The Economist

The baby-bust economy

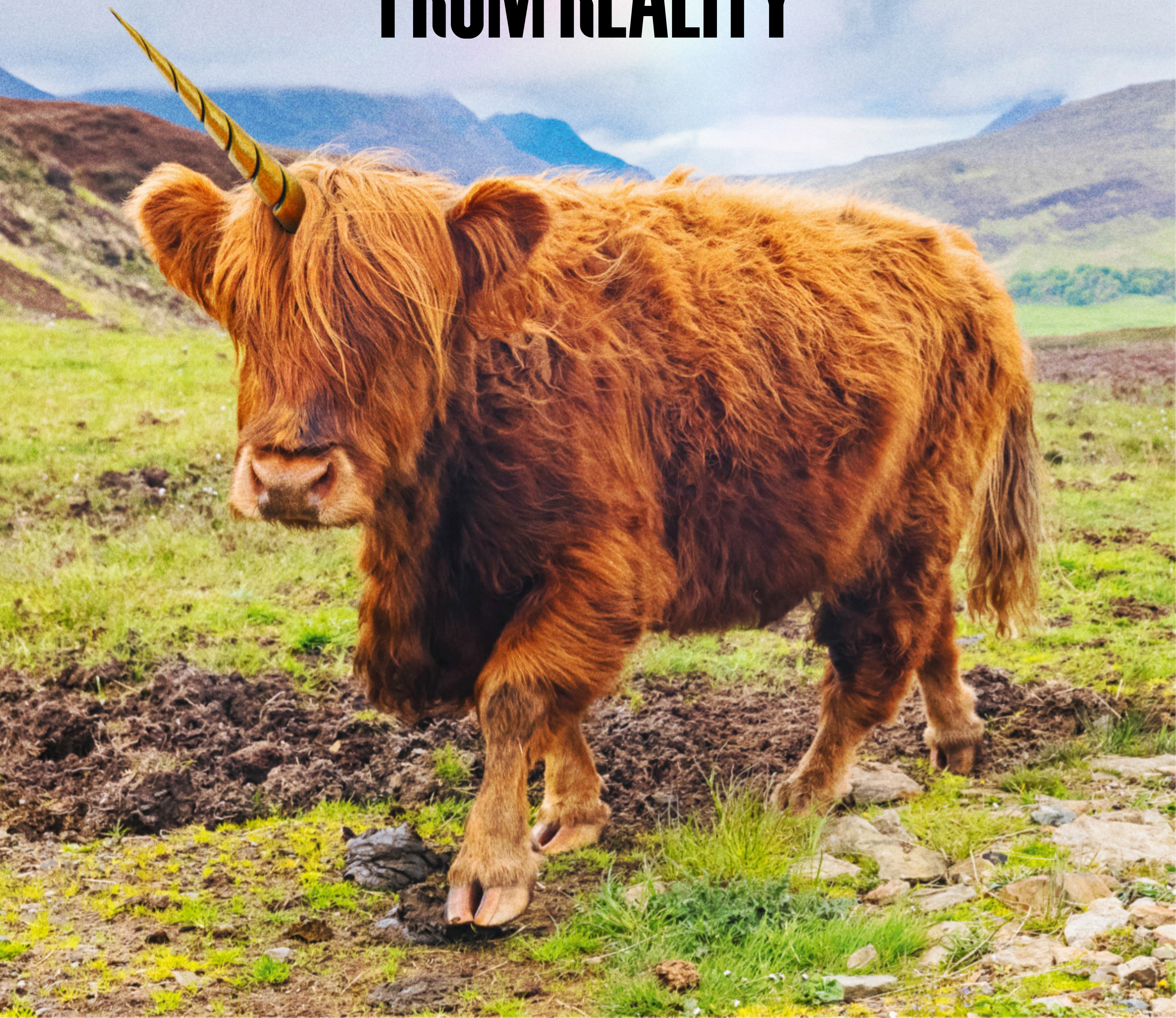
Nvidia and the AI gold rush

Erdogan: can there be a reset?

Curing Pakistan's perma-crisis

JUNE 3RD–9TH 2023

SCOTLAND'S HOLIDAY FROM REALITY



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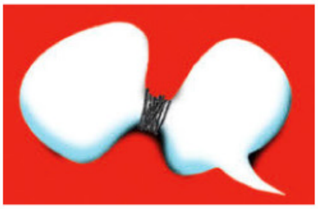

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to take part in *"a severe contest between intelligence, which presses forward, and an unworthy, timid ignorance obstructing our progress."*

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Recep Tayyip Erdogan won another term as **Turkey's** president, taking 52% of the vote in a run-off election against the opposition candidate, Kemal Kilicdaroglu. Observers from the Organisation for Security and Co-operation in Europe reported that the election was well run, but that media bias and restrictions on freedom of expression "created an unlevel playing field" in favour of Mr Erdogan. The Turkish lira hit a new low against the dollar.

Soft and hard power

Turkey warned **Sweden** to rein in domestic Kurdish activists, after a pro-Kurdish group projected a flag onto the parliament building in Stockholm. Turkey is the last hold-out in NATO against Sweden's membership of the alliance. Joe Biden said he had called Mr Erdogan after his victory and asked him to drop his opposition to Sweden's bid. The pair also discussed the possibility of sending F-16s to Turkey.

The Ukrainian capital, Kyiv, was attacked again by waves of Russian **drones**. Officials said most were shot down. Following one assault Moscow was also hit by several drones, causing minor damage. It was the most significant strike on the Russian capital since the start of the war. Ukraine denied that it was behind that attack. Russia blamed the West for encouraging Ukraine.

Mikhail Mishustin, Russia's prime minister, said that 1.5m **Russian passports** had been issued to people in the parts of Ukraine it claimed to annex last year (Russia does not fully control the regions). Under a decree signed by Vladimir Putin those who do not accept Russian citizenship face possible deportation.

In **Poland** the president, Andrzej Duda, signed a bill to investigate Russian influence in the country's politics. The ruling Law and Justice party says this is necessary to weed out Russian agents. But its opponents say the intention is to scrutinise previous governments headed by Donald Tusk, who now leads the opposition, and to harass him ahead of an election later this year.

NATO is sending another 700 peacekeeping troops to **Kosovo** amid a surge in violence in the country. Clashes between NATO peacekeepers and ethnic Serbs protesting against the installation of ethnic Albanian mayors in northern Kosovo, where Serbs form the majority of the population, has led to dozens of injuries on both sides. America and the EU have blamed Kosovar authorities for the trouble.

Spain's Socialist prime minister, Pedro Sánchez, called a snap general election, after his party was trounced in regional and local elections. The Socialists lost control of Aragón, Extremadura and Valencia to the conservative People's Party, and also the city of Seville in Andalucía. The PP will probably rely on the support of the right-wing Vox party to govern. Mr Sánchez is calling a national vote "to define the country's political direction".

Police in the **Netherlands** arrested 1,500 climate-change protesters and deployed water cannon when they refused to leave a motorway they had blocked in The Hague. Forty are to be prosecuted.

At least 153 people have died in custody in the year since President Nayib Bukele started a crackdown on gangs in **El Salvador**, according to a local human-rights group. Cristosal said that 75 of the dead showed signs of torture. Gang activity and murders have fallen, but at a huge cost to human rights: almost 2% of the adult population is behind bars.

Nicolás Maduro, **Venezuela's** autocratic president, made his first trip to **Brazil** since 2015. He was warmly welcomed by Luiz Inácio Lula da Silva, the new left-wing president, who said that the Venezuelan dictator was the victim of "a constructed narrative of authoritarianism".

The White House and Republicans in Congress released the details of their agreement on increasing the limit on federal debt. The deal suspends the **debt ceiling** for two years, past the elections in 2024, and cuts some government spending, but nowhere near as much as the Republicans had wanted. The deal passed the House of Representatives, although some Democrats and Republicans voted against it.

Bola Tinubu was sworn in as president of **Nigeria** amid worries about the economy and insecurity across the country, especially in the north. Some projections suggest that Nigeria's population could draw level with America's at more than 400m by around 2050, thus becoming the world's third-most-populous country after India and China.

Niger said it had killed 55 jihadists in a three-week joint operation with Nigeria along their border. Meanwhile, violence perpetrated by jihadists reportedly led to at least 40 deaths in **Burkina Faso**.

Jihadists from al-Shabab, an al-Qaeda-linked group that has been fighting to take over **Somalia** since 2006, attacked a Ugandan army unit that is part of an African Union peacekeeping mission, reportedly killing scores of soldiers at a base south-west of Mogadishu, the capital. The exact tally was unclear.

Sudan's civil war persisted, with fierce fighting in at least three districts of Khartoum, the capital. The army, which is battling against a paramilitary rebel force, said it had suspended a truce, which has been extended several times under the aegis of Saudi Arabia and America.

A court in **Libya** sentenced to death 23 Islamists attached to the jihadist group Islamic State and imposed life imprisonment on another 14. They had all taken part in killing, and in some cases beheading, dozens of Egyptian Christians who had been visiting the country in 2015.

Partisan advantage

Opposition parties boycotted the opening of a new parliament building in **India**. They had wanted the country's president, Droupadi Murmu, to lead the ceremony rather than the prime minister, Narendra Modi. Mr Modi is accused of turning what should have been a non-partisan occasion into a political advertisement for his brand of Hindu nationalism.

North Korea said that its first attempt to launch a spy satellite failed and it had crashed into the sea. It will try to send up another satellite soon. Emergency-evacuation texts were transmitted in error in Seoul, South Korea's capital.

The first summit between **South Korea** and **Pacific Island** states was held in Seoul. South Korea pledged to double its development aid to the Pacific region and collaborate on security. It is the latest in a series of international meetings aimed at countering China's growing influence in the Pacific.

A surge in **Nvidia's** share price pushed it briefly past $1trn in stockmarket value. The American company makes high-performance chips that are used in artificial intelligence and has seen its stock double in value since the release of ChatGPT, a chatbot, last November. This week's jump in the share price was triggered by Nvidia forecasting a huge increase in quarterly sales and assuring markets that it could increase supplies of its H100 chips, used in large-language AI models. Nvidia is getting orders from a wide range of companies, from cloud-computing providers to online-shopping websites, in their rush to adopt generative AI.

Profits from doom

A group of heavyweights who work in AI, including the bosses of Google's DeepMind and OpenAI, signed a statement warning that "mitigating the **risk of extinction** from AI should be a global priority", on the same scale as pandemics and nuclear war. Many scientists think that fears of AI wiping out humanity are overblown, and point to less apocalyptic problems with the technology, such as its generation of fake imagery.

Salesforce reported a solid set of quarterly earnings and higher net profit proving that its turnaround, after a run-in with activist investors over spiralling costs, is working. The share price of the business-software company is up by 68% this year.

America's Supreme Court declined to hear a case claiming that Reddit, an online platform, is responsible for child-pornography images hosted on the site. The court's denial of the case is another indication that the justices are unwilling to tackle liability issues under the **Communications Decency Act**, leaving the matter to Congress. In *Twitter v Taamneh*, the court recently ruled that charges against Twitter for hosting tweets from Islamic State were not permissible. And it dismissed *Gonzalez v Google*, another case centred on moderating terrorist content.

Hong Kong's exports slumped again in April, decreasing by 13%, year on year. In March outward-bound goods had dipped by 1.5%, an improvement on the 9% drop in February and 37% fall in January. Exports to mainland China were down by 13% in April, to America by 20% and Germany by 16%. South Korea's exports also fell sharply again, by 15% in May.

Chinese media heralded the inaugural commercial flight of the C919, a **passenger jet** built by Comac, a state-owned planemaker. The C919 is touted by the Chinese government as a potential rival to Airbus and Boeing in China's aviation market, stressing the country's technological independence in the face of some American sanctions. The first flight was operated by China Eastern from Shanghai to Beijing. Comac already has 1,000 orders for the plane, according to state media.

House prices in America increased again in March, as measured by the S&P CoreLogic Case-Shiller index, rising by 0.4% over February. S&P said that the decline in house prices that started last June may now be over, but that high interest and mortgage rates still posed "challenges".

Elizabeth Holmes began her 11-year prison sentence, 18 months after she was convicted of defrauding investors in Theranos, a blood-testing Silicon Valley startup that she ran. Ms Holmes's request to be granted bail while she appeals against the verdict was denied recently. She is serving her sentence at a women's minimum-security prison in Texas.

Proposals by **climate-change activist investors** at the annual shareholders' meetings at Chevron and ExxonMobil received less support than in previous years. The proposals want the energy giants to set higher emissions targets and were supported by around 10% of stockholders. By contrast, a similar proposal at the AGM of TotalEnergies was backed by 30% of investors. Police fired pepper spray and tear-gas at protesters as they tried to block entry to the meeting in Paris. Total's chief executive, Patrick Pouyanné, defended the climate-transition plan of the French company, describing the naysayers as "grumps".

Hundreds of employees are leaving **Credit Suisse** each week ahead of its impending takeover by UBS, according to reports. In a final humiliation for the Swiss bank a court has ordered it to pay $926m to Bidzina Ivanishvili, a former prime minister of Georgia, in a fraud case. The firm is appealing against the judgment.

ChatGPT in the dock

Amid all the hoopla about **generative AI** it emerged that ChatGPT had invented more than half a dozen legal precedents when a lawyer used it for research in a lawsuit against an airline. The lawyer presented the brief to the court when arguing the case. When the judge found out he had used ChatGPT, the lawyer pleaded for mercy: his source "has revealed itself to be unreliable", he said.

Scotland's holiday from reality

The collapse of the Scottish National Party holds lessons for populists everywhere

SCOTLAND WAS the first part of Britain to get high on populist referendums. In 2014, two years before the Brexit vote, the Scottish independence campaign exhorted people to ignore the experts and revel in a glorious national renewal. The Scottish National Party (SNP) lost that battle but it won the peace. Since then the SNP has triumphed in election after election. It has made the intoxicating cause of independence the principal dividing-line among Scottish voters. Nicola Sturgeon, the party's leader until her resignation in February, managed to make liberals giddy, too, by being not just populist but progressive.

The wheels have come off the camper van in spectacular fashion. Ms Sturgeon's abrupt exit amid a police investigation into her party's finances has shattered the SNP's credibility (see Britain section). The inability of the Scottish government to call another referendum unilaterally means that the path to independence is blocked. Under Humza Yousaf, the party's new leader, the SNP is projected to suffer heavy losses to Labour in the next Westminster election, making it more likely that Sir Keir Starmer will win the keys to 10 Downing Street. The SNP's grip on Holyrood, where it has held power continuously since 2007, will be in serious doubt at the election to the Scottish Parliament in 2026. Scottish politics is suddenly, dramatically, in flux.

And yet Scotland is also stuck. The country remains split down the middle on independence. Even if the chances of another referendum in the foreseeable future are very slim, the simplest electoral strategy for both the SNP and the Scottish Tories, the strongest unionist voice, will be to whip up the prospect for years to come. The SNP itself has become incapable of thinking beyond the next strategic gambit for divorce. Elementary tasks—procuring ferries, conducting a census—confound an administration that once claimed it could build an independent state in just 18 months. Genuine problems have been left to fester. Scotland is a parable with lessons that both encourage and dismay: that a populist movement can suddenly unravel and that the damage it causes can still endure.

Highland dudgeon

Scotland's problem is slow growth. Productivity has been stuck since 2014, and parts of the country remain shockingly poor. Business investment as a share of GDP has been flat since 1998—were Scotland an independent country, it would have been third from bottom in the OECD. In 2018 Scots launched 46 companies for every 10,000 of the population, versus 71 in the rest of Britain. North Sea oil is in long-term decline. Scotland's banking industry has become more dependent on London since the financial crisis. Good universities are constrained from admitting as many Scots as they should by a policy of free education.

Low growth is a problem that Scotland shares with the rest of the United Kingdom. But its predicament is worse, for two reasons. One is demography. The Scottish population is expected to peak sometime this decade and then fall back over the next 50 years. It will age more rapidly than England's. The over-65s will rise from a fifth to a third of the population by 2072. All this will knock half a percentage point off annual economic growth.

The second reason is that the flow of money from Westminster is becoming less lavish. The SNP has been able to recreate the trappings of a Nordic-style social democracy—free university tuition, free eye tests, free prescriptions—in part because of a generous supply of cash from the British government. An arrangement known as the "Barnett formula" determines by how much the biggest grant changes each year. This formula is going to become a squeeze in coming decades: the premium of per-person public spending in Scotland will fall from 124% of English levels in 2027 to 115% in 2057.

Improving Scotland's economic prospects, and reversing its demographic decline, ought to be the SNP's focus—not just for the sake of the country, but also as a route to the party's revival. However, manufacturing outrage is electorally easier and more instantly rewarding than the long haul of fixing real problems.

As with all populism, weaning activists and voters off a habit of constitutional confrontation will require a cultural shift. Every issue is seen through the lens of social outcomes first and implications for growth last. The SNP has grown chilly to businesses and made the fuzzy idea of a "well-being economy" the centrepiece of its agenda; its Green coalition partners repudiate the measure of GDP growth. The party has hoarded power centrally in Edinburgh, when cities such as Glasgow ought to have been able to try out their own growth-enhancing policies.

In a country where devotion to the cause counts for more than competence, scrutiny has been sorely lacking. Holyrood lacks a vibrant backbench culture; the poison of polarisation has made think-tanks and academics hesitant to criticise the SNP. Mr Yousaf still seems wedded to a mix of giveaways, tax rises and constitutional fights. It will take a new party leader—perhaps Kate Forbes, the runner-up in the race to succeed Ms Sturgeon—to put growth first.

Giving populists what they want sometimes makes things worse. Westminster's tactic of heaping powers on Holyrood in an attempt to quell separatism has failed. Instead the British government needs to police the boundaries of devolution. It was within its rights to reject Scottish demands for another referendum and to strike down proposed gender-recognition reforms. Westminster needs a stronger role in overseeing strategic infrastructure in energy and transport. Ms Sturgeon refused to take questioning from parliamentary committees in Westminster; that should change. The Public Accounts Committee should take more interest in how the Scottish government spends its money.

This more businesslike approach will inevitably prompt nationalists to say that the English are recolonising Scotland. Mr Yousaf is unpopular, which makes it all the more likely that he will seek to win over SNP activists with one last heave for independence. Politics is about vision and emotion. But the parable of Scotland shows that even populists must eventually demonstrate that they can solve genuine problems. The country's political class has been on a long holiday from reality. Scotland cannot afford another wasted decade. ■

Demography

The baby-bust economy

Global fertility has collapsed, with profound economic consequences

In the roughly 250 years since the Industrial Revolution the world's population, like its wealth, has exploded. Before the end of this century, however, the number of people on the planet could shrink for the first time since the Black Death. The root cause is not a surge in deaths, but a slump in births. Across much of the world the fertility rate, the average number of births per woman, is collapsing. Although the trend may be familiar, its extent and its consequences are not. Even as artificial intelligence (AI) leads to surging optimism in some quarters (see Leader), the baby bust hangs over the future of the world economy.

In 2000 the world's fertility rate was 2.7 births per woman, comfortably above the "replacement rate" of 2.1, at which a population is stable. Today it is 2.3 and falling. The largest 15 countries by GDP all have a fertility rate below the replacement rate. That includes America and much of the rich world, but also China and India, neither of which is rich but which together account for more than a third of the global population.

The result is that in much of the world the patter of tiny feet is being drowned out by the clatter of walking sticks. The prime examples of ageing countries are no longer just Japan and Italy but also include Brazil, Mexico and Thailand. By 2030 more than half the inhabitants of East and South-East Asia will be over 40. As the old die and are not fully replaced, populations are likely to shrink. Outside Africa, the world's population is forecast to peak in the 2050s and end the century smaller than it is today. Even in Africa, the fertility rate is falling fast.

Whatever some environmentalists say, a shrinking population creates problems. The world is not close to full and the economic difficulties resulting from fewer young people are many. The obvious one is that it is getting harder to support the world's pensioners. Retired folk draw on the output of the working-aged, either through the state, which levies taxes on workers to pay public pensions, or by cashing in savings to buy goods and services or because relatives provide care unpaid. But whereas the rich world currently has around three people between 20 and 64 years old for everyone over 65, by 2050 it will have less than two. The implications are higher taxes, later retirements, lower real returns for savers and, possibly, government budget crises.

Low ratios of workers to pensioners are only one problem stemming from collapsing fertility. As we explain this week, younger people have more of what psychologists call "fluid intelligence", the ability to think creatively so as to solve problems in entirely new ways (see Briefing).

This youthful dynamism complements the accumulated knowledge of older workers. It also brings change. Patents filed by the youngest inventors are much more likely to cover breakthrough innovations. Older countries—and, it turns out, their young people—are less enterprising and less comfortable taking risks. Elderly electorates ossify politics, too. Because the old benefit less than the young when economies grow, they have proved less keen on pro-growth policies, especially housebuilding. Creative destruction is likely to be rarer in ageing societies, suppressing productivity growth in ways that compound into an enormous missed opportunity.

All things considered, it is tempting to cast low fertility rates as a crisis to be solved. Many of its underlying causes, though, are in themselves welcome. As people have become richer they have tended to have fewer children. Today they face different trade-offs between work and family, and these are mostly better ones. The populist conservatives who claim low fertility is a sign of society's failure and call for a return to traditional family values are wrong. More choice is a good thing, and no one owes it to others to bring up children.

Liberals' impulse to encourage more immigration is more noble. But it, too, is a misdiagnosis. Immigration in the rich world today is at a record high, helping individual countries tackle worker shortages (see Finance & economics section). But the global nature of the fertility slump means that, by the middle of the century, the world is likely to face a dearth of young educated workers unless something changes.

What might that be? People often tell pollsters they want more children than they have. This gap between aspiration and reality could be in part because would-be parents—who, in effect, subsidise future childless pensioners—cannot afford to have more children, or because of other policy failures, such as housing shortages or inadequate fertility treatment. Yet even if these are fixed, economic development is still likely to lead to a fall in fertility below the replacement rate. Pro-family policies have a disappointing record. Singapore offers lavish grants, tax rebates and child-care subsidies—but has a fertility rate of 1.0.

Unleashing the potential of the world's poor would ease the shortage of educated young workers without more births. Two-thirds of Chinese children live in the countryside and attend mostly dreadful schools; the same fraction of 25- to 34-year-olds in India have not completed upper secondary education. Africa's pool of young people will continue to grow for decades. Boosting their skills is desirable in itself, and might also cast more young migrants as innovators in otherwise-stagnant economies. Yet encouraging development is hard—and the sooner places get rich, the sooner they get old.

Eventually, therefore, the world will have to make do with fewer youngsters—and perhaps with a shrinking population. With that in mind, recent advances in AI could not have come at a better time. An über-productive AI-infused economy might find it easy to support a greater number of retired people. Eventually AI may be able to generate ideas by itself, reducing the need for human intelligence. Combined with robotics, AI may also make caring for the elderly less labour-intensive. Such innovations will certainly be in high demand.

If technology does allow humanity to overcome the baby bust, it will fit the historical pattern. Unexpected productivity advances meant that demographic time-bombs, such as the mass starvation predicted by Thomas Malthus in the 18th century, failed to detonate. Fewer babies means less human genius. But that might be a problem human genius can fix. ■

Turkey's election

Erdogain

Recep Tayyip Erdogan has been re-elected as Turkey's president. Time to make the best of a bad lot

It certainly wasn't fair. Nor was it entirely free. But, like it or not, the victory on May 28th of Recep Tayyip Erdogan in Turkey's presidential election is a fact. For the next five years Turkey, Europe and the wider world will have to deal with a prickly and authoritarian populist. That is bad news on many fronts: economically, democratically and regionally. And yet pragmatists have a duty to search for chinks of light in the gloom.

The first is that Mr Erdogan's victory, by 52% to 48%, was clear enough that it has been accepted by the opposition. The last thing that Turkey needed, as its economy totters and wars rage in its backyard, was political turbulence. Now that he is safe, Mr Erdogan may at least consider muting the shrill and divisive politics that marked a campaign in which he accused his opponents of being in league with an international LGBTQ cabal and with the PKK, an armed separatist Kurdish group.

At the same time, the margin was small enough that Mr Erdogan may now feel his position will be stronger if he accepts that some form of compromise is necessary (see Europe section). The release of political prisoners or a renewed dialogue with the PKK would probably be too much to hope for. Still, it is possible that Mr Erdogan may start to listen not just to his opponents, but also to impartial experts and technocrats who were once close to him, especially over his ruinous economic policies. He certainly should.

Turkey has one of the world's highest annual inflation rates, clocking in at over 40% in April (last autumn it was more than twice as high). This harm is mostly self-inflicted, a function of Mr Erdogan's misguided belief that keeping interest rates low somehow suppresses inflation while at the same time boosting investment and growth (see Finance & economics section).

With the election out of the way, he may now feel able to bow to reality and appoint an independent central-bank governor, with a new inflation-busting mandate. If he refuses to change course, disaster beckons. Having collapsed over the past decade, the Turkish lira has recently been propped up by the central bank. It spent billions of dollars a week to help Mr Erdogan avert a currency crisis before the elections. But money is running out. Turkey's net national reserves are already negative.

The end of campaigning may also allow an improvement in the fraught relations between Turkey and its allies to the west. Blocking Sweden's membership of NATO with the accusation that the country is a haven for PKK terrorists and Koran-burners probably played well with Mr Erdogan's base. In victory, he can simply assert that Sweden has met Turkey's conditions, drop his veto, and mend a rift with an organisation that is, after all, there to protect Turkey from Russia. In return, the West has some things to offer Turkey. A NATO-related one would be for America to lift the stay that Congress has imposed on the sale to Turkey of new F-16 fighter jets (and to sell it modernisation kits for the ones it already has).

If Mr Erdogan showed that he is interested in a more harmonious relationship, the EU could also do its bit. Turkey's accession to the club as a member is a pipe-dream, but the two sides could make progress on lesser agreements, including visa-free travel to the EU for Turkish citizens and an extension of their customs agreement to cover at least some services and agricultural goods. Interestingly, France's president, Emmanuel Macron, swiftly called Mr Erdogan to congratulate him on his victory; and the German chancellor, Olaf Scholz, invited him to visit Berlin. The appetite for a modest reset is there, at least on the European side. Mr Erdogan has a history of making U-turns when it suits him. This is an opportunity he should not miss. ■

Pakistan's perma-crisis

Soldiers, go home

Imran Khan, Pakistan's most popular politician, must be free to contest timely elections

Imran Khan was a terrible prime minister. In office from 2018-2022, the Pakistani cricket star turned populist leader appointed corrupt ministers, locked up his opponents and hounded the press. As Pakistanis rapidly went off him, he peddled desperate anti-American conspiracy theories. Had his government limped on to the general election due later this year, his Pakistan Tehreek-e-Insaf (PTI) party would probably have been trounced.

That is how democracy is supposed to work. Bad governments get summarily ejected. Fear of a reckoning encourages politicians to do better. One government's failures are a lesson to its successors. Yet Pakistan, tragically, has experienced little if any of that (see Asia section). Its arrogant generals, the real power in the country of 240m, have not permitted a prime minister to complete a five-year term. Mr Khan, an erstwhile military favourite, was handed power after the generals toppled his predecessor, and was then himself dismissed last year following an army-orchestrated no-confidence vote. Thereby, the generals helped turn a failed politician into a populist hero, whose rabble-rousing has become a threat to order, even as Pakistan faces a balance-of-payments crisis. It is a textbook example of the incompetence, as well as power-hunger, of the men who presume to run the world's fifth-most-populous country.

Were Mr Khan's party allowed to contest the scheduled election, he would now probably be swept back to power in Islamabad. So the army intervened again. It had him charged with multiple crimes, from blasphemy to terrorism, and placed un- ▸▸

der de facto house arrest, and then set about dismantling his party. Thousands of PTI activists have been arrested and most of the party's senior leaders leant on to renounce Mr Khan. Whether the generals will even let the election go ahead is unclear.

Pakistan's woeful governance is a direct consequence of such military meddling. The country's political parties, as the PTI is now demonstrating, are shifting bands of opportunists, their members united by little more than an appetite to capitalise on whatever brief opportunity to get rich the generals afford them. Its governments, formed at the army's behest and in the knowledge that they are unlikely to last a full term, have little incentive to take tough political decisions. No wonder the current administration of Shehbaz Sharif has balked at the eye-watering tax rises and subsidy cuts that the IMF is demanding for its latest bail-out of Pakistan, which would be the 23rd. The courts, an instrument of army control, are often intimidated and corrupted by the generals' fixer-spies. Ditto the media.

The cost of the dysfunction is incalculable. Dominated by the agriculturally rich state of Punjab, Pakistan was for a long time a match for its much bigger Indian rival. Its army arguably lost four wars against India, but narrowly. Its cricketers were better than their neighbour's. In 1990 the two countries' average income per head was almost the same. Now Indians are, on average, 50% richer than Pakistanis. And whereas India is fast becoming a global power, Pakistan, beset by economic, environmental and social crises that its governments scarcely seem to comprehend, has become a global menace. It is abysmally governed, violent, unstable and nuclear-armed. Owing to the public anger Mr Khan is whipping up, it is now also at risk of civil strife. All this in a country whose population is projected to be more than 100m bigger in 2050 than it is today.

This mess has only one solution. The generals must, once and for all, get out of politics. Pakistan otherwise has no chance of getting the better governments it needs and deserves. The time for this is now. The election should be held to schedule and Mr Khan and his party—unimpressive though they are—be free to contest it. It is for Pakistani voters to choose who should govern them. They could scarcely choose worse than their turkey-cocking generals. Those self-appointed guardians of Pakistan have done little except lower, weaken and immiserate it. ■

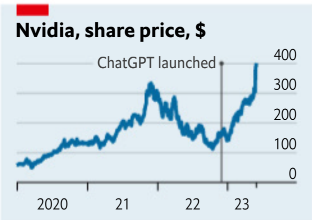
Artificial intelligence

Nvincible?

The AI boom has turbocharged Nvidia's fortunes. Can it hold its position?

Waves of innovation often create giants. Microsoft rode the upsurge in desktop computers, as Apple did with the smartphone. Artificial intelligence (AI) may well be the next big technological shift, transforming the way businesses are run and society functions. If so, plenty of firms selling the software and hardware that underpin AI stand to gain (see Business section). But none is better positioned than Nvidia, an American firm that makes specialist AI chips. Its market value briefly passed $1trn this week. Will AI sweep Nvidia to big tech-dom?

The hype around AI makes the question hard to answer. Excitement about Nvidia began to mount in November, after the release of ChatGPT, an AI-powered chatbot. Since then all manner of firms have launched AI-infused products, adding to the fervour. Jensen Huang, Nvidia's boss, is unsurprisingly bullish, talking of a "new computing era". Investors seem just as jubilant. Nvidia's share price has more than doubled since the start of the year.



Much of the excitement is justified. Nvidia is in an enviable position. Its core business is designing high-performance chips. At first it sold these to video-game enthusiasts. The chips were also highly efficient at training AI models, and a new, booming market emerged. But the firm has not just been lucky. With each generation of new chips, it has improved performance many times over. Today it holds over 80% of the market in specialist AI chips.

Nvidia also had the forethought to invest in two areas that helped cement its supremacy. One is advanced networking. Because training AI models requires vast amounts of processing power, many chips—sometimes thousands—are used simultaneously. These chips exchange data along a high-performance, AI-tailored network. Today Nvidia controls 78% of that market, thanks to its purchase of Mellanox, a specialist, in 2019.

Nvidia's other strength is its software. CUDA, its AI platform, is popular with programmers and runs only on the company's chips. By, for instance, giving free access to its chips and software to some AI researchers, the firm focused on encouraging developers to use its software long before its competitors set out to woo them.

Despite all these advantages, however, Nvidia's lasting dominance is not assured. For a start, some of the frenzy around AI may die down. The juicier the firm's prospects, the more competitors it will attract. Startups and big chipmakers, such as AMD and Intel, want a share of Nvidia's network and chip businesses. Others are working on open-source and proprietary software that may weaken CUDA's hold. The biggest challenge, though, may come from Nvidia's own customers. The cloud-computing arms of both Amazon and Alphabet are designing their own AI-tailored chips. Both have the scale and the deep pockets to become fearsome rivals.

Governments also pose a risk. Regulators worried about the dangers AI poses to society and national security are searching for ways to control the technology. Last year America restricted the sale of high-performance chips and chipmaking tools to some Chinese firms, which dented Nvidia's sales in the third quarter. If Nvidia is dominant, politicians will find it easier to act.

Still, for now the future looks bright. Even if AI mania cools, the technology is bound to be more useful than crypto, another craze that Nvidia cashed in on. Regulation may crimp growth, but is unlikely to kill it. And none of Nvidia's rivals is yet offering AI products that bundle together software, chips and networking. Nvidia's chief advantage lies in its ability to package these up and create an attractive ecosystem. That sounds a lot like Microsoft and Apple. ■

Congress investigates China
"Decoding the detente" (May 20th) suggested that Congress's House Select Committee on the Chinese Communist Party needs some "serious debate" in its proceedings. But just because both Democrats and Republicans jointly condemn the Communist Party's persecution of the Uyghurs does not mean there is groupthink on the panel. Indeed, the lack of political theatre points to how Washington should work.

The select committee is finding facts and engaging experts in order to build a bipartisan consensus around tough and thoughtful statecraft. In that process there is productive debate both within and between parties. For example, I do not agree with Washington's fixation on industrial policy, in general, and bilateral trade deficits with China in particular.

The United States will outcompete China by doubling down on our strengths as a market democracy, not by aping China's five-year plans at home and mercantilism abroad. We should pursue more trade deals, with the bipartisan support for the United States-Mexico-Canada Agreement as a template to move forward. And we should invest in industry-agnostic basics: superb education, especially in mathematics, where American students have lost ground since covid; a world-leading research and development complex; and a top-tier business environment characterised by democracy, rule of law, quality infrastructure and streamlined regulation.

As we used to say in the Marines, these initiatives are simple, but not easy.

JAKE AUCHINCLOSS
Representative for the 4th congressional district in Massachusetts
Washington, DC

The WHO and covid-19
Although Dr Tedros Adhanom Ghebreyesus must avoid offending any of his member governments at the World Health Organisation, I am disappointed by how cautious he was in his reflections on the lessons from covid-19 (By Invitation, digital editions, May 15th). The disproportionate initial impact of the pandemic on the developed world was strikingly more than just the underfunding of public health. This ignores the significance of mobile populations and other factors related to the way the disease spread so quickly. I would have had more to say, too, about vaccine nationalism, the failure of the visionary COVAX initiative and the continued impasse on intellectual property rights.

Regardless of the claims to the contrary about its relevance, the fact that NGOs and the pharmaceutical industry are at such loggerheads on the issue discourages the kind of consensus building and collaboration in global health policy that is so sorely needed. And, of course, Dr Tedros also avoided criticising the way the Chinese have stonewalled vital information about covid's origins.

KATHERINE HAGEN
Former deputy director-general of the International Labour Organisation
Grasse, France

MLK's Christian faith
"The last Founding Father" (May 13th) minimised the religious beliefs of Martin Luther King, by saying that Mohandas Gandhi "was perhaps the single greatest influence" on his life and work. King would be deeply offended by this remark, not because he didn't admire Gandhi, but because the "single greatest influence" on his life and work was Jesus Christ. It seems that *The Economist* is following the

thinking of people like Steven Pinker, who, in "The Better Angels of our Nature", ignored King's faith, the only true source of his immense reservoir of vital and intellectual energy.

TOMMASO TODESCA
Los Angeles

Building homes in Britain

Bagehot's assessment of the politics of new housing in Britain was spot-on (May 13th). Public opinion is such that there is plenty of room for excuses not to build, but it is also very conditional, more "maybe" than "nimby" or "yimby". In fact, there is consensus about what to aim for. A clear majority of both Remain and Leave voters agree that "unless we build a lot more homes, we will never solve the country's housing problems".

The challenge is two-fold. The public don't like the new homes they see being built (unaffordable, often ugly and plonked somewhere). Related to this, nimbyism is not always a knee-jerk reaction but motivated by some legitimate concerns. This takes us back to the planning system and the need for political leadership. As the saying goes, you probably wouldn't start from here. But start we must.

BEN MARSHALL
Research director
Ipsos
London

A case of the BLEU's

I enjoyed your article looking beyond the hype about the effects of artificial intelligence on work ("Your new colleague", May 13th). Resistance to technological change is common, including among researchers in AI and large language models. A small example of this, which frustrates me and many of my colleagues, is that many researchers continue to use the BLEU (bilingual evaluation understudy) algorithm to assess the quality of machine translation and computer-generated texts (I have also seen *The Economist* do this).

Numerous studies have shown that there are far better ways to measure text quality. If AI researchers can't be bothered to update obsolete techniques in their own research, they shouldn't expect the rest of the world to instantly and radically change in order to use AI technology.

EHUD REITER
Professor of computing science
University of Aberdeen

As disgusting as Vegemite

I read with interest your article on how insects can better serve the food chain ("Bug-fed steak", May 20th). The idea of feeding insects wastewater from beer brewing so that they become feedstock for farm animals sounds ingenious. Vegemite is also made using the yeast by-product from brewing. Many people consider eating Vegemite about as appealing as eating insects, though our Australian friends would passionately disagree. I will do my best to keep the peace by drinking more beer.

BRIAN HADDEN
Greenwich, Connecticut

A puff of smoke

Reading about the slow legalisation of cannabis in Europe I was struck by the name of a Dutch MEP, Dorien Rookmaker ("Up in smoke", May 13th). Dutch speakers might have thought it was a joke: Rookmaker translates as smokemaker in Dutch.

ARJEN LEVISON
Haarlem, Netherlands

Letters are welcome and should be addressed to the Editor at
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The old and the zestless

SINGAPORE

Ageing economies will suffer not just fiscal problems, but also a dearth of new ideas

"ADAM IS A special child," says the voice-over, as the camera pans across abandoned classrooms and deserted maternity wards. "He's the last child born in Italy." The short film made for Plasmon, an Italian brand of baby food owned by Kraft-Heinz, a giant American firm, is set in 2050. It imagines an Italy where babies are a thing of the past. It is exaggerating for effect, of course, but not by as much as you might imagine. The number of births in Italy peaked at 1m in 1964; by 2050, the UN projects, it will have shrunk by almost two-thirds, to 346,000.

Plasmon knows what side its fortified biscuits are buttered: a shortage of babies is not good for sales of baby food. But the rapid ageing of many countries around the world will be bad not just for certain industries, or for governments whose costs rise as their revenues decline. The falling number of educated young workers entering the labour market will also reduce innovation, sapping economic growth across the board. Over time, this effect may prove the most economically damaging result of the greying of the rich world, eclipsing growing bills for pensions and health care.

Italy and Japan, in particular, are the poster pensioners for demographic decline and its economic consequences. In both countries the fertility rate (the number of children a typical woman will have over her lifetime) fell below 2.1 in the 1970s. That level is known as the replacement rate, since it keeps a population stable over time. Anything lower will eventually lead to a declining population, something both Italy and Japan have suffered for about a decade. The median Italian is now 47; the median Japanese 49. Earlier this year, Kishida Fumio, Japan's prime minister, warned that the country is "on the brink of being unable to maintain social functions" because of its baby bust.

But Italy and Japan are no longer the most extreme examples of demographic decline. In 2022 South Korea had a fertility rate of just 0.8. A rate below one means that the next generation will be less than half the size of its parents'. As recently as 2012 the UN projected that South Korea's population would shrink by only a fifth or so by the end of the century, from 52m today to 41m by 2100. More recent forecasts, however, suggest that the population will fall by more than half over the same period, to just 24m (see chart 1 on next page).

South Korea may be an exceptional case, but demographic decline is becoming commonplace. In 2010 98 countries and territories recorded fertility rates below 2.1. By 2021 the number had grown to 124, more than half of the places for which the UN collects data (see map on next page). By 2030 it expects the tally to reach 136.

Matthias Doepke, an economist who studies the financial causes and effects of changes in fertility, notes that falling birth rates are no longer limited to richer countries or to wealthier families within a given country. "There's a global convergence in women's aspirations for careers and family life," says Mr Doepke. Fertility rates for women with fewer years of formal education have fallen towards the levels of their more educated peers. In fact, women in America with exactly 16 years of schooling (mostly those with undergraduate degrees) have marginally fewer children on average than those with more schooling.

By the same token, low fertility rates have spread from rich countries such as Italy and Japan to middle-income ones such as Thailand (1.3) and Brazil (1.6). Even more notably, India's fertility rate recently fell below 2.1 and is expected to keep falling. Since it accounts for a fifth of the world's population, that will have global repercussions. The 15 biggest economies in the world, including Brazil, China, India and Mexico, all have fertility rates below 2.1.

In 2021 there were 782m people aged between 21 and 30 in countries where fertility is below the replacement rate. By 2050 this group, in effect the potential number of home-grown entrants to the workforce, is expected to have dropped by a fifth, to 619m. This fall is not some subjective and ▸▸

questionable forecast: most members of that generation have already been born, and fertility rates do not tend to change rapidly. In countries in which the fertility rate is below 1.5, which includes almost all of East Asia and much of Europe, the decline will be more extreme, with the same cohort contracting by 37%.

Instead of a population structure shaped like a pyramid, with each new generation bigger than the one that preceded it, or even a pillar, with all generations similar in size, these countries will become inverted pyramids, with older generations replaced by smaller and smaller cohorts. In parts of the world this has already happened: the number of Chinese aged between 21 and 30 has already fallen from 232m at its peak in 2012 to 181m in 2021. The decline will accelerate rapidly in the 2040s, leaving China with fewer than 100m people in the same pool in the mid-2050s. The population of Europe in the same age category will fall from around 85m to below 60m over the same period.

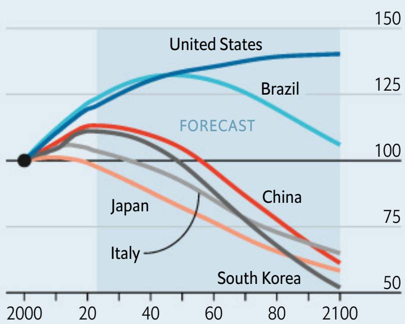
The obvious way to compensate for dwindling birth rates is immigration, which is on the rise in much of the rich world, despite the political tensions it has generated in recent years (see Finance section). But as demographic decline affects more and more countries, educated migrants will become harder to find, even as the shrinking of the native-born population accelerates in many rich countries. For China, with a population of some 1.4bn, the notion that enough immigrants could be found to reverse the effects of dwindling birth rates is fanciful. Although India's population is still growing, it will peak in the 2060s, if not sooner. Sub-Saharan Africa is the only region of the world that seems likely to be a big source of potential migrants for many years to come. But even there, birth rates are falling more quickly than past projections predicted. Although immigration will continue to temper demographic decline in many countries for decades, in the long run, it cannot fully compensate for the baby bust in big economies.

Some of the consequences of these demographic shifts are well known. An ever greyer population will mean higher spending on public pensions and health care, but there will be fewer people of working age to pay the taxes required. The rich world currently has around three people between 20 and 64 years old for every one over 65. By 2050 this ratio will shrink to less than two to one. That will necessitate later retirement ages, higher taxes or both.

The economic consequences of demographic decline are not only fiscal, however. Labour is one of the three main determinants of growth, along with capital and the efficiency with which both are used (productivity). Shrinking workforces,

Six shades of grey 1

Population estimates, January 1st 2000=100



Source: UN Population Division

other things being equal, automatically lead to lower economic growth. But demographic decline also has knock-on effects on capital and productivity that are much less well understood.

Many economists believe that a smaller working population will push down interest rates in real terms (meaning, after accounting for inflation), because there will be fewer investment opportunities and a large stock of savings accumulated by those in or near retirement. But others, such as Charles Goodhart, a former official at the Bank of England, believe the effect will be the opposite. As more people enter retirement and so stop saving but continue to consume, there will be less funding for investment, pushing real interest rates up.

Both sides agree that an ageing population will reduce both savings and investment, but disagree about which will decline more quickly. But the balance of evidence points towards lower real interest rates: many developing economies still have decades of savings accumulation ahead of them, and retirees often cling to their savings rather than running them down. Either way, demographic changes will have huge implications for markets. Broadly speaking, low real interest rates are good for those who have already accumulated assets but bad for those still trying to save, including the increasing numbers of workers approaching retirement with inadequate nest eggs.

But it is on productivity that demographic decline may have the most troubling effect. Younger people have more of what psychologists call "fluid intelligence", meaning the ability to solve new problems and engage with new ideas. Older people have more "crystallised intelligence"—a stock of knowledge about how things work built up over time. There are no precise cut-offs, but most studies suggest that fluid intelligence tends to peak in early adulthood and to begin to decline in people's 30s. Both types of intelligence are useful: companies, industries and economies need both youngsters able to respond to new challenges and seasoned veterans with a detailed understanding of their trade. But the two are not of equivalent value when it comes to innovation.

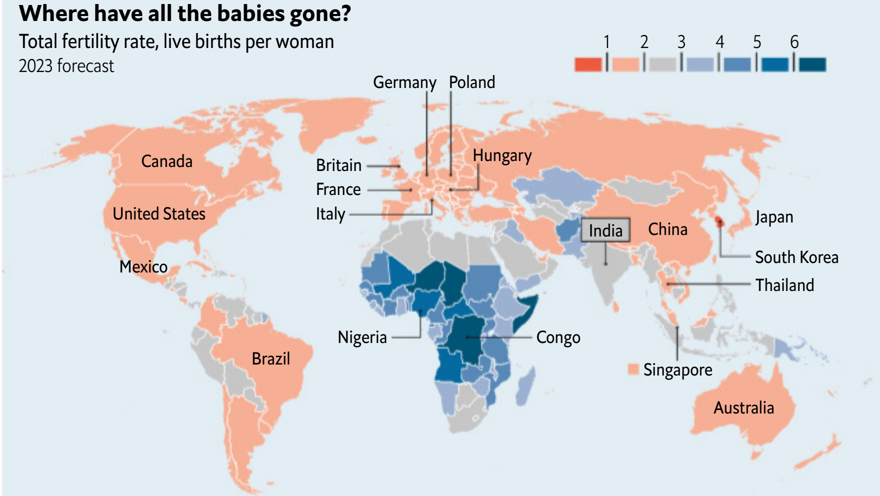
In research published in 2021, Mary Kaltenberg and Adam Jaffe, both economists, and Margie Lachman, a psychologist, used a database of 3m patents filed over more than 40 years to explore the relationship between innovation and age. Depending on the scientific discipline, the authors note that patenting rates peak in a researcher's late 30s and early 40s. The rates of patenting then decline only gradually through their 40s and 50s.

But for disruptive innovations, which fundamentally change a scientific field, the picture is very different. The researchers used a measure of disruptiveness based on the number of citations of a given invention in future patents. If a particular patent is cited by subsequent inventors, but that patent's technological predecessors are not, it is categorised as a disruptive

Where have all the babies gone?

Total fertility rate, live births per woman

2023 forecast



Source: UN Population Division

rather than an incremental innovation. For instance, the work of Kary Mullis, a Nobel-prize-winning biochemist, on polymerase chain reactions underpins much modern genetic and medical testing. After Mullis published his work, citations of prior technologies in the same field nosedived. Mr Jaffe, Ms Kaltenberg and Ms Lachman find that patents filed by the very youngest inventors are much more likely to be completely novel, discipline-changing innovations, and that as inventors age the patents they file become increasingly incremental.

This matters, because innovation raises productivity. Improvements to existing processes and the invention of entirely new ways of doing things enable more to be produced with the same amount of labour and capital. In the long term, it is only by raising productivity that standards of living can be lifted. Demographic decline will chip away at that contribution over time by reducing the number of novel ideas stemming from the fluidly intelligent minds of young workers.

Even a fractionally lower rate of productivity growth will compound over the years to make an economy significantly smaller. During the particularly rapid post-war boom in economic growth in the rich world, between 1947 and 1973, productivity growth accounted for about 60% of the rise in output per worker in America, Britain, France, Italy, Japan and West Germany. America has grown much faster than the rest of the rich world since the global financial crisis of 2007-09, thanks in large part to its bigger gains in productivity.

If the decline in fertility was confined to a few countries, or a particular region, the impact on innovation might not be so severe. Technologies invented in one country eventually spread to others. The spinning jenny and the computer chip didn't have to be reinvented in every corner of the world to improve productivity globally. But the fact that fertility is declining simultaneously in a large proportion of countries means that the consequences in terms of reduced innovation will be felt globally.

Some researchers believe such a demographically driven reduction in innovation is already under way in parts of the world. James Liang, a Chinese economist and demographer, notes that entrepreneurship is markedly lower in older countries: an increase of one standard deviation in the median age in a country, equivalent to about 3.5 years, leads to a decrease of 2.5 percentage points in the entrepreneurship rate (the proportion of adults who start their own business). That is a huge effect, considering the global entrepreneurship rate was around 6.1% in 2010.

What is more, this relationship does not seem to be simply a function of the relative lack of young people in ageing societies. Young people in such countries also seem to start businesses at lower rates than their peers in less wizened societies.

This phenomenon, according to Mr Liang, may be the cause of Japan's "entrepreneur vacuum". As recently as 2010, Japanese inventors were the biggest producers of patents in 35 global industries, according to the World Intellectual Property Organisation, a UN agency. By 2021 they were the leaders in just three. Japan has fallen behind not only China, which now occupies most of the top spots, but America too.

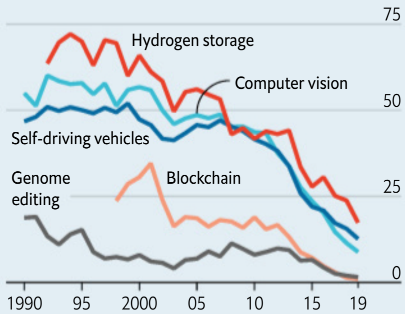
Looking only at the most novel fields, in which radical new innovations are most likely, makes the picture no better. In an analysis published by the London School of Economics' Centre for Economic Performance, Antonin Bergeaud and Cyril Verluise note that Japan's contribution to genome editing and blockchain technology has shrunk to almost nothing. Once-leading roles in hydrogen storage, self-driving vehicles and computer vision (a form of artificial intelligence that trains computers to interpret images) have been reduced to supporting roles behind America, China or both (see chart 2).

Needling nabobs of natalism

Governments are largely powerless to reverse declining birth rates. Attempts in various countries to prod women to have more children have typically yielded meagre results. Research on the expensive support provided by governments in Hungary and Poland, in the form of income-tax credits and flat payments respectively, suggests a limited effect on fertility. Singapore offers large grants to the parents of new children, which now run to S$11,000 ($8,300) for the first two children, and S$13,000 for any more, on top of tax rebates and child-care subsidies. Parents are given priority over other buyers in subsidised apartment sale schemes. But Singapore's total fertility rate is just 1.0: whatever the effect of the policies, it is nowhere near big enough to avert demographic decline.

Brain freeze 2

Japan, % of total patents filed*



*In Chinese, European, Japanese and US patent offices

Source: "The rise of China's technological power: the perspective from frontier technologies", by A. Bergeaud and C. Verluise, CEP discussion paper, 2022

Of course, birth rates are not the only, or even the main determinant of productivity. If they were, some of sub-Saharan Africa's poorest economies would be the world's most dynamic. Levels of education, the reliability of legal and financial systems and the existence of networks of innovators interacting with one another all matter. Japan is still more innovative than many rich countries with a lower average age. But demography can magnify or muffle a country's underlying potential.

That suggests ways to counteract the effects of demographic decline on innovation, by focusing on other factors that increase productivity. The most obvious is education, which allows ageing societies to make better use of the dwindling pool of young people. Especially in middle-income countries such as Brazil and China, there are millions who do not receive proper schooling, and whose contribution to the economy is therefore small. The same is true, albeit to a lesser extent, in much of the rich world. No matter how intelligent they are, uneducated workers cannot hope to come up with groundbreaking ideas in medicine or computing, say. As the potential workforce shrinks, maximising the output of everyone in it will become essential, and could help offset the effects of an ageing population for some time, at least in the realm of innovation.

Technology can also provide ways to cope with demographic change, from telemedicine to the increased use of robots in service industries. Such innovations can undoubtedly ease the difficulties presented by an ageing society, whether by directly contributing to the care of the elderly or by automating the roles of young workers. But the shrinking number of innovative young thinkers will, ironically, reduce the number of such valuable new ideas.

A shortfall in human innovation may also be less damaging if offset by new ideas conceived by artificial intelligence. There seems no doubt that machines will soon be working out how to make incremental improvements in existing processes—indeed, in some spheres, they already are. Whether machines will ever learn how to generate disruptive new ideas, however, remains a matter of debate.

Plasmon's film, about the last child in Italy, ends with a discussion of children as a symbol of hope. It directs viewers to a website that suggests policies to promote bigger families. The website, in turn, asks readers to sign a petition calling for action. Scarcely 8,000 have done so. As the number of Italians continues to shrink, and especially the number of young ones, it is not just buyers of baby food who will be in short supply. Plasmon will struggle to find creative talents to dream up clever advertising campaigns, much less devise new policies to reverse the baby bust. ■

Scotland

Up in the air

GLASGOW AND EDINBURGH

After a decade of SNP dominance, Scottish politics is suddenly in flux

SHAWLANDS, AN AREA in the southern suburbs of Glasgow, is the heartland of the modern nationalist movement. It is youthful, cheap and increasingly trendy: artisan bakeries, craft boutiques and activist bookshops have sprung up between the pawnbrokers, bookmakers and off-licences. It is a place of students and idealists, and it takes no great leap of imagination to see why this area voted so enthusiastically for Scotland's independence in the referendum in 2014.

Nor why, the following year, it elected a Scottish National Party (SNP) candidate to Westminster as part of a yellow tide that all-but wiped out the once-dominant Labour Party. Nor why Nicola Sturgeon, who represents the area in the devolved parliament and was until recently Scotland's first minister, is regarded as a hero by a coalition of progressive dreamers and those who simply want to stick it to the English.

If a referendum were held tomorrow, says Gordon McKee, the area would probably vote for independence again. (He was an activist for the union in 2014.) But as a referendum will not be held tomorrow, nor any time soon, there is a growing prospect it will elect Mr McKee as its Labour MP. For where Shawlands and the Labour Party are as one, he says, is in their appetite for ousting the Tory government in Westminster.

A change is sweeping through Scottish politics which is both unexpected and stunning. A combination of exhaustion and scandal is signalling the end of the SNP's electoral dominance and of the prospect—at least in the medium term—of the second referendum that the party craves. The toll of a decade of polarisation is becoming clearer, too.

Scotland is a small country of 5.5m people, and Ms Sturgeon bestrode it. The SNP has been in power in Holyrood continually since 2007; she served as deputy to Alex Salmond, and then as the country's first minister. The referendum of 2014 polarised the electorate into tribes of "Yes" and "No" voters. The Brexit referendum of 2016 gave Ms Sturgeon the pretext for a new rolling campaign for independence, which was bolstered by an increasingly erratic Conservative government in Westminster. Last year Ms Sturgeon announced that she had pencilled in October 19th 2023 as the date for a second referendum.

That turned out to be delusional. On February 15th Ms Sturgeon announced her resignation. She said she was tired, but her departure took on a new light when, two months later, police investigating the alleged misuse of party funds raided the home she shares with Peter Murrell, her husband and the SNP's former CEO. The police were reportedly searching for a woman's razor, jewellery and a wheelbarrow, among other things. A large motorhome was seized, and taken to a police lockup near Shawlands. A romantic movement that drew on a vaulting narrative of history suddenly looked humiliatingly small.

The SNP's polling, already sliding before Ms Sturgeon quit, has since cratered. Humza Yousaf, who was elected as her successor by SNP members on March 27th, has weak personal ratings. The SNP's landslide of 2015 may be undone: Labour would leap from one seat to 24 in Scotland if today's polling were repeated at the general election expected next year, according to a pro- ▸▸

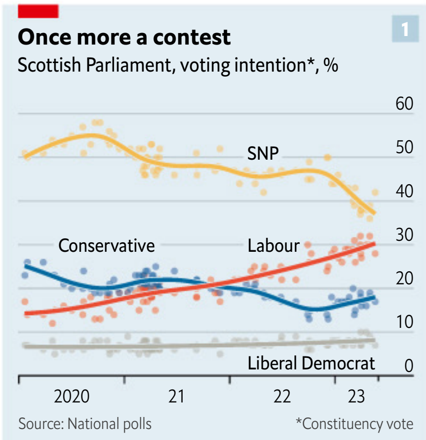
jection by YouGov on May 24th. Its gains would include Glasgow South, the constituency which contains Shawlands. That would ease Sir Keir Starmer's task of forming a majority Labour government in Westminster. It would also provide a toehold for returning to power at the next elections to Holyrood in 2026 (see chart 1).

An independence referendum is off the agenda, perhaps for the rest of the decade. It already faced two obstacles. One was constitutional: in November 2022 the British Supreme Court ruled that the Scottish Parliament could not legislate for a vote without Westminster's permission. The second was electoral: support for independence never achieved a sustained and clear majority of the sort which might have forced British prime ministers to accede to another referendum. Now a third has sprung up: the derailing of the SNP as the movement's political vehicle. The momentum stirred by Ms Sturgeon, a gifted orator, has dissipated. "The bubble has burst," says one nationalist. "Independence is inevitable," says another. "But it is not clear how we will get there."

Constitutional polarisation will endure. More than four in ten Scots still support independence, even as the SNP tumbles in the polls (see chart 2). Anas Sarwar, Scottish Labour's leader, is winning over nationalists, but he is not trying to turn them into unionists. His pitch is that a vote for Labour is now a faster "escape route" from the Conservative government and towards social change than a referendum. "We may disagree on the final destination for Scotland," he told *The Economist* in an interview. "But we can all agree we need to get rid of this rotten Tory government, so let's go on this part of the journey together." A second referendum could one day happen, says Mr Sarwar. His message resonates most with "soft" nationalists (the two in three "Yes" voters who do not rank independence in their top three priorities).

Without an obvious route to a referendum, the question for the SNP is "What next?". The party will meet for a special conference in Dundee on June 24th to settle on an answer. It is hoping for a hung parliament in the next general election, and claims it will be able to extract the constitutional right to organise another referendum in exchange for supporting a minority Labour administration. But that is a long shot. Even if the election turns out that way, the SNP's bargaining power is diminished by the fact that it cannot be seen to help the Tories stay in power. If it loses lots of seats itself, its mandate for a break-up will look weaker still.

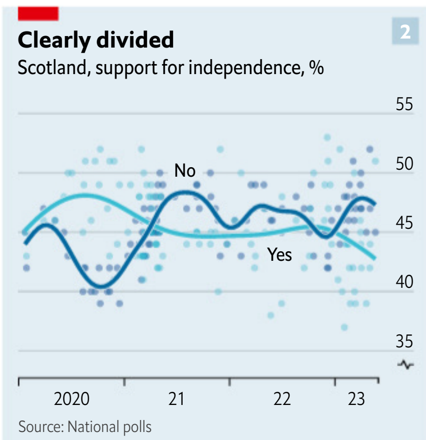
Cooler heads are preparing for a long game, in which the SNP focuses on extracting money and autonomy for Scotland from a Labour government which is keen to cement its electoral gains there. The



confrontational approach taken by the SNP in the past decade was a departure from the party's long tradition of gradualism, notes Stephen Noon, a former party strategist. Its goal now should be "more independence", not independence full stop, he argues.

The party's monopoly over nationalist voters is meanwhile weakening: since January, the proportion of "Yes" voters who say they will vote for the SNP in a Scottish Parliament election has fallen from 79% to 65%. Mr Salmond, now leading Alba, a pro-independence conservative splinter party, proposes that nationalists should run for election on a single ticket. He has an audience among the fundamentalist fringe, who will gather at Bannockburn, the site of an old victory over the English army, on the same day as the event in Dundee. The SNP will need to relax its "command and control" approach, says Gerry Hassan, a pro-independence academic.

Mr Yousaf faces a battle to hold onto his job as first minister, say some colleagues. The police investigation may become more embarrassing. A probable by-election in Rutherglen, a seat outside Glasgow, may also undermine him. Mr Yousaf has decided to launch a legal challenge against the British government over a blocked gender-recognition law, an issue which splits his colleagues. The most likely trigger for a rebellion would be heavy losses in a general election, but if the polling fails to improve then his colleagues may move against him much faster, says one senior party figure.



All the while, difficult questions about the state of the country are becoming harder to dodge. Scotland's health service is struggling to recover from the pandemic; its school performance is slipping behind England's. Growth is not good enough: the productivity gap with the rest of Britain shrank in the early years of devolution but has remained roughly constant since 2014.

It faces a tough demographic transition—Scotland's working-age population is expected to peak this year—and a looming gap between spending and receipts of 3.5% by 2027-28, notes the Institute for Fiscal Studies, a think-tank. Over the longer term the per-person funding premium for Scotland awarded under the "Barnett formula", a pan-UK regime of generous fiscal transfers, is set to shrink. All of which is stirring debate about the sustainability of Scotland's universal benefits, which nationalists regard as a vital symbol of a collectivist culture.

Mr Sarwar's answer is to position Scottish Labour as a pro-growth vehicle: "This Scottish Parliament has been for 24 years largely a social-policy parliament and not an economic-policy parliament." He is not angling for more devolved powers; the problem is the conflicted relationship between London and Edinburgh, he says. "You can have the best model of devolution in the world: if you have bad-faith actors on either side, it won't work."

Left behind

In contrast, Mr Yousaf is not ready to abandon the strategy that worked for Ms Sturgeon for so long. She took a leftward turn as she chased Labour's strongholds. She gave investors the cold shoulder, and used devolved powers to increase income taxes. Mr Yousaf hints he will raise them more. But these taxes fall on a small group of higher earners, particularly in the volatile oil and gas sector, and the extra revenue they bring in has been offset by a shrinking tax base as labour-force participation falls. During the leadership contest Kate Forbes, Mr Yousaf's principal opponent, warned that raising taxes further would risk driving activity south of the border; he dismissed her as a cheerleader for the rich.

Mr Yousaf has upheld the coalition assembled by Ms Sturgeon in 2021 with the pro-independence Scottish Green party, which decries an "obsession with growth". Such rhetoric plays well in places like Shawlands. But look at the potholed roads there, and the rubbish piled in the alleyways, and it is hard to conclude that this is a country suffering from a fixation with economic growth. Its problems stem from an obsession of a different kind. ■

Education

Decline and pall

The questions that dog boarding schools in Britain

THE MOMENT when his chemistry master pulled a pistol, declared it loaded and waved it in the air was "probably", says Justin Webb, a broadcaster, the worst point of his boarding-school career. Winston Churchill would recall the floggings, done until pupils "bled freely" and screamed loudly. In "Such, Such Were The Joys", George Orwell writes of being beaten so violently that his headmaster broke his riding crop and "reduced me to tears".

That British boarding schools are odd places is not news. For several centuries and for fat fees they provided the English upper classes with a ripping blend of architectural beauty and physical discomfort; with neoclassical corridors and cold showers; with lashings of Latin and just plain lashings. The pupils they produced were an equally idiosyncratic mix of the sophisticated and the childlike, mingling precocious brilliance with speech that never quite left the classroom. It was a heady brew and Britain was intoxicated by it: of the 57 British prime ministers, 20 went to Eton. As Boris Johnson, one of their number, might say: "Crikey!"

Boarding schools are not yet in trouble. Their pupil numbers are relatively constant—around 70,000, owing partly to masses of boarders from abroad. But their charms may be becoming easier to resist. Elite private schools are a less secure route into the top universities than they were. In 2014, 99 pupils from Eton were accepted into Oxbridge; in the 2021-22 school year, it managed 47. (Brampton Manor Academy, a state school in London, had 54.)

That raises hard questions about value for money. Annual fees for Eton were a mere £861 (around £10,000 today) a year in Mr Johnson's era. Today, its fees are £15,432 "each half" (which, as Eton's website explains, means thrice yearly; £46,296 a year apparently does not stretch to an understanding of fractions). For this, Etonians enjoy one pool; two chapels; three "theatre spaces"; a composer-in-residence; a filmmaker-in-residence; a pet pianist; and a director of "inclusive education", who notes that to promote diversity at Eton it is important "to enable people to talk about uncomfortable things". Like, say, those fees.

Perhaps the most profound threat to boarding schools is more fundamental. And that is the idea that to send a child as young as seven or eight away from home is not privilege but brutality; that even if this education goes well—no abuse; First XI cricket; scones for tea; huzzahs all round—it will still have been very wrong. Older adolescents might well find the experience less cruel, perhaps even a relief. But as John Bowlby, a psychologist who was the father of attachment theory, put it: "I wouldn't send a dog away to boarding school at age seven." Richard Beard, a writer who lacerates private schools in his book, "Sad Little Men", echoes the theme. The architectural beauty and bells and whistles of boarding schools, he says, are like the label on a dog-food tin which "isn't for the dog; it's for the person buying it".

Send your offspring to boarding school, agrees Alex Renton, an author and campaigner who was abused at his prep school, and "you're putting your child into care. You're just paying for it." Psychologists increasingly argue that posh care leads to bad outcomes. In 2011 the term "boarding-school syndrome" was coined by Joy Schaverien, a psychotherapist, to cover a series of symptoms such as depression and emotional repression. A group called "Boarding School Survivors" provides therapeutic help to former boarders. Since its foundation in 1990 it has treated hundreds.

Their defenders argue that boarding schools have changed. To extrapolate from the experiences of children 40 years ago is "obtuse", says Gavin Horgan, headmaster of Millfield School and chair of the Boarding School Association. "It's a completely different environment." Whereas once pupils were sent away for months, many young boarders are now weekly; they can video-call home each day. Attitudes are different, too: today boarding-school teachers talk not about stiff upper lips but safeguarding and mental-health first-aiders. Moreover, boarding-school syndrome is posited rather than proved by hard data.

But critics say that this is partly because no one has bothered to gather the information. Snobbery and a national obsession with old stone mean that it is still a struggle to see people in Palladian mansions as deprived. Mr Webb thinks he and his fellow-boarders were not privileged. "If anything, the opposite...they should've been at home, having tea with mum and dad." To send him away was, he says, "a crime".

The cruelty of this system was deliberate, not accidental. Victorian Britons, believing that the battle of Waterloo had been won on the playing-fields of Eton, set about creating new fields and new Etons in order to mass-produce the upper-middle classes. Children, removed from the "softening" influence of mothers, were put in uniform clothes, in uniform beds, in uniform dorms, where they spoke uniform vocabulary ("Topping! Pax! Sneak!") with an increasingly uniform accent: the clipped tones of Received Pronunciation (RP) are thought to have emerged as part of this school-led standardisation.

The empire might have been happy with the results, its children less so. Churchill wrote of a "life of anxiety" at his prep school; C.S. Lewis called his first school "Belsen". One of the best arguments in favour of boarding schools is the quality of the prose attacking them; one of the best arguments against is its content. After that beating, Orwell felt that "life was more terrible, and I was more wicked, than I had imagined." Such, such were the joys. ■

Unjolly japes

Clinical trials

Old standard

The lead in testing established during the pandemic has been lost

BRITAIN DID a lot of things badly during the covid-19 pandemic. But on clinical trials, which test the safety and efficacy of medicines, it did a lot of things remarkably well. It was the first country in the world to approve a covid vaccine, on the back of speedy yet rigorous testing. And at the beginning of the pandemic British scientists set up RECOVERY, the first randomised trial for covid treatments. The discovery that dexamethasone, a cheap steroid, reduced covid deaths by a third is alone estimated to have saved more than 1m lives.

Such feats are hard to reconcile with an independent, government-commissioned review by Lord O'Shaughnessy, a former junior health minister, published on May 25th. He finds that in commercial clinical trials Britain has been falling behind its peers (see chart). Between 2017-18 and 2021-22 it slipped from fourth to tenth in the world rankings for phase-3 trials—those closest to roll-out, when drugs are most extensively tested. For phases 2 and 3, Poland manages to recruit almost three times as many participants as Britain (an average of 61 compared with 21). "We are a long way behind the game at the moment," says Dame Kate Bingham, who headed the covid-vaccine task force.

Some failings may be linked to success in the pandemic. "We focused all our activities on delivering new vaccines for covid," says Matthew Hallsworth of the National Institute for Health and Care Research, a government agency that funds such studies. That was at the expense of other things.

Yet in other ways covid was not a distraction, but a brief interlude from inertia. In 2019 Britain took the longest of ten comparable countries to set up and approve clinical trials. When people were dying of a mysterious virus, investigation was urgent; such momentum has not been sustained. A reluctance to share data sets within the National Health Service (NHS), in order to recruit and monitor trial participants, was only briefly overridden. Researchers "do not feel that research is a priority for either the NHS or the wider UK economy," writes Lord O'Shaughnessy in his at-times scathing report.

Missing out on research means patients missing out on innovative therapies for serious diseases. Even in unsuccessful trials, patients often benefit from a "research effect" that improves their care. In 2020 the NHS rolled out a large-scale trial of inclisiran, a cholesterol-lowering medication. Academics reckoned it might be the equivalent of a vaccine for heart disease and that the trial might save up to 30,000 lives. But overworked, risk-averse general practitioners were slow to offer it to patients. The trial of a drug many called "ground-breaking" was grounded.

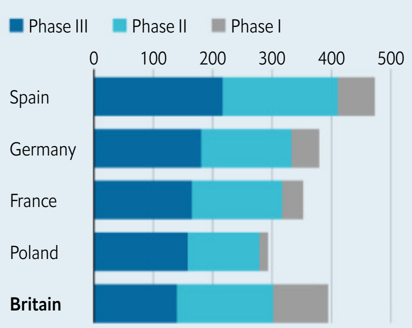
The breakneck pace set during the pandemic could not have been sustained. But some practices should have been. Britain's drugs regulator, the Medicines and Healthcare-products Regulatory Agency (MHRA), was, in the words of its boss, already trying to move from being a "policeman" to an "air-traffic controller". A streamlined approvals process helped it move faster during covid. Since then, an exodus of staff and a reversion to duplicative bureaucratic checks have contributed to myriad delays.

Lord O'Shaughnessy makes some sensible suggestions. To get back on its feet the MHRA needs more money (beyond that promised in the chancellor's spring budget) and a refreshing of the principles which made it an object of admiration during the pandemic. Contracts with drugs firms, now often negotiated on a case-by-case basis by NHS organisations, should be standardised. Clinicians should be given incentives to take part in trials, and more should be done to involve the public. A successor to the covid-vaccine registry, through which citizens could volunteer for research, has already attracted more than 150,000 people. A full launch on the NHS app is planned later this year.

The government's response to the report, released on the same day as a string of policies to boost the life-sciences industry, was positive. It tentatively accepted Lord O'Shaughnessy's suggestion to create networks of private- and public-sector organisations to accelerate selected trials, much as the covid-vaccine task force did. Amid intense global competition for investment in pharma, innovation is required. Clinical trials are slow and cumbersome everywhere. Just as it did during covid, necessity may help give Britain an edge. ■

Set phases to stunned

Clinical trials by phase, 2021



Source: Association of the British Pharmaceutical Industry

Sexual crimes

A terrible trial

Myths about rape pollute the justice system, says the Law Commission

RAPE HAS long had the lowest charging rate of all crimes. To a degree this is inevitable. The crime is defined by the absence of consent, which can be tricky to establish. The accused and complainant tend to be the only witnesses. Reporting sexual crimes is often delayed, meaning no physical evidence. And in most cases the victim knows their attacker, making investigations exceptionally intrusive and upsetting—which is why more than half of those whose rapes have been recorded by the police withdraw from an investigation.

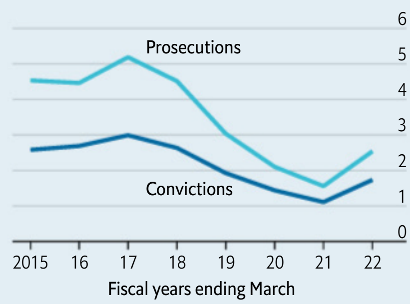
In recent years, however, a precipitous drop in the number of cases making it to court has suggested fresh failures in the criminal-justice system (see chart). In the year to March 2016 there were 3,910 charges for rape; in the year to March 2022 there were 2,223. The number of rape convictions dropped from 2,689 to 1,733.

It is not clear why charges have fallen so far. Some reckon that changes to the way the Crown Prosecution Service (CPS) decides whether or not to bring a case to court have played a part. Prosecutors have also become increasingly likely to ask to see everything on a complainant's phone, "making an already distressing process feel even more intrusive", according to one government report.

Reports of rape have increased exponentially, perhaps because the #MeToo movement has changed people's understanding of it: police recorded 69,905 cases of rape in the year to March 2022 compared with 36,334 six years earlier. Overstretched officers seem less likely to conduct thorough investigations. A big backlog of cases has meanwhile led to long waits for a court ▸▸

Investigation needed

England and Wales, outcomes of rapes referred to the Crown Prosecution Service, '000



Source: Crown Prosecution Service

date. Knowing the ordeal is likely to drag on prompts some victims to give up before their attacker is charged.

Going to trial can be the worst—and most off-putting—part of the criminal-justice process. That insight lies behind a new consultation paper on sexual-offence trials published on May 23rd by the Law Commission, an independent body that reviews laws in England and Wales.

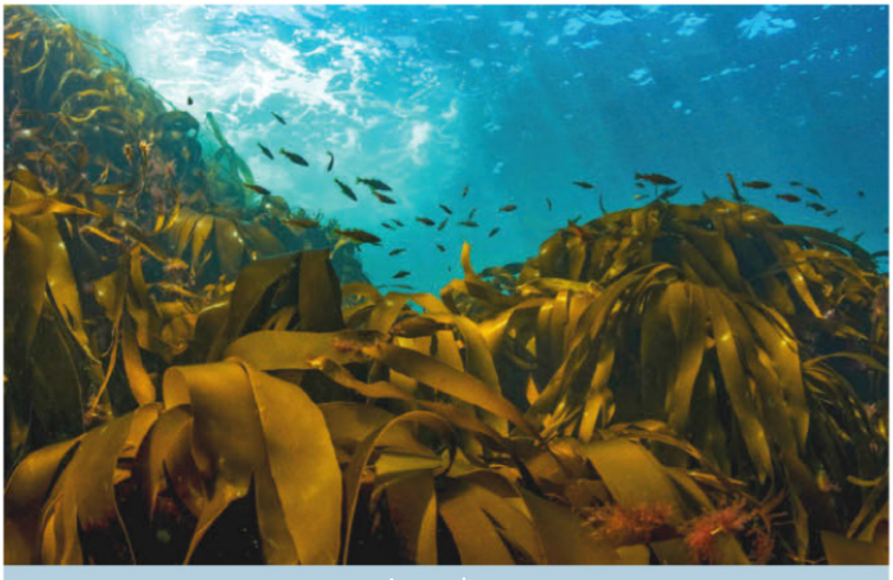
The paper suggests some changes in the law to tackle "myths" about rape that "filter through the breadth and depth of the criminal-justice system". They include the notion that rape always involves physical force; that victims will appear emotional when they testify; and that if a woman (not a man) has consented to sex before, she is likely to have done so "this time too". Police who subscribe to such views may be less likely to encourage a victim to pursue things; a juror who holds them would seem less likely to find a rapist guilty.

Harriet Bland, a lawyer at the Centre for Women's Justice, says such notions have long influenced the way the criminal-justice system treats rape. The use of personal documents, including therapy notes, in investigations and trials is a particularly egregious example. "Rape is the only crime for which the victim's credibility immediately comes into question," she says.

The Law Commission's recommendations include placing greater restrictions on the use of complainants' personal records relating to their sexual behaviour. It suggests using experts to explain to juries how victims respond to sexual violence in ways that may seem counterintuitive. It also recommends that victims of rape should receive independent legal advice to help them make informed decisions about how their evidence is used.

In Scotland political pressure to increase prosecutions has led to some controversial ideas. A new bill would allow the piloting of juryless trials for rape. Some victim-support groups have welcomed the idea; some lawyers say it threatens a defendant's right to a fair trial. The idea has also been floated by the Law Commission. It has not yet recommended juryless trials for rape cases, but invites views on the idea. (The results of its consultation are expected next year.)

Some believe a focus on trials and juries misses the point. Though prosecutions have fallen, conviction rates for rape have increased, from below 60% in 2016 to around 70% today. That is higher than the rate for some other serious crimes. Recent research, meanwhile, suggests that the idea that juries are infected by "rape myths" may itself be erroneous. Establishing the degree to which prejudice affects any system is difficult. But efforts to protect rape victims from bias are worth making throughout the judicial process. ■



Aquaculture

With a little kelp from my friends

BIDEFORD BAY

Can British seaweed farms bloom?

SETTING UP A seaweed farm isn't easy. Four miles off the north Devon coast in Bideford Bay, Algapelago, one of a spate of British seaweed startups, has just lost a sensor to the ocean. "Well, that's quite irritating," says Olly Hicks wryly. "That was our first month of data." Mr Hicks, a co-founder of Algapelago, is captaining a small crew of research scientists and aquafarmers to a pilot site which could become Britain's largest. The square-kilometre site may one day yield as much as 2,000 tonnes of seaweed per year. Right now, it's much less.

Seaweed, the umbrella term for thousands of species of marine algae, is seen by some as a magic ingredient in the fight against climate change. Researchers are studying its potential to sequester carbon. From food products to cosmetics to plastic alternatives, it has a range of possible industrial applications. Algapelago's target market is agriculture; one recent study found that feeding cows seaweed reduced their methane emissions by over 80%. It is easy to grow: long pieces of rope are implanted with seaweed spores, incubated onshore and then taken out to sea.

Britain has a long way to go to get a foothold in a global seaweed industry worth $13.3bn. Worldwide algae production reached 36m tonnes in 2019, according to the Food and Agriculture Organisation, a UN body. Over 97% of that production happens in Asia, and nearly all of that is grown at scale. The British contribution, in contrast, comprises small-scale wild harvesting and is barely a rounding error.

With easy access to the nutrient-rich waters of the North Atlantic and the North Sea, Britain should have a natural advantage. More is steadily being done to make the most of it. In 2022 the Scottish Association for Marine Science set up the Seaweed Academy in Oban, offering training and education for would-be aquaculturists. "We were getting calls all the time from people saying 'Can we start a seaweed farm? Can we just buy some seeds from you?'," says Rhianna Rees, the academy's co-ordinator.

But learning how to grow a crop is only one part of the equation. Making money out of seaweed is a very different proposition. "I break absolutely everything down," stresses Ms Rees. "I want people to know...that it is a challenge." Cultivated seaweed is relatively expensive and finding customers for it can be tricky; Britain falls far short of producing the volumes big industrial players need. Without clear routes to market, investment, leases and licences are hard to get.

Still, an ecosystem of research institutions and a sea of minds focused on the climate emergency offer some hope for the industry. Off the coast of Devon, samples of Algapelago's first batch of seaweed look promising. Several metres underwater two ropes, each 200 metres long and laced with kelp spores, are coming into season. "In a perfect world you'd have even crop all the way along that line", says Mr Hicks, drawing an imaginary path across the water. "We could have 250 lines on this patch."

Bagehot | Beware the Reform Fairy

Forget the Magic Money Tree. Another mythical being rules British politics

THERESA MAY, a former prime minister, was an underappreciated wordsmith. "Brexit means Brexit" was magisterial in its circularity. "No deal is better than a bad deal" stuck around long after she no longer agreed with it. Of all the phrases she popularised, the most potent was: "There isn't a Magic Money Tree."

Mrs May's Magic Money Tree explains why no politician can pledge to spend money without saying exactly where the cash would come from. Rishi Sunak, the Conservative prime minister, has long denied the tree's existence. When Rachel Reeves became Labour's shadow chancellor in 2021, she swung an axe at it, too. "I don't believe there is a Magic Money Tree," she said in one of her first big interviews after taking the job.

No such rules apply when it comes to reform rather than spending. Both main parties agree that although the British state requires a total overhaul, it does not need much more cash. In its bid to move away from the Magic Money Tree, British politics has fallen under the spell of another mythical being: the Reform Fairy. The Magic Money Tree could generate cash at will; the Reform Fairy can apparently improve public services without spending political or financial capital.

The Reform Fairy flutters over the National Health Service (NHS). Both parties think that the NHS, the biggest chunk of state spending, is glaringly inefficient and that pumping cash into long-term health rather than emergency care would be a fine thing. There is a problem, however. Making fat people thin will help in the long term but it will not reduce A&E demand next year. Plugging the £10bn ($12.4bn) backlog of capital investment has to come from elsewhere in the health budget without extra funding. Training more doctors will cut the expense of using agency workers to fill gaps in hospital rotas, but new medics will not arrive fast. All require money, unless the Reform Fairy flaps its wings.

People believe funny things when they are desperate. Whoever wins the next election will govern against a miserable economic backdrop. The last time Labour entered office from opposition, the economy was flying. Average growth was about 3%. National debt was 37% of GDP. It was in this context that Sir Tony Blair and Gordon Brown tried, with mixed success, to overhaul Britain's public services. This time the Conservatives are passing on a rotten inheritance. The economy is expected to be crawling along at 1.8%; debt is already at 99% of GDP. In such circumstances, faith in the supernatural becomes almost rational.

"Every time a child says, 'I don't believe in fairies,' there is a fairy somewhere that falls down dead," wrote J.M. Barrie in "Peter Pan". Likewise, for some Labour MPs, reform is simply a matter of belief. In general Labour hopes good intentions will be enough, whether it be reforming Whitehall or improving the country's deal with the EU. But each government enters office promising to overhaul the civil service—and each leaves it grumbling that "Yes, Minister", a 1980s TV comedy about conniving bureaucrats, is still a documentary. When it comes to the EU the Labour Party assumes that not being the Conservatives will be enough to win favours from Brussels. The Reform Fairy speaks fluent French.

One area of reform where at least Labour has been fiscally realistic is on the green transition. Labour has pledged to spend £28bn a year (about 1% of GDP) on capital investment to fund everything from home insulation to tree-planting. Making the national grid carbon-free by 2030 will not come cheap. The £28bn is, however, an area where discipline in the party breaks down. For some it is an untouchable pledge; for others, it is to be cast aside if things look a bit tight. If a Labour-controlled Treasury will not cough up, the Reform Fairy will have to do its thing for the climate.

Not believing in the fairy is, apparently, deadly. "If the NHS doesn't reform, it will die," says Wes Streeting, the shadow health secretary. It is as easy to say as it is absurd. In public policy, things do not die—they simply become worse. Not changing things is always an option. Pressure rarely leads to good policy in any case. In 2010 the Tories did have a radical reform agenda but it was just as reliant on magical thinking. At the heart of austerity was the idea that cutting government departments by up to 40% would leave them more efficient, since they would cut waste. It did not work.

Today, although practically every Conservative MP agrees the state needs reform, the government shows little willingness to do much about it. Backbench Tory MPs dream of sweeping, painless post-Brexit reforms that would overhaul everything from procurement to financial regulation. Mr Sunak once believed in the Reform Fairy. During his leadership pitch last year, he promised to shred EU legislation (with reams of paperwork put through a shredder for good measure in one campaign video). Reality intervened. Now the Houses of Parliament are filled with thumb-twiddling MPs, waiting for a legislative agenda that will never arrive.

Clap your hands if you believe in structural reforms

If Labour is to have more success, it must learn from a Conservative government that did manage to overhaul Britain. Margaret Thatcher is associated with a supply-side revolution that shook the state and broke Britain's unions. But it took both strategy and spending. Before Thatcher smashed the miners, she had to pay the police. As one of her first acts in office she handed the police a pay rise of 45%, on the ground that broke cops would not break strikes. While in opposition, Thatcher planned: she picked allies, identified enemies and worked out where the cash would come from.

Believing in the Reform Fairy has served Labour well so far. A cautious approach on fiscal matters means that Labour is now more trusted on the economy than the Conservatives. Promising reform, rather than spending, is a way of appearing sensible. Yet promising reform without admitting that it will cost money and cause political pain is fundamentally unserious. The Magic Money Tree may not exist. Nor does the Reform Fairy. ■

Turkey

Five more years

SEKEROBA AND ISTANBUL

Recep Tayyip Erdogan is re-elected as Turkey's president

IN SEKEROBA, A village on the outskirts of the Nur Mountains in southern Turkey, a woman stood outside the rubble of her former house and waved a Turkish flag mounted on a long metal bar. "We love him," she said, referring to Recep Tayyip Erdogan, the country's longtime leader. "For the call to prayer, for our homes, and for our headscarves." Cars screamed past, honking approvingly. A group of men fired shotgun rounds in the air.

Scenes like this played out across Turkey on the evening of May 28th after Mr Erdogan scored a convincing victory in the second round of the country's presidential elections. But the backdrop to the celebrations in Sekeroba was different from most. Less than four months ago, powerful earthquakes ripped through the village. Almost 180 people died. Rescue teams never showed up, though food and supplies began arriving within days. People tried to pry the wounded from the rubble with their bare hands. As in many places across the south, where the quakes claimed more than 50,000 lives, the botched response to them made no dent in support for Mr Erdogan. Turkey's leader took 82% of the vote in Turkoglu, the district to which Sekeroba belongs, four percentage points better than five years ago.

Nationwide, his performance was not as impressive, but it was enough to earn him a third term as president. Turkey's leader got 52.2% of the vote, compared with 47.8% for his challenger, Kemal Kilicdaroglu. Having governed the country for 20 years, as prime minister and then as president, Mr Erdogan will now be able to do so for another five, perhaps more.

Turkey's opposition had the best shot in a generation of unseating Mr Erdogan. Six opposition parties had settled on a comprehensive reform programme and on a joint presidential candidate. The economy had been ravaged by inflation that exceeded 86% last year, largely the result of a disastrous monetary policy that set low interest rates in the bizarre belief that this would bring prices down. The February earthquakes exposed shoddy building methods and a lack of preparedness.

A moment missed

But the opposition came up short, both in elections to parliament on May 14th, where Mr Erdogan's coalition retained its majority in the assembly, and in the presidential runoff. Turkey's strongman won by depicting the opposition as a threat to Turkish culture and national security. He used the backing Mr Kilicdaroglu received from the country's main Kurdish party to accuse his opponent of teaming up with the Kurdistan Workers' Party (PKK), an armed separatist group.

Many analysts had expected the economy to be Mr Erdogan's undoing. But in places like Sekeroba people compare their economic situation today with that of two decades ago, not that of two years ago. "Before 2002, we didn't have a single cobblestone street here," says the village headman, Seyfettin Bolat. "There's inflation, ▸▸

→ Also in this section

but at least we're not hungry like we were then." The streets are paved. Those torn apart by the earthquake have been repaired. Sekeroba boasts its own sports complex. Those displaced by the quake, now living in containers or tents, are expecting to move into one of the nearly 700 homes the government is building nearby. Most people say they trust only one man, Mr Erdogan, with their votes, and with the earthquake recovery effort.

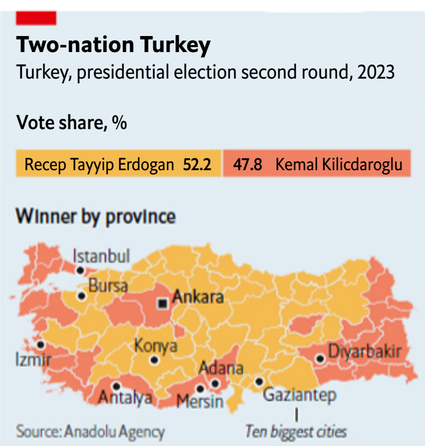
Party allegiances die hard in Turkey, and identity politics trumps inflation. Mr Erdogan's performance in the second round was a mere 0.4% worse than his performance in 2018, and a 0.4% improvement on 2014. Divisions are increasingly entrenched: between bigger cities, where support for Mr Kilicdaroglu is higher, and the countryside, which votes mostly for Mr Erdogan; between secular and religious; and between the country's western coast and the Anatolian interior (see map).

A chance to repair Turkey's democracy and its economy has been lost. The opposition promised to dismantle Mr Erdogan's executive presidency, a blueprint for one-man rule; to release at least some of Turkey's political prisoners; and to hand back power to nominally independent state institutions, and to parliament. Mr Erdogan has no such plans. He has already ruled out releasing Selahattin Demirtas, the former leader of the pro-Kurdish HDP party, who has languished in prison since 2016 on trumped-up terror charges. "Such a thing is not possible under our government," he told supporters during a victory speech on May 28th. Part of the crowd responded by calling for Mr Demirtas's execution.

Of the powers Turkey's president retains, none has been more advantageous to his own political interests and more harmful to the health of his country's economy than his control over the central bank. By bringing interest rates down way below the rate of inflation, Mr Erdogan has offered borrowers free money and continued to prop up growth, which reached 4% year-on-year in the three months to March. By burning through billions of dollars each week to defend the exchange rate, the bank helped Mr Erdogan avert a currency crisis ahead of elections.

The bill for such policies is starting to come due. The bank's net foreign reserves are now negative for the first time since 2002. Including swaps with local lenders and foreign countries, they are estimated to be over $70bn in the red. With elections out of the way and its coffers depleted, the bank's defence of the lira appears to have slowed. In the three days since Mr Erdogan's victory, the currency has lost nearly 4% of its dollar value. Unless Turkey's leader reverses course, the currency will continue to plunge.

Mr Erdogan may have realised that his policies cannot be sustained. As *The Economist* went to press, rumours swirled that he would appoint Mehmet Simsek, a voice of economic orthodoxy and one of the architects of Turkey's boom in the 2000s, to a senior post in his new cabinet. Foreign investors have seen this movie many times. Mr Erdogan has appointed market-friendly names to top jobs before, only to defenestrate them as soon as economic reforms get in the way of political interests. Local elections are scheduled for next March. Even if he is appointed to a top job, Mr Simsek may not last very long. ■



Spain

Going for broke

MADRID

Spain's prime minister gambles on a snap general election

PEDRO SÁNCHEZ is no stranger to comebacks. Ejected as leader of his Socialist party in 2016, he toured the country to build support and regained control the next year. And he is no rookie gambler; a motion of no confidence he called as leader of the opposition, in 2018, installed him as a surprise prime minister. Nor is he a bad political horse-wrangler. After elections in 2019, he assembled an awkward minority government with the radical-left Podemos party that has held together since then.

All these qualities are now on display as Mr Sánchez makes another gamble. On May 29th he announced snap elections for July 23rd, after his party had suffered heavy reverses in regional and municipal elections a day earlier. The conservative opposition People's Party (PP) not only won the regions of Valencia (a former bastion it had lost) and Aragón (an even harder target). It even won in the south-western region of Extremadura, held by the Socialists almost continuously since democracy was restored in Spain in 1978 after the death of Francisco Franco. Other regions and symbolic cities also swung from left to right.

Alberto Núñez Feijóo, the PP's leader, has pursued a course of moderation in tone and in policy. He has profited from the final demise of Ciudadanos, a liberal centre-right party which went into a death spiral after its decision, in 2019, not to go into government with Mr Sánchez. The PP seems to have scooped up all its voters, explaining its big gains. But it would still need the support of the hard-right Vox party, which emerged in the last electoral cycle, to govern in most of the regions where it has overtaken the Socialists. To avoid that, Mr Feijóo has offered Mr Sánchez a deal under which whatever party has come top in each region should be allowed to govern, even if it lacks a majority, in order to shut out the extremist parties from a share in power. But it seems Mr Sánchez would rather force the PP to govern with Vox, and so paint July's elections as a referendum on the rise of the hard right.

Mr Sánchez has his own problem. His coalition partner, Podemos, was pummelled and now needs to team up with Sumar, a new leftist group, or risk more of the same. After the weekend's elections, the momentum is solidly with the right. Mr Sánchez has little time to discover another talent: that of a general rewriting his strategy while already fighting. He has given himself only eight weeks to do it.


The pain in Spain

F-16s for Ukraine

Better late than never

The political backing may matter even more than the elderly fighters

THE FIRST batch of the F-16 fighter jets that Ukraine is preparing to receive is expected to arrive in late September—too late to play a role in the counter-offensive that could begin at any moment. However, the decision, made by Joe Biden just before the G7 meeting in Hiroshima in May, still has immediate significance.

The Ukrainians have been asking for Western fighter jets almost from the day of Russia's invasion. But the answer from the Pentagon, which can block other F-16 user countries from supplying the American-made aircraft, was always negative. The reasons given were of two sorts. The first set were supposedly practical. It would take 18 months to train Ukrainian pilots and ground crew to fly and maintain aircraft as sophisticated and unfamiliar as the F-16. Ukrainian runways were not of a high enough standard. The cost would be prohibitive. Ukraine, so the chairman of America's Joint Chiefs of Staff, General Mark Milley, patronisingly averred, should focus on other priorities.

The second set of reasons involved worries that Russia would regard such a move as an escalation, an excuse that had also been used to delay providing Ukraine with long-range weapons (such as HIMARS missiles) and with tanks. The fear of escalation was always the main consideration, but it was both contradictory to the first, and specious. If the F-16s would not do much to enhance Ukraine's capabilities, why would they concern the Russians? And anyway, what was the Russian response likely to be? Giving the Ukrainians an aircraft that first entered service nearly 50 years ago was hardly likely to push Vladimir Putin into taking the catastrophic step of using nuclear weapons.

Two things changed the American position. The first was growing pressure from allies. The British were particularly hawkish and the Dutch announced they were forming a coalition to get the F-16s to Ukraine and would start training its pilots. The second was a shift in war aims within the administration, moving from ensuring that Russia could not defeat Ukraine to backing a Ukrainian victory. It is this that should worry the Kremlin even more than the arrival of the F-16s themselves.

Whether the jets really are the game-changer that the Ukrainians appear to believe is questionable. There is no doubt that if Ukraine gets 40 to 60 F-16s they will provide real capability benefits. The version of the F-16 it will receive is known as the Mid-Life Update (MLU), which has been operated by several European air forces for the past 25 years. Among the MLU upgrades are a data link that will enable Ukraine's aircraft to combine with NATO's ground-based air-defence radars, such as the Patriot. This will improve effectiveness against Russian cruise missiles, and generally help defend Ukraine's airspace better than its diminishing fleet of Soviet-era MiG-29s, Su-27s and Su-24s. Unlike those planes, the F-16 can carry the full suite of air-to-air and air-to-ground missiles used by America and its allies.

But those expecting the F-16s to provide a quick ticket to air superiority may be disappointed. In the first place, any fourth-generation fighter that lacks stealth characteristics will be highly vulnerable to Russia's fearsome S-400 surface-to-air missiles, one reason why within NATO all such aircraft are being phased out in favour of fifth-generation F-35s. Another is the obsolescent AN/AG66 pulse-Doppler radar of the F-16 MLU, which cannot match either the range or target acquisition of the radars carried by later versions of Russian Su-35s and MiG-31s.

At least one problem previously cited as a reason for holding back the F-16s has not gone away. Ukrainian pilots, we now know, can be trained in four months, while contract ground crews can keep the planes flying. But with gaping air intakes that suck up debris, the F-16s will struggle to take off from rough or damaged runways.

It is what the F-16s represent in terms of Western commitment, as much as what they can contribute to the war effort, that matters. They will help Ukraine win, but they are not the *Wunderwaffe* that many are fervently hoping for. ■

Coming to get you

Poland

Lex Tusk

WARSAW

A new panel supposed to hunt Russian agents could be misused

JAROSLAW KACZYNSKI, the chairman of Poland's ruling Law and Justice party (PiS), is not a fun-loving type. Otherwise the curmudgeonly godfather of Polish politics might enjoy the irony of passing a law supposedly intended to purge the country of Russian influence, but which has distinctly Stalinist overtones. The law, which hands PiS a cudgel it could easily misuse to bash or ban its opponents, comes into force just months before an election in which Polish voters will pronounce judgment on his party's eight years in office.

Approved on May 29th by Andrzej Duda, Poland's president, the law creates a nine-person state commission to investigate suspected Russian influence operations between 2007 and 2022. PiS spokesmen say the new panel is needed to foster transparency and strengthen the country at a time of heightened threat. "Honest people who acted in the interest of Poland have nothing to hide and nothing to be afraid of," said Mr Duda.

Yet the commission will not in any way be independent. Its members will be selected by parliament, dominated by PiS, and its chair will be appointed by Mateusz Morawiecki, the prime minister and the party's vice-president. The panel will have access to Poland's most secret records. Its deliberations can be held behind closed doors, and its members will be immune from prosecution. The law's definition of "Russian interference" is vague. Yet the commission has the power to overturn any administrative decision that it finds was made under such influence, as well as to bar from public office any person it says helped Russia, for up to ten years.

To many Poles it is clear how such powers might be wielded. A poll released on May 29th found 61% of respondents agreeing the new law was "a pre-election ploy to discredit political opponents". Poles are not the only ones worried. Within hours of the law's passage America's State Department issued a statement fretting that the commission "could be used to block the candidacy of opposition politicians without due process". The European Commission expressed similar concerns and threatened to take "immediate action". It has already imposed huge fines on Poland over other violations of the rule of law.

The upcoming national election, to be held between mid-October and mid-November, is viewed by many as the most ▸▸

consequential political test Poland has faced since the end of communism in 1990. Most observers expect it to be close. Since coming to power in 2015 PiS has turned the state broadcaster into a propaganda outlet, packed the country's top courts and tried to take over the entire judicial system. But it has also overseen one of Europe's strongest economic-growth stories, and national pride has surged as Poles have united behind neighbouring Ukraine. And the opposition is badly fragmented.

In the past Mr Kaczynski, who shuns executive office but pulls the government's strings from behind the scenes, has called prominent opposition politicians traitors and stooges. He appears to bear a particular grudge against Donald Tusk, who leads the country's biggest opposition party, Civic Platform, and served as prime minister in 2007-14. During this term Mr Kaczynski's brother, who was then Poland's president, died in a plane crash near the Russian city of Smolensk along with 95 others. For over a decade Mr Kaczynski and many of his fellow PiS politicians have propounded a discredited conspiracy theory that Russia was behind the crash. Worse, they accuse Mr Tusk of complicity in a cover-up. Perhaps seeing his opponent disqualified would bring a rare smile to Mr Kaczynski's face. But the crippling of Polish democracy is no laughing matter. ■

Ukraine

Grain water

IZMAIL

How Ukraine's Danube ports have become a lifeline

On the night of July 30th, 2022 Oleksiy Vadatursky went to bed a happy man. The founder of Nibulon, a grain company, had just arrived at his home in Mykolaiv after inspecting work on a new export terminal at Izmail, 360km away on the Danube. He had acquired a "pair of wings", his driver later quipped, lifted by his company's quick progress in turning an undeveloped plot into a much-needed wartime escape route for exports.

But a few hours later the 74-year-old tycoon was dead, killed along with his wife in a Russian missile attack. One missile landed a few metres away from their basement shelter with a blast so strong it left the couple's silhouettes on the walls. "The Russians were destroying infrastructure and military facilities," recalled Andriy, Mr Vadatursky's son. "They destroyed whatever they thought they needed to... and that, apparently, included my father."

The younger Mr Vadatursky took the company over, committing himself to bringing his father's vision to fruition. On September 14th Nibulon's road-and-rail export terminal became fully operational; since then it has shipped 900,000 tonnes of corn and wheat. The facility forms part of a hurried redevelopment of previously neglected Danube river ports—driven by Russia's blockade of Ukraine's Black Sea trade. The Danube ports may be remote, largely underdeveloped and relatively expensive to get to, but they offer the crucial advantage of safety: their close proximity to Romania, a member of NATO, offers protection from Russian bombardment. Before the war, Danube ports were responsible for 1.5% of Ukraine's trade, by volume. Now they are on course to handle 20%, with plans for more.

Sources: Institute for the Study of War; AEI's Critical Threats Project

Yuriy Vaskov, Ukraine's 43-year-old deputy infrastructure minister, says that his team recognised the urgency of developing the Danube ports within three days of Russia's invasion on February 24th last year. A veteran of the maritime business, Mr Vaskov knew all about the river's potential after carrying out a reorganisation exercise back in 2012 as the then head of Ukraine's seaports authority.

His first step was appointing a ten-man working group to prepare the Danube ports for their new wartime role. The group oversaw $100m of public and private investment in the river's ports, transferring equipment from blockaded or captured seaports wherever possible. The result is an export picture unrecognisable from that in 2012, Mr Vaskov says.

One crucial project that has made the Danube ports more practicable has been the dredging of the northern Bystre canal to increase the depth from 3.9 metres to 6.5 metres, making that route navigable to larger traffic. The change attracted opposition from environmentalists and some Romanian interest groups. But the Ukrainians sidestepped their demands for consultation by digging out navigation maps from 1958 showing that such depths had previously been employed. The upshot was that the number of ships waiting to enter the Danube was cut by two-thirds.

Capacity was not the only factor affecting the viability of the Danube export route. The land-transport infrastructure connecting the region to the rest of Ukraine was, and remains, a bottleneck. The single-carriageway road from Odessa barely copes with the sudden surges of lorries that race down it, and there are regular accidents. The railway line that runs parallel to the road has its own vulnerability, in the form of a bridge crossing the Dniester estuary at Zatoka. Russian missiles and drones have attacked it over a dozen times. Every time the bridge is damaged, traffic switches back to the road. And "when that happens, you see a traffic jam from Odessa all the way to Izmail," says Oleksandr Istomin, head of the Izmail port authority. Planned work to widen the road and increase rail capacity can't come soon enough, he adds.

Shipping produce via the Danube is much less efficient than via Ukraine's seaports of Odessa and elsewhere along the Black Sea coast used to be. Before the war, those ports accounted for 60% of Ukrainian trade. Nibulon estimates the shipping costs of grain from field to market shot up from $12 to $150 per tonne when they switched to the Danube. They are still over $100. For Ukraine's grain producers, who work on slender margins, that is a problem; most lost money last year. But what the Danube ports offer is predictability.

By contrast, the on-off grain deal with Russia, which allows Ukraine to export limited cargoes from some of its Black Sea ports, is now operating at less than a quarter of intended volumes. Ukraine says Russia is deliberately stringing out inspections to decrease the number of ships that traverse the agreed corridor. The deal's extension is always subject to last-gasp negotiation. "Russia doesn't want Ukraine to have an economy at all," suggests Mr Vadatursky. "They're basically telling us to ask their permission to export."

Ukrainian agriculture, which employs roughly 2.5m people, has reached a critical point. One issue is the 8m-10m tonnes of grain still unshipped from last year's harvest of around 53m tonnes. A much bigger one is future harvests. Wartime Ukraine remains a key component of world food security. It is the world's biggest producer of sunflower oil, and in the top five for corn and barley. Yet grain-producers' financial losses mean they are already seeding less. Mr Vadatursky predicts that the Russian blockade will cut grain exports by 25m tonnes in 2024-25. "People thought war was impossible in 2022. They also seem to believe famine is unimaginable," he says. He has little faith in the long-term prospects of any Black Sea grain deal. The Danube grain terminal, on the other hand, has already proved its worth. ■

Charlemagne | Bakhmut and the spirit of Verdun

Two small front-line towns that symbolise the horrors of war

A hollow crater bright with wild flowers marks the spot where the little village school used to stand. Another, the former bakery. Today, on the ridge above Verdun in eastern France, buttercups and clover waft in the breeze where shrapnel, blood and ground flesh once scarred the soil. Swallows dart to and fro. During the Battle of Verdun in 1916, the village of Fleury-devant-Douaumont swapped hands over a dozen times, as French and German troops bombarded each other in a pitiless war of attrition to advance the front line. By the end of the battle, one of the bloodiest of the first world war, the French had lost 163,000 men and the Germans 143,000; the front line scarcely budged.

The unimaginable slaughter, in a small place of little renown, came to mark an existential struggle against an imperialist aggressor. In the French mind, Verdun stands for resistance and honour, sacrifice and unity. It was at Verdun in 1984, before the cemetery, that François Mitterrand and Helmut Kohl, then French president and German chancellor, held hands in a gesture that became emblematic of Franco-German reconciliation and peace in Europe.

Now, over 1,400 miles to the east, another small place of little renown has come to symbolise a modern existential struggle to repel an expansionist invader: Bakhmut. Since August 2022 Vladimir Putin's Russia has pounded the Ukrainian town, sending tens of thousands of men to their deaths to try to capture the place, street by street. A former home to 70,000 people has been razed in many parts to rubble. Yesterday's horrors in Verdun—the filth of the trenches, the relentless shelling, the sandbagged bunkers—are today's in Bakhmut.

Any parallel between Verdun and Bakhmut is of course imprecise. In 1916 the battlefield lay outside the town, in orchards and woods above Verdun; Bakhmut is an urban battle, fought amid blocks of apartment buildings and wide roads. The number of dead in Bakhmut, estimated at perhaps 20,000-30,000, is a fraction of the number that fell by the end of the Battle of Verdun, on December 18th 1916. In the ten months of fighting, 60m shells pounded the ground at Verdun. When it began at 7:15am on February 21st 1916 the German artillery assault shook the villages and fields above Verdun with "an incalculable deluge of shells" wrote Captain Anatole Castex, a French officer. Louis Barthas, a barrel-maker from the Languedoc region conscripted into the French army, noted "thousands of shredded, pulverised corpses…at places where the earth was soaked with blood, swarms of flies swirled and eddied." Yet for all the differences between Verdun and Bakhmut, three points nonetheless link the two battles.

One is the raw, muscular nature of the warfare involved, requiring staggering effort for meagre advances. It took the Germans a mere five days to capture the fort at Douaumont, the largest of the defences protecting Verdun. Yet it took four months for German forces to advance the three kilometres from the fort to take Fleury. To this day, the soil around Verdun is filled with unexploded ordnance and the remains of an estimated 80,000 bodies. "The forest here is a shroud," says Nicolas Barret, director of the Verdun Memorial. Fleury and other villages flattened during the battle have never been rebuilt.

Despite today's precision weaponry, the artillery battle in Bakhmut has been rudimentary, exhausting ammunition supplies and putting factories on a war footing, just as at Verdun. Shelling has forced soldiers into trenches or underground as it did then, underscoring the value of picks and shovels, cover and concealment. The fight for Bakhmut has now lasted even longer than that at Verdun, the longest in the first world war. Its battlefield is a "meat grinder", noted Yevgeny Prigozhin, who fed the meat while leading the assault as head of Russia's Wagner mercenaries.

A second point, as Anthony King at Warwick University points out, is that a small town of little consequence can take on strategic value if it becomes the place where opposing forces concentrate their forces. Initially, Russia put offensive power into taking Bakhmut in the hope of securing roads to the cities of Slovyansk and Kramatorsk. In 1916 Germany's military chief, Erich von Falkenhayn, thought he could take Verdun swiftly with superior artillery, to secure railway lines and distract French forces from the Somme. Both attempts met fierce resistance. At Verdun, as in Bakhmut, each side drew the other into committing vast military resources to avoid slim territorial losses, turning inconsequential towns into places of military significance.

All not quiet

Above all, each place has acquired a symbolic importance that outweighs its original strategic value. At Verdun, the French were caught ill-prepared. Under Philippe Pétain's command, they built resistance around the rotation of forces, limiting soldiers' time at the front and supplying the effort by road from Bar-le-Duc. "They shall not pass" became the Verdun battle cry, a defiant call to hold the town, just as President Volodymyr Zelensky called Bakhmut "our fortress". "What Bakhmut shares with Verdun is the notion of prestige," says Nicolas Czubak, a historian at the Verdun Memorial. The war was not won or lost at Verdun; but the French turned it into an emblem of strength that made retreat unthinkable.

The Ukrainians' defiant attempt to hold Bakhmut was set back in May when Russian mercenaries claimed to have taken the town. Its symbolic value, though, remains. Russia threw all its force into the capture of Bakhmut. Yet it is no closer to victory in its war against Ukraine. The battle has exposed splits in Russia's armed forces. And the Ukrainians still hold a sliver of the town as well as the outskirts; Russian troops are vulnerable inside it.

Back at Verdun, the Ukrainians' valiant efforts are being followed closely by those who keep alive the memory of the horrors of 1916. As a mark of respect and fellow-feeling, they would like to invite Mr Zelensky to visit, when the time is right. ■

The economy

Debt trap

WASHINGTON, DC

America avoids financial Armageddon but stays in fiscal hell

SOAP OPERAS must run indefinitely and therefore never conclude satisfactorily. So it is with the latest episode of a long-running Washington soap opera—its roughly biennial debt-limit drama—which is wending towards a predictably short-lived conclusion. Having threatened the world with a sovereign default and financial disaster in order to achieve their aims, Republicans in Congress have gathered modest concessions from President Joe Biden and agreed that America ought to honour its obligations, after all. The two sides hammered out a deal to raise the government's debt ceiling, which will let it resume borrowing money—staving off Armageddon for at least the next 18 months. Republican leaders have called the deal, known as the Fiscal Responsibility Act, a historic victory for budgetary prudence. In reality it does nothing to tackle the main sources of America's fiscal irresponsibility.

This current drama is not fully done yet. On May 31st the deal cleared its toughest hurdle when the House of Representatives approved it by a margin of 314 to 117. It now moves to the Senate, which must pass the bill by June 5th, or Treasury has warned it may run out of cash. A few conservative senators have threatened procedural delays, but in the end passage seems assured. Both Chuck Schumer, the Democratic majority leader in the Senate, and Mitch McConnell, the Republican minority leader, have come out strongly in favour of the deal. In the House support was about as bipartisan as anything is these days in Washington, with backing from two-thirds of Republicans and four-fifths of Democrats.

The headline summary of the deal seems impressive. The Congressional Budget Office, a neutral scorekeeper, calculates that it will reduce spending by about $1.3trn over the next decade. When cuts are measured in the trillions rather than the billions, they are, by definition, big. The trouble is that federal spending is in the tens of trillions: the CBO expects about $80trn in outlays over the next decade. Moreover, its debt-deal estimates are too optimistic. Side agreements between the White House and Kevin McCarthy, the Republican speaker of the House, will soften the reductions. Donald Schneider, a budget expert, thinks that creative accounting alone could shave off more than $90bn from the cuts. And crucially, spending caps are only enforceable in 2024 and 2025.

Totting up the full economic impact of the deal thus points to trifling outcomes. Michael Feroli of J.P. Morgan, a bank, estimates that it will lower federal spending by about 0.2% of GDP next year relative to the CBO's prior baseline. That is much smaller than the 0.7% reduction in 2011 following a debt-ceiling standoff during Barack Obama's presidency. The welcome news for Mr Biden is that the downside from the cuts is likely to be scarcely noticeable. Mark Zandi of Moody's Analytics, a subsidiary of the credit-rating agency, reckons that the drag may push up the unemployment rate by just 0.1 percentage points next year. The ▸▸

→ Also in this section

less welcome corollary is that spending cuts will do little to tame high inflation.

A weak deal is infinitely preferable to no deal, which might have provoked a meltdown in global markets. Nevertheless, the contrast between the high-stakes game of debt-ceiling chicken and its piddling resolution is incongruous. America's fiscal path remains worrisome. On May 26th the International Monetary Fund was the latest to raise the alarm about the country's finances. Federal debt held by investors at home and abroad has reached about 93% of GDP, almost triple its level on the eve of the global financial crisis of 2007-9. By the end of this decade the American government is on track to spend more annually on interest payments than on national defence.

Two parts of America's budget are most critical to defusing its fiscal problems. The first is its entitlement spending—notably, state-provided pensions and medical insurance for the elderly. These already account for nearly two-thirds of federal expenditures, and are set to expand as the population ages. The other is tax revenues, with the American government taking in considerably less as a share of GDP than most other high-income countries. Both of these elements were, however, entirely absent from the debt-ceiling negotiations: Democrats worry about the electoral consequences of calling for higher taxes, while Republicans fear blowback from trying to shrink entitlement spending. With both parties agreeing to increase the defence budget, the result is that the spending cuts will be entirely focused on "non-defence discretionary" programmes, which account for just about 15% of the budget. Cuts, yet to be hashed out, will hit national parks, schools, health care and more.

Perhaps some good will yet come of the debacle. Mr McCarthy has called for a bipartisan commission to figure out how to fix the country's finances—an idea that has prompted guffaws. Brian Riedl of the Manhattan Institute, a conservative think-tank in New York, is less dismissive. "Commissions can be useful if both parties are truly committed to achieving an outcome rather than just checking a box," he says. Mr Biden, meanwhile, has suggested that he might yet launch a legal challenge, long urged by progressive Democrats, to test whether the debt ceiling is constitutional.

A daydreamer can just about imagine a future in which the two efforts come together: the fiscal commission would lead to serious budgetary reforms, while a successful legal case would free America from its metronomic debt-ceiling lunacy. Soon enough, though, harsh political realities will intrude on such reverie. The new agreement to raise America's borrowing limit runs until early 2025, at which point its next episode of debt-ceiling drama is all but certain to kick off. ■

Student debt

Forgive and forget

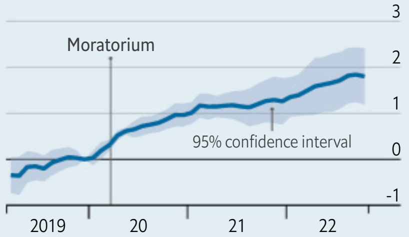
A bad policy has bad consequences

MILTON FRIEDMAN used to joke that nothing is so permanent as a temporary government programme. So it nearly was with America's moratorium on student-loan payments. The debt-relief scheme—which suspended payments, interest charges and collections on more than $1trn in federal student loans—was passed by Congress in the early days of the pandemic. Although meant to expire after just six months, it proved popular with voters and was extended eight times, despite a price tag of $5bn a month. Now the programme may at last be ending for good. The debt-ceiling deal negotiated by President Joe Biden and the House speaker, Kevin McCarthy, would resume student-loan payments on August 30th, without the possibility of an extension.

Has the student-debt-relief scheme left borrowers better off? The Biden administration has called the payment freeze a "critical lifeline" that helped borrowers pay for basic necessities while preventing millions of delinquencies and defaults. Media reports and surveys suggest that the pause allowed young people to make ends meet, pay down debt and build up savings. Early evidence seemed to bolster this view. An analysis published in March 2022 by researchers at the California Policy Lab, a group based at the University of California, found that the payment freeze lowered monthly bills, boosted credit scores and pushed some borrowers to increase their payments on mortgages, car loans and other outstanding debts.

Extra credit

United States, effect of student-loan payment moratorium on average loan balances*, $'000



*Vehicle, mortgage and credit-card loans of borrowers covered by the moratorium

Source: "Debt moratoria: evidence from student loan forbearance", by M. Dinerstein et al., NBER working paper, May 2023

But a new paper by economists at the University of Chicago suggests that the pause in student-loan payments caused borrowers to rack up more debt, not less. Using data from TransUnion, a credit-reporting firm, the researchers compared the personal finances of students whose loans were frozen in 2020 because they borrowed directly from the United States Treasury with those of students who borrowed from private banks and were therefore ineligible for the moratorium.

They found that the payment freeze reduced delinquency rates on student loans and boosted credit scores, but did not affect delinquencies on other debts. Nor did the policy reduce loan balances—in fact, it did the opposite. By the end of 2022 beneficiaries of the moratorium accumulated an additional $2,500 in student-loan debt and an additional $2,000 in credit-card, mortgage and car-loan debt, boosting total household indebtedness by 8%.

Jefferies, an investment bank, reckons that the return of student-loan payments, which are around $200 a month for the typical borrower, will weigh on consumer spending and push up delinquency rates. For those borrowers who took advantage of the student-debt moratorium, and accumulated additional debt over the past three years, the financial pressure could be especially acute. Back in April 2022 Mr Biden warned that the resumption of student-loan payments could lead to "significant economic hardship" for millions of borrowers. Little did he know that his own policies would be partly to blame.

Studying for credit

Urbanism

Where the neon signs are pretty

CLEVELAND

Can downtown densification still rescue rust-belt cities?

JUSTIN BIBB, the mayor of Cleveland, Ohio, has a good idea which neighbourhood needs to be fixed if his city is to thrive. That is, his own. Mr Bibb, a 36-year-old former consultant who took over as mayor at the start of last year, lives in a one-bedroom apartment in downtown Cleveland, just a short walk away from his office in the city's grand neoclassical city hall. For exercise, he jogs in the park outside. And he thinks that if Cleveland, a city of 362,000 people that was once home to almost three times as many, is to start growing again, it needs more people to be able to live lives like his.

"If we don't have a thriving urban core… we don't have tax revenue to fix potholes, to pay police officers more, to hire more folks to pick up trash and do recycling," he says. "The urban core of any city is its heart and the soul." It "feeds all of the arteries" that keep other neighbourhoods alive.

Mr Bibb's enthusiasm for downtown is far from unique. In the decade or so up to the pandemic, revitalising historic downtowns was the big hope of many leaders of struggling cities in the rustbelt. And to a remarkable extent they were succeeding.

Between the two most recent censuses, in 2010 and 2020, though the city of Cleveland as a whole lost 24,000 residents, the "downtown core" grew by over 3,000 people, or around 22%. Beautiful buildings once occupied by banks and offices are now smart apartment blocks. Milwaukee's downtown population grew by a quarter, even as its overall population shrank. Detroit's downtown, parts of which were abandoned when the city declared bankruptcy a decade ago, has been transformed, with cranes dotting the skyline.

Yet the pandemic has been a terrible setback. The wealthy office workers whom developers hoped to coax into cities with walkable commutes now have the option of working from home. In Cleveland, only around three-fifths of office workers are regularly back at their desks, according to data from the Cleveland Downtown Alliance, a local lobby group. Shopping centres and restaurants are reeling, even as their competitors in the suburbs thrive.

Mr Bibb believes the pandemic in fact strengthens his argument: if your downtown is to thrive, you need people to live in it, not just commute to it through punishing traffic from the suburbs. Yet there is a catch-22. Wannabe urbanites will not give up the comforts of the suburbs to move to a place that is dead; but new bars and restaurants will not open without them.

At least some developers still like the plan. One of the most prominent is Bedrock, a firm owned by Dan Gilbert, a Detroit-based billionaire who is the co-founder of Rocket Mortgage, and who owns the Cavaliers, Cleveland's basketball team. Mr Gilbert's approach to property investing is to concentrate enormous resources in one place, something he calls a "big-bang approach". In Detroit over a decade ago, when the city was close to bankruptcy, Mr Gilbert bought up a swathe of the city centre—he owns at least 100 buildings—and poured investment into all of them simultaneously, even giving subsidies to his workers to move into the new condos.

Mr Gilbert's idea is, in essence, that scale allows you to internalise spillover benefits. Restoring a single derelict skyscraper on its own might not be profitable enough to be worth it. But when you bring a building back to life, the ones next to it also go up in value. If you own those buildings too, perhaps the project becomes profitable. In Detroit, "we knew that an influx of investment in the city core would attract additional capital", he says.

He is now trying to do something similar in Cleveland. In 2016 Bedrock bought most of Tower City Centre, a long-neglected art-deco skyscraper built over what was the city's central rail terminus. In February the firm announced it intends to expand onto some 35 acres of land that drop steeply from the back of Tower City to the Cuyahoga river, and are now occupied mostly by parking spaces and a potholed road.

Over the next two decades, the asphalt will be replaced by 2,000 new homes, as well as a vast amount of office and non-residential space, linked together with a park, all designed by Sir David Adjaye, a famous Ghanaian-British architect. The total cost will be around $3.5bn—a huge sum for a single developer in a relatively poor city. But the idea is that the new buildings will not only make a profit directly. When they fill up with well-off new residents, that will also raise the value of Tower City, which Bedrock imagines turning from a slightly dingy shopping mall into one stuffed with fancy restaurants and high-end shops, as well as several other buildings that Bedrock has acquired nearby. That in turn makes the whole project viable.

Cleveland

Will it work? Mr Gilbert says that the pandemic shows how city centres need to be exciting places to visit and live in, not just warehouses for office workers. Commercial landlords may be struggling, but "developers can't bring residential housing online fast enough", he says. Vacancy rates for homes are extremely low.

What Mr Gilbert has, apart from lots of money, is a perhaps even rarer commodity: patience. Politicians like Mr Bibb, desperate to stop the shrinking of their tax bases, may have to find it too. ■

The Hunter Biden problem

The prodigal son

CHICAGO

Joe Biden may yet be hurt by Hunter Biden's activities

AT THE START of his memoir, "Beautiful Things", published in 2021, Hunter Biden, the second son of the president of the United States, begins with a single claim that summarises the argument of the book. "I am not Eric Trump or Donald Trump, Jr," he writes. "I've worked for someone other than my father, rose and fell on my own."

Over the next 220 pages, he takes readers through his childhood, his deep love of his brother Beau, who died in 2015 at the age of 46, his businesses and, in sordid detail, his use of crack cocaine and alcohol. Yet the theme that keeps coming back is his independence. "There is no question that my last name has opened doors," the younger Mr Biden admits. And his accomplishments "sometimes crossed into my father's spheres of influence during his two terms as vice-president". But they were, he maintains, still very much his own, just as his failures and addiction were too, and nothing to do with his father.

Republicans desperately wish they could show otherwise. Since January, the House Committee on Oversight and Accountability, and its Republican chairman, James Comer, have been digging through the younger Mr Biden's records, in a search ▸▸

for something incriminating that would tie President Joe Biden to his son's chaotic business practices. On May 10th Mr Comer held a press conference to unveil more details about the $10m or so that was paid between 2015 and 2017 to firms owned by Hunter, as well as to his uncle, James, both their wives, Beau's widow and their children, by various foreign sources.

What Mr Comer's committee has not succeeded in showing, however, is anything illegal, or any wrongdoing by the president. Even so, Mr Biden may still be hurt by the slow drip of revelations about his son, not least because Hunter's problems are far from over.

The committee's reports until now have highlighted the colossal extent to which the Biden name did indeed open doors. Payments of several million dollars came directly and indirectly from one Chinese tycoon, Ye Jianming. It is far from clear what services Hunter or his uncle provided in exchange for the cash. Mr Ye seemed to harbour unrealistic hopes of influencing the then vice-president by hiring his relatives, and was strung along. In 2018 he was detained for questioning by the Chinese authorities about unrelated corruption, and has since disappeared.

Another lucrative job taken by Hunter Biden, with Burisma, a Ukrainian natural-gas firm, seems similarly to have come with relatively few work requirements. He himself admits that he took it because it was not much work. "Its robust compensation initially gave me more time and resources to look after my brother," he observes in his book.

But despite their access to Mr Comer's subpoena powers, his team have uncovered nothing so far that shows the president benefiting. The extensive private correspondence taken from Hunter Biden's leaked laptop hard drive, which included dozens of voicemails left on his phone by his father, shows nothing either.

Rather, it is a parallel Justice Department investigation into the younger Mr Biden's conduct that is the more imminent headache for the president. The investigation became public in 2020. In late April Hunter Biden's lawyers are said to have met officials at the Justice Department to discuss four potential criminal charges (two misdemeanours and two felonies) that could be brought against him. That led to speculation that the investigation might well be wrapping up, and that an indictment could be issued relatively soon. Some think matters have not moved fast enough. On May 23rd a whistleblower from the Internal Revenue Service told CBS News that the Justice Department had "slow-walked" its probe of Hunter's finances.

Fathers and sons

The potential charges include three related to his taxes, and a fourth related to the purchase of a gun in 2018—Mr Biden is suspected of having lied about his extensive illegal-drug use on a background-check form. He has denied any wrongdoing. Morally the potential charges hardly compare to the many awful things Mr Biden freely admits to having done himself in his memoir (which include driving on crack cocaine, hanging out with pimps and trying to fight bouncers). None relates to his alleged "influence-peddling".

But if Hunter is charged, it will be uncomfortable for President Biden, who has been fiercely loyal throughout the saga of his son's addiction. "My son has done nothing wrong," he said (inappropriately, given the Justice Department's ongoing investigation) in an interview with MSNBC, a cable-news channel, in early May.

An irony is that Republicans are pursuing this even as Donald Trump's own relatives are also involved in legal influence-peddling that is orders of magnitude larger—at least in terms of the money involved. Last year the *New York Times* reported that Jared Kushner, Mr Trump's son-in-law, received a $2bn investment in his private-equity fund with a 1.25% management fee from a fund led by the crown prince of Saudi Arabia, despite the fact that Mr Kushner was a newcomer to the private-equity business. And Mr Trump himself faces his own criminal indictment, related to hush-money payments he made to Stormy Daniels, an adult-film star, before the 2016 election.

For Mr Trump, though, that merely makes Hunter's problems all the more useful. "Hunter Biden is a criminal, and nothing happened to him," the former president said at a big conservative conference in March. "Joe Biden is a criminal and nothing ever seems to happen to him," he added, without any evidence at all. The reek of hypocrisy spoils the point. But whether it is Hunter or one of Mr Trump's children, there seem to be few consequences for using your powerful father's name to make money. ■


Person of interest

America and China

Now showing in local theatres

State legislatures are becoming another front in America's clash with China

SHORTLY BEFORE Ron DeSantis launched his bid for the Republican nomination, the governor of Florida signed three bills to "crack down on Communist China", as he put it. The laws stop Chinese firms buying agricultural land, block certain apps owned by Chinese companies being used in state institutions, and curb ties between Florida's higher-education institutions and those in any "country of concern". China-bashing has been a staple of presidential campaigns for a decade. Now state legislatures have discovered a taste for it.

China is one of the only bipartisan issues at the moment, says Maggie Mick of MultiState, a consultancy focused on state politics. A deluge of legislation is coming before statehouses. Many have enacted laws similar to Florida's on education and land ownership. Texas even tried to stop Chinese citizens buying property (along with people from Iran, North Korea and Russia). The original bill would have banned even dual nationals and green-card holders from buying land. Legislators in the biennial session, which ended this week, eventually dropped it.

Indiana has passed a law requiring its

The landlord

state pension system to divest from Chinese companies; other states are mulling similar legislation. More than half of all states already prohibit the use of TikTok, which is owned by a Chinese company, on government phones. (Some limit other Chinese apps, too.) In May Montana became the first state to outlaw the downloading of TikTok, from January 2024, though the bill may prove unenforceable.

For much of their history, statehouses legislated mostly on local issues or followed national policies. Now that one party controls the governorship and both chambers of the state legislature in 39 states, it is fairly easy to pass legislation—particularly compared with Congress. Both Republican and Democratic statehouses use these bills to register discontent with the federal government's failure to act. But they have real consequences.

Think local, act global

In the 1980s, when a rising Japan was seen as a threat to America's ascendancy, many expressed concern about Japanese purchases of American assets. Now, rising anxiety about Chinese entities buying land in America tracks growing tensions between the two countries, says Caitlin Welsh of the Centre for Strategic and International Studies (CSIS), a think-tank. Foreign businesses and governments are prohibited from buying agricultural land in around two dozen states—most of them Republican. (States run by Democrats more often require such buyers to ask permission to acquire land.)

Though the bills often avoid mentioning China, their target is clear. "Communist China, America's greatest foe, is on a bender...buying up farmland," wrote Sid Miller, head of the Texas Agriculture Department last August. Legislators are understandably wary about foreign outfits buying land near military bases or critical infrastructure. So far, though, most concern about Chinese landgrabs is misplaced. Foreign entities own just 3% of all privately held agricultural land in the United States, and China's share accounts for less than 1% of the total; it ranks 16th on the list of foreign owners, according to the Department of Agriculture. The bills say more about American anxieties than about Chinese ambitions, reckons Ms Welsh of CSIS.

In higher education, at least ten states have tried to restrict ties between local institutions and Chinese ones, though only a handful have passed legislation. Most say they are acting on national-security grounds. Jerry Cirino, an Ohio state senator and sponsor of the state's "Higher Education Enhancement Act", said in a newspaper interview that action was necessary because China's global activities are "far more egregious than invading Ukraine".

Education exchanges helped thaw relations between America and China in the 1970s. Cutting these back threatens an economic as well as cultural export. No country sends more students to America than China, whose nationals made up a third of all international students there (before covid) in 2019-20. International students contributed $1bn to the economies of Ohio and Florida in 2021-22, and nearly twice that in Texas, according to the Association of International Educators, which promotes such ties. Many universities argue that the restrictions are pointless. Universities are there to disseminate knowledge, not hide it, argues Sarah Spreitzer of the American Council on Education.

The federal administration already struggles to speak with one voice on China: preventing the world's most important bilateral relationship from deteriorating further requires a delicate balance of strength and conciliation. Local legislation makes the executive look even more incoherent. The autonomy of America's states is enshrined in the constitution, yet few have the full gamut of expertise on foreign affairs. And foreign governments, particularly centralised ones like China's, may see state lawmaking as just another aspect of the national agenda. Disgruntled state legislatures could end up influencing America's foreign policy even more than their ambitious governors intended. ■

Political economy

For-profit polarisation

WASHINGTON, DC

Conservative Americans are building a parallel economy

IF YOU ARE a God-fearing, gun-toting patriot, conservative companies are hungry for your business. If Google and YouTube have become too woke for you, consider ditching them for Tusk and Rumble. Before paying your monthly AT&T bill, you might want to switch to Patriot Mobile, the nation's one-and-only Christian conservative wireless network. Rather than fruitlessly scouring Hinge for fellow right-wingers you can now make a profile on the Right Stuff, a dating app that helps users get to know each other by eliciting responses to prompts like "January 6th was" or "favourite liberal lie". To get java roasted by veterans, consider sipping on Black Rifle Coffee's "Silencer Smooth" (light roast), "AK-47" (medium roast), or "Murdered Out" (extra dark roast). And to protest against Hershey honouring a transgender activist on international women's day, you can instead buy Jeremy's Chocolate, where the HeHim bar contains nuts and the SheHer one is unequivocally nutless.

And that's just the beginning. PublicSq, an online marketplace, is home to 40,000 firms devoted to freedom, the family unit and the constitution. Click through and you can find skin care and artisan jerky, probiotics, banks, app developers and accountants. The businesses listed hope to capture the hearts and wallets of as many as 100m patriots, who together, according to Michael Seifert, PublicSq's founder, make up "the third-largest economy in the world by GDP". Its CEOs, sellers and most avid customers dream of a parallel economy where conservatives need never buy from liberals. Is such a vision feasible?

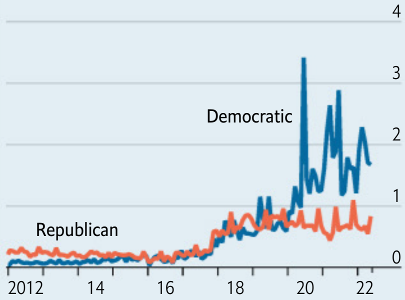
Today's populist Republicans have jettisoned many classical conservative values, but their departure from a decades-long alliance with America's corporations is one of the most notable rebellions. "Old-fashioned corporate Republicanism won't do in a world where the left has hijacked big business," Ron DeSantis, Florida's governor, recently wrote. The backlash came after Disney condemned Florida's so-called "Don't Say Gay" bill, Google halted midterm donations from candidates who had refused to certify Joe Biden's 2020 win and Delta, Coca-Cola and Microsoft denounced new voting laws in Republican states. Some argue that these public displays of liberal values go beyond economic self-interest. When researchers at the University of Chicago analysed every S&P 500 company tweet since 2011, they found that over time statements from companies and Democratic politicians came to sound more and more alike (see chart).

With big business on Republican hit-lists, entrepreneurs saw an opening. The parallel economy has two major draws. For consumers, it offers the opportunity to buy from firms that reflect their values. Surveys show that Americans want brands to get political and would sometimes even pay a premium for products if they did. For firms, politically aligned suppliers serve as an insurance policy. Businesses can be burnt when companies they rely on back out over politics. Parler, a far-right social network, was paralysed when Amazon pulled its web-hosting services and Apple and Google dropped it from their app stores after January 6th 2021. The withdrawal came just as Twitter froze Donald Trump's account and his army of apostles were hungry for a fresh platform. Politically aligned backend firms would ensure business opportunities are not missed.

Companies are quickly learning that building viable alternatives to common products—and pulling patrons from big-shot firms—is hard. Writing and maintaining code to run Google and YouTube is so costly that no small startup could hope to compete. For services like Facebook and Tinder, the value is vastly improved with more participants. For these reasons many of the conservative tech firms are fizzling out. Tusk and Rumble have little-to-no name recognition outside far-right circles. Downloads of Truth Social, Donald Trump's social-media site, are dwindling; its stock price has plummeted since last year. The Right Stuff captured over 50,000 hopeful singles in the two months after its debut, but has barely attracted more since

Elon's nightmare

S&P 500 companies, partisan tweets as % of total



Source: "The rise of partisan corporate speech", by W. Cassidy and E. Kempf, November 2022

(women are especially lacking). Its seed money from Peter Thiel, a libertarian billionaire, runs out this summer.

Others hope to entice customers by not only pledging devotion to conservative values, but by actually getting their hands dirty. Last spring Patriot Mobile, the wireless network, found and funded 11 candidates to run for school boards in the Fort Worth suburbs. Their $600,000 propelled each to victory, flipping four boards, one of which has since pulled "The Diary of Anne Frank" and LGBTQ-themed novels off library shelves. But patrons who came for phone services are frustrated by the inattention to them, saying in reviews that the firm's poor customer service is "NOT what Jesus would do!" and claiming the management is so bad "they run it like Biden".

MyPillow's founder, Mike Lindell, a conspiracy-theorist, also privileged politics over product. After Dominion, a voting-machine maker, sued him for spreading false claims about election rigging, Costco, Bed Bath & Beyond, Wayfair and more than a dozen other stores stopped stocking his pillows. The company lost $65m because of it, Mr Lindell says.

A third genre of firm, which works to strengthen conservative hotbeds, may be more of a hit. According to its CEO, Conservative Move, a property broker that helps clients sell their house in a Democratic state and buy in a Republican one, has moved "tens of thousands" of people to new neighbourhoods since 2016. Revenue at RedBalloon, a job board that helps workers escape "woke" firms and get hired at right-leaning ones that, for example, respect employees' right to be unvaccinated, grew by 90% in the first quarter of 2023. (The company's founder bought the domain RedBalloon.work because .com "sounded too much like communist".)

This is not Americans' first shot at a parallel economy. Forced out of local shops during the Jim Crow era, black people built independent commercial districts. Community leaders spoke of using the "double-duty dollar" at black-owned shops to simultaneously purchase goods and support their own. Later, in the 1970s, a band of lesbians tried to withdraw from the "male economy" with the utopian goal of creating a labour market void of husbands.

Separate yet together

Neither group achieved the self-sufficiency they dreamed of. In the South money was sparse and discrimination was not: black businessmen sold flour and dresses, but lacked the means and connections to open car dealerships or banks. Some feminist firms were lucrative at first—a record company and printing press led the way—but over time sales suffered, pioneers' energy waned and money dried up. Today's conservatives have better access to capital than past separatists, and may be greater in number. But the movement uses old strategies that failed in the past, says Lizabeth Cohen, a historian at Harvard University.

Not long ago Brave Books, an anti-woke children's-book publisher, came out with "Elephants are Not Birds", the tale of an elephant who, egged on by Culture the vulture, yearns to be a bird. Culture fits him with a beak and some clip-on wings, but after a demoralising attempt to fly the elephant learns that it is not his feelings that dictate who he is, but rather his body. The children who will be read this book may live in Republican states that bar transgender athletes from playing school sports, ban abortions and allow their parents to carry unlicensed pistols. But when Dad finishes reading the story he may just jump in his Jeep to pick up dinner from Shake Shack. When he gets home with food everyone will snuggle onto the IKEA couch to watch a Netflix film. Mom will probably open a pint of her favourite Ben & Jerry's. Even if it feels as if everything else is becoming more polarised, for now, Americans are still bound by what they buy. ■

Guerrilla marketing

Lexington | Dreaming the Iowa dream

Nikki Haley has some reason to hope the state will propel her long-shot candidacy

The romance of America as a land of boundless hope and possibility may have lost some lustre for Americans in general. But there is one place, for at least a handful of Americans, where the dream shines bright as ever. These idealistic few can be fascinating to watch, even inspiring, as they slip the reins of doubt, buck the burden of low expectations, and allow themselves, as dark-horse Republican presidential candidates, to run free through Iowa's fields of dreams.

So it can be to chase after Nikki Haley, the former ambassador to the United Nations and governor of South Carolina, as she races from event to event—22 in Iowa since she announced her run less than four months ago. Polling puts her in single digits in the state and nationally, and she is far behind in raising money as well.

Yet like others in the back of the pack, Ms Haley campaigns in a bubble of plausibility. As she differentiates herself by means of policy, tone and identity, jabbing the occasional elbow at Donald Trump, she makes a case that sounds persuasive, and the crowds of one-or-two hundred at her town-hall gatherings seem rapt. Where she goes, local press coverage blooms. If Iowans had the gumption to pick such improbable candidates as Jimmy Carter in 1976 and Barack Obama in 2008, delivering victories in the first-in-the-nation contest that ignited the national imagination, why not anoint the first female, Indian-American president in 2024?

Part of the case for Ms Haley, her allies believe, is that the Republican race will come down to Mr Trump and someone who is not Mr Trump. In this view Ron DeSantis, the governor of Florida, is not not-Trump enough. He may be running second in the polls, in Iowa and nationally, but he will not ultimately emerge as the alternative because, in terms of policy and personality, he is the front-runner's mini-me.

Of the other announced candidates so far only Asa Hutchinson, the former governor of Arkansas, attacks the former president as unworthy to hold office again. Ms Haley is not that not-Trump, not yet anyway. In her nimble, well-paced town-hall spiel, she mentions Mr Trump just once, describing his reaction when, as UN ambassador, she gave him a comparison of how far American aid to countries tallied with their General Assembly votes on American priorities. "He lost his mind!" she likes to say. "He's flipping pages, he's yelling out countries." It is a deft thrust of the knife, reminding her audience of Mr Trump's volatility as she takes some credit for his America-first foreign policy.

Yet for the close listener Ms Haley, who is 51, also points to important policy differences. She blames Republicans as well as Democrats for the national debt and promises to reform entitlement programmes Mr Trump has called untouchable. She is a hawk on Ukraine, saying a victory for Russia would be a victory for China. Mr DeSantis has tied himself in knots on Ukraine and said he would not "mess with Social Security", notwithstanding his votes as a congressman to do so.

When pressed about efforts to overthrow the 2020 election, Ms Haley begins to sound more like Mr Hutchinson. Asked in mid-May at a town hall in Ankeny, Iowa, how she would ensure fair trials for the insurrectionists of January 6th, she replied, "I will continue to say it was a terrible day, it was not a beautiful day," as Mr Trump has described it. As some members of the audience clapped, she added, "If they broke the law, they should pay the price." Mr DeSantis has suggested that, like Mr Trump, he might pardon insurrectionists.

Like another long-shot candidate, Senator Tim Scott of South Carolina, who is black, Ms Haley plays identity politics the Republican way. She presents her identity as a rebuff to claims that America is racist, and also as something powerful enough to help her unite America. "We weren't white enough to be white, we weren't black enough to be black," she tells audiences as she describes growing up in the only Indian-American family in Bamberg, South Carolina. "When I would get teased on the playground, my mom would always say, 'Your job is not to show them how you're different. Your job is to show them how you're similar.' Our country could use my mom's advice right now."

None of it may matter, not even the Iowa caucus. Mr Carter and Mr Obama were exceptions, not the Iowa rule. Mr Trump is better organised there this time than in 2106, when he lost to Senator Ted Cruz of Texas, and his opponents may splinter the not-Trump vote.

When the centre held

Still, not only long-shot candidates should entertain hope as Iowa Republicans weigh their options. Many respect the job Mr Trump did. But they also lament the way he behaves, including toward fellow Republicans. "I mean, I love the guy, but I hate him, too, you know?" Ben Leifker, 38, said with a laugh after attending a Haley town hall in Dubuque. "I want somebody who can win."

The next day, at a town hall farther south along the Mississippi in Davenport, Maxine Russman, a retired teacher, drew applause when she stood to say, "Nikki, I want you to make America civil again." Ms Haley responded with what may come as a tonic to anyone who has felt bludgeoned by a Trump speech. She described her decision to remove the Confederate battle flag from South Carolina's capitol in 2015 after a white supremacist murdered nine black people during a church prayer service in Columbia.

Ms Haley recalled the courage and goodness of the victims, naming some, then turned to the flag. "Half of South Carolina saw that flag as heritage and service, the other half of South Carolina saw it as slavery and hate," she said. "My job wasn't to judge any of them. My job was to bring out the best in them." Her ambition as president, she said, would be to "treat every person with respect". America is well past the point where it can indulge a sentimental view of the Confederate flag. But maybe Iowa can still help it hope again for a more generous Republican politics. ■

Latin America's soft power

Bad Bunny, good business

MADRID

On Spotify and Netflix Spanish seems to be taking over the world

ON ONE DAY last month Spotify's four most-streamed songs were "Ella Baila Sola", an upbeat tune with a prominent trombone; "Where She Goes", mixing R&B and rap; "un x100to", medium-tempo and heavy on acoustic guitar and accordion, and "La Bebe", a slow, mostly electronic bit of reggaeton, a style from Puerto Rico with a beat adapted from Jamaican dancehall. On the surface, these songs have little in common. But the world's top four tunes, streamed over 20m times that day, do share one feature: they are all sung in Spanish.

In November Spotify crowned Bad Bunny, a rapper from Puerto Rico, its most-streamed artist for the third year in a row. That is the first time in the streaming service's history that anyone has dominated its charts for so long. On YouTube, Peso Pluma, a singer from Mexico, is out-charting even Bad Bunny, performing on three of its top 20 songs. In fact, of the top 20 songs in the week of May 18th, nine were in Spanish. In the United States last year Latin music generated $1bn in recorded music revenues, a 24% annual increase, according to the Recording Industry Association of America. That is 7% of all American music revenues, an all-time high.

Spanish music is having a moment. This success is crossing not just musical genres but different media, too. Two seasons of "The Marked Heart", a Colombian thriller about organ-trafficking, are in Netflix's top ten of non-English speaking shows (see tables on next page). "Money Heist", a Spanish TV series, is Netflix's most viewed of all time by hours spent watching in the non-English charts. According to a new paper by Will Page, a visiting fellow at the London School of Economics, and Chris Dalla Riva, a musician, "Money Heist" is the most-viewed programme in Argentina, Brazil, Chile, France, Italy and Portugal. It is also popular in North Africa, the Middle East and Turkey. Three Spanish-language films rank in its top ten of all time in the non-English charts.

English-speaking culture is not going to lose its global prominence any time soon. But the inexorable rise of Spanish-language music, film and TV reflects several interconnected trends. For a start it shows the increasing importance of streaming services, such as Spotify and Netflix. It hints at how Latin Americans, particularly the young, are hungry to spend their cash on culture. It also demonstrates how Latin American migrants are moving abroad and bringing their cultures with them. In doing so, they are shaping tastes worldwide.

Spanish media is not new on the world stage. Beginning in the 1960s, the fiction of Gabriel García Márquez and Mario Vargas Llosa captivated readers and prize juries. Film has long been a strength, from Spain's Luis Buñuel and Pedro Almodóvar to Mexico's "three amigos" (Guillermo del Toro, Alejandro Iñárritu and Alfonso Cuarón). *Telenovelas* are a longstanding export; Egyptians as well as Ecuadoreans can relate to these universal dramas.

Several things are aiding the new boom. The first is the internet-savvy nature of Latin America. Around half a billion people in the region own a mobile phone. They are also likely to spend more of their time on social media: Argentines, Brazilians, Colombians and Mexicans are estimated to spend a combined average of three and a half hours a day on social media, one hour more than the global average.

A second reason for this boom is that these musicians operate across national boundaries. This collaborative nature of the music means that the big hitters appeal ▸▸

far more widely than just in their home countries. Fans appear to be dedicated, too. According to *The Economist*'s analysis of five years of data from Spotify, in Spanish-language countries the share of streams in Spanish increased from 74% in 2017 to 86% in 2021, while the share of English-language streams fell from 25% to 14%.

This may surprise many in the region. The world's Hispanophones have not always acted as though they shared a culture. Boundaries between both genres and countries have often got in the way: Puerto Rican salsa musicians went on strike in protest at Dominican musicians bringing merengue to their island in the 1970s.

Today, more often than not, hit songs feature a guest star alongside the main attraction. Take the example of "Despacito", a song from 2017 by Luis Fonsi, a Puerto Rican singer, featuring Daddy Yankee, a rapper also from Puerto Rico. It spent 11 weeks in the top spot in 36 countries, partly because of a remix featuring Justin Bieber, a Canadian pop superstar. Sales and streams of the song exceeded 13m in the United States. Until "Baby Shark", a children's video, surpassed it in 2020, the original song was the most-watched YouTube video of all time. It has so far attracted over 8bn views. Similarly, Rosalía, a Spanish mega-star, sings not only with Bad Bunny but with her fiancé Rauw Alejandro, from Puerto Rico. She has been streamed over 8bn times on Spotify, and packs out huge venues. In May she drew 160,000 fans in Mexico City.

Likewise Becky G (from California) sings with Peso Pluma and Feid (Colombia) with Young Miko (Puerto Rico). Bizarrap, an Argentine producer, has made collaboration his brand, churning out hits with a parade of others from around Latin America. His song with Shakira (Colombia) venting at her ex-husband Gerard Piqué, a Spanish former footballer, quickly smashed streaming records by becoming the most-streamed track in Latin music on Spotify in 24 hours and the fastest Latin track to reach 100m views on YouTube, taking just over two days.

Money Heist: a visual hold-up

But the biggest factor is the role of the United States. Though Spanish music and television are popular elsewhere, Latin America's northern neighbour is crucial. The Hispanic population in the United States reached 62.5m, or 19% of the total, in 2021. Hispanics account for 52% of the country's population growth since 2010. This means there is a huge audience for Spanish-speaking media. It also seems that the children of Latin American immigrants still share the identity of their parents' home. Fully 72% of Hispanics are Spanish-dominant or bilingual. Even in the third generation about a quarter remain bilingual.

As a result, Spanish may be getting a boost. The language has about half a billion native speakers, more than any other but Mandarin and perhaps Hindi. The coolness of Bad Bunny et al may spur new learners. After "Squid Game", a Netflix megahit, Duolingo, a language-learning app, saw sudden spikes in sign-ups to learn Korean. Customer interest in Spanish is broader and more sustained: after English it engages by far the most active users on the app, according to Cindy Blanco, an executive. Likewise Babbel, a paid language app, saw 42% growth in Spanish learners between the first quarters of 2022 and 2023. Most were in the United States.

This is influencing other parts of the Spanish-speaking world. Ramiro Villapadierna, head of Madrid's Office of Spanish, notes that there is little local snobbery about the Latin American accents and expressions making their way into Spanish children's speech. The government is even trying to ride the Latin wave by boosting film and music production in Madrid. By contrast the media in Portugal is having a minor moral panic about Brazlianisms among the country's YouTube-watching youth. One recent newspaper headline warned: "Children [are] addicted to Portuguese from Brazil".

Another result of the increasing clout of Hispanophone culture is more subtle. The signature three-beat "tresillo" rhythm of reggaeton can now be heard all over the English-language music of singers such as Ed Sheeran, Dua Lipa and Drake. Even if listeners do not know it, they are hearing a Latin beat. ■

The world is theirs

Global, top ten songs and TV shows

Spanish | English | Other

YouTube Music May 12th-18th 2023

Rank	Song (Artist)	Language	Streams, m
1	La Bebe (Yng Lvcas & Peso Pluma)	Spanish	66.9
2	Acróstico (Shakira)	Spanish	65.9
3	Piyar Farak Wali (Pawan Singh & Anupma Yadav)	Other	52.8
4	Ella Baila Sola (Eslabón Armado & Peso Pluma)	Spanish	50.5
5	Cupid (Fifty Fifty)	Other	47.2
6	un x100to (Grupo Frontera x Bad Bunny)	Spanish	41.0
7	「アイドル」(YOASOBI)	Other	40.9
8	꽃 (JISOO)	Other	38.8
9	Frágil (Yahritza Y Su Esencia & Grupo Frontera)	Spanish	30.8
10	Calm Down (Rema & Selena Gomez)	English	29.8

Spotify May 19th-25th 2023

Rank	Song (Artist)	Language	Streams, m
1	Ella Baila Sola (Eslabón Armado & Peso Pluma)	Spanish	45.4
2	Where She Goes (Bad Bunny)	Spanish	43.6
3	un x100to (Grupo Frontera x Bad Bunny)	Spanish	36.9
4	La Bebe (Yng Lvcas & Peso Pluma)	Spanish	35.3
5	Cupid (Fifty Fifty)	Other	34.1
6	Flowers (Miley Cyrus)	English	31.2
7	Daylight (David Kushner)	English	27.2
8	Kill Bill (SZA)	English	26.5
9	As It Was (Harry Styles)	English	25.0
10	Angel P. 1 (Kodak Black, NLE Choppa, Jimin, JVKE, Muni Long)	English	23.4

Netflix May 15th-21st 2023

Non-English-language TV shows

Rank	Title	Language	Hours viewed, m
1	Black Knight (Season 1)	Other	35.1
2	Muted (Season 1)	Spanish	35.1
3	Doctor Cha (Season 1)	Other	23.1
4	The Good Bad Mother (Season 1)	Other	15.4
5	The Marked Heart (Season 2)	Spanish	10.9
6	The Tailor (Season 1)	Other	8.9
7	La Reina del Sur (Season 3)	Spanish	8.9
8	The Marked Heart (Season 1)	Spanish	8.6
9	Pablo Escobar, el Patrón del Mal (Season 1)	Spanish	8.0
10	Welcome to Eden (Season 2)	Spanish	6.4

Sources: YouTube; Spotify; Netflix

Lula's grand plans for foreign policy

Cosying up to an autocrat

CARACAS AND SÃO PAULO

Nicolás Maduro receives a warm welcome in Brazil

In 2005 Luiz Inácio Lula da Silva, who was then just two years into his first term as Brazil's president, declared that Venezuela had "an excess of democracy". In fact even then democracy was under threat. Hugo Chávez, Venezuela's left-wing populist president, had recently introduced a law that restricted what could be broadcast about state officials on radio and TV. In 2007 he called for a constitutional referendum that sought to expand his own powers while abolishing term limits. Nearly two decades later, Nicolás Maduro, Chávez's unpopular successor, has taken advantage of his mentor's anti-democratic policies and is ruling as a dictator. During his decade in power the economy has collapsed by 75%. Some 7m people, or a quarter of the population, have emigrated. Despite this, Lula's views appear to remain stubbornly the same.

On May 29th Lula, who won the presidential election last year for a third term, received Mr Maduro in Brasília, the capital. It was the first time Mr Maduro had visited Brazil since 2015. His visit was part of a regional summit of South American leaders. After a series of hugs and backslaps, Lula described his guest, who in 2020 had a $15m bounty placed upon him by the United States government for "narco-terrorism", as the victim of "a constructed narrative of authoritarianism". He declared it "absurd" to label Mr Maduro an illegitimate leader given that he was "elected by the people"; a sophistic argument which sidesteps the context of the rigged election in 2018, which 60 governments globally declared to be fraudulent.

Mr Maduro's regime also faces grave human-rights allegations, including torture. Under Donald Trump, American sanctions were placed on the country and its oil industry. But this did not deter Lula in his fulsome praise. "Our opponents", he declared, "will have to apologise for the damage they did in Venezuela."

Why is Lula cosying up to his unsavoury neighbour? The simplest explanation is that the president is an old-school left-winger, and the instinct of the founder of Brazil's Workers' Party will always be to see Mr Maduro's regime not as a corrupt cabal but as a victim of the machinations of "imperialist" outsiders, such as the United States. Indeed, in some ways it seems as if Lula has not updated his arguments for nearly 20 years. On May 30th he cited the penchant of Chávez, who died in 2013, for referendums as examples of how democratic the country is today. Mr Maduro has blocked referendums by the opposition.

However, Lula's effusive support for Mr Maduro may also have a more practical purpose. The two countries share a 2,200km (1,400-mile) border, most of it in the Amazonian region. This area is a key focus of Lula's attention as he has promised to curb deforestation, which rose sharply under his predecessor, Jair Bolsonaro, a right-wing populist. One driver of tree-felling is illegal gold-mining. Tackling that, an enormously complex task, requires co-operation with Mr Maduro. Similarly, reducing migration from Venezuela is another challenge, as it is pushing up unemployment in northern Brazil.

But the primary reason appears to be that Lula, now 77 years old, is keen to become a global peacemaker. Guilherme Casarões at the Getúlio Vargas Foundation, a university, believes that the president has decided to take charge of foreign-policy decisions himself, rather than listen to his advisers. Since Lula's inauguration in January, when he declared that "Brazil is back", the president has taken about one official international trip a month, which has led allies to grumble privately that he is neglecting domestic issues. He wants to create a "peace club" to deal with the war in Ukraine. But his attempts at diplomacy have floundered, not least as he accused Volodymyr Zelensky, Ukraine's president, of being "as responsible as [Vladimir] Putin for the war". Lula may be motivated by an ambition "to negotiate a democratic transition in Venezuela", says Rubens Barbosa, a former ambassador for Brazil.

Whatever the reasons for Lula's staunch defence of Mr Maduro, it appears to have backfired. Sergio Moro, a judge who in 2017 sentenced Lula to prison on charges of corruption (the convictions of which were later annulled), tweeted that "Brazil is back to welcoming South American dictators with state honours". Mr Moro, who was elected as a senator last year, has requested that Brazil's Senate hold a hearing on human-rights abuses in Venezuela and that Maria Corina Machado, a prominent Venezuelan opposition leader, be invited. She could not attend in person, as she is banned from travelling by Mr Maduro's regime.

Maduro's new mates

Similarly, on May 30th many of Lula's presidential guests took him to task for glossing over Mr Maduro's record on human rights. Luis Lacalle Pou, Uruguay's conservative president, warned of the risks of ignoring reality. Chile's left-wing leader, Gabriel Boric, said that he disagreed with Lula that human-rights violations are a "narrative construction", adding that: "It is a reality, it is serious." However, he agreed that sanctions on Venezuela should be lifted.

Lula and Mr Boric are not alone in wanting to lessen Mr Maduro's isolation. Even the United States government has begun to reduce some of its sanctions on the Venezuelan oil industry. But Lula's latest comments "went beyond what was reasonable", says Mr Casarões. ■

Friends with few benefits

America and Iran's nukes

Too hot to handle?

It may be too late for America to stop Iran getting the bomb

It is exactly five years since Donald Trump pulled America out of the deal with Iran to constrain its nuclear programme in exchange for economic-sanctions relief. Since then, Iran has not stood still. Satellite pictures appear to confirm that Iran is building a nuclear facility in the Zagros mountains, near the existing Natanz enrichment site (shown above). It seems to be so deep under the ground that it will be invulnerable even to America's most powerful bunker-busting bomb.

If analysis of these pictures by the James Martin Centre for Non-proliferation Studies, an American NGO, is correct, four entrances have been dug into the mountainside, each six metres wide by eight metres high. The facility is 80-100 metres deep down inside. The Americans had developed a bomb, known as the GBU-57, specifically to be able to destroy an earlier underground facility, at Fordow. Also known as the Massive Ordinance Penetrator (MOP), the 14,000kg precision-guided bomb can burrow through 60 metres of earth and rock before detonating. But that may no longer be enough to destroy Iran's hideout.

The Institute for Science and International Security (ISIS), a think-tank in Washington founded by David Albright, a former weapons inspector, reckons that the deepest part of the chamber could be used as a hall for a small number of advanced centrifuges that could rapidly produce enough weapons-grade uranium (WGU) to make Iran capable of an unstoppable nuclear breakout.

Whatever the criticisms of the nuclear bargain of 2015 known as the Joint Comprehensive Plan of Action (JCPOA), which Barack Obama's administration had concocted in partnership with the four other permanent members of the UN Security Council and the European Union (the P5+1), it did ensure that it would take Iran about a year to produce enough fissile material for a nuclear device. Now it could probably achieve it almost immediately.

Since Mr Trump's reckless decision to trash "the worst deal ever" and renew sanctions that were designed to exert "maximum pressure" on the Iranian regime, Iran has brought online new, faster centrifuges that have hugely expanded its enrichment capacity. Based on the quarterly inspection report in February of the International Atomic Energy Agency (IAEA), the UN's nuclear watchdog, Mr Albright's team estimates that Iran could produce enough WGU for a nuclear weapon in just 12 days. It would need to use only three advanced-centrifuge cascades and half of its current stock of 60%-enriched uranium.

More worrying still, if Iran used all its stock of highly enriched uranium, it could produce WGU for four more nuclear weapons in a month. In another two months, using its stock of low-enriched uranium (ie, less than 5%-enriched), it could get enough material for two more weapons. It would take about six months to test and deploy a bomb for a crude delivery system, such as a plane or a ship. A missile-delivered warhead might be feasible in a year ▸▸

or two. Testifying to Congress in March, General Mark Milley, chair of the joint chiefs of staff, drew a similar timeline.

None of which means that Iran is about to break out and become a fully fledged nuclear-weapons state. But it does mean, as Mr Albright puts it, that it can produce nuclear weapons pretty much "on demand". Given America's oft-repeated commitment never to allow Iran to have the bomb and its fear of escalation in a volatile part of the world, it might be thought that intense diplomatic efforts to revive the JCPOA, or at least to find some alternative means to constrain Iran's nuclear threat, would be urgently under way.

Far from it. Despite intensive indirect talks between America and Iran, chaired by the EU's top diplomat, Josep Borrell, which continued for many months in Vienna last year, the attempt to breathe some new life into the JCPOA got nowhere. By September the sides were even farther apart. The Iranians refused to accept a new probe by the IAEA into their past nuclear activities and insisted that they be given guarantees that they would continue to benefit from sanctions relief, including financial compensation, in case a future American administration again walked away from a deal.

Russia's invasion stymied a new deal

Ali Ansari, the director of the Institute of Iranian Studies at St Andrews University in Scotland, reckons the Iranians were never "genuine about a return to the JCPOA and nor was there much real enthusiasm within the State Department: it was negotiations for the sake of negotiations." Emile Hokayem, a Middle East security specialist at the International Institute for Strategic Studies in London, agrees: "The Iranians had already decided they were beyond the JCPOA by the time the Biden administration came in. They were playing a complicated game with the IAEA."

Both believe that the death knell for a nuclear deal was Russia's invasion of Ukraine last year. By bringing Russia and Iran into a much closer defence relationship, it killed off any lingering hopes of restoring the P5+1 process. As energy prices soared, it also removed some of the immediate economic pressures on Iran. Besides, reckons Mr Ansari, Iran presumed that Russia would prevail in Ukraine, which would boost Iran's narrative of Western decline and get it better terms on sanctions by exploiting divisions between America's European allies. Although that expectation has for the moment been dashed, Iran thinks it can strengthen its own hand in its relationship with a weaker Russia.

Mr Hokayem thinks that the assessment in most of the six countries of the Gulf Co-operation Council (GCC), including Saudi Arabia and the United Arab Emirates, is that an isolated Russia, keen to buy drones and missiles from Iran, will become a far more valuable transactional partner. In particular, it is now assumed, Russia will be readier to transfer high-tech weapons systems that could plug big gaps in Iran's inventory, such as advanced S-400 surface-to-air missiles and Russia's highly capable Su-35 fighter aircraft.

In any case, some in Washington want the Gulf countries to do more for their own security, especially at a time when the American administration is embroiled in handling the war in Ukraine, not to mention its constant rivalry with China. Many Gulf-watchers think America has already begun to pack its bags in the region.

Moreover, the Gulf Arabs have become much less interested in the Iran nuclear file than either America or Israel. They already regard Iran as a de facto nuclear pow-

Business succession in the Gulf

Make it clearer

DUBAI

New laws are needed to help resolve disputes among family firms

"I LOVE YOU, but you are not serious people," says Logan Roy, the fictitious media mogul, to his feuding, grasping children in the TV series "Succession". The same may be said by many an anguished tycoon in the Gulf as he struggles to arrange a harmonious handover to the next generation. The current laws are often either non-existent or inadequate for dealing with increasingly complex business structures when the great man dies. Some Gulf governments are beginning to enact laws to settle such family matters harmoniously.

Take the Kuwaiti brothers Bassam and Kutayba Alghanim. The pair were embroiled in a succession dispute over their family's huge conglomerate that lasted for years. At first the brothers sought to divide the business up amicably. But accusations and recriminations ensued, causing bad blood among the extended family. Kuwait's rulers even stepped in to try to sort it all out.

Such family disputes in the Gulf may be getting commoner. The firms' reputations often suffer, decision-making can be paralysed and businesses can

sometimes implode altogether. Fadi Hammadeh, who advises the Family Business Council-Gulf, an outfit based in Dubai that seeks to help family firms cross generations, says that dozens of rows within such businesses are being expensively adjudicated in the courts of the United Arab Emirates (UAE).

This particularly affects succession and inheritance. Extended families can be enormous, since some rich Arabs still have a string of wives and many children. So family businesses may have a multiplicity of shareholders. Unless there is careful planning, the rules tend to make it hard to arrange for the most able or meritorious of the descendants to take over. The original owners can make bequests and transfers in their lifetime, but many do not. As there is no inheritance tax in any of the GCC countries, there is little incentive to make early handovers. Many owners are loth to step down early or even admit their mortality.

Courts in the Gulf have generally been ill-equipped to deal with such matters. But governments are beginning to improve the laws. When Majid al-Futtaim, founder of a retail empire headquartered in Dubai worth more than $16bn, died in December 2021, Dubai's leadership appointed a "special judicial committee" to help resolve disputes that arose between his ten immediate heirs: three wives, a son and six daughters.

In January the UAE issued a family-companies law that spells out arbitration methods. Family businesses need proper constitutions and rules of succession. So far, however, it is optional for family firms to sign up to the new law. Oman and Saudi Arabia have also begun to take similar action.

Walid Chiniara, author of "Dynastic Planning", who advises Saudi families, says more of his clients see the need for urgency. "I hear them say 'I saw my friends fighting—I don't want this to happen to my family'."

er. Nor do they have the technical expertise to negotiate with the Iranians on nuclear constraints, even if they wanted to. What they worry about, says Mr Hokayem, is Iran's missiles, drones and militias. By contrast, Israel feels it can cope pretty well with those. But time and again it has said it cannot live with a nuclear-capable Iran.

The result is a kind of weary but nonetheless dangerous equilibrium whereby the regional powers are trying to gain some leverage over Iran by investing in its economy, making goodwill gestures such as re-admitting Iran's Syrian protégé back into the Arab League, and deferring to China—the one real influence on Iran—whenever possible. The smaller Gulf states plainly accepted the Chinese-brokered restoration of relations between Saudi Arabia and Iran in March. At the same time they hope Iran will choose to meddle less in the region. On the nuclear front they would prefer Iran to hold back from breakout and let the IAEA have the figleaf of routine inspections.

From the Gulf Arabs' perspective the biggest wild cards are the outcome of the next American election and the behaviour of Israel. Despite the Abraham accords of 2020, which normalised Israel's relations with four more Arab countries, governments in the Gulf know they have little influence on what Israel might decide to do over Iran. While Iran pushes to get those game-changing S-400 missiles and modern jets from Russia and buries its enrichment cascades ever deeper in the mountainside, Israel may see its window for action closing. "Iran has made more progress in uranium enrichment than ever before," said General Herzi Halevi, chief of staff of Israel's army, on May 23rd. But Israel has a constraint of its own. It probably needs a type of aerial tanker, the KC-46 Pegasus, to carry out an attack on Iran, which would anyway be difficult and risky. Boeing is not expected to deliver them until 2025.

In any case, Israel's intelligence services are not yet convinced that Iran has decided to break out into weapons-grade enrichment or that it has taken the key steps towards weaponisation by enabling fissile material to be put into an operational nuclear warhead. Meanwhile, it is concentrating on pegging back Iran's regional proxies, such as the Palestinian Islamist group Hamas and the Lebanese group Hizbullah. It is also keen to cement friendlier relations with the Saudis.

Henry Rome, an Iran specialist at the Washington Institute for Near East Policy, says that the situation is like trying to thread a ball down a bowling alley where one gutter represents a new nuclear agreement and the other stands for conflict escalation with potentially catastrophic consequences. Keeping the ball down the middle will require concentration, prudence and luck. None of which is guaranteed. ■

Sudan's civil war

The worst of a bad lot

What next for Sudan's most notorious rebel leader?

THE JOURNEY of Muhammad Hamdan Dagalo, better known as Hemedti, from the deserts of remotest Darfur to a gilded mansion on the banks of the Nile in Khartoum, Sudan's embattled capital, is hard to fathom. Once a lowly camel rustler and small-time businessman, he started out with neither formal education nor military training. Yet by the late 2000s he was the most powerful militia commander in all of Darfur, the country's vast western region, holding a key to Sudan's future. His infamous force of fellow camel-herding Arabs, known as the Janjaweed, was accused of committing genocide against the region's African tribes on behalf of the country's long-serving dictator, General Omar al-Bashir. As a veteran Sudan-watching diplomat puts it, Hemedti was like "a Mafia don who started on a street corner and then took over the city".

Within a decade the Janjaweed, officially recognised by the central government as the Rapid Support Forces (RSF), had morphed into a paramilitary body with tens of thousands of well-equipped troops. Mr Dagalo, now a brigadier-general, had struck lucrative deals with the United Arab Emirates and Saudi Arabia and had sent men to aid their war in Yemen. Thanks to the RSF's control of Sudan's gold mines, he had established a sprawling transnational business empire.

By the time Mr Bashir was ousted by a combination of popular protests followed by an army coup in 2019, Mr Dagalo may have become Sudan's most powerful man. Western diplomats shook hands with him; Russian mercenaries are said to have armed him; and a Canadian public-relations firm lobbied for him. Backed by what was, in effect, his own private army, he

deftly manoeuvred himself into the post of de facto vice-president in the interim government that was set up after the fall of Mr Bashir. Few doubted that Hemedti had his eye on the very top job.

Now, though, Mr Dagalo is fighting for his life. Since mid-April, his RSF has been battling the regular army, the Sudanese Armed Forces (SAF), in a deadly power struggle which threatens to ruin the central state and uproot millions of civilians. Though the RSF has overrun much of Khartoum in the past seven weeks, and still controls key spots such as the international airport, the central bank and the country's main oil refinery, Mr Dagalo remains the underdog.

A string of patchily observed ceasefires brokered by America and Saudi Arabia may have helped the RSF strengthen its foothold in the capital, letting it rearm and deploy fresh troops. But Mr Dagalo has little chance of defeating the army outright.

Though both sides are quarrelsome coalitions, the RSF may be the more effectively commanded. Mr Dagalo and a close-knit circle of his family and clansmen will have to decide whether their troops should capitulate, raze the capital, or flee to their stronghold in Darfur, where they could inflict even more damage. The priority of the army, under General Abdel Fattah Burhan, is to kill or capture him and his brother, Abdul-Rahim Dagalo, the paramilitaries' deputy commander. The rebel leader has not been seen in public since late April.

Jérôme Tubiana, a French researcher who has known Mr Dagalo since the late 2000s, calls him "a pragmatist". Once upon a time his chief allies were the Arab supremacists of Darfur. These days he claims to be fighting for democracy. But as recently as 2021 he joined forces with his rival, General Burhan, the de facto president, to oust the civilian-led government. To win support from potential allies in the Gulf, he portrays himself as a staunch opponent of political Islam, even though he was for years an enthusiastic participant in the Islamist regime of Mr Bashir.

Mr Dagalo's weakness is that he lacks a wider popular base. Despite his recent efforts to portray himself as the authentic tribune of Sudan's downtrodden masses, the RSF remains at core a family concern centred on Mr Dagalo's own Rezeigat tribe. Its exceptionally brutal conduct since the civil war began in April has alienated people still more. "He lost the hearts and minds of the people," says a former official in Sudan's interim government. If forced to choose between the RSF and the SAF, most Sudanese would opt for the latter.

Mr Dagalo's biggest bonus is money. He has used his gold to buy up a web of private and public assets, enabling him to smuggle in arms and fuel from Libya and reportedly from states across the Red Sea. Mr Dagalo ▸▸

has also been able to pay for mercenaries who have been recruited from Arab tribes right across the Sahel. Since the civil war began, foreign fighters are said to have been coming to his side from Chad and the Central African Republic.

It is unclear whether the RSF could fight a protracted war. Most of Mr Dagalo's troops may be motivated more by money and clan solidarity than ideology. Despite the sporadic ceasefire, the fighting in their Darfuri stronghold seems to be getting more vicious as the humanitarian crisis worsens. "It's a black hole—we don't know what's going on there," frets Martin Griffiths, the UN's humanitarian chief.

Resentment of Mr Dagalo inside the RSF may yet begin to grow, even among his own tribe. His whereabouts are puzzling. Many of his family are said to be ensconced safely in the Gulf. "He's making [his people] pay a very high price for his ambition," says Magdi el-Gizouli of the Rift Valley Institute, a think-tank that operates across the region. "At what point do they decide it's not worth it?" ■

Uganda and homosexuality

A harsh anti-gay bill is now law

KAMPALA

African homophobia is homegrown but pepped up by Western culture wars

HOMOSEXUALITY IN UGANDA has been punishable by life imprisonment since colonial Britain outlawed it in 1950. But today's lawmakers have deemed that too lenient. A new law signed on May 26th by President Yoweri Museveni provides for the death penalty for some same-sex acts, including those that might spread HIV. Other clauses envisage long prison sentences for "promoting" homosexuality or even for renting a room to a gay couple. "We have a culture to protect," said Anita Among, parliament's speaker. "The Western world will not come to rule Uganda."

It is not just Ugandan homophobes who cloak themselves in anti-colonial garb. In Ghana, the preface to a similar bill warns of "the infiltration of foreign cultures". Some Kenyan politicians, who hope to pass a law of their own, have described LGBT rights as "a second colonisation" designed to shrink Africa's population.

Western governments have indeed become more assertive about sexual rights as their voters have become more liberal. But the West's conservative culture warriors are also pushing their ideas in Africa, feeding a moral panic in societies where homophobia is already routine. Uganda's bill is "the end product of a propaganda war that was started long ago," says Fox Odoi-Oywelowo, Uganda's sole MP to vote against it.

The politics of the family crosses borders and continents. Consider a conference on "family values and sovereignty" organised by the Ugandan parliament in March. It brought together religious leaders, youth activists and MPs from 20 African countries. Others attending included delegates from Family Watch International (FWI), an American group that helped develop the programme, and Christian Council International, from the Netherlands. Afterwards they met Mr Museveni and his wife Janet, the education minister, who is a born-again Christian. Some speakers at the conference denounced homosexuality, sex education and other threats—as they see them—to the African family.

Sharon Slater, the president of FWI, spoke about "the child sexualisation agenda". For two decades she has been building networks in Africa to oppose "comprehensive sexuality education", which she says sexualises children without parental consent. In a written statement FWI said it has never supported anti-homosexuality bills in Africa and opposes several sections of Uganda's new law. It urged Mr Museveni to include provisions for "voluntary counselling" for people who experience "unwanted same-sex attraction".

Other speakers at the conference were enthusiastic proponents of the legislation. One of them was George Peter Kaluma, an MP from Kenya, where he has submitted a bill modelled on the Ugandan one. Another was Sam George, the man behind Ghana's proposed law. He was also a guest at FWI's African Family Policy Conference last October, held, with no sense of irony, in Utah.

Many of those attending share a belief that the liberal West is trying to sexualise children (in debates about Uganda's new law, politicians routinely conflate homosexuality and paedophilia). For African conservatives, Western culture wars offer inspiration. "The language has been globalised," says Kapya John Kaoma, a Zambian priest at Boston University who has studied anti-LGBT politics. Gillian Kane of Ipas, an American group that campaigns for safe abortion and contraception, argues that aspects of FWI advocacy are "fear-based" and widen the space for such politics, though African politicians bear most responsibility for the laws.

And shame on the bill

A meeting in Moscow in 1995 between an American historian and two Russian sociologists who blamed homosexuality for population decline laid the ground for the World Congress of Families, an American anti-gay network that opposes same-sex marriage, promotes "the natural family" and has organised conferences in Africa. For many years its representative in Russia was Alexey Komov, a right-wing activist close to figures allied to the Orthodox church. Until Russia's invasion of Ukraine he also sat on the board of CitizenGO, an online community which has co-ordinated social-media campaigns against abortion and gay rights in Africa.

Local sources and Western diplomats in Uganda speculate, without so far producing evidence, that Russian money may have oiled the progress of the anti-gay bill through parliament. Russia's embassy in Kenya has gone out of its way to praise Ugandan politicians for "stand[ing] firm to protect traditional values".

Tradition can be widely interpreted. Sylvia Tamale, a Ugandan academic, has argued that African societies once had a nuanced understanding of sexuality, before colonial missionaries imposed rigid moral codes. Some countries are recovering a lost culture of tolerance. In 2019 a court in Botswana struck down the country's sodomy laws, saying they were "imported" by the British.

Nowadays most Western governments support gay rights. America, which gives almost $1bn a year in development aid to Uganda, has hinted at economic repercussions in response to the new law. President Joe Biden has already forcefully criticised it. Ghana's president, Nana Akufo-Addo, distanced himself from his country's bill after meeting Kamala Harris, America's vice-president. Some African politicians cite this as evidence of the West using its leverage to undermine laws that many Africans support.

The best chance of change comes from within. In Uganda gay people have been arrested, blackmailed, denied health care and evicted from their homes. "We live in fear and uncertainty every day," says Clare Byarugaba, an LGBT activist at Chapter Four Uganda, a rights group. But she and her comrades are not backing down. Some have already filed a court challenge to the law. "One way or another," she says, "we will once and for all destroy this bill." ■

Taiwan's elections

The search for a middle way

TAIPEI

The presidential election will be fought on how Taiwan should navigate a superpower confrontation

THE CHINESE COMMUNIST PARTY (CCP) has never ruled Taiwan. But how to deal with it and its insistence on eventual unification with the island has always been the central issue in Taiwan's national politics. As campaigning begins for the presidential elections due next January, the stakes are especially high. Almost every day China sends fighter jets into the Taiwan Strait, often crossing Taiwan's de facto maritime border; America is expanding its military bases and stepping up exercises with allies across the Indo-Pacific. The next president will take office with the island at the centre of a bubbling superpower showdown.

Already, as always, the two main parties are attacking each other for provoking or appeasing Beijing. The "appeaser", the main opposition Nationalist Party, known as the Kuomintang or KMT, calls the election a choice between "war or peace". The "provoker", the ruling Democratic Progressive Party (DPP), says it is a choice between "democracy or autocracy". The parties have competing visions of how best to protect the island. The DPP proposes forging alliances with other democracies; the KMT wants to talk to the CCP.

Unusually, a third-party candidate, Ko Wen-je of the Taiwan People's Party (TPP), may also be a serious contender. In the past Taiwan's voters tended to split along identity lines. The KMT's origins were as the party of Mandarin-speaking mainlanders, who fled China as the CCP won its civil war in the 1940s, and their descendants. The DPP's were as the party of the native-Taiwanese majority, many of whose members wanted formal independence from China. Now, more than half of voters are not committed to either party; 40% of those in their 20s claim to be neutral.

The DPP's candidate is Lai Ching-te, the vice-president, a softly-spoken former doctor. He is leading in the polls, with about 30% support, but is haunted by past statements. In 2017 he called himself a "Taiwanese independence worker", antagonising China and providing an uncomfortable reminder to America of Taiwan's first DPP president, Chen Shui-bian (2000-08), whose talk of independence unsettled American negotiations with China.

Also in this section

Mr Lai knows he needs to tone down his language. He has said his priority is not *taidu*, Taiwan independence, but *taizhu*, Taiwan democracy, and has moderated the DPP's slogan from "resist China and protect Taiwan" to "peacefully protect Taiwan". He promises to stick to the careful dictum of the current president, Tsai Ing-wen, that, since Taiwan is already independent, it needs no further declarations. But all that is unlikely to wash with the CCP, which will continue to threaten and seek to isolate Taiwan as long as the DPP is in charge—fuelling the KMT's criticism that the DPP makes Taiwan unsafe.

The DPP also has an image problem at home. It grew out of opposition to the KMT's four decades of one-party rule. Its founders were activists seeking both democracy and independence. Ms Tsai's elections in 2016 and in 2020 both followed student movements in Taiwan and Hong Kong that drew voters to the DPP as a symbol of resistance to Chinese authoritarianism. But after eight years in power, its oppositionist credentials have faded. Many ▸▸

young people see the DPP as the "establishment". At a recent campaign event, a student asked Mr Lai how he planned to change the DPP's "habitual arrogance".

The KMT has chosen a candidate it hopes will counter its own establishment image. Hou Yu-ih, a burly, calm-seeming former cop, is a moderate with a reputation for efficiency and, in the words of a former DPP legislator, a "Taiwanese flavour". He won re-election as the mayor of New Taipei City last year with a wide margin. He is said to speak Taiwanese better than he speaks Mandarin. The KMT hopes he will appeal to voters outside the party's traditional base.

That will depend on his cross-Straits policy, which is so far vague. Mr Hou has said Taiwan should not be a "pawn of larger nations", adding that he means both China and America. He has stuck to generalities, like rejection of "one country, two systems", China's discredited model for Hong Kong. Mr Hou "has been able to persuade people that he is everything to everyone," says Nathan Batto of Academia Sinica, a Taiwanese research outfit. But the campaign will soon force him to clarify his approach to China—which will make or break his chances of winning.

Then there is Mr Ko, a former mayor of the capital and founder of the TPP. Mr Ko, who says he has Asperger's syndrome, has a blunt, sometimes awkward, way of speaking. His campaign focuses not on relations with the mainland but on domestic concerns such as energy and housing, which has proved popular. In recent polls Mr Ko has hovered just a few points behind the KMT's candidate, on more than 20%.

Mr Ko says he offers a "third choice" for voters between provoking China and deferring to it. In fact his policies have been closer to the KMT's. As Taipei's mayor he oversaw annual forums between the Taipei and Shanghai city governments. He once told Shanghai officials that the two sides of the Taiwan strait are "one family", alienating DPP supporters. Critics accuse him of being under CCP influence. Supporters say Mr Ko is "extremely pragmatic". At a recent campaign event Liang Jih-chang, a student who plans to vote for Mr Ko, agreed, pointing by way of illustration to his ability to engage Shanghai officials.

The TPP's popularity makes Taiwan's elections far less predictable. The polls show Mr Lai in the lead, with Mr Ko and Mr Hou vying for second place. If Mr Ko and Mr Hou team up, as some of their parties' representatives have suggested is possible, they may overturn DPP rule. That might lead to a superficial easing of tensions in the Taiwan Strait. But it would slow the advance neither of China's military build-up nor of its contest with America. Taiwan's would-be presidents all promise a way to peace. Sadly, it is not entirely within their power. It, too, depends on China. ■

India's new parliament building

Monumental Modi

DELHI

The Hindu-nationalist government is rebuilding New Delhi

INDIA'S NEW parliament building reflects the dreams and aspirations of all Indians, according to the government of Narendra Modi. Yet the opening on May 28th of this new edifice of democracy, built in concrete and stone to a grand hexagonal design, was remarkable for its focus on one man: the prime minister himself.

Mr Modi performed a lengthy *puja,* a Hindu worship ritual, at the ceremony. He then installed a golden sceptre associated with an ancient Hindu kingdom in the spanking-new parliamentary chamber. He also presided over multi-faith prayers and addressed members of the assembly. But this note of inclusiveness was dulled by the fact that 20 opposition parties boycotted the occasion to protest against the ruling Bharatiya Janata Party (BJP) politicising such a significant public building.

It is not just a replacement for the country's smaller, rather decrepit British-built parliament building. The new home of Indian democracy reflects in many ways the BJP's idea of Indian nationhood. It signifies an obvious break with the country's colonial past. The impressive scale of the building, which sits next to its predecessor in central Delhi, also illustrates the Hindu nationalists' ambition. Mr Modi said it reflected a country that was "gaining back its pride" after having its "glorious past ...snatched away by years of slavery".

The building's interior, which Mr Modi inaugurated on the birthday of Vinayak Damodar Savarkar, the foremost architect of his party's Hindutva ideology, is more contentious. The government says its design represents "Indian culture", but by that it mostly means Hinduism. The chambers of the parliament's lower and upper houses are shaped as a peacock and lotus, respectively. These national emblems are also considered auspicious and holy in Hinduism. The lotus features in the BJP's own insignia. The golden sceptre that Mr Modi installed in the chamber is, similarly, associated with Hindu ideas of good governance.

The new building is part of a wider redevelopment of central Delhi, spearheaded by the prime minister's favourite architect, Bimal Patel. Critics say this grand project is manifestly political. "The government is using architecture as a tool for politics," says A.G.K. Menon, an architect who has challenged the plan in court. Some BJP ideologues agree. The new parliament, wrote one in an op-ed this week, "is part of

The new acolytes of Indian statehood

the holistic efforts of the BJP government to renew nationalist fervour". The conversion of the old parliament into a museum would be "the beginning of the rewriting of history on our own terms".

Indians keen to know whether the new parliament building reflects their dreams and aspirations must be patient. For now the building remains closed to the public, with much of its expanse hidden behind a construction fence. But passers-by could be seen this week peering through a gap at the building's flower-clad entrance—before the police shooed them away. ■

Pakistan's politics

Military victory

ISLAMABAD

Imran Khan loses his party and his battle with the army

NOT LONG ago Imran Khan looked like a man who had defied Pakistan's all-powerful generals and got away with it. After his arrest by paramilitary goons on May 9th, the former prime minister was freed by a Supreme Court order—even though his outraged supporters had had the temerity to smash up military installations around the country. As Pakistan's most popular politician, with a legion of committed activists and apparently no fear of the army, Mr Khan looked odds-on to win a general election due later this year.

Barely three weeks later, the political walls have caved in on him. The generals have in effect dismantled the party Mr Khan founded in 1996, Pakistan Tehreek-e-Insaf (PTI). Scores of its senior leaders have defected and thousands of its supporters have been arrested. The government of Shehbaz Sharif is openly mulling banning the party. Mr Khan, who faces dozens of charges including corruption and blasphemy, could be tried by a military court—and perhaps expect a long political exile at best. Pakistan's beleaguered civilian institutions appear, for now, to be firmly back under the army's sway.

Whether under orders from the military or out of sheer opportunism, the government of Shehbaz Sharif is backing the PTI's dismantlement. It cites the urgent need to restore economic and political stability. Pakistan's economy barely grew over the past year. Due to a collapse in the rupee, annual income per person dropped by nearly $200 in dollar terms, to $1,568. Annual inflation is estimated to have hit 37% in May. With foreign exchange reserves barely sufficient to cover a month's worth of imports, there remains a real risk of sovereign default. The IMF this week urged the government to respect constitutional means in resolving the political crisis and reiterated that Pakistan must obtain "sufficient financing from partners" before it releases a long-stalled $1.1bn in bail-out funds. China is expected to roll over $2.3bn in loans in June.

An irony of Mr Khan's fall, not lost on Pakistanis, is that he was once promoted by the army as a means to suppress other civilian parties, including Mr Sharif's. After he became prime minister in 2018 some observers described his government as a civil-military "hybrid". But the generals eventually tired of his grandstanding and narcissism, leading to his ouster last year in a no-confidence vote.

The attacks unleashed on army buildings by his supporters on May 9th, including the ransacking of a house belonging to the commanding general in Lahore, were unprecedented and, it is now clear, intolerable to the generals. An army spokesman promised a crackdown on all "planners, instigators, abettors and perpetrators" of the violence. Penitent PTI leaders have since been paraded before journalists, condemning the violence, dissociating themselves from Mr Khan and pledging fealty to the army. Many of them have renounced politics altogether. Rights organisations accuse the government of using the crackdown to detain peaceful opponents alongside alleged rioters.

The generals will now be weighing their options. On the basis of their past campaigns against civilian politicians who dared to disappoint them, these will include jailing Mr Khan, nudging him into exile, disqualifying him from politics and, though it seems unlikely, allowing him to contest the election at the head of whatever remains of his party. Or they may decide that the election will not be held—there are rumours that they mean to form a technocratic government instead. Mr Khan, for his part, remains defiant. Challenging the government to "break as many people as you want", he has called for early elections.

In any event, political and economic stability is likely to remain elusive. Mr Khan's sidelining will not make him less popular. Mr Sharif and, for that matter, whoever the generals pick to lead the country next will have to contend with vast numbers of disaffected PTI supporters. And so will the generals, whose relentless political interference has, thanks to Mr Khan, now made them a principal target for Pakistanis' justified rage. "The army can't help itself," says Zahid Hussain, a political commentator. "Its urge to intervene is irresistible." And yet it has never seemed more self-defeating. ■

Japan and geothermal energy

In hot water

TAKAYAMA CITY, GIFU

A venerable leisure industry is blocking energy development

WHITE STEAM rises from the waters of Okuhida Onsengo in snowy northern Japan. Each year thousands of bathers from across the country travel to soak in these hot springs. Down the road, meanwhile, the spring's underground reservoirs are being put to a new use: last December the Nakao Geothermal Power Plant began using steam from them to generate electricity. With a maximum output of almost two megawatts (MW), the plant could supply electricity to 4,000 households.

With over 100 active volcanoes, Japan is estimated to have a potential geothermal resource of 23 gigawatts, equivalent to the output of 23 nuclear reactors. But the Nakao plant is a rarity—Japan has hardly developed its geothermal reserves. Geothermal energy accounts for just 0.3% of its electricity supply. Japan holds the third-largest geothermal potential in the world, after America and Indonesia, but ranks tenth in terms of geothermal power generation. For a country heavily dependent on imported energy and struggling to honour its commitment to decarbonise its economy by 2050, this represents a huge missed opportunity.

Japan's sprawling onsen (hot spring) industry is the main obstacle to geothermal development. Though many geologists reckon there is little chance of geothermal plants negatively affecting bathing pools (which are generally filled by much shallower aquifers than the geothermal reservoirs energy companies look for), the onsen industry is unconvinced. "The government relies on hot springs for its tourism—what are they going to do if the hot springs disappear because they keep building geothermal power plants?" asks Sato Yoshiyasu of the Japan Onsen Association, a big industry group. Japan's 3,000 hot-spring resorts routinely withhold the consent necessary for development to proceed. And the fact that they are deeply rooted in Japanese culture, and attract around 130m visitors a year, has largely deterred the government from pushing back.

There are other obstacles to geothermal development. Some 80% of Japan's reserves are in national parks. Much of Japan is mountainous. Its underground geology is relatively complex, with layers of hard rock that are difficult to drill through. Whereas countries such as Indonesia that produce a lot of geothermal power often have relatively large, well-connected power stations, Japan's tend to be small and scattered. Geothermal in Japan is "promising" but requires "diligent effort", says Ehara Sachio of the Institute for Geothermal Information, a think-tank near Tokyo.

With enough political will, none of these barriers is insurmountable, however, as Japan demonstrated in its response to the oil crisis of the 1970s. Back then it launched an initiative, known as the "Sunshine Project", to promote alternative energy sources, including solar, hydrogen and geothermal. The New Energy and Industrial Technology Development Organisation (NEDO), a government institution established in 1980, conducted a nationwide assessment of geothermal potential. By the late 1990s, dozens of geothermal power stations were built across the country, adding over 500MW of generating capacity.

As oil prices stabilised and more nuclear power stations came online, Japan's spurt of enthusiasm for geothermal petered out. But the meltdown at the Fukush-

Onsen NIMBYism in action

ima nuclear plant in 2011, which turned public opinion against nuclear power, has brought another spurt. Japan now hopes to triple geothermal output by 2030. Businesses and local governments are considering more than 50 possible sites to build new geothermal power plants.

To that end, the government is eyeing next-generation technology. Japan and America recently signed an agreement to collaborate on geothermal projects, including on research for supercritical geothermal—which involves drilling deep wells to access ultra-hot fluids. Mr Ehara reckons such advanced technologies could ensure geothermal provides more than 10% of Japan's energy. (America is aiming to get 8.5% of its electricity generation from geothermal by 2050.)

In the short run, conventional geothermal plants remain a better way to reduce Japan's carbon emissions. Developing them is becoming slightly easier. The timeline for environmental assessments was recently shortened from over a decade to eight years. The rules on developing national-park land were eased around a decade ago. Perhaps more promisingly, some geothermal-energy producers, such as Cenergy, which runs the plant at Nakao, are developing their own innovative ways to mollify the objectors.

Hot water extracted at the plant is piped to the local onsen. The two parties enjoy a "win-win" situation, says Uchino Masamitsu, a local onsen owner. This co-operation appears to be sparking interest in using the hot waters in other ways, too. Some local householders are using their heat to grow tropical fruits such as bananas and dragon fruit. "Geothermal," sighs Mr Uchino, "opens up so many dreams." ■

Banyan The rise and fall of Tae Yong Ho

A prominent defector from North to South Korea illustrates the flaws of both

FEW POLITICAL transformations are as dramatic as that of Tae Yong Ho. Until his defection in 2016, he was North Korea's deputy ambassador in London. A video circulating online shows him earning applause from British fanboys of his country's despotic regime by predicting that "the future will be of socialism". Four years later he became the first defector directly elected to South Korea's parliament. Representing the conservative People's Power Party (PPP), he now predicts that the North Korean regime he once served "will inevitably collapse".

Many of the 30,000 North Korean defectors living in the South struggle to get on. They lack the requisite training to be competitive in a first-world economy. The psychological scars most carry from Kim Jong Un's totalitarian regime make their transition harder. A North Korean accent, which most defectors retain, is not a plus in South Korea's cut-throat job market. The unemployment rate among the defectors is twice the national average. In this context Mr Tae's success has made him an emblem of the meritocratic society that South Korea aspires to be. Yet a recent stumble, which has seen him suspended from his party, has upset that happy image.

As a North Korean high-flyer he was a rare prize for the South from the start. Mr Tae was a product of what passes for a middle-class family in North Korea and studied in China, then Pyongyang University of Foreign Studies, where North Korean diplomats learn their trade. His wife is the grand-daughter of an anti-Japanese partisan. This granted him entry to the elite tiers of North Korea's rigid caste system, where such revolutionary credentials matter greatly.

He was first posted as a diplomat to Denmark and Sweden, where he begged European governments to send North Korea relief from its self-induced famine. During his spell in London, he once took Mr Kim's elder brother to a concert by Eric Clapton, a guitarist adored by baby-boomers among the North Korean elite as elsewhere. Such star billing persuaded the PPP, South Korea's then ruling conservative party, to welcome Mr Tae's defection warmly, despite its inveterate hostility towards Northern officialdom. The fact that he was denounced by the Kim regime as a "threepenny clown" and "hideous human scum" perhaps reassured it.

After a brief spell working in a government think-tank, Mr Tae further raised his profile by working with NGOs to help less fortunate North Korean refugees. Many defectors, and those who work to support them, hoped he would become their champion. He chose instead to run as the conservative candidate for a seat in Gangnam, an affluent district of Seoul.

Under South Korea's former government, run by the Democratic Party (DP), which favours friendlier relations with the North, Mr Tae became the PPP's chief attack dog. For who better to lambast the government for being soft on North Korea than a penitent ex-servant of Mr Kim? After the PPP came to power last year, under Yoon Suk-yeol, Mr Tae was rewarded for his belligerence; he was voted onto the party's governing council. But allegations of graft, defaming the DP and falsely claiming that an uprising suppressed by the South Korean government in 1947-49 was instigated by Kim Il Sung, North Korea's founder, have put him in hot water with party disciplinarians. Despite resigning from the council to show contrition, he has been suspended from his party for three months.

A cynic might suggest these allegations seal Mr Tae's graduation from North Korean stooge to South Korean power-broker. Maligning opponents and graft allegations are almost de rigueur for South Korean politicos. In fact, though his punishment was relatively light, Mr Tae's treatment suggests he is subject to closer scrutiny than his colleagues. There were also previous indications of this. It is normal for South Korean politicians to drive their subordinates hard; when Mr Tae does it there is talk of his "Pyongyang style". His historical revisionism was widely attributed to his bad North Korean education.

Southern attitudes towards North Korean refugees are always politicised. Because the DP wants to improve relations with the North, it tends to ignore the defectors who are living proof of the Kim regime's viciousness. Because the PPP sees the North as its enemy, it highlights their complaints to serve its cause. Mr Tae's career illustrates both traits. And also a third. North Korean defectors are never fully embraced by South Korea's clannish and judgmental society, no matter how high they may rise.

Youth unemployment

The job search goes on

HONG KONG

The high rate of graduate unemployment reflects a mismatch of timing, skills and aspirations

CHINA IS A land of remarkable statistics. But an official figure published on May 16th still managed to stand out. The unemployment rate among China's urban youth, aged between 16 and 24, exceeded one in five in April.

The figure boggles the mind for a variety of reasons. China is running short of young people. It is trying, without much success, to raise the birth rate. Its economic future hangs on increased education, which could improve the quality of its workers even as their quantity declines. China is also famous for mobilising resources, including manpower. Yet it is wasting large numbers of the best-educated cohort it has ever produced.

Youth unemployment is puzzling, as well as surprising. It has increased even as China's economy has reopened after the sudden end of its zero-covid regime in December. It has jumped up while the overall unemployment rate has edged downwards (from 6.1% in April 2022 to 5.2% a year later). And it is likely to rise further in the next few months. This year, a record 11.6m students will graduate from university, an increase of almost 40% since 2019. They include Wang Lili, who will leave one of China's top-100 universities this year with a degree in management. "The market is terrible," she laments. "Many graduates are very anxious."

The number of unemployed youth (about 6.3m in the first three months of this year) is small relative to China's 486m-strong urban workforce. But they attract most of the attention, points out Xiangrong Yu of Citigroup, a bank, and his colleagues. The anxiety and disappointment felt by college students—and spread through social media—could "affect the confidence of the entire society", write Zhuo Xian and his co-authors at the Development Research Centre (DRC), a government think-tank.

Although the problem has outlasted the pandemic, it is partly caused by it. When covid struck, many Chinese chose to extend their studies. In 2020, for example, the Ministry of Education told universities to increase the number of Master's students by over 20%. That has created a bulge of newly minted graduates entering the labour force in subsequent years.

China's reopening may have tempted many of those who had dropped out of the job market to re-engage before firms were ready to hire them. The bottleneck has been aggravated by mismatches in timing, skills and aspirations. Some graduates delayed their job hunt last year to prepare for entrance exams for higher degrees or the civil service. But employers last year wanted to fill their ranks early because of fears of a winter covid wave. So later job-seekers missed the best recruitment months and many are now competing for the same jobs as students leaving university in 2023.

Some of them boast qualifications that are out of sync with the new demands of the economy. Platforms like Alibaba, property firms like Evergrande, and online tutors like New Oriental were once dream employers for graduates. But in the time it takes to earn a bachelor's degree, they have lost favour with the government. ▸▸

→ Also in this section

China's leaders now fear what they call the "disorderly expansion of capital" in sectors like property and education, as well as the market power and cultural reach of tech firms. Recruitment has therefore slowed. Only 5.5% of students graduating this year expect to go into the education and training industries, according to a survey by Zhaopin, a recruitment portal.

Some graduates now adopt a "spray and pray" approach, as Ms Wang (not her real name) puts it, submitting applications willy-nilly. The government is keen to steer talent into "hard tech" industries, such as aerospace, biotechnology and electric vehicles. They are promoted in the latest five-year plan and have grown faster than industry as a whole, says Louise Loo of Oxford Economics, a consultancy. Employment may follow. According to the recent Zhaopin survey, 57% of engineers graduating this year had already received a job offer, compared with only 41% of their counterparts in the humanities.

One of the oddities of China's labour market is that less-educated youth are less likely to be unemployed. Youngsters with vocational qualifications or just a high-school education may have more practical skills and a more burning need for a job. "Everyone says a degree is a stepping stone," said one hapless graduate in an online comment translated by *China Digital Times*, a media-monitoring website, "but I'm slowly coming to realise it's more like a pedestal I can't get down from."

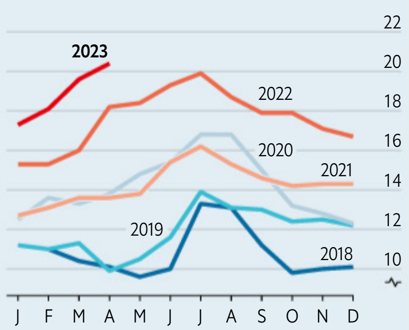
Students' aspirations may be changing. The proportion choosing to continue their studies (at home or abroad) fell by almost half in this year's Zhaopin survey. Students are also keen on stability and security. The share who rank state-owned enterprises (SOEs) as their first choice has increased for three years in a row to 47%, compared with 27% who favour a foreign-financed or domestic private firm. The remaining quarter wish to work for the government or public institutions.

The government's response to record youth unemployment may reinforce these trends. The State Council, China's cabinet, has urged local governments to recruit as many graduates as their budgets allow. It has also called on enterprises to create at least 1m internships for unemployed youth, in return for subsidies and tax breaks. The offer is open to all firms, but SOEs are most likely to heed the call. These initiatives risk drawing some of China's better-educated minds into some of the least efficient parts of its economy.

But for young folk, stop-gap measures do at least alleviate some of the worry and confusion. Ms Wang, for example, has combined her studies over the past two years with an internship at a foreign firm. That gave her "something to do every day", she says, and also led to a satisfying job offer—in human resources. With luck, she will enjoy a long career helping China use those resources better. ■

Kicking their heels

China, urban youth unemployment rate*, %



Source: National Bureau of Statistics *16- to 24-year-olds

Fertility

Stuck in the trap

China's birth rates remain stubbornly low. New research helps explain why

THE SCARS left by China's population-control policies are clear. Last year, its population started to fall for the first time since 1962; its working-age population has been declining for a decade. A shrinking workforce acts as a drag on growth, and a swelling number of elderly puts pressure on the welfare system.

Family-planning regulations like the one-child policy are widely blamed for depressing birth rates. But a less explored idea is that falling birth rates can ripple through the population causing the decline to be self-reinforcing. There has been little hard evidence to back this up, but a new paper about changes in China 50 years ago appears to offer some proof. Pauline Rossi of Ecole Polytechnique in Paris and Yun Xiao of the University of Gothenburg show in the *Journal of the European Economic Association* that birth-control policies have "spillover effects", meaning that if some couples reduce their number of children, it may lead others to follow suit.

Professors Rossi and Xiao examine fertility data for women born between 1926 and 1945. This cohort was of reproductive age when the "later, longer and fewer" (LLF) campaign of the 1970s, the first of China's family-planning policies, began. It encouraged couples to marry later, wait longer between children and have fewer of them. Much of China's fertility decline happened during this period. In 1969, the total fertility rate (the average number of children a woman is expected to have over her lifetime at current birth rates) was 6.2, according to the World Bank; a decade later, when the one-child policy was introduced, it had already fallen to 2.7.

Crucially, the LLF campaign targeted only the main ethnic group, the Han. That allowed the authors to study how ethnic-minority groups, who were exempt from it, responded. After controlling for other factors, they found that the policy did not affect minorities who lived apart from the Han. For those who lived among the Han, however, it led to a decline in fertility—what the authors suggest is evidence of spillovers. The greater the share of Han in the prefecture, the stronger the effect.

Spillover effects may work in two ways. First, couples who have fewer children have more resources to invest per child. Other couples may feel compelled to emulate them if they want to compete, especially in areas such as education. A second way is through social conformity. As some couples have fewer children, this may influence others to limit the number of children they have, too. The authors found that minorities culturally closer to the Han were affected more by the LLF.

China is not the only place affected by spillovers. They have been found in South Korea, too, another country with a low fertility rate and punitively expensive education. Many children there attend private tuition classes, known as *hagwon*, late into the evening. Seongeun Kim of Sejong University and others found that when wealthy families spent less on private classes, it led lower-income families to do the same. Spillovers may happen where people have strong economic or social incentives to keep up with others.

For China, the implications are grim. The government has belatedly tried to prod couples into having more children, with little success. Even though the one-child policy ended in 2016 and China switched to a three-child policy in 2021, birth rates have not rebounded. The fertility rate fell to 1.2 in 2021, a record low. The high cost of having children means couples want fewer of them. Low birth rates are in turn reinforced by spillovers, leading more couples to follow suit. Without external impetus, China cannot escape this trap.

What can be done? Theoretically, if spillovers work in reverse, getting one segment of the population to have more children could have an impact. To this end, China's leaders have tried to crack down on private tutoring in order to slow the education arms race. They could also incentivise couples through payments or benefits for extra kids. But experience suggests that such policies yield meagre results (see Briefing). China is finding that it was much easier to use force to restrict the number of births than it is to increase it. ■

Covid returns

Surfing the second wave

SHANGHAI

From zero-covid to zero restrictions

THERE CAN be few things as symbolic of post-zero-covid China as a photo that popped up on social media in April. It showed that one of the many mobile booths used for administering covid tests in Shanghai had been turned into a bar. A year ago hundreds of thousands of Shanghai residents were being forcibly removed from their homes and taken to fever wards on the outskirts of the city. Now they are busy sipping beer.

It is even more striking because the virus is surging again, in the form of a new sub-variant known as XBB. Cases are expected to reach record highs of 65m a week by the end of June. Yet authorities have no plans to reimpose new restrictions. On the contrary, they are urging citizens to fill the malls and restaurants, spending money.

China closed its borders for nearly three years and its two-month lockdown of Shanghai in 2022 seemed to promise years more isolation. But since the sudden end of the policy in December it has struggled to strike a balance between zero-covid and zero restrictions. With few rules in place, the first wave of the virus swept over the country in January, infecting perhaps a billion people. More than a million people may have died. But without a reliable tally of deaths, the state proclaimed the reopening "a miracle in human history".

This new wave is playing out in a similar way to the January outbreaks. Office workers in Shanghai are being told to report for duty even if they have recently tested positive. Queues for bars and restaurants spill into the streets. Beaches on Hainan, a southern island, have been packed with young people looking for sun.

Officials have cheered on the consumption binge, and retail and hospitality have done well so far this year. Pricier purchases such as new homes are, however, struggling to recover. Growth in new-home sales appears to be slowing.

As the second wave takes hold there appear to be few efforts to vaccinate people, even the elderly. Hospitals are filling up. But natural immunity is higher this time around, so many people are just treating it as the proverbial "bad cold". Your correspondent finally succumbed for the first time last week. When he turned down an invitation to a barbecue at the weekend, the host was not worried about the potential for infection and said it would still be fine for him to attend. ■

White Rabbit sweets

Bunny power

A favourite brand reinvents itself again

AMONG THE self-flying planes, swanky electric cars and model space-stations on display at an exhibition of Chinese wares in Shanghai in May was a decidedly untechnical relic of the past: White Rabbit creamy candies. For many older Chinese the milky flavour recalls a Communist-era childhood when few other treats were available.

The sweets predate the Communist Party takeover in 1949. This year they turn 80. As one of the few pre-Communist products still thriving, they have a thing or two to teach China's new tech upstarts about longevity.

The rabbit has reinvented itself many times, most recently in November when it teamed up with Coach, a high-end American fashion firm, to produce giant bunnies on handbags (pictured) costing up to 7,500 yuan ($1,050), as well as flouncy dresses, denim jackets and a gold White-Rabbit necklace (hopped up at 9,500 yuan). Tapping into nostalgia in the Chinese market, the collaboration gives Coach a boost in the complex warren of Chinese consumerism, while enabling White Rabbits to breed new followers across the Pacific.

China's first domestic toffees were produced in 1943 with Mickey Mouse on the wrapper. When such Americana fell out of favour in the 1950s, the rodent was replaced by *da baitu*, a big white rabbit, which gave the brand its name. The stylised blue-and-white cartoon bunny became an icon: in 1972 Zhou Enlai, then China's prime minister, presented White Rabbits to Richard Nixon on his first visit to Communist China. Soviet leaders visiting Beijing also enjoyed such gifts.

Out of the bag

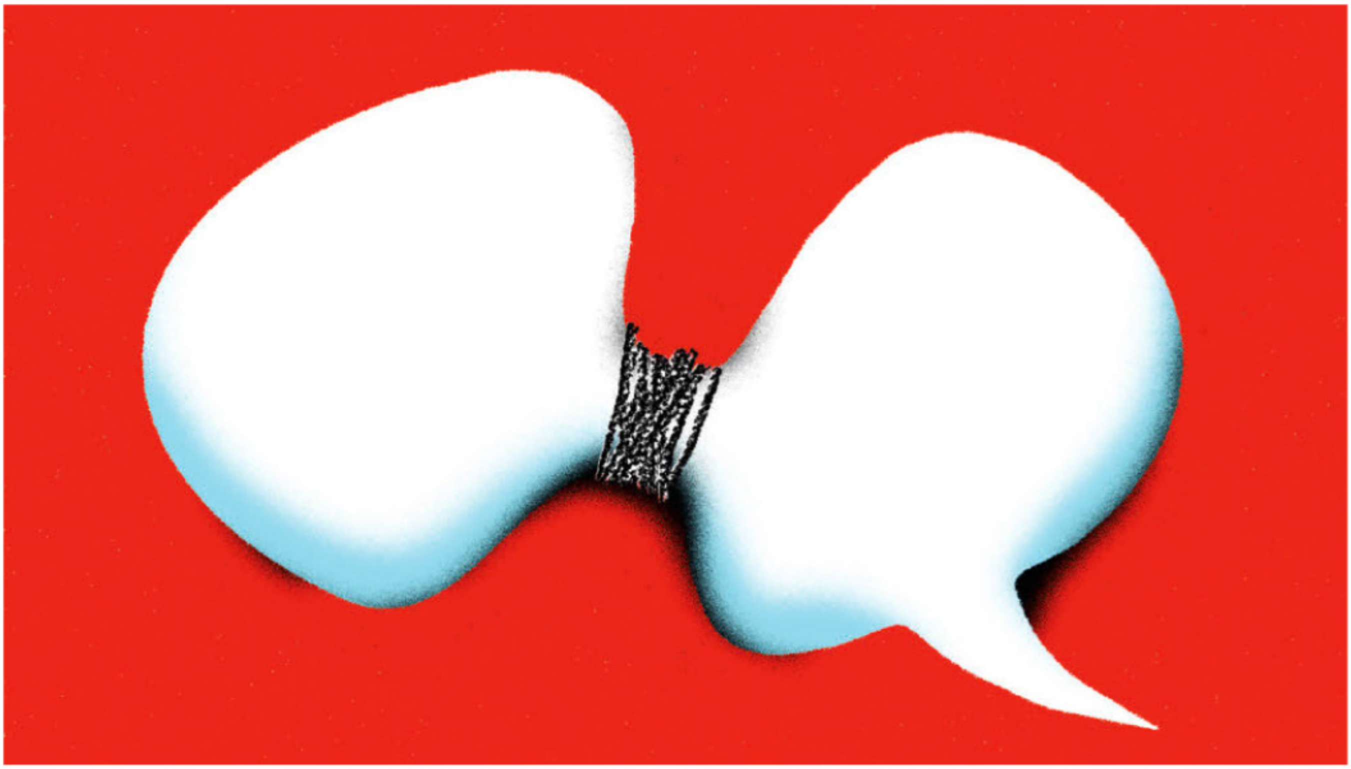
The fortunes of the sweet soured after Mao Zedong died in 1976. As foreign goods poured in, White Rabbits lost their domestic dominance. Guan Sheng Yuan, the state-owned company that makes them, touted the treat's nutritional properties—seven sweets were equivalent to drinking a glass of milk, according to a popular slogan—but parents became harder to lure with such claims.

The confectionery even fell foul of China's food-safety scandals in 2008 when thousands of children became ill drinking Chinese powdered milk contaminated with melamine, and dairy products were removed from shops at home and abroad. White Rabbits are now made using imported milk powder.

The bunnies fought back. In 2018 the first batches of White Rabbit lip balm sold out within hours. The following year the manufacturer teamed up with Godiva, a chocolate company, to make White Rabbit ice cream and people queued for hours to buy the newly launched White Rabbit milk tea at a pop-up shop in Shanghai. The company has since launched perfumes, a shower gel and hand cream. In 2021 Guan Sheng Yuan opened a shop in Shanghai selling all manner of branded products.

The sweet-maker has capitalised on the trend for *guochao*, a phrase meaning "national wave", applied to trendy Chinese-made consumer goods that appeal to the nostalgia and patriotism of the young. Liushen, a traditional mosquito repellent, collaborated with KFC to make a refreshing herbal drink for the summer. The Forbidden City in Beijing even produced a range of lipsticks named for the colours of ancient artefacts.

White Rabbit's collaboration with luxury brands received a boost this year from the arrival of the year of the rabbit in the Chinese zodiac. Sales in the first quarter were up by 10% year on year, according to Guan Sheng Yuan. To see in the new year, SK-II, a Japanese skincare brand, launched a limited-edition White Rabbit face serum (the bottles warned consumers: "Do not eat"). Foreign markets provide an additional carrot. The candies have diversified into a whole range of flavours, such as peanut, red-bean, mustard and durian, and are exported to more than 50 countries. That's a whole different rabbit-hole.



Content moderation

Enter the speech police

Governments are preparing tougher laws on who says what on social media

In recent days Ron DeSantis, Florida's governor and Donald Trump's chief rival for the Republican nomination, chose to announce his bid for the White House via Twitter. The live audio event, hosted by the social network's owner, Elon Musk, descended into farce as Twitter's servers struggled to cope with the few hundred thousand listeners who had tuned in. When he could be heard, Mr DeSantis said he had decided to announce on the platform because, unlike the "legacy media", Twitter is a "beacon of free speech".

The debate about who can say what online is again heating up globally. Twitter, the favoured network of politicians and the press, is under the mercurial new management of Mr Musk, a self-declared free-speech absolutist who has restored the accounts of previously banned users such as Mr Trump. Meta, a larger rival, is reportedly preparing a text-based network of its own, to be launched this summer. Social-media platforms face a test over the next 18 months as America's presidential election approaches, one of the world's great festivals of online bile and misinformation.

Into this fray step politicians and judges with regulatory proposals. With Congress deadlocked, America's state legislatures and its courts are drawing new lines around the limits of speech. In Europe legislatures have gone further. These moves are inspiring governments in less democratic parts of the world to write new rules of their own. What can be said and heard online is under scrutiny.

Policing the online public square is a daunting task. Things have calmed down a bit since Mr Trump left office and covid-19—and the associated wave of disinformation—died down, but in 2022 the world's three largest social-media platforms—Facebook and Instagram, owned by Meta, and YouTube, owned by Google—removed or blocked 11.4bn posts, videos and user comments. Most are zapped by automated filters, but Meta and Google also employ more than 40,000 content-reviewers between them.

Most of this housekeeping is uncontroversial: 90% of the posts that Facebook, the largest network, took down last year were simply spam. But many moderation decisions are hard (see chart on next page). In the latest quarter, Facebook removed or blocked 10.7m posts that it deemed hate speech and 6.9m that it considered bullying, both concepts where there is room for disagreement. To take one recent dilemma, Meta recently ordered a review of whether it has been overzealous in its policing of the Arabic word *shaheed*, which is generally translated as "martyr" but whose meaning can change in different contexts. The platforms have mostly been left to resolve such quandaries by themselves.

Now, however, politicians are stepping in. In America Democrats and Republicans agree that social networks are doing a lousy job of moderation, and that it is time to change Section 230 of the Communications Decency Act, which shields online platforms from liability for content posted by users (with exceptions such as content linked to sex trafficking). But they disagree completely on what to do about it.

Democrats, who accuse tech billionaires of stoking rage and misinformation for clicks, want platforms to remove more content. Republicans, who think woke California busybodies are gagging conservatives, want them to remove less. (By a ratio of three to one, voters suspect tech firms of favouring liberal viewpoints over conservative ones, according to the Pew Research Centre, an American think-tank.) The result is congressional deadlock.

The Supreme Court has had the chance to tinker with Section 230. But on May 18th, in rulings on two similar cases involving ▸▸

YouTube and Twitter, which had hosted content uploaded by terrorists, it declined to alter the status quo, rejecting the idea that online platforms have liability for crimes their users commit. NetChoice, a tech lobby group, described the decision as a "huge win for free speech on the internet". Section 230 looks safe for now.

With no luck at the federal level, reformers on left and right are focusing on the states. Last year California passed a law forcing tech companies to collect less user information on children, among other things. Several states have passed or proposed laws requiring those under 18 to get parental permission before using social media. On May 17th Montana banned TikTok altogether, over its Chinese ownership (TikTok is suing and is expected to win).

States of denial

Most controversially, in 2021 Florida and Texas, both Republican-controlled, passed laws restricting social networks' ability to moderate political speech. Courts have upheld Texas's law and struck down Florida's, paving the way for a return to the Supreme Court, which is expected to take up the cases later this year. "If the court opens up the door to regulation in this space, many [states] will jump at the opportunity," says Evelyn Douek of Stanford University.

They will have two transatlantic models to follow. Passed in July 2022, the EU's Digital Services Act (DSA) will kick in next year. Britain's Online Safety Bill, four years in the making, is expected to be enacted later this year. Both take a different approach from America's. Rather than altering who has liability for online content (the issue at the heart of the Section 230 debate), they force platforms to do a kind of due diligence, to keep bad content to a minimum.

Europe's DSA requires online platforms to set up complaint-handling processes and demands that they tell users how their algorithms work, allowing them to change the recommendations they receive. Smaller platforms, defined as those with fewer than 45m users in the EU, will be let off some of these obligations to stop them from drowning in red tape (some larger rivals warn that this could make them a haven for harmful material). For those big enough to qualify for full oversight, the DSA represents "a significant financial burden", says Florian Reiling of Clifford Chance, a law firm. There is grumbling in Washington that of the 19 platforms so far earmarked by the EU for the most intensive scrutiny, only one—Zalando, a German e-commerce site—is European.

Twitter, which has cut its staff by about 80% since Mr Musk took over in October, may be one of those that struggles to meet the DSA's requirements. Mr Musk seems to have taken over from Mark Zuckerberg, Meta's boss, as social media's greatest villain in the eyes of some. On May 26th Thierry Breton, a European commissioner, tweeted that Twitter had left the EU's voluntary code of practice against disinformation, adding what sounded like a threat: "You can run but you can't hide."

Britain's parallel legislative effort is shaping up to be more far-reaching. The Online Safety Bill was conceived in 2019 after the suicide of a 14-year-old who had binged on algorithmically recommended depressive material. Four prime ministers later, the text of the bill has almost doubled in length. An American tech firm dubs it "one of the most complex bills we face anywhere in the world".

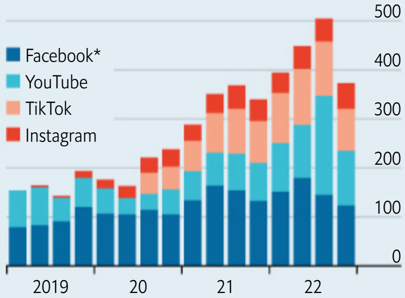
It goes further than the EU in its loosely worded requirement for platforms to proactively screen material. The larger social networks already check videos for matches with known child-abuse content. But subtler crimes, such as incitement to violence, are harder to detect automatically. The scale of some platforms—YouTube uploads 500 hours of video per minute—means that a strict requirement to pre-screen content could throttle the amount of new material uploaded.

As in America, British conservatives worry about the over-moderation of right-wing views. The bill therefore imposes a duty to ensure that moderation "[applies] in the same way to a wide diversity of political opinion". Similarly, the EU has promised that it will provide "protection for media against unjustified online content removal" as part of its forthcoming European Media Freedom Act, a response to crackdowns on the press in members states such as Hungary and Poland.

The most controversial part of Britain's bill, which required platforms to identify content that is "legal but harmful" (eg, material that encourages eating disorders), has been dropped where adults are concerned. But there remains a duty to limit its availability to children, which in turn implies the need for widespread age checks. Tech firms say they can guess users' ages from their search history and mouse movements, but that a strict duty to verify users' ages would threaten anonymity.

Post haste

Items of content removed or blocked, m



Sources: Google; Meta; TikTok

*Excludes spam and fake accounts

Some suspect that their real objection is the price. "I don't think 'It costs money and is hard' is an excuse," says Keily Blair, chief operations officer of OnlyFans, a porn-centric platform which checks the age of its users and doesn't see why others shouldn't do the same. Yet some platforms are adamant: the Wikimedia Foundation, which runs Wikipedia, says it has no intention of verifying users' ages.

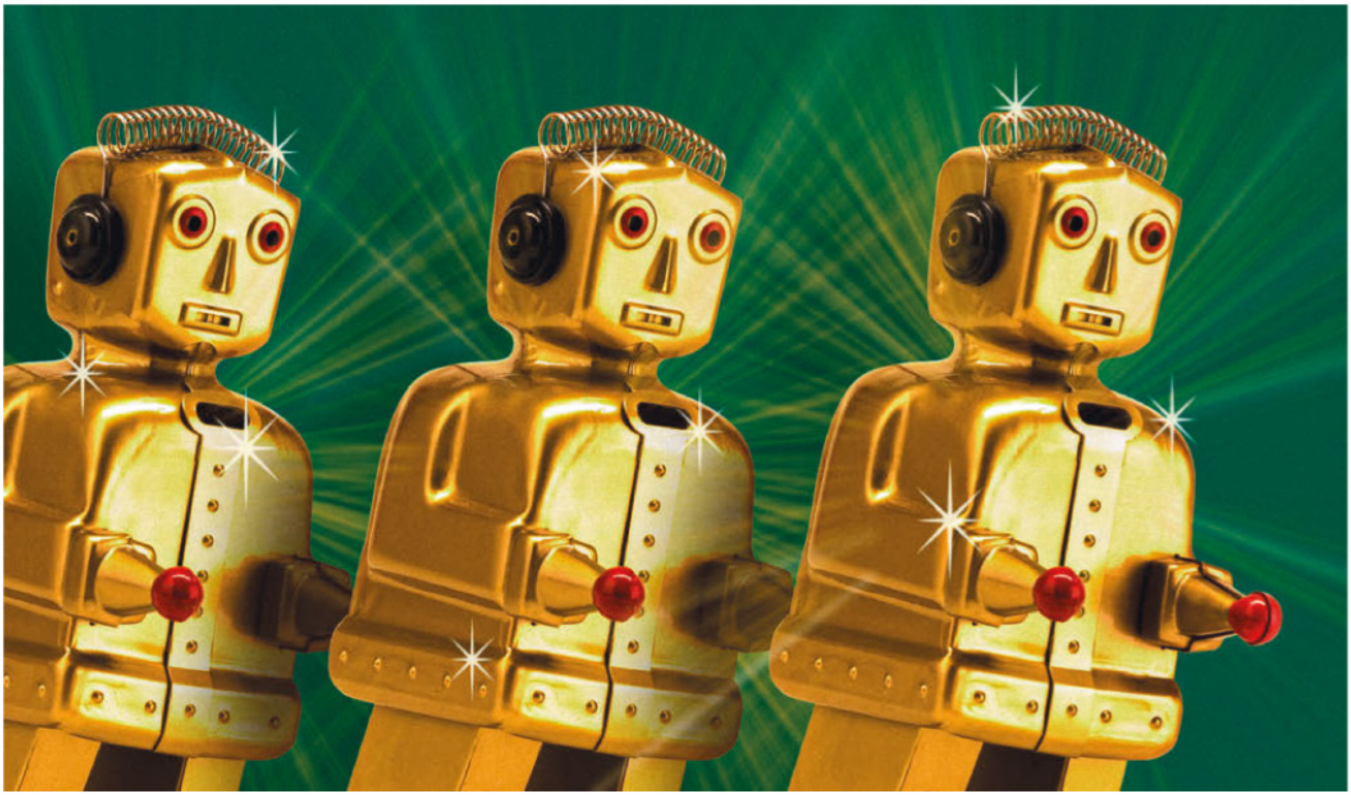
The stricter the rules in jurisdictions such as Britain or the EU, the likelier tech companies will be to opt to offer different services there, rather than to apply the same rules worldwide. Some may even quit. WhatsApp, a Meta-owned messaging app, says it is unwilling to break its end-to-end encryption to meet a requirement in Britain's bill that companies must scan private messages for child abuse. It may not come to that: the bill would let Ofcom demand the data only in cases where it determined that such a measure was proportionate. Still, threats to up sticks are becoming more common. On May 24th Sam Altman, the head of OpenAI, said he would consider leaving the EU if its regulation of artificial intelligence went too far. (He later rowed back his remarks.)

Network effects

Whether or not Britain or the EU use the full extent of their new powers, they set a handy precedent for countries that might use them oppressively. Britain's bill, which proposes prison for executives of companies that break the rules, is "a blueprint for repression around the world", according to the Electronic Frontier Foundation, a civil-liberties group. One American executive snipes that Britain's claim to be "world-leading" in tech is true only in the sense that it is blazing a trail for non-democracies to pass repressive laws of their own.

They need little encouragement. Turkey ordered Twitter to censor information during its recent election; that free-speech enthusiast, Mr Musk, complied. Brazil has proposed a "fake news law" that would penalise social networks for failing to identify misinformation. Modelled on the European legislation, it has been dubbed the "DSA of the tropics". India is to publish an internet-regulation bill in June which will reportedly make platforms liable for users' content if they do not agree to identify and trace those users when directed.

The international impact of the British and EU proposals is influencing the debate in America. "No matter how much you think that social networks have been corrupting to American politics," says Matthew Prince, head of Cloudflare, an American networking firm, "they've been incredibly destabilising to other regimes that are against the United States' interests." ■



Technology

There's AI in them thar hills

SAN JOSE

The companies selling the picks and shovels in the artificial-intelligence gold rush are cashing in

A GREY RECTANGULAR building on the outskirts of San Jose houses row upon row of blinking machines. Tangles of colourful wires connect high-end servers, networking gear and data-storage systems. Bulky air-conditioning units whirr overhead. The noise forces visitors to shout.

The building belongs to Equinix, a firm which leases data-centre space. The equipment inside belongs to corporate customers that are increasingly using it to run their artificial-intelligence (AI) systems. The AI gold rush, spurred by the astounding sophistication of "generative" models such as ChatGPT, a hit virtual conversationalist, promises rich profits for those who harness the technology's potential. As in the early days of any gold rush, though, it is already minting fortunes for the sellers of the requisite picks and shovels.

On May 24th Nvidia, which designs the semiconductors of choice for many AI servers, beat analysts' revenue and profit forecasts for the three months to April and said it expected sales of $11bn in its current quarter, half as much again as what Wall Street was predicting. On May 29th Nvidia's boss, Jensen Huang, declared that the world is at "the tipping point of a new computing era". The next day the company's market value, which had leapt by 30% after its earnings, briefly hit $1trn.

Other chip firms, from fellow designers like AMD to manufacturers such as TSMC of Taiwan, have been swept up in the AI excitement. So have providers of other computing infrastructure—which includes everything from those colourful cables, noisy air-conditioning units and data-centre floor space to the software that helps run the AI models and marshal the data. An equally weighted index of 30-odd such companies has risen by 40% since ChatGPT's launch in November, compared with 13% for the tech-heavy NASDAQ index (see chart on next page). "A new tech stack is emerging," sums up Daniel Jeffries of the AI Infrastructure Alliance, a lobby group.

On the face of it, the AI gubbins seems less exciting than the clever "large language models" behind ChatGPT and its fast-expanding array of rivals. But as the model-builders and makers of applications that piggyback on the models vie for a slice of the future AI pie, they need computing power right now—and lots of it.

The latest AI systems, including the generative sort, are much more computing-intensive than older ones, let alone non-AI applications. Amin Vahdat, head of AI infrastructure at Google Cloud Platform, the internet giant's cloud-computing arm, observes that model sizes have grown tenfold each year for the past six years. GPT-4, the latest version of the one which powers ChatGPT, analyses data using perhaps 1trn parameters, more than five times as many as its predecessor. As the models grow in complexity, the computational needs for training them increase correspondingly.

Once trained, AIs require less number-crunching to be used. But given the range of applications on offer, this "inference" will, cumulatively, also demand plenty of processing oomph. Microsoft has more than 2,500 customers for a service that us- ▸

→ Also in this section

es technology from OpenAI, ChatGPT's creator, of which the software giant owns nearly half. That is up ten-fold since the previous quarter. Google's parent company, Alphabet, has six products with 2bn or more users globally—and plans to turbocharge them with generative AI.

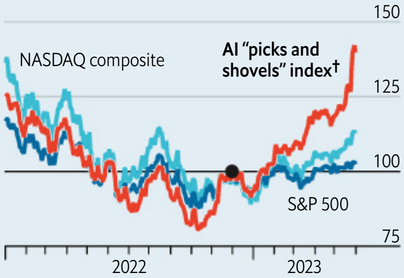
The most obvious winners from surging demand for computing power are the chipmakers. The products of companies like Nvidia and AMD, which design chips and have them made at foundries like TSMC, are in hot demand, notably from the big providers of cloud computing that powers most AI applications. AI is thus a boon to the chip designers, since it benefits from more powerful chips (which tend to generate higher margins), and more of them. UBS, a bank, reckons that in the next one or two years AI will increase demand for specialist chips known as graphics-processing units (GPUs) by $10bn-15bn. Nvidia's data-centre revenue, which accounts for 56% of its sales, could double. AMD will this year launch a new GPU. A much smaller player in the GPU-design game than Nvidia, the firm is poised to benefit "even if it just gets the dregs" of the market, says Stacy Rasgon of Bernstein, a broker. Chip-design startups focused on AI, such as Cerebras and Graphcore, are trying to make a name for themselves. PitchBook, a data provider, counts about 300 such firms.

Naturally, some of the windfall will also accrue to the manufacturers. In April TSMC's boss, C.C. Wei, talked cautiously of "incremental upside in AI-related demand". Investors have been rather more enthusiastic. The company's share price rose by 10% after Nvidia's latest earnings, adding around $20bn to its market capitalisation. Less obvious beneficiaries also include companies that allow more chips to be packaged into a single processing unit. Besi, a Dutch firm, makes the tools that help bond chips together. According to Pierre Ferragu of New Street Research, a firm of analysts, the Dutch company controls three-quarters of the market for high-precision bonding. Its share price has jumped by more than half this year.

UBS estimates that GPUs make up about half the cost of specialised AI servers, compared with a tenth for standard servers. But they are not the only necessary gear. To work as a single computer, a data centre's GPUs also need to talk to each other. And that requires advanced switches, routers and specialist chips. The market for such networking gear is expected to grow by 40% annually in the next few years, to nearly $9bn by 2027, according to 650 Group, a research firm. Nvidia, which also sells such kit, accounts for 78% of global sales. But rivals like Arista Networks, a Californian firm, are getting a look-in from investors, too: its share price is up by nearly 70% in the past year. Broadcom, which

Shovel readiness

Stockmarket indices, Nov 30th 2022*=100



*ChatGPT launched
†Equally weighted index of 32 AI-proximate companies
Sources: Refinitiv Datastream; *The Economist*

makes chips that help networks operate, said that its annual sales of these would quadruple in 2023, to $800m.

The AI boom is also good news for assemblers of servers that go into data centres, says Peter Rutten of IDC, another research firm. Dell'Oro Group, one more firm of analysts, predicts that the world's data centres will increase the share of servers dedicated to AI from less than 10% today to about 20% within five years: this kit's share of data centres' capital spending on servers will rise from about 20% to 45%.

This will benefit server manufacturers like Wistron and Inventec, both from Taiwan, which produce custom-built servers chiefly for giant cloud providers such as Amazon Web Services (AWS) and Microsoft's Azure. Smaller manufacturers should do well, too. The bosses of Wiwynn, another Taiwanese server-maker, recently said that AI-related projects account for more than half of their current order book. Super Micro, an American firm, said that in the three months to April AI products accounted for 29% of its sales, up from an average of 20% in the previous 12 months.

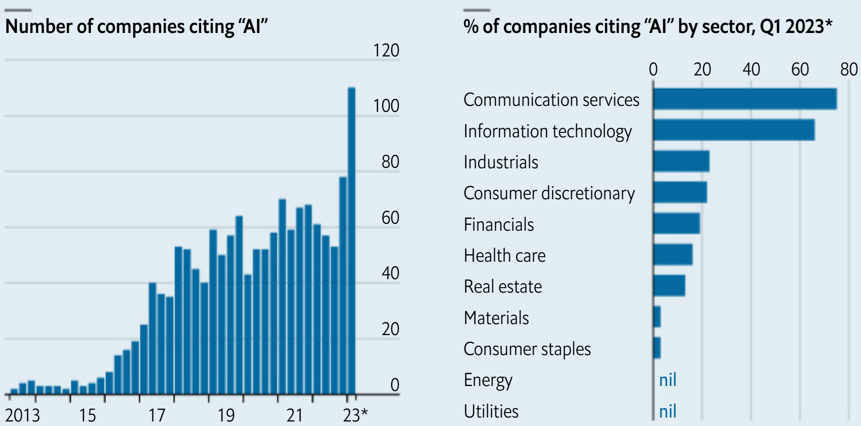
All this AI hardware requires specialist software to operate. Some of these programs come from the hardware firms; Nvidia's software platform, called CUDA, allows customers to make the most of its GPUs, for example. Other firms create applications that let AI firms manage data (Datagen, Pinecone, Scale AI) or host large language models (HuggingFace, Replicate). PitchBook counts around 80 such startups. More than 20 have raised new capital so far this year; Pinecone counts Andreessen Horowitz and Tiger Global, two giants of venture capital, as investors.

As with the hardware, the main customers for a lot of this software are the cloud giants. Together Amazon, Alphabet and Microsoft plan to undertake capital spending of around $120bn this year, up from $78bn in 2022. Much of that will go to expanding their cloud capacity. Even so, demand for AI computing is so high that even they are struggling to keep up.

That has created an opening for challengers. In recent years IBM, Nvidia and Equinix have started to offer access to GPUs "as a service". AI-focused cloud startups are proliferating, too. In March one of them, Lambda, raised $44m from investors such as Gradient Ventures, one of Google's venture arms, and Greg Brockman, co-founder of OpenAI. The deal valued the firm at around $200m. A similar outfit, Core-

ChatBoss

S&P 500 earnings calls



Source: FactSet

*From calls held March 15th-May 25th

Techno-babble

Since the launch in November of ChatGPT, an artificially intelligent conversationalist, AI is seemingly all anyone can talk about. Corporate bosses, too, cannot shut up about it. So far in the latest quarterly results season, executives at a record 110 companies in the S&P 500 index have brought up AI in their earnings calls.

Weave, raised $221m in April, including from Nvidia, at a valuation of $2bn. Brannin McBee, CoreWeave's co-founder, argues that a focus on customer service and infrastructure designed around AI help it compete with the cloud giants.

The last group of AI-infrastructure winners are closest to providing actual shovels: the data-centre landlords. As demand for cloud computing surges, their properties are filling up. In the second half of 2022 data-centre vacancy rates stood at 3%, a record low. Specialists such as Equinix or its rival, Digital Realty, compete with big asset managers keen to add data centres to their property portfolios. In 2021 Blackstone, a private-markets giant, paid $10bn for QTS Realty Trust, one of America's biggest data-centre operators. In April Brookfield, Blackstone's Canadian rival, which has been investing heavily in data centres, bought Data4, a French data-centre firm.

Continued growth of the AI-infrastructure stack may yet run up against constraints. One is energy. A big investor in data centres notes that access to electricity, of which such assets are prodigious users, is expected to slow development of new ones in hubs like northern Virginia and Silicon Valley. But a shift away from vast AI models and cloud-based inference to smaller systems may lower demand, since these require less computing power to train and can run inference on a smartphone, as is the case for Google's recently unveiled scaled-down version of its PaLM model.

The biggest question-mark hangs over the permanence of the AI boom itself. Despite the popularity of ChatGPT and its ilk, profitable use cases for the technology remain unclear. In Silicon Valley, hype can turn to disappointment on a dime. Nvidia's market value surged in 2021, as its GPUs turned out to be perfect for mining bitcoin and other cryptocurrencies, then collapsed as the crypto boom turned to bust. And if the technology does live up to its transformative billing, regulators could clamp down. Policymakers around the world, worried about generative AI's potential to eliminate jobs or spread misinformation, are already mulling guardrails. Indeed, on May 11th lawmakers in the EU proposed a set of rules that would restrict chatbots.

All these limiting factors may slow AI's deployment, and in doing so dampen the prospects for AI-infrastructure firms. But probably only a bit. Even if generative AI does not turn out to be as revolutionary as its boosters claim, it will almost certainly be more useful than crypto. And there are plenty of other, non-generative AIs that also need lots of computing power. Nothing short of a global ban on generative AI, which is not on the horizon, is likely to stop the gold rush. And so long as everybody is rushing, the pedlars of picks and shovels will be cashing in. ■

The advisory business

A tale of three tie-ups

Dealmaking has slowed—except, it seems, among dealmakers

In the market for corporate counsel, building is more common than buying. Shelling out for a bullpen of bankers or lawyers is often more costly than poaching a rival's star performers. So if mergers are, like second marriages, a triumph of hope over experience, then the advisers who put them together really should know better when it comes to their own family. Though their clients are announcing tie-ups at the slowest pace in a decade, in recent weeks the corporate consiglieri have struck a flurry of deals among themselves. Three big transactions illustrate how they may be fooling themselves.

On May 21st Allen & Overy, one of London's elite "magic circle" of law firms, announced a tie-up with Shearman & Sterling, a prestigious Wall Street "white shoe" practice. The merger will create a transatlantic giant with annual revenues exceeding $3bn. Especially for the British partner, though, it may end in heartache. Shearman has struggled to keep up with competitors and has haemorrhaged partners in recent years; in March it abandoned a tie-up with Hogan Lovells, another big firm. As well as staving off the threats of dealmakers departing amid a period of thin corporate activity, the joint firm's bosses must prove that the marriage is one of convenience rather than desperation.

The second deal looks no less fraught. On May 22nd Mizuho, a Japanese banking giant, said it was acquiring Greenhill for $550m. The sale concludes a stagnant decade at the boutique American investment bank, founded in 1996 by Robert Greenhill, a former Morgan Stanley banker. With its share price down by more than 90% from its peak in 2009, the house of Greenhill is in a shoddy shape. That does not necessarily make trying to repair it a good idea.

This is not the first Japanese foray onto Wall Street. During the global financial crisis of 2007-09, Mitsubishi UFJ purchased its 22% stake in Morgan Stanley and Nomura acquired Lehman Brothers' European investment-banking operations. In April this year Sumitomo Mitsui, another big Japanese bank, announced that it would increase its stake in Jefferies, a medium-sized investment bank it first put money into two years ago, from 5% to 15%. The results have been mixed: Mitsubishi's bet paid off handsomely; Nomura's did not. For Sumitomo, the jury is out.

Mizuho's first task will be to avert an exodus. Unlike machines in a factory, white-collar workers are not nailed to the floor. Bankers are not usually given to pangs of loyalty when they receive offers of more money elsewhere. Boutiques, which typically lure star dealmakers with the promise of a bigger slice of their fees, are particularly sensitive to well-connected dealmakers leaving, especially if they take their clients with them—Greenhill's ten highest-paying customers made up 38% of revenues in 2022. There is little reason to think Mizuho, a firm with little presence on Wall Street, can resuscitate Greenhill's powers.

The third transaction heaps another challenge on top of employee retention. After pruning its investment bank in recent years, on April 28th Deutsche Bank announced a deal to buy Numis, a British investment-banking firm, for £410m ($515m). The German lender has bought the ear of British bosses before—in 1989 it acquired Morgan Grenfell, one of London's most illustrious merchant banks. Numis is less grand, but acts as corporate broker to around one in five large listed British firms, a service which involves offering regular market-facing advice to bosses in the hope of landing better-paid dealmaking contracts down the line.

Deutsche Bank's move looks like a contrarian bet on British listings—possibly too contrarian. The received wisdom today is that London's stockmarket is in decline. British bosses regularly moan that they could achieve higher valuations elsewhere. Arm, Britain's most important chipmaker, is expected to list its shares in America. Maybe Deutsche Bank is counting on a wave of buy-outs by foreign firms to turn it into the auctioneer of Britain's corporate silver. But that business would at best be transient, and Numis looks dear. The German buyer is paying the equivalent of £1.7m for each of Numis's front-office staff, more than twice the annual revenue each employee has generated since 2020. If only it could demand a prenup. ■

Bankruptcy in India

Going broke? Go slow

MUMBAI

Efforts to fast-track insolvencies get bogged down in the courts

GO FIRST, AN Indian low-cost airline, collapsed in May under the weight of four years of losses, citations for safety lapses and operating confusion that, in January, resulted in a flight from Bangalore to Delhi carrying baggage but forgetting a third of its passengers. At least the carrier held valuable assets in the form of 45 or so aircraft stranded at Indian airports. And, as a high-priority case, it was supposedly subject to expedited bankruptcy hearings.

A prompt liquidation and redeployment of assets has obvious benefits for the aviation industry, its creditors and, possibly, for rivals keen to snap up its planes to add capacity in response to packed flights. Not so fast, the court hearing Go First's case now appears to be saying. Rather than allow easily identifiable assets like the company's aeroplanes to be reclaimed while more complicated financial ones are unwound, it has placed a blanket hold on all the airline's assets.

The Go First roadblocks are indicative of longstanding problems with bankruptcy in India. These were meant to be solved by a new insolvency code introduced in 2016. That code's provisions shifted power from indebted companies, protected by a morass of earlier rules, to their creditors. It allowed some interminable bankruptcy proceedings at last to come to an end, for example forcing the sale of Essar Steel, an industrial giant which had been in default to various creditors as far back as 2002. A smooth journey through the court system was meant to send a bigger message—that the risk of lending to Indian businesses could be mitigated by ensuring that collateral is readily transferable. This, the argument went, would help reduce borrowing costs for corporate India more broadly.

Despite a few successes such as Essar, however, the regime has not lived up to its promise. One persistent problem has been the low recovery rate for creditors' claims. In the past seven years lenders to a company that presented a successful resolution plan received a paltry 32% of their claims, on average. And only one in four bankrupt firms present such a plan; the remaining three-quarters of cases end in liquidation, for which creditors' average recovery rate is a dismal 7% of what they are owed.

The official figures may overstate the actual returns of what creditors are owed. They take no account of the time and effort involved in the process—the second problem with the code as applied in practice. Under the law, cases are to be resolved within 330 days. The latest quarterly update by the law's administrator, the Insolvency and Bankruptcy Board of India, indicated that cases leading to a liquidation took an average of 456 days to conclude. The average for cases in which the company survived through a resolution plan was a gobsmacking 614 days. The number of applications that are taking more than two years rose to 85 in the 12 months to March 2022, from 15 a year before. Bankruptcy lawyers grumble that submitting an application in the first place is becoming harder, and can itself now take a couple of years.

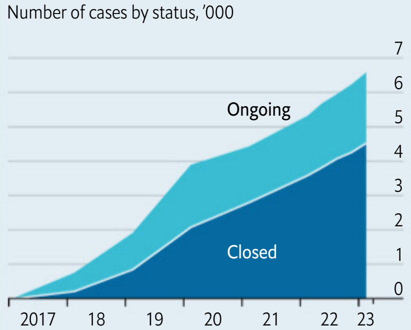
Fixing India's bankruptcy process may require revisions to the law. It could, for instance, do with a clearer distinction between tangible and less tangible assets of the sort that has historically allowed things like railway carriages to be repossessed quickly and leased out in jurisdictions such as America.

The bankruptcy system also needs more resources. As the number of cases keeps rising, so does the backlog (see chart). Unlike India's older courts, often ensconced in palatial buildings, the country's busiest bankruptcy forum in Mumbai occupies an upper floor of a dilapidated old building owned by MTNL, an ailing state-owned telecoms provider. In theory, its five courtrooms operate six hours a day. Lawyers say that in practice four hours is more common. Without enough judges to man all five benches, some courtrooms remain empty. As an exasperated banker involved in many insolvencies puts it, "No one is winning now." ■

Flush with busts

India, corporate insolvency-resolution process

Number of cases by status, '000



Source: Insolvency and Bankruptcy Board of India

The luxury business

Keeping their shine

Some bauble merchants are more recession-proof than others

HERMÈS IS A byword for exclusivity. Its signature Birkin bag, one of which sold for $450,000 last year, cannot be bought from the luxury firm's website or by simply walking into a store. There are neither ads in fashion magazines nor glossy campaigns on Instagram. For the not-so-famous, owning a Birkin can involve a years-long waiting list.

Part of the reason for the wait is constrained supply, which Hermès manages with the precision worthy of its stitching. But another part is booming demand for all manner of luxury goodies. Last year net profits of Kering, which owns fashion labels such as Gucci and Balenciaga, rose by 14%. Those at LVMH, owner of Tiffany and Louis Vuitton, among other brands, grew by nearly a quarter. Hermès and Richemont, which owns Cartier, among other baubles, each saw theirs surge by more than a third. Together, the four groups raked in over €33bn ($35bn) in profits, on combined revenues of around $130bn.

That, though, was before persistent inflation and rising interest rates to combat it fanned fears of a global recession. Now, as those fears intensify, luxury brands are losing their shine, at least in the eyes of investors. Luxury bosses' unease expressed at an industry pow-wow on May 22nd provoked a sell-off that wiped $65bn, or 7%, from the four luxury groups' collective market value. Once shareholders stop quaking in their Louboutins, they may pay closer attention to two things in order to assess their luxury stocks' prospects.

The first is a brand's positioning within ▸▸

the luxury business. Mid-market houses that target the merely affluent, such as Ralph Lauren, a maker of polo-themed apparel, are more sensitive to economic headwinds than top-end brands catering to the obscenely wealthy. This was already evident last year. Shoppers who had shelled out up to €1,000 on designer goods before the pandemic cut their average spending in half in 2022, according to Bernstein, a broker. By contrast, the truly loaded more than doubled theirs. These days just 5% of buyers account for two-fifths of global luxury sales.

Exposure to China, one of the world's biggest luxury markets, is another factor. Luxury merchants counting on a sharp rebound from years of harsh zero-covid lockdowns to raise sales have been disappointed by Chinese shoppers' unobliging restraint. Brands including Estée Lauder, a pedlar of pricey cosmetics, have slashed their outlook for the region. Burberry, a British maker of beige coats, generated less than a third of sales from Chinese shoppers, down from 40% before the pandemic. Things could get worse for American and European brands in China if Sino-Western geopolitical tensions ratchet up.

Luxury houses are already searching for new engines of growth. These include India, which though mostly poor has growing ranks of the super-rich, and sub-Saharan Africa, where last year Chanel became the first European luxury brand to stage an African fashion show, in Dakar, the capital of Senegal. But these markets will take years to reach China's scale, if they manage to do so at all. In the meantime, investors are likely to become as discerning about their luxury stocks as they are about their posh wardrobes. ■

Bartleby Desk rage

The health condition that blights office workers everywhere

A recent piece of research revealed that as many as one in five people in Britain suffers from "misophonia", a condition in which certain sounds cause them disproportionate distress. If you can listen to your spouse eating an apple and don't immediately want a divorce, you are not a sufferer of misophonia. But you may have another, similar condition for which the workplace is the perfect breeding-ground. "Misergonia" (colloquial shorthand: desk rage) is the name hereby bestowed on the eye-gougingly deep irritation triggered by certain aspects of office life.

Like misophonia, sounds are often the trigger for misergonia. The routine fire-alarm test is a case in point. "Attention please, attention please," shouts a voice that is literally impossible to ignore. "This is a test," it roars, making it clear that your attention is not in fact required. More shouting and eardrum-piercing noises follow. Then, most galling of all, a message of thanks for your attention, the aural equivalent of a prison thanking you for choosing them for a stay. By the end of it all, a conflagration would be sweet release.

Other noises are less obviously intrusive but just as annoying. The noise of clicking keys is the soundtrack of cubicles everywhere. But every office has its share of keyboard thumpers, people whose goal seems to be not producing a document but destroying the equipment before one can be created.

Verbal tics are another tripwire for misergonia sufferers. "This is a point that has already been made," is how weirdly large numbers of people start to make a point that has already been made. Why not just say "I don't value your time" and have done with it?

Small IT failures are a fact of office life, but they can still be soul-destroying. The printer which jams repeatedly. The design requirement in said printer that demands every flap and tray must be opened once before things can restart. The headphones that never work. Or the mouse that gives up at just the wrong moment. Your cursor is two centimetres from the unmute button on a Zoom call; you move your mouse towards it when it is your turn to speak, and nothing happens. You rattle it around more vigorously, and still no response. Either your cursor is in a coma or the battery has run out. "You're still on mute," offers up a colleague helpfully. Someone else fills the gap. "This is a point that has already been made…," they begin.

And then there is the reply-all email. It starts innocently enough, with someone asking for help with a problem. In come one or two replies, and with a sickening lurch of the stomach you realise that the entire company has been copied in on this request. Suddenly, an avalanche. It is as if nothing else matters other than weighing in on this one question. Deadlines are deferred. Milk goes off in the fridge. Visitors in reception are left to forage for food while members of staff devote themselves to the matter at hand. There are replies to replies, and replies to replies to replies. This isn't a thread, it's a hawser. Everyone seems to be enjoying themselves hugely.

But there is a silent, suffering group for whom every new message lands as a hammer blow to their composure. How many minutes can one organisation fritter away on this nonsense? Why isn't it stopping? And when the initial round of answers has died down, can you be certain that it is really over? It is always possible that someone who has been away from their desk will pile in and start the whole farrago up again.

Individual workers will have their own triggers, ostensibly tiny things to which they are extremely sensitive. It might be the person who still doesn't understand you have to tag someone in Slack to notify them of a message. It might be the doors closing on a crowded lift, only for an arm to snake in and a voice to ask "room for one more?" (If you were the size of a marmot, yes.) It might be a particularly heavy tread or an even heavier perfume. It might be the way someone insists on using the word "pivot". It might be anything, frankly—which means that for some of your colleagues it might also be you.

There is no cure for misergonia. The workplace is a collection of people in enforced and repeated proximity, their habits, noises and idiosyncrasies turning into something familiar for some colleagues and disproportionately grating for others. The only release is to go home, close the front door behind you and find your significant other tucking into an apple.

Schumpeter | Welcome to Ozanada

Australia and Canada are one corporate country—with one set of flaws

If Australia and Canada were one economy, this "Ozanada" would be the world's fifth-largest, bigger than India and just behind Germany. Considering the two in tandem is not as nutty as it seems. Weather aside, they have a remarkable amount in common. Both are vast land masses populated by comparatively few people and dangerous wildlife. Both are (mostly) English-speaking realms of King Charles III. Both export their rich natural resources around the planet. And both are magnets for immigration.

Their worlds of business, too, are near-identical. Macquarie, an Australian financial group, is the world's largest infrastructure-investment manager. Brookfield, a Canadian peer, is the runner-up. Fittingly, Australia has produced a number of top surf-clothing labels, just as Canada has developed a niche in parkas and other winterwear. And, of course, both are home to commodities giants. But the main thread that connects Ozanada Inc is less fetching. As Rod Sims, former head of Australia's competition watchdog puts it, his country's firms have "forgotten how to compete". So have their Canadian counterparts.

Many hands have been wrung in recent years over oligopolies in America. Yet next to Ozanada, the world's largest economy looks like a paragon of perfect competition. Coles and Woolworths, Australia's biggest supermarkets, sell 59% of its groceries, according to GlobalData, a research firm. Loblaws and Sobeys peddle 34% of Canada's—more than the combined share of the top four grocers in America. In both Australia and Canada the four biggest banks hold three-quarters of domestic deposits, compared with less than half in America. In both countries domestic aviation is a duopoly and telecoms a triopoly. The list goes on.

Part of the explanation for Ozanada's oligopolistic tendencies is benign. If companies need to be of a certain scale to be economically viable—to afford the necessary investments in computer systems, for example—then a small economy may be unable to support more than a few players in many industries. Ozanadian national champions, notably its grocers and lenders, are, however, meaningfully more profitable than their American counterparts. That points to other, less innocent causes.

Toothless antitrust regimes in both countries set a high bar for blocking mergers, permitting consolidation. A lack of openness to foreign investment doesn't help. Of the 38 members of the OECD, only three—Iceland, Mexico and New Zealand—are less open to foreign investment. Stringent screening, ownership caps and various other hurdles make setting up shop in Ozanada a hassle for foreigners. In 2013 Naguib Sawiris, an Egyptian telecoms tycoon, swore he would never again invest in Canada after his bid to acquire the fibre-optic network of Manitoba Telecom Services (MTS), a Canadian carrier, was rejected by the government with little explanation. Four years later MTS was purchased in its entirety by Bell Canada, a local rival.

All this may reflect a unique Ozanadian spin on the "resource curse" that has brought political instability and underdevelopment to commodity-rich countries in Africa and South America. Ozanada's natural bounty has weakened its incentive to build globally competitive industries in other areas. That may explain why, beyond commodities and outdoor apparel, the list of successful Ozanadian multinationals is so short. Canada's banks have dipped a toe in America, but remain small fry. Its life insurers have fared only a bit better south of the border, mostly thanks to big acquisitions. Vegemite, a divisive Australian spread, has yet to win over foreign sandwich-eaters.

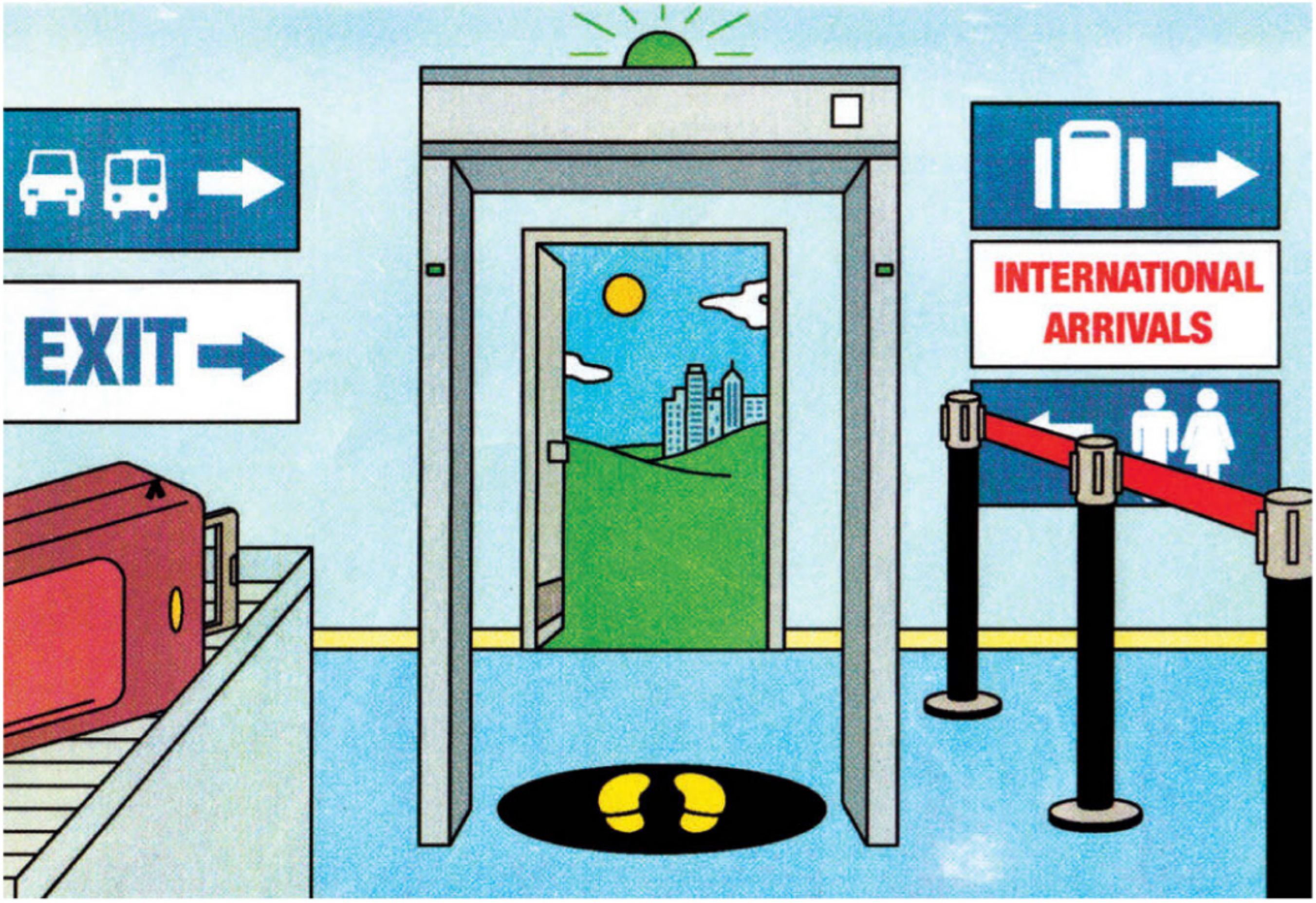
Ozanada Inc's limitations are particularly acute at the cutting edge of technology. Products deemed "high-tech" by the World Bank, such as computers and drugs, represent more than 7% of the combined exports of OECD members, but only 4% for Canada and less than 2% for Australia. Patents granted per 10,000 people are a mere 5.9 in Canada and 6.7 in Australia, compared with 9.9 in America and 28.2 in South Korea.

This is not for want of well-nourished brains; Ozanada is home to world-class universities and boasts some of the highest rates of tertiary education in the OECD. Rather, the problem is an underfed innovation system. Spending on research and development comes to just 1.7% and 1.8% of GDP in Canada and Australia, respectively, against an OECD average of 2.7%. Total venture-capital investment in Ozanada was a mere $16bn in 2022, roughly half the level in Britain. Atlassian and Canva, two Australian technology successes, and Shopify, a Canadian one, have not prompted a lot of fresh prospecting for the next generation of tech winners.

Dormant animal spirits

To Ozanadians, this may all seem academic. After all, among citizens of countries with at least 20m inhabitants, only America's are richer. But they used to be better off than Americans: after soaring in the first decade of the 2000s thanks to rising commodity prices, their GDP per person briefly surpassed America's in the early 2010s in dollar terms. And a fate tethered to demand for commodities may prove particularly volatile in the decades to come.

Canada, with its reliance on oil and gas exports, could be dragged down by decarbonisation. Australia will be somewhat insulated by its vast deposits of copper and other minerals needed for the green transition. But it could suffer from its dependence on shipping commodities to China. In 2020 China began introducing restrictions on Australian coal, timber and other products, seemingly in retaliation for calls by Australia's then government for an inquiry into the origins of covid-19. Australia weathered those restrictions, which have since been loosened, surprisingly well. A long-term slowdown in China's economic growth, though, which many economists now expect, would weigh heavily on the country. Ozanada's economic model is not about to collapse. In time, though, its corporate weaknesses may come back to bite it. ■



Crossing borders

Exodus

ST JOHN'S, NEWFOUNDLAND

An unprecedentedly large wave of mass migration is under way

Last year 1.2m people moved to Britain—almost certainly the most ever. Net migration (ie, immigrants minus emigrants) to Australia is twice the rate before covid-19. Spain's equivalent figure recently hit an all-time high. Nearly 1.4m people on net are expected to move to America this year, one-third more than before the pandemic. In 2022 net migration to Canada was more than double the previous record and in Germany it was even higher than during the "migration crisis" of 2015.

The rich world is in the middle of an immigration boom, with its foreign-born population rising faster than at any point in history (see chart 1 on next page). What does this mean for the global economy?

Not long ago it seemed as if many wealthy countries had turned decisively against mass migration. In 2016 Britons voted for Brexit and then Americans for Donald Trump, political projects with strong anti-migrant streaks. In the global wave of populism that followed, politicians from Australia to Hungary promised to crack down on migration. Then covid closed borders. Migration came to a standstill, or even went into reverse, as people decided to return home. Between 2019 and 2021 the populations of Kuwait and Singapore, countries that typically receive lots of migrants, fell by 4%. In 2021 the number of emigrants from Australia exceeded the number of immigrants to the country for the first time since the 1940s.

The surge in migration has brought back a sense of normality to some places. Singapore's foreign workforce recently returned to its pre-pandemic level. In other places it feels like a drastic change. Consider Newfoundland and Labrador, Canada's second-smallest province by population. Long home to people of Irish-Catholic descent—with accents to match—net migration to the province is running at more than 20 times the pre-pandemic norm. St John's, the capital, feels more like Toronto every time you visit. Heart's Delight, a small rural settlement, now has a Ukrainian bakery, Borsch. The provincial government is setting up an office in Bangalore to help recruit nurses.

The new arrivals in Newfoundland are a microcosm of those elsewhere in the rich world. Many hundreds of Ukrainians have arrived on the island—a tiny share of the millions who have left the country since Russia invaded. Indians and Nigerians also appear to be on the move in large numbers. Many speak English. And many already have family connections in richer coun- ▸▸

→ Also in this section

tries, in particular Britain and Canada.

Some of the surge in migration is because people are making up for lost time. Many migrants acquired visas in 2020 or 2021, but only made the trip once covid restrictions loosened. Yet the rich world's foreign-born population—at well over 100m—is now above its pre-crisis trend, suggesting something else is going on.

The nature of the post-pandemic economy is a big part of the explanation. Unemployment in the rich world, at 4.8%, has not been so low in decades. Bosses are desperate for staff, with vacancies near an all-time high. People from abroad thus have good reason to travel. Currency movements may be another factor. A British pound buys more than 100 Indian rupees, compared with 90 in 2019. Since the beginning of 2021 the average emerging-market currency has depreciated by about 4% against the dollar. This enables migrants to send more money home than before.

Many governments are also trying to attract more people. Canada has a target to welcome 1.5m new residents in 2023-25. Germany and India recently signed an agreement to allow more Indians to work and study in Germany. Australia is increasing the time period some students can work for after graduating from two to four years. Britain has welcomed Hong Kongers fleeing Chinese oppression—well over 100,000 have arrived. Many countries have made it easy for Ukrainians to enter. Even those countries hitherto hostile to migration, including Japan and South Korea, are now looking more favourably on outsiders as they seek to counteract the impact of ageing populations.

Economies that welcome lots of migrants tend to benefit in the long run. Just look at America. Foreign folk bring new ideas with them. In America immigrants are about 80% likelier than native-born folk to found a firm, according to a recent paper by Pierre Azoulay of the Massachusetts Institute of Technology and colleagues. Research suggests that migrants help to build trading and investment links between their home country and the receiving one. A slug of young workers also helps generate more tax revenue.

Come from away 1

Developed countries*, foreign-born population

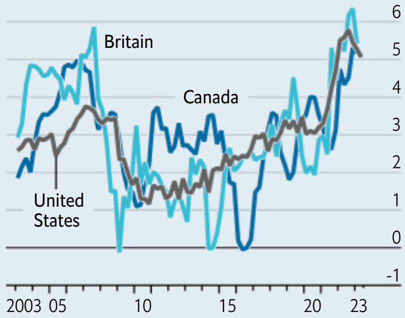
% change on a year earlier†

*Australia, Britain, Canada, EU, Iceland, Norway, Switzerland and US †Four-quarter moving average

Sources: National statistics; *The Economist*

Pinions with glistening gold 2

Nominal wages, % change on a year earlier



Source: Goldman Sachs

Some economists hope that the wave of migration will have more immediate benefits. "High immigration is helpful for the Fed as it tries to cool down the labour market and slow down inflation," says Torsten Slok of Apollo Global Management, an asset manager, expressing a common view. Such arguments may be a little too optimistic. Having more people does increase the supply of labour, which, all else being equal, reduces wage growth. But the effect is pretty small. There is little sign that the countries receiving the most migrants have the loosest labour markets. In Canada, for instance, pay is still rising by about 5% year on year (see chart 2).

Your people shall be my people

Migrants also lift demand for goods and services, which can raise inflation. In Britain new arrivals appear to be pushing up rents in London, which already had a constrained supply of housing. A similar effect is apparent in Australia. Estimates by Goldman Sachs, a bank, imply that Australia's current annualised net migration rate of 500,000 people is raising rents by around 5%. Higher rents feed into a higher overall consumer-price index. Demand from migrants may also explain why, despite higher mortgage rates, house prices in many rich countries have not fallen by much.

Over the next year or so migration may come down a bit. The post-pandemic "catch-up" will end; rich-world labour markets are slowly loosening. In the very long term, a global slump in fertility rates means there may be a shortage of migrants. Yet there is reason to believe that high levels of new arrivals will remain raised for some time. More welcoming government policy is one factor. And migration today begets migration tomorrow, as new arrivals bring over children and partners. Before long the rich world's anti-immigrant turn of the late 2010s will seem like an aberration. ■

Brent crude

New anchor

Radical reform of the world's oil-price benchmark seeks to avert chaos

The price of Brent crude has a claim to be the world's most important number. Two-thirds of the 100m barrels of oil traded each day derive their price from it. So do millions of futures contracts that buyers and sellers employ to manage risk. Some governments use the oil price to set tax rates; customers, for their part, are exposed through heating-oil and petrol prices. Dated Brent, as the benchmark is formally known, also anchors markets beyond petroleum. It sets the price for liquefied natural gas in energy-guzzling Asia. And as an indicator for economic health, it shapes the decisions of the world's power brokers, from America's Federal Reserve to China's strategic planners.

The four-decade-old index is named after a tiny cluster of wells some 190km northeast of the northernmost islands of Scotland. That it still wields such clout is a wonder—and, increasingly, a danger. The crude transactions that Platts, a price-reporting agency, observes to calculate the Brent price have become ever rarer, making it easier for traders to sway prices. So Platts is introducing a fix: for deliveries dated June 2023 onwards, it will add transactions of West Texas Intermediate (WTI) Midland, an American crude similar in quality to Brent, to the pool from which the benchmark is calculated, marking the first time oil from outside the North Sea will be included. How the experiment unfolds will determine whether trust in Brent endures, and whether the world's biggest commodity market continues to function.

Worries that Dated Brent might become insufficiently liquid have a pedigree. Output at the eponymous field peaked in 1984; ▸▸

American invasion

WTI Midland crude oil, exports to Europe

Barrels per day, m

Source: Kpler

now just two or three cargoes a month are loaded. Starting in 2002, four blends from other fields (one British, three Norwegian) were added to the pool. This buoyed volumes of Brent-graded cargoes, facilitating price discovery. It also made the price-reporting agencies' job fiendishly complex. To discourage "squeezing" (attempts to drive up prices by hoarding cargoes) Dated Brent is based on the price of the cheapest blend in the pool as traded in London during a daily window. But each blend differs slightly from the original Brent, in density and sulphur content, requiring adjustments to ensure fair competition.

These additions have bought time but failed to solve the fundamental problem: North Sea oil production has been steadily falling. Campaigns to corner the market have multiplied. They are especially likely in the summer, when maintenance at wells means even less oil is produced, says Adi Imsirovic, a former oil-trading chief at Gazprom, an energy giant. It was becoming plausible that doubts about the benchmark could one day cause market participants to declare millions of contracts invalid. Change was needed to avert chaos.

Over a barrel

In theory, the market could have crowned an index from much bigger oil-production hubs than Europe, such as the Persian Gulf or Russia, to replace Brent. To gain credibility, benchmarks have to tick many boxes, notes Paul Horsnell of Standard Chartered, a bank. Having sufficient production of the underlying crude is one of them, and it is where Brent struggles. But aspiring substitutes have bigger flaws. Some are dominated by a single buyer or seller; many are impaired by distorting tax regimes, feeble rule of law and political interference. Despite trying for years, none of Brent's rivals has managed to break out, says Colin Bryce, a former commodities boss at Morgan Stanley, another bank. The sole well-functioning alternative to Brent, which tracks prices of WTI cargoes delivered in Cushing, Oklahoma, to satiate America's home market, is too parochial.

So the Brent show needed to go on. One way to prolong it might have been to add Johan Sverdrup, a prolific Norwegian field, into the Brent basket. The problem is that Sverdrup's high density and sulphur content would have made it the odd one out. Such an addition might also have given too much power to Equinor, Norway's state driller. Midland has issues, too. To make it comparable to North Sea grades, Platts will have to estimate and adjust for the cost of ferrying oil from America's Gulf Coast to Rotterdam, making the index still more unwieldy. But the blend is similar to Brent, and the volumes of it delivered to Europe have surged of late, meaning it is a good mirror of oil demand in the bloc.

Because Brent deliveries are priced up to 30 days in advance, the inclusion of Midland started coming into force in May. The market so far seems to be accepting the change. The price difference between Brent forwards (the purchase of cargoes in advance) and futures (financial bets on the future spot price), which is positive in a healthy market, has returned to near usual levels, notes Mr Imsirovic. It had contracted when the change was first discussed.

Risks remain. One is that Midland swamps the benchmark. In April 1.1m barrels of the stuff landed in Europe each day, more than the other Brent grades combined. Had it been part of the basket in 2021, Argus, a rival to Platts, estimates Midland would have set the price of Brent 68% of the time. So far, though, Midland appears to be chosen less often, perhaps because its inclusion in the basket is creating a bigger market for it, boosting its value.

Another worry is that the change could favour a coterie of marketmakers, such as Glencore and Trafigura, that account for a large share of Midland shippings, and which may now be the only ones able to keep track of how Dated Brent is formed. The cast of Brent barons has evolved over time, however, suggesting barriers to entry are surmountable. In the 1980s Europe's once-dominant oil firms were supplanted by Japan's mighty trading houses, which were themselves dethroned by Wall Street banks at the turn of the millennium. The new-look benchmark is already enticing new players. In May Koch Industries, an American conglomerate, sold its first forward Brent cargo in nearly a decade.

The biggest risk may be of a different nature. Tweaks to Brent used to emerge from within the oil industry. This time the initiative has come from a price-reporting agency, Platts, which wants to pre-empt a crisis with its own solution. Now that a precedent has been set, insiders worry that the result could be endless tinkering, needlessly raising questions about Brent's robustness—the very outcome price-reporting agencies want to avoid.

Good oil?

In 1976 the NYMEX potato-futures market, based on a red variety from Maine, imploded after speculators holding 1,000 contracts involving 23,000 tonnes of the crop failed to deliver on time. At fault were reckless attempts to squeeze supply, such as coaxing buyers into rejecting cartloads of the stuff on the pretext that they did not meet standards. Investors got burnt. JR Simplot, America's potato prince, was still compensating counterparties a decade later. No other potato price has since managed to gather such clout. Making a mess of a Brent revamp would leave many more people holding a sizzling-hot spud. ■

Medical finances

A pricey shot

America will struggle to pay for ultra-expensive gene therapies

The vial is familiar, the liquid inside could be water—but the price tag is a little more unusual. A shot of Zolgensma, a gene therapy for spinal-muscular atrophy, comes to $2.1m. It is one of a new generation of ultra-expensive medicines. Treatments for beta-thalassemia and haemophilia, two blood disorders, cost $2.8m and $3.5m, respectively. Their prices may be overtaken by gene therapies for sickle-cell disease expected to be approved this year, and one for Duchenne muscular dystrophy, which could be approved any day now.

Such therapies will be beyond the means of many middle- and low-income countries. They will also cause trouble in the richest, not least America. Pharmaceutical firms point out the drugs are expensive to develop, mostly for rare disorders and may offer benefits that last a lifetime. Governments and insurers must decide if the medicines are worth it at current prices and, if not, try to negotiate them down. Health-care experts wonder if this process could, in time, force sweeping changes in how American states pay for medication.

Vertex, one of the firms working on sickle-cell-disease therapies, argues that current treatment for the worst-affected patients can cost $4m-6m over the course of a lifetime. Yet the Institute for Clinical and Economic Review, a think-tank, calculates that the firm's new medicine would only be cost-effective at a shade under $2m a patient, both because the initial cost would earn a return if put to other uses and because there is uncertainty over how long the benefits of the drug will last.

Sickle-cell disease, which can lead to extreme pain, strokes, serious infections and lung difficulties, is a particular problem for governments and insurers, since it is relatively common. In America there are 100,000 people who suffer from it, and many are covered by Medicaid, an official health-care scheme for the poor. Michael Kleinrock of the IQVIA Institute for Human Data Science, an analytics firm, expects that Medicaid will have to prioritise patients when the drugs are approved, as it will be unable to afford to pay for everyone who might benefit at the same time.

In the medium term, a change of approach may be necessary. Francis Collins of the National Institutes of Health, which funds medical research, says there is recognition in government that there will have to be "special creative thoughtfulness to make access [to these medicines] happen". A report by the CMS Innovation Centre, an official agency, suggests a move to a system in which the government negotiates on behalf of state Medicaid outfits, in the hope of using federal heft to win better deals. Although the details are yet to be worked out, the hope is payments can be linked to drug performance, as already happens in Britain, France and Germany.

Private insurers will face difficulties, too. Many have imposed outright exclusions or restriction on access to gene therapies in their policies. As insurers have a high turnover of customers, they may not benefit from the savings of a cure, which will accrue over a lifetime. There is talk of reinsurance programmes and risk pooling, but little progress has been made.

Some argue that costs will come down over time. Zandy Forbes, chief executive of MeiraGTx, says that her firm is working on a gene therapy for Parkinson's disease that will be competitive with existing treatments. To achieve this, the company has decided to bring all its development and manufacturing in house in order to radically reduce costs. History demonstrates that drops in the price of pharmaceutical goods are possible. Between 1998 and 2009 manufacturing improvements brought about a 50-fold reduction in the cost of goods of monoclonal antibodies. They are now routinely used in medicine.

There is another option, which is that breakthroughs go to waste. Some states have been unwilling to pay the price needed to eliminate Hepatitis C, a viral disease, despite the availability of antiviral therapies that cost around $20,000 per patient, says Dr Collins; this results in all kinds of obstacles being put up for those receiving treatment. It would be an extraordinary waste were the same to happen with the new wave of gene therapies. ■

Fighting inflation

Monetary madness

ISTANBUL

Turkey's bizarre macroeconomic experiment enters a new phase

IT WAS SUPPOSED to bring respite. Instead, Turkey's election, which surprised investors by re-anointing Recep Tayyip Erdogan as president on May 28th, has deepened the country's economic malaise. In the past fortnight the lira has lost 5% of its value against the dollar, falling to a rate of 21 to one. Some economists think it could hit 30 by the year's end, despite the government's attempts to prop it up. The central bank's net foreign-exchange reserves are now in the red, having been depleted as savers and investors flee the currency.

Such difficulties are symptoms of eccentric monetary policy. In 2021, facing inflationary pressure that caused central banks everywhere to raise interest rates, Turkey cut them. Believing that low rates lower inflation—the opposite of economic orthodoxy—Mr Erdogan has repeatedly strong-armed Turkey's central bank to slash its policy rate. Indeed, the overnight policy rate now stands at a cool 8.5%. According to official figures, annual inflation hit 86% in 2022 (see chart 1 on next page).

Inflation has since softened—either to 44%, according to official estimates, or to something higher, according to independent ones. Mr Erdogan's lackeys boast he was right all along. In fact, inflation has dropped because of a fall in energy prices, central-bank intervention in currency markets and "base effects", where past price rises lift the base from which inflation is calculated. Regardless, Mr Erdogan looks likely to continue with his policy, at least for a time. In his victory speech he maintained that, alongside looser monetary policy, "inflation will also fall".

Mr Erdogan is right about something, however. Inflation in Turkey is a puzzle for economists, even if not in the way he suggests. The persistence of low interest rates and high inflation suggests Turkey's real interest rate has been deeply negative for some time. This ought to become quickly unsustainable, since it enables speculators to profit by borrowing in lira and investing in stable assets such as housing or other currencies, further depreciating the lira and turbocharging inflation. How, then, have real interest rates stayed negative for so long without, say, hyperinflation making an appearance? And what does it mean for the future path of inflation?

Fishing for answers

To start, one must first understand Mr Erdogan's approach. This was best articulated in 2018, when Cemil Ertem, an adviser, provided an outline, referring to an equation baked into many economic models and named after Iriving Fisher, a pioneering economist. The "Fisher equation" states that the nominal interest rate is a sum of the real interest rate and the expected rate of inflation. Most economists believe the real rate is determined by factors, such as the long-term growth rate, over which policymakers have little sway. A lower nominal rate should, at least according to Mr Ertem's interpretation, reduce inflation. Mr Ertem argued that this would happen if firms passed on lower borrowing costs to consumers as lower prices.

Yet when the theory was put to the test in late 2021, Mr Erdogan was proved wrong. After all, inflation continued to rise. The problem was that the other channels through which interest rates affect inflation dominated the cost channel by which Mr Ertem expected inflation to be reduced, says Selva Demiralp of Koc University.

This still leaves the mystery of Turkey's persistent deeply negative real interest rate. But it starts to unravel when other types of real rates, which have not been as negative, are considered. As Emre Peker of the Eurasia Group, a consultancy, argues, "the [policy] rate has become irrelevant."

In some cases, interest rates are distorted by government policy. In the commercial sector, for instance, banks are told not to lend above a certain interest rate. The result is that they simply avoid making most loans. Only favoured industries, such as construction, receive credit. Turkey has also required banks to hold bonds against foreign-exchange deposits, in effect subsidising state borrowing.

In sectors where interest rates are less distorted, though, nominal interest rates have moved in the opposite direction to the policy rate (see chart 2). Since investors do not believe the central bank will act to stop inflation in the future, inflation expectations have risen. This has fed into higher consumer-lending rates, especially for longer-term loans, because investors demand a higher return the lower the purchasing power they expect the lira to hold. Thus judged by consumer-loan rates, real interest rates may not be all that negative.

Similarly, returns on other assets are much higher than the central bank's policy rate suggests. This is causing firms, households and investors to flee the currency. The government wants to support the lira, but there is only so much it can do. Your correspondent was blessed with many thanks when—short of time—he paid for a taxi in Istanbul using dollars at the market exchange rate, rather than the less generous black-market one. Suppliers are taking matters into their own hands, pricing items in dollars, points out Bekir, a shop owner in Istanbul's Grand Bazaar. Assets other than foreign currencies are also attracting investment, as parties scramble to protect their savings. Ms Demiralp notes there are, for instance, "long lines outside car dealerships". House prices have grown at triple the rate of official inflation. Some speculate about the potential for an attack on the lira from foreign investors.

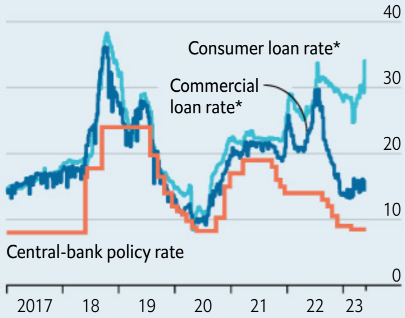
The government has tried to stem currency flight. Exporting firms must sell 40% of their foreign currency revenues to the central bank. In late 2021 the government introduced a scheme whereby some lira deposits are protected against depreciation. In an extremely costly and not entirely sustainable situation, almost a quarter of all deposits are now covered.

What, then, to make of the Fisher equation? Short-term policy rates have been quite negative, but they are much less relevant for borrowing, since market rates have either risen owing to higher inflation expectations, or credit has been rationed. In other areas the result has been a dash from the lira, prompting use of soft capital controls. If Mr Erdogan were to hold down market interest rates across the board, the result might well be hyperinflation.

Some economists think Mr Erdogan, armed with victory and facing a brewing currency crisis, may soften his approach. Turkey will have some economic respite over the summer, when energy consumption will fall and tourism revenue rise. Mr Erdogan has been able to keep the lira afloat thanks to one-off foreign-exchange agreements with friends including Russia and Saudi Arabia. Yet come autumn he may have to let up on his promise to continue the low-rate policy, perhaps via indirect means like softening limits on commercial-lending rates. Warm weather and friendly favours do not last for ever. ■

The great divergence 2

Turkey, selected interest rates, %



Source: Bloomberg *Estimate of weighted average

Cliff jumping 1

Turkey, consumer prices

% increase on a year earlier

Source: Central Bank of Turkey

Stimulus problems

Tiny toolbox

HONG KONG

Why China's government might struggle to revive its economy

CHINA'S POST-COVID recovery was supposed to be world-shaking. Instead, it looks merely shaky. After the initial release of pent-up demand, economic data for April fell short of expectations. In response China's stocks faltered, yields on government bonds fell and the currency declined. The country's trade-weighted exchange rate is now as weak as it was in November, when officials were locking down cities.

Will the data for May look better? On the last day of the month the National Bureau of Statistics reported its purchasing-managers indices (PMIs). They showed that services output grew more slowly than in April and manufacturing activity shrank for the second month in a row. Another manufacturing index by Caixin, a business publication, was more encouraging, perhaps because it gives smaller weight to inland heavy industry, which may benefit less from a consumption-led recovery.

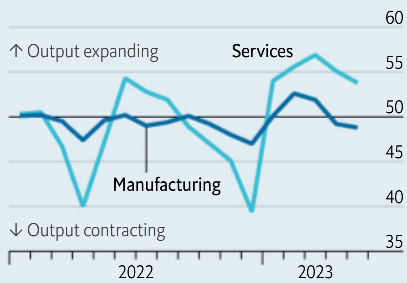
Both sets of PMIs also suggest the prices manufacturers pay for inputs and charge for outputs have declined. Some economists now think producer prices—those charged at the "factory gate"—may have fallen by more than 4% in May, compared with a year ago. Such price cuts are hurting industrial profits, which is in turn hampering manufacturing investment. This has raised fears of a deflationary spiral.

As a result, China's economy faces the growing risk of a "double dip", says Ting Lu of Nomura, a bank. Growth from one quarter to the next may fall close to zero, even if headline growth, which compares GDP with a year earlier, remains respectable.

Elsewhere in the world, weak growth is accompanied by uncomfortable inflation. ▸▸

Fun while it lasted

China, purchasing-managers' index*



*Based on a survey of purchasing executives, activity compared with the previous month

Source: Haver Analytics

This makes it harder for policymakers to know what to do. But China's problems of faltering growth and falling inflation point in the same direction: towards easier monetary policy and a looser fiscal stance.

Some investors worry that China's government is not worried enough. The central bank seems unconcerned about deflation. Even without much stimulus, the government is likely to meet its modest growth target of 5% this year, simply because the economy last year was so weak.

That stance will change soon, predicts Robin Xing of Morgan Stanley, a bank. In 2015 and 2019, he points out, policymakers were quick to respond when the manufacturing PMI fell below 50 for a few months. He is confident China's central bank will cut reserve requirements for banks in July, if not before. He also thinks China's policy banks, which lend in support of development objectives, will increase credit for infrastructure investment. That should be enough to make the slowdown a "hiccup".

Others are less optimistic. The government will act, argues Mr Lu, but small tweaks will not lift the gloom for long. A bigger response faces other obstacles. Officials could cut interest rates, but that would squeeze the profitability of banks which must already worry about losses on property loans. They could transfer more money to local governments, but many have misspent funds on ill-conceived infrastructure in the past. They could hand out cash directly to households, but creating the apparatus to do so would take time. In the past, the government could quickly stimulate the economy through property and infrastructure investment. Since then, notes Mr Lu, its "toolbox has become smaller and smaller". ■

Buttonwood Back into battle

Investors return to their confrontation with rising interest rates

THE PAST three months have afforded investors little pause for thought. Since a run on Silicon Valley Bank (SVB) in March, markets have had to judge first whether one American lender would collapse (yes), then others (yes, though mercifully few), then whether the contagion would spread overseas (just to Credit Suisse). With the takeover of First Republic, another regional lender, on May 1st, bank failures seemed to have petered out. But by then it was time to worry about whether America's politicians would throw global markets into chaos by defaulting on their sovereign debt. As this column was published, they at last appeared to have decided not to, provided a deal between President Joe Biden and Kevin McCarthy, the Republican speaker of the House of Representatives, makes it through Congress.

All this drama has given markets a holiday of sorts: it offered a break from obsessing about how high interest rates will need to rise to quash inflation. Since the Federal Reserve started hoisting borrowing costs in March last year, little has mattered more to investors. But after SVB's fall, the question was not how much the Fed was prepared to do to fight inflation; it was how much it might need to do to stabilise the financial system.

Now attention is turning back to interest rates. Once again, they are on the rise. In early May the yield on two-year Treasuries, which is especially sensitive to expectations of the Fed's policy rate, fell to 3.75%. It has since increased to 4.4% as officials briefed journalists they were contemplating raising rates further than their present level of 5-5.25%. Traders in futures linked to interest rates, who were until recently anticipating rate cuts within months, have also switched to betting on another rise.

The new mood music can be heard outside America as well. In Britain former rate-setters have warned that the Bank of England's benchmark rate may rise to 6% from its current 4.5%. Yields on government bonds have climbed to within touching distance of levels last September, which at the time were only reached amid fire sales and a market meltdown.

For Jerome Powell, the Fed's chairman, this may come as a relief. In early March he appeared to have convinced investors that the central bank was serious about lifting interest rates and keeping them high. He and his colleagues had spent months saying so; traders had spent months trying to call their bluff. But then something in the market's psyche snapped, and investors at last priced in the same path for rates as the Fed. Days later banking turmoil broke out and they abandoned the bets as fast as depositors fled SVB. That the market has now realigned itself with the Fed's view of the world counts as a win for monetary guardians.

The return of rising rates feels more ominous for investors. True, part of the story is that the economy has held up better than expected at the start of the year, and certainly better than feared once banks began to buckle. Yet the bigger part of the story is that inflation has proved unexpectedly stubborn. As of April "core" American prices, which exclude food and energy, were 5.5% higher than a year ago. Although recession has been avoided or delayed, few are predicting stellar growth. In these circumstances, rising rates are bad for stocks and bonds. They hurt share prices by raising firms' borrowing costs and marking down the present value of future earnings. Meanwhile, bond prices are forced down to align their yields with those prevailing in the market.

Does this mean another 2022-style crash? Certainly not in the bond market. Last year the Fed lifted rates by more than four percentage points. An extra quarter-point rise or two this year would have nothing like the same effect.

Shares, though, look vulnerable on two counts. One is that most of the stockmarket ran out of momentum some time ago. The S&P 500 index of large American firms has risen by 10% this year, but the entire increase is down to its biggest seven tech stocks, all of which seem gripped by AI euphoria. Such a narrowly led, sentiment-based climb could easily be reversed. The second source of market vulnerability is the earnings yield, which offers a quick-and-dirty guide to potential returns. The S&P 500's is 5.3%. This means stockholders are taking the risk of owning equities for an expected return that the Fed may shortly be offering risk-free. Stay tuned for more drama.

Correction: Last week's Buttonwood ("i >g") misstated America's economic growth. Sorry. We have updated the text and chart online.

Free exchange | The perfect carbon price

How to make the best method of tackling climate change even better

To most economists, putting a price on greenhouse-gas emissions is the best way to tackle climate change. It is efficient, allowing society to identify the cheapest unit of carbon-dioxide equivalent to forgo. It is fair: polluters pay; the proceeds can be redistributed. And it aids other forms of decarbonisation: complying with a carbon price forces companies to track their emissions and investors to work out which of their assets are the dirtiest.

According to the World Bank, there are now 73 carbon-pricing schemes across the world, covering 23% of global emissions. That is up from just 7% a decade ago. The bank's tally includes both emissions-trading schemes, where polluters can trade permits in a market, and carbon taxes, where a government sets a price directly. The largest scheme is in China and was launched in 2021. It covers the country's energy industry, and therefore 9% of global emissions. Even in America, which is immune to the charms of carbon pricing at a federal level, an increasing number of states are setting their own prices. Washington state, the latest convert, launched its emissions-trading scheme in January.

Yet a growing number of centre-left economists, who might be expected to be vociferous supporters of carbon prices, have soured on the policy. These critics focus on two points. The first is that carbon prices are not aggressive enough. The EU's emissions-trading scheme, one of the most comprehensive, nevertheless excludes buildings and transport. Allowances are given to airlines and heavy industry in the name of competitiveness. Prices are relatively high in Europe, reaching a record €100 ($107) a tonne of carbon-dioxide equivalent in February, but too low elsewhere. The World Bank reckons less than 5% of emissions are priced at or above the level that would be required, by 2030, in order for temperature increases to be limited to 2°C above pre-industrial levels.

This tentative action reflects the critics' second worry: equity. They argue that rather than ensuring polluters pay, the cost of carbon prices falls too heavily on the poor. Such initiatives raise energy prices—usually the only area of the economy that is entirely subject to them—and push industrial jobs overseas, beyond the reach of emissions-trading schemes. Anticipating pushback on these grounds, politicians water down the schemes. Therefore the promised emissions cuts never materialise.

These are the arguments. How does the evidence stack up? Measuring the impact of carbon prices is challenging. Carbon prices, like interest rates, both affect and are affected by the economy. All else being equal, a higher carbon price will lower economic activity and raise consumer prices. But a stronger economy will also raise the price of a carbon permit. Politicians may also be more comfortable raising carbon taxes when the economy is booming. They might take steps to cut them in bad times. For instance, in May last year the European Commission announced an auction of surplus permits during the energy crisis that followed Russia's invasion of Ukraine, in order to bring down prices

Thankfully, there are ways to disentangle cause and effect. Marion Leroutier of the Stockholm School of Economics uses a "synthetic control" method to examine a top-up tax on the EU's emission-trading scheme that was introduced by Britain in 2013. To see the effect of this higher carbon price, Ms Leroutier employs data from other EU countries to fashion a hypothetical version of Britain that did not introduce the tax—akin to a control group in an experiment. In reality, interconnectors allow Britain to import electricity from neighbours, potentially making the control group also subject to the treatment. But having included an estimate of such "spillovers", Ms Leroutier estimates that the tax led to a 20-26% reduction in emissions from the energy industry.

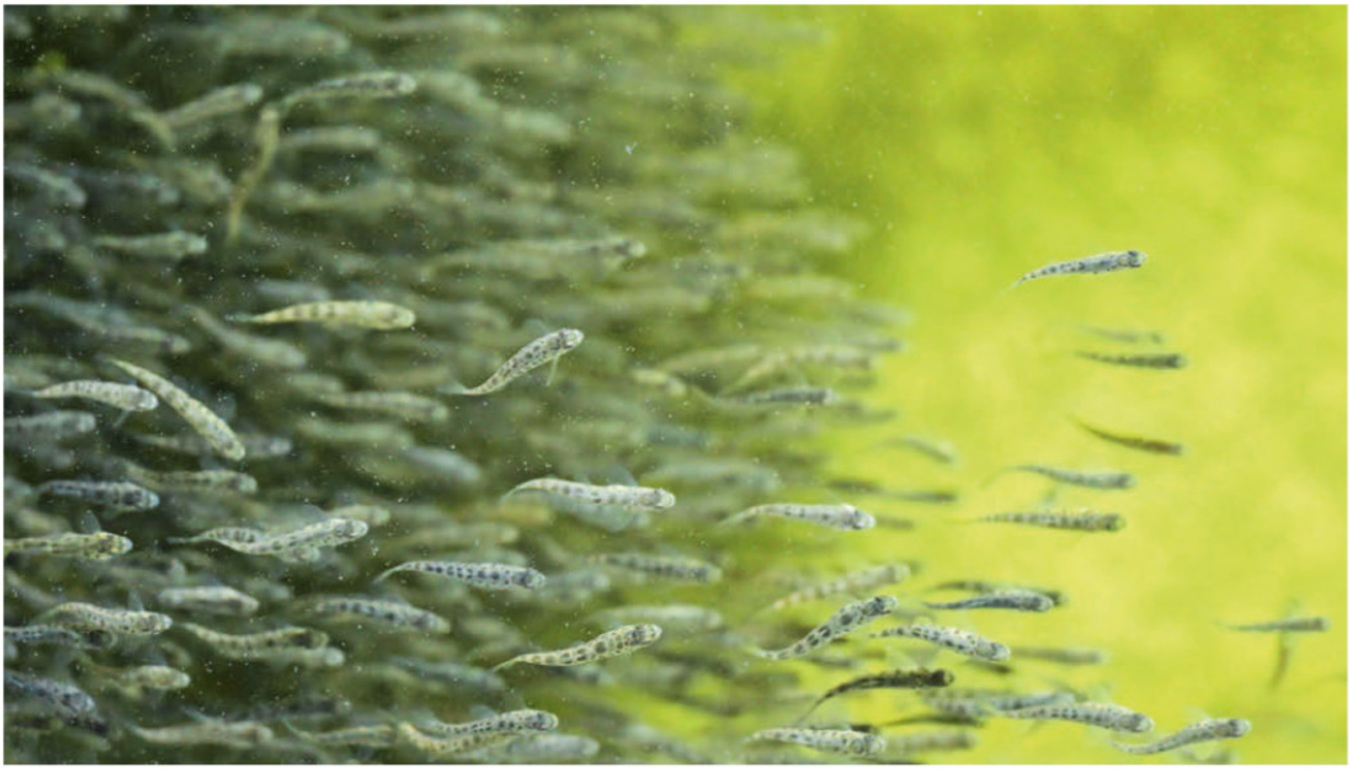
In a forthcoming paper Gilbert Metcalf of Tufts University and James Stock of Harvard University attempt to account for the broader economic context. They look at 31 European countries, controlling for past emissions and economic growth, in order to isolate variation in carbon prices that is unexplained by the state of the economy. The authors find that carbon taxes reduce greenhouse-gas emissions much as economists have previously predicted. Significantly, they also find virtually no effect, either positive or negative, on economic growth and employment, perhaps because there was more innovation than anticipated.

A final method of disentangling cause and effect is to employ an "event study". These are often used to assess the impact of monetary-policy decisions. By looking at the near-instantaneous reaction of carbon prices to a policy announcement, it is possible to remove the effects of background economic conditions, which do not change at the same speed. The impact of the change in price can then be tracked through the economy. In a recent working paper Diego Känzig of Northwestern University did just this, finding that higher carbon prices lower emissions and encourage green innovation. Yet these gains come at a cost. The higher prices raise energy costs and thus reduce the incomes of the poor.

Get the green right

Carbon prices have successfully cut emissions when used. They could be more palatable, however. In another paper, Mr Känzig compares the EU's emissions-trading scheme and national carbon prices. Although national taxes are more likely to lead to leakage, where polluting activity shifts across borders, they are less of a drag on the economy, helping neutralise criticism from centre-left critics. This is because revenues are often recycled using tax cuts, which can be aimed at the poor.

The World Bank estimates that carbon taxes and emissions-trading schemes will raise $100bn for governments this year. As carbon-pricing schemes expand, the amount will only grow. By itself, this will help tackle one criticism: that the measures are insufficiently aggressive. To tackle the other—that they harm the poor—policymakers must embrace the importance of recycling. ■



Aquaculture

Fishy business

BODØ, NORWAY

High-tech fish farming can cut pollution, boost productivity and allow fish to be grown anywhere in the world

The rugged, chilly coast of northern Norway, beyond the Arctic Circle, is not usually thought of as prime agricultural land. But far down a dead-end road on the shores of Skjerstad Fjord sits Salten Smolt, one of the most advanced farms in the world. Rather than crops or cows, though, the firm produces fish. Inside its 7,000 square metre main building are tanks capable of producing 8m smolt—juvenile Atlantic salmon—every year.

Fish farming is the fastest-growing form of food production in the world. Seafood accounts for around 17% of the world's protein intake (in some parts of Asia and Africa, the number is nearer 50%). The OECD, a rich-country club, reckons that, thanks to population growth and rising incomes, global consumption of fish will reach 180m tonnes by the end of the decade, up from 158m tonnes in 2020.

But the ocean has only so much to give. The World Bank reckons that 90% of the world's fisheries are being fished either at or over their capacity. Aquaculture has therefore accounted for nearly all the growth in fish consumption since 1990 (see chart on next page). It will have to account for almost all the growth to come, too.

As with farming on land though, aquaculture can cause environmental damage. Many farmed fish are grown in net pens, either in rivers or the open ocean. Uneaten food and fish waste can pollute the surrounding waters. When net pens break, escaped farmed fish can damage the local ecosystem. Inland "flow-through" farms require continuous streams of freshwater from rivers or wells, competing with those who might wish to drink it instead. Rearing lots of fish in close proximity risks outbreaks of diseases and parasites, which sweep in from the open water. That requires antibiotics and other drugs to keep the fish healthy.

→ Also in this section

It is these sorts of problems that newer fish farms, like Salten Smolt, hope to solve. It makes use of a technology called "recirculating aquaculture systems", or RAS for short (pronounced "Rass"). Rather than relying on a constant flow of natural water to keep fish healthy, a RAS system grows fish on land in tanks whose water is continuously cleaned and recycled. That offers three big advantages. Compared with standard aquaculture systems, RAS farms use far less water, can take better care of their fish, and can allow picky species to be raised anywhere in the world.

RAS farms are, in essence, much bigger versions of home aquariums. Each consists of a tank in which the fish swim, and a set of water-cleaning components to dispose of the waste that they produce. Much of the technology is recycled from the sewage-treatment industry.

Reduce, re-use and recycle

Unwanted solids—fish faeces and uneaten feed, mostly—are removed first. This is done mechanically, using a conical tank, gravity and a series of increasingly fine mesh filters. Most of the remaining waste is ammonia. Fish secrete the stuff through their gills, as a byproduct of their metabolisms, and too much is toxic. The ammonia-laden water is therefore pumped through colonies of bacteria which, given enough oxygen, will convert the ammonia into nitrite and nitrate. Further steps can remove other contaminants such as phosphorus and heavy metals. ▶▶

The cleaner the water, the more can be recirculated, and the less is needed from outside. A completely closed loop is impractical, at least for now. But state-of-the-art systems, such as Salten Smolt's, can reduce water usage by more than 99%. Standard salmon-farming consumes about 50,000 litres of water for each kilogram of salmon produced. A RAS system might need just 150. The upshot, says Steve Sutton, the founder of TransparentSea, a RAS shrimp farm near Los Angeles, is that RAS farms "leave the wild environment alone so that [farmed fish] don't spread pathogens or pollute the waterways".

Concentrating the waste in one place offers advantages of its own. One of the biggest missed opportunities with standard aquaculture, says Kari Attramadal, head of research at Nofitech, another Norwegian aquaculture firm, is that the waste released into the environment from standard fish farms contains plenty of valuable nutrients. Nitrates can be used as food for hydroponically grown crops. John Sällebrant, Salten Smolt's production manager, says that the firm recovers and dries fish faeces, as well as uneaten feed, for conversion into agricultural fertiliser.

Keeping fish alive in artificial tanks relies on keeping tight control of the entire system. Errors can be costly. If the oxygenation system fails, says Dr Attramadal, fish can start to die within eight minutes. But that need for careful monitoring also offers the ability to fine-tune the environment in which the fish are being raised. That allows RAS systems to perform an aquatic version of what, on land, is called precision agriculture.

Salmon, for instance, prefer cold water. A climate-controlled tank is able to provide the ideal temperature at all times, without worrying about currents, tides or weather, boosting the speed with which the fish grow. ReelData, a startup based in Nova Scotia, uses data from cameras and sensors in RAS tanks to estimate how hungry fish are, how much they weigh and even to assess how stressed they are. The firm says its technology can raise a farm's productivity by up to 20%.

And because they do not rely on the natural environment, RAS systems can, in principle, be built anywhere. Atlantic Sapphire, another Norwegian firm, has built an Atlantic salmon farm near Miami, a thousand miles south of the fish's natural range. Being close to big cities reduces the distance that fish have to travel before arriving on a dinner plate. Pure Salmon Technology, a Norwegian RAS provider, is building a farm in Japan. It reckons that lower transport costs will more than halve the carbon footprint of each kilogram of salmon, despite the extra energy costs involved in running a RAS system.

As with any new technology, there have been teething troubles. Half a million fish, or about 5% of the total, died at Atlantic Sapphire's plant in Florida in 2021, for instance, after problems with its filtration systems. (The firm describes the incident as a piece of "expensive learning" to be "seen in the context of RAS having been in the early stages of its rapid development".)

Small fry

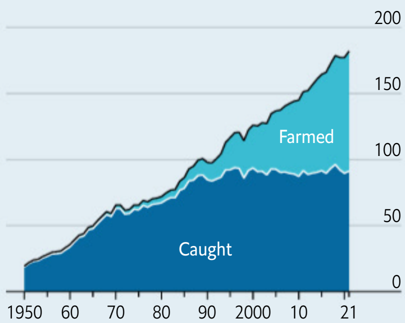
The biggest downside is cost. All those pipes, pumps and monitoring systems mean that capital costs are significantly higher for RAS farms than for standard ones. (That is one reason why many existing systems focus on salmon, a comparatively pricey fish.) Even in Norway, where about half the country's salmon farms use RAS, it is limited to the first stage of the fish's life. Juvenile fish are still grown into adults in standard open-water pens.

Tax changes in Norway may change that, says Matt Craze of Spheric Research, a firm of aquaculture market analysts. And there are other ways to keep costs down. Some firms are experimenting with hybrid systems. These dispense with the more expensive bits of waste-management kit, but can still cut overall water usage significantly. Economies of scale will help, too. Mr Craze reckons that, while smaller RAS farms might produce fish at twice the price of standard aquaculture, bigger ones should, if they can iron out the gremlins, eventually be able to match them.

For now, though, RAS remains a tiddler. Kathrin Steinberg, head of research at the Aquaculture Stewardship Council, a Dutch non-profit organisation, says that less than 5% of the farms certified by her organisation make use of it. But with the world's demand for fish rising inexorably, that share, she says, is growing. ■

Economies of scales

World fish production, tonnes, m



Source: FAO

Correction: In our story on May 17th on the trade in dinosaur fossils ("Digging up the money"), we said that a fossil sold by the Aguttes auction house in 2018 had "not been seen since". That was wrong. It is permanently on loan to the Royal Belgian Institute of Natural Sciences in Brussels, where it is on display to the public. Apologies for the mistake.

Medical engineering

This will only hurt a little

Insects and worms could improve the humble hypodermic needle

Using hypodermic needles to deliver drugs has been common for more than a century. The past hundred years have seen all manner of medical advances, from antibiotics and x-rays to mRNA vaccines and immunological cancer treatments. Yet the needle has stayed mostly unchanged. Although now available in a variety of different sizes, it remains, in essence, a hollow, pointy tube.

With luck, that may soon change. As Yichi Ma, a mechanical engineer at the University of California, Berkeley, and his colleagues outline in a review paper in *Biomimetic Intelligence and Robotics*, researchers around the world are looking for ways to ease the passage of needles into the skin. Many have been inspired by nature.

An obvious source of ideas has been mosquitoes, which manage to extract their blood meals almost painlessly. One reason is that the insects deploy anaesthetic chemicals when they first pierce the skin. But another has to do with the shape and action of their mouthparts.

The point of a mosquito's proboscis is serrated and softer at its tip. The insect stretches the skin of its prey before biting, and vibrates its proboscis as it pushes it in. All of this helps to reduce the force needed to puncture the skin. One paper, published in 2020 by a group of researchers in America and China, found that a mosquito-inspired needle required 27% less insertion force than an ordinary one. And less puncture force means less pain.

Mosquito-inspired needles might also be useful for delicate procedures such as biopsies. A paper from the University of Michigan, also published in 2020, found that they could improve biopsies of small tumours in the prostate gland. The lower insertion force led to less movement of the gland itself, ensuring that the needles were guided accurately to the area that needed sampling, rather than veering off-target.

Since needles are long and thin, another challenge is pushing them deep into the body without them buckling or breaking. Such an approach might be needed, for instance, to get precision drugs into a tumour. Insects can help here too. Researchers have sought inspiration from the way female wasps use needle-like structures called ovipositors to drill into wood or fruit before depositing eggs. Ovipositors are made up of three sections. Like an extending telescope, each segment can slide longitudinally beyond the others.

Mimicking that structure with bundles of nickel and titanium wires, scientists at Delft University of Technology in the Netherlands have made needles less than a millimetre thick and 200 millimetres long that can be steered through artificial liver tissue without giving way. That could allow less traumatic access to parts of the body that currently require surgery to reach.

There are other ideas, too. One is a needle that swells at the end once inserted, inspired by a parasitic worm that attaches itself to fish intestines. That could be useful for cannulas, which must stay inserted for long periods. Another is a jab that can precisely steer the flow of drugs across its surfaces. It is modelled after European true bugs, a family which includes aphid and bed bugs. Some can use microstructures to steer defensive chemicals around the outsides of their bodies.

For now, such devices remain confined to labs. But there is a big market for better needles. According to the World Health Organisation, around 16bn injections were given in 2018—and that was before the covid-19 pandemic. With one person in four saying they suffer from trypanophobia, or a fear of needles, the savings on stickers and sweets for the brave souls who roll up their sleeves would be considerable. ■

Climate change

Melting the Med

Temperatures of 50°C will become much more common in the Mediterranean and Middle East by the end of the century

Spring was a scorcher in the Mediterranean. A heatwave in April saw temperatures up to 20°C higher than usual in Algeria, Morocco, Portugal and Spain. Scientists used to hesitate to blame a particular piece of weather on climate change. These days they are more confident. World Weather Attribution, a network of climate modellers, reckons that the heatwave was made around 100 times more likely by the greenhouse gases that are piling up in the atmosphere.

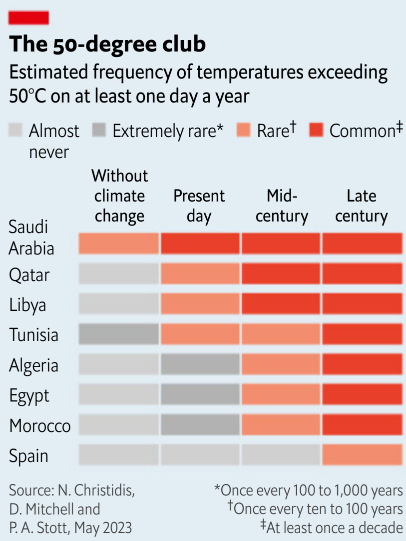
In a paper published on May 26th in *npj Climate and Atmospheric Science*, Nikolaos Christidis, a climatologist at the Hadley Centre, a branch of the British Met Office, look at what might be in store for the Mediterranean and the Middle East in a future, even hotter world. They were particularly interested in how often the region can expect to see days in which the mercury rises above 50°C.

Dr Christidis and his colleagues used data from a dozen sites around the region, from Turkey and Spain to Egypt to Qatar. They first simulated a pre-industrial world, in which humans had not yet begun to significantly alter the atmosphere. They found that 50°C days were virtually impossible under those conditions. Only in Saudi Arabia and on the coast of Tunisia could they happen—and even then, only once a century or so.

The team then re-ran their models using a standard "middle-of-the-road" scenario for future emissions. It assumes countries will make some effort to curb climate change, but few truly radical adjustments. In that world, the level of carbon dioxide in the air levels off at around 600 parts per million by 2100, up from around 420ppm today.

They found the likelihood that at least one day each year will exceed 50°C increased rapidly by the middle of the century for all but the coolest Mediterranean locations, such as Spain (see chart). By 2100, such days will become once-in-a-decade events across the Mediterranean and the Middle East. Spikes above 45°C are likely every year.

That means more droughts and fires (2022 was the second-worst European wildfire season on record, and most were in the Mediterranean). Extreme heat melts roads, buckles railways and makes outdoor work dangerous. Heatwaves already cause 8% of all weather-related deaths. Very high temperatures and humidity can even prevent people shedding heat through sweating, which can eventually kill them. Countries in the Mediterranean and the Middle East are used to the heat. But the future will be very different from the past.



Language and the law

Why legal writing is so awful

Never attribute to malice what can be explained by mere convenience

"The first thing we do, let's kill all the lawyers," is one of Shakespeare's most memorable lines. You would struggle to find such a line in the writings of lawyers themselves—and not just because they would, presumably, disagree. Though some judges are sophisticated stylists, most legal language is fussy, tangled and incapable of producing anything so pithy. (This is no doubt one reason so many people want to kill all the lawyers.) But do lawyers write that way to impress, to bewilder—or perhaps because they must?

In a study published in *Proceedings of the National Academy of Sciences*, Eric Martínez and his colleagues from the Massachusetts Institute of Technology and the University of Edinburgh tried to find out. Contracts written in "legalese", as well as simplified versions conveying identical concepts, were shown to American lawyers and laypeople. It turns out that lawyers struggle with, and dislike, legal language almost as much as their clients.

Legalese is heavy on "centre-embedding", sentences in which related words are separated by a long insertion, as in "It is understood by artist and company that comprehensive liability insurance, protecting against any claim or demand up to $300,000, including attorney's fees, related to company's actions under this venue agreement, shall be purchased and maintained throughout the agreement by company." This puts a heavy strain on the brain's working memory. The word "insurance" must be held in the mind while some 20 other words go by before its attendant verb phrase "shall be purchased" arrives.

Another baleful feature of legal writing is jargon: uncommon words like *hereinbefore*, *mala fides* and *lessor*. These mean little more than *above*, *bad faith* and *landlord*. Even if most lawyers and many laypeople know the jargon, the words require more effort to recall than everyday ones.

Given the almost universal disdain for legal language, the obvious question is why it persists. Mr Martínez and his colleagues examined several hypotheses. One was "the curse of knowledge". This is the idea that many learned people do not know how to write for those less informed than themselves. But the researchers found that the lawyers struggle with legal language too. They found the content of the legalese contracts harder to understand and remember. So did laypeople, of course, but ▸▸

they remembered the simple contracts as well as the lawyers did the complex ones; they understood them almost as well, too.

A more cynical idea was the "it's just business" hypothesis. This holds that lawyers are intentionally opaque so as to gull clients into paying more for their supposed expertise. But that did not fit the data either, for the lawyers believed their clients would be more likely to sign the simplified contracts than the standard ones.

Perhaps legalese is a form of "in-group signalling"—behaviour used to signal belonging to a group, such as religious iconography or flag-waving at sports events, and aimed at fellow lawyers rather than clients? But the lawyers in the test group said they would be more likely to hire the writers of the simplified contracts than the authors of the traditional gobbledygook.

The most common defence of legalese is the need for precision, says Mr Martínez (who trained as a lawyer before switching to cognitive science). Legal language, in this view, is too important to leave to the imprecisions of ordinary style. But this argument was refuted too: the lawyers who read the simplified contracts rated them just as enforceable as the complex ones.

The researchers were left with a simple conclusion, which they call the "copy-and-paste hypothesis". Lawyers imitate what previous lawyers have done. After all, a good deal of rote legal work (such as drawing up contracts) can be copied in large chunks from one document to another.

Whatever the reason, changing behaviour will be hard. Experts in legal writing have called for clearer prose for decades. But the plague of legalese persists. Perhaps evidence from outside the profession will help change things—especially if it is written in plain language. ■

Metallurgy and global warming

David and Goliath

WOBURN, MASSACHUSETTS

Electricity may be better than hydrogen for making green steel

STEELMAKERS AROUND the world hope to decarbonise by changing the way they pluck oxygen from iron-oxide ores. This is done using either carbon monoxide (CO) derived indirectly from coke in a blast furnace, or by "direct reduction" with syngas, a mixture of CO and hydrogen.

Both create carbon dioxide, a greenhouse gas. As a consequence, steelmaking is reckoned responsible for about 9% of man-made greenhouse-gas emissions. A widespread aspiration is thus to introduce direct reduction by hydrogen alone. The only by-product of such a reaction would be water (or rather, steam).

Clever. But, thinks Tadeu Carneiro, not clever enough. Mr Carneiro runs Boston Metal, a firm based not in Boston, but rather in Woburn, 17km to the north-west. Employing the insights of Donald Sadoway of the Massachusetts Institute of Technology, Boston Metal has created a way of separating iron from its ore by electrolysis. Instead of releasing CO_2 or steam, its approach produces pure oxygen—which is not merely harmless, but actually valuable.

Electrolytic separation of metals from their oxides is not new. Aluminium is made this way. But the process uses carbon electrodes, and the oxygen liberated at the anode reacts with this carbon to generate CO_2. Boston Metal employs, instead, anodes made of chromium, iron and a secret mix of other metals in an alloy that does not react with oxygen. The other electrode, the cathode, is the liquid metal itself.

Between these electrodes, as in any form of electrolysis, sits an electrolyte. In this case it is a molten mixture of metal oxides, into which the iron ore is dissolved. Passing a current through the mixture both heats it, keeping it molten, and splits the iron oxide into its component elements.

This arrangement has several advantages over direct reduction by hydrogen. Direct reduction produces "sponge iron", a solid that must be melted before being used to make steel. Boston Metal's process produces liquid iron directly. Sponge iron retains any impurities from the ore itself, meaning only high-grade ore can be employed for direct reduction. In Dr Sadoway's process impurities are retained instead in the electrolyte. This means the iron itself is chemically pure, and immediately ready to receive the various alloying elements used to produce steel.

Another advantage of relying on electricity is that the world already produces and distributes plenty of it, whereas almost no infrastructure yet exists for making and supplying hydrogen. To top things off, Boston Metal's approach is based on cells that are much smaller than furnaces. That makes electrolytic production modular and easy to scale up.

Mr Carneiro, who used to run CBMM, the world's leading producer of niobium, reckons steel made this way could eventually compete on cost with the conventionally manufactured version, without needing the supporting bureaucracy of subsidies, tariffs and carbon taxes required for direct reduction by hydrogen. Working up from benchtop prototypes, Boston Metal now has a cell close to the size needed for commercial production. It is in discussions with ArcelorMittal and Cleveland-Cliffs, two big steelmakers, about building its first test production facility, probably at an existing American steel plant. On May 30th the International Finance Corporation, an offshoot of the World Bank, said it had invested $20m in Boston Metal.

If the company's process takes off, the geography of steelmaking could change radically. Legacy mills sited in coalfields in America and Europe might be replaced by plants next door to iron-ore mines, fed their electricity by connectors to the local grid. Or those new plants could be built in places with cheap electricity. (Iceland, with its low-cost hydroelectric and geothermal power, and location half way between North America and Europe, might find steelmakers queuing up.)

Pure-hydrogen direct reduction does, it is true, have first-mover advantage in the race to green steel. It also benefits from being a mere modification of an already familiar technology. But familiarity can breed complacency. And complacency sometimes leaves the door open for truly disruptive new technologies. ■

Electricity in action

South Africa's transition to democracy

The powers that be

A dual biography of Winnie and Nelson Mandela offers an important corrective to recent historical revisionism

Winnie & Nelson: Portrait of a Marriage. By Jonny Steinberg. *Knopf; 576 pages; $35. William Collins; £25*

The end of minority white rule in South Africa three decades ago prompted worldwide celebrations. Multiracial politics led to the election in 1994 of Nelson Mandela, the country's first black president. He became a beacon of liberal democracy and, for some, the triumph of Africans over a form of colonial rule. For most, there was relief that a civil war, a widely feared prospect, had been avoided.

It was a joyful period, though not a peaceful one. In the four years after Mandela walked out of Victor Verster prison in 1990, ethnic and political violence took some 15,000 lives, mostly in poor townships outside big cities. (Much of it was stirred up by apartheid agents.) Still, the violence was contained: apartheid had been negotiated out of existence with a stutter, not brought to collapse in a dreadful bang.

How do historians explain that mostly successful outcome? Many, including Jonny Steinberg, a South African author, rightly focus on the wisdom of leaders. In "Winnie and Nelson" he has produced a revealing new study of two of the main personalities of the era.

Mandela had long feared the sort of violence that Algeria suffered during and after its anti-colonial war of liberation. Among the white rulers it was the last apartheid president, F.W. de Klerk, who offered a path to talks. De Klerk made a concession by unilaterally unbanning the African National Congress. The ANC suspended its armed struggle. The men shared the Nobel peace prize in 1993.

A rival explanation, however, has gained traction in the past decade or so. As Mr Steinberg writes, "the standard story of what had happened when apartheid ended" is angrily disputed. Many of the "born frees"—young people who have no direct memory of apartheid—deny the transition counts as a happy miracle or the shared achievement of humane leaders. Instead, it was a stitch-up: no wonder whites venerate Mandela, they say, for they led him to do their bidding.

According to this line of argument, when Mandela took office, aged 75, he was enfeebled after nearly three decades in prison, vain and anxious to strike a deal before he died. He won political power for the majority, but only with his hands tied. He failed to achieve a transfer of economic power. Today white people account for just 8% of the country's population but still retain much wealth. (To take just one measure: over 70% of farmland today is esti-

→ Also in this section

mated to remain in white hands.) In this telling Mandela had become a "dummy adversary", as whites dictated the outcome.

There is little sense to this argument, even if many who are disaffected now voice it. To take it seriously requires imagining that some alternative transition of power might have been possible, at least without tipping the country into that much-feared civil war. Could, for example, Winnie Madikizela-Mandela, Mandela's charismatic second wife and a militant, uncompromising and belligerent figure, have done more to shape the handover of power? This is one question that lurks behind the powerful narrative Mr Steinberg tells of her and her husband's life.

Among some young populists in South Africa today, Winnie (who died in 2018, almost five years after Mandela) is admired because of her perceived ruthlessness. She was willing to threaten and use violence long after her husband had turned against those methods. A woman who talked of the power that comes from being feared, she called for revolution into old age. As Mr Steinberg writes, she has become a "sentinel" for the idea that somehow the transition is incomplete. The likes of Julius Malema and his party, the Economic Freedom Fighters, often laud Winnie and call for the revolution to be completed.

Yet Winnie was never really in a position to influence the transition. As Mr Steinberg shows, she barely survived decades of abuse and repression at the hands of apartheid security agents. (She was exiled within the country, kept under house arrest and tortured.) For many, her reputation was shattered after a trial in 1991, when she was convicted of kidnapping and being an accessory to the assault of a 14-year-old boy, Stompie Moeketsi, who was murdered by a close associate.

In fact, as Mr Steinberg sets out in his study of the Mandelas' marriage, she was badly broken long before that. He takes care to avoid assessing her as simply a monster—instead he describes her remarkable strength in the "norms she transgressed" and says that she was "the most singular, the most astonishing woman". He draws on letters between jailed husband and wife, diaries, contemporary interviews and long, revealing transcripts and notes made for years by informants and spies who had bugged both their prison cells and homes.

The picture that he sketches is a damning one. Yes, early on she was brave, flamboyant, wonderfully theatrical and able to deploy her beauty to generate global attention for the ANC's cause. But as the years passed, and the police detained or killed those whom she relied on, she grew pitiless, depressed and dependent on alcohol.

Nor was she trusted by her own side. Security police were able to introduce informants into her household, in some cases as lovers, for many years. So isolated was she that she persisted with at least one affair even after the man was exposed as a police agent. By the 1980s, in Soweto, she in effect presided over a gang, the Mandela United Football Club, that deployed rape, beatings and murder to assert its power.

Winnie was ultimately a tragic and undisciplined figure. Mr Steinberg's book includes many details about her private life not widely published before. Despite his repeated efforts to show sympathy for a person who was cruelly victimised, the main impression of his book is that South African democracy was lucky that she was marginalised. Thank goodness that she, and thuggish people around her, were unable to influence the transition more. As imperfect as the results in South Africa may be, they are much better than any likely alternative. For that, it is Mandela—and the wise and humane people round him—the world still has to thank. ■

German fiction

An affair to remember

Kairos. By Jenny Erpenbeck. Translated by Michael Hofmann. *New Directions; 335 pages; $25.95. Granta; £16.99*

THE ANCIENT GREEKS took the word *kairos* to mean "the opportune moment"; in Christian texts the term has been translated as "spiritual opportunity". More simply, *kairos* can mean "the right time". It certainly seems that way for Hans, in his early 50s, and 19-year-old Katharina, who meet on a bus in East Berlin in July 1986. Their encounter is a *coup de foudre* of desire and anguish. The relationship plays out momentously—and, over the course of the next four years, destructively—as the German Democratic Republic begins to crumble.

"Kairos" is a continuation of Jenny Erpenbeck's series of novels about Germany over the past century. Taken together, the books constitute a supreme undertaking with parallels to Edgar Reitz's epic television series, "Heimat".

Right place, strange times

From her first book, "Visitation" (2010), in which a lakeside summer house is witness to decades of turbulence, to the fatalistic rootlessness of "The End of Days" (2014) and "Go, Went, Gone" (2015), a 21st-century story of African migrants navigating the once-divided capital city, Ms Erpenbeck has proved time and again that she is a fearless, astute examiner of a country's soul.

Hans and Katharina conduct their clandestine relationship at a time when secrecy and paranoia is woven into the political fabric. Hans, a freelance writer and radio broadcaster, is married with a teenage son. His wife has tolerated his many affairs, but the relationship with Katharina seems a more decisive threat to their stability.

Ms Erpenbeck was born in East Berlin in 1967 and was an apprentice bookbinder before working in theatre. The similarly aged Katharina is a state-approved trainee typesetter who seeks to move into theatre design. During an internship in Frankfurt away from Hans—a character indifferent and possessive by turns—Katharina commits a youthful transgression. Thereafter the torturous, hypocritical nature of their affair becomes ever more apparent.

As the certainties and protection of the Soviet system begin to disintegrate, so the atmosphere of the book grows darker and more anxious. "How will creatures of the new age cope with the future, when they no longer know the foundations on which this future rests?" wonders Hans, who grew up in a family which embraced National Socialism to the end (though he, as a young man, violently rejected its depredations). Narrated alternately by Hans and Katharina in the close third person, and with a sublime translation by the great Michael Hofmann, "Kairos" powerfully examines individual as well as collective history.

World in a dish

United Nations of the Lone Star State

ARLINGTON, TEXAS

Immigrants and first-generation Texans are changing barbecue for the better

Central Texas-style barbecue joints have a particular aesthetic, born of history but now veering slightly into kitsch. Restaurants are often plain, with bare wood tables and chairs, along with a few well-chosen pieces of Texas-themed decor. Meat is minimally seasoned, smoked over hardwood and served on butcher paper with almost nothing else: perhaps a few Saltines, pickles or onion slices, and tiny cups of sauce and beans.

Smoke'N Ash in Arlington breaks almost all those rules. The decor is minimal, but the flag on the wall is red, yellow and green, rather than red, white and blue with a star. Fridges containing southern desserts such as peach cobbler stand next to shelves stacked with wicker serving trays and round-bellied clay pitchers.

Here perfectly cooked meat is maximally seasoned with a riot of warm spices; it is served with small piles of lentils, collard greens and rolled *injera,* a soft and sourish Ethiopian flatbread (see picture). At the plate's centre is a scoop of rice topped with pepper relish. The restaurant marries the backgrounds of the couple who run it: Patrick Hicks was born in Waco, about 100 miles south of Arlington; his wife Fasicka comes from Addis Ababa, Ethiopia's capital. Their restaurant is just one example of how immigrants and first-generation Texans are changing barbecue for the better.

The first question about the Hicks's project is why the marriage of those two cuisines, which at first seems improbable, works so well (setting aside the excellence in execution). One reason might be that they have complementary austerities. Ethiopian cuisine is brilliantly seasoned, but often meatless; Central Texas barbecue is meat-centric, but in classic form seasoned with nothing more than salt and pepper. Each fills gaps in the other.

The second question is how new a phenomenon it really represents. German and Czech immigrants helped define Central Texan barbecue more than a century ago. They opened butchers' shops, smoking their unsold meat to preserve it. Eventually their smoked meat became more popular than their fresh offerings. Mr and Mrs Hicks may have opened the world's first "Tex-Ethiopian smokehouse", as they call it, but they are heirs to a long and deeply American—and Texan—tradition.

Nor are they alone. At Blood Bros. BBQ in Houston, Quy Hoang and brothers Terry and Robin Wong, who grew up together in a working-class suburb, serve Texas barbecue with East and South-East Asian influences. In Austin, Valentina's serves "Tex-Mex-BBQ"; KG BBQ, started by an Egyptian who fell in love with barbecue on a visit to America, serves ribs with pomegranate and brisket shawarma. These restaurants are not gimmicks or high-minded fusion. They represent contemporary Texas and are tributes to barbecue's broad appeal.

Inevitably these populations will help define American cuisine, as their predecessors did. Purists may quail, but as Daniel Vaughn—who, as *Texas Monthly*'s barbecue editor, surely has the world's best job—explains: "Variety is what's going to keep barbecue interesting and alive." ■

An Egyptian pharaoh

Larger than life

Ramesses the Great. By Toby Wilkinson. *Yale University Press; 223 pages; $26 and £18.99*

Unlike Alexander or Frederick, Ramesses the Great did not earn his sobriquet through feats of arms. His most famous military engagement—the battle of Kadesh in 1274BC—ended in a bloody draw. Making the best of a murky situation, his propagandists celebrated his personal courage, but they could not conceal how close he had come to disaster. Ramesses had walked into a trap set by Hittite spies, who deceived him into believing their main force was many miles away.

If greatness is attached to Ramesses II's name, it is in large part because he insisted on telling the world—repeatedly and on a massive scale—just how great he was. Over the course of his 66-year reign he excelled both as a builder and as a self-promoter, which amounted to much the same thing. As Toby Wilkinson, a prizewinning author and Egyptologist, chronicles in this compact and highly readable biography, Ramesses sought to dominate the landscape through "quantity rather than quality, durability rather than finesse".

His efforts left an impression on both contemporaries and future generations. He not only enlarged the magnificent temples dedicated to the gods at Karnak and Luxor, but initiated vast new complexes, including the memorial temple known as the Ramesseum and the temple complex at Abu Simbel, carved deep into sandstone cliffs. Whether appropriating an earlier pharaoh's project or initiating one of his own, Ramesses's busy sculptors advertised their employer's piety and achievements. They made sure he was a looming presence through enormous statues, some of which were as high as 90 feet (27 metres) tall. The ruins of one such colossus inspired Percy Bysshe Shelley's poem "Ozymandias", a meditation on the transience of earthly glory (whose thesis its subject would surely have rejected).

Though he was brought up to believe himself a deity, Ramesses's bombast was not simply a matter of ego. "For all his vainglory, Ramesses seems to have been a prag- ▸▸

Correction: In a review last week of "The Perfection Trap" we said that a subset of perfectionists "often…harm themselves and harbour thoughts of suicide". More accurately we should have said that research suggests links between these phenomena.

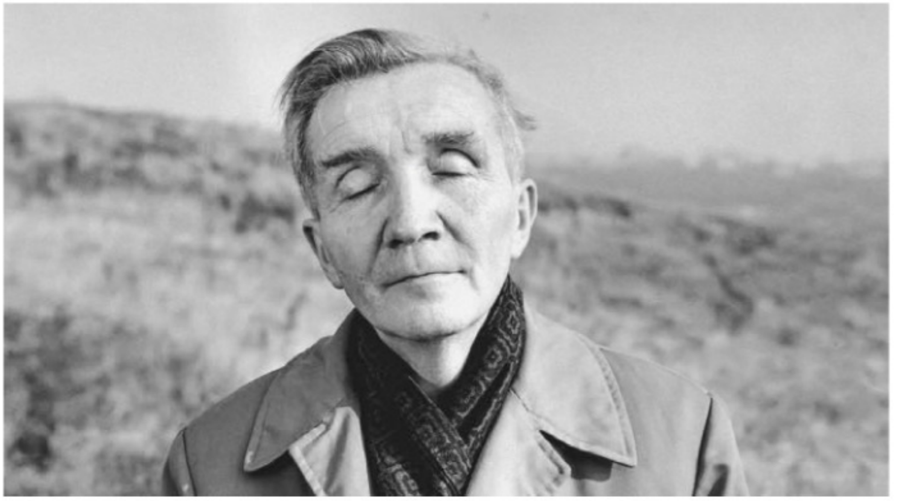
matist," Mr Wilkinson writes. Projecting confidence was an essential part of the job and a political necessity, since neither his own subjects nor foreign rivals were inclined to reward humility. "His Majesty was a youthful master," his poets bragged, "vigorous and without equal."

In fact, Ramesses was probably overcompensating. It is thought that his grandfather, Ramesses I, had been a lowly stablemaster before he rose through the military ranks to become the chosen successor of Pharaoh Horemheb. Given these plebeian origins, Ramesses calculated that ostentatious displays were necessary to remind his subjects that he was not only divinely appointed, but a god incarnate.

Ramesses apparently regretted the fact that his résumé included no clear-cut military triumph—the frequency with which the battle of Kadesh was cited on his monuments suggests a nagging sense of martial potential unfulfilled. But it reflects well on his statesmanship that he managed to turn stalemate into profit, his greatest deficit contributing to his greatest success. "A peace dividend," Mr Wilkinson observes, "would be Ramesses's freedom to indulge in his favourite pastime, building on a grand scale."

The author succeeds in bringing this distant age to life through telling detail and insightful analysis, though the man at the centre inevitably remains something of an enigma. Whenever he can, the author takes advantage of opportunities to peer beneath the mask. The "attention lavished by Ramesses on his chief wives suggests a genuine fondness," he says, and offers a rare glimpse "of his true character and personality". But, as with almost everything else in his life, this fondness also served to bolster his status, conferring a kind of immortality through the more than 100 children he sired. Even in the bedchamber it was impossible to separate personal preference from *raison d'état*. ■

Look on his works



Music and the Holocaust

Requiems and echoes

A new book tells the story of Aleksander Kulisiewicz, who preserved the secret cultural life of the Nazi camps

Sing, Memory. By Makana Eyre. *W.W. Norton; 352 pages; $32.50 and $27.99*

One night in October 1942 SS guards burst into a barracks at Sachsenhausen concentration camp, savagely beating anyone within reach. Random acts of violence and murder were usual—but the gathering was not. The prisoners had formed a secret choir to perform "Jüdischer Todessang" ("Jewish death song") by Rosebery d'Arguto, once a famous composer and conductor in Berlin, now an inmate. They began with bass notes, writes Makana Eyre, each one an "omen of death, like the footsteps of the men on their way to their demise". It ended, unfinished, with the guards' onslaught.

Among those watching the performance admiringly was a Polish prisoner called Aleksander Kulisiewicz (pictured). A singer and writer, Kulisiewicz had been arrested by the Nazis after Germany invaded Poland in 1939 and was sent to Sachsenhausen in May 1940. There, music would help save his life, mentally transporting him out of the horror of the camp and giving him a reason to live. He had been a wilful and precocious teenager, running away from a middle-class Catholic upbringing to perform in nightclubs. He quickly became a key figure in the camp's rich and hidden cultural life.

Out of sight of the guards, or ignored by them, the inmates wrote, composed and performed, each act a powerful statement of resistance. Thanks to his extraordinary memory, Kulisiewicz could collect these assorted poems and compositions; he also performed himself and wrote song after song. "Notturno 1941" praises the Allied bombers flying overhead en route to Berlin. In another, he laments: "But on the barbed wire/A sad, charred body droops."

Mr Eyre, an American journalist who lives in Paris, skilfully recounts the remarkable story of Kulisiewicz's survival and of the archive he went on to build. He is a deft storyteller, with a limpid style, moving his characters to centre stage, aside, then back again. He weaves a compelling, well-informed narrative and illuminates the inner dynamics of the camp's power structure.

"The hierarchy of prisoners at Sachsenhausen was highly complex," he explains. German prisoners, many of them convicts and communists, were at the top, some exerting power as wardens. Below them were fellow "Aryans", such as Dutch and Norwegians, then eastern Europeans, and, at the bottom, Jews and Russian POWs. But the system was fluid, giving Kulisiewicz room to manoeuvre and stay alive through almost five years of incarceration. At Sachsenhausen, as at every camp, having something to barter was vital. When he needed a tiny sum to buy a stamp he asked a Czech priest for help. The priest agreed, in exchange for Kulisiewicz's margarine ration.

In April 1945, as the Soviet army approached, the SS guards evacuated over 30,000 prisoners from Sachsenhausen on foot. They were marched across Germany. When Danusia, a young woman prisoner known for her kindness, was unable to ▸▸

Back Story England, the opera

Glimpsing the state of the nation at Glyndebourne, just not as you might expect

YOU LUG your wicker hamper across the stiletto-punctured lawn and bag a spot beside the ha-ha. You say "ha-ha" a lot because this is the only chance you get. Smoothing your frock or dinner jacket, you head inside for the opera—in this case, "L'elisir d'amore", Donizetti's comic delight of 1832—re-emerging at the long interval to picnic and covet your neighbour's candelabra. Before the gong sounds for the second act, you stroll around the lily-pad-crowded lake, to a soundtrack of popping corks and the distant bleating of doomed lambs.

Held on a Tudor estate in the blissful countryside of East Sussex, the summer opera festival at Glyndebourne, which opened on May 19th, tends to be described—often by foreigners—as the epitome of Englishness. In reality, it is more of a caricature: dressing up, drinking and ogling old houses are widespread English pastimes, but black-tie opera and Pol Roger are minority pursuits. In 2023, however, Glyndebourne does indeed offer a state-of-the-nation tableau, just not in the way you might expect.

The weather was kind on the opening weekend, so patrons didn't need to summon the sangfroid to picnic in the rain, as occasionally they must. But a strike on the railways, a scourge of the times, complicated the trip. It nixed the train back to Victoria station, meaning Londoners had to petition for ticket refunds and drive. (A bank of electric-charging points has been installed in the car park, but it lacks another useful amenity: someone, perhaps a jobbing Old Etonian, to do up your bow tie.)

The opera-house stage, meanwhile, is a battlefield in the culture wars as well as a set for melodramas. Opera's plots abound in toxic masculinity, abused heroines and ethnic stereotypes; left alone or revised, they are liable to upset somebody. Confessing that the "social assumptions" in some past productions "may offend audiences today", Glyndebourne has vowed to do better. Settling into his seat, one regular dispensed with a printed synopsis as he already knew the story—that is, he groaned, unless they had changed it. Donizetti got off lightly, but the festival's "Don Giovanni" has been accused of neutering the titular rake.

Then there is the old-fashioned politics, and recent scarcity, of money. Producing high-end opera is horribly expensive—and companies everywhere are feeling the pinch. Audiences are ageing. In America, philanthropy is erratic. In Britain, state funding has been slashed, leading Glyndebourne to cancel its usual autumn tour (it will instead put on some affordable shows at its home base). The glorious summer festival receives no subsidy, but tickets are pricey and go mostly to paid-up members. It will be sad if what, at its best, is the supreme art form is ever more a preserve of the rich.

Enjoying this European art in an English idyll, it is natural, too, to reflect on the underlying bonds. Glyndebourne's story marries English eccentricity with continental talent: founding it with his wife in 1934, John Christie, then the estate's master, drafted in starry refugees from Germany and Austria to give it some oomph. Gus Christie, his grandson and the current boss, has worried publicly about the impact of Brexit on the economy and the opera's finances.

As it happens, the plot of "L'elisir d'amore" features a huckster who peddles a bogus cure for all known ailments, intending, like a cynical politician, to be off the stage before he is rumbled. In his case the panacea is a potion that his marks are soon guzzling and slathering on themselves. One of them is Nemorino, sung here by Matteo Desole, a peasant in love with a landowner (he is bailed out by a rich uncle).

Mr Desole nailed "Una furtiva lagrima", the work's best-known number. Nardus Williams shone as his sassy beloved, Adina. Maxime Nourissat did a hilarious silent turn as the quack's sidekick. Especially in a scene of tipsy womenfolk, the choreography was droll. As usual, the acting was strong.

Still, as he often did, Sir Isaiah Berlin got it right about Glyndebourne. "That something so enchanting could happen in England at all," the Russian-British thinker wrote in 1984, was "a source of lasting astonishment and delight." He loved it, in other words, not because it was typical, but because it was exceptional. The true quintessence of England in summer does not recline in Glyndebourne's gardens ("Please do not picnic on the croquet lawn"); rather it basks on pebbly beaches and pub pavements where the English get sozzled and sunburnt on balmy afternoons.

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continue and stepped out of the column, Roland Tillard, a French prisoner who often accompanied Kulisiewicz on his accordion, moved to protect her. They were both shot and their bodies kicked into a ditch. Eventually the guards fled, frantically disposing of their uniforms.

Kulisiewicz survived and returned to his family in Poland. There he contracted tuberculosis. He ran a high fever and seemed delirious, but a nurse realised he was reciting lyrics and poems. Over three weeks she typed out everything that he dictated from his sick bed, including the words of "Jüdischer Todessang".

Those notes were the start of the archive that became his life's work. From 1945 until he died in 1982, he gathered everything he could find about art, music, poetry and theatre in the camps. Kulisiewicz's archive was a collection of rare value, but it languished after his death. Polish and American institutions did not want it. After a temporary spell at the Auschwitz Museum, it went to the United States Holocaust Memorial Museum in Washington, DC, where it is now housed—its artefacts testimony to the power of artistic creation, even as the creators died one by one.

Many of the losses of the Nazi genocide have been quantified: the 6m lives, the Jewish communities that vanished, the synagogues reduced, like their worshippers, to ashes. But no one can know what the dead might have created: the stories and lyrics they might have written, the plays they could have staged, the songs they would have sung. "Sing, Memory" is a moving story of courage and determination amid overwhelming loss, all the more powerful for its heartbreaking sense of what might have been. ■

Economic & financial indicators

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 $ May 31st	% change on year ago
United States	1.6	Q1	1.3	1.0	4.9	Apr	3.8	3.4	Apr	-3.0	-5.4	3.6	79.0	-	
China	4.5	Q1	9.1	6.1	0.1	Apr	1.2	5.2	Apr‡§	2.5	-2.9	2.5 §§	-8.0	7.10	-6.2
Japan	1.3	Q1	1.6	1.1	3.5	Apr	2.2	2.6	Apr	3.2	-5.8	0.5	20.0	140	-7.9
Britain	0.2	Q1	0.5	0.4	8.7	Apr	6.2	3.9	Feb††	-3.3	-5.5	4.4	241	0.81	-2.5
Canada	2.2	Q1	3.1	0.7	4.4	Apr	3.3	5.0	Apr	-1.0	-1.5	3.2	30.0	1.36	-7.3
Euro area	1.3	Q1	0.3	0.9	7.0	Apr	5.8	6.5	Mar	1.6	-3.5	2.3	115	0.94	-1.1
Austria	2.6	Q4	-0.1‡	1.0	9.7	Apr	7.6	4.5	Mar	1.1	-2.7	3.0	129	0.94	-1.1
Belgium	1.3	Q1	1.6	0.7	5.2	May	4.8	5.9	Mar	-2.1	-4.9	2.9	125	0.94	-1.1
France	0.9	Q1	0.7	0.7	5.1	May	5.9	6.9	Mar	-1.7	-5.0	3.0	152	0.94	-1.1
Germany	-0.5	Q1	-1.3	0.3	6.1	May	6.2	2.8	Mar	4.7	-2.5	2.3	115	0.94	-1.1
Greece	4.5	Q4	5.6	2.0	3.0	Apr	3.9	10.9	Mar	-8.0	-2.3	3.8	18.0	0.94	-1.1
Italy	1.9	Q1	2.2	1.2	7.6	May	6.4	7.8	Mar	0.1	-5.0	4.1	96.0	0.94	-1.1
Netherlands	1.9	Q1	-2.6	1.2	5.2	Apr	4.8	3.4	Apr	6.9	-2.4	2.6	124	0.94	-1.1
Spain	3.8	Q1	1.9	1.8	3.2	May	4.1	12.8	Mar	1.0	-4.4	3.5	136	0.94	-1.1
Czech Republic	-0.1	Q1	-0.2	0.2	12.7	Apr	11.4	2.5	Mar‡	-2.1	-4.6	4.5	-22.0	22.3	3.6
Denmark	2.8	Q1	1.0	0.5	5.3	Apr	5.0	2.8	Apr	9.8	0.7	2.6	109	6.99	-0.6
Norway	3.0	Q1	1.0	1.4	6.4	Apr	4.6	3.7	Mar‡‡	20.0	11.4	1.4	76.0	11.1	-15.6
Poland	-0.1	Q1	16.1	0.9	13.0	May	13.1	5.2	Apr§	-1.3	-4.0	6.0	-58.0	4.25	0.7
Russia	-1.9	Q1	na	-2.2	2.3	Apr	7.3	3.3	Apr§	6.0	-4.4	10.9	140	81.2	-22.4
Sweden	0.8	Q1	2.4	0.5	10.5	Apr	6.0	7.5	Apr§	3.4	-0.3	2.4	87.0	10.9	-10.1
Switzerland	0.6	Q1	1.1	1.1	2.6	Apr	2.6	1.9	Apr	7.5	-0.7	0.8	7.0	0.91	5.5
Turkey	4.0	Q1	1.3	2.6	43.7	Apr	43.9	10.2	Mar§	-4.8	-4.4	9.7	-1184	20.7	-20.9
Australia	2.7	Q4	1.9	1.6	7.0	Q1	5.5	3.7	Apr	0.8	-0.5	3.6	26.0	1.55	-10.3
Hong Kong	2.7	Q1	23.0	3.4	2.0	Apr	2.3	3.0	Apr‡‡	7.0	-1.4	3.5	77.0	7.83	0.3
India	6.1	Q1	5.8	6.1	4.7	Apr	5.6	8.1	Apr	-1.4	-5.7	7.0	-43.0	82.7	-6.2
Indonesia	5.0	Q1	na	4.5	4.3	Apr	4.0	5.5	Q1§	0.7	-2.6	6.4	-65.0	14,990	-2.7
Malaysia	5.6	Q1	na	3.9	3.3	Apr	2.7	3.5	Mar§	3.2	-5.0	3.8	-35.0	4.62	-5.2
Pakistan	1.7	2023**	na	1.5	36.4	Apr	30.3	6.3	2021	-2.9	-5.8	15.1 †††	250	285	-30.5
Philippines	6.4	Q1	4.5	5.3	6.6	Apr	5.7	4.8	Q1§	-4.6	-6.5	5.9	-68.0	56.2	-6.7
Singapore	0.4	Q1	-1.6	0.9	5.7	Apr	5.1	1.8	Q1	18.7	-0.1	2.9	14.0	1.35	1.5
South Korea	0.9	Q1	1.1	1.5	3.7	Apr	2.8	2.8	Apr§	2.5	-2.1	3.5	21.0	1,327	-6.8
Taiwan	-2.9	Q1	-2.4	0.4	2.3	Apr	1.9	3.6	Apr	11.1	-2.2	1.2	nil	30.7	-5.5
Thailand	2.7	Q1	7.8	3.8	2.7	Apr	2.2	1.0	Apr§	2.1	-2.7	2.6	-31.0	34.8	-1.7
Argentina	1.9	Q4	-6.0	-3.6	109	Apr	106.5	6.3	Q4§	-2.4	-4.6	na	na	240	-49.8
Brazil	1.9	Q4	-0.9	1.7	4.2	Apr	5.2	8.5	Apr§‡‡	-2.6	-7.6	11.6	-100	5.12	-7.4
Chile	-0.6	Q1	3.4	0.3	9.9	Apr	7.9	8.7	Apr§‡‡	-4.3	-1.9	5.6	-71.0	814	1.1
Colombia	3.0	Q1	5.9	1.6	12.8	Apr	11.8	10.7	Apr§	-4.2	-4.4	11.1	45.0	4,421	-14.6
Mexico	3.7	Q1	4.1	2.1	6.3	Apr	5.5	2.8	Mar	-1.1	-3.7	8.8	21.0	17.8	11.0
Peru	-0.4	Q1	-2.2	1.7	8.0	Apr	6.8	7.5	Apr§	-2.0	-1.6	7.2	-27.0	3.68	0.3
Egypt	3.9	Q4	na	3.0	30.5	Apr	25.8	7.1	Q1§	-1.8	-6.3	na	na	30.9	-39.8
Israel	3.5	Q1	2.5	2.8	5.0	Apr	4.1	3.6	Apr	4.3	-2.3	3.8	118	3.74	-11.0
Saudi Arabia	8.7	2022	na	2.0	2.7	Apr	2.2	4.8	Q4	5.0	0.6	na	na	3.75	nil
South Africa	0.9	Q4	-4.9	0.5	7.1	Apr	5.2	32.9	Q1§	-2.0	-4.7	11.3	146	19.8	-21.4

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.

Markets

In local currency	Index May 31st	% change on: one week	Dec 30th 2022
United States S&P 500	4,179.8	1.6	8.9
United States NAScomp	12,935.3	3.6	23.6
China Shanghai Comp	3,204.6	nil	3.7
China Shenzhen Comp	2,003.2	-0.3	1.4
Japan Nikkei 225	30,887.9	0.7	18.4
Japan Topix	2,130.6	-1.0	12.6
Britain FTSE 100	7,446.1	-2.4	-0.1
Canada S&P TSX	19,572.2	-1.8	1.0
Euro area EURO STOXX 50	4,218.0	-1.1	11.2
France CAC 40	7,098.7	-2.1	9.7
Germany DAX*	15,664.0	-1.1	12.5
Italy FTSE/MIB	26,051.3	-1.8	9.9
Netherlands AEX	748.9	-0.7	8.7
Spain IBEX 35	9,050.2	-1.2	10.0
Poland WIG	62,286.0	-2.9	8.4
Russia RTS, $ terms	1,055.4	1.1	8.7
Switzerland SMI	11,217.9	-1.5	4.6
Turkey BIST	4,886.9	10.4	-11.3
Australia All Ord.	7,273.5	-1.6	0.7
Hong Kong Hang Seng	18,234.3	-4.6	-7.8
India BSE	62,622.2	1.4	2.9
Indonesia IDX	6,633.3	-1.7	-3.2
Malaysia KLSE	1,387.1	-1.6	-7.2

	index May 31st	% change on: one week	Dec 30th 2022
Pakistan KSE	41,337.8	0.6	2.3
Singapore STI	3,158.8	-1.7	-2.8
South Korea KOSPI	2,577.1	0.4	15.2
Taiwan TWI	16,579.0	2.6	17.3
Thailand SET	1,533.5	-0.2	-8.1
Argentina MERV	342,078.5	0.1	69.3
Brazil BVSP*	108,335.1	-0.4	-1.3
Mexico IPC	52,736.3	-1.2	8.8
Egypt EGX 30	17,495.8	2.4	19.8
Israel TA-125	1,747.0	-1.0	-3.0
Saudi Arabia Tadawul	11,014.1	-2.0	4.4
South Africa JSE AS	75,067.5	-0.7	2.8
World, dev'd MSCI	2,800.6	0.4	7.6
Emerging markets MSCI	958.5	-1.3	0.2

US corporate bonds, spread over Treasuries

Basis points	latest	Dec 30th 2022
Investment grade	157	154
High-yield	496	502

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

Commodities

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

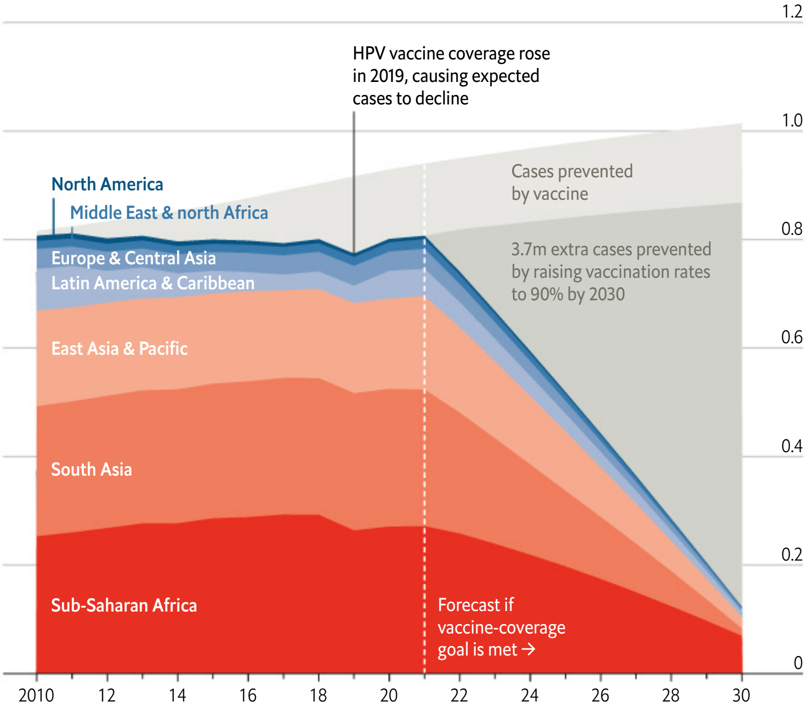
2015=100	May 23rd	May 30th*	% change on month	year
Dollar Index				
All Items	140.4	140.1	-4.9	-23.6
Food	130.8	131.7	-4.5	-20.9
Industrials				
All	149.4	147.9	-5.2	-25.6
Non-food agriculturals	107.2	104.7	-4.4	-40.4
Metals	161.9	160.7	-5.3	-21.9
Sterling Index				
All items	172.6	172.3	-4.5	-22.4
Euro Index				
All items	144.5	144.8	-2.6	-23.7
Gold				
$ per oz	1,967.3	1,958.3	-2.7	6.1
Brent				
$ per barrel	76.9	73.6	-2.4	-40.2

Sources: Bloomberg; CME Group; Cotlook; Refinitiv Datastream; Fastmarkets; FT; ICCO; ICO; ISO; Live Rice Index; LME; NZ Wool Services; Thompson Lloyd & Ewart; Urner Barry; WSJ. *Provisional.

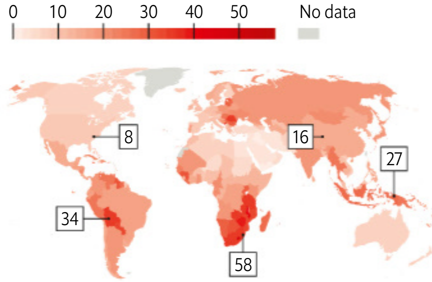
For more countries and additional data, visit
economist.com/economic-and-financial-indicators

→ Increasing take-up of the HPV vaccine would slash future rates of cervical cancer

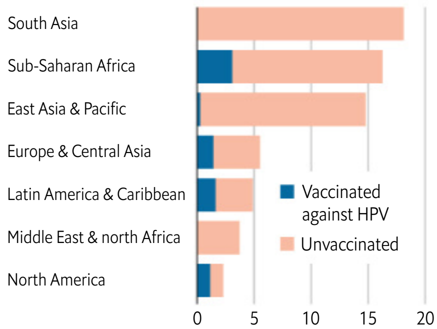
Expected cervical-cancer cases, m
Over lifetime of girls eligible for HPV vaccine in year



Cervical cancers per 100,000 females, 2020



Number of 12-year-old girls in 2021, m*



*Assuming girls are vaccinated aged 12
Sources: London School of Hygiene & Tropical Medicine; WHO; UNICEF; HPV Information Centre; *The Economist*

Low-hanging fruit

Cheap, single-dose HPV vaccines could save millions of lives

ALONGSIDE AILMENTS resulting from hepatitis B, cervical cancer has a strong claim to be the world's deadliest vaccine-preventable disease. Most illnesses for which effective vaccines for children are widely available no longer threaten public health. But in 2020, 14 years after the advent of a jab that prevents almost all cases, cervical cancer still killed 342,000 women. If take-up of the vaccine rose—a goal about which there are new grounds for hope—this cancer could be nearly eliminated.

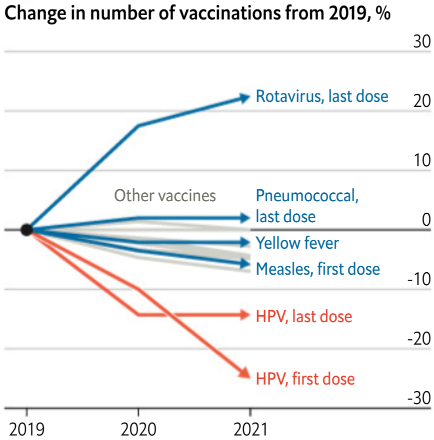
Fully 95% of cervical-cancer cases are caused by human papillomavirus (HPV), a group of sexually transmitted viruses. So common is HPV that nearly every sexually active person contracts a strain. Most never know, because the body flushes it out within two years. In some cases, however, the virus lingers, forming lesions on women's cervixes that can become cancerous.

This deadly condition is the second most common cancer among women aged 15-44. In rich countries, five-year survival rates are around 70%. In the poorest ones, which account for 90% of deaths from cervical cancer, less than one in five women with the disease are thought to survive.

The HPV jab, if given before people become sexually active, fully protects against HPV. But take-up has been slow. In the rich world, the share of people vaccinated by age 15 ranges from zero in Japan, which only resumed recommending the jab in 2022, to 81% in Britain. Many poorer countries have never begun vaccination drives. Worldwide, just 12% of eligible girls got the jab in 2021, down from 14% in 2019.

The nature of HPV can hinder vaccination efforts. Many countries lack systems to distribute vaccines at ages nine to 15, and

Change in number of vaccinations from 2019, %



some parents are squeamish about vaccinating young girls against a sexually transmitted virus. Moreover, the jab's benefits are not felt until the age when cervical cancer is diagnosed, typically 15-35 years later.

However, two other roadblocks are now being cleared. In December the World Health Organisation (WHO) said that a single dose of the HPV jab provided full protection. This will vastly expedite vaccination efforts. In addition, firms in both China and India are now producing their countries' first domestic HPV jabs. The Serum Institute of India plans to make 200m doses in two years at prices well below the current market rate. Its output should supply India's first national vaccination effort.

The WHO has set a goal for the HPV vaccination rate to reach 90% by 2030, entailing a sustained increase of nine percentage points per year. Based on a statistical model built by scholars at the London School of Hygiene and Tropical Medicine, we estimate that among girls eligible for vaccination by 2030, this path would reduce the number who wind up dying of cervical cancer by 2.65m, when compared with the status quo. Maintaining the 90% rate beyond 2030 would prevent another 650,000 deaths among girls vaccinated in each subsequent year, before accounting for population growth. With cheap, single-dose vaccines on the horizon, such numbers may no longer be the stuff of fantasy. ■

Shine, no matter what

Tina Turner (born Anna Mae Bullock), singer and dancer, died on May 24th, aged 83

GENTLY SHE massaged his temples. She would do this until he fell asleep. How many times had she done this, tenderly and sisterly, though he reeked of the peach brandy he was hooked on, to wash down the drugs. She would also do his hair, trim his nails, feed him soup, whenever he asked—even when, as now, her clothes were bloody from a beating, her face swollen and her eyes black. He always aimed his blows at her eyes.

Often she had picked up his gun and thought, I could shoot him sleeping. In all her 16 years with Ike Turner she never could, somehow. At 17 she had longed so crazily to be in his band, the hottest in St Louis, and through him she had learned that she had talent. He thought she sang like Little Richard, an astonishing big, raw, falsetto-whooping voice coming out of her skinny body. In the early days he bought her fur, long gloves, sparkly earrings, and drove her around in his pink Cadillac. The Ike and Tina Turner Revue packed in black audiences, then desegregated ones, and in 1971 their version of Creedence Clearwater Revival's "Proud Mary" reached no. 4 in the Billboard Hot 100. So she carried on.

In her purse as she massaged him, that night in 1976, she had 36 cents and a Mobil credit card. He had taken all the rest. Even her new name, Tina Turner, was not fully hers; Ike had actually trademarked it, to show he owned her. She had been born Anna Mae Bullock in a cotton-picking family in Nutbush, a blink of a place, in Tennessee. The young woman who stayed with Ike, though she knew she ought to go, was Anna Mae, bushed, unsure and sometimes suicidal. The young woman who now rushed away from him, to find a room at the Ramada Inn and an airline ticket to California, was simply Tina, her free self, in control and just arriving.

She was to become the musical sensation of the next two decades and longer. Her name moved 20m records, and sold more concert tickets worldwide than any other solo performer. She won 12 Grammys; two films were made of her life. No one could electrify a stage as she could, first in shimmying mini-dresses and then as a leather-clad diva belting out her songs, tossing her teased wigs and tiny skirts in a frenzy, kicking up her long, long legs. (How she had disliked those legs as she grew, impossible to buy clothes for!) She was sexual dynamite even at 60, when on her penultimate, sellout, world tour she danced on a narrow platform cantilevered out 60 feet above the crowd. She didn't intend to be sexy, she said, only practical: fishnets didn't run like other stockings, leather didn't show dirt or perspiration. Her only motive was to prove she was having fun. The moment music started up, any music, she had to dance. How did she do it in her favourite three-inch Manolo Blahniks and Louboutins? She stayed on her toes, kept those little steps moving.

The road was bumpy, though, after she left Ike. She was 37, old for the industry, and only half of a hit duo. Venues didn't know where to put either her or her songs, not "black" enough to be R&B and not "white" enough to be pop. (Phil Spector's Wall of Sound "River Deep, Mountain High" of 1966, which had made her and Ike huge names in Europe, failed in America for that reason.) So she went on, cleaning people's houses, doing her old numbers in cabaret, until in 1984 her fifth album, "Private Dancer", suddenly broke through, and stardom fell glittering round her in middle age.

That album featured her biggest hit, "What's Love Got to do With it?" It was a cynical song she didn't like, and a strong-woman anthem like Gloria Gaynor's "I Will Survive", but she didn't put herself in that category. She didn't necessarily want to be a strong person, or part of any women's movement. She was just Tina, who had come into this lifetime with a particular job to finish and intended to get it done. Ike's abuse was bad karma that trapped her in negative energy, but she overcame it. Instead of being angry she did her Buddhist chanting, *Nam myoho rengekyo* for ten or 15 minutes a day. She had no idea what the words meant—being still half-Baptist—but they touched something deep and moved her brain into the light, in the same way music did.

She never became a black totem, either. The past was vivid enough, when she and all black performers at clubs in the South might be given filthy storage rooms or closets to change in, and often had to sleep in their cars. But white people in Texas had helped her when she escaped from Ike. And anyway, those days were past. She liked to look forward; to shine, no matter what.

Love was what she looked for. It hadn't come from her mother, who—a psychic told her—resented having her, in the womb or out of it. The woman who raised her, her father's mother, was strict and starchy; each time tomboy Anna came in from adventuring outdoors, with her hair pulled out and dirty as heck, she'd get a spanking. And Ike was Ike. No love there, just a commercial deal, because she was his moneymaker. Their marriage was a quickie ceremony in Tijuana, and he took her to a whorehouse afterwards.

Her audiences loved her, though, and she fed on that. She might not be a star, like Barbra Streisand or Maria Callas; she was just dancing and singing; but she could put on a great show. Her motivation was to make people happy. It was also, frankly, to earn the luxurious and more tranquil life she knew she deserved. She was seldom sure she could find it in America, where there was always a chance she might bump into Ike at some event or other. But from 1985 true love and luxury arrived at once when she met Erwin Bach, a German EMI executive 16 years her junior, moved with him to a chateau in Switzerland, and in 2013 married him in a gown of green taffeta, black silk tulle and Swarovski crystals. She was 73. As usual, she bloomed late.

The famous legs were starting to go a bit, showing cellulite and losing tone. She had various health scares. But her skin was still good. She could look in the mirror and think how pretty she was. In a past life, she knew she had been a queen in Egypt; in the chateau she had a painting of that. Now Ike's humble Cinderella relaxed on her Louis XIV sofas by the shores of Lake Zurich, still undisputed queen of the pop-rock stages of the world. ■

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