation to bring down real rates would require sweeping changes, such as central banks abandoning their inflation targets, as well as a reversal of much of the financial liberalisation that took place towards the end of the 20th century.

Best of the worst

What, then, will happen? "Governments are going to have to live with high inherited debts," reckon Messrs Arslanalp and Eichengreen. The best politicians can do is not to make a bad situation worse. Yet the ongoing accumulation of debt suggests it is unlikely that politicians will follow this advice. On its current path America will match its post-war record of spending 3.2% of GDP on interest in 2030. Two decades later this will pass 6%. The bill could be higher if another pandemic or major war arrives in the meantime.

However unlikely it seems that voters and politicians will be willing to tolerate primary surpluses, sustained inflation or financial repression, they will probably reach a point where they are equally unwilling to put up with handing over a large chunk of tax revenues to bondholders. At such a time political constraints will ease—and the danger of a bond-market crisis will rise. The debt-reduction menu will then not look quite so unpalatable. ■

Chronic pain

A new world of hurt

Chronic pain is still poorly understood. But some new approaches show promise

When she was only 14, Catherine Charlwood noticed a swelling in her right forearm. It was accompanied by a heavy muscular ache that made daily activities difficult. As a talented clarinettist at a British school where regular practice was on the timetable, the pain was deeply worrying. She was told it was repetitive strain injury, and would disappear within six weeks. When those weeks had gone and the pain remained, she was diagnosed with tendonitis. She did her best to make do, minimising her music practice and learning to write with her left hand. Eventually, when playing the clarinet was no longer feasible, she had to leave the school.

When the pain continued past the six months which is typical of tendonitis, doctors recommended surgery. "Each time they opened me up, what they were looking for wasn't there," she says. The second of those procedures, intended to relieve pressure on her radial nerve, actively made things worse. Since then, she occasionally experiences what feels like electricity crackling down the scar left by the procedure. "The volume can turn up, and it can turn up a lot, but it doesn't turn down," she says. Further diagnoses have come and gone, but the true origins of her pain remain mysterious.

Disabling consequences

Chronic pain, however it is experienced by people, is an enormous problem (see chart on next page). As opposed to acute pain, which is a short-lived response to a dangerous or noxious event, chronic pain is widely defined as lasting for three months or longer. It has no discernible evolutionary purpose and often no identifiable trigger. It is best thought of as a disease, one that affects around 30% of the world's population and carries with it a significant economic cost, in medical treatment, lost labour productivity and caregiving. Around one in ten of those affected are estimated to have disabling pain, making it the leading cause of disability worldwide.

In addition to the physical symptoms, chronic pain brings with it wide-ranging psychological problems, including depression and withdrawal from society. "You grieve your past life," says Sara Villa Hernandez, a pain researcher at King's College London, who herself experiences chronic pain. The experience differs from the sudden pain caused by a stubbed toe, as hurtful as that may be, in the same way that depression differs from being sad, explains Jan Vollert of Imperial College London, who also studies chronic pain.

The ranks of people who experience chronic pain are growing all the time. Many diseases that would once have been fatal can now be treated, sometimes leaving patients who are alive but in pain. One in three cancer survivors, for example, live with chronic pain. Fully 80% of care-home residents do likewise. The covid-19 pandemic has also had an enormous impact: an estimated 65m people are thought to be living with long covid worldwide, of whom a quarter experience pain.

To help doctors treat chronic pain, scientists first need to understand where it ▸▸

comes from. To say that is a long way off is to understate the complexity of the field. "Chronic pain as a research endeavour is a bit of a car crash," says Christopher Eccleston, head of the Pain Research Centre at the University of Bath, in Britain.

Most of the pain experienced by people occurs when specialised nerve cells on the body's periphery react to traumatic events such as pressure or heat. Proteins on the surface of those cells deform to produce channels that enable the flow of charged ions out of those cells, through their neighbouring cells, up the spinal cord and into the brain, where they are interpreted as pain. This signalling from damaged tissue along healthy nerves is known as nociceptive pain, and can occur in chronic form in such conditions as ulcers or osteoarthritis. Neuropathic pain, by contrast, occurs when the tissue is healthy but the nerves themselves are damaged—as in the case of spinal-cord injuries or shingles.

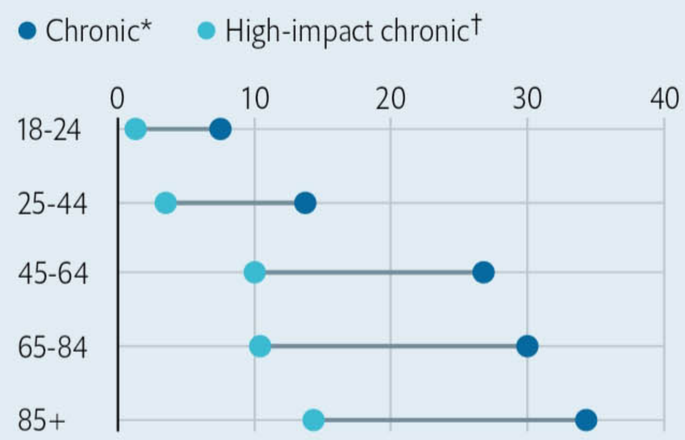
But not all chronic pain fits under these two labels. In 2017 the International Association for the Study of Pain, the leading body of pain researchers, defined a new form of chronic pain—nociplastic pain. Potentially experienced by up to a billion people, this new condition squeezes neatly into the gap left between the others. Both tissue and nerves appear healthy, in other words, but the pain persists. It is this world that Ms Charlwood inhabits. "I've been living for over 20 years with essentially faulty wiring," she says.

Nociplastic pain is thought to arise when the body's own pain-processing network gets rewired to overreact to incoming stimuli. Such sensitisation can arise when sustained pain signals permanently change a nerve's ion channels, making even mild sensations indistinguishable from painful ones. Alternatively, it can occur when the body's natural painkillers, neurotransmitters such as endorphins that dampen the flow of pain signals, are less readily manufactured. This often signals some damage to the Descending Pain Modulating System (DPMS), a network of brain regions that can provide pain relief if appropriately stimulated. Among its best-known functions is the placebo effect, where a patient can feel better after simply being given the impression of being treated. Another set of mechanisms, known as pain inhibits pain, is what allows the discomfort of nails digging into palms to alleviate the pain of a dental drill being used on teeth.

It is not just the nervous system that can be at fault. Andreas Goebel, a pain researcher at the University of Liverpool, had long hypothesised that antibodies, which patrol the bloodstream to identify and draw attention to pathogens, could also mistakenly attack a patient's nerves. In experimental results published in 2021, he demonstrated that a type of antibody known as immunoglobulin G could, if taken from individuals with fibromyalgia, a condition characterised by severe pain across the body (as well as a host of related symptoms such as tiredness and cognitive problems), induce similar sensitivities when they were injected into mice. This suggests that variations in the immune system may contribute to the onset of nociplastic pain. He intends to conduct similar studies on long covid, as that is a condition also associated with nociplastic pain.

Ageing painfully

US, people reporting pain, by age group, 2021, %



*Pain on most days or every day
†Pain limiting daily activities
Source: Centres for Disease Control and Prevention

Suffering in silence

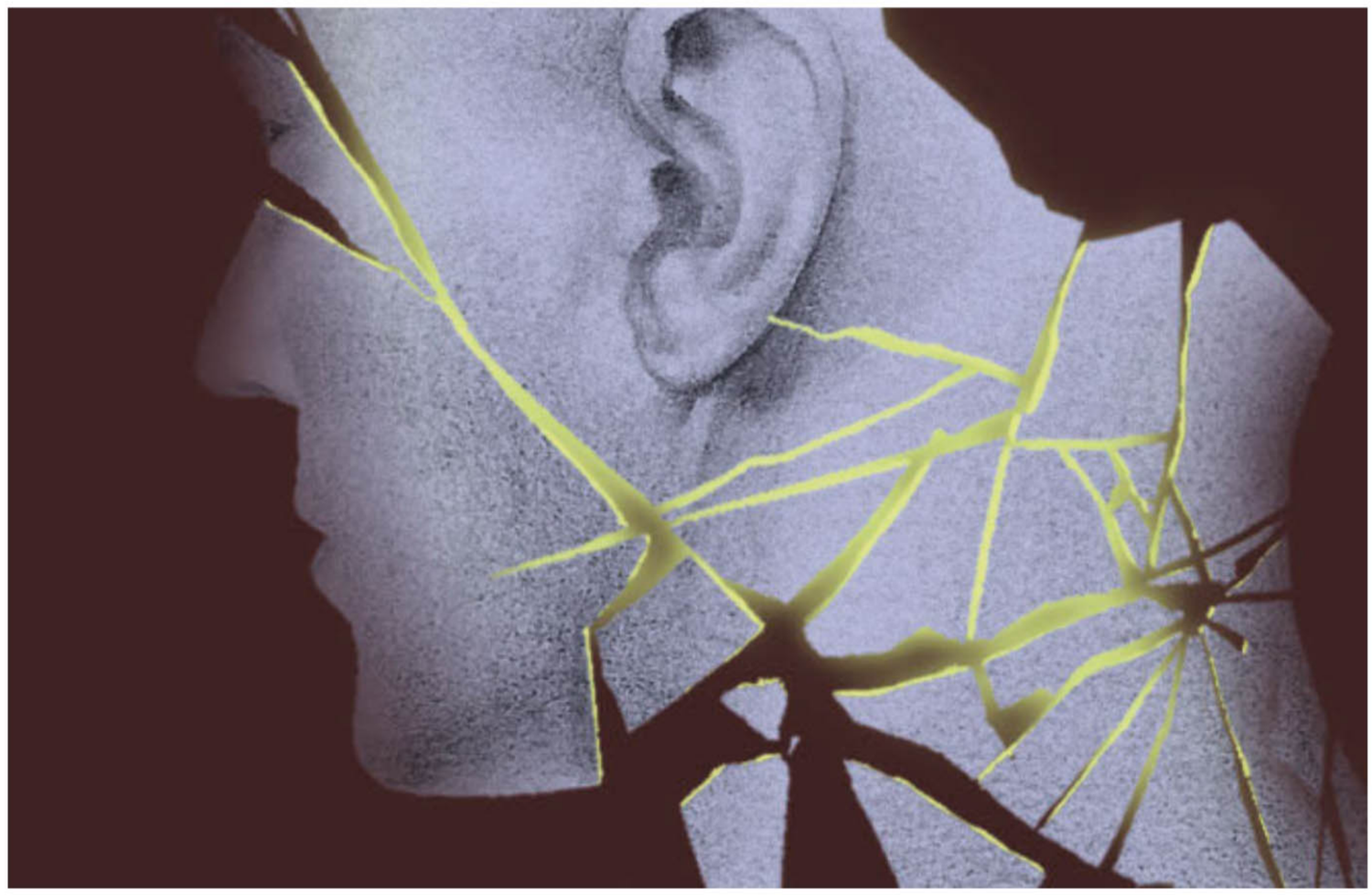
Physical mechanisms, however, will only ever be one part of the problem. How a person feels is also critical to the sensation. Studies have shown that adverse effects in childhood can make an adult more likely to develop nociplastic pain, as can a history of conditions such as depression and anxiety. The spinal cord is like a palimpsest, says Rajesh Munglani, vice-president of the British Pain Society. "It retains memory." Social factors can also exacerbate the problem, with the negative emotional consequences of pain (including an inability to work, social alienation and depression) leading to activation of the very brain regions that can amplify its severity.

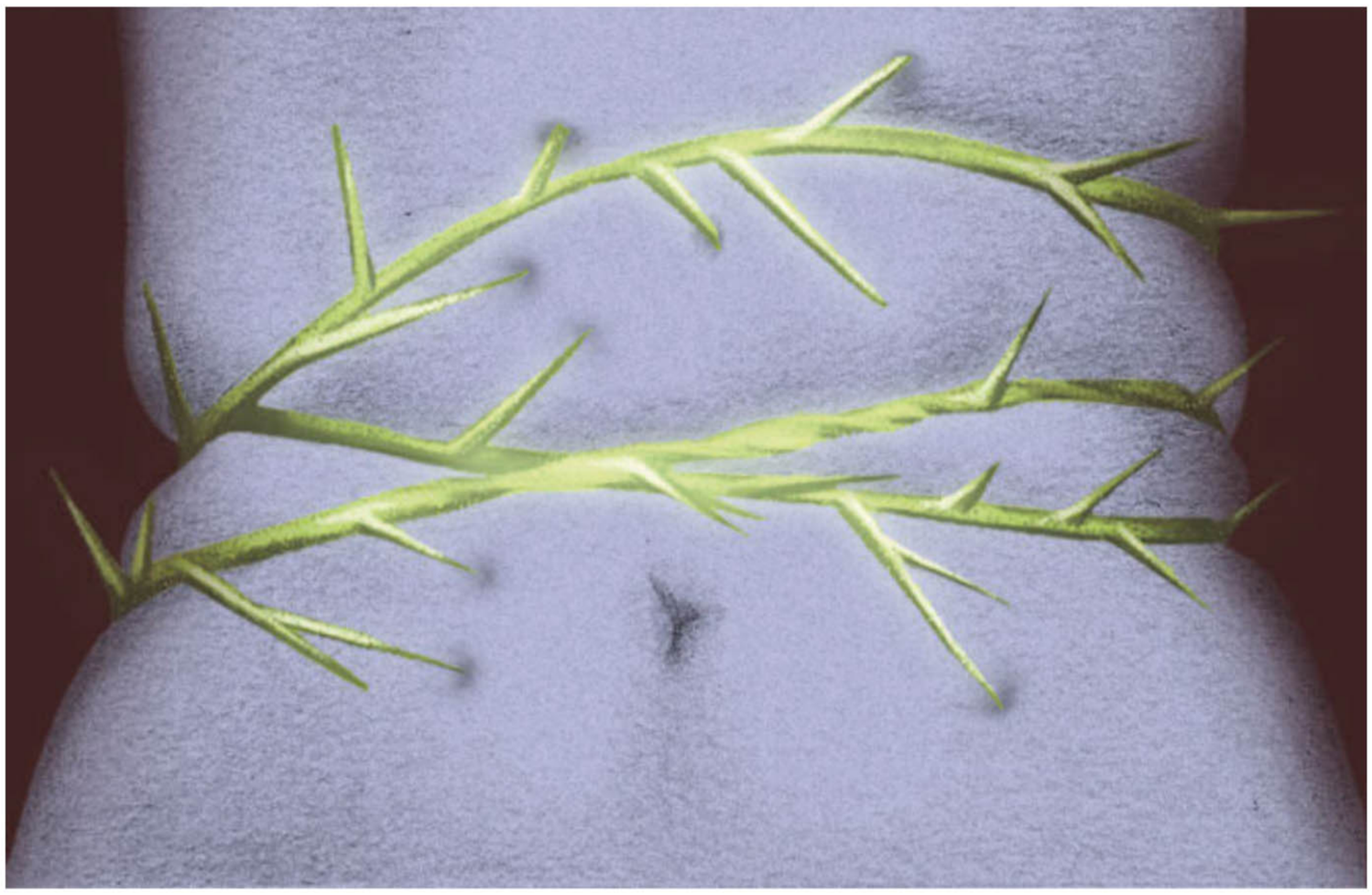
All this complexity means that nociplastic pain cannot be resolved by a single pill. Indeed, when it comes to medicine, most commonly prescribed forms of pain relief—opioids such as morphine, non-steroidal anti-inflammatories (NSAIDS) such as aspirin, or antidepressants such as duloxetine—are either ineffective for nociplastic pain, or come with unpalatable side-effects (addiction in the case of opioids, or stomach ulcers for NSAIDS).

But some interventions can make a big difference. Studies have shown that being listened to and, crucially, being believed by medical professionals can make chronic pain easier to bear. In the case of nociplastic pain, a sensation that cannot easily be traced to any physical source, such empathy can be hard to find.

After Ms Charlwood's initial surgeries failed to clear up the pain, she was put on a waiting list for ultrasound-guided steroid injections, a set of procedures aimed at identifying and disabling any misfiring nerves. These were not straightforward, with nurses having to manipulate the bones in her neck to allow the doctor to puncture the right spot. "That was all a bit medieval," she recalls.

Exhausted by the pain and frustrated by the lack of a diagnosis, Ms Charlwood decided to engineer a meeting with the University of Bath's Dr Eccleston, whose work on chronic pain she had admired from a distance. Her nascent doctoral work on comparative literary studies offered her a way in. In 2012, she submitted an abstract on intergenerational pain in the poetry of Robert Frost to a conference where Dr Eccleston was presenting. Having secured an invitation to speak, Ms Charlwood burst into tears when they met. He was one of the





first people who really got it, she says.

Patients with nociplastic pain are slowly gaining recognition. They are increasingly being consulted by researchers ahead of experimental trials, and are sometimes selected as reviewers for papers to be published in pain journals.

Specialist doctors are also referring people diagnosed with nociplastic pain to pain-management courses, rather than encouraging them into the exhausting pursuit of a potentially nonexistent cure. Such courses often centre on giving patients a sense of community, as well as the tools they need to regain control of their lives. This can take numerous forms, from classes on pain science through to cognitive behavioural therapy, physiotherapy or exercise. Virtual reality is also being tried, as this allows patients to experiment with real-world activities in the safety of their own homes. Although such methods can be expensive and time-consuming, many patients say they wish they had come to them sooner.

Ms Charlwood, with the memory of unnecessary and harmful surgeries still fresh in her mind, agrees. People end up turning to pain management too far down the line, she says. By the time they get there, they are often in worse shape than when they started looking for treatment.

Some relief

Although unrealistic expectations can make matters worse, ways to relieve nociplastic pain may yet be found. Most interest now lies in harnessing the brain's flexibility for good. "Neuroplasticity can actually go both ways," says Dr Munglani. Psychedelics such as psilocybin, for example, are thought to act on certain neurons in ways that disrupt their existing connections, making it easier to reform faulty circuits or to establish new connections between different parts of the brain. Such new patterns of brain activity have been tentatively linked with an easing of depression, and could potentially help with nociplastic pain. Later this summer, Peter Hendricks at the University of Alabama will begin a clinical trial testing psilocybin on patients with fibromyalgia in order to monitor changes to their level of pain and quality of life. Tryp Therapeutics, a Canada-based biotech company, is also planning to trial the effects of a synthetic form of psilocybin on patients with fibromyalgia and irritable bowel syndrome.

Another reason few remedies exist is that potentially helpful treatments may have been tested on the wrong patients. In most clinical trials of analgesics of all kinds, says Dr Munglani, fewer than a third of patients feel any benefit. Diagnostic improvements could help identify that cohort in advance.

At present, most pain of all kinds is assessed on a 0-10 scale, with zero representing no pain and ten the worst pain imaginable. In addition to misdiagnosing patients with overactive imaginations, such a scale flattens much of the nuance associated with pain. Carl von Baeyer, a pain scientist with the University of Saskatchewan, likens it to describing music by volume alone.

A more sophisticated form of assessment is quantitative sensory testing (QST). Developed in Germany in the 2000s, it aims to identify patients whose different forms of chronic pain may be caused by similar underlying mechanisms. Imperial's Dr Vollert compares it to how similar infections may be either bacterial or viral in origin, necessitating entirely different treatment plans.

The methodology is simple. Individuals have a small metal plate held against their skin as the temperature of the plate is varied. The patients are then tested on their ability to detect the changes in temperature as well as the threshold at which they experience discomfort. The process is subsequently repeated with hairlike filaments and blunt needles in order to establish the patients' sensitivity to pressure. The results allow researchers to group patients in a number of cohorts that transcend their diagnoses: those who are relatively normal but more sensitive to temperature changes (peripheral sensitisation), those less sensitive to both kinds of painful stimuli (extensive peripheral nerve fibre damage), and those with a loss of thermal detection (small fibre neuropathy). Many patients fall into more than one category, says Dr Vollert, who reckons that more subtle categories may yet emerge.

Such categorisations may seem self-indulgent, but they have shown promise in guiding people towards the right medications. Even, potentially, ones that already exist. In 2014, Dr Vollert and colleagues performed trials that showed that an anticonvulsant called oxcarbazepine, which had failed in previous trials across a broad swathe of patients with neuropathic pain (resulting from nerve damage), achieved results superior to a placebo in patients deemed by QST to have peripheral sensitisation. This success has resulted in interest from pharmaceutical firms keen to use QST to better target future medications.

Rolling this approach out from neuropathic to nociplastic pain comes with challenges. For one thing, says Dr Vollert, QST is best performed on a painful part of the body that can then be compared with a normal region. As nociplastic pain is frequently either felt across the body or else in inaccessible organs below the skin, this makes comparisons more difficult.

It couldn't hurt

There are, however, some early signs that nociplastic patients could eventually feel the benefits. A 2022 study by researchers at Harvard Medical School showed that patients with fibromyalgia were most likely to feel the analgesic benefits of electrical nerve stimulation if they had increased sensitivity, as measured by QST. "The trajectory the field is on looks really promising," says Dr Vollert.

Tests that can reveal a patient's pain profile are enticing, especially when they offer the promise of early diagnosis. But researchers worry about the unintended consequences of setting a medical reference for what pain should look like. Many patients with chronic pain already get turned away on the grounds that they do not look as if they are in pain. Relying solely on a biomarker runs the risk of repeating the error. For Dr Eccleston, biomarkers, though useful, must not supplant the individual's reported experience. "There is no objective measure of pain," he says. ■

Publishing

Pulp fiction

Bestsellers are ignored by critics—but are immensely profitable

DANIELLE STEEL books deal with "Family. Courage. Loyalty", as the cover of one explains. They are also about "Wealth. Fear. Revenge. Love", as the cover of another has it. Ms Steel herself has said she writes "about stuff that happens to all of us". Though arguably she focuses a little more on the sort of stuff that involves Wealth. Palazzos. Emotions in Capital Letters. A little less on the sort of stuff that involves Tax Returns. Cutting One's Toenails. Buying Groceries.

But that hardly matters. For her books are also about selling staggering numbers of copies. Ms Steel has written over 200 books—the latest, "Happiness", came out in August, and her next, "Second Act", will be released in October. She is one of the world's bestselling living authors (according to some claims, the best) and has sold over a billion copies. Her novels are a literary sediment, settling on the shelves of holiday cottages everywhere. She has created not merely books but a brand: everyone, whether or not they have read them (and most will claim "not"), knows what "a Danielle Steel" is. And so naturally the literary world ignores her.

Publishing is an odd business. It is worth around $37bn in Britain and America alone, but you would never know this from the literature that it produces, which focuses on books in the brainy vein rather than anything so vulgar as volumes that actually sell. One authoritative history of English literature contains 60-odd mentions of "Shakespeare"; ten on "the sublime"; eight on "blank verse"—but a blank silence for concepts such as "business" and "turnover".

In another literary history, popular novels—those "jam tarts for the mind" as William Thackeray, the British novelist, called them—are mentioned, but with a wince, under the heading: "Problems of popular culture". When Gore Vidal wrote an article on bestsellers it opened with the observation that "shit has its own integrity"—and became more dismissive from there.

The book business, however, depends on those despised bestsellers. September is when publishers release the titles that they hope will be their money-spinners. Yet most books will be loss-making. To produce, print and publicise a book costs about £12,000-15,000 ($15,000-19,000), says Mark Richards of Swift Press, an independent publisher. He reckons that it takes around 5,000 copies to break even. Most books never come close: only 0.4% of titles in Britain last year sold more than that, according to Nielsen BookData. Ms Steel's books, by contrast, have sold 268,000 in Britain this year. Jam tarts they may be, but that is why people gobble them up.

And yet publishers seem to have an almost total inability to predict which books will sell. As Markus Dohle, then the boss of Penguin Random House, a large publisher, said last year, "Success is random. Bestsellers are random. So that's why we are the Random House." Editors less sagely select winners than buy literary lottery tickets and hope for the best. Taking credit for a bestseller is, as Jonathan Karp, the chief executive of Simon & Schuster, has said, "like taking credit for the weather".

The word "best-seller" first appeared in the 1890s, with the first authoritative lists following soon after. Patterns emerged quickly. The writing can be good (H.G. Wells, an English writer, shot to the top of early rankings); but it need not be (just read "The Da Vinci Code" by Dan Brown). Sex sells well, but celebrity sells best. Prince Harry's "Spare", published in January, broke records for the fastest-selling nonfiction book.

In 2018 a group of researchers from Northeastern University analysed almost ▸▸

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eight years' worth of *New York Times* bestsellers and observed a few general patterns. Some elements of bestsellers are similar, says Burcu Yucesoy, the lead author. Aspiring writers should bear in mind that fiction sells better than non-; thrillers and romance sell best of all; name recognition matters (so write lots); and if you must write non-fiction, which does not sell, make it biography, which does.

Writers are often unable to explain their own success in helpful ways. In 1956 Ian Fleming, the creator of James Bond, wrote an essay on how to write a successful book, in which he argued that: "There is only one recipe for a bestseller, and it is a very simple one." All bestsellers "have one quality: you simply have to turn the page". This is true—but entirely dodges the question. Jo Nesbo, a Norwegian thriller writer, thinks good prose is like good food: "You can't tell what the ingredients are necessarily...but you know it when you see it and you read it." Lionel Shriver, an American author, believes that "if there were such a thing as just following the rules...then everyone would write a bestseller. No one sits down and is determined to craft a story that only five people will read."

But make your way through *New York Times* bestsellers, and trends become clearer. Of the top ten bestsellers in one recent week, three were romances; one was a thriller; four were by a single author, Colleen Hoover, a romantic novelist whose first book, "Slammed", was self-published, proving the unpredictability point. Only one of the ten, "The Covenant of Water", is a literary sort of book. It has glum characters, too many similes and a tendency to use words such as "gloaming".

Here comes the sun

The settings of bestsellers are often exotic: Fleming observed that "the sun is always shining in my books." Ms Steel's books have titles such as "Five Days in Paris" and "Sunset in St. Tropez", rather than "A Fortnight in Glasgow". Their female characters tend to be called names like "Lily" and say things like "I only want you"; their male ones say things like "We've got rifles and grenades. They've got .50-cals." Accountants are not overrepresented in their pages. There are certain stylistic traits too: sentences tend to be short. Really short. And repetitive. Really repetitive. Think Hemingway. On holiday.

Almost all bestsellers make the most of any research they have done. A recent Danielle Steel opens with the heroine looking out over Rome, at "Saint Peter's Basilica and Vatican City, the dome of the San Carlo al Corso Basilica, and to the north, the Villa Medici and the Borghese Gardens". This is one way to run up a word count. "The Da Vinci Code", similarly, offers such detailed tours through Paris that the overall effect is less like reading a book than switching on a verbose satnav.

But perhaps the most striking quality about bestselling authors is how prolific they are: James Patterson, an American thriller writer, has churned out more than 340 books (some in collaboration with other writers). Such speed, as Truman Capote once put it, is less writing than typing. "Don't get it right, get it writ" is a common theme among bestselling authors. Ms Steel says that she writes until her nails bleed. Fleming recommended writing 2,000 words a day and not sullying this with "too much introspection and self-criticism".

The sentences in bestsellers might have benefited from a little more introspection—or at the very least a second read. In one, a character finds her lover in bed with someone else and observes that "the only thing that struck me was that his face was as expressionless as his buttocks, which stared at me from the bed." Reread that sentence several times, and you may still feel it has not given up all its secrets.

However, if you really want to write a bestseller, then ignore Ms Steel and other novelists. Because the book that sold the most copies in America in the past ten years was by none of them. It was "Oh, the Places You'll Go!" by Dr Seuss. Number three was that other literary classic, "The Very Hungry Caterpillar" by Eric Carle. Children's books not only sell well, but they also keep selling, year after year, building fans across generations.

And, incidentally, they obey the bestseller formula perfectly: sentences of Hemingwayesque brevity; pleasant settings and, of course, excellent weather. Or, as Eric Carle described it: "One Sunday morning the warm sun came up and—pop!" Out of the book came a world-beating, bestselling marvel. ■

Feminism's founders

The fierce urgency of NOW

Fame, forgetfulness and the story of American feminists

Betty Friedan: Magnificent Disrupter. By Rachel Shteir. *Yale University Press; 384 pages; $27. To be published in Britain in November; £18.99*
The Women of NOW. By Katherine Turk. *Farrar, Straus and Giroux; 448 pages; $32*

Friedan, a forgotten face

ASK AN ENLIGHTENED twenty-something of either sex if he or she is a feminist, and you may get a resounding "Yes!" Ask this feminist to name someone famous for *being* a feminist, and you will draw a blank stare. Feminism is hotter than ever, but the women who created modern feminism are often forgotten.

It is in the nature of the activist to believe that she is the first to see a particular injustice. "Don't trust anybody over 30," said a free-speech campaigner, Jack Weinberg, in 1964. Today the brush-off "OK, boomer" sends a similar message.

One casualty of such forgetfulness is the cohort of women who invented modern feminism in the 1960s and 1970s. They are largely ignored or paid only the most backhanded of compliments. A youthful television watcher, for example, will know the legendary founder of *Ms.* magazine, Gloria Steinem, in one of two ways: from the 2020 TV series "Mrs. America", in which the main character is Ms Steinem's conservative nemesis Phyllis Schlafly, or through her cameo in "And Just Like That", the reboot of the HBO series "Sex and the City". The likes of Ms Steinem (now 89), her fellow *Ms.* founder Letty Cottin Pogrebin (84) and Susan Brownmiller (88), author of "Against Our Will", a pioneering study of rape culture, surely deserve better.

Two new books aim to restore some collective memory. The first, by Katherine Turk, is a history of the National Organisation for Women (NOW), founded in 1966 as an umbrella group for the women's movement. The book is by turns tedious and ▸▸

thrilling—like activism itself, in which the peaks of mass marches require the valleys of door-knocking and envelope-stuffing.

Even youngsters may know that NOW was co-founded by Betty Friedan, whose 1963 book "The Feminine Mystique" was a bestseller. Ms Turk makes the bold choice of focusing instead on three lesser-known figures from NOW's early years.

Patricia Hill Burnett was a Detroit socialite and a Republican, in a time when NOW still had bipartisan support. A former winner of the Miss Michigan beauty pageant, she led NOW's efforts to plant chapters outside America. She mostly failed, but her internationalism shaped NOW's ambition to liberate women everywhere.

Mary Jean Collins grew up in a working-class Irish Catholic family in Milwaukee and learned her feminism from the nuns at her women's college. She moved to Chicago in 1968, started NOW chapters throughout the Midwest and later came out as a lesbian. She helped run NOW's campaign against Sears, then the world's largest retail chain, infamous for its discriminatory hiring practices and low pay for women.

Aileen Hernandez was born to Jamaican immigrants in New York City. She became a union organiser and the first woman to serve on the Equal Employment Opportunity Commission, a powerful federal agency. She was not the only black leader in NOW's early years, but she has received too little recognition even within the movement, despite having been NOW's president from 1970-71. It would be 50 years before NOW had another black president.

By telling the story of NOW through this disparate group of women, Ms Turk moves the historical memory well beyond Friedan. As Rachel Shteir's new biography shows, Friedan herself desired a movement with broad appeal, and thus with room for all Ms Turk's characters. Her fears that radicals would poison the movement were chalked up to simple bigotry—and it is true that she labelled lesbians "the lavender menace", for which she spent decades apologising. But she was also afraid that any focus on what is now called identity politics would distract from issues like abortion rights and equal pay.

Ms Shteir concludes that Friedan was not entirely wrong. Although women's choices today have expanded, she writes, "the social, political and economic equality for women that Friedan imagined remains elusive." Like many revolutionaries, Friedan, who died in 2006 on her 85th birthday, could be abrasive and self-righteous. She was also a proud Jew and a Zionist, in a women's movement that has seen a good deal of anti-Semitism. (Ms Turk conspicuously neglects Jewish women's presence in the movement.) But she remains rightly renowned—unlike too many of her fellow pioneers of feminism. ■

Volcanoes

Some like it hot

Mountains of Fire: The Secret Lives of Volcanoes. By Clive Oppenheimer. *University of Chicago Press; 352 pages; $27.50. Hodder & Stoughton; £20*

MOUNT EREBUS—named after one of the primordial beings in Greek mythology, son of Chaos, personification of darkness—is the southernmost active volcano in the world. More people have been to space than have travelled to Antarctica and set foot on Mount Erebus (pictured). That is for good reason. When humans first climbed it in the early 1900s, the journey involved violent winds, occasional frostbite and bowls of "hoosh" (a potent, greasy combination of boiled, dehydrated beef and fat, which would not go bad).

Clive Oppenheimer, a professor of volcanology at Cambridge University, has spent 13 seasons—cumulatively an entire year of his life—living near the summit of Mount Erebus. In "Mountains of Fire" he regales readers with gripping stories of his travels, as well as those of adventurers past. He does not just describe what the volcanoes look like, but how they feel and what they mean to the people who encounter them.

A volcano is a rupture in the crust of a planet. Through that opening, molten rock and hot gases escape. This can be a sudden and thunderous puff of ash and steam, or it can be a protracted ooze of lava, razing everything in its path. Perhaps because of volcanoes' danger, their longevity and importance are often overlooked. But they live hundreds of thousands of years, and the gases they release come from the inside of the Earth. They are probably the very gases that created Earth's atmosphere billions of years ago. Volcanoes "made the world fit for human purpose", Dr Oppenheimer writes.

In total he has visited more than a hundred different volcanoes. Few people have come into contact with as many fiery mountains as Dr Oppenheimer has. Yet millions live close to them: around 800m people have their home within 100km of an active volcano. For some of the more than 1m Javanese who have settled in the shadow of Merapi, a volcano in Indonesia, it is a kingdom of ghosts, where the physical and spirit world merge. A gatekeeper is charged with maintaining the volcano's "equilibrium" through daily observances and annual ceremonies. In 2010, even after ominous earthquakes and belching gas, the gatekeeper at the time refused to leave his post. He was found afterwards, his body scorched in the position of prayer.

Both awful and awesome, volcanoes have much more to offer than dramatic geological events, which Dr Oppenheimer documented in his previous book, "Eruptions that Shook the World". "Mountains of Fire" is a love letter to volcanoes and an investigation into all the ways that they have and continue to sustain humanity—spiritually and scientifically.

Volcanic regions are hotbeds of biodiversity. The lava islands of the Galapagos are textbook examples of evolution in action. Volcanic eruptions can act as a reset button; as lava hardens and begins to erode over the course of years or centuries, the released nutrients and minerals create rich soil. Some of the world's most productive regions for farming, such as in Indonesia and Central America, owe their abundance to eruptions past. Volcanoes can also help build up underground aqui- ▸▸

Who packed the "hoosh"?

The history of computing

Coolly calculating

Empire of the Sum: The Rise and Reign of the Pocket Calculator. By Keith Houston. *W.W. Norton & Company; 384 pages; $32.50. To be published in Britain in October; £25*

When was the last time you used a calculator? Having enjoyed a brief heyday in the 1970s, these once miraculous-seeming gizmos now mostly languish in desk drawers. Keith Houston's sprightly history aims to give the calculator the recognition it deserves as a stepping stone to the digital era. Calculators, he argues, "helped usher in the world of ubiquitous computing".

It is a tale that starts with a 42,000-year-old tally stick found in South Africa and moves through finger-counting systems to the abacus and the slide-rule. But Mr Houston's narrative really gets going with the advent of the clockwork calculating devices in the 17th century. These in turn gave way to ever smaller and more capable electrical devices in which numbers were crunched by relays, valves and ultimately transistors.

All this is recounted with wry wit, plus numerous detours into mathematics, science and social history. Modern jargon has deep roots: "digit" and "digital" recall finger-counting systems; "calculi" were pebbles used by Romans on abacus-like counting boards; a cursor was originally a sliding indicator on a slide-rule, pioneered by Isaac Newton; and computers were originally people, many of them women, who performed calculations, often in teams.

Most human computers were anonymous—in 1944 an American government committee even used "kilogirl" as a unit of computing power—but not all. Mr Houston explains how John Glenn, an American astronaut, insisted on having the trajectory of his spacecraft hand-checked by Katherine Johnson, an expert in orbital mechanics, using a Friden STW-10 electro-mechanical calculator.

Calculator, operated by computer

The first purely electrical calculator, the desk-sized Casio 14-A, showed where things were heading. Fierce competition between firms in America, Europe and Japan led to smaller, cheaper models. Calculator development was computing's cutting edge. The first microprocessor, the Intel 4004, was designed for a calculator made by Busicom, a Japanese firm. Hewlett-Packard's HP-35, launched in 1972, was the first smash-hit consumer-electronics product. Calculators drove the miniaturisation and democratisation of computing.

And it was a calculating app—VisiCalc, the first spreadsheet program—that kick-started personal computing. To do a quick sum today, it is quicker to open an app on your phone or computer than to reach into a drawer. Calculators, Mr Houston writes, are now "everywhere and nowhere at once". His thesis adds up. He makes a convincing case, in sum, for the significance of the calculator.

fers. For example, without the Tibesti and its five volcanoes in the north of Chad and in southern Libya, the eastern Sahara would be even more arid.

Science still has a lot to learn from the tiny organisms that live in and near volcanoes, in the harshest environments, such as the hot-acid crater lake of Ijen on Java. Some might one day find a use for these micro-organisms in medicine or air purification. Volcanoes also produce geothermal energy, which accounts for significant shares of electricity supply in a growing number of countries, including El Salvador, Kenya and New Zealand. The most common type of volcanic rock, basalt, is capable of permanently trapping carbon dioxide, making volcanoes an important player in the game of carbon capture and storage. Long viewed as a fearsome enemy of civilisation, volcanoes may yet become a saviour. ■

Video games

Hands up, don't shoot

Gamers are turning against violence

A Tamil mother, recently immigrated to Canada, stirs *biryani*. Her young son looks on, sniffing the delectable aromas. This is a scene in Venba, a recently released video game attracting attention. Through a series of cooking puzzles—in which players learn to prepare ingredients in the correct order or work out the various items missing from recipes—it offers an emotionally intense family saga, serving up topics like immigration and identity, alongside Tamil food.

Unlike the noisy, big-budget productions that dominate gaming and its public image, Venba is peaceful and gentle. It cost less than $1m to make but quickly managed to break into the top-sellers on Steam, a PC gaming hub, sitting alongside rivals that cost as much as $100m. It might not get the recognition or nearly as many users as "Call of Duty" and "Assassin's Creed" do. But Venba is important, because it is part of a growing trend of non-violent games attracting both game developers and players.

Recently Steam held a sale, offering nearly 250 "wholesome" games that do not feature any violence. Such a notion would have been impossible until the recent past: there were just so few games that did not involve bloodlust. "The Best Non-Violent Video Games", a new book by James Batchelor, a gaming expert, celebrates 300 peaceful games from the past 50 years, all the way back to Pong (an early game that features a ball and two paddles, like a virtual game of tennis). More than half of them came out in the past ten years.

Two factors are contributing to the rise of kinder, gentler games. One is a backlash by those who design games. Many independent developers, who can choose their own projects (versus those who work for larger firms), do not want to spend their careers designing games about killing, says Mr Batchelor. Job Stauffer, a game-industry veteran, contributed to violent productions such as the "Grand Theft Auto" series, but has started refusing to work on brutal or murderous ones. "We see media reports of mass shootings and wars day after day," he explains. "I decided that I didn't want to be a part of the problem, creating entertainment that involves firing rockets into buses," he adds.

Chris Chancey, a Canadian game developer, was in the midst of making a combat

and adventure game when he learned that four-fifths of the games demonstrated at a leading gaming convention involved violence. This prompted him to change course and design something that cut against the trend. In the resulting game, "Rainbow Billy: The Curse of the Leviathan", players speak instead of kill each other. It is popular with parents. "I get a lot of messages from parents who want to play games with their kids, but who don't want to expose them to gore and violence," he says.

As gaming becomes a pastime for the entire family, it is becoming more diverse, and this is fuelling demand for titles that do not involve pixelated machine guns or swords. When people think about gamers, they often picture them as male and on the cusp of puberty. Some are. But in reality, the average age of people who regularly play games is around 33, and about half are female. Wren Brier, developer of the popular narrative puzzle game "Unpacking", says the tastes and preferences of women gamers have started to influence developers; many are looking for play where caring and friendship are on display, instead of shooting and domination.

Just like real life, however, peaceful experiences can exist alongside conflict and bloodshed. The most lavish productions and biggest commercial successes in gaming still usually include slaughter. (Many of the biggest Hollywood films do too, although they are not seeing the same backlash from film-industry folk or viewers—at least not yet.) "As soon as we attach a certain dollar amount to a project, it's like violence becomes as understood a feature as having graphics," says Laralyn McWilliams, a game developer. She hopes this will change in the future, as more developers and gamers choose a side. But of the 20 top-selling premium games so far this year, 15 feature combat. ■

Brandish your weapon—I mean, spoon

World in a dish

A moveable feast

A new book celebrates Chinese food's spread and savour

About a decade ago, this correspondent attended a banquet in Guangzhou. The bird's nest soup was gentle and slithery, the sea cucumber rich and gelatinous and the fish sparklingly fresh and perfectly steamed. The most memorable dish, however, was the plain white cup of broth served at the end. Made from chicken, probably with ham and dried scallop as well, it was simple, austere and perfect.

Ending a banquet with soup may seem odd to Westerners, accustomed as they are to sweets at a meal's close. But, as Fuchsia Dunlop, an English food writer, explains in an authoritative new book, stock is a unique, intrinsic expression of a chef's art, much as a voice is for a singer. And the "transparent, almost invisible soup...in its quiet golden, ineffable loveliness" is an ideal conclusion to a banquet, with its opulence and strong flavours.

"Invitation to a Banquet" is Ms Dunlop's seventh book. Unlike those for which she is best known, including "The Food of Sichuan" and "Revolutionary Kitchen" (about Hunanese cuisine), this is not a cookbook. Instead, she has chosen 30 dishes and used each to illuminate different aspects of Chinese cuisine—and, in turn, Chinese life and history.

This is less of a departure for Ms Dunlop than it seems. Like other outsiders who spend their lives focused on a foreign cuisine—as Diana Kennedy, an English food writer, did in Mexico, or Paula Wolfert, an American, did in the Middle East—she is more a gatherer than an inventor of recipes. Ms Dunlop's well-researched cookbooks read as mini-ethnographies.

Readers will not learn how to make braised pomelo pith with shrimp eggs but how and why Chinese chefs have long prized unusual (and to Western palates, sometimes off-putting) ingredients, such as the bitter pith of a giant citrus fruit. An apparently humble, but in fact exceptionally laborious, dish of braised carp's tail is a jumping-off point for a discussion of the importance of *kougan*, or mouth-feel, in Chinese cuisine.

Westerners, Ms Dunlop argues, "have traditionally assumed that the Chinese eat marginal animal parts out of poverty and desperation", when in fact turning up one's nose at gizzards, cartilage and jellyfish shuts the door on a range of foods that is wonderfully *cui* ("slippery and crunchy, often in a wet way").

In aggregate, Ms Dunlop makes a compelling case for the superiority of Chinese cuisine, but in a delighted and expansive rather than chauvinistic way. She shows how it has assimilated foreign influences (as other cuisines have, too), how it has changed with China's increasing wealth and how central it is to the country's intellectual and cultural history.

She makes an equally compelling case that what Westerners think of as "Chinese food", meaning what most can find at their local takeaway, is neither inauthentic nor wrong. Instead, it is a diasporic offshoot that reflects local tastes but is about as representative of the cuisine's diversity as a frozen pizza is of Italy's. Immigration and adventurousness have made the real thing more accessible than ever outside China. Eaters should savour that. ■

Economic data

	Gross domestic product, % change on year ago: latest		quarter*	2023†	Consumer prices, % change on year ago: latest		2023†	Unemployment rate, %		Current-account balance, % of GDP, 2023†	Budget balance, % of GDP, 2023†	Interest rates: 10-yr gov't bonds, latest,%		change on year ago, bp	Currency units: per $, Aug 30th	% change on year ago
United States	2.5	Q2	2.1	1.8	3.2	Jul	3.9	3.5	Jul	-2.8	-5.7	4.1		101	-	
China	6.3	Q2	3.2	5.2	-0.3	Jul	0.8	5.3	Jul‡§	2.0	-2.8	2.4	§§	-2.0	7.29	-5.3
Japan	2.0	Q2	6.0	1.3	3.3	Jul	2.9	2.7	Jul	2.9	-5.2	0.7		43.0	146	-4.7
Britain	0.4	Q2	0.8	0.3	6.8	Jul	6.7	4.2	May††	-3.3	-4.3	4.5		171	0.79	8.9
Canada	2.2	Q1	3.1	1.7	3.3	Jul	3.4	5.5	Jul	-0.6	-0.9	3.6		51.0	1.35	-3.0
Euro area	0.6	Q2	1.0	0.9	5.3	Jul	5.4	6.4	Jun	2.0	-3.3	2.6		106	0.92	8.7
Austria	1.9	Q1	0.4‡	0.8	7.0	Jul	7.3	5.1	Jun	2.0	-2.4	3.2		102	0.92	8.7
Belgium	0.9	Q2	0.8	0.9	2.4	Aug	3.2	5.7	Jun	-2.8	-4.7	3.2		109	0.92	8.7
France	0.9	Q2	2.2	1.0	5.1	Jul	5.4	7.1	Jun	-1.7	-5.0	3.1		107	0.92	8.7
Germany	-0.1	Q2	0.1	-0.1	6.4	Aug	5.9	3.0	Jun	5.3	-2.3	2.6		106	0.92	8.7
Greece	2.3	Q1	-0.3	2.4	3.5	Jul	3.8	11.1	Jun	-5.9	-1.8	3.9		-17.0	0.92	8.7
Italy	0.6	Q2	-1.4	1.1	6.3	Jul	6.1	7.4	Jun	0.9	-4.8	4.2		38.0	0.92	8.7
Netherlands	-0.3	Q2	-1.3	0.9	5.3	Jul	5.3	3.6	Jul	7.5	-2.3	2.9		104	0.92	8.7
Spain	1.8	Q2	1.7	2.3	2.4	Aug	3.1	11.7	Jun	1.8	-4.1	3.6		104	0.92	8.7
Czech Republic	-1.0	Q2	0.6	0.2	8.8	Jul	10.5	2.6	Jun‡	-1.2	-4.5	4.3		-42.0	22.0	11.4
Denmark	1.9	Q1	0.8	2.0	3.1	Jul	4.0	2.8	Jun	10.5	1.5	2.8		95.0	6.82	9.2
Norway	0.7	Q2	0.1	1.6	5.4	Jul	4.8	3.3	Jun‡‡	17.6	12.5	1.4		76.0	10.6	-6.9
Poland	-0.5	Q2	-14.0	1.3	10.8	Jul	11.9	5.0	Jul§	-0.2	-4.8	5.6		-57.0	4.09	15.7
Russia	4.9	Q2	na	-0.5	4.3	Jul	6.5	3.0	Jul§	1.8	-3.8	11.4		236	96.1	-36.5
Sweden	-0.8	Q2	-3.3	-0.2	9.3	Jul	7.0	6.2	Jul§	4.2	-0.3	2.8		74.0	10.8	-1.0
Switzerland	0.6	Q1	1.1	1.2	1.6	Jul	2.2	2.1	Jul	6.8	-0.7	0.9		19.0	0.88	11.4
Turkey	4.0	Q1	1.3	3.2	47.8	Jul	46.3	9.0	Jun§	-5.0	-4.9	18.3		535	26.7	-31.9
Australia	2.3	Q1	0.9	1.6	6.0	Q2	5.5	3.7	Jul	1.5	0.2	4.1		46.0	1.54	-5.2
Hong Kong	1.5	Q2	-5.2	3.5	1.8	Jul	1.9	2.8	Jul‡‡	9.1	-1.5	3.9		82.0	7.85	nil
India	6.1	Q1	5.3	6.2	7.4	Jul	5.5	8.1	Apr	-1.3	-5.9	7.2		nil	82.7	-4.0
Indonesia	5.2	Q2	na	5.0	3.1	Jul	3.8	5.5	Q1§	0.7	-2.6	6.4		-73.0	15,240	-2.6
Malaysia	2.9	Q2	na	4.2	2.0	Jul	2.7	3.4	Jun§	2.9	-5.0	3.9		-11.0	4.64	-3.5
Pakistan	1.7	2023**	na	1.7	28.3	Jul	32.2	6.3	2021	-1.7	-7.0	16.3	†††	370	304	-27.8
Philippines	4.3	Q2	-3.6	4.2	4.7	Jul	5.5	4.5	Q2§	-5.7	-7.0	6.5		33.0	56.7	-0.9
Singapore	0.5	Q2	0.3	1.0	4.1	Jul	5.0	1.9	Q2	16.2	-0.7	3.2		19.0	1.35	3.7
South Korea	0.8	Q2	2.4	1.3	2.3	Jul	3.0	2.7	Jul§	1.7	-2.7	3.9		15.0	1,323	1.8
Taiwan	1.4	Q2	5.6	0.8	1.9	Jul	2.0	3.4	Jul	13.2	-0.4	1.2		-3.0	31.9	-4.3
Thailand	1.8	Q2	0.7	3.2	0.4	Jul	1.5	0.9	Jun§	1.1	-2.7	2.8		24.0	35.1	3.6
Argentina	1.3	Q1	2.7	-2.4	114	Jul	116.1	6.9	Q1§	-2.3	-4.2	na		na	350	-60.4
Brazil	4.0	Q1	8.0	2.4	4.0	Jul	4.5	8.0	Jun§‡‡	-1.9	-7.6	11.0		-136	4.88	3.9
Chile	-1.1	Q2	-1.2	0.1	6.5	Jul	7.5	8.8	Jul§‡‡	-3.6	-1.9	5.8		-113	856	2.8
Colombia	0.3	Q2	-4.1	1.6	11.8	Jul	11.5	9.3	Jun§	-4.0	-4.2	10.8		-120	4,083	7.8
Mexico	3.6	Q2	3.4	2.4	4.8	Jul	5.0	2.7	Jun	-1.9	-3.5	9.3		23.0	16.8	20.0
Peru	-0.5	Q2	1.5	1.3	5.9	Jul	6.5	6.7	Jul§	-1.3	-2.0	6.9		-104	3.69	3.8
Egypt	3.9	Q1	na	3.8	36.4	Jul	36.2	7.0	Q2§	-1.5	-6.9	na		na	30.9	-37.8
Israel	3.3	Q2	3.0	3.0	3.3	Jul	4.1	3.4	Jul	4.7	-2.0	3.8		97.0	3.78	-11.9
Saudi Arabia	8.7	2022	na	1.0	2.3	Jul	2.2	5.1	Q1	3.2	-1.4	na		na	3.75	0.3
South Africa	0.2	Q1	1.4	0.5	4.8	Jul	5.7	32.6	Q2§	-1.8	-5.7	10.2		-13.0	18.6	-8.6

Source: Haver Analytics. *% change on previous quarter, annual rate. †The Economist Intelligence Unit estimate/forecast. §Not seasonally adjusted. ‡New series. **Year ending June. ††Latest 3 months. ‡‡3-month moving average. §§5-year yield. †††Dollar-denominated bonds. Note: Euro area consumer prices are harmonised.

Markets

In local currency	Index Aug 30th	% change on: one week	Dec 30th 2022
United States S&P 500	4,514.9	1.8	17.6
United States NAScomp	14,019.3	2.2	33.9
China Shanghai Comp	3,137.1	1.9	1.5
China Shenzhen Comp	1,958.9	3.0	-0.8
Japan Nikkei 225	32,333.5	1.0	23.9
Japan Topix	2,313.4	1.6	22.3
Britain FTSE 100	7,473.7	2.1	0.3
Canada S&P TSX	20,330.3	2.3	4.9
Euro area EURO STOXX 50	4,315.3	1.1	13.8
France CAC 40	7,364.4	1.6	13.8
Germany DAX*	15,891.9	1.0	14.1
Italy FTSE/MIB	28,916.7	2.4	22.0
Netherlands AEX	745.4	0.6	8.2
Spain IBEX 35	9,551.1	2.5	16.1
Poland WIG	68,979.8	1.2	20.0
Russia RTS, $ terms	1,052.1	0.1	8.4
Switzerland SMI	11,090.2	1.1	3.4
Turkey BIST	7,907.1	4.0	43.5
Australia All Ord.	7,506.8	1.9	3.9
Hong Kong Hang Seng	18,482.9	3.6	-6.6
India BSE	65,087.3	-0.5	7.0
Indonesia IDX	6,966.7	0.7	1.7
Malaysia KLSE	1,451.9	0.8	-2.9

	index Aug 30th	% change on: one week	Dec 30th 2022
Pakistan KSE	46,244.6	-2.5	14.4
Singapore STI	3,220.2	1.5	-1.0
South Korea KOSPI	2,561.2	2.2	14.5
Taiwan TWI	16,719.8	0.9	18.3
Thailand SET	1,576.7	1.8	-5.5
Argentina MERV	675,841.0	9.8	234.4
Brazil BVSP*	117,535.1	-0.5	7.1
Mexico IPC	54,390.7	1.4	12.2
Egypt EGX 30	18,818.2	3.8	28.9
Israel TA-125	1,869.5	-0.4	3.8
Saudi Arabia Tadawul	11,574.8	1.8	9.7
South Africa JSE AS	75,256.2	1.7	3.0
World, dev'd MSCI	2,991.5	1.8	14.9
Emerging markets MSCI	988.3	1.9	3.3

US corporate bonds, spread over Treasuries

Basis points	latest	Dec 30th 2022
Investment grade	135	154
High-yield	438	502

Sources: Refinitiv Datastream; Standard & Poor's Global Fixed Income Research. *Total return index.

Commodities

***The Economist* commodity-price index**

2015=100	Aug 22nd	Aug 29th*	% change on month	year
Dollar Index				
All Items	143.2	146.1	-1.3	-5.9
Food	131.4	133.8	-2.8	-9.7
Industrials				
All	154.1	157.6	nil	-2.6
Non-food agriculturals	111.2	111.7	1.0	-27.2
Metals	166.9	171.2	-0.2	4.2
Sterling Index				
All items	171.6	177.1	0.1	-13.0
Euro Index				
All items	146.3	149.6	0.1	-13.2
Gold				
$ per oz	1,897.1	1,934.7	-0.4	12.2
Brent				
$ per barrel	84.1	85.5	0.7	-13.9

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.

For more countries and additional data, visit
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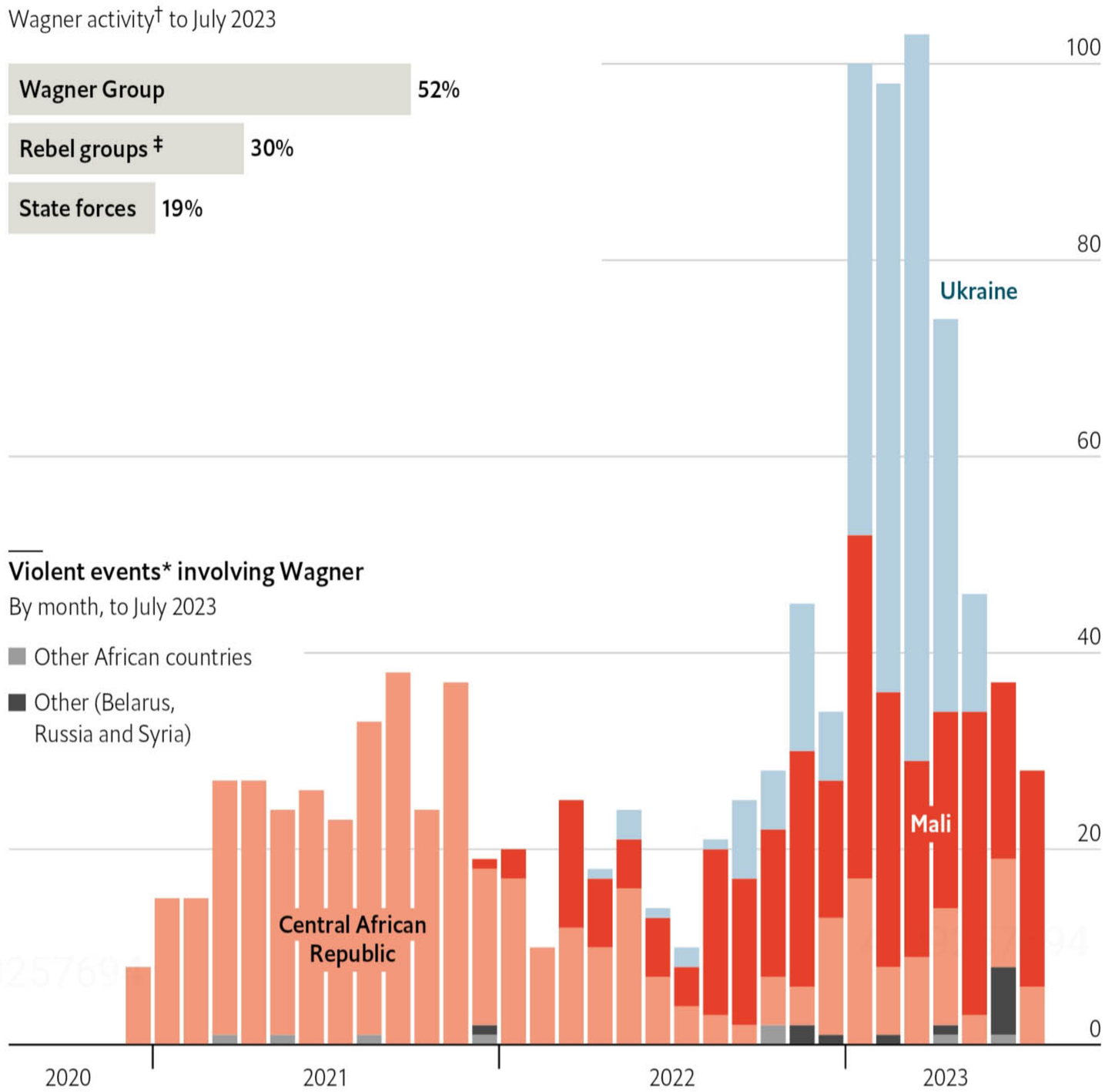
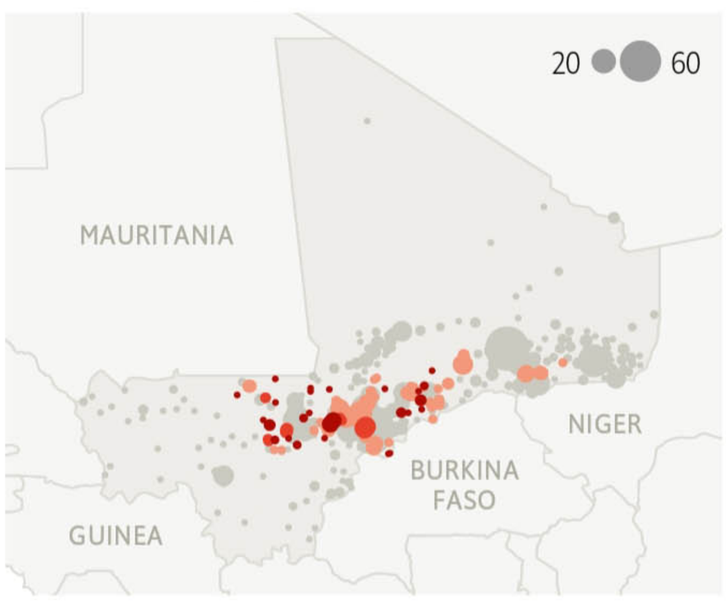
→ **Wagner's campaigns in the Central African Republic and Mali have been brutal for civilians**

Violent events* by group, % targeting civilians
In the CAR and Mali, from start of continuous Wagner activity† to July 2023

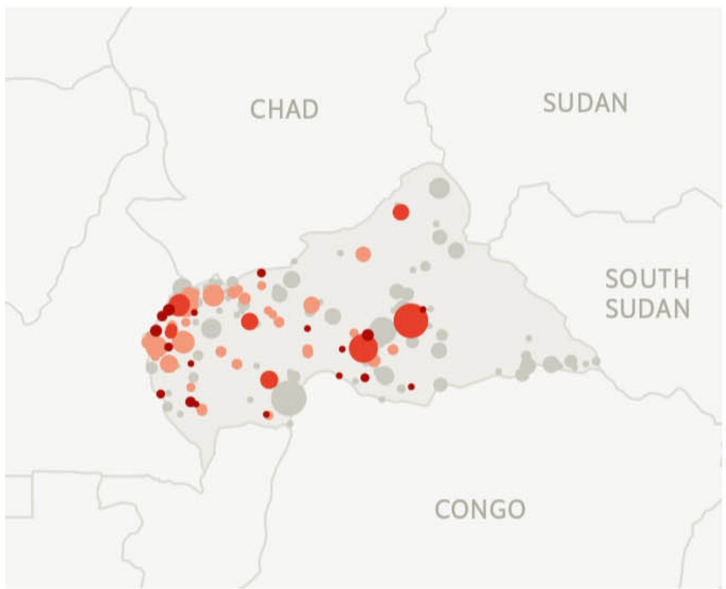
Violent events* involving Wagner
By month, to July 2023



Violent events* targeting civilians
Mali, Dec 2021-Aug 2023



Central African Republic, Dec 2020-Aug 2023



*Recorded by ACLED †Dec 2020 in the CAR, Dec 2021 in Mali ‡CPC/UPC in the CAR, JNIM in Mali Source: ACLED

A bloody legacy

Wagner has routinely targeted civilians in Africa

YEVGENY PRIGOZHIN, the leader of the Wagner mercenary group, is notorious for how he died: his private jet fell from the sky on August 23rd, many presume due to orders from Vladimir Putin, Russia's president. Wagner also is notorious for its brutality in Ukraine: the group has been linked to the mass murder of civilians in Bucha.

But Wagner's worst atrocities have taken place in Africa. Records show that the group has mounted far more attacks on civilians, and killed more ordinary people, in the Central African Republic (CAR) and Mali than they have in Europe.

The Wagner Group is a loose network of subsidiaries linked to the Russian state. It operates under contracts with foreign governments, providing services from running disinformation campaigns to supplying fighters. It enables the Kremlin to partake in foreign crusades, seeding anti-Western sentiment and looting natural resources, with scant accountability.

Governments in the CAR and Mali hired Wagner to protect their regimes and quash insurgencies. Although there is no full public record of Wagner's activities, the Armed Conflict Location and Event Data Project (ACLED), a research group, has sought to catalogue them using a patchwork of news articles, social-media posts and reports from human-rights groups. Since upping their presence in the CAR in 2020 and Mali in 2021, Wagner forces have been involved in some 35% and 10% of recorded violent events there, respectively.

Far from just fighting rebels, data from ACLED highlight Wagner's propensity for targeting civilians. Attacks on ordinary people—which include abduction, sexual violence and torture—account for almost half of Wagner's documented clashes in the CAR, and 60% in Mali. The same figures for state forces or big insurgent groups are between 13% and 37%. On-the-ground reporting from human-rights groups has flagged the mercenaries' cruelty, too.

Wagner's violence against civilians is not just frequent but deadly. Each Wagner attack on non-combatants recorded in the CAR led to four deaths on average, compared with just one in attacks involving the state or rebels. In Mali the figure for Wagner was almost seven, more than twice that of the state and insurgents there. There are reports of Wagner forces killing hundreds of people in single attacks, razing entire villages, and setting fire to homes with women and children trapped inside.

In total ACLED counts 1,800 deaths resulting from the group's attacks on African civilians. The true number is surely higher. Journalists investigating Wagner in Africa face arrest. Three have been murdered.

Although the mercenary troops have been known to carry out opportunistic attacks for personal gain, some events were probably mandated by governments. In Mali and to a lesser extent in the CAR Wagner has worked alongside state forces to target communities thought to have links with rebels. The organisation also has financial goals. Wagner-linked firms control several diamond mines in the CAR. Heavy-handed security makes them hotspots for violence against civilians.

It is not yet clear what Mr Prigozhin's death will mean for Wagner or Russia's influence abroad (see Middle East & Africa section). But whatever happens next, the mercenary leader leaves a horrific legacy. ■

How to win a war

Andriy Pilshchykov, Ukrainian fighter pilot, died in an air crash on August 25th, aged 30

As DREAMS WENT, it was not a quiet one. And he had it often. He was flying with his squadron in a fourth-generation F-16 fighter jet with a maximum speed of more than 2,000kph, or Mach 2. This Fighting Falcon was the coolest plane there was. Through the frameless bubble canopy he could see perfectly across the immense flat patchwork of Ukraine. With little strain on the control stick he could take the plane through its paces, soaring to 15,000 metres, swooping low or rolling quickly away. Its combat range, with four 454kg bombs on board, was 546km before refuelling. If he was spotted, the F-16's electronics could jam the enemy's radar. And as their pilots dithered he could release, one by one, a deadly stream of Sidewinder or Python missiles to blast that Russian shit out of the sky.

In reality, however, Andriy Pilshchykov flew a MiG-29. That was a different world. His plane was a Soviet-era model, upgraded since, but just not in the same class. It was much less adaptable, and needed frequent refuelling. The radar was so poor that he could not detect enemy missiles on his own, but had to take orders from the ground. Worse, the MiG's own R-27 missiles were heat-seeking, so firing them over cities was perilous; if he did not keep them in a radar lock, hard on target, they would make for buildings, camp fires, or anything else. Meanwhile his plane struggled to prevail against Shahed-136 kamikaze drones, slower than he was but too small to spot; let alone against nimbler Russian Su35s, the biggest enemy, firing missiles with a range three times as far as his. It was not a real fight; it was stupid. Ukraine could not win the war against those sorts of odds.

He told everyone so. Yuriy Ignat, an air-force spokesman, was deluged with his messages. But it was the Western powers he had to convince. There his strategy was more dramatic. He gave interviews to any Western media that sought him out, either while on standby, in flight suit and vizored helmet, or in fatigues, with a black bandana hiding half his face. His clothes made the point that he was fighting right now, and his message was urgent. Pakistan, Norway, Morocco, Italy, all had F-16s. Fully 4,600 were scattered round the world. Ukraine should have them too.

His words were sharpened by the mystery of who he was. He went simply by the call sign "Juice", a nickname he was given by the California Air National Guard when they were on exercises together. "Juice" came from his orders at bars: always juice, no alcohol. He had that official call sign long before other pilots in Ukraine, and it made him a star among them. When a myth sprang up about the Ghost of Kyiv, who had supposedly destroyed six Russian planes on the first day of the war, it was Juice, with his helmet and handsome blue stare, whose picture ran with the story.

The "ghost" was in fact his unit, not him. But he liked the idea. "Top Gun: Maverick" was one of his favourite films. When not in his MiG he was often beside it, just waiting for the order to scramble into the sky. When it came, he had mere minutes to be ready. Meals were a snatched bite of a Snickers bar, or a bun from the airfield café. Then he was in the air, chasing, hunting. In the first ten weeks of the war he clocked up 500 combat hours. Night brought little rest; the Russians liked to fly then, so he slept in his flightsuit to be ready. Those sorties were hair-raising, as he raced through the dark without knowing what lay below him, open country or a blacked-out town, and with radar that could not tell drones from birds. Every enemy plane or drone he missed meant lives lost that he could have saved. But often, too close for comfort to heat sources on the ground, he simply had to abort, hoping the ground-to-air crews would finish the job. After nine months of fighting, he had still not "opened his score" of Russian kills.

He longed to do that. From childhood, building model fighter planes, he had pored over their potted histories and decided, very early, to be a fighter pilot himself. As a teenager, he haunted airfields. By 2011, at 18, he had joined the air force. In 2014, after the annexation of Crimea, he flew missions in the east. The thought of a Russian incursion was always there; with such a neighbour, you had to be ready. The day before the invasion, he bought more ammo for his assault rifle. As a single man, his first thought was autonomous fighting with rifle, pistol, whatever it took, and in the streets or fields, anywhere. He always flew with his pistol stuffed in his home-devised survival vest.

On invasion day itself he raced to the main airfield in Kyiv, only to find there were no planes for him. There were not enough. For some days he had to be a foot soldier, looking out for saboteurs and helping to service more planes. After that, his war got going. As it ground on, he was convinced that the West had to give Ukraine more than ground-based systems such as IRIS-T and NASAMS, welcome and effective though those were. Air-to-air fighting was what would win the war.

Eventually the Americans heard him. In June 2022, because his English was perfect and his presence compelling, he was sent to Washington to make Ukraine's case. On Capitol Hill he found sympathetic ears. Congressman Adam Kinzinger introduced a bill to fund the training of pilots and crews, with six co-sponsors. America would still not give Ukraine F-16s directly, for fear of escalation, but in August this year Denmark and the Netherlands were allowed to supply them from their stock. On the 24th came news that training of Ukrainians to fly them would start in October in Arizona. Ukraine had already sent a list of 32 pilots. Most did not qualify because their English was bad; but Juice had no problem there. All his pleading had given him useful practice. In a matter of months he, and Ukraine, could be taking the battle to the Russians in the best possible style.

The very next day, however, he was out doing combat-training in two L-39s over Zhytomyr oblast, 140km west of Kyiv. Those planes were even older than his MiG, 1960s models. So Ukraine laboured along, still waiting. The L-39s collided and crashed, landing in gardens. No one was injured on the ground. ■

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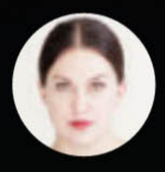

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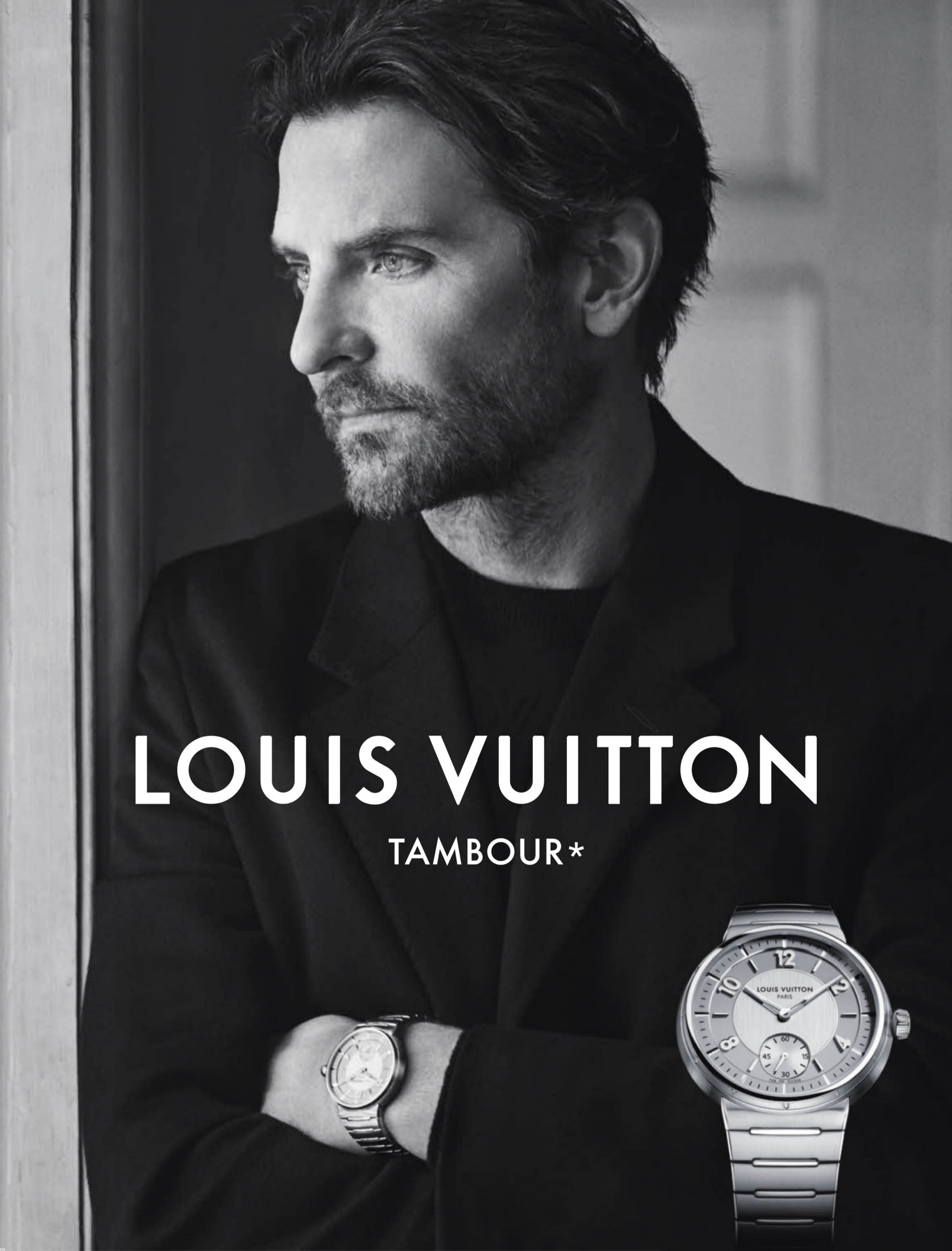
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