The Economist

California's daft reparations plans

Are private schools worth it?

The perils of being loyal at work

Vladimir Putin's other mother

JUNE 10TH–16TH 2023

UKRAINE STRIKES BACK


LA FABRIQUE DU TEMPS
ADJUSTED TO SIX (6) POSITIONS
SWISS MADE
CALIBRE LV525
FIFTY (50) JEWELS
SWISS MADE
Au 750


30 40 50 60

Contents

On the cover

Ukraine's counter-offensive is getting under way. The next few weeks will be critical: leader, *page 9*. The country's forces are testing Russian defences all along the 1,000km front, *page 15*. In Russia people are becoming anxious, *page 19*. The geopolitical stakes, *page 17*

California's daft reparations plans The scheme is bad policy and worse politics: leader, *page 10*. The state's politicians wanted to show the way forward. Now they are looking for a way to back out, *page 21*

Are private schools worth it? Fees are rising fast. But paying them in America is a surer route to a top university than paying them in Britain, *page 50*

The perils of being loyal at work In most things loyalty is a virtue; in the office it can be a liability: Bartleby, *page 57*

Vladimir Putin's other mother Despite official denials, Vera Nikolaevna Putina insisted that Russia's president was her son: Obituary, *page 78*

The world this week

Leaders

Letters

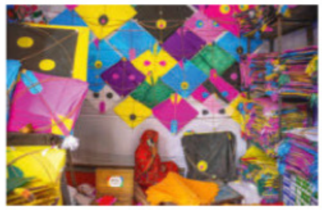
Briefing

Free exchange Policymakers' argument for central-bank digital currencies is rather flimsy, *page 65*

United States

The Americas

Asia



China

Middle East & Africa

▸▸ Contents continues overleaf

The Economist

Volume 447 Number 9350

Published since September 1843
to take part in *"a severe contest between intelligence, which presses forward, and an unworthy, timid ignorance obstructing our progress."*

Editorial offices in London and also:
Amsterdam, Beijing, Berlin, Brussels, Chicago, Dakar, Dallas, Dubai, Johannesburg, Madrid, Mexico City, Moscow, Mumbai, New Delhi, New York, Paris, San Francisco, São Paulo, Seoul, Shanghai, Singapore, Tokyo, Washington DC

Subscription service
For our full range of subscription offers, including digital only or print and digital bundled, visit:
Economist.com/offers

If you are experiencing problems when trying to subscribe, please visit our Help pages at:
www.economist.com/help
for troubleshooting advice.

To manage your account online, please visit my.economist.com where you can also access our live chat service which is available 24/7. To call us, contact our dedicated service centre on:

North America: +1 888 815 0215
Latin America & Mexico: +1 646 248 5983

Please recycle

PEFC/29-31-58

PEFC certified
This copy of *The Economist* is printed on paper sourced from sustainably managed forests certified by PEFC
www.pefc.org

The **Nova Kakhovka dam** on Ukraine's Dnieper river was breached, leading to disastrous flooding in downstream cities that displaced thousands of people. Ukraine said Russia had blown it up, and America promised to release evidence backing that claim. Russia denied the accusation.

Ukraine cranked up its highly anticipated counter-offensive to recapture territory held by Russia in its east and south. In a few places its forces penetrated several kilometres into occupied areas. So far the attacks have been small, and a full-scale assault is believed to be yet to come.

It's the economics, stupid

President Recep Tayyip Erdogan appointed mainstream economic thinkers to his government in **Turkey**. Mehmet Simsek, the new finance minister, promised to pursue "rational" policies. The Turkish lira plunged, since markets expect this will mean less intervention to prop it up.

Prince Harry became the first senior member of the British royal family to be cross-examined in court since the future Edward VII in 1891. The Duke of Sussex is suing Mirror Group Newspapers, claiming its journalists obtained information about him unlawfully, notably by phone-hacking.

Poland moved to moderate a law creating a commission that could ban allegedly pro-Russian politicians from running for office, after massive street protests in the capital, Warsaw. Opposition parties think the law could be abused to block their members.

At least 23 people were killed and many more injured in **Senegal** in clashes between security forces and protesters, according to Amnesty International. The violence began after Ousmane Sonko, a leading opposition figure, was sentenced to two years in prison for the "corruption of youth". The sentence is expected to rule Mr Sonko out of next year's presidential election.

Warring factions in **Sudan** are reportedly restarting ceasefire talks sponsored by America and Saudi Arabia. Previous attempts have failed to hold for long. The conflict is now in its eighth week.

Iran officially reopened its embassy in **Saudi Arabia**, seven years after the two countries broke off diplomatic relations. Their rapprochement was brokered three months ago by China.

At least 288 people were killed in a **train collision** and derailment in Odisha, a state in eastern India. The disaster is potentially embarrassing for the central government, which has invested heavily in road and rail development. In general, India's rail safety record is fairly impressive.

The Taliban were reported to have launched a successful crackdown on **Afghanistan's opium** poppy production. Analysis of satellite imagery has suggested the opium harvest this year will be less than 20% of last year's. In many fields, wheat has been planted in place of poppies.

At the **Shangri-La Dialogue**, the most important security summit in Asia, held in Singapore, the world's two biggest powers failed to communicate. Lloyd Austin, America's top defence official, blasted China for refusing to hold military talks. China, in turn, blamed America for ramping up tensions by placing sanctions on Chinese officials and reinforcing its military presence in Asia. America released a video of a Chinese military vessel crossing the path of one of its destroyers in the **Taiwan Strait**, calling it an "unsafe" manoeuvre.

Wildfires in **Canada** left swathes of North America choked in hazy smog. The New York City region recorded its worst-ever air quality, people were forced indoors and flights bound for New York-area airports were grounded due to low visibility.

Colombia's president, Gustavo Petro, accepted the resignations of his chief of staff, Laura Sarabia, and ambassador to Venezuela, Armando Benedetti. The resignations follow revelations that intelligence services had wiretapped the mobile phone of Ms Sarabia's former maid and the leak of a recording in which Mr Benedetti suggested money he helped raise for Mr Petro's presidential campaign came from drug traffickers. The president denied all allegations of wrongdoing.

Luiz Inácio Lula da Silva, Brazil's president, unveiled a plan to end illegal deforestation in the **Amazon** by 2030. The policy aims to strengthen law enforcement against environmental crimes, regularise land titles, and set up a tracing system for wood, livestock and other agricultural products from the Amazon. Lula, as the president is known, also promised to achieve net zero deforestation by planting as many trees as are cut down.

Mexico's foreign minister, Marcelo Ebrard, said he would step down to focus on the race to become the candidate for Morena, the ruling party, in presidential elections next year. Although he is respected, and currently second in the polls, he will struggle to beat Claudia Sheinbaum, the prominent mayor of Mexico City who is President Andrés Manuel López Obrador's favoured successor.

Haiti was hit by a 4.9-magnitude earthquake and torrential rains that caused widespread flooding. Over 50 people died in the country, which is already racked by poverty and famine.

Courtier turns contender

Chris Christie and Mike Pence launched long-shot bids for the **Republican nomination** for president. Both were lieutenants of Donald Trump. Mr Pence served as his vice-president but broke ranks over his refusal to concede the presidential election in 2020. They face the tricky—arguably impossible—task of courting Republicans tired of Mr Trump without antagonising his many supporters.

Mr Trump's lawyers met Jack Smith, the special counsel investigating the Republican former president at the Department of Justice, signalling that Mr Smith may soon decide whether to file charges over the handling of classified documents. Mr Smith is also leading the probe into attempts to overturn the result of the election in 2020.

A gunman killed two people outside a high school graduation ceremony in Richmond, Virginia. There have been at least 279 **mass shootings** in America in 2023, according to the Gun Violence Archive, a nonprofit research group.

Five countries were elected to the 15-strong **UN Security Council**: Algeria, Guyana, Sierra Leone, Slovenia and South Korea. They were elected for regional slots, each unopposed, except for Slovenia, which kept out Belarus, a close ally of Russia. Their two-year-long stints will start in January.

Apple unveiled the Vision Pro, a headset for virtual and augmented reality, at its developers conference in Cupertino, California. The new gadget, which is controlled by hand gestures, voice commands and eye movements, is pitched as a leap forward in "spatial computing". When it hits the market next year it will cost $3,499. Pricey, too, are shares in the technology giant, which hit an all-time high on the day of the announcement, nudging the firm's market capitalisation close to $3trn.

Putting differences aside

A merger announced between **PGA Tour**, **DP World Tour** and **LIV Golf** marked the end of a bitter schism in golf. LIV was launched last year by Saudi Arabia's sovereign-wealth fund, luring star players away from the sport's traditional tournaments with big cheques. The deal will end legal disputes between the groups and give the Gulf state another controversial foothold in global sport.

Chinese exports slumped by more than expected in May, fuelling fears that the country's economic recovery is losing steam. In the face of weak global demand, exports fell by 7.5% year-on-year. Exports to America were particularly hard hit during the period, declining by 18.2%.

America's Securities and Exchange Commission took aim at two cryptocurrency exchanges in the latest blow to the industry. On June 5th the markets watchdog sued **Binance** and its boss, Changpeng Zhao, alleging violations including operating an unregistered securities exchange and mishandling customer funds. The next day it also charged **Coinbase** with breaking securities rules.

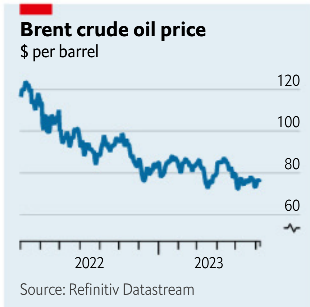
As geopolitical tensions increasingly disrupt cross-border investment, **Sequoia Capital**, an American venture-capital giant, announced it would split into three firms. By March 2024 the firm will shed its Chinese and Indian businesses. It told investors that it has become "increasingly complex to run a decentralised global investment business".

Merck, an American pharmaceutical giant, has sued authorities in an attempt to block rules for negotiating drug prices introduced last year as part of the Inflation Reduction Act. In its lawsuit Merck said that the measures are "tantamount to extortion".

Teck Resources, a Canadian miner, said it has received several proposals for deals involving its steelmaking coal business. The announcement comes after Teck's plan to separate its coal business from its copper- and zinc-mining operations was disrupted by a takeover offer from **Glencore**, a commodities giant, in April.

Persistent inflation led the **Reserve Bank of Australia** to raise interest rates by 0.25 percentage points to 4.1%, in a move that took most economists by surprise. The **Bank of Canada** also surprised investors, raising its policy rate from 4.5% to 4.75%.

Volatile commodity prices since Russia's invasion of Ukraine have meant big profits for traders such as **Trafigura**, which reported record results for the six months to March. The firm pocketed net profits of $5.5bn, more than twice as much as during the same period last year.



Saudi Arabia announced a surprise cut to oil production in an attempt to boost falling prices; it will lower its output by 1m barrels per day in July. Other members of OPEC, which met in Vienna on June 4th, also agreed to extend previously announced cuts by a year to December 2024.

The **Confederation of British Industry**, Britain's most prominent business lobby group, won its members' endorsement for a plan to reform its governance and culture. The group was backed by 93% of votes cast following months of crisis involving allegations of misconduct and the departure of its boss, Tony Danker.

Microsoft reached a settlement with America's Federal Trade Commission after being charged with illegally collecting data from children using its Xbox gaming system. As part of the deal the firm will be required to pay $20m to the authorities and take steps to bolster privacy protections for children using its consoles.

Industrial action shot

The **Directors Guild of America**, a union that represents movie and TV directors, reached a tentative agreement on pay with Hollywood studios to avert further disruption in the industry. Writers remain on strike after members of the **Writers Guild of America** downed pens on May 2nd.

Chris Licht stepped down as boss of **CNN**. Mr Licht's departure follows a week of high drama at the news network after the publication of an explosive profile of the executive. His exit is the latest headache for bosses at Warner Bros. Discovery since the completion of the blockbuster tie-up between WarnerMedia, CNN's parent company, and Discovery last year.

The Economist

Ukraine strikes back

The counter-offensive is getting under way. The next few weeks will be critical

TRAILED TEN days early with a blood-stirring video in which Ukrainian troops asked God to bless their "sacred revenge", Ukraine's counter-offensive is under way. For weeks its armed forces have conducted probing and shaping operations along the 1,000km front line, looking for weaknesses and confusing the Russians. Now Ukraine is testing enemy defences with an intensity not seen for months, with attacks against the occupiers in a series of positions in the east and south. The apparent demolition of the Kakhovka dam on June 6th, if it was indeed Russian sabotage as Western military sources believe, would be clear evidence that they are already feeling the pressure.

More will come in the days ahead (see Briefing). The main force has yet to be sent into battle. The operation will last well into the summer. However, what happens in these next weeks will shape the future not just of Ukraine itself, but of the whole security order in Europe. The point of decision has arrived.

The task for Ukraine, bluntly, is to show Vladimir Putin, his henchmen, his compatriots and the wider watching world that Russia cannot win; that this invasion has been misconceived from the outset; that Russia cannot outlast Ukraine and its Western backers; and that the Kremlin's best option is to give up before Russia suffers yet more losses and humiliation.

That is no easy task, and the risk of failure is real. But thanks to Ukraine's astonishing determination, and the strong and unexpectedly united backing of the West, success is possible. It requires, right now, the strongest diplomatic and military support, and the clearest commitment from the West that it will stand by Ukraine for many years to come. Mr Putin must no longer be able to lie to himself or his people about the foolishness of the direction he has chosen.

This is why this moment is so critical. The Russians are well dug in and reinforced after months of a mobilisation drive that has replenished the supply of cannon-fodder. Imagine the worst case: that Ukraine's counter-offensive peters out, its troops spread too thin, or used too sparingly, to make an impact.

If that happens, it would be a damaging failure. Despite the Russian army's woeful performance in the months-long fight to take the city of Bakhmut, it would nonetheless start to seem well matched against Ukraine's. The voices urging Ukraine to stop fighting and start talking would grow louder, even though a ceasefire would leave Russia in possession of almost 20% of Ukraine and Russian promises of peace would be worthless.

This would be a win for Mr Putin—not the total victory he once dreamed of, but success in his backup objective, to cripple Ukraine if it cannot be returned to the Russian imperium. There would be recriminations within NATO and the European Union. In America, as it heads towards a divisive presidential election, the pressure to cut back funds that Republican critics already claim are being wasted would grow. In Europe the backsliders would slide further.

But the fighting may also go differently. Imagine that the invaders break, their troops running back to Mother Russia in fear of encirclement, as they did from Kharkiv last September. That would be a grave setback for Mr Putin. He has lost more than 100,000 dead and wounded, expended tens of billions of dollars'-worth of military hardware, and shattered his economic relationships with Europe and America: and it would be all for nothing. He would struggle to survive the humiliation. Although Russia might suffer deep and dangerous instability, many in the West would be glad to see the back of him.

The most likely outcome lies in between. As the summer wears on, Ukraine is likely to push back the Russians in two main areas, gaining territory but not precipitating a full-scale collapse. The first, and the one where most of the new activity is so far going on, is in Donbas. One clear Ukrainian objective is to reverse Russian gains there. If Mr Putin starts losing even the territory he has held since his first incursion, in 2014, as well as what he has seized since last February, it will be apparent to him, his generals and the Russian people what a blunder he has made.

The other objective will surely be a push south. Ukraine will seek to break the "land bridge" that connects Russia to Crimea. If it can do that, everything changes. Crimea would become isolated, hard to resupply and protect. The collapse of the dam has already threatened its water supply. Large numbers of Russian troops might be cut off and captured. Ukraine would get back some of its coast on the Sea of Azov. Even if it cannot reach the coast, advancing far enough to put the east-west roads and railways that supply Crimea in range of its guns would be an important step.

Yet neither Ukraine nor Europe will be safe while Mr Putin believes he can launch another invasion later. So the West should understand its commitment must last for years. While Russia remains a threat, Ukraine will need enough weaponry to hold the line, wherever it settles.

What that means in practice needs to be agreed on now—as a further signal to Russia of the folly of dreaming that this war could one day turn out well. NATO members are split on whether Ukraine should become a member, and in any case it cannot happen while the war still rages. So willing Western powers must immediately craft a set of security guarantees for Ukraine that will have credibility, unlike the empty words of the past.

Make Ukraine Putin-proof—and Trump-proof

Short of an explicit treaty that will be hard, but not impossible. America, for instance, has legal commitments that oblige it to provide Israel and Taiwan with the arms they need to defend themselves. The guarantees should cover weapons systems, ammunition, training and support to beef up Ukraine's own defence industries. The more countries that sign up to them, the more convincing they would become—and the harder they would be to overturn if a Ukraine-sceptic like Donald Trump were elected. After the fighting stops, Western "tripwire" forces could be stationed on Ukrainian soil.

Ukraine's fear, and Mr Putin's hope, is that the West will lose focus. Only a successful counter-offensive and credible security pledges can get Russians to realise that Mr Putin's war is futile—that he will never succeed, but can only fail, or fall. ■

Apple

The meaning of "spatial computing"

The Vision Pro is an incredible machine. Now to find out what it is for

No one shows off a new gadget quite like Apple. But the device that Tim Cook unveiled on June 5th was billed as something more significant. The Vision Pro, a pair of sleek glass goggles, represents "an entirely new spatial-computing platform", said Apple's boss, comparing its launch to that of the Macintosh and the iPhone. Apple's message is clear: after desktop and mobile computing, the next big tech era will be spatial computing—also known as augmented reality—in which computer graphics are overlaid on the world around the user.

The presentation was both jaw-droppingly impressive and oddly underwhelming. The Vision is stuffed with innovations that eclipse every other headset on the market. Clunky joysticks are out, hand gestures and eyeball tracking are in. Instead of legless avatars, users get photo-realistic likenesses, whose eyes also appear on the outside of the glasses to make wearing them less antisocial. The product is dusted with Apple's user-friendly design magic.

Yet the company had strangely uninspiring suggestions for what to do with its miraculous device. Look at your photos—but bigger! Use Microsoft Teams—but on a virtual screen! Make FaceTime video calls—but with your friend's window in space, not the palm of your hand! Apple's vision mainly seemed to involve taking 2D apps and projecting them onto virtual screens (while charging $3,499 for the privilege). Is that it?

Patience. Mr Cook is right that spatial computing is a new platform, but it will take time to exploit. Consider the iPhone's launch, 16 years ago. Like the Vision, its technology sparkled, but its dull initial uses were inherited from earlier platforms: make calls, write emails, browse the web, listen to music. It was years before developers found mobile computing's killer use-cases: group chats, ride-hailing, short video, casual gaming, mobile payments and all the other things that today persuade people to spend $1,000 or more on an iPhone (whose $499 launch price in 2007 was considered shocking).

Other platforms have taken just as long to reach their potential. Television producers began by filming people appearing on stage. Internet pioneers started off by sharing files, before spinning the web and much more. Apple's own smartwatch was a damp squib until consumers decided that it was a health and fitness device. It now sells 50m watches a year.

No one yet knows what spatial computing's killer use-case might be—or if it even has one, though that seems likely. It could be commercial (surgeons, engineers and architects have dabbled in the tech) or educational (Apple previewed a "planetarium" in its demo) or in entertainment (Disney made a cameo with ideas for immersive cinema and sports coverage). Vision Pros could even become high-end porn goggles, if Apple relaxes its ban on such things. Artificial intelligence will allow programmers to make eerily realistic content in all these categories, and many more (see Business section).

The way to speed up this process is to get the hardware into the hands of developers—and that is the real purpose of the Vision. Apple will not sell many of the expensive first-generation units, and doesn't care. Its aim is to get the product to the people who will work out what spatial computing can do. It is uniquely well placed. Meta, its chief rival in the headset game, lacks Apple's links with developers, who like making software for Apple's best-in-class hardware (and its richest-in-class consumers).

The flawed but extraordinary Vision shows that the technological struggle to make spatial computing a reality is being won. The next race is to discover what it is for. Apple has just fired the starting gun. ■

Race relations

How not to repair America

California's reparations scheme is bad policy and worse politics

Since at least 1865, when Congress voted to set up the Freedmen's Bureau, Americans have debated how and whether to compensate former slaves. In 2020, when Donald Trump had reawoken the left and George Floyd, an unarmed African-American man, was murdered by a policeman, the idea of reparations—paying money to the descendants of slaves—became almost mainstream. Some Democratic politicians, under pressure from activists and eager to be on the right side of history, agreed to set up commissions to study the idea. A few years later, those commissions are coming back with recommendations.

Cash reparations for slavery are not popular (see United States section). Only 30% of Americans support the policy. Most of those alive today played no role in Jim Crow; none can reasonably be blamed for slavery. Nor are black Americans the only disadvantaged group: try telling an unemployed Appalachian coal-miner why finite tax dollars should go on reparations rather than, say, better schools or public health. Still, unpopular policies are sometimes right. Are cash reparations for African-Americans one such case?

Not long after slavery ended, the Freedmen's Bureau collapsed. Few freedmen received compensation and many ended up working as sharecroppers for their former masters in something close to indentured servitude. Emancipation was followed by the creation of a two-tier version of citizenship that lasted for a century. Until the 1960s, many black Americans lived in fear of terrorism, were shut out of many neighbourhoods and could not ▸▸

vote. Many were also excluded from supposedly universal programmes like the GI Bill. Plenty of the people who suffered directly from this system are still alive today. And in many cases their children and grandchildren have inherited disadvantages that have their roots in state-sanctioned discrimination. How much present racial inequality is due to that inheritance is impossible to quantify. But it is not zero and it is not 100%.

The moral sentiment about reparations rests on these centuries of unfairness. Yet the cruelty of history is not the main argument. If the past were the same but there were no present-day racial gaps in income or life expectancy, the case for reparations would be weak. The main policy question, then, is how to help those who have been left behind. California shows how, in practice, it is impossible to create an actuarial table of injustice that can be consulted to determine how much cash is owed and to whom.

California outlawed slavery when it joined the union in 1850, so its commission concentrated on making amends for current racial disparities. These are considerable, as they are nationwide. African-Americans die four years earlier than white Americans on average. (Perhaps less noticed is that black Americans have enjoyed the fastest gains in life expectancy over the past 20 years.) For the purpose of its calculations, the commission assumed that a life is worth $10m and, speciously, that all racial disparities in outcomes are due to racism, current or historical. It then calculated how much African-American Californians are owed. The maximum payout per person came to $1.2m. San Francisco, naturally, created its own commission, which put the figure higher, at $5m.

The bill for the statewide scheme could exceed $800bn, though the commission deems even that sum to be merely a down payment. This comes as California faces a $32bn budget shortfall on an overall annual budget of $300bn. Then there is the difficulty of determining who is eligible for reparations. America, happily, is more racially fluid than when the Jim Crow era ended, which makes that hard. The commission's answer is to set up another body to determine individual claims, which is just to pose the question again.

If the aim of the policy is to ease disadvantage, that can be done with race-neutral anti-poverty programmes. The expanded child-tax credit, which was part of Congress's response to covid-19, cut child poverty nationwide. It did the most for African-American children, narrowing disparities, and was popular. This is a route to the same end that is achievable.

For Democrats, whose task is to build as big a coalition as possible to defeat Mr Trump's movement, it is hard to think of a policy better designed to set different groups of supporters against each other than cash reparations. Or one easier to lampoon in attack ads: "Californian liberals vote to give Hollywood star $1m!" Gavin Newsom, the governor, appears to be looking for ways to quietly ignore the state commission. London Breed, San Francisco's mayor, has not endorsed the city council's proposal. Both should say clearly that they oppose cash reparations, and then propose policies to narrow disparities which most Americans would happily support. ■

Climate finance

The struggle to kill King Coal

Financial tools alone cannot stamp out the world's dirtiest fuel

IN NOVEMBER 2021, at a UN summit in Glasgow, the world's leaders declared to much fanfare that they were consigning coal to the ash heap of history. Governments promised to stop building coal-fired power plants, and financiers pledged to stop financing coal mines. Eighteen months on, however, the world's dirtiest fuel is still smoking. Russia's invasion of Ukraine set off a scramble for fossil fuels, pushing coal consumption to record levels in 2022. Even though the energy shock has faded, global coal demand is still set to rise a little this year. If the increase in the world's temperature is to be limited to 1.5°C, coal production must fall by more than two-thirds over the course of this decade. Instead it is projected to fall by less than a fifth.

One reason for the hopeful prediction of 2021 was the spate of commitments made by the world's biggest banks and other lenders and investors. More than 200 mainly Western financiers have announced policies restricting investments in coal mining or coal-fired power plants. Lenders representing fully two-fifths of global banking assets have signed up to the Net-Zero Banking Alliance, which pledges to align portfolios with achieving net-zero emissions by 2050. The hope was that reducing the finance available for fossil fuels would help the world decarbonise by raising the cost of capital for projects, deterring investment and ultimately choking off supply. But the coal boom is exposing the flaws in this approach.

What is going wrong? For a start, the banks' promises come with small print. Many pledges do not come into force until later in the decade; others cover only new customers or new mines, or exclude miners deriving only a portion of their revenues from coal. As a result, 60 large banks helped channel $13bn towards the world's largest coal producers last year.

There are also limits to what a club of financial firms can achieve. Faced with criticism from Republican state lawmakers in America, who are threatening antitrust action against members of such clubs, many financial firms are becoming warier. Last month Allianz, AXA and SCOR, three insurers, left the Net-Zero Insurance Alliance. Some had warned the club against toughening up its rules.

In any case, Western firms are not monopoly providers of finance. In the areas where they are lending less, such as for new mines, other providers of capital are rushing in. Banks in China and India, both big burners of coal, have no qualms about financing its extraction. Nor do those in producing countries such as Indonesia. Many are state-owned and happy to help secure energy supply. None has signed up to the Net-Zero alliance.

Another source of capital comes from private investors around the world. Some big oil and mining firms are disposing of their coal assets, but instead of being wound down these are being snapped up, and often expanded, by private funds. Britain's first deep coal mine to be dug in decades, which received approval last year, is ultimately owned by private-equity investors. From Miami to Chicago, investors are expanding their coal holdings. Teck, a Canadian miner seeking to spin off its business supplying coal for steelmaking, this week said that it had received lots of interest from potential buyers.

Stuck in the coal hole

All this points to a fundamental problem of relying on finance to limit fossil fuels: it does not target the demand for them. For as long as demand is high, people can make a profit from investing in coal—and someone, somewhere will seek to do so. No one can say whether coal production would have been higher still, had Western banks not made their pledges. But it is also possible that such promises, by engendering a false sense of security, have prevented companies and—more importantly—governments from taking further action to bring down coal consumption.

Just as the simplest way to discourage smoking is to make it harder and costlier to buy cigarettes, rather than cutting off finance for big tobacco, so too the most effective way to kill coal is to curb demand for it. Making greener sources of energy cheaper, and encouraging investment in nuclear energy, would blunt coal's appeal when the next energy shock hits. Properly pricing carbon, even if only in the West, would reduce global demand for fossil fuels; a carefully designed carbon border tariff, which taxed imports that use dirtier forms of energy, could encourage manufacturers around the world to clean up production.

Politicians have long looked for alternatives to such policies, which raise costs for consumers and so are likely to be unpopular. Some governments, outrageously, still subsidise the burning of coal. Instead, to kill King Coal, they must first make it more expensive. The time to start is now. ■

Dodging the resource curse

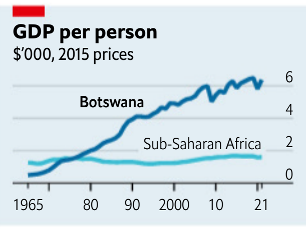
Diamond geyser

Lessons from Botswana on how to make the most of commodities

Africa's soil is studded with buried treasure. Half the world's diamonds are mined there. The largest producers of cobalt, manganese and uranium are all African countries. Since 2000 more big petroleum discoveries have been made in sub-Saharan Africa than in any other region. Yet Africans are not wrong when they talk of a "resource curse". The continent's political elite have squandered or stolen much of the bounty, often aided by unscrupulous private firms. The World Bank predicts that by 2030, 62% of the world's very poor people will live in resource-rich sub-Saharan countries, up from 12% in 2000. Resource-rich states are more likely to suffer dictatorship or civil war.

Managing resources better is crucial to the future of Africa. The world is hungry for its hydrocarbons. Its minerals are needed for cleaner energy. Sadly African politicians risk wasting the moment. Few pursue the right policies. One African country, however, has been a glittering exception, at least until recently—Botswana (see Middle East & Africa section).

At independence in 1966 Botswana was one of the poorest countries in the world. It sold beef but little else. It was home to just 22 university graduates. Over the next four decades its economic-growth rate rivalled that of China, Singapore and South Korea; today it is one of the richest countries in Africa. A necessary condition for its rise was the discovery in 1967 of diamonds by De Beers, a mining giant. But that was not sufficient: the transformation of Botswana also required the right policies.



Several stand out. Botswana has long offered secure property rights and a stable, clear tax regime. Today De Beers reckons that Botswana keeps four-fifths of the revenues from Debswana, their joint mining venture, through taxes, royalties and dividends. Elsewhere in Africa firms are reluctant to invest huge sums when mines can be seized or tax rates are volatile. Neighbouring South Africa is among the world's ten least attractive countries for investors in mines, according to the Fraser Institute, a think-tank. Between 2009 and 2018 Africa attracted just 14% of the industry's total spending on exploration, despite containing perhaps 30% of the planet's mineral wealth.

Botswana has minimised "Dutch disease", whereby resource exports cause the local currency to rise, making other exports less competitive. It has managed the value of the pula and set up a sovereign-wealth fund. Too many African countries have spent the proceeds of resource booms before they arrive. In Botswana a stabilisation fund helps smooth boom-and-bust cycles.

Like many African countries, Botswana has struggled to diversify its exports and foster manufacturing. Both unemployment (25%) and income inequality (among the worst in the world) are high. Diamonds still make up more than 80% of export revenues. Yet whereas petrostates such as Nigeria and Angola have ploughed money into industrial white elephants, Botswana has invested in future sources of wealth, including education and infrastructure. As new technology makes it possible to do more cutting and polishing in Botswana, rather than in India, the traditional hub, past investments in a skilled workforce will give it a chance to reap the rewards. Better to have industrial strategies that build on existing strengths than try to conjure up new ones.

Copying Botswana is not straightforward. Diamonds are not a typical commodity and it is not a typical African country. Thanks to a trio of astute chiefs who petitioned Britain more than a century ago, the then Bechuanaland became a protectorate, not a colony. It thus avoided some of the traumas of imperialism. ("I do object to being beaten by three canting natives," harrumphed Cecil Rhodes at the time.) Its modern government was built on relatively pluralistic traditional institutions.

Worryingly, under Ian Khama, the previous president, and Mokgweetsi Masisi, the current one, Botswana has shown signs of forgetting the secrets of its own success. Economic populism, protectionism and abuses of power are creeping in. Yet its history shows that getting the basics right goes a long way. Diamonds may not be for ever, but the benefits of sound policy can be. ■

Director of ECDC

The next ECDC Director will have a key role in achieving the Centre's vision to improve lives in Europe by applying scientific excellence and empowering EU Member States, the European Commission, and other partners to drive public health policy and practice.

The Director will lead and manage ECDC and take overall responsibility for its operations, ensuring the achievement of ECDC's objectives. He/she is the Centre's legal representative and public face. The post is available from 16 June 2024.

ECDC is a public health agency of the European Union. Its mission is to identify, assess and communicate current and emerging threats to human health posed by infectious diseases and outbreaks of unknown origin. The Centre is based in Stockholm, Sweden. Further information is available at: www.ecdc.europa.eu.

For detailed information on the job description, requirements and the application procedure, please visit: **https://www.ecdc.europa.eu/en/vacancies**
Deadline for applications: **26 June 2023**, 12:00 noon CEST.

जवाहरलाल स्नातकोत्तर आयुर्विज्ञान शिक्षा एवं अनुसंधान संस्थान

JAWAHARLAL INSTITUTE OF POSTGRADUATE MEDICAL EDUCATION & RESEARCH

(स्वास्थ्य एवं परिवार कल्याण मंत्रालय, भारत सरकार के अधीन राष्ट्रीय महत्व का संस्थान)
(An Institution of National Importance Under Ministry of Health & Family Welfare, Government of India)
धन्वंतरी नगर, पुदुच्चेरी / Dhanvantari Nagar, Puducherry-605 006
Website: http://www.jipmer.edu.in
Email: rect2023@jipmer.ac.in

No. JIP/Admn.4(FW)/1(9)/2023 Dated: June 10, 2023

ADVERTISEMENT NOTIFICATION

Applications are invited from Citizens of India and Overseas Citizens of India for the post of **DIRECTOR, Jawaharlal Institute of Postgraduate Medical Education & Research (JIPMER) on or before July 31, 2023 by 4:30 PM.** The eligibility criteria are as follows:

1. **ESSENTIAL QUALIFICATIONS:**
   (a) A high postgraduate qualification in Medicine or Surgery or Public Health and their branches. (b) Teaching and, or research experience of not less than ten years. (c) Twenty-five years standing in the profession. (d) Extensive practical and administrative experience in the field of medical relief, medical research, medical education or public health organization and adequate experience of running an important scientific educational institution either as its Head or Head of a Department.
2. **PAY LEVEL & ALLOWANCES:**
   (a) Level-17 as per 7th CPC [₹2,25,000 (fixed) plus non-practicing allowance of 20% of basic pay; Pay plus NPA does not exceed ₹2,37,500]. (b) Residential accommodation will be provided in the Institute's campus on payment of license fee at standard rate under F.R. 45 or 10% of pay, whichever is less. (c) Other allowances as admissible.
3. **For details regarding tenure, eligibility conditions, other informations and general conditions etc. please refer detailed advertisement available on the website https://www.jipmer.edu.in**
4. **MAILING ADDRESS:** Eligible candidates may apply in the prescribed proforma along with self-attested photocopies of all relevant certificates and documents to the address below through **Registered/Speed Post, in an envelope super-scribed as**

   "Application for the post of Director, JIPMER"

   Deputy Director (Admin)
   JIPMER
   First Floor, Administrative Block
   Dhanvantari Nagar, Puducherry
   Pin code 605 006 India
5. Applicant must submit self-attested copies of certificates with regard to the fields mentioned in the application form (prescribed proforma).
6. The cut-off date for determining the eligibility as per the prescribed qualifications, experience etc., for the post shall be as on the closing date for applications.
7. The prescribed proforma for application for the post of Director, JIPMER is available on the JIPMER website **https://www.jipmer.edu.in**
8. The prescribed proforma is also available on website of Ministry of Health and Family Welfare, Government of India: **https://main.mohfw.gov.in/**

Deputy Director (Admn.)
JIPMER

The demand side of drugs

Your article on fentanyl impressively explored the deadly 21st-century drug epidemic ("Supply-side epidemic", May 13th). However, it missed the mark in the most fundamental way. Fentanyl, which now comes to America mostly from China and Mexico, can be easily synthesised anywhere, including in America itself. Worse yet, fentanyl is not unique. There are endless additional synthetic opioid analogues with similar toxicity and attractiveness to drug users. Stop Mexico and China and other drug suppliers will quickly fill in the gap.

The driver of this tragic epidemic is the $150bn spent annually on illicit drugs by Americans; there is no end to the foreign and domestic drug suppliers who will collect that cash. Without reducing drug users' money, no supply-side effort can have sustained success. Yes, this is a supply-side problem. But it is driven by demand.

There is a studied effort to ignore the central role of drug users in the overdose epidemic because it is so difficult to get them to stop using drugs. Drug users are well aware of fatal overdoses. This knowledge does not stop their drug use or induce safer ways to use drugs.

ROBERT DUPONT
White House drug chief, 1973-77
Chevy Chase, Maryland

Enforcing privacy laws

You told only half the story about the large fines imposed on big American tech companies for transferring users' data to America in breach of European privacy rules ("Fine and dandy", May 27th). The rules were introduced following Edward Snowden's revelations of mass surveillance by government agencies and were designed "to give citizens back control over their data". However, governments seem to be immune to the kind of enforcement faced by firms.

On May 24th the Belgian data-protection authority concluded that transfers of EU citizens' data to America under FATCA, America's notorious tax-compliance law, breaches basic GDPR principles and should stop. And yet, the Belgian data protection authority stopped short of imposing a fine. This was only two days after the €1.2bn ($1.3bn) penalty imposed on Meta.

The lack of meaningful enforcement of the European privacy rules against governments in this area shows a degree of hypocrisy. A fine for you and a big fat zero for me.

FILIPPO NOSEDA
Partner
Mishcon de Reya
London

Chicken Keev?

Beyond its measure of self-conscious empathy, the "Keev" syndrome of hyper-correcting foreign place names never rings true with native speakers (Johnson, "When in Kyiv", May 13th). A classic case is Beijing. The name is largely unrecognisable to local residents. Journalists fail to address the tonal character of standard Chinese and routinely render the second consonant as though it were unaccountably French, like the "g" in *rouge*.

Incidentally, the French themselves invariably pronounce foreign cities, politicians, artists, and so on as though these were purely French words. They also make no attempt to use cuddly phonetic neologisms. So Kyiv is still Kiev, and the accepted French name for the Chinese capital remains *Pékin*. Anglo hipsters may think it embarrassing that anyone still talks about "Peking", but the former English name derives fairly accurately from the Cantonese reading, Pak-king. This is still the vernacular pronunciation in Hong Kong and much of southern China.

B.T. LAFAYETTE
Alès, France

As Geoff Lindsey, a British linguist, described it in 1990, Americans tend to pronounce markedly foreign words using a system of five tense vowels adapted from Spanish, regardless of where the word actually comes from. That's why Americans say the first vowel of mantra with a long "a". And we use the same "o" for baroque, shalom, mocha and Costa Rica. The British have a less rigid system, using different "a"s for taco and sake (the Japanese drink). Britons are also more likely to nativise foreign words, pronouncing them as if they were English. Some names are still fluctuating here too, like Iraq and Iran, pronounced by some as if English sentences ("I rack, I ran"), and by others according to the Spanish-derived rule.

MARK LUNDY
Austin, Texas

Should you translate place names into your own language? When living in Spain, I was amused to note the locals refer to Newcastle as *Nuevo Castillo*. New York was *Nueva York*, Cape Town *Ciudad del Cabo* and St John's in Newfoundland the delightful *San Juan de Terranova*. Curiously, the reverse process seems less common, as we all go to Las Vegas rather than to The Meadows and Buenos Aires rather than Fair Winds.

DAVID SCOTT
Port St Mary, Isle of Man

Sudan's peace process

Many Sudanese felt excluded from the transition to democracy in Sudan ("War and peacemaking", May 13th). Young Sudanese civilians are willing and capable first responders, service providers and interlocutors. They are resilient, shifting from political activism to organising the distribution of basic goods, co-ordinating medical care, planning evacuations and contributing to solutions to the conflict.

Civilians can be brought into the peace process. Engaging with local leaders and networks is the heart of the Carter Centre's approach to building peace in Sudan. Since 2020 we have supported a Youth Citizen Observer Network in the country. Together with advisory bodies it promotes civilian voices and informs efforts to tackle the crisis, and could help distribute aid and monitor ceasefires. Western countries and the Sudanese leadership have not engaged with local bodies effectively. They should take note of the Youth Citizen Observer Network's presence and capability.

PAIGE ALEXANDER
Chief executive
Carter Centre
Atlanta

The first Tube map

Engineers building the first London Underground lines in the late 19th century had a different problem to worry about than the engineers who built the Elizabeth line today ("Have you come far?", May 13th). The low literacy rates at the time meant that many passengers would not know what station they were at and when to get off. This was simply solved by using a different bold pattern of wall tiles for each station, which are still visible to this day.

CHRIS DRAKE
Leicester

I think you were unfair to John Betjeman, a champion of Victorian engineering and architecture. "Slough", his despairing poem published in 1937, was aimed at the trading estate, a former dump site for army vehicles, and not the town. He later regretted it.

JEAN-MARC BARSAM
London

Spiffy the new trains are, but as an older person, who is not that well padded, I find the seats on the Elizabeth line to be rock hard. I have no idea how anyone could sit on them all the way into London from Maidenhead.

JAREK GARLINSKI
St Leonard on Sea, East Sussex

Letters are welcome and should be addressed to the Editor at
The Economist, The Adelphi Building, 1-11 John Adam Street, London WC2N 6HT
Email: letters@economist.com
More letters are available at:
Economist.com/letters

All guns blazing

KHERSON

Ukraine's army launches big pushes in the south and east

"EVENTS ARE developing very dramatically," warned a Russian military blogger on June 8th, as Ukrainian forces attacked Russian positions in Zaporizhia province. Ukraine had conducted "massive" artillery barrages before sending in tanks, the blogger said. Four columns of up to 120 armoured vehicles, each headed by a dozen or so tanks, were said to be advancing from Orikhiv to Tokmak, a town on the "land bridge" of occupied territory linking Russia to Crimea (see map on next page).

The overnight advance in Zaporizhia is a milestone for Ukraine's army. It represents its largest-scale fighting at night since the war began, with attacks from two directions. "It has all gone according to plan on that axis," says a source with knowledge of the operation. Beyond Tokmak lies Melitopol, the city that General Valeriy Zaluzhny, Ukraine's top soldier, identified as a prime target when he spoke to *The Economist* in December. The thrust in Zaporizhia, along with others all along the 1,000km front line, mark the start of Ukraine's long-awaited counter-offensive.

It has been six months in the making. Last autumn Ukraine liberated Kharkiv province and a big part of Kherson province. But its Western allies were concerned that it lacked the muscle to build on these victories by pushing faster and farther. In January they resolved to provide it with the weapons to do so and, over the spring, in the German city of Wiesbaden, helped its generals to plan and wargame their options—a push towards Melitopol included. In May Ukraine began softening up Russian forces with rocket and missile attacks on command posts, barracks, depots and transport nodes far behind the front lines.

This week Ukraine launched the next phase. The first indication came on June 4th when several Ukrainian brigades advanced towards Velyka Novosilka and into Novodonetske, small settlements near Vuhledar, which is held by Russia. That area was vulnerable, notes Rob Lee of King's College London, because Russian naval infantry there had taken huge losses in the spring, and because other units had been sent to Bakhmut, an eastern town which Russia captured in May after a year-long slog. The attacks on Tokmak and near Vuhledar threaten not just Melitopol but also the port cities of Berdyansk and Mariupol, farther south on the Sea of Azov. They offer several chances to sever the land bridge, assuming Ukraine can breach the thick Russian defences.

→ Also in this section

The blast of war blows

Russia claimed that it had repulsed Ukraine's attacks near Vuhledar, inflicting an implausible 3,715 casualties. Yet not only Ukrainians but also Yevgeny Prigozhin, head of Wagner Group, a mercenary outfit that led Russia's fight for Bakhmut, dismissed such talk as "wild and absurd science fiction" (see later story). Western officials say that Ukraine made reasonable progress in the first day or two of fighting, though video footage showed tough battles. "With the capture of the height at Storozheve the Ukrainians are in a good place to continue offensive operations," notes John Helin of the Black Bird Group, which uses open-source intelligence to track the war. Ukrainian attacks have probably fixed two Russian motorised divisions in place, he says. "Even then it's still a long way to go to the Russian main defensive line."

But what is clear is that Ukraine is attacking not only in the south, but all along the huge front. Russian forces are arrayed in a crescent from Kherson in the south to Luhansk province in the north-east. There is frenetic activity at both ends. In the north, on Russia's right flank, Ukraine has been attacking towards Svatove, a town in Luhansk province. The latest update from that area came from General Oleksandr Syrskyi, the commander of Ukraine's ground forces, on June 4th. He said that his troops had advanced, albeit by only 400 metres. Ukrainian forces have repeatedly probed around Luhansk over the past six months: in November there was hope of a breakthrough which never materialised. Western officials say that Russian defences there still seem shaky.

Feints and thrusts

Moreover, Russia is increasingly distracted by raids even farther to the north of the established front line. In recent weeks militias largely manned by Russian exiles but backed by Ukraine have conducted brazen raids into Russia's Belgorod province, forcing Russia to devote resources and attention to a part of the border that was previously quiet. On June 1st three Russian conscripts were reportedly killed in cross-border shelling, with seven other people injured. On June 5th the Russian Volunteer Corps, one of those militias, said it had killed a Russian colonel. And the following day a Russian unit sent to Belgorod from Pskov, 1,000km away, complained of heavy losses and a lack of supplies.

At the other end of the front, in the south, on the Russians' left flank, the most dramatic development came on June 6th when the Kakhovka dam collapsed, causing massive flooding across Kherson province. It is too early to assess the full damage. Yury Vaskov, Ukraine's deputy minister for infrastructure, suggested on June 7th to *The Economist* that more of the dam may be intact than initially thought. Working out how much is left will be clear only once the water level falls. But already more than 150 tonnes of oil have leaked into the Dnieper. "We already know it is the most terrible catastrophe Ukraine has experienced in decades," Mr Vaskov said.

Both sides blame the other for the collapse, although Russia is the likelier culprit. Some locals report hearing an explosion in the morning. Ukraine had long warned that the Russian forces that controlled the dam had mined it. The scale of the damage suggested the dam had been demolished from the inside. Ukraine has already referred the matter to the International Criminal Court as a war crime.

The worst-hit areas are those immediately downstream from the dam. Some of them are under Russian control, on the eastern shore of the Dnieper. A Ukrainian military spokesperson suggested Russia had lost many of its own defensive positions, forcing it to retreat to a second line of defence 5-15km away.

In Kherson city, which is under Ukrainian control, the worst-hit area was Ostriv, meaning island, which sits in the middle of the Dnieper. It is low-lying. One of its upmarket local streets was even nicknamed "Venice", in reference to the water that sometimes rose to its front porches. Now the whole of Kherson is Venice, jokes a volunteer, Serhiy Rybalchenko. He had brought a boat out of storage to help deliver nappies, water and other essentials to his stranded neighbours. "Sometimes, it's more like the Atlantic."

Despite the damage done to Russia's own positions, it may have destroyed the dam to forestall Ukrainian attacks over the Dnieper, which might have threatened Russia's left flank at a crucial time in the offensive. It is understood that at least some Ukrainian units had moved out from Kherson city in the days leading up to the blast. They may have been preparing for a risky operation to cross the Dnieper via or near the Kakhovka dam and bridge.

Such amphibious operations would have been difficult, but not impossible—small-scale raids had already taken place. Our analysis of infrared satellite data shows that Kherson was one of the most heavily bombarded areas on June 6th. A meaningful Ukrainian advance there looks improbable, for now, though falling water levels upstream from the dam, around the Zaporizhia nuclear power plant, could create other opportunities for Ukraine in the weeks ahead.

Meanwhile, fighting has not ceased in the east. In messages published between June 5th and 7th, Ms Maliar, playing down other developments, said that Bakhmut was still the "epicentre of hostilities". Ukraine was advancing on a "fairly broad front" there, she claimed, as much as 1.1km in places, capturing the commanding heights around the town. There was also fighting towards Soledar, to its north, suggesting that Ukraine might hope to encircle Bakhmut. Recapturing the town would erase Russia's sole substantial gain of the past year. A bigger push in the surrounding Donbas region would also allow Ukraine to recapture territory it lost in 2014. That would be a humiliation for Russia, and undercut its stated rationale for the war—the "liberation" of the east.

Unto the breach

Taken together these military developments indicate that, after weeks of preparatory missile strikes and other activity, the counter-offensive has entered a new and more aggressive phase. The infrared data, which show the fires that result from shelling and bombing, suggest that June 6th was one of the most intense days of fighting since the war began, with most of the fires occurring in Russian-held areas. The continuing confusion over the disposition of Ukraine's forces and their primary targets is testimony to Ukraine's success in keeping its plans under wraps.

Despite some claims from Russian bloggers—there have been reports that German Leopard tanks are in use in Zaporizhia province, for example—there is still

no definitive sign of the bulk of Ukraine's most advanced new kit, such as European armour and American Bradley infantry fighting vehicles. Western countries have helped Ukraine equip and train nine new "combat credible" brigades for offensive operations, according to documents written in February that have since leaked from the Pentagon. One of those brigades, the 37th, may have taken part in the Ukrainian attacks near Vuhledar, judging by sightings of French AMX-10RC light tanks and British Mastiff mine-resistant vehicles. Ukraine has also raised at least three other brigades on its own. On paper, that should be enough to break through Russia's multi-layered defensive lines along a narrow—20km, say—stretch of the front.

Ukraine will need to concentrate its forces for such an attack without their being detected and struck. It will need to synchronise its different combat arms, ensuring, for instance, that dismounted infantry protect tanks from Russian anti-tank squads, and that mobile air defences keep up with advancing columns. And it will need to ensure that a relatively lightly trained force has the courage and confidence to keep moving forward in the face of intense shelling and potentially heavy losses—an issue that proved to be one of the biggest challenges for Ukraine during its offensive in Kherson last year. If it can do these things, Western military officials believe that Russia's poorly motivated and badly trained troops, exhausted after months of fruitless offensives, may struggle to defend the trenches and fortifications built over recent months. Shock, speed and surprise will be crucial.

The point of Ukraine's current ground attacks may be to keep Russia guessing as to where the offensive brigades will appear, forcing it to defend a number of areas at once and stretching its units thinly—though Russian military insiders increasingly think that Ukraine's attacks in Zaporizhia represent the main axis. The dilemma between reinforcing the east to protect Donbas and shoring up the south to shield Russian supply lines to Crimea is especially acute. Ukraine enjoys the additional advantage of so-called interior lines, a military term which refers to the fact that it can move units to different parts of the front, through its own territory, more quickly than Russia can do the same.

Even seasoned experts remain unsure where the heaviest blows will come. "I assume that there will be bigger attacks to draw Russian reserves before the actual main thrust," says Pekka Toveri, a former head of Finland's military intelligence. All options are on the table, he suggests: "I wouldn't be surprised if there would be quite a big offensive to retake Bakhmut followed by another one towards Mariupol." Or perhaps it will be Melitopol after all. ■

The geopolitical stakes

Offence is the best defence

Ukraine and its allies hope the counter-offensive will not only regain territory, but also deter future Russian aggression

On the eve of the commemoration of the Allies' D-Day landings in Normandy, General Mark Milley, America's most senior general, drew a parallel with the Ukrainian counter-offensive starting some 2,800km to the east. The goal, he said, was the same as it had been nearly eight decades ago: "To liberate occupied territory and to free a country that has been unjustly attacked by an aggressor nation, in this case, Russia."

Then as now, the battles will determine the future security order in Europe. But for Ukraine's Western supporters, at least, the ultimate aim of the war is much less clear than it was for the Allies in 1944. Unlike Nazi Germany, Russia is a nuclear power. It is hard to imagine its complete capitulation. Ukraine's professed goal is to reconquer all of the land Russia has seized since 2014, restoring the borders that were set in 1991, when the Soviet Union broke up. But even if the Ukrainian army can achieve that (and many Westerners, especially, have their doubts), there are fears that Russia might view such an outcome as a humiliation so abject that it would be worth using nuclear weapons to avoid it.

The upshot is a much vaguer aim: for Ukraine to inflict as many losses and make as many territorial gains as possible, thereby strengthening its hand as it tries to reach a *modus vivendi* with a weakened Russia. By this way of thinking, a positive outcome would be for Ukraine's new Western-armed brigades to sever the land bridge between Russia and the Crimean peninsula or to get close enough to endanger Russian positions in Crimea. Most Western officials expect more modest gains, however, with Ukraine recapturing and holding less strategic slices of the territory it has lost in the past year, but at least demonstrating that it can still make headway on the battlefield. In the pessimistic view, the Ukrainians struggle to get past Russian defences, make only minor gains and end up in a stalemate. Happily, the prospect of Ukrainian forces failing, suffering a counter-attack and retreating can be all but ruled out, because Russia lacks the means to stage a big advance.

Although it is the resolve and competence of the Ukrainian forces that will be decisive, external factors will influence the outcome. America's president, Joe Biden, has declared two broad objectives: to ensure both that Ukraine is not defeated and that NATO does not get drawn into direct conflict with Russia with the attendant risk of nuclear escalation. Early on he declined to send troops to Ukraine or impose a "no-fly zone". But he has delivered weapons of ever greater quantity and sophistication to help Ukraine defend itself. Equally vital has been the provision of intelligence, planning and training by America and its allies. Ukraine today has one of the largest armies in Europe backed by the most powerful military in the world. And while it is not trained to the standard of NATO, "it only has to be better than the Russian army" to get an upper hand, say Western officials.

China's leader, Xi Jinping, also appears to have set boundaries, according to American and European officials. He wants to prevent Russia's complete defeat, but also a breakdown in relations with Europe or the use of nuclear weapons. So even though he and Russia's president, Vladimir Putin, have declared that their countries' friendship has "no limits", there have been limits so far in the help China has been prepared to offer Russia. It buys Russian exports of oil and gas at a discount, and sells Chinese goods, some of which might be useful to the war effort. But Mr Xi has so far declined to provide big deliveries of weapons, of the kind the West has given Ukraine. That may change if China thinks the Russians are about to be routed, Western officials worry.

Is never good for you?

Even allowing for that risk, however, and while sticking to Mr Biden's parameters, America's generals increasingly think it is possible to engineer a "strategic defeat" for Russia. Over time they have become less fearful of nuclear escalation. In part their "boiled frog" strategy of gradually increasing conventional military aid has helped to mitigate the risk. And by prodding Russia itself, through attacks on the border region of Belgorod or small-drone attacks on the Kremlin, Ukraine also seeks to expose the emptiness of Russian threats. Increasingly, America's top brass aims to ensure Russia loses both the military capacity and the inclination to launch another war of aggression. "Never again is not a difficult concept to grasp," says a Western official.

This goal is especially enticing to America's military planners because they have long dreaded the prospect of having to fight two wars at once: with Russia in Europe and with China in Asia. If the threat from Russia were to be substantially reduced, at least for some years, it would allow more resources to be directed towards deterring China, which has become America's most pressing military concern.

Western analysts have three broad scenarios for how the war might unfold. The first involves a big Ukrainian breakthrough, in which they either sever supply lines to Crimea or regain much of the territory in the eastern region of Donbas that Russia grabbed last year and in 2014. Such a devastating collapse of Russian forces might conceivably result in Mr Putin's losing power. To some that is the best way to restore peace in Europe. But assessing Russia's capacity to maintain discipline among its troops is hard; gauging the brittleness of Mr Putin's regime is harder still. Nuclear worries are not entirely gone. Still, some American officials are less worried about Mr Putin's use of nuclear arms than they are about Russia's descent into chaos and a concomitant loss of control over its nuclear arsenal.

A second scenario entails smaller Russian losses, but also the prospect of further defeats if the war goes on, which may be enough to chasten Russia and weaken Mr Putin. A third, gloomier outcome would be a stalemate that lets Russia hold on to most of what it has taken. That would undermine Western confidence in Ukraine and embolden Mr Putin. For all Russia's military setbacks, says Alexander Gabuev of the Carnegie Russia Eurasia Centre, a think-tank in Berlin, Mr Putin does not appear to have abandoned his intention of subjugating the whole of Ukraine, annexing more of its territory and installing a puppet government in Kyiv. He may imagine he can still achieve that by grinding out the conflict for years. His air force and navy are largely intact, and he can mobilise more soldiers, though that risks popular discontent in Russia. He will want to wait out the West.

In particular, Mr Putin will be hoping for a return to power of Donald Trump in next year's presidential election in America. Mr Trump complains that America has been wasting billions on Ukraine, depleting its own arsenal and prolonging a bloody war. If elected he claims he could put an end to the conflict within 24 hours, without saying how. Ukrainians fear that he might either cut off the flow of aid or otherwise agree to Mr Putin's terms.

How to avert a protracted war? One hope is that Ukraine will inflict such a smarting military defeat as to prompt Mr Putin to revise his goals. Some Western officials, notably in Germany, hope Ukraine's counter-offensive will soon be followed by peace talks. But others, especially in America, caution that Mr Putin is unlikely to be ready for serious negotiations unless he suffers a rout. Even if talks were to take place, Russia's participation might be an entirely insincere stalling tactic. Genuine diplomacy may have to wait for a further round of fighting next year.

Can it last?

The West is therefore debating how to give greater credence to its promises to support Ukraine "for as long as it takes". The thorniest questions surround what security guarantees the West might offer Ukraine, both in the short term and as part of a lasting settlement. Hitherto some Western leaders thought such matters were best left until after a cessation of hostilities. But given the scant chance of a negotiated peace, many argue the West should no longer wait; indeed, enhanced guarantees could hasten the end of the war by undermining Mr Putin's dream of winning a drawn-out conflict. President Emmanuel Macron of France, long regarded in eastern Europe as resentful of America and soft on Russia, took a surprisingly hawkish turn in a recent speech in Slovakia in which he called for Ukraine to be given "tangible and credible security guarantees".

Regretting the memo

The security "assurances" Ukraine received in 1994 from America, Britain and Russia itself, in an agreement called the Budapest memorandum, in exchange for surrendering its share of the Soviet Union's nuclear weapons, have proved wholly inadequate. Ukraine and its friends in eastern Europe argue that only membership of the NATO alliance—with its strong mutual-defence commitment, known as Article 5—can protect Ukraine from future attack.

Western allies are divided, however. Germany, in particular, argues that a country with unresolved territorial disputes, especially one at war, cannot become a member (to which others retort that West Germany joined NATO despite the partition of Germany during the cold war). In any case, it is difficult to see Mr Biden extending America's nuclear guarantee to Ukraine in the near future, given his reluctance to send American troops to defend it now.

Anders Fogh Rasmussen, a former secretary-general of NATO, proposes a two-step plan. First, Western countries should issue "substantial" guarantees to Ukraine, ideally ahead of NATO's summit in Lithuania next month. Then the summit itself should issue an invitation for Ukraine to join the alliance, or at least signal that one will be forthcoming in the coming year. This would make clear that Russia has no veto on who joins. Ultimately, argues Mr Rasmussen, protecting Ukraine within NATO would be less costly than arming it to fend off Russia alone indefinitely.

One difficulty will be to ensure that the guarantees act as a bridge to membership rather than an alternative to it. In a forthcoming paper, Eric Ciaramella of the Carnegie Endowment for International Peace, a think-tank in Washington, sets out a five-point plan to give Ukraine "less than Article 5 but more than the Budapest memorandum". This includes legally codified commitments to help Ukraine defend itself, inspired in part by those that America gives to Israel and Taiwan, to ensure they endure regardless of who is in power in America and Europe. He also advocates multi-year allocation of funds to arm Ukraine; support to rebuild Ukraine's arms industry; mechanisms for political consultation like NATO's Article 4; and a clear path to EU membership. As Mr Macron has belatedly come to recognise, "today Ukraine protects Europe"; better to integrate it firmly than leave it in a grey zone that only invites Russian aggression. ■

Russia's home front

Nothing to see here

It is getting harder to pretend that everything is under control

A few hours after the Kakhovka dam collapsed, flooding a big slice of southern Ukraine, Vladimir Saldo, who runs the Russian-occupied parts of the affected region, released a video. Standing by the window of an administrative building in military fatigues and a helmet, he tried to project an air of normality. "Novaya Kakhovka and other settlements downstream carry on [as usual]. Driving along, I saw people calmly walking the streets. Petrol stations and shops are open." Behind him, clearly visible through the window, the floodwaters were rising in the already inundated town square.

Even back across the border in Russia, pretending that everything is normal 15 months into Vladimir Putin's special military operation in Ukraine is becoming ever harder. A mixture of fierce repression and unrelenting propaganda have kept the public largely quiescent. But in recent weeks the war has been seeping into everyday life. In an affluent area in south-western Moscow military trucks roar past Teslas. Recruiters stationed outside supermarkets try to enlist passers-by in the army. At a speed-dating event young women complain of the difficulty of maintaining a steady relationship—because their boyfriends have been called up.

On May 30th a swarm of drones attacked Moscow. None hit its target: they were all either shot down or disabled by jamming. Some fell close to Barvikha Luxury Village, a posh suburb. Villages close to the border with Ukraine in Belgorod province have been shelled. A few have been briefly occupied by pro-Ukrainian militias making forays across the border. These incursions met little initial resistance: many of the troops who used to guard the border had been redeployed to Russian-occupied parts of Ukraine.

Lieutenants at loggerheads

There are also growing signs of disarray among Russia's elite. For months Yevgeny Prigozhin, the leader of the Wagner Group, a mercenary force fighting on Russia's behalf, has been denouncing Sergei Shoigu, the defence minister, and Valery Gerasimov, Russia's top general, as incompetent foot-draggers. But his complaints are becoming steadily shriller. He recently claimed that Russian soldiers had laid mines behind Wagner's positions. Wagner has also released a video of a Russian officer, who looked as if he had been beaten, confessing that he had shot at a vehicle used by Wagner's forces while drunk.

The incursions in Belgorod have especially incensed Mr Prigozhin (pictured). "Why are tens of thousands of people, our Russian guys, dying advancing towards the West? So that we could start giving away, step by step, pieces of Belgorod province, our native Russian land? Why is everyone silent about the deaths of these civilians? Where is their explanation to the Russian people that we are handing over our territories and civilians to be devoured?"

Mr Putin has a habit of provoking conflict among his subordinates to reinforce his role as an indispensable arbiter. Mr Prigozhin also serves as a useful spur to the Russian army and as a scold for rich Russians unenthused by the war. But these conflicts typically do not spill into public view. Some speculate that Mr Prigozhin could be attacking the top brass in anticipation of territorial losses in Ukraine. By denigrating the generals, he may help deflect blame from Mr Putin. Alternatively, the bickering could be a reflection of infighting between powerful factions who sense weakness on the part of the arbiter.

Mr Putin has been keeping a low profile of late, presumably to avoid any association with military setbacks. A visit to a children's clinic and meetings with regional officials have been his only recent public appearances. His apparent lack of interest in the war and the noisy squabbling in the top ranks, whatever the reason for them, are likely to have a demoralising effect on Russia's soldiers and civilians alike.

Russia's propagandists have been trying to reassure the public, insisting that Russia had thwarted the Ukrainian counter-offensive before it had even begun. But their jaunty footage of destroyed Ukrainian tanks has been scorned by Mr Prigozhin and military bloggers. Big territorial losses will presumably lead to further tension within the Russian elites. A weakened Mr Putin, in turn, would probably resort to even greater repression to compensate for losses at the front. Mr Prigozhin is calling for martial law, a general mobilisation and the restoration of the death penalty.

What comes next will depend not just on the progress of the counter-offensive, but on the pliability of the elite and the mood of the broader public. Mr Putin has had little trouble suppressing dissent so far. But the many military setbacks and the public disagreements among his own henchmen make that job harder. "We are moving into uncharted waters," an American official says. "And it is not just Ukraine that needs liberation, so does Russia." ■

A mercenary on a mission

Reparations

The tide goes out

MANHATTAN BEACH

California's state and city governments wanted to show the way forward on reparations. Now they are wondering how to back out

One city block in Manhattan Beach, a ritzy town just south of Los Angeles, is not like the others. On a hill above the shoreline, sitting snug between McMansions masquerading as beach houses, is a grassy area. A square monument, inscribed with "Bruce's Beach Park", invites visitors to read about the history of the place. In the early 1900s, this land belonged to Charles and Willa Bruce, an African-American couple who ran a beach resort for black Angelenos. Unhappy with their new neighbours, white residents of Manhattan Beach persuaded the city to seize the land. In 1924 Bruce's Beach, as the resort was known, was condemned. Last year, nearly a century after their land was stolen, the city transferred the land to the Bruce's great-grandsons, who then sold it back to LA County for nearly $20m.

The return of Bruce's Beach to the Bruce family was part of a national reckoning. After George Floyd was murdered by a police officer in Minneapolis in 2020, sparking weeks of protests, municipalities around the country agreed to study reparations for slavery as a way to atone for America's original sin and the legacy of segregation. "The essential component of a reparations programme", argues William Darity, of Duke University, "is the elimination of the racial wealth gap." In 2019 the median net worth of black families was roughly 13% that of white ones, according to the Federal Reserve's most recent survey of consumer finances. Things look even worse in southern California. One study from 2016 suggests that black residents of Los Angeles possessed about 1% the wealth of their white neighbours.

California, which prides itself on being a laboratory for America's most progressive policies, jumped in head first. In 2020 San Francisco's Board of Supervisors, the city council, established a task force to study reparations. Activists in Los Angeles want reparations for (mostly Mexican and Indigenous) families who were removed from their homes so that the city could eventually build Dodger Stadium. In September 2020 California's state legislature passed a law creating its own reparations task force. It remains the only state to do so. After more than two years of meetings, the nine-member committee must present its final report to the legislature by July 1st.

California entered the union as a free state in 1850, so the report focuses largely on the effects of discriminatory policies over generations rather than recompense for slavery. Over hundreds of pages, the study lays out California's history of discrimination and racial terror, precedents for reparations, an analysis of what black Californians who are descended from slaves may be owed, and a wish-list of policies aimed at eliminating racial disparities in health, wealth, housing and education.

The details in the report about previous reparations schemes are compelling. Jewish refugees received reparations from ▸▸

Germany after the Holocaust. Indigenous children forced into Canadian boarding schools were compensated for their suffering. In America, Japanese-Americans successfully lobbied for cash payments decades after their incarceration during the second world war. In 2021 California approved payments to people who were forcibly sterilised in state prisons.

Yet in each of these examples, people were compensated for specific horrors, not systemic disparities resulting from those harms. John Tateishi, a Japanese-American who was incarcerated at Manzanar, the prison camp in California, supports reparations for African-Americans, but cautions against equating the two campaigns. "You can't even begin to compare our effort with what they're trying to do," he says. "We had a beginning and ending point, whereas slavery, it's a forever thing in this country."

To calculate the cost of health disparities, the task force started with the assumption that a human life was worth \$10m, and divided that number by the average life expectancy of a white American to get the annual value of a life absent racial discrimination. That figure, multiplied by the difference between white and black life expectancy, the committee argues, equals the wealth lost. Different formulas were used to determine the cost of mass incarceration and housing discrimination. All told, the task force estimates that black Californians could be entitled to up to \$1.2m per person. Never one to be outdone, San Francisco's report suggests paying each eligible resident \$5m.

It is unclear how many people would receive payments were the programme ever implemented. California has about 2.5m black residents, but eligibility is limited to those who can prove they are descended from slaves. Mr Darity, who consulted on the report, reckons that the total cost could exceed \$800bn, more than double the state's annual budget. That sum could swell. The task force says this compensation would be a "down payment" on reparations. In addition, the report urges lawmakers to fund a new government body, the California American Freedman Affairs Agency, to help applicants with their claims and disburse payments.

Last year California enjoyed a surplus of nearly \$100bn thanks in large part to federal pandemic relief. This year it is staring at a \$32bn deficit. San Francisco faces a \$780m shortfall of its own over the next two years. Gavin Newsom, the state's Democratic governor, set low expectations last month when he said that reparations "is about much more than cash payments". He later walked back the comment. London Breed, the mayor of San Francisco, has declined to endorse her city's proposal.

Even task-force members seem pessimistic. Reverend Amos Brown, a member of both California's and San Francisco's reparations committees, was once a student of Dr Martin Luther King. "The first thing we ought to do is chill," he says. Ever the pastor, he uses scripture to urge pragmatism. "As the book Book of Isaiah says," he recalls, "Come, let us reason together."

Supporters of reparations also fret about the precedent California could set if lawmakers were to take up the proposal. Mr Darity worries that federal reparations become less likely if more states and cities pursue their own schemes. Evanston, Illinois—the first municipality in America to begin paying reparations—is distributing housing vouchers. New York, where slavery was legal until 1827, may soon launch its own commission.

The push for federal reparations has stalled regardless. John Conyers, a former congressman from Detroit, first introduced a bill to study the subject in 1989. The latest version is sitting on a shelf. That is probably because reparations are deeply unpopular. A recent survey from Pew Research Centre suggests that just 30% of Americans support reparations for slavery. Democrats are evenly split on the issue. Even among reparations' supporters, cash payments are less popular than scholarships for black students, business financing and housing assistance.

This leaves California in a tricky spot. Endorse the report, and empty the state's coffers. Ignore it, and disappoint black Californians who were energised by the state's well-intentioned, but impractical, study. It is relatively easy and cheap for Democrats to signal a desire to squash pervasive racial disparities by supporting the study of reparations. Eventually, though, the bill will come due. ■

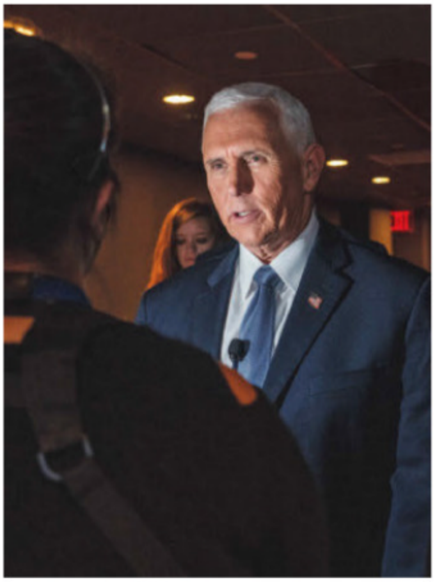
The Republican pack

Taking on their former boss

WASHINGTON, DC

Mike Pence and Chris Christie try to bring down Donald Trump

WHETHER THEY grimace or they grin as they say it, more and more Republicans seem to agree that Donald Trump is likely to capture the party's presidential nomination. But that has not deterred others from hoping against hope and entering the contest. Chris Christie, a former Republican governor of New Jersey, announced his candidacy from New Hampshire on June 6th; Mike Pence, a former vice-president, announced his own bid from Iowa the following day. A less prominent contender, Doug Burgum, the North Dakota governor, also entered the fray.


So Help Him God

Study the histories and motivations of Messrs Christie and Pence—with all due apologies to Mr Burgum—and you quickly see the problem with much of the effort to dethrone the former president. Pitching Trumpism without Trump is much harder when you were a devoted courtier to him.

The two men will confront the same problem differently. Mr Pence is a polite, midwestern evangelical Christian who loyally served as deputy to the brash boss. Throughout almost every scandal of the Trump administration, he remained remarkably supine. But in the aftermath of the election of 2020, Mr Pence's spine stiffened even as most elected Republicans were seen to be made of spongier stuff. Rather than accede to Mr Trump's demands that he hijack the procedural transfer of power on January 6th 2021 and declare him the winner, Mr Pence certified Joe Biden's victory. A crowd of Trump supporters descended on the Capitol, some intending to lynch the vice-president. "Mike Pence didn't have the courage to do what should have been done," Mr Trump tweeted from the White House, mid-riot.

And yet, even afterwards, something servile remained about Mr Pence. His memoir, titled "So Help Me God" markets itself as "the most robust defence of the Trump record of anyone who served in the ▸▸

administration." His announcement video criticised Mr Biden at length, but was silent on Mr Trump. Mr Pence hopes his actions on January 6th will endear him to the Trump-sceptical minority of the party; and that his subsequent refusal to say bad words about Mr Trump will endear him to MAGA devotees. He may find that in fact he appeals to neither camp.

Mr Christie is in a similar bind. After his first presidential bid failed in 2016, he was the first candidate to endorse Mr Trump, lending valuable credibility to the New York mogul. Mr Christie earned himself the reward of several high-profile advisory jobs. But in September 2020 he became critically ill with covid-19 after attending a reception at the White House that turned out to be a superspreader event. Mr Trump called him in intensive care to ask that he not tell reporters where he was infected; Mr Christie did so anyway.

It was the beginning of the end of a beautiful friendship. Like many Republicans who served under Mr Trump, Mr Christie experienced public pangs of conscience after January 6th, blaming the president's rhetoric for the violence. But unlike the ever-polite Mr Pence, Mr Christie will probably seek to escape his awkward past by going on the attack.

The former New Jersey governor was seen as astoundingly pugnacious for a would-be president—up until Mr Trump arrived and broke the scale. Having scored one of the more memorable debate demolitions in recent memory (in 2016 he made Marco Rubio, a Florida senator, look like a broken automaton), Mr Christie may be one of the few men who can stand up, rhetorically and physically, to Mr Trump on a debate stage. At an event announcing his candidacy this week, Mr Christie castigated his former boss in unusually direct terms as "a bitter, angry man". Other contenders have calculated that assaulting Mr Trump head on is a suicidal strategy; Mr Christie may stand out by doing so.

As for the front-runner, Mr Trump has been relatively welcoming to new challengers. Each of them fractures the field a little more and makes an upset a little harder to achieve. Instead of attacking the president head-on, some candidates are hoping to first bulldoze Ron DeSantis, the Florida governor and current runner-up in the polls, before confronting their biggest obstacle. (Mr DeSantis does appear to be an easy mark for Mr Christie's talents.) All long-shot candidates tend to dream of a breakthrough debate performance or of surprising strength in Iowa after a Stakhanovite feat of campaigning. But at least one of those paths may be harder than usual to pursue. Rather than deal with the mass of candidates chasing him at the first televised primary debate, to be held in August, Mr Trump may elect to skip it altogether. ■

Georgia

Slim pickings

PEACH COUNTY

The Peach State has no peach crop this year

On a Monday in March Robert Dickey went to bed feeling sick to his stomach. After a few tropical weeks the temperature was dropping, and when it got numbingly cold, he knew that his thousand acres of blooming peach trees would be icy by morning.

This year 90% of Georgia's peach crop was destroyed by the freeze—an unusually balmy winter meant trees blossomed early, only for spring frosts to kill the flowers. The trio of orchards in middle Georgia, that grow 95% of the state's peaches, typically ship more than 150m peaches to grocery stores. This summer trees are bare and no commercial trucks are being packed. The last time the farmers lost an entire crop was in 1955.

Though the peach is a fussy plant to begin with—a characteristic that awards successful growers prestige in husbandry circles—climate change is giving farmers conniptions. In order to bear fruit, peach trees need 600 to 1,000 "chill hours" a year, when temperatures drop below 45°F (7°C). But winter averages have been climbing in Georgia and since 2016 crisp nights have become rare.

Horticulturists are experimenting with spraying early buds with insulating goo to shield them from spring freezes and farmers are planting varieties that require less cold. Switching to pecans and strawberries (both far less temperamental crops) and chopping down timber helps growers get by.

You might expect such a devastating harvest to bode badly for Georgia's economy. In fact, the Peach State has a perplexingly small market for stone fruit. Cotton, peanuts and corn each bring in far more revenue. (Peaches generated $34m in 2022; cotton $1.4bn.) Nor is Georgia the main domestic supplier of peaches. Last year California dominated the market and South Carolina took second place. Why, then, does the fruit loom so large in the state's identity?

Before the Civil War peaches grew wild on plantations and roadsides. On the eve of Reconstruction, with slavery scrapped and the Southern economy in shambles, businessmen were looking to rebrand themselves to attract Northern investment. Cotton-growing stank of the Confederacy, but peaches were sweet. Soon Georgians took to growing them. Since spring came earlier down South, farmers could get fruit to the New York market before others, and buyers paid a premium for that. Yankee investors got hooked on the yellow, meaty Elberta variety, newly bred in Georgia, and by the 1920s refrigerated railcars hauled fruit north. Newspapers declared that "queen peach" had "dethroned king cotton".

As a cultural marketing ploy the peach was a hit, says Tom Okie, a historian at Kennesaw State University. By the 1950s images of the fuzzy fruit were on licence plates, peach festivals drew crowds and men called women they fancied "Georgia peaches". The fruit symbolised a progressive, sophisticated and economically open new South.

The peach harvest was always unpredictable, but as demand grew it became harder to promise stock to merchants. Farmers in the milder California valley offered more consistency. Profits in the Southeast fell. According to farm records, in 1885 Georgia farmers sold peaches for $15 a bushel. Though that is nearly $500 in today's dollars, farmers claim they now struggle to charge $15.

Pam Knox, a climatologist at the University of Georgia, says that orchards should be fuller next summer, since an El Niño cool phase is headed to the Southeast. But farmers see every year as a gamble, with the odds getting a tad worse each play. The occasional bumper crop fuels addiction. "A year like this makes me want to double down," says Lawton Pearson, a fifth-generation peach farmer who vows to never walk away. "That's the drug, that next year will be better."

A rare sight

University rankings

Columbia opts out

WASHINGTON, DC

The Ivy League departure could signal a turning-point in college rankings

On June 6th Columbia University announced that it will no longer co-operate with *US News & World Report*'s undergraduate rankings. It is the first top-notch institution to do so. Might its departure be the start of a mass exodus?

Columbia's decision follows a rankings scandal last year. In February 2022 one of Columbia's own maths professors, Michael Thaddeus, accused the college of fudging its data in several areas. The university later admitted to having used "outdated and/or incorrect methodologies".

US News began ranking America's top universities in 1983, and has released its findings annually since 1988. In the 1980s prospective students started to expand their college search beyond their local area, and it was hard to learn about universities and compare them, says Michael Sauder, a professor of sociology at the University of Iowa. "*US News* filled an information gap at that time," he adds.

Colleges have gone to great lengths to move up in the ratings. Richard Freeland, Northeastern University's former president, capped class sizes and hired faculty to improve its spot; it moved from 127th in 2003 to 44th this year. Others went too far. A dean at Temple University's business school was sentenced to prison and was ordered to pay a $250,000 fine after being convicted of fraud in relation to artificially inflating his programme's rankings.

The ranking system used to seem unstoppable. Universities have tried to ditch it before, only to find that doing so can backfire badly. *US News* still ranks non-participating universities, using publicly available information, and the data often do not go in their favour. Reed College, a liberal-arts college, stopped taking part in 1995. It tumbled from the top quartile to the bottom. Columbia did not submit data for this year's analysis, citing concerns about Dr Thaddeus's claims, and its ranking fell from second in 2021-22 (tied with Harvard University and Massachusetts Institute of Technology) to 18th in 2022-23 (tied with the University of Notre Dame).

Recently the mood has begun to change, however, especially among graduate schools. In 2022, 17 medical schools and 62 law schools did not submit data to *US News*. Yale and Harvard were the first leading law schools to leave, in November. By the release of the rankings, of the 15 highest-ranked law schools, only the University of Chicago submitted data. Some undergraduate schools have already opted out this year (Rhode Island School of Design, Colorado College, Stillman College), but none are as prestigious as Columbia.

Its departure could give others cover for the decision to leave. Meanwhile another pillar of undergraduate education is under threat: standardised testing. Many universities made the SAT and ACT optional because of covid-19, then extended the policy beyond the pandemic's end. In March Columbia became the first Ivy League university to dump the tests entirely.

In May *US News* announced changes to its rankings methodology. It is moving away from metrics that rely on reputation (such as alumni giving scores) and towards student outcomes (such as graduating people from different backgrounds). One way or another, the rankings—and universities more broadly—are in flux. ■

State versus local

Pre-emptive strikes

WASHINGTON, DC

Southern Republicans step up their attempts to control city governments

Conservative dogma once taught that local government reigned supreme. Those closest to constituents were best equipped to govern them, the argument went. Today, however, Republicans espouse a Goldilocks principle of government, says Bennett Sandlin, the head of the Texas Municipal League, an advocacy group. "The federal government is big and bad, cities are small and bad, and somehow state government gets it just right."

In the latest legislative session Republican statehouses have sought to bolster state power and undercut the role of cities in local politics. Two sweeping new bills that illustrate this shift await governors' signatures in Texas and Florida. The Texas Regulatory Consistency Act bars municipal governments from enacting policy that goes beyond state law in eight areas: agriculture, business and commerce, finance, insurance, labour, natural resources, occupations and property. Any local laws that currently do, such as tenant and worker protections, will be voided.

Florida's new legislation will also chill city lawmaking. Local Ordinances—as the bill is, misleadingly, called—authorises businesses to sue municipal governments over any law they deem "arbitrary or unreasonable". While a speedy "rocket-docket" court deliberates the case, in most circumstances the government will have to suspend the rule in question. And if the challenger wins, the city must repeal it. Last year Ron DeSantis, Florida's governor, vetoed a previous version of the bill, arguing that it would lead to an onslaught of costly litigation. But legislators and business lobbyists think they have a better shot of securing his signature this time, as Mr DeSantis cultivates his conservative credentials in his push for the presidency.

Such gutting of local authority—called "super-pre-emption" by academics and "death-star pre-emption" by progressives—is new. But for decades state politicians of all stripes have chipped away at specific local ordinances to retain consistency across jurisdictions. A dozen or so years ago the nature of pre-emption started to change, as Republicans weaponised these powers to kill progressive initiatives in big cities, says Richard Briffault of Co- ▸▸

No, you can't do that

lumbia Law School. Plastic-bag bans, gun controls, paid sick-leave mandates and minimum-wage rises were axed.

More recently pre-emption bills have started to proliferate, many targeting LGBTQ folk, progressive prosecutors and abortion-seekers. According to non-profit groups, there were 140 in 2017. That number grew to 475 in 2021 and over 1,000 in 2022. Midway through this year's legislative season the tally was already 650.

The assault is driven in part by changing demography in the South. In recent years Democratic cities in Republican states have been flooded by new residents. Texas and Florida stand out. In the year to July 2022 seven of America's ten fastest-growing big cities were in these two states. That feeds a nasty political tension.

State Republicans in both Texas and Florida emerged mightier from last year's midterm elections. But many metropolitan areas leaned further left. Last month a Democrat clinched an upset win to become mayor of Jacksonville, Florida's largest city. Republican state politicians see liberal cities as a threat. Urban hubs generate large shares of state GDP, and economic power tends to beget political influence.

In some states, rather than merely blunting local authority, lawmakers are stepping in directly. In April Tate Reeves, Mississippi's Republican governor, signed two bills that, respectively, increase the number of state cops patrolling the streets of Jackson, the state capital, and create a new state-run court district in the city. The NAACP, a civil-rights group, sued, alleging that the laws violate the 14th Amendment by imposing a "separate and unequal" justice system on the city's mostly black residents. "They are looking to colonise Jackson," the mayor told the Associated Press.

Legislators in Georgia, meanwhile, have passed a law authorising a state commission to remove locally elected district attorneys from their posts. (Some suspect this will allow the state to punish Fani Willis, Fulton County's chief prosecutor, for going after Donald Trump.) And on the national stage, in March Congress struck down a bill passed by the council of Washington, DC, for the first time in three decades. Andrew Clyde, a Republican from Georgia who proposed the scrapping, wants to dissolve the DC mayor's office.

Some new laws could get tied up in court if critics claim they breach state constitutions. But, says Courtnee Melton-Fant of the University of Memphis, since local governments were granted no powers by the founding fathers, states are well within their rights to designate authority as they see fit. With super-pre-emption laws on the books, many cities and towns will struggle to function as laboratories of democracy. They risk becoming forums of frustration instead. ■

Environmental lawsuits

Hiking and suing

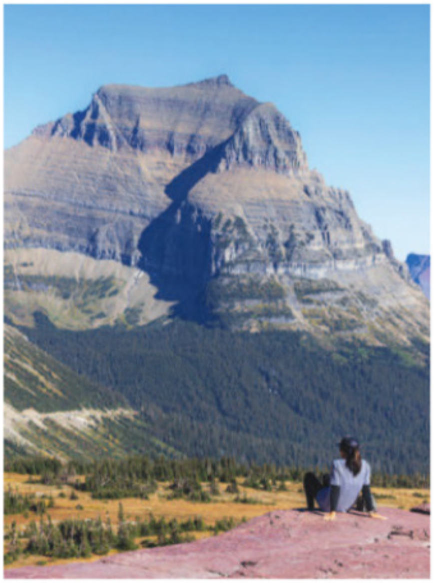
HELENA, MONTANA

Where liberals uphold the constitution and conservatives rewrite it

MAE NAN ELLINGSON was a widowed 24-year-old graduate student when she was elected to be a delegate to Montana's constitutional convention. She was from Texas but her late husband had taken her back to his home state. They spent their honeymoon car-camping through Montana, snowshoeing in Glacier Park. When Ms Ellingson co-wrote the constitution's preamble in 1972, she put the state's natural assets at the very top. The people of Montana are "grateful to God for the quiet beauty of our state, the grandeur of our mountains, the vastness of our rolling plains".

Montanans dress as though a hike may present itself at any moment, and indeed one might. Mountains envelop the freeway. Pickup trucks park on the shoulders of I-90 while their drivers fish the Clark Fork river. Their relationship with the outdoors is codified in the state's constitution. The legislature is tasked with ensuring that the state "maintain and improve a clean and healthful environment...for present and future generations". Pointing to this document, a group of 16 youth plaintiffs are taking the government to court on June 12th, arguing that, by favouring fossil fuels over renewables, the state's energy policies have violated their constitutional right.

One spokesperson for the state's top prosecutor has called this case, *Held v State of Montana*, a "show trial"; another accused Our Children's Trust, the non-profit firm



Helena beat

behind it, of "exploiting" children. When the suit was filed in 2020, the plaintiffs ranged in age from two to 18. One of the older plaintiffs, Grace Gibson-Snyder, is a sixth-generation Montanan. She talks of the wildfire smoke that has kept her from backpacking and the glaciers that she has seen melt over the years.

Nationally, Democrats generally wish to amend constitutions and Republicans to preserve them. In Montana, it is the other way round. When Ms Ellingson and her fellow delegates travelled to Helena in 1972, it was a heady time for social and environmental radicalism. Four other state constitutions were redrafted to guarantee environmental rights during the period between 1965 and 1980.

Montana's legislators can change the constitution by approving amendments with a two-thirds vote, then securing the majority of the electorate. But the legislature put no such amendments forward this session, opting instead to pass laws that its own legal researchers flagged for not conforming to the constitution. For example, Montana grants citizens an explicit right to privacy. The state's Supreme Court has interpreted it to mean that abortions are protected. Nevertheless Republican legislators passed multiple bills restricting access to the procedure, including one that in effect created a 15-week abortion ban (it was temporarily blocked by a judge).

"I call it trying to amend the constitution from the bottom up," says Evan Barrett, the former head of Montana's Democratic party. "You force statutory change and you hope nobody challenges it." Steve Fitzpatrick, the state Senate majority leader, rejects allegations of a backhanded amendment strategy. But the document, he concedes, "reflects its times", and "obviously we've gotten more conservative over the years."

The result is a lot of lawsuits: over 20 laws passed in the last legislative session were challenged on constitutional grounds, according to a database from the Montana Free Press. Raph Graybill, a lawyer in Helena whose grandfather was president of the 1972 convention, estimates that "about half the work I do is constitutional challenges." He represents Planned Parenthood, which has challenged at least four abortion-related laws this session. He says the barrage has stressed the court system, which "is not set up to just routinely be assessing constitutionality of laws".

In March the legislature dissolved the energy policy at the core of the *Held* case, a move some said was designed to derail the trial. The judge said that it could proceed, but narrowed the scope of the lawsuit. The plaintiffs are seeking declaratory relief, asking the judge to weigh in on the constitutionality of the state's policies. No more, and no less, than words on a page. ■

Southern Baptists

The Big Uneasy

HATTIESBURG, MISSISSIPPI

Getting ready for a row over women at the annual meeting in New Orleans

As the pastor of a small church in a small city, Jennifer Brown is warm and solicitous. But at the mention of Mother's Day she turns exasperated: she hates it. For years, in the Southern Baptist churches in which she was raised, it was the only time that she was permitted to take the pulpit. Even then it was called a "reflection", not a sermon, and a male pastor would introduce her, signalling that he authorised her presence there.

Among Southern Baptists, preaching to both sexes is a man's job. When Beth Moore, an evangelical celebrity, tweeted in 2019 that she would be leading a Mother's Day service, she added, wryly, "please don't tell anyone". She was amazed at the uproar that followed. Vilified, she stopped calling herself a Southern Baptist two years later.

The Southern Baptist Convention (SBC), America's largest Protestant denomination with 13.2m adherents, which begins its annual meeting on June 13th in New Orleans, has long treated women as subordinate to men. "Complementarianism"—the idea that men and women occupy distinct but equal roles, with men exercising spiritual authority—is the preferred term. Women can be Bible teachers, not preachers, and instruct only other women or children. "I thrive under my husband's headship," says Erin Wheeler, a Bible teacher and pastor's wife in Fayetteville, Arkansas. "There's no oppression in it."

Things were not always so doctrinaire. By the mid-1980s, 200 women had been ordained as pastors. A confab in 1978 to identify job opportunities for women in the church had a distinctly "feminist feeling", reported a Baptist newspaper. But a year later conservatives commandeered the leadership of the SBC, and began to purge women from seminaries. In 1998 the SBC amended its statement of faith to affirm that a wife should "submit herself graciously" to her husband. In 2000 it said that only men can be pastors. Churches that disagreed were hounded out.

Ms Brown's story illustrates that fraught history. Her mother had attended the SBC's flagship seminary in Louisville and served as ordained clergy. By the time Ms Brown felt her own pastoral calling, it was clear that her career would be made outside the denomination. The progressive, LGBT-affirming church that she now leads, University Baptist in Hattiesburg, Mississippi, left the SBC years ago. Mozella Conville, a congregant of 44 years, notes with pride that it was the first Southern Baptist church in Hattiesburg to desegregate and that the people in the pews were just fine with ordaining female pastors: it "didn't mean a thing" to them.

Complements all round

The Baptist confession of faith is a guideline, not a mandate; local autonomy is central to the religious tradition. Some churches continued ordaining women discreetly and calling them associate or youth pastors. Now the fight has flared up again. In February the SBC expelled five churches over the issue. Among them was Saddleback, a megachurch in California (the second-largest in the denomination) founded by Rick Warren, one of the most prominent evangelicals and the closest approximation to a modern-day Billy Graham. He plans to contest Saddleback's ouster at the gathering in New Orleans.

Ultra-conservatives are girding themselves for a fight. They want to amend the convention's constitution to bar women from serving as a "pastor of any kind", not just the top job. What seems like an abstruse row reveals a big, symbolic one about liberal creep. "Once a denomination has female pastors, it's usually just a matter of time until they ordain homosexual pastors," warn the leaders of the effort.

All this is a distraction from the SBC's real problems. In recent years hundreds of sexual-abuse allegations have surfaced, implicating pastors directly and in the cover-up. And ever more people are leaving the faith. In 2012 there were three baptisms for every congregant who quit. Last year the SBC lost two-and-a-half members for every baptism. Ultra-conservatives think doctrinal purity will restore the denomination's strength. In truth that dynamic—where decline spurs fundamentalism—looks self-reinforcing.

Courtney Reissig, who designs the Sunday-school curriculum at a Southern Baptist church in Little Rock, Arkansas, sees hypocrisy among some pastors who fixate on the question of whether women can do the job. She agrees that would be unbiblical. But then she whips out her Bible and reads from the First Epistle to Timothy, which exhorts church leaders to be self-controlled, above reproach and soberminded. There are male pastors, she tuts, who are "disobeying scripture too". ■

He/His

Latin American growth

A land of useless workers

Why are Latin Americans so strikingly unproductive?

For half a century economies in Latin America have disappointed policymakers. For just as long, wonks have invented slogans to describe the source of the region's abysmal growth. First economists lamented a "lost decade" in the 1980s, during which a chain of fiscal crises sent 16 governments in the region into default. The 1990s were spent in the "middle-income trap", in which, the theory goes, the tricky leap from low- to high-tech industry stops countries from developing fully. Even when, in the late 2000s, commodity prices picked up, muttering began about the "resource curse", which strikes when energy and mining bonanzas discourage investment in manufacturing.

In 1962 Latin America's income per person was three times that of East Asia. By 2012 both regions had the same level. By 2022 East Asia's was roughly 40% higher than Latin America's (see chart 1 on next page). When the differences in purchasing power are taken into account, Latin Americans' GDP per person has been stuck at little more than a quarter of that of their neighbours in the United States for the last three decades. According to the World Bank, between 2010 and 2020 Latin America was the world's slowest-growing regional economy.

Now things are set to get even worse. Growth is expected to be 1.9% in 2023 and stay below 2% for 2024, compared with over 4% on average in other emerging markets. The World Bank also predicts that Latin America will remain at the bottom of the pack in terms of economic growth per person until 2030. The pandemic hit Latin America hard: it had the highest number of excess deaths of any region between March 2020 and October 2021. Since then, economic recovery has stalled.

Why are Latin American economies in such bad shape? The region is not short of workers, one reason often given for a sluggish economy. Latin America's population growth has been among the strongest in the world. Some of the places with the slowest-growing economies, such as Brazil and Mexico, have had the biggest population spurts. Over the past 30 years the working age population of the region has more than doubled. The ratio of workers to dependents continues to rise and is not expected to peak until 2030. By contrast China hit its peak in 2011.

Instead, the problem appears to be that those workers are not terribly productive. Economists find productivity fiendishly difficult to measure, but most of their attempts show Latin America lacking. The World Bank's effort places Latin American workers as the second-least productive in the world, behind the Middle East. Mexico is consistently the least productive in the OECD, a club mostly of rich countries. Annual productivity growth in the region has languished between 0.2% and 0.5% since 2000, according to the World Bank. By contrast East Asia's productivity has increased by more than 2% every year.

Weak investment is one possible cause of low productivity. If policymakers and firms do not plough capital into new technology, infrastructure and education, workers lag behind their competitors. Latin America invests the equivalent of just 20% of its regional GDP, compared with 25% of GDP for the average emerging market. Yet even in countries where investment has been high, GDP is still languishing. Mexico's annual domestic investment is worth 22% of its GDP. Between 2017 and 2021 it attracted annual foreign direct investment worth on average another 2.8% ▸▸

of GDP. Even so, at the end of this period its economy was no larger than it was at the start (the pandemic did not help).

In any case the IMF thinks that blaming investment for slow growth mixes up cause with effect. According to its analysis, it is Latin America's low growth that has caused its low investment. Domestic investment relies on household savings, which the region's workers have relatively little of due to their low wages. And foreign capital is scarce because investors think putting their money elsewhere will yield a better return.

Instead, several long-term trends contribute to Latin America's productivity problem. One is education. Before covid-19 Latin American 15-year-olds were, on average, three years behind their peers in the OECD on science, maths and English tests. This gap is likely to be worse now: according to UNICEF, the UN's children's fund, schools in Latin America and the Caribbean had some of the longest lockdowns, remaining fully closed for 158 days from March 2020 to February 2021, compared with the global average of 95 days.

Working 9 to when?

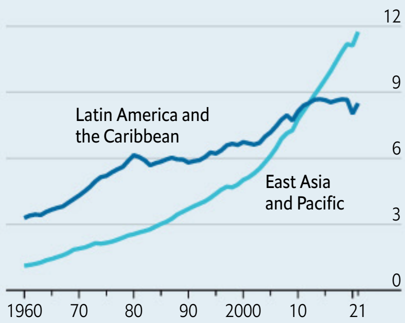
Options are limited for those wanting the best education, as the region has few world-class universities. The OECD reckons less than half of Latin Americans have the ability to perform basic tasks with a computer. That is likely to send firms which are looking for cheaper IT workers to Asia and Africa instead. American tech companies recruiting from Guatemala and Chile complained at a summit last year that they could not find workers to fill the jobs they were offering.

A second problem is that the region has lots of oligopolies. In Chile the 50 biggest firms account for more than 70% of GDP. In Colombia state-owned conglomerates account for 25% of the revenue of the largest 100 businesses. Latin American firms enjoy bigger markups than those in the rest of the OECD. Governments make the problem worse, often cordoning off industries from potential new entrants or pushing up costs with red tape. In the absence of disruption, which takes away pressure to innovate, old, unproductive firms survive. Over the last three decades Latin American countries have, on average, got far less diverse in terms of what they produce, with exports coming from less-productive industries, according to Shannon O'Neil, of the Council on Foreign Relations, an American think-tank. Competition laws are scarce, while corruption does not help. In too many parts of the region dodgy deals between businesses and governments are allowed to thrive.

The biggest problem, however, is a huge informal sector. In Brazil and Peru more than half the potential workforce is employed informally. In Bolivia the proportion is 82%, according to the International Labour Organisation. By one estimate Latin America has the fastest-growing shadow economy in the world, in terms of GDP per person. Informal workers are less productive. To fly under the radar, firms stay small. That means they cannot scale up production, which would lower their costs. The financial system also takes a hit when lots of value is tied up with informal firms and workers that do not use conventional banks. Credit creation is stifled, meaning fewer firms get loans.

A bang and a whimper

GDP per person, $'000, 2015 prices



Source: World Bank

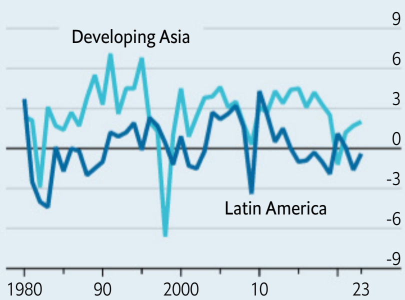
Informality shows that an economy is sick, but "it is not the disease", says Santiago Levy, a fellow at the Brookings Institute, a think-tank. Much like slow growth, illegal economies do not get big by themselves. In much of the region the high costs of hiring people—in the form of bureaucracy, social-security contributions and minimum wages—put off small- and medium-sized businesses from employing people formally. In some places, such as Argentina, strict labour laws make it nearly impossible to fire employees. According to the World Bank the minimum wage in Colombia is higher than in most OECD countries, relative to median income levels.

Corruption within formal sectors—as when a customs official asks for a bribe, or a police officer turns a blind eye to criminality—also lowers the cost of going into the informal sector. Women, who owing to traditional gender norms often look after the children alongside work, tend to favour the flexibility and quick turnover of these jobs (see next story).

A measurement of lives

Labour productivity per person employed

% change on a year earlier



Source: The Conference Board

Mr Levy, who used to be the chief economist of the Inter-American Development Bank, a regional outfit, also thinks that the structure of some welfare states, such as Brazil's Bolsa Família, can make operating informally more attractive. These offer health care to informal workers, which may be considered better value than that available to people in full-time employment. They also do not require firms to pay employee health contributions.

Tackling most of these problems is unpalatable for politicians. Around 300m people across the continent have come to rely on social-spending handouts for their income, health care or their children's education. The risk of losing their votes will prevent any drastic changes being made to these policies anytime soon. Meanwhile clamping down on oligopolies could potentially jeopardise a source of political-campaign finance. Making industries more competitive would also squeeze profits. Progress on education is likely to be slow, not least as the region has several powerful teachers' unions.

Money for nothing

Latin America needs an economic-policy rethink. As the United States detangles an ever-expanding list of industries and technologies from China, its southern neighbours risk being cut off, too. Most of President Joe Biden's industrial-policy bonanza will go on bringing industry back home. But what few prizes the region, particularly Mexico, stands to gain from "friend-shoring" or from China's re-opening are at risk if Latin America cannot find workers and innovative firms to fill demand.

The green transition holds a similar combination of promise and peril. On the one hand, Latin America's riches of copper, rare-earth minerals and lithium have sparked interest from multinationals. The trick will be getting these big companies to convert their interest from the region's resources to its industries. Latin American governments want to force companies that come for their minerals to refine them in the region, and then build batteries and electric vehicles there.

But doing so will require shrewd policymaking and a better business environment to make companies stay. A smaller informal sector and more competition would go a long way towards achieving that goal. If they do not grasp these opportunities now, policymakers are at risk of ushering in a new decade of sluggish growth—and yet another slogan to describe it. ■

Latin America's mothers

All the single ladies, and their kids

BOGOTÁ AND RIO DE JANEIRO

Helping single mothers enter the formal workforce could boost productivity

WHEN VANESSA, a 22-year-old, finished school her goal was to get a job and move out of the *favelas* of Rio de Janeiro. Those plans were derailed three years ago when she got pregnant. Vanessa and her boyfriend broke up soon after and she found herself raising her daughter alone. She has found it tricky to get a full-time job without child care. For now, she runs a beauty salon from her front room.

In Latin America and the Caribbean stories like Vanessa's are common. Some 11% of households are led by a single parent, almost always a mother, according to estimates by the UN. That is above the global average of 8% (see chart). Even in sub-Saharan Africa—which does worse on other indicators, such as poverty and access to contraception—single-parent households make up 10% of the total. On average almost a third of Latin American women can expect to have a baby before the age of 20.

The preponderance of single mothers is a reflection of how Latin America is stuck in a developmental limbo. No country within the region falls within the World Bank's definition of low-income. Female enrolment in secondary school is near 100%. Despite being home to a third of the world's Roman Catholics, attitudes to sex can be liberal in parts of the region. Asked how justifiable it is to have sex before marriage, around a fifth of respondents in Argentina, Brazil and Chile say it is "always justifiable", according to the World Values Survey, a poll. Just 5% of people say the same in Ethiopia and Nigeria.

Even so, religious attitudes still shape access to contraception in parts of the region. Over 80% of women of reproductive age in Latin America live in countries where the Centre for Reproductive Rights, an advocacy group, describes abortion laws as "restrictive". In some countries sex education focuses on abstinence. *Machismo* does not help. Diana Rodríguez Franco, secretary for women's affairs in the mayor's office in Bogotá, the capital of Colombia, describes a common pattern there: "A woman has a child, she is abandoned by the father, she has another child with another man, she is abandoned again."

The latest data from the World Bank suggest 78% of single mothers in Latin America and the Caribbean are in the workforce, either working or actively looking for work, above the average of 73% for all adults. Yet the unemployment rate among single mothers, at 9.2%, is higher than for any other group, including single childless women and single fathers. Even when they do find jobs, lone mothers earn far less than other adults. Often the only work that offers the flexibility required to juggle child care is in the informal sector.

This has wider effects on the economy. The UN reckons that because women's labour-force participation rate is lower, the gender gap will drag GDP per person down 14% in Latin America and the Caribbean between 2020 and 2050. According to the World Bank's Human Capital Index, which measures expected productivity based on health and education, a girl born today in Brazil will accumulate more human capital by the age of 18 than a boy. Girls are more likely to finish school and less likely to get involved in gangs. But assuming nothing much changes in Brazilian society, this girl will not put that talent to use. Accounting for current labour-force participation rates, a woman in the labour market will probably put a third of her talent to use, while a man would utilise two-fifths.

Governments are trying to address the problem. Argentina, Colombia and Mexico have decriminalised abortion in recent years. Cash-transfer programmes target poor women. During the pandemic Brazil's government offered single mothers double benefits. In Bogotá the mayor's office has built 18 *manzanas del cuidado*, or "care blocks", where women can get free vocational training, sexual-health services and help applying for government support.

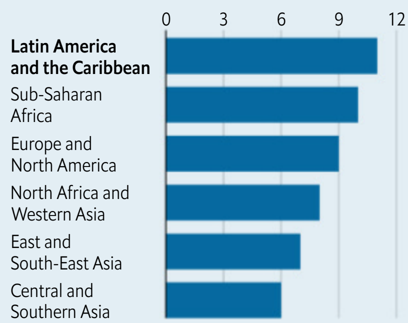
More could be done. In many countries the law obliges fathers to pay child support. But enforcement is weak, says Laura Cuesta at Rutgers University in New Jersey. The share of single-mother households receiving child support ranges from 15% in Guatemala to 50% in Chile. Franco Parisi, who ran in Chile's presidential election in 2021, did not campaign in the country. One local difficulty was a judicial order against him for 207m pesos ($260,000) in child support owed to his ex-wife. (His lawyer denied the allegations, but Mr Parisi later reached an out-of-court settlement.) Even so, Mr Parisi still won 13% of the vote.

Single mothers have to lean on their family for support, instead. Fully 43% of Peruvian mothers live with at least one other adult who is not their spouse or partner. Until governments and fathers start to provide support, *abuelas* (grandmothers) will have to fill the gap. ■

Independent women

Single-parent households*, % of total

2018



Source: UN Women *No data for Oceania

Soft(ware) power

India’s digital Belt and Road Initiative

MUMBAI

Narendra Modi wants to export his country’s digital public infrastructure

Narendra Modi aspires to turn India into a *vishwaguru*, or “teacher to the world”. But what pedagogical gift, beyond its prime minister’s sage-like appearance, does a rapidly growing and ambitious India have for other countries?

Technological prowess, is the Modi government’s answer. In a little over a decade India has built a collection of public-facing digital platforms that have transformed its citizens’ lives. Once known as the “India Stack”, they have been rebranded “digital public infrastructure” (DPI) as the number and ambition of the platforms have grown. It is this DPI that India hopes to export—and in the process build its economy and influence. Think of it as India’s low-cost, software-based version of China’s infrastructure-led Belt and Road Initiative. “The benefits of digital transformation should not be confined to a small part of the human race,” said Mr Modi at the G20 summit in Indonesia last year.

DPI involves a triad of identity, payments and data management. It started with the aptly named Aadhaar, or “foundation”, a biometric digital-identity system rolled out under the former Congress-led government in 2010, which now covers nearly all of India’s 1.4bn people. Next came the Unified Payments Interface (UPI), which makes digital payment as easy as sending a text or scanning a QR code. Launched in 2016, the platform accounted for 73% of all non-cash retail payments in India in the year to March. The third DPI pillar involves data management. Using their 12-digit Aadhaar number, Indians can access online documents whose authenticity is guaranteed by the government. This system, called Digilocker, is connected to tax documents, vaccine certificates and more. To make payments, verify her identity and get access to crucial documents, an Indian can rely on her phone.

For the affluent, such innovations are convenient. For millions of others they are transformative. Vendors of everything from coconuts to jewellery can now accept digital payments. This has made their lives easier, more profitable and secure. The hundreds of millions in India’s welfare system receive “direct benefit transfers” straight to their Aadhaar-linked bank accounts, which has slashed corruption. The IMF thinks the government thereby saved 2.2trn rupees ($34bn), or 1.1% of GDP, between 2013 and March 2021. The system also helps disburse emergency funds, such as during the pandemic.

Several other digital platforms have recently been launched or soon will be. The Open Network for Digital Commerce is a newish government-backed non-profit dedicated to helping e-commerce services work together. The idea is to help millions of small businesses connect to third-party payments and logistics providers. Sahamati, an NGO, is setting up a platform to allow “account aggregators” to enable individuals to share financial information in a standardised format with, for instance, lenders. It hopes this will mitigate the need for the forests-worth of documents applying for a loan in India entails.

The digital ecosystem behind these developments is complex. Its members include government agencies, regulators, tech firms, quasi-public corporations, NGOs and universities, all building different parts of the digital edifice. Aadhaar is run by the government; UPI is managed by a public-private venture, the National Payments Corporation of India (NPCI). Other platforms, such as for health and sanitation management, are created by NGOs and sold to state and local governments. Many have been designed by IT experts with private-sector experience.

India wants to coax other developing countries to follow its example. It views this as a way to push its claim to lead the developing world. Partly to that end, India invited 125 such countries to a "Voice of the Global South Summit" in Delhi in January. "I firmly believe that countries of the global south have a lot to learn from each other's development," Mr Modi told their delegates, offering DPI as an example.

The Indian sales pitch is attractive. Starting without legacy systems such as credit cards and desktop computers, developing countries can leapfrog the West. The digital prize, as India has shown, is a means to accelerate connectedness, social-service provision, growth prospects and, ultimately, the building of a state and civic identity. Significant investment is required. But, as India's example also suggests, it is likely to be cost-effective. And it need not require the massive splurge on 4G networks that India's biggest private company, Reliance Industries, has conducted.

India is promoting its digital offer through its year-long leadership of the G20. At the club's meetings, delegates are hammering out a definition of DPI. India is also trying to launch a multilateral funding body to push DPI globally. It hopes to unveil both at a G20 leaders' summit in September, marking the end of its presidency.

India's claims for its technology have been widely endorsed. "The key idea behind DPI is not digitalisation of specific public services," reads a recent IMF paper. "But rather building minimal digital building blocks that can be used modularly...to enable society-wide transformation." Central to that vision is the notion of private innovators and firms accessing and adding to the infrastructure, as they do in India. DPI is "infrastructure that can enable not just government transactions and welfare but also private innovation and competition," says C.V. Madhukar of Co-Develop, a fund recently launched to help countries interested in building DPI pool resources.

An emerging cohort of Indian organisations is dedicated to exporting the technology. NPCI International, a subsidiary of the NPCI, was set up in 2020 to deploy India's payments systems abroad. The International Institute of Information Technology, a university in Bangalore, launched the Modular Open Source Identity Platform (MOSIP) in 2018 to offer a publicly accessible version of Aadhaar-like technology to other countries. The Philippines was the first to sign up; 76m of its 110m people have been issued with digital IDs using MOSIP's technology, says its boss, S. Rajagopalan. Morocco conducted a trial of the technology in 2021 and has made it available to 7m of its 36m people. Other countries using or piloting MOSIP include Ethiopia, Guinea, Sierra Leone, Sri Lanka and Togo.

Such countries can customise whatever bits of DPI they want. Morocco already had a database of fingerprints, which MOSIP's platform had to be integrated with. "We are not going to tell countries: 'Here is a health system, here is a payment system.' What we are trying to do is get them to build their own systems with building blocks which are interoperable," says Mr Rajagopalan.

India is offering its technologies and platforms for free. Yet it stands to gain in many ways from propagating them. Indian IT firms can expect bumper development and maintenance contracts. And just as Europe's influence on global technology has been boosted by its regulatory power, so India's will grow if many countries adopt Indian-made digital systems.

India everywhere

Some hope that influence might one day extend to an Indian alternative to the Western-run global financial plumbing, which includes clearing systems in New York and the SWIFT messaging system upon which thousands of banks rely for cross-border transfers. America's weaponisation of this system after Russia's invasion of Ukraine last year, which included sanctioning most Russian banks, spooked governments from Brasília to Beijing. The exit of Western payments systems such as Visa and MasterCard from Russia was less extreme, but also disruptive. In the event of a future crisis, domestic payments systems based on UPI could be insulated; they would be harder for American sanctions to target.

For Aadhaar's eyes only

Cross-border linkages of such systems could bypass America's financial architecture. In February NPCI connected UPI with Singapore's digital payments systems, PayNow. In April it did the same with the United Arab Emirates' system. Indians should, in theory, now be able to use UPI in shops and restaurants in Dubai. "India is self-sufficient on the domestic payments. We would like to be self-sufficient on cross-border payments and remittances as well," says Dilip Asbe, NPCI's boss.

That is a distant prospect. For now, the main benefit to India may be in boosting its prestige. "India usually wants something from outside. Now we have something others may want," says an Indian participant in the G20 meetings. "That is quite powerful when it comes to foreign policy." By promoting its technology as a means to transform poor countries, India hopes to position itself as a neutral third force between what it sees as the transactional West and an authoritarian China.

There are risks to that. India's reputation as a country full of software engineers is especially strong among developing countries. Bulelani Jili, a Harvard academic who studies technology in Africa, recalls a Kenyan official gushing about India's institutes of technology. Yet DPI technology can be unreliable. Aadhaar has performed poorly in places with bad internet connections or where manual workers have worn finger pads. The system also suffers security breaches. Experts say it is very easy to access it with false credentials or spoof fingerprints. India's technology offer, says one analyst, includes a lot of "hot air".

Such problems could lead India's projection of digital power to backfire—especially, some argue, because there is uncertainty in Africa and elsewhere about its intentions. "India has not done enough on the continent for people to have formed judgments," says Mr Jili. In that context the Modi government's continuing assault on pluralism and democratic institutions could be a turn-off. For that matter, DPI's success in India is not without controversy. The government does not let UPI apps charge a fee to consumers or businesses, giving the system an edge over rivals such as Visa and MasterCard. Though Aadhaar was supposed to be optional, it is hard to function without it. India's technology could in such ways be tainted by the *vishwaguru*'s growing authoritarianism.

Yet trust and state efficiency are relative qualities. India's reputation is much better in the global south than America's or China's. And its digital technology, even if glitchy, is a huge improvement on the largely analogue states operating in most developing countries. India's digital progress is proof of that. It seems likely that many poor countries will want to emulate it, to their advantage—and India's too. ■

Myanmar's civil war

With the armed resistance

KAYIN STATE

A wretched civil conflict appears to have reached a stalemate

In thick jungle, in southern Myanmar, two soldiers cover a freshly dug pit with tree trunks. The floor of the emerging air-raid shelter, which will fit a dozen people, is already covered with rattan mats. Such makeshift defences are dotted about this hideout of Myanmar's National Unity Government (NUG), whose forces are battling the ruling junta. The camp is the headquarters of the NUG's Southern Command, one of three command posts established as part of a broad effort to reorganise the scattered Burmese resistance. *The Economist* spent several days inside NUG-controlled Myanmar assessing its progress.

The country has a long history of insurgency. Ethnically based militias have been fighting its government, dominated by the majority Bamar group, for decades. But the resistance sparked by an army takeover in 2021 is on a different scale. Armed dissident groups have mushroomed across the country, including for the first time in the Bamar heartland. There are estimated to be over 300 of these People's Defence Forces (PDFs), with more than 65,000 fighters. Most are affiliated with the NUG, which was launched by members of the parliament elected in 2020, and also includes ethnic and civil-society leaders.

More than 30,000 people are estimated to have been killed and 2m displaced in two years of fighting between the army and these militias. The opposition is estimated to control up to half Myanmar's territory, though most towns are in junta hands. Some think the conflict could escalate, due to the NUG's effort to turn the PDFs and its ethnic allies into a more coherent force.

Organising the PDFs has taken longer than expected, admits Ko Bate, an NUG official in the jungle camp. The PDFs are poorly co-ordinated and equipped; only 30% of their forces are thought to have guns. But, claims Mr Bate, a former senior civil servant, in charge of finance, logistics and supplies for the southern sector, around 80% are now organised into battalions, with names like Lion, Cobra and Unicorn.

Despite sending a delegation to Europe and America, the NUG has failed to win foreign recognition or support. To feed and equip its troops, it relies on crowdfunding. Last year it ran a digital lottery and set up a digital-wallet app, NUGpay, to solicit donations. It also "sells" the rights to property belonging to the coup leader, General Min Aung Hlaing, and shares in future developments on army-controlled land.

The NUG's munitions are similarly jerry-rigged. Saw Min is part of "Federal Wings", a unit refitting drones to drop homemade rockets. A former civil engineer and Singapore resident, he says he has given his life savings to the cause: "All that matters is to get the army out of politics." On his phone he has a video of a drone blowing up an army truck. On the next frame is a picture of a tiny baby, his first-born, whom he has not yet met.

Despite their lack of firepower, the PDFs and their ethnic allies have killed 15,000 troops, estimates Anthony Davis, a security analyst who studies the conflict. (NUG estimates are much higher.) That is not enough to threaten an army of 170,000. But it is driving the junta to arm veterans and convicts. Even wives and children of military personnel are receiving basic training.

Unable to move large convoys without being ambushed, the army is attacking from the air. "After an engagement with our troops they drop bombs indiscriminately," claims U. Yarma, an NUG intelligence chief. Nearly 200 people were killed on April 11th in an aerial attack on villagers in Sagaing, in central Myanmar. They had gathered for the opening of an NUG administrative office. The UN says such air strikes might constitute war crimes. NUG officials say the junta has killed 13,000 people, including PDF fighters and civilians.

Though the NUG and allied forces are currently restricted to guerrilla tactics, their leaders suggest a more sustained assault is coming. "In the near future the whole country will be inflamed by war," predicts an NUG commander. It seems a bit unlikely. The NUG looks unready to launch a conventional attack. For now, the junta is too unpopular to control the countryside, yet too powerful to yield the towns. And so the country's wretched, extensive but mostly low-level conflict will endure. ■

Indian railways

After the crash

DELHI

India's massive rail network has a decent safety record overall

It was around 7pm on June 2nd when a train travelling from Kolkata in West Bengal to Chennai, 1,700km down India's east coast, smashed at full speed into a parked freight train in the state of Odisha, 250km south of Kolkata. The passenger train's coaches were derailed and collided with the rear coaches of another train travelling in the opposite direction.

The trains were carrying around 2,000 people, many of them migrants from West Bengal off to seek work in the richer south. At least 288 were killed and more than 1,100 injured, many of them gravely.

The cause of the accident, the deadliest on India's railways since 1999, when at least 290 people died in a train collision in West Bengal, was still unclear. An initial report pointed to a signal failure, but experts suggested that would not normally lead to such a calamity. The railways minister has hinted that equipment was tampered with and ordered a criminal probe.

Notwithstanding this disaster, rail travel is not especially dangerous in India, where some 20m people take a train every day. Of the roughly 25,000 who died in train-related accidents every year before the pandemic (a number that had changed little in a decade), most were run over or fell from trains. A tiny minority died in derailments or collisions. And the number of such serious incidents is decreasing. By contrast, some 300,000 people are estimated to die on India's roads each year. ▸▸

Heart-rending and rare

Even so, the tragedy in Odisha is potentially embarrassing for the government of Narendra Modi, given its great emphasis on developing India's railways and roads. This year it plans to spend the equivalent of 1.7% of GDP on them, more than four times as much as India was spending a decade ago, and around double the proportion spent by most developed countries. Mr Modi had been due to inaugurate a new high-speed Vande Bharat service the day after the disaster. Instead he visited the crash site, where he, too, promised to find the culprit: "Whoever is found guilty will be punished severely".

Despite the railways' reasonable safety record, the crash is likely to exacerbate claims that, in its push for new tracks and faster trains, his government is neglecting upgrades to existing tracks and equipment. Last year an audit of derailments by India's comptroller-general found railway officials had not spent the budget set aside for track repairs, even though it had declined. A special fund to pay for safety improvements was not adequately replenished in any year between 2017 and 2022. Two days after the collision in Odisha, a new bridge being built over the Ganges in the northern state of Bihar collapsed for the second time in just over a year, killing nobody but casting doubt on the quality of flagship construction projects.

The government denies that it is skimping on safety. It notes that it has accelerated the elimination of dangerous level-crossings, particularly on lines where trains travel at higher speeds, and begun the roll-out of an anti-collision system on some trains. In the wake of the tragedy in Odisha, it vowed to install additional security features on signalling equipment. ■

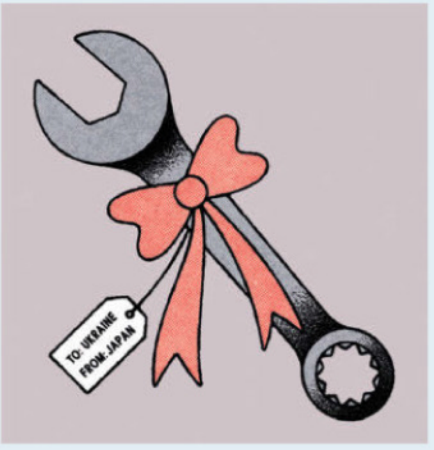
Banyan Lessons in Asian resilience

Ukraine looks to Japan's expertise in rebuilding after disasters and war

Kobe, in western Japan, is best known for its marbled beef. But feasting on the delicacy was not what brought Igor Korkhovyi to town last month. At an auditorium in the city centre, he and a group of other officials from Ukraine tucked into a day of meetings and lectures. "We should learn from your experience," he told the region's governor.

Japan's armed forces, which have not fired a shot in combat since 1945, have little to teach Ukraine's battle-hardened warriors. Yet Japan has plenty of useful lessons to impart when it comes to weathering disasters and rebuilding in their wake. The second world war devastated many Japanese cities, including Tokyo. While visiting for the G7 summit last month, Volodymyr Zelensky, Ukraine's president, remarked on the resemblance between the "ruins of our cities" and the pictures he saw of Hiroshima after the atomic bombing. Natural hazards, from earthquakes to typhoons to floods, are also common in Japan. The north-eastern region of Tohoku suffered from an earthquake, tsunami and nuclear meltdown in 2011. Much of the country's disaster-management system traces back to the experience of Kobe's devastating earthquake in 1995. "Out of some successes and many failures, we learned some lessons," explains Matsunaga Hideki of the Japan International Co-operation Agency (JICA), Japan's overseas-development body.

For Ukrainians, Japan is therefore a study in resilience. "Japan is a country living in permanent recovery," says Mr Korkhovyi of Ukraine's Ministry for Communities, Territories and Infrastructure Development. "How have they made this miracle? How can that approach be used or modified in Ukraine?" Sergiy Korsunsky, Ukraine's ambassador to



Japan, recently published a book in Ukrainian called "How Nations are Reborn: The Experience of East Asia", which explores those questions, studying the experiences of China, Japan, South Korea and Vietnam.

Three lessons stand out. The first involves prioritising people during reconstruction—infrastructure is worthless unless communities return to use it. The second is the importance of seizing the opportunity inherent in a blank slate. "Don't rebuild the old, build anew," says Mr Korsunsky. Thinking ahead is also essential. "What's important is not just money—you have to plan," he concludes. Ukraine should start that now. "When the war is finished, we'll have no time for planning—everything has to be done in parallel," Mr Korkhovyi says.

Ukrainian leaders would still prefer arms to urban plans. But Japanese law bars sending lethal aid (though some in Japan's ruling party want to change that). So the government has focused on the financial and humanitarian sort. According to the Kiel Institute for the World Economy, a German think-tank, Japan's total assistance to Ukraine comes to $6.7bn. As a share of GDP, that is a third of what America and Britain have given; but it is far more than other Asian democracies that have aligned themselves with Ukraine, such as Australia and South Korea.

Study tours like the trip JICA arranged for Mr Korkhovyi and other officials from across Ukraine are part of the package. Mr Korkhovyi marvelled at Japan's underground electrical substations. "If Ukraine had such substations in big cities, we'd avoid disruptions from drone attacks on critical infrastructure," he mused. He also asked his hosts for copies of Japanese regulations related to the disposal of rubble from buildings destroyed by earthquakes, which could be applied to those flattened by bombs. Serhii Koreniev, the deputy mayor of Mykolaiv, a city in Ukraine's south that struggled to provide fresh water after shelling disrupted its pipe network, found much to praise in the water management of Kobe. It constructed an innovative system of water pipes and reservoirs after suffering similar disruptions during the earthquake.

Such measures could indirectly help Ukraine fend off attacks and the environmental crises they can trigger, such as the flooding caused by the destruction of a dam in the country's south this week. They will also be essential after the fighting ends. Ukraine will have to live with constant risk—in the form of its threatening neighbour. That will mean building cities and fostering communities that are ready for the worst—a bitter lesson Japan had to learn. As Valentyna Poliakova of Ukraine's State Agency for Restoration and Infrastructure Development puts it: "We need to think of Russia as a natural disaster, like they do a tsunami or earthquake in Japan."

Climate change

A new Great Wall

SHANTOU

China is acutely vulnerable to rising sea levels. Its leaders are betting on new barriers to protect big cities

CHINA'S COMMUNIST PARTY likes to think it is good at long-term planning. A glance along the country's coastline might suggest that it is. More than 40 years ago Deng Xiaoping, the late paramount leader, started letting coastal cities dabble in free-market policies and attract foreign investment. Now the gleaming skyscrapers and bustling ports of Guangzhou, Shenzhen and Shanghai are at the heart of global supply chains. Locals' wealth has increased a hundredfold. Immigrants from poorer inland areas have flocked to cities by the sea.

Yet, although Deng knew that the sea could bring wealth to coastal cities, he and his successors appear not to have planned for the fact that, within a century, rising sea levels could bring serious problems. This represents a greater threat to China than to most countries. By 2100 43m-57m Chinese people could find themselves living below the high-tide line, with an additional 60m threatened by annual coastal floods, according to projections by scientists at Climate Central, an American NGO. By 2050 some 32trn yuan ($4.5trn) of GDP (about 10% of China's predicted total) could be vulnerable to coastal flooding in a "plausible worst-case" scenario where greenhouse-gas emissions stay high, according to a report by scientists from Britain's Committee on Climate Change and China's Expert Panel on Climate Change.

Different areas of sea around the world warm up and expand at different rates, so sea levels rise faster in some places than others. China is unfortunate in this regard. According to a sobering report released in April by China's Ministry of Natural Resources, the country's coastal sea levels have been rising by an average of 4mm per year since 1993, compared with a global average rise of 3.4mm. In 2022 sea levels on China's coasts rose 10mm.

China's position in the western Pacific also exposes its southern and eastern coasts to about a dozen typhoons a year. These are set to get more severe as the oceans warm. Higher sea levels will only amplify the storm surges experienced when the typhoons come ashore.

Development since Deng's reforms has made things worse. Half of China's coastal wetlands and mangrove forests—natural shields against floods—have been destroyed. Cities have pumped unsustainable amounts of groundwater out of the earth and built heavy skyscrapers. The resultant subsidence has caused the land in some cities to sink towards the sea even faster than the sea rises. Parts of Shenzhen are falling by 74mm a year. Tianjin, in the north, faces a similar challenge.

Rising seas are already causing pro- ▸▸

→ Also in this section

blems. Parts of China's coast have retreated by dozens of metres, damaging buildings and infrastructure. Seawater is seeping into farmland, its salt spoiling crops and threatening drinking water.

The biggest danger is flooding. Here, China's record is mixed. The number of people dying from floods has fallen, thanks to better emergency warnings and faster evacuation. But the economic damage from floods is increasing, and few people are well prepared.

Last year floods in the coastal provinces of Guangdong, Guangxi and Fujian caused $5bn of damage, of which just 6% was insured, according to Munich Re, an insurance company. When rescue efforts are botched, officials resort to cover-ups. In 2021, after rainfall devastated the central city of Zhengzhou, foreign media covering the floods were harassed and the scale of the damage hidden.

China's government has rejected some international estimates of sea-level rise, like that of Climate Central. It has also, unhelpfully, warned environmental NGOs away from studying its coasts, citing security concerns. In 2021 one group trying to monitor marine pollution was accused of collecting data for foreign spies.

But some parts of the central government are demanding action. The report from April said coastal cities should include sea-level-rise projections in urban planning and prepare for the possible impact. Important economic regions, it said, should set out migration blueprints based on worst-case scenarios.

It is not clear how worried officials on the coasts are about such risks. Some of the most reckless sorts of development have slowed. Now better protected, wetlands and mangrove forests are growing again in some areas. Land reclamations, which added over 7,500 sq km of low-lying coastal land between 1985 and 2010, are approved less often. Groundwater is better managed.

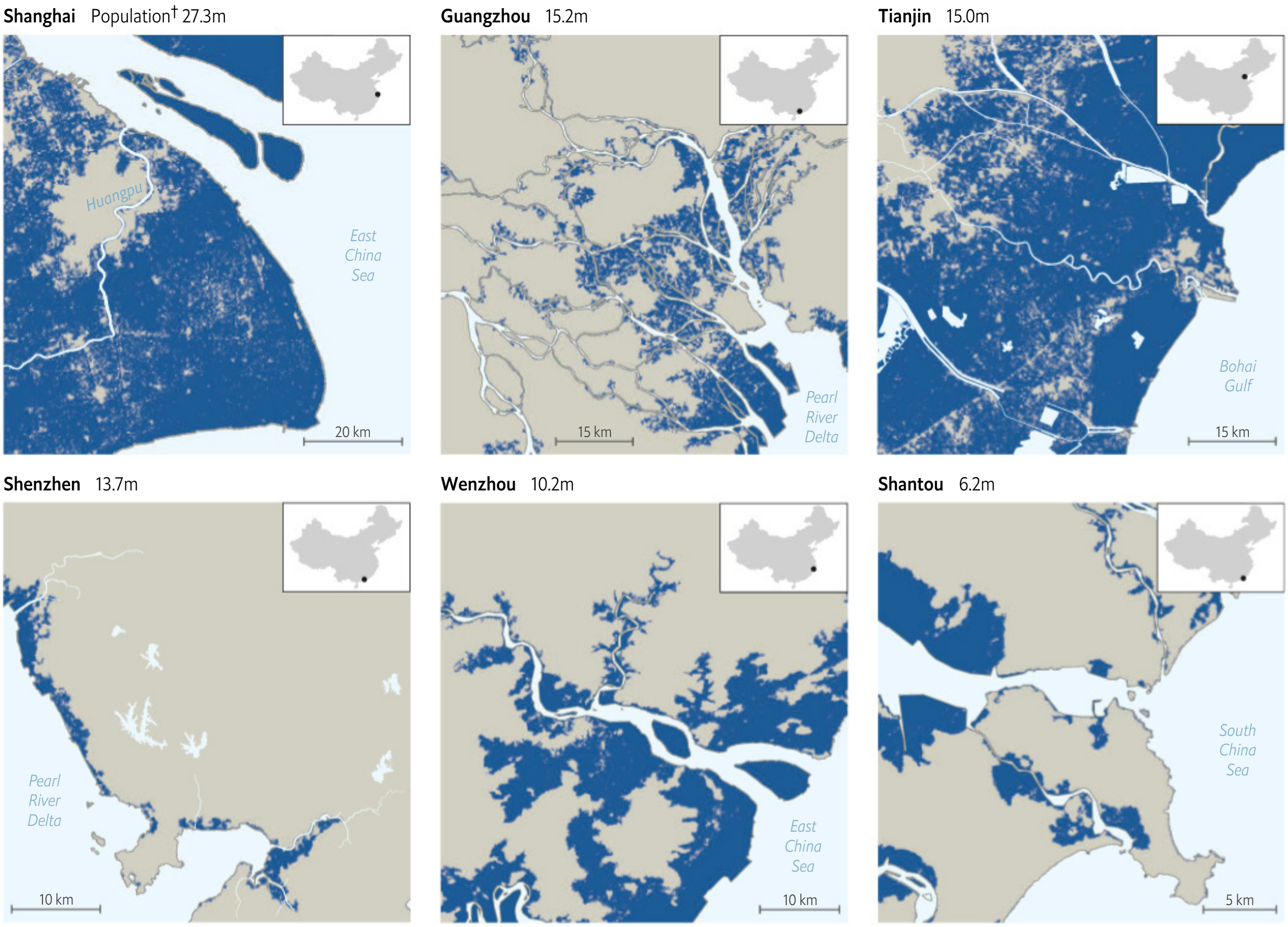
Coastal land, though, is China's most valuable. Officials would prefer to continue building on it. Giant construction projects are ongoing all along the coastline. In Shantou, a port city on the south coast known for its fierce typhoons, a 22,000-seat stadium was recently completed beside the sea. It is surrounded by construction sites which will become industrial parks and residential buildings.

Officials are betting on sea walls to protect such assets. China has thousands of kilometres of them. Smaller cities are supposed to have walls resilient to one-in-100-year floods—those which historically had a 1% chance of occurring in a given year. Big cities are supposed to have one-in-200-year flood protection. Shanghai is unusual in building one-in-1,000-year protection for its central districts. In the Netherlands, for comparison, planners demand one-in-10,000-year standards for coastal cities.

But around half of the sea walls in China are shoddy, according to a government report. Even those that do meet official standards may not last long. A report in 2019 by the UN's Intergovernmental Panel on Climate Change predicted that one-in-100-year floods could occur every year by 2050, owing to sea-level rise.

This all means that massive sea-wall construction can be expected in the coming decades, says Scott Moore of the University of Pennsylvania. Some 430km is

Projected coastal flooding in 2050, based on estimates of sea-level rise, storm surges and high tides*



Sources: Climate Central; Haver Analytics

*Assuming no sea walls or other protections. Based on current emissions trajectory SSP3-7.0 †2022 estimate under construction already. But a new Great Wall on the sea will have downsides. Upgrading sea walls will become more expensive, as costs rise sharply with height. And the risk of failure increases as sea-level rise accelerates. Higher sea walls create illusions of safety that lead to more construction. "You may be setting yourself up for failure and…setting people up for real danger later on," says Mr Moore.

More ambitious engineering works are another option, says Sun Laixiang of the University of Maryland. He has suggested that Shanghai build a tidal barrier across the Huangpu river, similar to the Thames barrier in London. Officials have been discussing the idea for decades. But the Thames barrier was undertaken only after disastrous floods. Mr Sun worries that China might not act until catastrophe strikes. "If we do not take action, if we wait, we may feel great regret," he says.

In Shantou people know all about the dangers of the sea. In 1969 over 500 soldiers and university students drowned when a dyke collapsed during a storm. They were trying to protect farmland which had been reclaimed from the water. Cigarettes and alcohol are still left as gifts for the dead at a shrine to their memory.

Flood defences failed again in 2013, killing ten people. Earlier this year the city government admitted in a report that its defences were incomplete. Locals do not seem worried, though. Many view sea-level rise as a distant danger. Houses, they say, can just be built higher to leave space for storm waters. One shop-owner recalled how quickly the local economy recovered after the last big floods. She said she was confident that the government had a plan.

It is not hard to see where this confidence comes from. Shantou's GDP per person has grown by 430% in the past two decades. Photos in a local museum show before-and-after images of the city since the launch of Deng Xiaoping's reforms. Swathes of wetland and muddy fields morph into high-rise blocks and factories. The exhibition uses an apt Chinese idiom to describe these great changes: "The blue sea turned into mulberry fields." The danger is that few seem to believe that this process could be reversed. ■

Genetic data

Precious bodily fluids

BEIJING

China's guarding of human genetic data is a drag on scientific research

A TEAM OF Chinese-led scientists made international headlines in May with newly published research that showed a surprising result. The Ice Age humans who crossed what is now the Bering Strait and populated North America had origins not only in Siberia, as previously known, but also in coastal China. The work of the team, which included Italian researchers, involved the collection and analysis of 100,000 genetic samples covering modern populations from nearly all of Eurasia, and more than 15,000 ancient samples.

It is the kind of painstaking collaborative work that pushes the boundaries of knowledge. But it is also the kind of work that has become increasingly hard to do in China, or in co-operation with Chinese scientists. In recent years the country has, for the most part, tightened its regulations on the sharing of "human genetic resources" (HGR) with foreign entities.

China's rules, updated on June 1st, cover not only organs, tissue and bodily fluids but also data based on such material. Permission must be obtained through a byzantine application process before any export abroad or any sharing with foreign-controlled entities within China.

Dr Yu-Chun Li, the lead author of the study on Ice Age migration, says the required approvals did not take long and the rules did not impede her team's research. But many other scientists, Chinese and foreign, say they are having a harder time.

The regulatory regime imposes a heavy burden on multinational pharmaceutical firms and stifles international collaboration on biomedical research. Foreign companies conducting clinical trials in China have had to recruit dedicated HGR compliance teams in order to keep from running afoul of the rules. Violations can lead to both administrative and criminal punishment. "It creates this chilling effect," says a person in the drug industry.

There have been no publicised cases of criminal penalties since the earliest regulations were introduced in 1998. But numerous entities have been disciplined, ranging from AstraZeneca, a global pharmaceutical giant, to Huashan Hospital in Shanghai, one of China's most prestigious.

Many governments regulate the collection and use of genetic data and material, mainly out of concern for standards of informed consent and patient privacy. "But China takes it to the extreme. They view it as a very valuable resource," says Lester Ross of WilmerHale, a law firm.

The updates do loosen restrictions in some areas. Katherine Wang of Ropes & Gray, another law firm, sees the simplification of review and approval procedures as a positive development. Clinical information, medical imaging and metabolic data, previously regulated as HGR data, now fall outside the government's definition. The state has also clarified its definition of a "foreign entity", which had been vague.

But some of those affected by the rules are disappointed that the science ministry remains in charge of enforcing them. Many expected the updates to shift responsibility to the national health authority, which, it was hoped, would be more sensitive to the needs of researchers. The new rules also strengthen the link between the HGR regime and national-security laws.

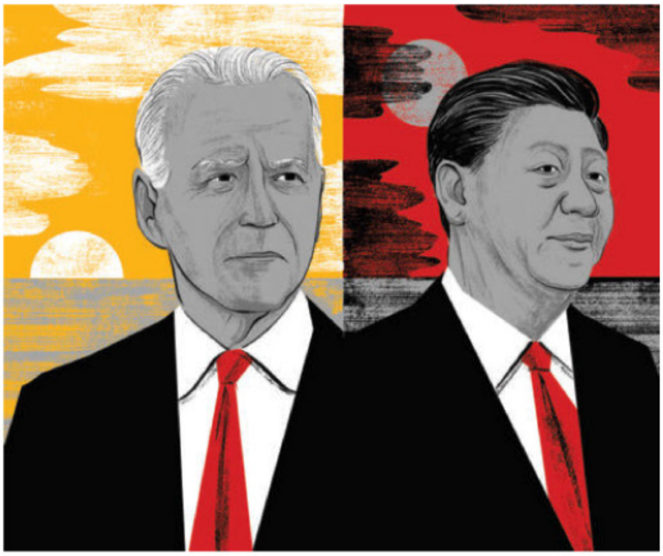
Rao Yi of Peking University believes the impulse to restrict the sharing of genetic resources arose decades ago among people who did not understand the science and believed genetic material could be used to design bioweapons targeted at Chinese people. But it is the Chinese public that stands to lose from the dearth of Chinese samples made available to scientists elsewhere. Nearly 90% of the data used for worldwide genetic research comes from sources in the West, notes Mr Rao, meaning most studies focus on disease-associated mutations in those populations.

For years Xi Jinping, China's leader, has made reference to what he calls "the red gene". This metaphorical bit of revolutionary DNA, he has said, can be passed from generation to generation and "penetrate into the blood" of the Chinese masses. When it comes to the real-world genetic material of China's people, his government seems to hold similarly strong views about where it may or may not be passed. ■

Keep out of foreign hands

Chaguan | The West drops naivety about China

A new China debate pits optimists against fatalists



Among western democratic governments, this is a moment of unhappy clarity about China. Their bleak consensus follows years of naivety and wilful self-delusion about the nature of Xi Jinping's regime. A changed mood—one of shared, durable gloom—was on display at the latest Stockholm China Forum. This is a gathering of American and European officials, scholars and business types that Chaguan has attended, on and off, since 2008 (Chinese diplomats and scholars attend some sessions).

The war in Ukraine hung over the latest forum, jointly hosted by Sweden's foreign ministry and the German Marshall Fund, a think-tank. There was no happy talk about China being an ideal peace-broker, as some European leaders had suggested in the early months of the conflict. Instead, participants talked of Chinese envoys touring European capitals to recommend that Ukraine lay down its arms and sue for peace, while casting Vladimir Putin as a ruler acting in self-defence. One speaker called China's "collusion" with Russia an "electroshock" for Western governments. China is expected to play a role in the conflict's end-game and in post-war reconstruction, not least because Ukraine's government wants Mr Xi at the table. But there was shared horror in Stockholm at any notion of China helping to design a future security architecture for Europe. That distrust is born of hearing Chinese officials blaming the NATO defence alliance for war in Ukraine, and promoting a world order in which individual countries seek security via shifting, values-free calculations of their interests.

There is transatlantic convergence, too, about the need to de-risk commercial ties with China. That is an ugly term for an idea with usefully broad appeal. American, European and other Western governments and businesses want to avoid excessive dependencies on Chinese suppliers of critical commodities and products, and to ensure that exchanges with China are consistent with their "interests, values and security concerns", to quote Sweden's prime minister, Ulf Kristersson, in on-the-record remarks that opened the forum.

Chinese officials, backed by some foreign business bosses, accuse Western governments of planning wholesale economic decoupling, a ruinously disruptive and costly outcome. In truth, talk of decoupling is a straw man. On each shore of the Atlantic, insiders say, there is agreement that perhaps two-thirds of trade with China involves no strategic implications, and should be encouraged. At the same time, governments are aligned on the need to scrutinise a few sectors and deals much more closely. Europeans are warier than Americans about export controls to stop China building advanced weapons or tools of repression with Western technologies. But most Western capitals are in lockstep on the need for new, defensive tools against Chinese economic coercion.

Foreign businessmen and officials share notes about Mr Xi's ever-sterner emphasis on security. A new counter-espionage law could make it perilous to collect soil samples to check for toxic residues before building an expensive new factory in China, the forum heard, or dangerous to obtain data about weather patterns in the Taiwan Strait before investing in a coastal wind farm.

Western governments face shared challenges to their domestic politics as China becomes dominant in such sectors as electric vehicles. While China has every right to compete in industries of the future, the forum was invited to contemplate the politics of a world in which millions of car-plant workers blame Chinese imports, backed by vast state subsidies, for taking their jobs. German car companies, which once made huge profits in China, now face a fight to survive in that country's market, a speaker reported.

Yet if the West is now united in anxiety about China, a different divide could be heard in this gathering of transatlantic officials and scholars. Under President Joe Biden, America leads a camp of optimists which hopes that with enough political will, economic resources, military might and diplomatic skill, the West can outcompete China. A second camp is much more fatalistic.

The groupings have fuzzy boundaries. Some European countries, such as France, share the Biden administration's faith in industrial policies to protect manufacturing jobs. But France's president, Emmanuel Macron, is called "deeply pessimistic" about geopolitics by those who have briefed him about China. Though Mr Macron does not dispute dark assessments of Mr Xi's regime, he has little confidence that America can be relied on as a security partner, especially after its presidential election in 2024. That fatalism helps to explain why Mr Macron delighted his Chinese hosts earlier this year by suggesting, in an interview with *Les Echos* on his plane home, that Europe should beware of being dragged by America into clashes in Asia, including over Taiwan.

Other countries fret about rising protectionism, and worry about Mr Biden unleashing subsidy contests that leave all players worse off. But some of the same governments argue that the war in Ukraine has proved, once again, that America is the West's indispensable security partner. In return for American support in Europe, they urge the EU to see security and political interests in the fate of Taiwan and the Indo-Pacific.

Divide and rule

Chinese leaders detect the confidence gap, and try to widen it. A Chinese speaker at this month's Shangri-La Dialogue, an Asian security forum, told Europeans the "best thing" they could offer Asia was to stay away and "do nothing". A similar logic underpins the growing risks taken by Chinese warships and fighter jets, as they intercept American and allied naval vessels and planes in international skies and seas near China. The aim is not to win friends, but to make America's partners take fright so that they urge Mr Biden to back down. Mr Xi's assertive words and deeds leave ever less room for Western naivety. But if foreign credulity is replaced with despair, China will take that for a win. ■

Botswana

Carats and sticks

GABORONE

One of Africa's success stories is looking ever less exceptional. Wrangling over its diamond deal with De Beers shows why

In 1966 BOTSWANA's future looked grim. On the eve of its independence from Britain the country had 12km of paved roads, a hundred secondary-school graduates and a GDP per person that was half the average in sub-Saharan Africa. Today it has the highest average income on the African mainland, save for the odd petrostate. And it has always been a democracy.

This success would have been impossible without diamonds. In 1967 De Beers, which then had a near-monopoly of global production and today remains the largest miner by value, discovered what would become Orapa, the world's biggest open-pit diamond mine. Whereas such windfalls have been squandered across Africa, Botswana's first few leaders forged a productive partnership with the firm. They used the proceeds from diamond mining to keep public debt low and create rainy-day funds, all the while improving health care, education and infrastructure.

But Mokgweetsi Masisi, Botswana's current president, is questioning the relationship ahead of a deadline of June 30th to renew ties. "Clearly, our agreement with De Beers is very limiting for us and we must either get a better deal or walk away completely. We must refuse to be enslaved," he told a rally of the ruling Botswana Democratic Party last month. The rhetoric partly reflects campaigning ahead of next year's elections and partly a common desire among African states to get more from their raw commodities. But it alarms those worried that Botswana is becoming more volatile, nationalist and populist—no longer such a rare gem.

Between Botswana and De Beers there are multiple deals. Each party owns half of Debswana, which mines 95% of the diamonds in Botswana, the second biggest producer after Russia. The Diamond Trading Company Botswana, which sorts the offtake, is also evenly split. A quarter of the rough stones go to the state-owned Okavango Diamond Corporation (ODC), which sells its share at auction. The government also owns 15% of De Beers. If you add taxes, royalties and dividends, around 80 cents out of every dollar Debswana earns in Botswana goes to the state, estimates the firm. Diamonds account for over 80% of exports and roughly a third of GDP.

Though he has never put forward detailed complaints, Mr Masisi argues that Botswana still gets stiffed. He wants more than a quarter of the rough stones to go to ODC. He also thinks Botswana should do more of the "downstream" business, such as cutting and polishing.

To that end, he said in March his government would buy a 24% stake in HB Antwerp, a Belgium-based diamond firm, a move that is being watched by other African governments keen to move beyond the exporting of raw commodities. At a new facility in Gaborone, Botswana's capital, HB says it will soon cut diamonds produced by Lucara, a Canadian miner known for big stones. The plan is for the firm to start doing the same for ODC's diamonds.

Yet the proposal has caused consternation. Neither the cost nor the terms of the deal have been publicly revealed. Even ▸▸

technocrats in the finance ministry are unsure of the details. Western governments worry that any tie-up would bring Mr Masisi closer to Felix Tshisekedi, the Congolese president, who is close to another of HB's co-founders and who runs a country not known for wise management of resources.

Whether HB might one day be part of a genuine alternative to De Beers is unclear. Botswana has long pledged to do more "beneficiation" but has never put in place the right policies, argues Sheila Khama, formerly of De Beers. A landlocked country of 2.6m people with no real domestic market for diamonds is at an inherent disadvantage compared with places specialising in specific parts of the value chain. The Indian city of Surat has more people employed in the diamond industry than there are formal workers in Botswana.

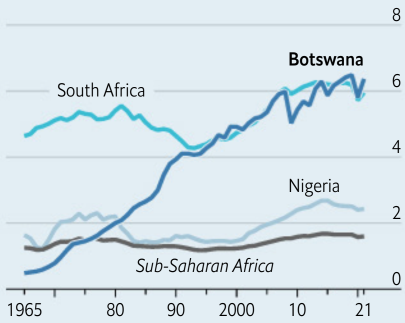
De Beers argues it has tried to help develop downstream industries, for instance by bringing its global sales meetings to the country since 2013. It believes, as does HB, that new technology will make it more cost-effective to do more manufacturing in Botswana, especially if tracing technology makes it easier to prove the origins of diamonds, since consumers may be happy to pay more for traceable Botswanan stones than those from war-mongering Russia. De Beers says that last year around $1bn of its $6bn-worth of rough-diamond sales globally were to 31 Botswana-based cutting and polishing factories.

Mr Masisi's language worries Botswana's Western champions. He also has protectionist instincts. He banned the import of some vegetables from South Africa and he has limited foreign ownership of businesses in certain sectors. He says he has a "wonderful relationship" with Emmerson Mnangagwa, Zimbabwe's ruthless president. Journalists talk of intimidation.

Then there is the feud between Ian Khama, the former president, and his handpicked successor, Mr Masisi. The former accuses the current president of having "the character of a typical dictator". Mr Khama says he has been the target of three attempted poisonings. The Botswanan authorities have accused Mr Khama of trying to launch a coup; those charges have been dropped but Mr Khama, who lives in exile in Johannesburg, is wanted in Gaborone on firearms and other charges. He says he is committed to "regime change" at the next election. Each man seems determined to bring down the other, no matter the damage to Botswana's reputation.

Most analysts would bet a few carats on Botswana and De Beers cutting a deal. Both sides have few alternatives. Botswana is De Beers's largest source of supply. Other miners may not offer better terms. One of De Beers's rivals, Alrosa, is under American sanctions and therefore an unattractive partner, given that American consumers

Shine bright like a diamond
GDP per person, $'000, 2015 prices



Source: World Bank

purchase about half of all finished-diamonds. One might describe the relationship between Botswana and De Beers as one of mutually assured production.

As technology that makes it possible to trace the origin of every stone improves, Botswana has a big opportunity. A relatively stable African country, where the proceeds are still largely well spent, it can pitch its diamonds to consumers worried about buying Russian stones or funding warlords. Yet to command a premium, it has to keep the sparkle in its own brand. ■

Senegal

A beacon of stability flares up

DAKAR

Senegal's reputation for democracy and stability is increasingly undeserved

THE STREETS OF Dakar, the capital of Senegal, usually mix the chatter of busy traders, the aroma of grilled meat and the occasional glimpse of the sparkling Atlantic Ocean. Yet recently smoke from burnt-out buses darkens the view, the stench of tear-gas stings the eyes and chatter has been replaced by the crash of rocks into riot shields, the thud of baton on flesh, and the boom of police weapons. Witnesses say security forces have used live ammunition. "We are living a nightmare," says Alioune Tine of Afrikajom Centre, a think-tank in Dakar.

At least 23 people have been killed across the country since violence erupted on June 1st, says Amnesty International, a rights group, making the protests the bloodiest in decades. Some 400 have been injured. The government sent the army onto the streets and detained more than 500 people (including one hauled away from a television interview by a balaclava-clad gendarme.) It first blocked social media and messaging apps, then shut down almost all mobile internet in the capital.

The trouble began when a court sentenced Ousmane Sonko, a leading opposition figure, to two years in prison for "corruption of youth," defined as immoral behaviour with someone under the age of 21. The victim is Adji Sarr, a masseuse who was 20 at the time. Mr Sonko was acquitted of charges of raping her and making death threats. Still, the sentence almost certainly rules him out of the presidential poll next February. Mr Sonko decries the case as politically motivated, says the investigation was riddled with malpractice, and refused to attend the trial. Many protesters also believe that President Macky Sall wants to run for a constitution-bending third term.

Senegal has long enjoyed a reputation as a beacon of stability and democracy in a region beset by coups and overstaying presidents. This has made it a favoured partner of the West. France maintains hundreds of soldiers in Dakar, while Spain has patrol boats there to stop migrants in *pirogues* setting off for the Canary Islands (part of Spain and thus the EU). Several American presidents have visited to laud and reward a stable African democracy.

Yet Senegal has been losing its sheen. In early 2021, when Mr Sonko was first accused of rape, protests flared. Some 14 people were killed, 12 of them shot dead by the security forces. Opposition figures have been arrested for fuzzy crimes such as "insulting state institutions". Senegal's ranking in press freedom has plummeted from 47th in 2020 to 104th, says Reporters Without Borders, an international watchdog. The latest heavy-handed response to protests is not a surprising blip but a sharp plunge in an ongoing descent.

Mr Sonko is a populist former tax inspector who denounces corruption among the elite and rails against the influence of France, the former colonial power. Though Mr Sall has presided over robust growth, many of Mr Sonko's supporters feel left out and battered by inflation. And he is not the first opposition leader to run into legal trouble. In the election of 2019 two other prominent candidates were barred from running after convictions for alleged corruption—and are still ineligible.

Mr Sonko makes an uncomfortable martyr for liberal Senegalese. In a recent livestreamed speech he made an ugly attempt to discredit the trial by declaring, among other things: "Even if I had to rape, I would not rape someone who looks like a monkey that has had a stroke."

As we went to press, a precarious calm had descended on the country, in part because Senegal's influential Muslim brotherhoods have urged restraint. It may not last. Mr Sonko, who has not been seen or heard from since May 28th, is said to be in his house, surrounded by police. The justice minister, Ismaila Madior Fall, says he could be arrested "at any time". That could prompt attacks on the homes of people linked to the government and even more violent crackdowns by soldiers and police, worries Ousmane Diallo, who is based in Senegal for Amnesty.

That would not be the end of the affair, anyway. If Mr Sall intends to run again, he will have to start gathering signatures by the end of August to support his candidacy. Should he do so, many Senegalese will feel deeply betrayed. He came to power in 2012 by harnessing a wave of opposition to the last president's attempt to run for a constitutionally dubious third term.

Yet in March he claimed he is legally permitted to run again, even though he has served two terms under a constitution that states that two consecutive ones mark the limit. Running again would rely on the thin argument that because the constitution was tweaked during his second term (to reduce the length of a presidential term from seven to five years), the clock on term limits was somehow reset.

Perhaps Mr Sall will soon announce he will step down at the election. If he had declared as much in 2021 and again in the past week, much bloodshed could have been avoided. He has not done so. The worst could be still to come. ■

Nigeria's new president

Bye-bye to bungs

ABUJA

The new leader does the right thing the wrong way

Normally when presidents ad-lib in an inauguration speech it is to stress their folksy charm. But the off-script remarks of Nigeria's new president, Bola Tinubu, sent his compatriots rushing to the petrol stations. "Fuel subsidy is gone," he declared during his swearing-in on May 29th in Abuja, the capital. Before he had even finished his address, queues began to stretch at the pumps, as drivers raced to nab a last cheap drop of fuel.

Nigeria has spent a fortune subsidising petrol since the 1970s. It was supposed to be a temporary measure, but the cost has swelled, while the mechanics have become opaque. The state oil firm, the Nigerian National Petroleum Corporation (NNPC), does a fiddly set of transactions, swapping some of the crude oil it pumps for refined fuels on global markets, which it then resells at a discount to Nigerians. Any cash left over is remitted to the government. The effective subsidy hit $10bn last year, and the burden of that meant NNPC paid nothing to the government, despite Nigeria usually being

Filling up with frustration

Africa's biggest oil producer. That depressed overall government revenues, 96% of which were gobbled up by servicing debt last year. Mr Tinubu says the bung simply had to go. Angola, a big oil producer where a litre of petrol is cheaper than a bottle of water, faces similar fiscal strife. Last week its government also slashed the subsidy.

Several Nigerian presidents have promised to end the subsidy—against the opposition of many of the country's 220m people. In 2012 trade unions brought the place to a standstill before the government backed down. Though the subsidy does little to help the 33% of Nigerians living on less than $2.15 a day, many Nigerians feel that cheap petrol is the only benefit they get from their country's vast oil wealth.

Since Mr Tinubu's declaration, prices at the pump have soared, even though the subsidy is supposedly in place until the end of this month. In some areas the NNPC has nearly tripled the price of petrol to 557 naira ($1.17), up from 189 naira. This will push up inflation, already running at 22%. Taxi fares in many cities doubled overnight. Sarah Bature has doubled the price of the cabbages that she sells at a market in Abuja. They are trucked in each day. "What else can I do?" she demands. Others are struggling to keep track. Hassy, who drives a cab in Abuja, laments that he now has to argue over prices with his customers.

Scrapping the subsidy should, however, free up desperately needed funds for schools and clinics. For years the World Bank has pleaded with governments to bin it. Yet announcing it off the cuff meant that measures to soften the blow were not yet in place. As a result, the jump in inflation will be all the more painful. Ferocious calls to reinstate the subsidy are sure to ensue.

The unions promptly announced that they would strike in protest from June 7th but suspended their plan after the government obtained a court injunction to stop it, pending a further hearing. The unions at least seem willing to negotiate. They want other measures to soften the crunch, such as a rise in the minimum wage.

Mr Tinubu's move in the right direction on another issue was similarly messy. In his inauguration speech he also promised to unify Nigeria's elaborate multiple exchange rates, which are meant to keep the naira strong. But he provided few details. The central bank was soon forced to deny a report that went viral after a newspaper claimed the currency had been devalued from 465 naira to the dollar to 630. Traders are pricing in a fall of about 20% in the next three months and 30% in the year ahead.

Mr Tinubu won the election in only a third of Nigeria's states. The overall turnout was a dismal 27%. His victory is still being disputed in court by his rivals. He faces a dire security situation with separatists in the south-east, clashes between herders and farmers in the centre, a jihadist insurgency in the north-east and rampant kidnapping gangs in the north-west. To make headway on security he must also rescue the economy. Removing the fuel subsidy is a good step. But he needed to avoid creating chaos in the process. ■

Iraq

Who runs the show?

BAGHDAD

Militias are undermining democracy

A gaggle of western tourists sun themselves on a crowded café pavement in the heart of Baghdad. Hotel lobbies bustle with businessmen from China. Spectators pack the reopened horse racecourse. After a 20-year hiatus, cranes are in action building malls and housing estates. Normality, or at least a version of it, is returning to Iraq. What is less normal is that many of the bulldozers and tractors bear the rifle-and-bullet insignia of the Hashd al-Shaabi, an umbrella group of government-funded, Iran-backed Shia militias.

In 2014 Iraq's government of the day launched the Hashd, or people's mobilisation force, to counter Islamic State (IS), a movement of Sunni jihadists who had conquered Mosul, the country's main northern city, and were sweeping menacingly south towards Baghdad. But after IS was defeated and a modicum of calm returned, the Hashd found a new role. Though the political coalition it backed came sixth in last year's general election, the Hashd has managed to wrest control of government, parliament and Iraq's finances.

The Hashd's economic arm is spearheading Iraq's reconstruction—and is beginning to look eerily like the Islamic Revolutionary Guard Corps (IRGC), the praetorian guard that is the power behind the state of Shia Iran. The Arabic word Hashd, meaning mobilisation, echoes Baseej, the Persian name for the IRGC's paramilitary youth wing. "We're cloning the IRGC and handing Iraq to it," says an Iraqi security man worried about Iranian influence.

Many Iraqis are glad of the stability that comes when one side finally wins a civil war. Iraq's Sunni Muslim minority seems to have abandoned the struggle for the supremacy it once enjoyed. Iraq's Kurds have edged back from their bid for independence. And the Hashd's prime opponent among Shias, Muqtada al-Sadr, a hot-headed cleric who appeals to Iraq's poor, has been hobbled (see box). Though Mr Sadr won last year's election, the Hashd's allies in the courts ruled that he needed a two-thirds majority to form a government, which he failed to get. In a fit of pique Mr Sadr withdrew his people from parliament, letting the Hashd pick its own prime minister, Muhammad al-Sudani. The Hashd readied itself for a backlash from Mr Sadr's fans in the slums. So far it has not happened. The few Shia ayatollahs who once backed Mr Sadr have washed their hands of him, perhaps under pressure from Iran.

Flush with funds from high oil prices, Mr Sudani's government drafted a record budget of $152bn, fattening an already obese public sector. The Hashd is one of its chief beneficiaries. Mr Sudani has given it an annual budget worth $2.7bn and helped it to add another 116,000 men to its ranks, bringing its total to more than 230,000. Mr Sudani has approved the launch of a Hashd-run building company named after Abu Mahdi al-Muhandis, the Hashd commander assassinated by an American drone in 2020. Its charter gives it preferential access to government tenders. Mr Sudani has also awarded the al-Muhandis company tracts of strategic land ranging from Baghdad to Iraq's borders. Another swathe, half the size of Lebanon, stretches along the border with Jordan and Saudi Arabia. Critics say these zones may host militia bases that could connive in the smuggling of drugs, guns and contraband.

Other Shia allies of Mr Sudani are gathering economic clout. Shrine foundations are growing into financial conglomerates, bolstered by alms-giving, subsidies from the Shia department of religious endowments and the tax-free charitable status they enjoy. A foundation in the shrine city of Karbala headed by Ali al-Sistani, the grandest of Iraq's ayatollahs, runs poultry farms, hospitals and fish farms. Another imports electronics from China. Their earnings run into billions of dollars, says a banker. "They are states within states."

Mr Sudani has purged the ranks of pro-American intelligence men around his predecessor, Mustafa al-Kadhimi. In parliament Hashd supporters have manipulated the electoral law to keep out independents. Free speech is being curbed. Social-media influencers have been jailed for immorality. Under threats from pro-Iranian militias, some Western academics and journalists have had to leave. One MP's office was shut down after he questioned the size of the Hashd's budget.

Some hope the Hashd's new business interests may temper its militant tendencies. Better that its commanders consort with businessmen rather than global guerrillas, says an adviser to Mr Sudani. His officials distinguish between units under the Hashd umbrella that seek business deals and respectability, and those who still want to clobber their opponents.

Mr Sudani sends mixed signals about his relationship with the Hashd. The IMF recently reckoned that Iraq needs to sell oil at $96 a barrel, a lot more than the present rate, if it is to balance the books. So Mr Sudani may soon have to tell Iraqis to tighten their belts. If their standard of living were to fall, he might need the Hashd's guns to survive. "The rope that saved Iraq", says Hayder al-Khoei, an Iraqi analyst, referring to the Hashd's role in defeating IS, "can be the noose that hangs around its neck." ■

Shia Islam

Who will be the next top clergyman?

NAJAF

A host of successors are vying to succeed Grand Ayatollah Ali al-Sistani

"ALLAH YATAWAL OMRU: May God grant him a long life" has long been an Arabic mark of respect for the elderly. But seminarians in Iraq's shrine city of Najaf have begun reciting it almost obsessively. Ali al-Sistani, the grand ayatollah who is the senior religious figure for the world's 200m Shias, is 92 and fading.

No one has done more over the years to keep Iraq from collapse or from turning it into an Iranian-style theocracy, though he has used his influence to veto any Iraqi leader of whom he strongly disapproves. Despite his humble way of life, he heads a multinational network worth billions of dollars and presides over the holiest of Shia shrines, visited by millions every year. Seeing no obvious successor, many Shias fear a struggle that could, as an insider puts it, be "messy, complicated and rife with division".

The great influencer

In theory his fellow clerics could and should decide. Two other grand ayatollahs, one from Pakistan, the other from Afghanistan, head the list but may be too old: the first is in his 80s, the second is 93. Three other younger scholars may bid, though one, from Bahrain, is said to have fallen out of favour with Mr Sistani for jumping the gun. All five front-runners suffer from their relatively lowly lineage; none descends from the Prophet Muhammad, a status that Shias venerate.

This time the job may go to someone not born in Iran—a rarity for over a century. That would rattle the clergy who rule the country: they would love to impose one of their own to replace Mr Sistani, who was born in Iran. Ayatollah Ali Khamenei, Iran's supreme leader, tried sending his old teacher to Najaf to win over seminarians there. Several Persian-speakers have been seen moving into houses in Mr Sistani's alleyway.

Less pious claimants could also bid for the post. Muhammad Sadiq al-Sadr, a bold activist Iraqi cleric, challenged Mr Sistani's quietist leadership before he was assassinated by Saddam Hussein in 1999. His firebrand son, Muqtada al-Sadr, has inherited his populism, if not his scholarship, and can claim to have the biggest following among Iraq's poor. Some of his fans even hail him as the mahdi, the anointed one, who Shias say will emerge at the end of days. Another feisty Sadrist, Qais Khazali, who is setting up a beefy militia cum political party, may also be planning a takeover. He recently moved from Baghdad to Najaf and is building a vast mosque there. However spiritual the job, guns and money may still help.

France and Germany

Reconcilable differences

PARIS

Russia's war is changing France, Germany and Europe

THE CONTOURS of a new Europe are beginning to emerge, thanks to Russia's brutal war on Ukraine. On the eastern and northern fringe, Finland and Sweden are joining NATO. The European Union has granted Ukraine and Moldova "candidate status" for membership of the 27-country club. Deep shifts are also taking place at Europe's historic core. After a tricky spell, the leaders of France and Germany are trying to work out what all this means for their own countries, and their ability to overcome differences between them.

At least symbolically, a Franco-German reset is now under way. On June 6th Olaf Scholz hosted Emmanuel Macron, France's president, in Potsdam, where the German chancellor lives. The pair strolled around the pretty town together, and dined for nearly three hours. It is part of an effort to put behind them a period of mutual irritation. Things reached a low point last autumn, when France cancelled a joint cabinet meeting. That has now taken place. And the Germans have invited Mr Macron for a full state visit in July, the first one laid on for a French president in 23 years.

Each country is facing a challenge to its underlying tenets. For Germany, the war has upended the foundations of its post-war economic model, based on cheap Russian energy and exports to China. The country has weaned itself off Russian gas. For decades uneasy about the notion of muscular power, Germany has also become a generous military supplier to Ukraine. It is spending an extra €100bn ($107bn) on rearming. It may take time for the *Zeitenwende* ("historic turning-point") to take effect; but Germany is changing.

For France, the shift is less visible, but no less profound. It is less about the country's economic model, which is not as export-dependent as Germany's. Nor, thanks to nuclear power, was it as reliant on Russian gas. Rather, France is rethinking European borders, alliances and security. Traditionally unenthusiastic about expanding the EU, France used to treat central and eastern European countries as juniors. In 2003 Jacques Chirac, then president, dismissed the support of aspiring EU member countries from eastern Europe for America's invasion of Iraq (which France opposed), declaring that they had "missed an opportunity to shut up". As recently as 2019 France vetoed opening EU membership talks with Albania and North Macedonia.

Russia's war has hastened a structural shift. One element is fresh French support for EU expansion. On a trip to Kyiv last June, Mr Macron backed Ukraine and Moldova for EU candidate status. France has lifted its veto on Albania's and North Macedonia's membership bids. On May 31st in a speech in Slovakia, Mr Macron declared, to much surprise, that EU enlargement should take place "as fast as possible". "The question for us is not whether we should enlarge," he said, "but how we should do it." In a nod to Chirac, Mr Macron confessed to the largely central and eastern European audience there: "We have sometimes missed an opportunity to listen."

Such statements have helped reassure those who feared Mr Macron's idea of a wider European Political Community was also a ploy to stall EU expansion. Designed to bring together 44 EU and neighbouring

→ Also in this section

countries twice-yearly, this confab met for the second time on June 1st in Moldova—just 20km (13 miles) from the Ukrainian border. With Ukraine's president, Volodymyr Zelensky, present, the summit was a show of unity for his war-battered country as well as a boost for the host, Moldova. France now sees EU borders extending farther to the east. Russian territorial revisionism, recently wrote Alexandre Adam, a former Europe adviser to Mr Macron, has made enlargement a "geopolitical necessity...there is no longer a stable grey zone possible between the Union and Russia."

The second French shift concerns security. Mr Macron wants Europe to do more to defend itself and to rely less on America, especially ahead of elections there in 2024. Fellow Europeans still fear that such talk will undermine America's commitment to European security. The continent's new geopolitics, however, seem to be making France more hawkish. In Bratislava Mr Macron called for Ukraine to be given a "path to NATO membership" at the alliance's summit in Vilnius in July. This is quite a turnaround for a leader who in 2019 told *The Economist* that NATO was undergoing "brain death", and who remains uneasy about its playing any role outside Europe.

There are now serious conversations taking place in France about how to give Ukraine robust and credible security guarantees. On June 19th defence ministers will meet in Paris to discuss European air defences and "deep-strike" capability. Mr Macron has even offered to hold a dialogue on the French nuclear deterrent.

As Germany and France each work out how to shape and adapt to a new Europe, their discussions will be fraught with difficulties. One taciturn and cautious, the other grandiose and risk-taking, the two leaders struggle to read each other. The pair are now aligned on enlargement, but there are tough discussions going on over new rules for the EU's internal workings, a prelude to further enlargement. Differences over nuclear energy, defence procurement and fiscal rules remain. Germany, like America, remains cautious about Ukraine and NATO. It is exasperated by Mr Macron's periodic outspokenness. France is frustrated by the confusion and slowness of Mr Scholz's governing coalition.

Russia's war on Ukraine has taught Europeans that their continent's organisation, in any guise, is far broader than the link between Paris and Berlin. These days Germany spends less time than it did fretting about France. France is keener than before to reach out to other countries within the EU. Still, little gets done in the bloc unless France and Germany can agree. As a rule, they differ on most issues, but share the will to overcome those differences. Their ability to do so will be crucial to defining the shape of this new Europe. ■

Turkey's economy

Braking at the cliff's edge

ISTANBUL

New officials will struggle to undo President Erdogan's damage

IN THE 16TH century, as inflation gripped the Ottoman empire, Sultan Murad III appeased his troops, who complained of being paid in debased silver coins, by handing them his treasurer and a senior adviser. It was probably the sultan who had ordered the debasing, but the officials made convenient scapegoats. Both were put to the sword. Now the team that has run Turkey's economy over the past few years is being sacked too (though not beheaded) to appease investors and Turkish consumers facing the worst inflation in a generation.

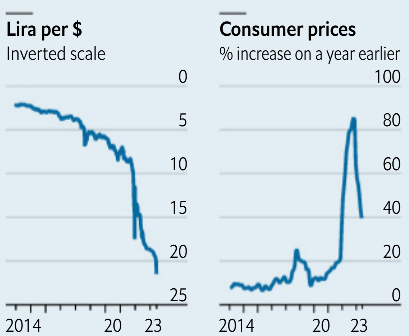
As *The Economist* went to press on June 8th, a day after the lira plunged by 7% against the dollar, Turkey's newly re-elected president, Recep Tayyip Erdogan, appeared poised to replace his central-bank governor, Sahap Kavcioglu. His replacement is expected to be Hafize Gaye Erkan, a former Goldman Sachs banker. Days earlier Mr Erdogan had appointed Mehmet Simsek, a voice of economic orthodoxy, as his new treasury and finance minister.

The blame for Turkey's economic woes lies with Mr Erdogan, who holds to an upside-down theory that making borrowing cheaper lowers consumer prices. Turkey's benchmark interest rate has dropped by more than ten percentage points in under two years. This has sustained economic growth, which reached an annual rate of 4% in the first quarter of this year. But it caused the currency to plunge and inflation to skyrocket to 86% last year, before slowing to 40% in May.

"Turkey has no choice left but to return to a rational basis" for policymaking, Mr Simsek said on June 4th, a day after his appointment. Such words are music to the ears of foreign investors. Raising rates and rolling back capital controls would help tame inflation and restore some confidence in the management of the economy. But whether Mr Simsek's appointment leads to a policy U-turn remains to be seen.

A mess for Mehmet

Turkey



Source: Refinitiv Datastream

Turkey has been here before. In 2009 Mr Simsek became Mr Erdogan's economy and finance minister and later his deputy prime minister, presiding over a period of record growth. But he eventually lost the president's ear. In 2018 Mr Erdogan entrusted economic policy to his son-in-law, Berat Albayrak. Loyalists and snake-oil salesmen have replaced technocrats. Mr Erdogan has in effect turned the central bank into an arm of his government, and has repeatedly sworn to keep rates low.

The cabinet shake-up has gone some way towards calming markets. Spreads on Turkish five-year credit default swaps, a measure of the risk of a sovereign debt crisis, exceeded 700 basis points in May; they have now dropped below 500. But the lira's slump has accelerated. The currency lost 10% against the dollar in the three days after Mr Simsek's appointment. The central bank went to shocking lengths to prop up the currency in order to help Mr Erdogan win re-election. It kept the exchange rate under control only by selling tens of billions of dollars in foreign reserves since the start of the year. In late May net foreign reserves fell below zero for the first time in two decades.

The central bank seems to have stopped intervening, or run out of money to do so. But such was the scale of its interventions that the lira remains overvalued. Analysts expect it to lose up to 20% more by the end of the year. This may cause another surge in inflation. It could also set off a bomb buried in the country's budget. Under a scheme devised in late 2021, Turks have some $110bn in lira deposits insured against shocks in the exchange rate. In a fresh currency crisis Turkey's treasury may have to compensate such depositors to the tune of billions of dollars. The budget is already strained by election handouts and by reconstruction in Turkey's south, where earthquakes killed more than 50,000 people earlier this year.

Things will become clearer by June 22nd, when the bank will set new interest rates. A big increase then would show that Mr Erdogan has changed course. "The markets have given him the benefit of the doubt, but now it's time for action," says Cagri Kutman of KNG Securities. That could persuade foreign investors who have shunned Turkey for years to return. But local elections are due next March. Rational policy may give way to Mr Erdogan's political need to generate growth. Erdoganomics seems to be in retreat, but it may be only a tactical and temporary one. ■

German politics

Green fades to brown

BERLIN

Anger at Green rules shifts German opinion to the right

"Green is getting too Brown," moaned the graffiti in Germany's capital late last year. The scribblers were hard-line environmentalists. Their gripe was that the Greens, one of three parties in Germany's ruling Ampel or "traffic light" coalition, were going soft. By agreeing to crank up coal power to replace lost imports of Russian gas, and to delay by six months the long-planned shutdown of Germany's last three nuclear plants, the Greens had bent so far right they were shading into a colour that Germans link not just with grubbiness but with fascism.

Six months later much of the German public is also upset with the Greens, albeit for the opposite reason. Instead of the Greens doing too little for the environment, many now think they do too much. No one calls them fascists, but even their partners in government, the bigger Social Democrats (SPD) and smaller, liberal Free Democrats (FDP), seem to find them too bossy. Sniping between Robert Habeck, the carefully tousled Green deputy chancellor in charge of the economy and environment, and Christian Lindner, the Porsche-driving liberal finance minister, looks increasingly like an inter-elite culture war between advocates for climate responsibility and for personal freedom.

The grumpy German public does not seem to like either camp. Polls show diminishing enthusiasm for the Greens, with the percentage of Germans saying they would vote for them falling in the past year from the low 20s to the mid-teens. But they also show that the shift has benefited neither the centre-left SPD of chancellor Olaf Scholz nor the FDP, nor even the conservative Christian Democrats. Instead, since June support for the far-right Alternative für Deutschland (AfD) has doubled, to 19%. The immigrant-bashing, Russia-friendly and climate-change-denying fringe party, which marked its 10th anniversary in February, now shares second place in the polls with the SPD, which in May celebrated its 160th year.

Polling by Forsa, a research group, shows that more than a third of the AfD's new backers used to vote for one of the Ampel trio. The far-right party's recent slogans suggest why. "Roll back mad climate laws!", declares a party poster. "Stop the *Heizhammer*!" screams its website, describing a bill, intended by Mr Habeck to accelerate adoption of energy-saving (but high-cost) heat pumps to replace household boilers, as a "heating hammer".

The proposed home-heating law, which would ban new gas and oil boilers and subsidise installation of heat pumps, has become less a hammer than a lead weight for the government. Opinion polls suggest that barely a fifth of voters favour the ban. But the problem is not just resistance to a measure that householders fear would saddle them with fat bills and bureaucratic bother. A big majority of Germans also thought that the Greens' insistence on closing nuclear plants in April was stupid at a time of high energy prices and vulnerable supplies. Most also dislike new EU rules that will end production of cars with combustion engines by 2035, though Germany has won some exceptions. And nearly everyone is fed up with radical climate activists who have held up traffic across Germany by gluing themselves to autobahns and junctions.

Such protests seem more effective at tainting the Greens by association than at raising climate awareness. They have also, indirectly, helped the AfD: tellingly, two-thirds of its current supporters, according to a recent survey, say they would vote for the far-right group not because they share its views, but out of "disappointment with other parties". This does not, however, mean the AfD is now considered a normal party like any other. In another poll, 57% of Germans said they cannot imagine ever voting for them. ■

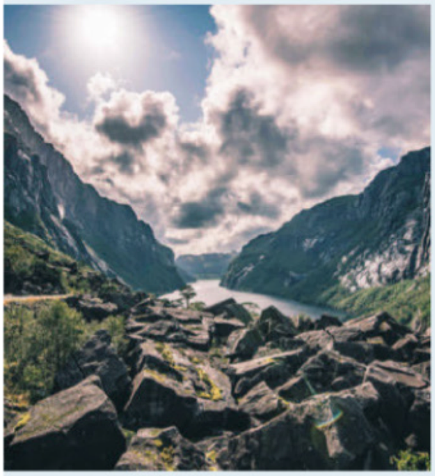
Norwegian mining

Of fjords and forges

A big phosphate find is a strategic boon for Europe

Norse legend has it that the dwarves Brokkr and Eitri forged Mjolnir, Thor's hammer, after Loki bet they could not match the skill of the Sons of Ivaldi, who had made Odin's spear. Nowadays metallurgical rivalry in Europe's far north is just as intense. Until recently the world's largest known deposits of ultra-pure phosphate rock were on Russia's Kola peninsula. Russia also has rich reserves of vanadium and titanium. But last month Norge, an Anglo-Norwegian company, announced it had found massive deposits of all three in south-western Norway: at least 70bn tonnes.

The company says that could supply current global annual demand for more than 50 years, a big deal now that countries are jockeying over strategic minerals. Titanium is used to build aeroplanes (including fighter jets). Vanadium is needed for improved steel and for the giant high-tech liquid batteries used by power companies. Phosphates are used in fertiliser and to obtain phosphorus for computer chips and solar panels. For all of these minerals, Europe and America depend on worryingly unreliable suppliers. Airbus buys half its titanium from a Russian manufacturer. Boeing's Japanese titanium suppliers import ore from Africa, where it may be under Chinese control. China, Russia, South Africa and Brazil dominate vanadium production; America imports nearly all of the ore it uses. Phosphates and phosphorus are newly relevant as Europe and America worry about food security and try to relaunch their chip and solar industries.



Where battles are won

Michael Wurmser, Norge's co-CEO, says the company's new mines will be greener than current ones. Phosphate rock in Africa is sedimentary and contains many pollutants; that in Norway and the Kola peninsula is igneous and much purer. Norge plans to capture the carbon emitted by its operations and store it. Getting environmental permits will be a chore, but the mine is a high priority for Norway's government, as well as for Europe and America: its minerals fall under the EU's Critical Raw Materials Act and an American strategic-minerals scheme.

Sweden recently discovered rare-earth metals in its far north. Such finds will help the West in its ever-sharper rivalry with Russia and China. The stakes are almost as high as they were for Loki: having lost the bet, he was obliged to give the two dwarves his head. As usual, though, he talked his way out of it.

Charlemagne | No drama Rama

Albania is no longer a bad Balkan joke

Long the most benighted and quarrelsome part of Europe, the Balkans may have a new leading light. Most unusually he is the prime minister of Albania, a strapping 58-year-old former basketballer cum modern artist, Edi Rama. Last month his Socialist Party trounced the tattered ragbag of opposition groups to win all but a handful of the country's 61 mayoralties and councils. So he is likely to win the next general election, due in 2025, his fourth victory in a row, and thus to rule until 2029 what was once the region's most miserable outpost. In power since 2013, Mr Rama is already the longest-serving current head of a Balkan government. In 2000 he emerged as a dynamic and colourful mayor of Albania's capital, Tirana. Since 2005 he has headed his party. Now he can claim to be a Balkan star, even a calming influence in a still fragile region: witness the ructions next door in Kosovo, where the Serb minority has been railing against the ethnic Albanian majority. Mr Rama refuses to gee up his cousins, and urges the West to handle Serbia's president, Aleksandar Vucic, sensitively.

Sprawled out in his office after flying back from talks with Manchester City Football Club about creating a network of coaching academies in the Balkans, he cuts an imposing figure in a T-shirt, slacks and gleaming white sneakers. He is six foot seven inches tall, shaven-headed, with a trim white beard, speckled moustache and watchful, baleful eyes: you might not want to bump into him in a dark alley at midnight. Fluent in an array of languages, he is patently cosmopolitan, despite an upbringing in what was one of the world's most isolated, vicious and paranoid countries, often described by today's Albanians as "the North Korea of Europe" before communism collapsed in 1991.

"Italy was our America," he muses. "TV, Italian football, the pope, music. But even getting TV wasn't easy." He recalls draping his room with sheets and carpets so that no one could hear him and his pals playing illicit recordings of the Beatles. He says he remembers his shock and delight when he could read Kafka, Proust and Dostoevsky, listen to Ravel, Debussy and Stravinsky, and see Cézanne, Van Gogh and Picasso. His critics note that he was a child of the communist *nomenklatura*; his father was a leading official sculptor, who may have moulded the features of Stalin. Mr Rama is also accused of indulging a cult of personality. A Western observer calls him "brilliant, visionary, eccentric, egomaniacal...with a strong sense of his legacy in history".

He is not shy about listing his achievements—or at least post-communist Albania's. Tirana is unrecognisable from what it was three decades ago: a grim, grey, totalitarian, sub-Soviet, Ruritanian village. Then, the entire country had around 6,000 cars: it was illegal to own one. Now it has more than 700,000. Though Mr Rama's party descends from the one run for 44 years by the mass-murderous Enver Hoxha until his death in 1985, it has been utterly revamped into a pro-market, social-democratic outfit. Its critics accuse it of entrenching corruption under an oligarchical elite that dominates the media and has let inequality widen.

Mr Rama shrugs off such claims. He says he models his party on Britain's New Labour. Tony Blair, his lawyer wife Cherie, and his long-time spin doctor, Alastair Campbell, all still visit to lend advice. "We're not very ideological," says Mr Rama. "For us there's no right or left solution: it's not a heresy to have a right solution that works." Margaret Thatcher, he avers, was "a great leader" who enacted painful reforms to modernise Britain, without which New Labour could not have succeeded in her wake.

Mr Rama's confidence encompasses the region. The entire Balkans, he notes, even traditionally pro-Russian Serbia, is united behind Ukraine. A member of NATO since 2009 and since 2010 part of the Schengen group that grants visa-free travel within Europe for up to three months, Albania has no serious tussles with its neighbours, he adds. "This is unique in our history."

As for actually joining the EU, he wisely refuses to dangle any dates, while accepting the club's entry requirements as a motor for Albania's own reforms. Mr Rama recognises that a clutch of countries in the club, led by France, are wary of letting the Balkan bunch in. Every Western diplomat's mantra in Tirana is that Albania is "heading in the right direction" but that "there is still a very long way to go", especially with regard to cleaning up the courts and creating a proper rule of law, an issue to which the EU and America devote much attention and money. A scheme to vet the country's entire body of judges and prosecutors has led to the dismissal of an astonishing two-thirds of them. What happens to those that are weeded out? "Oh, they become lawyers and accountants," says a local civil-society campaigner.

Endemic corruption is still the biggest blot on today's Albania. Both main parties are deemed responsible, in the eyes of most Albanians. The most charitable view of a diplomat, in assessing Mr Rama's failure to expunge it, is that "in order to push on with development, you just have to play the game of patronage".

Please don't go away

The other big issue that bugs Mr Rama is emigration. The population has shrunk by at least a quarter since communism ended, to around 2.9m today. Albanians are still leaving in droves. Mr Rama is understandably prickly when asked about the common view in the West that too many Albanians, including those arriving illegally in Britain by boat, are involved in crime.

But his more serious lament is the enduring lack of civility in his country's politics. All sides invariably denounce the other as gangsters, crooks, even killers, which in some cases is true. This, he concedes, goes back to the ghastly Hoxha era, when the mildest dissent often meant banishment, prison or even execution (see Culture section). If Albania is ever to become a liberal democracy, this, Mr Rama admits, must change. If it did happen, it would be his greatest legacy. It may need another generation. ■

Public inquiries

The state on trial

The trio of difficulties facing Britain's covid-19 inquiry

REFORMING THE BRITISH STATE

HUGO KEITH KC, the chief lawyer to Britain's covid-19 inquiry, took a defensive turn. "We've proceeded at a remarkable pace," he told a preliminary hearing on June 6th. "There is simply no justification for any complaint that the inquiry has been slow or dilatory." Yes, commissions in other countries had already finished their reports. But they lacked legal powers to compel witnesses to appear and evidence to be produced. "They did not, of course, address these issues with anything like the same degree of scope and width." That much is true. It will be the inquiry's great virtue. And its great weakness.

Public inquiries into disasters and scandals have become a fixture of Britain's uncodified constitution: 83 have been opened since 1990, eight of them since the covid inquiry was announced in May 2021. The west London office where it will be held last hosted hearings into the Grenfell Tower fire, in which 72 people died in 2017.

Inquiries are not trials, but look rather like them. Written submissions are laid; witnesses cross-examined in public; verdicts weighed. Heather Hallett, the chair of the covid inquiry, is a retired judge. She is being assisted by an army of lawyers. In complexity, political sensitivity and the number of British victims, only the Chilcot inquiry into the Iraq war comes close. Whereas most inquiries deal with a single incident or organisation, this one will anatomise almost the entire British state, from the prime minister's office downwards. Oral evidence in the first of a series of modules, covering the state's pre-crisis resilience, begins on June 13th. The rest will unfold up to the summer of 2026, covering hospitals, vaccines, schools and more.

The most sensational hearings will come this autumn, with Module 2: "Core UK Decision-making and Political Governance". It will focus especially on the decisions of Boris Johnson, the then prime minister, and his inner circle between January 2020, soon after covid emerged in China, and March 2020, when they imposed the first lockdown. Requests for evidence have been sent to 450 politicians, officials and scientists. The 150 questions sent to Mr Johnson give a sense of the interrogation ahead: When did you first become aware of covid-19? Why did you skip five meetings on covid in January and February? Did you really suggest you should be injected with covid on television?

Inquiries seek to do three things: establish the facts; bring a sense of resolution to victims; and help to prevent a repeat. With covid, all these look extraordinarily hard. In establishing a factual narrative, the inquiry should benefit from more contemporaneous material than any of its predecessors. Lord Saville pieced together the events of Bloody Sunday, a massacre by British troops in Northern Ireland in 1972, from grainy images and interviews conducted years later. The Chilcot inquiry dealt with emails and memorandums. For ▸▸

→ Also in this section

covid, the government says it has identified 20m documents. The mother lode that Lady Hallett is seeking is the record of WhatsApp groups and Google Spaces on which Mr Johnson's circle and the wider civil service ran the crisis.

But obtaining the evidence has become a circus. Witness statements have been patchy and late, Mr Keith complained. The pursuit of electronic logs and minutes met silence and obfuscation. The inquiry is still in the dark as to what WhatsApp data is out there. Lady Hallett says she, not the government, should decide how evidence should be redacted, but on June 1st the Cabinet Office launched a judicial review to insist on its power of censorship. Mr Johnson—with much less to lose than Rishi Sunak, chancellor back then and prime minister now—has decided to bypass the government altogether by handing over a trove of his personal notebooks, unredacted. He is also willing to share an old phone, but it cannot yet be opened by the inquiry because of a risk to national security.

A further challenge is understanding the epidemiological data and modelling, which remain disputed. Because so many experts were either assisting the government or criticising it, says Oliver Johnson of the University of Bristol, finding truly independent authorities will be hard. It is not so simple as to ask whether the government "followed the science", he says.

As for victims and families, modern inquiries must retain their support without being taken over by them. Lady Hallett is struggling on both counts. She has sought to incorporate the relatives of the 226,000 estimated to have died, via an online consultation, Every Story Matters, and will show films of their testimony. A commemorative tapestry will be made. But Covid-19 Bereaved Families for Justice, which claims to speak for 6,000 relatives, has asked for its lawyers to cross-examine witnesses and for families to give testimony in person, and has claimed Lady Hallett will have to resign if the government doesn't give up evidence. This fits a pattern of declining deference to inquiry chairs: at Grenfell, residents demanded Sir Martin Moore-Bick's resignation when he was appointed, denouncing him as an establishment figure.

Will it produce useful lessons? Judges tend to be better at determining individual culpability than at analysing ecosystems. Long inquiries are unlikely to give an up-to-date account of how the state is performing: the government says it is now overhauling its civil-contingencies regime. Lady Hallett's sweeping ambit—she wants to cover the effects of austerity, Brexit, bureaucratic group-think, class, gender and race—risks creating a buffet of conclusions, from which people can pick according to political taste.

The central weakness of inquiries, argues Emma Norris of the Institute for Government, a think-tank, is that once they deliver their reports to Parliament and the government responds, there are no powers to compel anything more. But if there were, that might be troublesome, too. Some recommendations of the covid inquiry may be easy technocratic fixes, but others are likely to run into political choices about the capacity of the state. And if Lady Hallett concludes that Britain was led into a crisis by an inadequate, distracted prime minister, that isn't a problem a judge can solve. ■

Sexual health

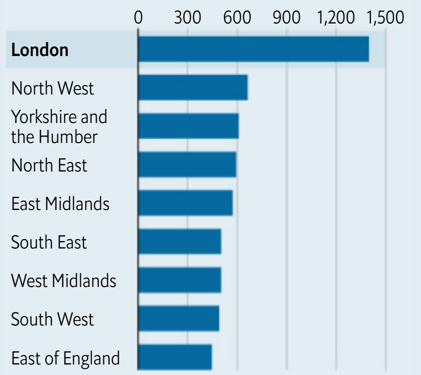
Clap for the NHS

London is the STI capital of Britain

As the country locked down for covid-19, Britons had fewer chances for casual unprotected sex. They also had fewer tests for sexually transmitted infections (STIs). Not surprisingly, diagnoses plummeted. Not any more. On June 6th the UK Health Security Agency reported that nearly 83,000 cases of gonorrhoea were diagnosed in England in 2022—the most since records began in 1918. Cases of syphilis were at their highest since 1948. London's rate is more than twice that of any other region, making STIs a particularly metropolitan problem (see chart).

London's special status is nothing new.

Troubles shared
England, sexually transmitted infections
Diagnoses per 100,000 population, 2022



Sources: GUMCAD STI surveillance system; CTAD

In the 1500s Henrys VII and VIII shut down Southwark's brothels, or "stew houses", to try to stop the spread of syphilitic sores. A study in 2020 estimated that in the 1770s a staggering one in five Londoners was likely to have had "the pox" by the age of 35, against 8% of people in the provincial city of Chester and less than 1% in rural areas. Given that gonorrhoea is around four times as infectious, a majority of Londoners may have had an STI, marvels Simon Szreter of the University of Cambridge, the paper's lead author.

Thanks to antibiotics, among other things, STI rates today are a fraction of what the Georgians endured. But London is still a relative hotbed. As in the 18th century it has a young, fast-growing population with large social networks to spread STIs. Rates are no longer highest among squaddies and scullery maids but in other marginalised groups (eg, in the Afro-Caribbean community). A more modern metric is that London is England's gayest region. Though under 4% of its people identify as gay, lesbian or bisexual, where sexual orientation is known, men who have sex with other men account for half of its new STIs.

Such figures are in part a sign of liberation. HIV is no longer the death sentence it was for many in the 1980s. Pre-exposure prophylaxis (PrEP), a pill taken daily, can almost completely ward it off. According to Preventx, a testing firm, rates of gonorrhoea and chlamydia among men who take PrEP are nearly double those among men who do not, perhaps in part because they feel it is safe not to use condoms. Dating apps (notably Grindr) have made both sex and drugs easier to find. Surveys suggest that around one in five gay or bisexual men in London have sex while on drugs like crystal meth, which can reduce inhibitions and increase sex drive. "You can have a ridiculous amount of sexual partners, upwards of 20 in a weekend," says Ian, who spent many years having "chemsex".

The fun is not without risk. Gonorrhoea is becoming increasingly resistant to antibiotics. As well as STIs, "chemsex" carries a greater risk of sexual assault, drug addiction and death. "We probably have more young men dying of chemsex than we do dying of AIDS," says Dr Anatole Menon-Johansson of Brook, a sexual-health charity.

Georgian Londoners were loth to admit that sex outside wedlock spread STIs. Today it is fear of stigmatisation that can hold up the aiming of health messages at gay men—as in a monkeypox outbreak in 2022. When men who have sex with men get 84% of new syphilis cases and 72% of gonorrhoea cases, such reluctance is counterproductive. The figures should be "a wake-up call to improve sexual-health education targeted at gay and bisexual men," says Peter Tatchell, a gay-rights activist. "Blame won't solve the problem; education will." ■

Bagehot | But you can't say that!

British politics is littered with fake taboos

"We're in one hell of a mess," declared Chris Patten, a former Conservative minister and establishment grandee, ruing the state of the nation. Inflation, slow economic growth and cack-handed monetary policy had condemned the country, he declared on "Question Time", a current-affairs show. "It's also, and this is a word one isn't supposed to use any more, it's also because of Brexit." The Leicester audience nodded. Finally, someone had said it. The great Brexit taboo had been broken!

If discussing the downsides of Brexit is taboo, people have been falling foul of it for years. Leaving the EU has dominated political discourse for approaching a decade. Economists and analysts have pored over its economic effects, filling newspapers, television and social media. Commentators wail about it daily. Rishi Sunak, the prime minister, boasted of fixing the myriad problems Brexit caused for Northern Ireland. Labour has promised to darn the obvious holes in Britain's relationship with the EU. For a word that folk are no longer supposed to use, it is used a lot.

British politics is littered with fake taboos: topics that are supposedly unmentionable, yet discussed incessantly. From reforming the National Health Service (NHS) to cutting immigration and Brexit, politicians and voters engage in the fiction that some topics are *verboten*. It is a useful tool. Ideas that are unpopular can be laundered as forbidden. Impractical schemes can be painted as merely transgressive rather than foolish. Pretend taboos cover a host of failings. If there is a taboo in British politics, it is admitting that most political taboos do not exist.

Pretending that they do has lots of upsides. A fake taboo can mask hard questions. An immaculate return to the EU, as offered by a polling question, would indeed be popular. About half of voters would support it, while a third would oppose it. But it is also impossible. The same problems that encouraged people to leave, such as free movement and the fundamental question of sovereignty, would emerge on re-entry. Would British voters still support rejoining if it meant Schengen or the euro? Crying taboo is far easier than grappling with reality.

Leaving the EU is only the latest fake taboo. Ever since Enoch Powell's "rivers of blood" speech in 1968 predicting racial strife, immigration has been supposedly off limits. Yet Britain has, somehow, managed to argue about it for 50-odd years. When statisticians revealed record net inward migration of 606,000 in 2022, those on the right insisted cutting immigration was beyond the political pale. This is backward. Cutting immigration is the stuff of political consensus: both main parties say it is too high, as do most voters. If governments are supposed to do what they say they will do, then immigration policy has been a failure. Conjuring a taboo is preferable to facing that.

This is a common tactic. Consider the poor performance of white working-class boys in schools. "Why has it become such a taboo subject to speak out on behalf of the under-privileged?" wondered Ben Bradley, a backbench Conservative MP, on the topic. But sharpening up white working-class boys has been a goal of every government for a quarter of a century. In 1996 Chris Woodhead, the chief school inspector, labelled it the "most disturbing" problem in education. In the David Cameron years, MPs discussed extending the school day to boost their performance. Throughout it all, white working-class boys have stayed near the bottom of the class. Every government has targeted them. Every one has failed.

Sometimes a pseudo-taboo is an excuse for inertia. Any criticism of the NHS is a no-no, say some politicians. If it is a religion, as the cliché goes, then blasphemy is on the rise. The NHS has become the butt of jokes. TikTok is filled with spoof videos about grumpy receptionists telling the unwell to get lost. More Britons are dissatisfied with the NHS than at any point on record.

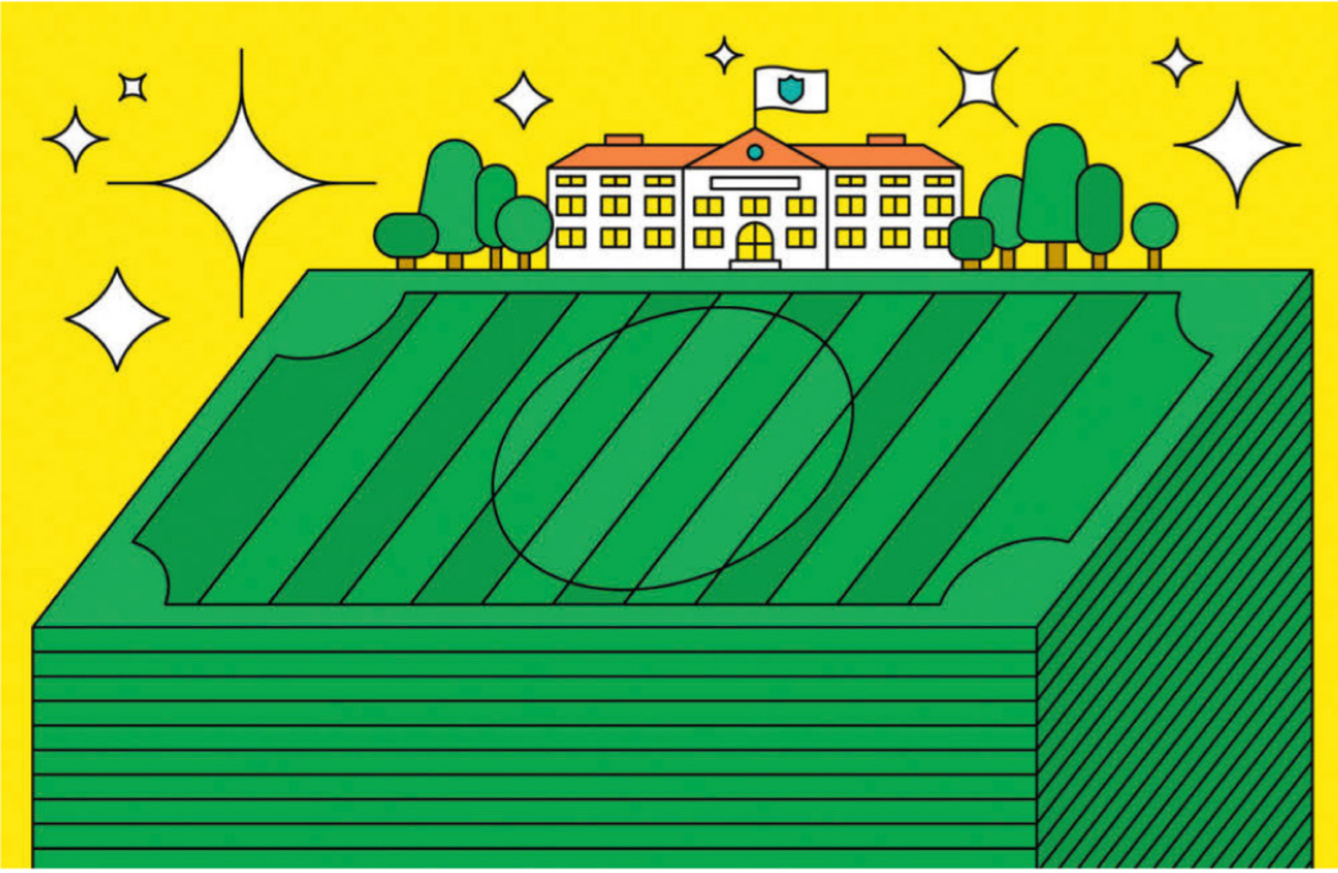
Reforming the NHS, which is free at the point of use, is, apparently, another taboo. Sir Tony Blair and Gordon Brown spent years fighting over what now seem to be arcane debates about NHS structures; Mr Cameron pledged no top-down restructuring of the NHS, then noticed that his health secretary had, in fact, done a top-down restructuring of the NHS. A wholesale shift to a European-style insurance model is not taboo. It would merely be expensive, difficult and unpopular. Better to pretend something is forbidden rather than tricky or hated.

Breaking supposed taboos is cheaper than fixing the problems they shroud. Politicians speak regularly about the need to "reduce the stigma" surrounding mental health. In an interview Mr Sunak revealed that his mental disposition was improved by the family dog. At the same time, Sir Mark Rowley, head of the Metropolitan Police, said the force would no longer respond to mental-health call-outs, in a change that is part husbanding of resources and part accelerationism. Ensuring that the police and hospitals are able to cope with psychosis is expensive. Reducing the stigma is free.

So controversial, so brave

Building an imaginary taboo and then smashing it has long been a tactic of the populist fringe. "But you can't say that!" is a line from the How To Speak Populist phrasebook. But now it is used by all wings of politics. Once influential populist parties such as the UK Independence Party may have all but died. Those politicians who played up to it, most notably Boris Johnson, have been booted out. Yet the style of politics they espoused—of enlightened voters speaking truth against the wishes of a complacent elite—lives on.

And no wonder. Transgression is enjoyable for a life-long insider, such as Lord Patten. Establishment figures can paint themselves as revolutionaries, daring to speak truth to power. Even the tamest of events, such as attending a pro-EU rally, enjoy an added frisson if an idea is, supposedly, forbidden. Middle-of-the-road ideas—"Brexit is not going well, is it?"—can be laundered as thrillingly transgressive. Why let populists have all the fun? ■



Studying for success

Should you send your children to private school?

America's private schools are a surer route to a top university than Britain's

Eton College can boast of educating more than a third of Britain's 57 prime ministers over its 583 years. Less impressive is the fact that the number of its pupils winning places at the universities of Oxford or Cambridge fell by more than half between 2014 and the 2021-2022 school year. Some parents pick private schools in the hope that their kids will benefit from more attention or less bullying. Others bet that these institutions will lead to a better education, higher grades and a place at a venerable university. But soaring costs and changing university admissions policies are prompting discussion of whether the crests and crenellations are worth it.

In many rich countries, traditional private schooling is in decline. Across 30-odd members of the OECD, a club of mostly wealthy countries, the share of children in schools that get less than half their funding from government fell from about 8% in 2000 to some 5% in 2018. Private schools in Britain and America have fared better, and the debate over them remains particularly politically charged in both countries.

Recent evidence suggests that for most privately schooled children in Britain and those who attend elite private institutions in America, the advantages of an expensive education remain robust. The benefits are probably bigger in America than they are in Britain, at least for pupils sitting in the swankiest private classrooms. That is because their alumni continue to enjoy access to the best universities at rates which would cause a furore in the old country. That might surprise anyone who assumes that American society is less ridden by class than British society.

Private schools in Britain serve around 6.5% of kids, about the same share as they did in the 1960s. (Hockey sticks and rice pudding appeal across the ages.) America's ones teach about 9% of children, a share that had held steady for a decade by the time of the covid-19 pandemic. In America about 75% of private-schoolers go to institutions with religious affiliations (a big chunk of which operate on fees that are similar to, or less than, per-pupil funding in government schools). But that country also has an exclusive subset of schools, often called "independent" schools, which most closely mimic fee-paying ones in Britain. These educate less than 2% of American youngsters.

Costs in Britain are among the highest in the world. A family there can expect to cough up more than £16,000 ($20,000) a year to put one child through a private day school. That is three times what they were paying in the 1980s; it is around half the median household income in Britain, whereas it was once one-fifth. Fees in America are lower on average, but also rocketed by 60% in the first decade of this century, according to the most recent good government data. The most snooty schools bill parents on average $28,000 each year for a day pupil.

Measuring what benefits flow from these outlays matters both to critics of private schooling—who accuse posh schools of perpetuating elites—and to those who pay for it. At first glance, the pay-offs are clear: all around the rich world privately educated pupils do better in exams, go to better universities and end up with better-paid jobs. But some of that success derives from advantages outside the classroom, such as having wealthy, encouraging or intelligent parents. Understanding the boost from private education involves comparing pupils' fortunes with those of otherwise similar peers in government schools. Good research of this sort is easiest to find in Britain.

Getting the abacus out

By the time they turn 25 Britons with private education earn 17% more than other workers from similar homes, according to a study from 2015. The pay premium widens by the age of 42, according to earlier research, to around 21% for women and 35% for men. In part this is because privately schooled people are more likely to enter high-earning professions, such as finance. Alumni networks may help in this, but peer pressure and parental expectations probably play a big role, too.

A larger reason for higher incomes is because private-schoolers get more and better academic qualifications than they otherwise would. They enjoy a "modest" boost in test scores when compared with children from similar homes who enroll in government classrooms, reckons Francis Green at University College London. This advantage accumulates with every additional year they spend in private schooling. One study finds that the edge they enjoy by the time they are 18 is roughly the equivalent of moving from grades of AAB to AAA (school-leavers on England's academic track commonly take nationally standardised exams in three subjects).

The critical point is that even a modest boost in results can have a big effect on the size of additional earnings. That is because better grades might secure a pupil a slot at a more prestigious university than they would have gone to otherwise, or a slot at a university at all. In 2021 more than half of privately educated pupils who started a degree in Britain attended one of the 24 "Russell Group" universities (a club that includes most of the best ones). Such pupils are more likely to spend their last years at school studying the tough, traditional subjects that very selective universities most want to see on applications. They are also more likely to get extra help so as to ace interviews and admissions tests.

Private-schoolers no longer nab quite such unfair shares of top university places as they once did. They comprise around 18% of all pupils aged 16-19 in England, as well as about 25% of all those with top grades in school-leavers' exams. Last year they were 20% of new undergraduates at Russell Group universities.

In 2016 about 6% of all private-schoolers who began a degree in Britain won places at the universities of Oxford or Cambridge; that share has since fallen to about 4% (it is around 2% for those from government schools). Last year private-schoolers made up 32% and 27% of the pair's new British undergraduates, down from 43% and 39% a decade before. This shift has rocked the handful of elite private schools which once sent hordes of pupils to the two universities.

Picking apart the benefits of private education in America is difficult, because its schools are a more motley bunch than Britain's. Since religion is banned from government schools, many pious parents pick private classes for reasons other than academic performance alone. Overall, evidence to suggest that America's private-schoolers learn more than they would if they went to government schools is less secure than it is in Britain.

A study published in 2018 by two academics at the University of Virginia, Robert Pianta and Arya Ansari, analysed the test scores of 1,000 children who were born in the 1990s. It found that by age 15 the ones who attended American private schools were getting no better grades, after adjusting for their backgrounds. There is not much good research, however, singling out the extra benefits rich children gain from attending America's subset of "independent" schools. But it is reasonable to think that they boost a child's prospects by at least as much as their British cousins.

America's universities welcome those from grand schools with open arms. In 2021 James Murphy of Education Reform Now, a think-tank in Washington, DC, collected data from 35 of America's highest-ranked universities and liberal-arts colleges. He found that on average about 34% of their new undergraduates were educated in private high schools (see chart). That is astonishing given that the private sector educates just 8.5% of American high-schoolers. Pupils from "independent" schools do brilliantly. The most recently published data suggest they made up about one-third of new undergraduates at Dartmouth and more than a quarter at Princeton. "Legacy" preference, whereby the relatives of alumni get a leg-up in admissions, may explain some of this. Nothing so brazenly unfair happens at British universities.

Green lawns and greenbacks

Money helps, too. Whereas English universities charge every domestic student the same tuition fees (though those from abroad pay more), America's best universities vary the cost according to means. This allows exceptional pupils from poor backgrounds to study for little or nothing. But it also gives universities good reason to keep in with dependable "feeder" schools, full of clever pupils with ample wealth.

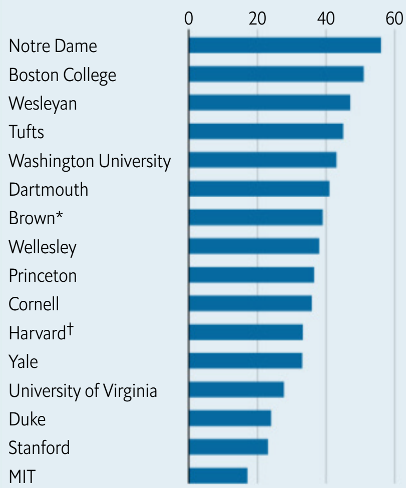
It follows that Britain's private schools are pointing more of their leavers overseas. Last year about 6% of those who went to university chose to study abroad, up from 4% in 2016. America is the most popular destination. Its universities demand top grades, says Barnaby Lenon of the Independent School Council, which represents British private schools. But he adds that they also value non-academic achievements, such as those obtained through extra-curricular activities of a kind that private schools try hard to provide.

The edge enjoyed by private-schoolers is much less discussed in America than it is in Britain, in part because questions of race, rather than class, tend to take centre stage in debates about university admissions. Political battles that have broken out over the teaching of race, sex and history are benefiting private providers, in part because states are choosing to put money into private "school-choice" programmes. These involve local governments paying for some private-school places (commonly only for poor children and usually in the cheapest kinds of private institutions).

America may be on the verge of change, however. Imminent rulings from its Supreme Court could ban the use of affirmative action in university admissions. And if colleges and universities can no longer boost applicants from underrepresented minority groups, the advantages enjoyed by posh pupils may receive greater scrutiny. Private schools in Britain face a bumpy ride, too. The Labour Party, which looks likely to win power at elections due in the next 18 months, talks of abolishing private schools' charitable status and stripping them of tax breaks. That could cause tuition fees to jump. Meanwhile, the paths to Oxford and Cambridge will keep narrowing. Expect a growing gang of Brits to head across the Atlantic. ■

Degrees of difference

Selected US universities, private-school students, % of undergraduate enrolments, 2020



*Students offered a place †According to student-led survey
Source: Education Reform Now

The future of technology

Reality check

Apple's Vision Pro is a technical marvel. Will anyone buy it?

"CERTAIN PRODUCTS...shift the way we look at technology," said Tim Cook, Apple's boss, as he unveiled the technology giant's latest gadget on June 5th. The Vision Pro, a headset for virtual and augmented reality (VR and AR in the lingo), whose development has been rumoured for years, will be available in early 2024. The tech giant dubbed the sleek glass goggles, which make use of more than 5,000 patents, "the most ambitious product we've ever created".

It may also turn out to be one of its lowest-selling. The company had reportedly hoped to shift some 3m units in the first year. But expectations have been scaled back; some analysts now forecast that Apple will ship fewer than 200,000 units in its first 12 months, an order of magnitude less than any of its other big product launches. The Vision Pro's initial iteration may prove to be a commercial flop. Yet it is also the first step on the way to something that Apple hopes will be much bigger.

The technology, which Apple has yet to let the public get its hands on, certainly looks impressive. Unlike other headsets, which tend to require hand-held controllers, the Vision Pro is controlled by hand gestures, voice commands and eye movements. It tracks eyes like a mouse, and recognises irises in lieu of a password. It is a "pass-through" device, which uses front-mounted cameras to show the user a video view of the world around them. And to make them come across (a bit) more normal to others, it projects a video image of their eyes onto the front of the goggles. (An Apple advert shows a man making his children breakfast while wearing it, something you would struggle to do with most existing headsets.)

The chief reason for the projected low sales is the price. At $3,499, the device is more than three times as expensive as Meta's rival VR and AR headset, the Quest Pro, and more than ten times as expensive as the Quest 2, the social-media firm's widely used VR device. Even at this price, Apple has had to make some technical compromises. The gadget has a clunky external battery, connected to the headset by a cable, which lasts only two hours. And though Apple's designers have done their best to make it as sleek as possible, it is still an awkward thing to strap to your face.

Such challenges have forced many competitors to rethink their involvement in virtual and augmented realities. Meta seems to be scaling back its enthusiasm, following investors' complaints about its spending and, reportedly, weak sales of the Quest Pro despite a steep price cut since its launch in October. Microsoft, a software giant, has put on hold the idea of making ▸▸

→ Also in this section

another HoloLens, an AR device that is mainly used by corporate clients. Snap, another social-media firm, seems in no hurry to bring out a new version of its AR Spectacles. Tencent, a Chinese digital titan, abandoned its VR hardware plans in February.

It isn't unusual for new products to take time to take off. Apple's past hits mostly took several years before they really caught on (see chart 1). Sales of the Apple Watch were low until people decided that its key use was for monitoring their health. The iPhone didn't really take off until its fourth generation, in 2010, by which time the App Store was populated with thousands of apps that made people realise what the phone could do. Discovering more use cases for the iPhone also helped to justify its price. The device was considered ludicrously expensive when it launched at up to $599; these days a top model costs $1,599, a price people are willing to pay because it can do so much. Perhaps Apple can normalise paying thousands of dollars for a pair of goggles in the same way.

Nevertheless, the Vision Pro is launching at a particularly early stage. Rather than a true consumer product, it looks more like a piece of "expensive developer kit", says one maker of AR components. Releasing a developer-oriented product at this point in its development is a "new frontier" for Apple, says George Jijiashvili of Omdia, a firm of analysts.

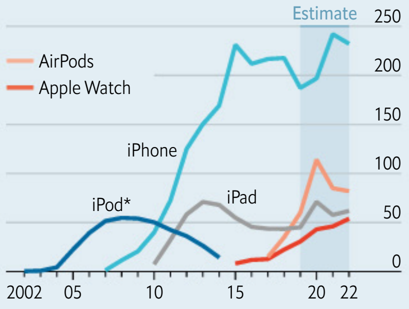
There are two reasons for Apple to want to get the product out early. One is competitive pressure, chiefly from Meta, which despite retrenching a little in the past year has been on a hiring and acquiring spree in its aim to make the "metaverse" into reality. As well as hoovering up talent, Meta has been recruiting users. Already about one in ten Americans uses a VR headset at least once a month, according to Insider Intelligence, a data provider. Most of those sets are made by Meta, which has been flogging its Quest 2 at a loss to build up a critical mass of users. Later this year it will release the Quest 3, its own pass-through device that will be far less capable than Apple's but, at $499, a more realistic prospect for most consumers.

The second reason Apple wants to get its product out sooner rather than later is because it already has its eye on what comes next. Technologists have long speculated that it will eventually be possible to make AR spectacles as thin and unobtrusive as a pair of sunglasses. At that point headsets will stop being clunky things for nerds and start becoming something that normal people might wear all day.

Such devices might even one day replace the smartphone as the thing at the centre of the next big technological ecosystem. "I don't think there is a doubt in anyone's mind that AR is the future," says Jitesh Ubrani of IDC, another data company.

Soft launch

Apple, unit sales by product, m



*Not reported after 2014

Sources: Business of Apps; company reports

In its presentation, Apple characterised the Vision Pro as "the start of an entirely new platform".

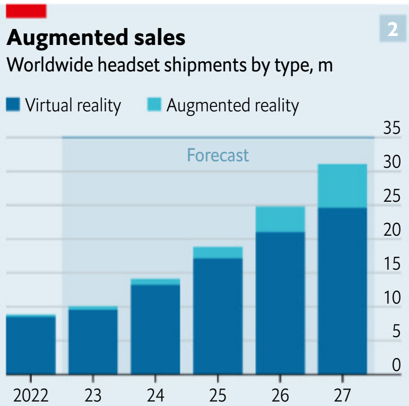
AR is set to slowly increase its share of the headset market (see chart 2). The Vision Pro's AR allows it to start building an ecosystem of apps and operating systems for the eventual AR glasses, if and when they materialise. Tweaking a pass-through AR app into true AR is easy. Apple is aiming to build as many use cases as possible for an eventual mass-market product, says one AR developer.

The strategy is not without risk. Apple has a reputation for releasing perfect, polished products. Launching a $3,499 device with a two-hour battery life could amount to what Steve Jobs, Mr Cook's late predecessor, used to characterise as a "brand withdrawal". It is also not yet clear what people will do with their devices. So far VR headsets have been used mostly for gaming: nearly 90% of VR content spending last year was on games, estimates Omdia. Meta's Quest Pro has failed to excite professionals with its promise of in-person video-conferencing and the like.

Apple's presentation of the Vision Pro, though characteristically slick, had nothing resembling a "killer app". There are some exciting features, such as the ability to take 3D photos and videos, turning the device into a "nostalgia generator", says Mr Ubrani. But most of Apple's suggested uses for the Vision Pro seem to involve treating it as a sort of giant virtual desktop, using floating windows for Zoom chats or Excel spreadsheets, or watching a film on a giant virtual screen. None of this is anywhere near as innovative as the technology itself.

Augmented sales

Worldwide headset shipments by type, m



Source: IDC

Still, Apple enjoys big advantages over its rivals. Its gargantuan profits give it more cash to spend on experiments. It has a huge existing user base, with 2bn devices in circulation. The Vision Pro presentation showed how the headset synchronises with Apple's other gadgets: users can do FaceTime video calls with friends on their iPhones or project a MacBook laptop screen into the headset just by looking at it. Apps for the iPhone and iPad will be compatible with the Vision Pro, meaning there will be hundreds of thousands of apps available at launch—albeit ones not optimised for the device.

Apple's strategy is also straightforward: make the best headset and charge consumers a lot of money for it, and, presumably, also charge developers a slice of their app earnings, as happens in the App Store. Although the firm seems focused on the eventual goal of AR, that is quite different from the VR-centric metaverse that Mark Zuckerberg, Meta's chief executive, has talked so much about.

Glasses half full

Apple also has a trusted brand. In a survey in 2021, three times as many people said they would buy a headset from Apple as from the second-placed company, Google. Meta came sixth. Apple has leverage with developers, too. It will have apps from Microsoft, as well as Zoom and Webex, and a partnership with Unity, a gaming firm.

Bob Iger, Disney's chief executive and a former friend of Jobs, made a surprise cameo in the presentation to praise Apple's "revolutionary platform" and show off how the headset might allow audiences to watch a "Star Wars" movie while transported in virtual reality to the planet of Tatooine, or watch 3D replays of a basketball match in VR on Disney's ESPN sports network. Having Mickey Mouse, or even the Disneyland castle, appear in the sitting room—"bring[ing] Disney to our fans in ways that were previously impossible", as Mr Iger put it—is the sort of thing that might excite people more than a new twist on virtual conferencing.

Few people are likely to cough up for the Vision Pro, at least initially. But Mr Cook, who compared its launch to those of the Mac and the iPhone, emphasised that it was the "beginning of a journey". It may yet be that the journey leads somewhere profitable. As Mr Ubrani puts it, "When Apple enters a market, it completely changes the trajectory of the market." ■

Artificial intelligence and the law

First thing we do, let's bot all the lawyers

NEW YORK

Generative AI could radically alter the practice of law

LAWYERS ARE a conservative bunch, befitting a profession that rewards preparedness, sagacity and respect for precedent. No doubt many enjoyed a chuckle at the tale of Steven Schwartz, a personal-injury lawyer at the New York firm Levidow, Levidow & Oberman, who last month used ChatGPT to help him prepare a court filing. He relied a bit too heavily on the artificial-intelligence (AI) chatbot. It created a motion replete with made-up cases, rulings and quotes, which Mr Schwartz promptly filed after the bot assured him that the "cases I provided are real and can be found in reputable legal databases" (they were not, and cannot). Lesson learned, a tech-sceptic lawyer might conclude: the old ways are the best.

That is the wrong lesson. Blaming AI for Mr Schwartz's error-filled brief makes no more sense than blaming the printing press for mistakes in a typed one. In both cases, fault lies with the lawyer who failed to check the motion before filing it, not the tool that helped produce it. For that is what AI is: neither a fad nor an apocalypse, but a tool in its infancy—and one that could radically change how lawyers work and law firms make money. The legal profession is hardly the only field about which one could say that. But few combine as clear a use case with so high a risk. Firms that get it right stand to reap rewards. Laggards risk going the way of typesetters.

According to a recent report from Goldman Sachs, a bank, 44% of legal tasks could be performed by AI, more than in any occupation surveyed except for clerical and administrative support. Lawyers spend an awful lot of time scrutinising tedious documents—the sort of thing that AI has already demonstrated it can do well. Lawyers use AI for a variety of tasks, including due diligence, research and data analytics. These applications have largely relied on "extractive" AI, which, as the name suggests, extracts information from a text, answering specific questions about its contents.

"Generative" AIs such as ChatGPT are far more powerful. Part of that power can be used to improve legal research and document review. As Pablo Arredondo, creator of a generative-AI "legal assistant" called CoCounsel, explains, using it "removes the tyranny of the keyword…It can tell that 'We reverse *Jenkins*' [a fictional legal case] and 'We regretfully consign *Jenkins* to the dustbin of history' are the same thing." Allen & Overy, a large firm based in London, has integrated a legal AI tool called Harvey into its practice, using it for contract analysis, due diligence and litigation prep.

Not all lawyers are convinced. One recent survey found that 82% of them believe generative AI can be used for legal work but just 51% thought it should. Many worry about "hallucinations" (as AI boffins refer to chatbots' tendency to present falsehoods with aplomb, as in Mr Schwartz's case) and about inadvertently feeding information subject to attorney-client privilege into algorithms. Yet if these challenges can be tackled—and they can, with better technology and careful humans in the loop—then the misgivings of the doubting 49% may pass. After news of Mr Schwartz's debacle broke, for example, a federal judge in Texas told attorneys appearing before him to file a certificate attesting that they either did not use generative AI at all or that, if they did, they checked the final result. Much as it made little sense for lawyers to insist on doing legal research in libraries once the vastly larger and more easily searched databases of Westlaw and LexisNexis were a click away, when a critical mass of firms embraces generative AI, more will follow.

No need to tear your hair out just yet

AI has the potential to transform the legal profession in three big ways. First, it could reduce big firms' manpower advantage. In large, complex lawsuits, these firms tell dozens of associates to read millions of pages of documents looking for answers to senior lawyers' questions and hunches. Now a single lawyer or small firm will be able to upload these documents into a litigation-prep AI and begin querying them. As Lawrence Lessig of Harvard Law School notes, "You can be a smaller, leaner specialised firm and have the capacity to process these sorts of cases."

Billable powers

Second, AI could change how firms make money. Richard Susskind, technology adviser to the Lord Chief Justice of England, argues that firms profit by "having armies of young lawyers to whom they pay less than they charge clients". If AI can do the work of those armies in seconds, firms will need to change their billing practices. Some may move to charging flat fees based on the service provided, rather than for the amount of time spent providing it. Stephen Wu of Silicon Valley Law Group speculates that firms may charge "a technology fee", so that "clients don't expect to get generative AI for nothing".

Third, AI could change how many lawyers exist and where they work. Eventually, Mr Lessig argues, it is hard to see how AI "doesn't dramatically reduce the number of lawyers the world needs". If AI can do in 20 seconds a task that would have taken a dozen associates 50 hours each, then why would big firms continue hiring dozens of associates? A veteran partner at a prestigious corporate-law firm in New York expects the ratio of associates to partners to decline from today's average of perhaps seven to one at the top firms to closer to parity. If associates aren't worried about their jobs, he says, "they should be".

That may not happen for a while, however. Moreover, AI could make legal services cheaper and thus more widely available, particularly for small and medium-sized businesses that currently often struggle to ▸▸

afford them. Ambitious law-school graduates may find that AI provides an easier path to starting a solo practice. If so, then AI could actually lead to an increase in the overall number of lawyers, as well as changing the sort of tasks they perform—just as the ATM led to an increase in the number of human bank employees rather than their replacement.

Ultimately this will be good news for clients. "People who go to lawyers don't want lawyers: they want resolutions to their problems or the avoidance of problems altogether," explains Mr Susskind. If AI can provide those outcomes then people will use AI. Many people already use software to do their taxes rather than rely on professionals; "Very few of them are complaining about the lack of social interaction with their tax advisers." ■

Professional services

Aussie rule-bending

PWC has disgraced itself down under

ANTHONY ALBANESE, Australia's prime minister, has called it "completely unacceptable". Jim Chalmers, his treasurer, is "furious". The object of their ire is PWC. The professional-services giant is in hot water over allegations that, after helping the government design a new system to make foreign multinational firms pay more tax, it used its inside knowledge to help global clients circumvent those same measures.

The scandal centres on Peter-John Collins, a former PWC partner who counselled the government on the tax rules between 2013 and 2015 and then leaked details of the work to at least 53 fellow partners in Australia and abroad. The Australian Tax Office, suspicious of the speed with which multinationals adapted, raised the matter in 2018 with the Australian Federal Police, and in 2020 with the Tax Practitioners Board (TPB), an accreditation body.

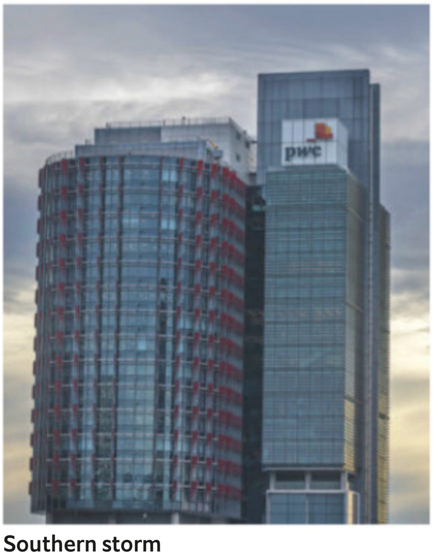
In January it was revealed that the TPB had at the end of last year banned Mr Collins from tax work for two years over the incident. Since then the affair has escalated into a reputational nightmare for PWC. On May 8th its Australian boss stepped down. On May 31st Australia's central bank said it would exclude the firm from future contracts until it had rebuilt trust. On June 2nd AustralianSuper, the country's largest pension fund, took similar steps; the Australian Retirement Trust, the second-biggest, followed suit on June 6th. Many departments of Australia's federal government, PWC's biggest client in the country, will be reviewing their ties.

PWC's Australian operation has apologised over the incident, which it has called "unacceptable". It has launched its own investigation and is "ring-fencing" its business with the federal government to minimise potential conflicts of interest. That may not be enough to quell the rage. On June 7th Australia's senate began hearings for an inquiry into the government's relationship with the consulting industry. Its findings will be published in September.

The saga also reignites awkward questions about the "multidisciplinary" model adopted by PWC and its rivals, Deloitte, EY and KPMG, which brings together auditing, management consulting and tax advice under one roof. Audit, not tax, has been the scandal magnet in recent years. Earlier this year EY was censured in Germany for its failure to spot cooked books at Wirecard, a German fintech darling that collapsed in 2020. Deloitte and KPMG have both run into trouble in Britain over audit flubs.

Those reputation-denting snafus have bolstered the case for those who, like the global boss of EY, argue for splitting audit from the rest of the firms' businesses. That would allow the advisers to escape independence rules that prevent them from serving audit clients on other matters. This latest saga shows that the tax business, which represents around one-fifth of the combined revenues of the "big four", can also be a liability, as PWC's audit and consulting businesses are discovering.

It is not the first time tax has caused a stink. In 2005 KPMG narrowly escaped criminal prosecution in America over its alleged promotion of illegal tax shelters to clients, instead settling with a hefty $456m fine. A conviction would have barred the firm from auditing public companies, which may have been fatal. PWC's nightmare in Australia deals another blow to the multidisciplinary model of the big four. ■



Southern storm

Golf and the Gulf

Whole in one

The PGA teams up with its arch-enemy

MANY A BUSINESS deal is sealed on the golf course. So it was on June 6th, when America's PGA Tour and Europe's DP World Tour, the biggest organising bodies in men's golf, said they had agreed to merge with LIV Golf, a Saudi Arabian upstart. The merger, which will reportedly see LIV's backers invest around $3bn in the combined entity, ends a costly split in the game and gives the Saudis membership of one of the most august clubs in sport.

LIV Golf teed off last June, financed by Saudi Arabia's $650bn sovereign-wealth fund. It brought made-for-TV razzmatazz to a normally genteel game. Shorter tournaments feature teams with names like Crushers. Polite applause gave way to whooping. Star players were paid a fortune to take part, despite misgivings that the Saudis were "scary motherfuckers", in the words of Phil Mickelson, one who took the money. To hang on to talent, the old tours wielded a carrot and a nine-iron. They increased prize money (if not quite to Saudi levels), banned defectors to LIV and highlighted Saudi Arabia's human-rights record. The PGA and LIV have sued and counter-sued one another for interfering with the other's business.

The deal kills those suits (and the prospect of Saudi officials having to appear in an American court). Players who signed up to LIV can expect to be welcomed back to the PGA. Those who had steered clear of the Saudis, for ethical reasons or to avoid upsetting their sponsors, may feel hard done by.

The established tours face accusations of hypocrisy. But the deal protects them from competition with LIV. Saudi Arabia, meanwhile, adds another sporting trophy to its cabinet, which already boasts football stars like Cristiano Ronaldo (tempted to its domestic league in January) and an annual Formula One Grand Prix. Sport diversifies its economy, keeps restless young Saudis entertained and distracts foreigners from the regime's unsavouriness. The princes who run the sovereign fund probably find it more congenial than hydrocarbons, too.

Golf fans will get to see more big stars, and probably more of the snappy, team-based contests. Jay Monahan, the PGA's boss, hailed the tie-up as "transformational". Other sports may wonder where the oil money will flow next.

German business

Angst

BERLIN

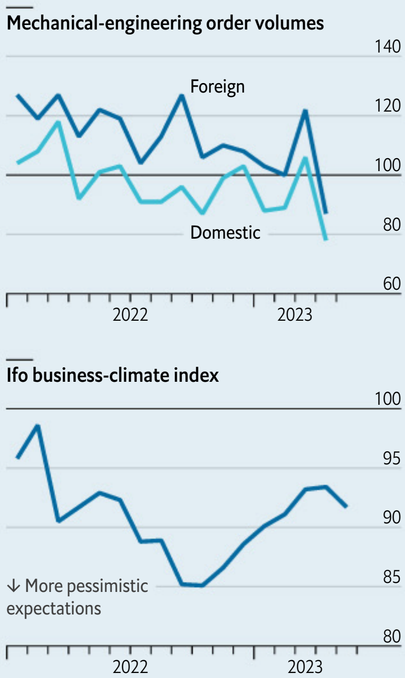
Bosses are depressed—and dissatisfied with the government

"WE ARE AT a dangerous point," worries Arndt Kirchhoff, boss of the employers' association in North Rhine-Westphalia and one of three brothers who run Kirchhoff, a maker of car components. Germany recently slipped into a technical recession. Many companies are investing abroad rather than at home. Chinese consumers are importing less after the lifting of pandemic restrictions than German manufacturers had been hoping. And Ukraine's counter-offensive against Russian invaders is injecting uncertainty into Germany's backyard.

In May an index of business confidence from the Ifo Institute, a think-tank, fell for the first time in seven months (see chart). On June 5th manufacturers' gloomy mood became darker still when the VDMA, the main lobby group for machinery-makers, announced that orders for engineering companies fell by 20% last month, year on year. A small contraction in GDP (German output fell by 0.3% in the first quarter) can have a big effect on orders for makers of machinery. Yet the fall in orders also "reflects the recent deterioration of the mood of the economy", laments Olaf Wortmann of the VDMA. Having promised a new "German speed" in business and economic matters, the governing coalition of Social Democrats, Greens and Free Democrats is delivering what to disillusioned German bosses looks increasingly like a crawl.

Employers' most pressing worries are, according to a recent survey of industrial firms, the prices of raw material and energy (both of which remain high); availability of skilled labour (which is in short supply); and rising wages (which push up costs further). And don't even get bosses started on red tape. Bureaucratic approvals still take too long. A finicky new law requires companies with more than 3,000 staff in Germany to monitor whether their suppliers around the world meet human-rights and environmental standards. It has taken ten years to build the wind farm that Robert Habeck, the economy minister, inaugurated in Bad Berleburg, North Rhine-Westphalia, on June 6th. "We have to speed up approval processes," Mr Habeck conceded during the inauguration. He insisted that Germany will manage to double its windpower capacity by 2030. But this would, by his own admission, require tripling the pace of wind-farm development.

Industrial inaction
Germany, 2015=100



Sources: VDMA; Ifo Institute

German firms are increasingly reluctant to make the effort to invest and expand. Their country ranks a dismal 18th out of 21 industrialised countries as a place for family companies to do business, according to the ZEW Mannheim, an economic-research institute (America, Canada and Sweden are the top three). "We have been on the wrong path for the last 20 years," laments Natalie Mekelburger, chief executive of Coroplast, a leading maker of adhesive tape. The state's *dirigiste* intervention in business is "indirectly destroying entrepreneurial forces", says Ms Mekelburger, who accuses the Greens in particular of a "planned-economy approach".

Almost one-third of German medium-sized *Mittelstand* firms are thinking about transferring production and jobs abroad; one in six is already doing it. BioNTech, a pioneering biotechnology company that helped develop a covid-19 vaccine, is building its cancer-research centre in Britain. Viessmann, a manufacturer of heating equipment, is selling its core heat-pump business to America's Carrier. "We are running the danger of creeping deindustrialisation," warns Nikolas Stihl, head of the supervisory board of Stihl, a leading maker of chainsaws.

Mr Stihl's firm is not planning to move production somewhere else. But he hopes that BioNTech's and Viessmann's decisions will serve as a wake-up call for the government. Neither move would have happened, he says, if Germany were as business-friendly as it used to be. ■

Sino-Western relations

Hardwood floored

SHANGHAI

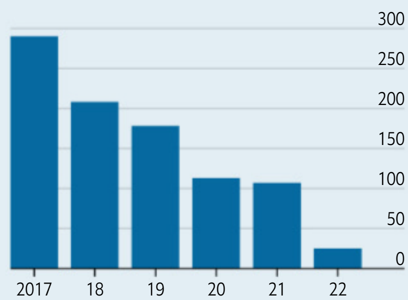
Sequoia Capital saws off its Chinese branch

NEIL SHEN has god-like status in the Chinese private-equity industry. The lead dealmaker at Sequoia China placed big, early bets on some of the country's most successful technology companies, such as Meituan, a delivery super-app, and Pinduoduo, an e-commerce giant. Now Mr Shen's investment firm is planning to go it alone, dropping the Sequoia name and eventually severing all connections with its Silicon Valley parent.

On June 6th Sequoia Capital, a 51-year-old stalwart of the venture-capital industry, announced it would split into separate American, Chinese and Indian businesses. Sequoia China has operated with a high degree of autonomy for a while, with Mr Shen calling most of the shots. So has Sequoia's Indian and South-East Asian business, led by Shailendra Singh. By March 2024 the entities will no longer share investors or returns, as they have done for years. The Chinese branch will be known as HongShan, the mandarin word for redwood. Sequoia says the split is part of a "local-first" approach designed for a world where it has become "increasingly complex to run a decentralised global investment business".

Many of Mr Shen's investments were indeed made for a globalised, connected world. He was an investor in Didi Global, a Chinese ride-hailing company whose listing in New York was hobbled by China's government in 2021. He hoped to make American social media work in his home country by investing in the Chinese arm of LinkedIn, a networking platform for professionals—before growing censorship and onerous rules forced LinkedIn to give up almost completely on the country. ▸▸

Bye, bye, Beijing
Worldwide private-equity capital raised for investments in China*, by closing year, $bn



Sources: Bain; Preqin *Excluding real estate

Meanwhile in America, where bashing China is just about the only thing that Democrats and Republicans can agree on, Sequoia and other investors face mounting political pressure to quit China. Montana has just banned TikTok, a short-video app in whose Chinese parent, ByteDance, both Sequoia Capital and Sequoia China have stakes. DJI, a big Chinese dronemaker part-owned by Sequoia China, is on an American investment blacklist.

Investors and bankers in China have seized on Sequoia's decision as a sign that the country is losing important business connections with the rest of the world. The environment for foreign businesses has indeed turned dark. Raids by Chinese authorities on several Western consulting firms have put multinationals on edge. So has the glum outlook for the economy, which has been boosted less than expected by its reopening after hard pandemic-era lockdowns. Imports and exports both slumped by more than forecast in May. A two-year government campaign against China's digital giants, though now supposedly over, has left deep scars. The Communist Party is taking ever larger stakes in promising technology companies.

Fraught geopolitics and heavy-handed domestic politics are taking a toll on investments in Chinese private assets. Funds that focus on such bets raised just $25bn last year worldwide, down by 77% from the year before, according to Bain, a consultancy (see chart on previous page). Greater China's share of fundraising relative to the rest of Asia has fallen to a 15-year low. Deal value for private equity in China tumbled by more than half last year, more than anywhere else in the region. Sequoia is unlikely to be the last to step away. ■

Bartleby Is employee loyalty silly?

Many a fickle makes a muckle

Job interviews are an opportunity to see allegiances shift in real time. A candidate will usually refer to a prospective employer as "you" at the start of an interview ("What do you want to see from someone in this position?"). But occasionally the pronoun changes ("We should be thinking more about our approach to below-the-line marketing. Sorry, I mean 'you' should be"). That "we" is a tiny, time-travelling glimpse of someone imagining themselves as the employee of a new company, of a fresh identity being forged and of loyalties being transferred.

Loyalty is seen as a virtue in most situations: among friends, family and football fans. Employee loyalty, however, is more complex. It is more transactional. Friends don't give each other performance reviews or fire each other for cost reasons. It is less reciprocal. A worker can feel attachment to a company and a company can feel precisely nothing. (Which is why people often feel more loyal to team members and individual bosses than to their organisations.) And too much of it can impose high costs.

Wage bumps and careers are built on people changing jobs. According to the Federal Reserve Bank of Atlanta, which tracks wage growth in America, in April job switchers were being paid 7.6% more than a year earlier; job stickers were being paid only 5.6% more. A little promiscuity on the part of other people can help those who choose to stay where they are. A paper by Nathan Deutscher, a Treasury official in Australia, found that higher rates of job-hopping in local Australian labour markets were associated with faster wage growth both for workers who switched jobs and for those who did not. Loyalty is nice; so is bargaining power.

Too much loyalty can harm workers in other ways. A piece of research published earlier this year by Matthew Stanley of Duke University and his co-authors tested how bosses felt about loyal workers. The researchers asked managers how willing they were to ask a fictional employee named John to work overtime for no pay. If John was described as loyal, then bosses were happier to dump more work on him. The reverse also applied: workers who did more work for no reward were more likely to be described by managers as loyal. Dogs are known for their loyalty, remember, but not for their brains.

Employers tend to be clear-eyed about what generates loyalty. Retention bonuses are an admission that the best employees might need a little nudge to stay. Actual loyalty tends to get nugatory rewards: a week's extra holiday for 25 years of service? Netflix encourages its employees to speak to recruiters so that they know their worth in the open market and so that it can respond with counter-offers (an approach that makes more sense when you are prepared to pay top dollar and less so if you are in the non-profit sector).

Companies can nonetheless be wedded to the idea of loyalty. The group of employees who left Shockley Semiconductor Lab in the 1950s to found Fairchild Semiconductor was famously dubbed the "traitorous eight". Some of that attitude still prevails. But unless you are a member of the mafia or a cleric, joining a competitor is neither treachery nor heresy. Indeed, boomerang hires—people who leave an employer and then come back—can offer a valuable blend of known quantity and new skills.

Society can suffer if there is a surfeit of employee loyalty. A paper on whistleblowing, published in 2019 by James Dungan of the University of Chicago and his co-authors, found that employees were more likely to report wrongdoing if their concern was fair treatment of people outside the organisation and less likely to do so if they were more motivated by loyalty. Other research suggests that competitive situations can encourage loyal members of one group to cheat in order to best another.

Employee loyalty can be great. Companies want workers who feel committed to them, who are prepared to go the extra mile and not join a rival at a moment's notice. Workers want to believe in and belong at a firm, confident that it warrants chunks of their finite time on Earth. It is better all around, for job satisfaction and for performance, if employees stay put because they feel invested in their organisation than because they haven't got a better offer. But loyalty in the workplace is a self-interested decision, not a moral one. It should be contingent on being treated well, not a habit that becomes harder to break. Stay where you are because you like it, not because to leave would be immoral.

Schumpeter | We need to talk about TIM

What a mega-spin-off reveals about Europe's telecoms industry

EVEN BY ITALY'S chaotic standards, TIM Group, the country's largest provider of telecommunication services, is an odd beast. In the past seven years it has churned through five chief executives. It has amassed net debt of more than €25bn ($27bn), making it the most indebted of Europe's large telecoms firms. And now, to lower the load, it wants to do what none of its peers has done, by selling off its main asset: the fixed network. When Pietro Labriola, TIM's latest new boss, explains the spin-off, he does not beat around the bush. With interest rates rising, the debt burden is becoming crushing. All three big ratings agencies now score TIM's debt as below investment grade. Selling off the fixed network, which is expected to fetch more than €20bn, is "the clearest way to regain industrial options". Offers were due to be in by June 9th.

TIM is an extreme case. Yet its move reveals a lot about where Europe's hyperfragmented telecoms industry is headed. America and China have less than a handful of operators; Europe has more than 100. Though some are local subsidiaries of larger companies, they still compete in a patchwork of national markets. If more European operators follow TIM's example and split their fixed networks from their other assets, as seems likely, this "delayering" may, ironically, be the first step towards consolidation.

The recent history of European telecoms is one of grand ambitions. Most have failed spectacularly. Over the past two decades, many of the sector's firms have become big integrated operators. They offer all kinds of services to both consumers and businesses all over the world. Their collective annual revenues add up to more than €265bn. Some have tried being more than just network operators, dabbling in tech and media—only to see themselves out-innovated by both America's digital giants and its startups.

Financially, the story is not much prettier. In the early 2000s operators paid too much for 3G radio spectrum; some, including Orange (*née* France Télécom) and Deutsche Telekom, almost went belly up. To save them, regulators let them make outsized profits for a few years, only to rein them back in with competition-boosting measures such as licensing new entrants and capping roaming fees within Europe, explains James Ratzer of New Street Research, an equity-analysis boutique. At the same time, the telecoms firms were expected to invest more in their fixed and mobile networks. Their bosses complain about having to accommodate the deluge of data that America's digital titans, from Google to Netflix, are channelling to consumers. Big tech generates more than half of all internet traffic, they say, but contributes nothing to building the infrastructure. (The European Commission has launched a consultation, the results of which are expected soon.)

As a result of all this, the sector's return on capital employed has since fallen from a healthy 18% on average to a paltry 8%, according to New Street. Although they have managed to string plenty of fibre-optic cables all the way to people's homes, including to remote villages in places from Sweden to Spain, their low returns may have kept them from rolling out 5G mobile networks as rapidly as counterparts in America or China. Competition has recently become less intense, allowing operators to raise prices. Even so, investors remain wary. Telecoms shares have lagged behind those in nearly all other sectors in Europe.

Delayering may be the best chance to rescue the industry from profitless wilderness. In 2014 O2 Czech Republic, which split itself up into a network and a service company after being bought by a private-equity fund, saw the combined value of its two parts nearly double, calculates McKinsey, a consultancy. TIM is a much larger firm—and thus a bigger test case. European telecoms bosses are thus watching TIM's disassembly carefully. Once Mr Labriola has sold off the fixed network, he intends his rump company to focus on three businesses, each of which has to hold its own financially: its consumer brand in Italy; cloud-computing services for corporate customers; and a big foreign subsidiary, TIM Brazil. If he succeeds, his rivals will be tempted to follow his lead.

Many, such as Orange, have already split themselves up internally into separate business units offering different services, from cloud computing to network access. Several have spun off their radio towers. As networks become increasingly controlled by software, separation becomes easier. Investors could pick the slice of the telecoms pie that fits their risk appetite. Some may like the predictable economics of fixed network: KKR, an American private-equity giant, is willing to fork out at least €20bn for TIM's (the second bidder is Cassa Depositi e Prestiti, a state-owned bank, which owns 10% of TIM and would give the Italian government more control). Others may prefer the racier mobile business.

Connectivity issues

As Mr Labriola points out, once TIM's fixed network is hived off, regulators are likelier to let him combine its mobile business with that of another operator. Indeed, the industry has redoubled efforts to persuade trustbusters at the commission and national competition authorities to let more of them merge. Hopes of consolidation may explain why Patrick Drahi and Xavier Niel, the French *enfants terribles* of European telecoms, have increased their stakes in two troubled British carriers, BT and Vodafone, respectively. An early test will be the proposed mobile marriage of Orange and MásMóvil in Spain, which is expected to come up for a decision later this year.

Some of the European telecoms bosses' groans about a fragmented market crimping capital spending are self-serving. Fragmentation did not stop them from building formidable fibre networks, which can be costlier than mobile ones. Europe may trail behind America on 5G, but fibre coverage on the continent is now much better than across the Atlantic. Many of European telecoms' problems stem from their attempts to do too much. If they recognise this and delayer, Brussels should cut them some slack. ■

Ember alert

Who is keeping coal alive?

NEWCASTLE AND PARIS

The financiers saving the world's dirtiest fuel from extinction

MOUNTAINS OF COAL are piled beneath azure skies at the port of Newcastle, Australia. Giant shovels chip away at them, scooping the fuel onto conveyor belts, which whizz it to cargo ships that can be as long as three football pitches. The harbour's terminals handle 200m tonnes of the stuff a year, making Newcastle the world's biggest coal port. Throughput is roaring back after floods hurt supply last year. Aaron Johansen, who oversees NCIG, the newest, uber-automated terminal, expects it to stay near all-time highs for at least seven years. Rich Asian countries, such as Japan and South Korea, are hungry for the premium coal that passes through the terminal. So, increasingly, are developing ones like Malaysia and Vietnam.

Halfway across the world the mood music is rather different. In recent weeks activists have made use of quotes from great writers, including Shakespeare ("Don't shuffle off this mortal coil") and the Spice Girls ("Stop right now"), to disrupt annual general meetings of European banks and energy firms, as part of a call for an end to coal extraction. A broader chorus worries that the fuel is the biggest source of greenhouse gases, making up more than 40% of energy-related carbon emissions in 2022. The UN says output must fall by 11% a year to keep warming less than 1.5°C above pre-industrial levels. The International Energy Agency (IEA), an official forecaster, argues against opening new mines and expanding existing ones. Climate wonks think that 80% of reserves must remain unburnt.

This is mainly meant to happen by starving the supply chain of funding. More than 200 of the world's largest financiers, including 87 banks, have announced policies restricting investments in coal-mining or coal-fired power plants. Lenders representing 41% of global banking assets have signed up to the Net-Zero Banking Alliance, pledging to align portfolios with net-zero emissions by 2050. At the COP26 summit in 2021, the UN predicted that this campaign would "consign coal to history". As recently as 2020 the IEA believed consumption had peaked a decade ago.

Yet King Coal looks brawnier than ever. In 2022 demand for it surpassed 8bn tonnes for the first time. This article will look at who is greasing the wheels of the once doomed trade. We find that the market is lively, well-funded and profitable. More striking still, the motley crew bankrolling it will probably allow trade to endure well into the 2030s, lining survivors' pockets to the detriment of the planet.

It is tempting to see 2022 as exceptional. Russia cut piped gas to Europe, and Europe banned coal imports from Russia. The bloc turned to liquefied natural gas (LNG) destined for Asia and thermal coal from Colombia, South Africa and distant Australia. Meanwhile, Asian countries reliant on Russia's premium coal also diversified. Prices for top grades jumped. Europe's poorer neighbours, priced out of the gas market, gorged on lower-grade stuff.

Now the storm has abated. After a mild winter European utility firms retain good stocks of gas and coal. But as the need to power cooling units rises in the summer, coal imports will accelerate. China's economy has emerged from zero-covid; India's is going gangbusters. Traders expect global use to grow by another 3-4% this year.

Coal is likely to remain sought-after beyond 2023. True, demand in Europe will fall as renewables ramp up. It is already low in America, where fracked gas is cheaper. Yet last year's crunch has reminded Asia's import-dependent countries that, when energy is scarce, coal can be a lifeline. It is cheaper and more abundant than other fuels, and once loaded on rudimentary ships can be sent anywhere—unlike LNG, which requires vessels and regasification terminals that take years to build. China is planning 270 gigawatts of new coal-fired plants by 2025, more than any country has installed today. India and much of South-East Asia are following a similar path.

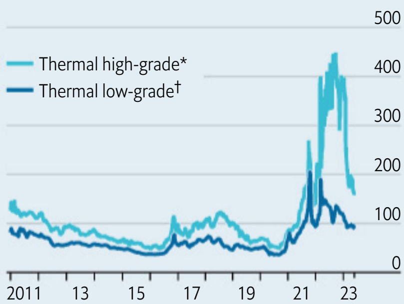
Even with a speedy Western exit from coal, Boston Consulting Group thinks thermal coal demand will fall by just 10-18% between now and 2030. Much of the demand will be met by domestic production in China and India, the world's biggest consumers. But imports will still be crucial. Investment banks do not expect traded volumes to drop below 900m tonnes, from 1bn last year, for much of the decade. One, Liberum Capital, thinks imports will rise over the next five years.

Back in black

Will the global coal market continue to meet stubborn demand? Our research suggests it will. That is because there will remain cash for three vital links in the supply chain: trading and shipping; more digging at existing mines; and new projects.

Financing trade is the easy part. Modelling for *The Economist* by Oliver Wyman, a consultancy, suggests high prices, together with the longer journeys made by rerouted exports, buoyed the working-capital needs of coal traders in 2022 to $20bn, four times the historical average. Assuming average coal prices remain above $100 a tonne, as many analysts do, those needs will sit above $7bn until at least 2030.

Soot-stained profits
Coal prices, $ per tonne



Sources: Bloomberg; Liberum Capital
*Newcastle, 6,300 CV
†Kalimantan, 5,000 CV

Commodity merchants retain access to generous sources of liquidity to finance coal purchases. One is corporate borrowing, via multi-year bank loans or bonds, which gives firms a lump sum they can use however they want. Traders can also draw on short-term, revolving credit facilities, provided by clubs of banks. Many such lines have been expanded since the start of 2022—their limits often reach several billion dollars—to help traders cope with volatile prices. Banks that impose restrictions, specifying the money should not be used to buy coal, face a high risk that traders decamp to lenient rivals. So few do.

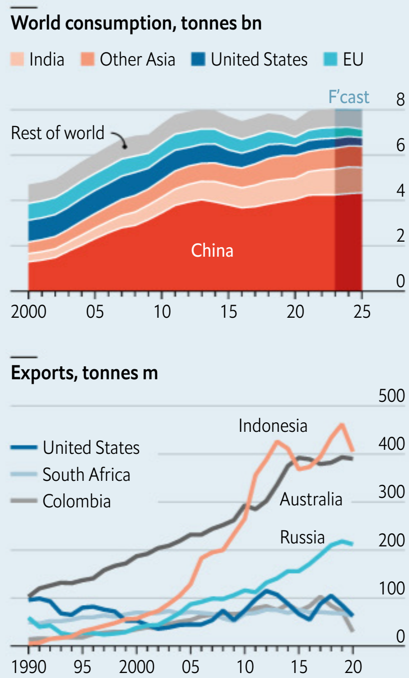
Finance chiefs at trading firms say banks in countries where trading is bread-and-butter, including Singapore's DBS and Switzerland's UBS, still finance coal purchases. Swiss cantonal lenders are happy to help. Banks in consuming countries, like China or Japan, also oblige, as does Britain's Standard Chartered, which focuses on Asian business. (DBS and Standard Chartered both point out they are reducing their exposure to thermal coal.) Only European lenders—particularly French ones—have exited. They are being replaced by banks from producing countries, such as Australia, Indonesia and South Africa.

Smaller, "pure-play" coal traders have faced a bigger squeeze. Banks, which never made much money from them anyway, can hardly claim to be unaware of how lent funds are put to use. Last year some traders were forced to borrow from private vehicles, often backed by wealthy individuals, at annual rates nearing 25%—about five times standard costs. Yet after months of booming business many no longer need external financing. A banker says some of his coal-trading clients have seen profits grow ten-fold in 2022. One in London witnessed his total equity leap from £50m ($62m) in 2021 to £700m in 2023.

To then ship the stuff to buyers, traders often need a guarantee, provided by a reputable bank, that they will be paid on time. Ever fewer lenders are keen to provide such "letters of credit", but there are ways around this, too. Some traders charge their clients more to cover counterparty risk. It helps that exposure is limited. At today's prices, a cargo of coal may be worth just $4m-5m. By contrast, an oil tanker may carry $200m-worth of crude. Others insert trusted intermediaries in the trade, or ask for bigger guarantees on other wares being bought by the client. Some governments in recipient countries provide the guarantee themselves, or even pay upfront.

Outside South Africa, where rail strikes have paralysed transport, there is plenty of infrastructure on land to move coal about. Soon there will be even more. Global Energy Monitor, a charity, reckons that India plans to more than double its coal terminals to 1,400 (today the planet counts 6,300). Seaborne logistics are more restricted: pressured by green shareholders, some shippers have started to shun coal. But smaller ones, often Chinese or Greek, have stepped in. Traders report no difficulties in insuring the cargo. Even sanctions-hit Russia is exporting most of its coal, using the same mix of obscure traders and seafarers, based in Hong Kong or the Gulf, that it employs to ship its oil to Asia.

Big in China
Coal



Source: IEA

Financing more digging at existing mines—the second link in the supply chain—is no problem either. Last year coal production hit a record 8bn tonnes. It is not quite business as usual. Since 2018 many mining "majors" (large, diversified groups listed on public markets) have sold some or all of their coal assets. Yet rather than being decommissioned, disposed assets have been picked up by private miners, emerging-market rivals and private-equity firms. New owners have no qualms about making full use of mines. In 2021 Anglo American, a London-based major, spun off its South African mines into a new firm that instantly pledged to crank up output.

Like traders, the miners have been printing money. Australia's three biggest pure-play coal producers went from posting net debt of $1bn in 2021 to $6bn in net cash last year. They have repaid most of their long-term borrowing, so have no big deadlines to meet soon. "The conversation has gone from 'How do I refinance my debt?' to 'What do I do with my extra cash?'," says a finance chief at one of them.

Coal miners can still borrow money when needed. Data compiled by Urgewald, a charity, shows they secured an aggregate $62bn in bank loans between 2019 and 2021. According to the outfit's research, Japanese firms (SMBC, Sumitomo, Mitsubishi) were the biggest lenders, followed by Bank of China and America's JPMorgan Chase and Citigroup. European banks also featured in the top 15. During this period coal miners, mainly Chinese, also managed to sell $150bn worth of bonds and shares, often underwritten by Chinese banks. The liquidity is not drying out. Urgewald calculates that in 2022 60 large banks helped channel $13bn towards the world's 30 largest coal producers.

This is possible because the coal-exclusion policies of financial firms are wildly inconsistent. Many do not kick in until 2025. Some cover only new clients. Others prohibit financing for projects, but not general corporate loans that miners may use to dig for coal. Policies that do restrict such lending often do so only for miners that derive lots of their revenue from coal, typically 25% or 50%. Many big firms, including Glencore, a Swiss commodities giant which produces 110m tonnes a year, fall below such thresholds.

Some policies are vaguely worded to allow for exemptions. Although Goldman Sachs, a bank, promises to stop financing thermal-coal mining companies that do not have a diversification strategy "within a reasonable timeframe", it has reportedly continued to lend to Peabody, a huge Australian miner that derived 78% of its revenue from coal sales in 2022 (it may have helped that the firm recently launched a modest solar subsidiary). Out of 426 large banks, investors and insurers assessed by Reclaim Finance, another charity, only 26 were deemed to have a coal-exit policy consistent with a 2050 net-zero scenario. Even fewer have said they will exit completely. Most of China's and India's state-owned banks have said nothing at all.

In short, few banks are ready to hurt their top line or their country's supply. Analysts reckon that will help existing mines meet demand until the early 2030s. At this point, there may finally be a crunch. Western banks, many of which periodically revise their policies, will gradually tighten the screws. The paucity of new projects today—the third link in the chain—means there may not be enough fresh supply when old mines stop producing.

Although finance for new projects is getting harder to attain, it is still available. As Western banks retreat, other players are coming to the fore. Capital expenditure by Western miners has been feeble for years. Having spent big in the 2000s, many suffered when prices crashed in the mid-2010s. Even though they are making hefty profits again, the majors prefer to buy rivals, reopen old mines or return capital to shareholders rather than launch new ventures. The investment drought is most severe in coal. Building a pit from scratch can take more than a decade. Years are spent obtaining permits, which in the West are increasingly refused.

Financing new projects in rich countries is a big hurdle. Last year Adani Group, an Indian firm that runs Carmichael, a vast coal mine being built in Queensland, had to refinance out of its own pocket $500m in bonds it had issued for the project. Some opportunistic pots of money will continue to target juicy profits, especially if prices rise. The first deep coal pit to be dug in Britain in decades is ultimately owned by EMR Capital, a private-equity firm incorporated in the Cayman Islands. Peter Ryan of Goba Capital, an investment firm in Miami, expects his company's coal assets to grow eight-fold by 2030.

Asian century

The picture in Asia is different. Banks remain on the scene. Investors are starting to back new mines at home. Family offices, set up to invest the fortunes of the rich, are interested. Any business dynasty in Indonesia, where mining is the backbone of the economy, has to have some coal in its holdings, says a trader who sources his wares there. In India obscure property firms are bidding for land that may be mined for coal. Eventually companies from the same countries may come to dig mines overseas, with banks following them. Chinese forays in the West will remain rare; Indian and Indonesian firms, which already own an archipelago of coal assets in Australia, are bound to increase their footprint.

The coal market of the 2030s will thus look very different. "From ownership and operation to funding and consumption, coal will be a developing-market commodity," says a mining-major boss. Supply constraints will keep prices high, but the cast of exporters cashing in will shrink. Colombia and South Africa, which serve Europe, will no longer have a market. Russia will find it harder to flog cargoes to China. All three will export less coal for less money. Australia will appease critics by focusing on the most efficient coal; it may export less, but charge more. Indonesia could become the swing exporter, like Saudi Arabia is for oil today. It will sell more of its basic coal—often for more money.

Although coal is on a downward slope, its goodbye will be uncomfortably long. By the 2040s demand may crater for good as renewables ramp up. Yet even then some countries may keep their options open. More energy shocks will come. "And when there is one, the commodity no one wants is the one we need to use again," says a big trader who serves Asia. "That feature of coal could stay for ever." ■

Investing in Asia

Growth problems

Japan's stockmarket rally may disappoint true believers

The last time Japan's Nikkei 225 stock index was as high as it is today, the Soviet Union was collapsing, the internet was in its infancy and Emperor Akihito had just ascended to the Chrysanthemum throne. Japanese stocks are now only a fifth short of their all-time high, which was set in December 1989—at the absolute zenith of Japan's bubble-era exuberance (see chart).

A wave of interest in the country's stocks, which have risen by 24% so far this year, may yet propel the market further. The cheap yen has padded the bottom line of firms that make money abroad. Optimism about corporate-governance reforms, and interest from Warren Buffett, an American investor, have provided a boost. A dearth of compelling options in other parts of the world also helps. So far this year, foreign investors have bought ¥3.8trn ($27bn) more in Japanese stocks than they have sold, the most since 2013.

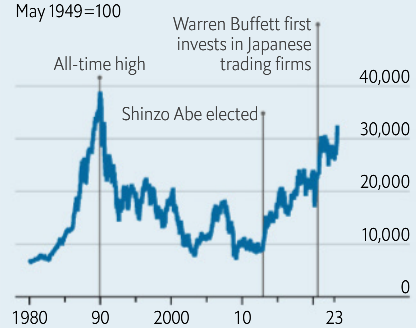
Beneficiaries include Japan's cheaply priced value stocks, such as the five *sogo shosha* (general trading companies) that Mr Buffet has bought stakes in. The share prices of these firms have comfortably beaten the market this year, rising by between 28% and 45%. Shareholder activism at cheaply valued firms, once anathema in stuffy Japanese boardrooms, hit a new record this year, as measured by shareholder proposals at annual general meetings.

But experienced investors know that the land of the rising sun has had more than its fair share of false dawns. The Nikkei 225 rose by over 40% between the end of 1999 and a peak in March 2000, after which the dotcom bubble burst. It rose by over 50% between the end of 2004 and

Tokyo yo-yo

Nikkei 225 stockmarket index

May 1949=100



Source: Refinitiv Datastream

mid-2007, before the global financial crisis. It more than doubled in the couple of years after Shinzo Abe was elected prime minister in 2012, promising to lift growth.

The Abe rally was not just larger in size than the present one; it also saw more foreign participation. In 2013 overseas buyers snapped up ¥16trn of Japanese stocks, four times the amount they have purchased this year. Even though the quality of Japanese governance has improved markedly in the past decade, foreign investors have sold practically all the shares they accumulated during that burst of optimism. This is because the growth Abe promised has mostly failed to materialise. Revenues per share on the MSCI Japan index are, in dollar terms, still below the levels they reached before the global financial crisis, and are marginally worse than on the humdrum stockmarkets of Britain and the euro zone.

Some analysts foresee better economic conditions. Udith Sikand of Gavekal Research, a consultancy, argues that the return of inflation to Japan—prices excluding fresh food and fuel rose by 4.1% in the year to April—heralds the beginning of a virtuous cycle, which will lift wages and consumer spending. However if such a cycle is coming, the evidence so far is thin. Wages have risen by just 1% in nominal terms over the past year, meaning workers are enduring real-terms pay cuts.

The improved profitability and returns that result from shareholder-friendly governance have helped lift the Japanese stockmarket. Improved valuations would lift it higher still. Yet solid economic growth is practically a precondition for sustaining a prolonged rally—meaning another generation of investors in Japan may soon have their fingers burned. ■

Buttonwood Great Predicted Turnover

The current stockmarket surge is powered by artificial intelligence

Do you buy the hype? The release of ChatGPT, a tool designed by OpenAI, has kicked off a wave of enthusiasm about artificial intelligence (AI). Everyone from spy agencies to law firms is trying to make use of the technology. And investors are working out how they might be able to take advantage by buying AI-exposed firms.

In the stockmarket this has manifested itself as an almighty boom in the valuation of tech companies. OpenAI might be private, but the S&P 500 index of leading American shares contains more than a dozen firms that design AI software, have invented or build the computing chips that make AI possible, or run the data centres that the tech relies on. The latest firm to experience an AI-induced rally is Nvidia. The Californian company's share price has risen by almost 23% since it reported unexpectedly strong earnings on May 24th, and has more than doubled in the year to date. Nvidia is now the fifth most valuable listed corporate entity in America.

Yet it is not just tech firms that are thriving. The AI boom has coincided with a broader recovery in stockmarkets, which were battered last year by a combination of high inflation and rising rates. The S&P 500 is up by 8% since ChatGPT was launched, and has risen almost 20% from its October low. This prompts a question. Just how much of the rally is explained by AI enthusiasm?

To answer such a question, it is necessary first to rule out the usual culprits for major market moves: namely, shifting interest-rate or growth expectations. After all, owning a share is ultimately a claim on the future earnings of a firm. One way of working out the value of a share today is by estimating future earnings, and potential growth, before applying a discount or interest rate to calculate its value. This time around a shifting macro outlook cannot illuminate market movements. In November investors thought the federal-funds rate would rise to around 5-5.5% by the end of 2023. Although sentiment has oscillated, it has settled at about the same place. An average of earnings expectations for the year is also where it was six months ago.

The next step is more straightforward: it involves quantifying the size of the AI bounce. Analysts reckon that the S&P 500 has 14 firms with significant exposure to the tech. These include well-known giants, such as Google and Microsoft, and lesser-known providers of underlying infrastructure, like Arista and NetApp, two data-centre companies. On its own, the price of Nvidia is responsible for an enormous slice of the stockmarket recovery. Since the end of November the firm's market capitalisation has soared from under $400bn to $925bn—accounting for a fifth of the rally. Add Nvidia's surge to the growing market capitalisations of the 13 other firms with AI exposure and a remarkable 73% of the broader rally is explained. The boom in AI stocks has comfortably outstripped the wider tech rebound. The NASDAQ is up by a fifth since November, compared with a third for the most AI-exposed firms.

That AI optimism is the driver of the recent rally becomes even clearer when looking at share price "multiples", which divide current prices by current or future earnings. These multiples are affected by earnings and economic factors like interest rates, but also by more nebulous things under the broad label of "animal spirits". In November the average price to current earnings multiple of an S&P 500 firm, excluding the 14 most exposed to AI, was around 27. As we went to press, the multiple had dipped to 26. Meanwhile, the average multiple of firms in our AI bucket had leapt from 43 to 77.

These multiples might be justified. Excitement about Nvidia's prospects has been prompted by orders for the company's chips. During the firm's earnings call representatives suggested that booming growth in income from data-centre chips would lift total revenues in the second quarter to $11bn, double their level in the previous year.

On the other hand, investors have been known to get overexcited about novel technologies. The internet made a new generation of companies (and their bumper profits) possible. It set off a wave of productivity improvements for economies around the world. The problem is that much of this happened after a stockmarket bubble, which caused speculators to lose their shirts. It is obvious that investors making bets on AI must assess whether the hype is justified this time around. But such is the importance of AI to the broader stockmarket, so must everyone else, too.

Urban life

Forged in fire

JOHANNESBURG, SAN FRANCISCO AND SINGAPORE

Amoral global cities are flourishing in a turbulent geopolitical era

Miami nice

Global cities' perfomance

Ranking Out of ten cities		Population 2019-22*, % change	Real GDP 2019-22*, % change	Office vacancy rates, 2019-22†, %-point change	Real house prices, 2019-22†, % change
1	Miami	-1.6	10.6	2.3	39.5
2	Singapore	-1.2	6.9	1.4	10.9
3	Dubai	5.8	-1.9	-3.0	11.9
4	New York	-2.0	4.3	8.3	15.3
5	London	0.5	3.0	4.3	-3.2
6=	Sydney	-0.3	4.4	8.7	3.1
6=	Tokyo	-4.8	0.4	3.1	21.5
8=	Johannesburg	7.4	0.9	6.8	-7.1
8=	Paris	-2.0	1.8	2.8	2.9
10	San Francisco	-8.3	9.4	19.9	7.7

Sources: JLL; Knight Frank; Oxford Economics; national statistics; *The Economist*

*Includes preliminary estimates
†Q4 2019-Q4 2022

SINGAPORE’S IMMACULATE Changi airport is the perfect place to witness a shift in the balance of power between global cities. Since the city-state’s final covid-19 border restrictions were lifted last year, it has welcomed crowds of bankers, consultants and lawyers, fresh off a four-hour flight from Hong Kong or Shanghai, and often arriving without a return ticket. Singapore’s neutrality is pivotal in a region where the rupture between America and China feels especially immediate.

In most cities the twin blows of covid and geopolitical tension have proved more of a problem. In order to assess which are thriving in this new era, *The Economist* has compiled a rough-and-ready index. It scrutinises a sample of ten locations, looking at changes in four measures—population, economic growth, office vacancies and house prices—over the past three years. We rank each city by how it has performed on the measures to create an overall score.

Miami claims top spot thanks to strong economic growth and an extremely perky property market: real house prices leapt by 39.5% from 2019 to 2022. Singapore is next, benefiting from GDP growth of 6.9%, and only a small rise in office vacancies. Dubai, meanwhile, has seen its population jump by 5.8%. It is also the only city in the index where office vacancies have dropped. At the other end of the table is San Francisco, where the population has fallen by 8.3%.

What an airport looks like in Singapore

What explains this contrasting performance? Covid plays a part. Cities in bits of the world that did not go overboard with restrictions, such as Dubai and Miami, benefited—sometimes at the expense of those that did, like San Francisco. International overnight visits to Singapore may have been three-quarters lower at the end of 2022 than before covid, according to Oxford Economics, a consultancy, but life was pretty good when compared with its rivals, Hong Kong and Shanghai, where tough restrictions on movement lasted longer. Indeed, thanks to falling rents, Hong Kong has lost its top spot in a ranking by HSBC, a bank, of the world’s most expensive cities.

Singapore has also sucked up firms and workers fleeing Xi Jinping’s authoritarianism. Much like Dubai in the Middle East, it serves as a place where anyone can do business with anyone. Dubai and Singapore share other advantages as well. Both offer year-round warm weather (important when people can work remotely) and lenient regulation (helpful for those annoyed with Western red tape). Singapore has thrown tax breaks at family offices, helping lift their number to 1,500 in 2022, from 50 in 2018. Dubai has introduced social reforms, decriminalising alcohol and the cohabitation of unmarried couples.

Local leaders can make a difference. Miami has worked hard to attract financial business, with firms such as Blackstone and Citadel setting up shop recently. By contrast, San Francisco has lots going against it: a victim of the tech bust, it is expensive and sometimes dangerous, with high taxes and increasingly bad public services. Businesses are walking away, especially those based downtown, with Anthropologie, Office Depot and Whole Foods all closing stores in recent weeks. Johannesburg, which aspires to be the commercial capital of South Africa, if not the whole continent, suffers from deteriorating power and water infrastructure, as well as increasingly unstable politics: the city has had six mayors in the past two years. Locals with means are rushing to “semigrate” to better-run Cape Town.

One problem faced by all cities in the index, bar Dubai, is what to do with surplus office space. Vacancies represent a multi-billion-dollar fiasco for owners of commercial property, and leave city budgets exposed. In February San Francisco proposed annual tax breaks of up to $1m for new office-based companies. Meanwhile, cities including New York, Paris and Singapore hope to convert offices to much-needed housing. The success of such schemes will determine the cities’ economic health, and their position in next year’s rankings. ■

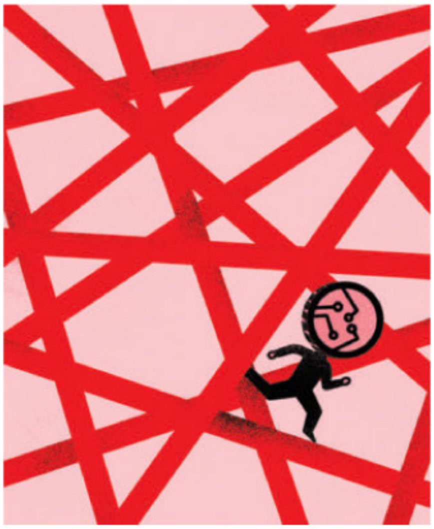
Cryptocurrencies

Crackdown

Regulators place the future of America’s crypto industry in doubt

TAYLOR SWIFT’S record-smashing “Eras” tour could end up being one of the most lucrative in musical history, possibly even minting the world’s newest billionaire. But Ms Swift has another thing going for her personal finances. When courted to invest in FTX, a now defunct crypto exchange, she reportedly balked: “Can you tell me that these are not unregistered securities?”

American regulators are asking similar questions. On June 6th the Securities and Exchange Commission (SEC) sued Coinbase, the country’s largest crypto ex-



change, for failing to register as a broker, exchange or clearinghouse of securities. When markets opened, Coinbase's share price dropped by a fifth. The day before the SEC had sued Binance, the world's largest crypto exchange—alleging both that it offered securities-trading services without the necessary registrations, and that it had placed customer funds in a trading outfit owned by its boss, Changpeng Zhao. Binance rejected all the allegations and said it would "vigorously defend" itself.

At the core of both lawsuits is the idea that many cryptocurrencies are in fact securities. American law defines securities to include any "investment contract" that produces an asset for which an owner can expect to accrue returns depending on the effort of a promoter. The SEC has suggested bitcoin, the world's most valuable cryptocurrency, does not meet this standard. It has also avoided making definitive statements about ether, the second most valuable token. But Gary Gensler, the SEC's chairman, has made clear that he thinks most other cryptocurrencies fit the bill.

Absent legislation or friendlier regulators, the lawsuits place the fate of America's crypto industry in judicial hands. An entity's issuance of crypto tokens is strikingly similar to the issuance of equity shares. If the organisation does well, the value of its tokens goes up. This makes it hard to argue they are not securities. The flipside is that some cryptocurrencies, like bitcoin, do not have such a promoter, since there is no centralised outfit that stands to profit from the token's growth. And others, like some stablecoins, are used mainly for liquidity, such as facilitating trade within a crypto protocol, rather than investment.

Coinbase is listed in America. Binance, which has no formal headquarters, is a trickier case. It separated American operations from international ones, but regulators say it turned a blind eye to Americans trading on the international platform. The SEC's lawsuit notes a damning message sent by its chief operating officer to colleagues: "We are operating as a fking unlicensed securities exchange in the USA bro."

The exchanges, for their part, argue that the SEC is "regulating by enforcement" and has failed to provide clear guidelines on what is permitted. In this narrow sense, they may have a point. If the rules had been clear earlier then years of investment and talent could have been better allocated.

There are two big implications of America's crackdown. First, if the SEC wins, America could in effect join the 25 of 45 markets tracked by the Atlantic Council, a think-tank, that have fully or partly banned crypto. Even if regulators create a path for firms to exist within the law, crypto's value will shrink, as it becomes more difficult to avoid the costly red tape that applies to regular financial institutions.

Second, more crypto firms will move to places with friendlier regulation and shun doing business in America altogether. Dubai will be one winner. It has set up a specialist crypto regulator and opened its arms to offices from Binance, Crypto.com and Bybit. The game of regulatory cat-and-mouse is not over just yet. ■

Dysfunctional governance

Nasty hangover

WASHINGTON, DC

After debt-ceiling negotiations, America faces a debt deluge

HAVING FLIRTED with madness, Congress decided to avert a sovereign default and allow the government to resume borrowing. But although the debt-ceiling negotiations are over, their aftershocks will ripple through financial markets for months to come. In order to stave off disaster, the Treasury spent much of the past six months running down its cash holdings, eventually reaching the point where it had almost nothing left. Now it must scramble to replenish its cash, creating a potential hazard for the economy.

The Treasury general account—the government's main account at the Federal Reserve, used for official payments—fell to just $23bn at the start of June, far less than the amount of net spending on a typical day. Normally the Treasury tries to maintain a balance of at least $500bn, enough to cover about a week of cash outflows. Thus its task is to rebuild buffers by selling bills and bonds (it will mostly rely on bills, because it is easier to raise cash quickly via short-term debt sales). At the same time, it will have to sell even more paper to finance the government's deficit. The result will be a surge in issuance. Mark Cabana of Bank of America forecasts that the Treasury will issue more than $1trn in bills over the next three months, roughly five times its total in an average summer.

The concern is where the money will come from and, in particular, if debt sales will drain liquidity from other asset markets. There are two main possible sources of cash, and each poses risks. The first is money-market funds, which are flush at the moment, with more than $5trn invested in them. In principle, these funds could hoover up the bulk of the new bills by simply paring the cash they place at the Federal Reserve via its reverse-repurchase (repo) facility. For that to happen, though, the Treasury may have to offer higher coupon rates than the 5.05% yield on reverse repos. Higher yields, in turn, could translate into higher funding costs for already strained regional banks—an unattractive prospect.

The second option is less attractive still. Firms, pension funds and other investors may wind up being the biggest buyers of bills, which would mean moving money out of deposits into Treasuries, reducing the level of bank reserves in the financial system. Banks are sitting on excess reserves of about $3trn; it would not take much for these to fall to $2.5trn, a level seen by many as indicating reserve scarcity (going by the rule of thumb that banks should maintain reserves at about 10% of GDP). Such a development would raise uncomfortable questions about banking stability and could force lenders to offer higher deposit rates to recover reserves.

A brief encounter with reserve scarcity would not necessarily spell disaster. The Fed could provide liquidity support if required. And to the extent that money-market funds buy up more bills, pressure on bank reserves would be reduced. Either way, however, the flood of Treasury issuance will almost certainly add to market anxiety and volatility, increasing the risk that something, somewhere breaks. It is one more thing to dislike about America's perennial debt-ceiling convulsions. ■

Back from the brink

United States, Treasury general account

Weekly average, $trn

Source: Federal Reserve

Free exchange | Money problems

Policymakers propose a flimsy argument for central-bank digital currencies

To their critics central-bank digital currencies (CBDCs) are a fad—a solution in search of a problem. To their supporters CBDCs are a necessary response to a digitising world. Central bankers everywhere are studying the idea. Recently several have signed up to an argument in their favour: that CBDCs will be needed to anchor the value of money in a cashless financial system. It is a notion that could prompt governments to rebuild their banking and payment systems. But does it withstand scrutiny?

The logic has recently been set out by the Bank of England, whose public consultation concerning CBDCs closes on June 30th. It goes as follows. People have the confidence to hold bank deposits (money issued by the private sector) in part because they know that they can at any time withdraw it as notes and coins (money that is issued directly by the state). But physical cash is declining in both use and usefulness. You cannot spend it on the internet; a growing number of shops insist on digital payment. Deprived of their convertibility into publicly issued money that is useful, bank deposits might lose their competitive advantage over emerging competitors that are similarly removed from public money, such as stablecoins or even foreign digital currencies.

In Britain, the Treasury and Bank of England therefore judge a retail CBDC to be probably necessary "to anchor the value and robustness of all monies circulating in the UK", as Sir Jon Cunliffe, a deputy governor at the bank, has put it. A similar judgment has been reached in Frankfurt, where the European Central Bank must ensure "the money we issue maintains its role as a monetary anchor", according to Fabio Panetta of the bank's governing council.

Yet the argument that CBDCs will be needed to anchor the value of money is unconvincing. It is also failing to catch on in America, where the Federal Reserve is unenthused by the idea. "Physical currency can effectively disappear, and everything still works," Chris Waller of the Fed has argued. David Andolfatto of the University of Miami agrees. The absence of physical money would be of "no consequence whatsoever", he says.

The evidence that physical cash underpins confidence in banks is flimsy. Depositors in most rich countries are able to take comfort from deposit insurance, which pays out up to a certain limit if banks fail; the knowledge that central banks will lend freely in emergencies; and the ability to transfer funds to other banks. A paper cited in the Bank of England's consultation, by Hanna Armelius of Sweden's central bank and two co-authors, notes that with such measures in place "neither cash nor a CBDC seems fundamental to the monetary [system]", although the authors speculate that CBDCs could support "a sense of control" among depositors who distrust banks.

Would such depositors trust a CBDC, however? The Bank of England's draft proposal is for a "platform" CBDC, in which the digital currency is held in digital wallets offered by the private sector. For most consumers such a CBDC would be "absolutely indistinguishable from ordinary retail deposits", says George Selgin of the Cato Institute, an American think-tank. The unique feature of the CBDC wallet—that it would be fully backed by public money—is something many people already mistakenly think is true of bank deposits. Whether held in wallets or not, it seems optimistic to think that CBDCs would reinforce confidence in banks among particularly mistrustful customers, given the many conspiracy theories circulating about the plans.

The paranoid will continue to crave cold, hard cash. Fortunately notes and coins might continue to reassure them even as their use in transactions declines. "All the central bank needs to do is promise to provide the currency if requested," according to Mr Waller. "Eliminating currency is a policy choice…not an economic outcome." It is true that physical cash has less utility as it becomes more difficult to spend. But it maintains its status as "legal tender", meaning, in most contexts, that creditors must accept it as a means of repaying debts. The rule protects the function of cash as a store of value even as it becomes less useful for payments.

As for the threat from stablecoins, it is hard to see why creating CBDCs would be the simplest way to prevent monetary fragmentation. Stablecoins pegged to domestic currencies are a lot like bank deposits and could be regulated as such to ensure a 1:1 exchange rate between private and public monies. Central bankers talk of CBDCs acting as a "bridging asset" between different digital coins. Yet digital state-issued money that can be used to settle transactions involving multiple banks already exists in the form of the deposits, called reserves, that they hold at central banks. It would be more straightforward to expand this system than to build a retail CBDC, says Mr Andolfatto.

Common cents

Economists have long argued that the power of governments to choose the currency in which they levy taxes creates some demand for that currency, in whatever form the state prefers. "A prince who should enact that a certain proportion of his taxes should be paid in a paper money of a certain kind might thereby give a certain value to this paper money," wrote Adam Smith in "The Wealth of Nations". Unless the Treasury is about to start accepting crypto assets as tax payment, in other words, the Bank of England probably need not worry about losing its grip. The widespread use of a stablecoin backed by sterling-denominated assets would in any case leave the bank in control of interest rates, which would flow through the stablecoin's balance-sheet much as they flow through those of banks at present.

Over the years plenty of people have argued that the monetary system could not function well without certain anchors, such as to gold or the dollar, only to be proved wrong. The idea that the system needs government-issued money to be in widespread use is likely to suffer the same fate. ■

The human family tree

A tangled history

An ancient hominin seems to have buried its dead and made art despite its tiny brain. That complicates the story of human origins

"THE MARCH OF PROGRESS", created by Rudolph Zallinger in 1965, is an image that has launched a thousand T-shirts. It shows a line-up of six figures. The first is hunched and ape-like. The rest become gradually taller and straighter until eventually a neatly shaven *Homo sapiens* strides into the future.

The picture captures a conviction still prevalent among anthropologists. This is that the evolution of intelligence in humans and their ancestors was driven by ever-larger brains enabling more complex behaviours, such as better designs for stone tools, or abstract ideas expressed through culture and art.

Three papers published online this week undermine that idea. Written by a team led by Lee Berger, a palaeoanthropologist at the University of Witwatersrand, and due for publication in the next few months in the journal *eLife*, they provide evidence that *Homo naledi*—a small-brained species of hominin that lived at a similar time to early humans—left behind rock engravings and buried its dead deliberately and with ceremony.

H. naledi has been puzzling scientists since it was discovered. In 2013 around 1,500 bones from at least 15 individuals were found in the Rising Star cave system in South Africa, 25km north of Johannesburg. It was obvious that this was a new species of hominin. But placing it in the genus *Homo*, to which modern humans belong, was controversial. *H. naledi* was a mosaic. It was short—around 145cm tall—with human-like hands and feet. But its hips and shoulders look more like those of *Australopithecus*, a more ape-like genus ancestral to *Homo*.

Its brain looked equally chimerical. The general shape of *H. naledi*'s skull is characteristic of *Homo*. Modelling of its braincase suggests that it had a highly developed frontal cortex, like other members of the genus, which includes both modern humans and Neanderthals. Despite that, *H. naledi*'s brain as a whole was remarkably small, even controlling for its stature. It was about half the size of a typical human brain relative to the size of its body. That looks more like something you would find in a member of *Australopithecus*.

All that led to rows over whether *H. naledi* was an early member of *Homo* or a late member of *Australopithecus*. It was assumed that it was probably 2m-3m years old, since that was roughly the window of time in which the two overlapped. But when the rocks in the chamber were analysed, they revealed another surprise. *H. naledi* was still roaming the planet sometime between 235,000 and 335,000 years ago. That would have made it a rough contemporary of the earliest humans.

The minds of the dead

The latest papers concern not *H. naledi*'s physical features, but attempts to deduce how its mind worked. In the first, Dr Berger and colleagues report bone fragments in what appear to be the remains of shallow graves. The depressions cut across the rock layers of the cave floor and do not follow its natural slope, suggesting they are artificial. The bones are also arranged in a way that suggests the bodies rotted while covered over with soil, rather than being left exposed to the air. Dr Berger reckons that adds up to compelling evidence that *H. naledi* went to some trouble to bury its dead. ▶▶

→ Also in this section

Ceremonial burial is reckoned to be a big deal by palaeontologists, indicating the ability to reason about abstract ideas such as mortality and identity. After all, Rising Star cave is not a convenient spot to bury bodies. The hominins would have had to carry the body over treacherous terrain in the dark, probably using fire to light the way (there is already evidence that *H. naledi* used fire to cook). "I was sceptical that a hominin with a small brain could be capable of the deliberate disposal of its dead," says Chris Stringer, an expert on human evolution at the Natural History Museum in London who was not involved in the research. "But this evidence is impressive."

The second paper reports the discovery of abstract geometric patterns carved into three panels on the walls of two different chambers within the cave. The engravings take the form of nearly 50 lines etched deep into the rock, which intersect to form squares, triangles and crosses.

The rock upon which they were etched seems to have been chosen deliberately, says Dr Berger. "You can see the surface has been prepared [with tools]," he says. And the depth of the carvings, he argues, means the markings were unlikely to have been made idly. If the engravings really are deliberate art, then, *H. naledi* would join Neanderthals and *H. sapiens*, both of which had much bigger brains, as the only hominins with an artistic bent.

The final paper discusses how to interpret these findings. Scientists generally believe that ceremonial burial indicates a sophisticated culture comfortable with abstract ideas. Art, meanwhile, is an example of the sort of symbolic thinking that some believe to be a precursor to language and high-level cognition. If a species with a tiny brain really was thinking along such lines, it suggests the story of human evolution is in need of a rethink.

It also sets the stage for something of a crisis in the field. A few decades ago, the hominin fossil record appeared quite straightforward, suggesting that there was, in general, only one species in a given place at a given time. That made it simple to marry up material evidence such as stone tools, cave art and evidence of fire with what the fossils showed. If there was only one hominin around, it must have been responsible for whatever was found.

These days, the picture looks much more complicated. *H. naledi* is the fifth new hominin discovered in the past 20 years alone. And if *H. naledi* was as clever as Dr Berger suggests, it would make things more tangled still. Tools or cave art, or any other evidence of sophisticated behaviour, could plausibly come from many more of the figures in "The March of Progress" than scientists had thought possible. Human history, it seems, is even more crowded than scientists had thought. ■

Horse-racing and genetics

Maybe she's barn with it

A new study asks whether racehorses have hit their genetic peak

For decades there was an apparent paradox in horse-racing. The sport is lucrative (Mage, the winner of this year's Kentucky Derby, earned his owner $1.9m) and simple—the fastest horse wins. Horses with good results and a good pedigree are used as breeding stock for the next generation. Horse-breeders were armed with plenty of data, a single trait to optimise, and strong incentives to do so. Yet several studies suggested that, despite their efforts, race times were not improving.

The most common explanation was that, physiologically speaking, it was increasingly difficult to breed a horse that ran faster than existing horses already do. The modern thoroughbred racing horse dates back at least three centuries. Perhaps the years of selective breeding had already discovered and exploited almost all of the breed's genetic potential.

That did not make sense to Patrick Sharman, a racing enthusiast and geneticist at the University of Exeter, in England. After all, cattle breeding has been going on for hundreds of years, yet continues to create cows that produce more milk. Artificial selection applied to chickens is still raising plumper birds. It would be odd, he thought, if racehorses were the one domesticated animal that humans could no longer improve. So, along with Alastair Wilson, who had once been his PhD supervisor, he started digging.

They were slower back then

Their first paper was published in 2015, and examined a dataset of British races going back to the 1800s, much larger than in other papers. It found that, contrary to accepted wisdom, horses have indeed been getting faster. In sprint races—those run over five to seven furlongs (1-1.4km)—the average speed needed to win has increased by about 0.1% each year since 1997. Their latest paper, published on May 27th in *Heredity*, tries to assess how much of that improvement is attributable to genetics. In other words, is the time-, energy-, and money-intensive profession of horse breeding worth the faff?

The answer appears to be yes—though less so than breeders might like. By linking a large performance database, containing nearly 700,000 race times recorded in Britain between 1995 and 2014, to a family tree of more than 76,000 horses, they found that speed is heritable, albeit weakly, and that breeding is improving it, but slowly.

The boost is most pronounced for sprints and middle-distance races (8–12 furlongs). Drs Sharman and Wilson conclude that around 12% of the variation in the speed of horses at these distances comes down to genetics. (This is about the same heritability as neuroticism or lifespan is in humans.) And they found that improvements to those genetics accounted for more than half of the increase in speed seen over that time period. The rest, says Dr Sharman, is probably down to hard to measure, non-genetic factors such as better nutrition and veterinary care or improved jockeying technique.

When it comes to longer-distance races, it is not clear that times are improving. One reason, says Dr Sharman, may be that the genes that are good for sprinting do not necessarily make for good endurance athletes. Breeders seem to be selecting for sprint performance because it offers quicker commercial returns. Sprinters tend to start running at around two years old, long-distance horses at three.

Horse-breeders may face other trade-offs, too. Selecting solely for speed may increase the risk of injury. (Churchill Downs racecourse, where the Kentucky Derby is run, suspended racing for a month from June 7th, after more than a dozen horses had died following injuries over the past six weeks.) Temperament matters, too—a fast horse is of little use if it is unrideable.

Despite the difficulties, there is also evidence that breeders might be leaving some horsepower in the genetic tank. At least in Britain, says Dr Sharman, breeders still rely, to some degree, on their professional judgment when assessing horses. Less intuitive, more objective statistical techniques have transformed other sports, most famously baseball, over the past couple of decades. Horse-racing too may be ripe for its "Moneyball" moment. ■

Evolutionary biology

Sometimes it only takes one to tango

A form of sexless reproduction is more common than scientists thought

SEX IS A tricky business, evolutionarily speaking. One problem is that sexually reproducing organisms must suffer the considerable faff of securing a mate (for the males of some species, the struggle to do so can be fatal). Another is that the mixing of two genomes into one offspring means that, per child, each parent gets only half its genes into the next generation rather than the full complement.

The fact that it is nonetheless widespread suggests that sex must have big advantages, too. One concerns genetic variety. In asexually reproducing species, the only source of variation is mutation. Sex, by contrast, produces genetically unique individuals every time. That may increase the chance that at least some survive a disease, or a change in environmental conditions, that prematurely kills the others.

Some animals, though, like to have things both ways. American crocodiles, for example, usually reproduce sexually. But in a paper published in *Biology Letters* on June 7th, a team led by Warren Booth, an entomologist at Virginia Polytechnic Institute and State University, show that this is not always true. It seems that female crocodiles can, under some conditions, reproduce via "parthenogenesis"—the production of fertile eggs without the involvement of a male.

The female crocodile in Dr Booth's paper lives in a Costa Rican reptile park. Now 18 years old, she was obtained by the park at the age of two, and has been kept by herself ever since. The park staff were therefore surprised when, in 2018, she laid a clutch of 14 eggs. When workers examined the eggs—by holding them in front of a bright light, giving a murky view of the contents—seven appeared to be fertile.

Intrigued, the park incubated the fertile eggs. None hatched. Six contained embryos that had died early in their development. But one contained a fully developed crocodile fetus that was almost ready to hatch. The mother, it seemed, had given parthenogenetic reproduction a go, and very nearly succeeded.

Parthenogenesis is fairly common. Some insects, scorpions and worms, among others, are known to do it. But it was thought to be rare among vertebrates. That assumption, though, is changing. In the 1950s turkey farmers discovered that some of their hens had laid viable eggs despite never having had access to males. Lizards and snakes were added to the list in the 1960s and 1990s respectively. In 2021 researchers monitoring the critically endangered California condor noticed that some of the birds lacked genes from the males that were supposed to be their fathers.

Crocodiles are the newest members of the vertebrate-parthenogenesis club. Its growing membership raises questions about just how widespread the ability might turn out to be. Despite their differences crocodiles, lizards, snakes and birds (which are descended from dinosaurs) are all members of the clade Reptilia. The evolutionary distance between those species suggests the ability is an ancient one. Might that mean that other members of Reptilia—turtles, for example, or chameleons—could have it too? ■

Green energy

Making petrol from thin air

How to make carbon-neutral fuel for cars and planes

WHEN IN MARCH the European Union approved a law requiring all new cars to have zero carbon emissions from 2035, Germany managed to wangle an exemption for vehicles running on "e-fuels". Some saw it as a charter for producers to continue flogging internal-combustion engined cars to petrol-heads. While it does, indeed, mean some petrol-powered sports cars are likely to remain in production in the future, the hope is they can be powered without overheating the planet.

E-fuels get their name because they are made synthetically, using electricity. The process involves combining hydrogen with carbon to produce various hydrocarbon fuels, such as diesel, petrol or jet fuel.


Powered by thin air

The hydrogen can be made by using electrolysis to split water into its constituent elements. The carbon comes from carbon dioxide, perhaps captured from an industrial chimney-stack, or even sucked directly out of the atmosphere via so-called direct-air capture systems. Provided both processes are powered by zero-carbon electricity, e-fuels are carbon neutral. After all, the carbon released back into the air when the fuels are burned is the same that was used to make them in the first place.

Although a handful of big plants already make e-fuels for aviation, most obtain their carbon from old cooking oil, animal fat and biomass. Some aim to use direct-air capture, although the technology is still largely at the prototype stage. One such plant is in southern Chile. It is run by a group of companies that includes Porsche, part of the German Volkswagen group. Chile is a windy place, so the factory is powered by a wind turbine. Until its direct-air capture system is ready, the plant is getting carbon dioxide from a brewery, where yeast produces it during fermentation.

For Porsche, cars powered by e-fuels will be a sideline rather than its main business. The firm aims to have more than 80% of its vehicles running on batteries by 2030. Karl Dums, the firm's head of e-fuels, readily agrees that an electric car will always be inherently more efficient than one that runs with e-fuels. (This is because of the extra steps involved in turning electricity into synthetic fuel, rather than just charging a battery directly.) But, he says, there will still be plenty of internal-combustion vehicles on the road after 2030. These could be made greener by filling them with e-fuels.

Dr Dums reckons economies of scale could make e-fuels competitive with fossil ones, perhaps by the end of the decade. And, he says, they offer a convenient way to store surplus renewable energy, or to make it suitable for export. Chile has the potential to produce huge amounts of renewable power. But the wind and the sun are unpredictable, and on some days could produce more electricity than necessary. Chile lacks the long-range grids to transmit that surplus elsewhere. If it were turned into a liquid, though, it could be shipped abroad using existing infrastructure designed for fossil fuels.

"In the end," says Dr Dums, Porsche's business is "fulfilling dreams for our customers." Although electric cars are both smooth and nippy, some of those customers might miss the growl and thunder of a petrol-powered engine. If you do fancy a petrol-powered 911 in the future, e-fuels might allow Porsche to sell you one. ■

Decarbonising industry

Some like it hot

Running a turbine backwards could help clean up energy-hungry heavy industry

FOSSIL FUELLED power stations can be replaced by solar panels or nuclear reactors. Petrol-powered cars can be replaced with ones that use zero-carbon electricity to charge batteries. But not every part of an economy is so easy to decarbonise, even in principle. Three heavy industries—cement, chemicals and steelmaking—are particularly tricky to clean up. One reason is that all rely on chemical processes that need very high temperatures.

Extracting iron from its ore, for instance, is the first step in steelmaking. Temperatures inside the furnaces used to do that can exceed 1,600°C. Cement kilns, which convert limestone into clinker, one of cement's raw ingredients, can reach 1,400°C. Because it is tricky or impossible to produce such temperatures for some industrial processes using electricity alone, firms rely on fossil fuels.

Green-minded businesses have been exploring alternatives. Hydrogen, for instance, can be produced by splitting water into its component elements. If that is done with clean energy, the gas can be burned as a zero-carbon fuel. Another option might be to stick with fossil fuels, but to capture and bury the carbon dioxide they generate, an idea known as carbon capture and storage. But both technologies are nascent, and would require the building of a great deal of new infrastructure that does not yet exist.

At the Brightlands Campus, a state- and industry-backed innovation centre near Maastricht, in the Netherlands, a Finnish engineering firm called Coolbrook is hoping to change that. Its "RotoDynamic" system is designed to supply just the sorts of super-high temperatures needed by heavy industry—and to do so while being powered solely by electricity.

Spinning up

The easiest way to think about Coolbrook's system is as a gas turbine in reverse. A conventional gas turbine—as used in power stations or jet engines—burns fossil fuel to create a hot, high-pressure gas that spins rotor blades. That rotational energy can be used to run a thrust-generating fan (as in jet aircraft) or converted to electricity in a generator (as in a power station).

The new system begins instead with an electric motor. The motor spins the turbine's rotors. Gas or liquid is then fed to the turbine. Once inside, the rotors accelerate the stuff to supersonic speeds, and then rapidly slow it again. The sudden deceleration transforms the kinetic energy contained in the accelerated gas or fluid into heat. If the motor is powered by green electricity, then no carbon dioxide is produced.

The first test of the pilot plant at Brightlands will involve steam cracking, one of the most energy-intensive processes in petrochemical plants. Conventional crackers decompose naphtha, one component of crude oil, into smaller molecules. As the name suggests, this is done by diluting the naphtha with steam then blasting it, in the absence of oxygen, in a furnace.

Coolbrook's pilot plant will instead inject a mix of naphtha and steam into the rotating turbine, which will heat it to around 1,000°C. That should break the naphtha into substances such as propylene and ethylene, which are used for making plastics. The hope is to prove that not only is it possible to crack naphtha in an electric reactor, but that it is better. Laboratory trials have shown that yields from the electrified process could be significantly higher than what can be obtained with fossil fuels.

Assuming that everything goes according to plan, the firm will try producing heat for several other industrial processes. Joonas Rauramo, Coolbrook's boss, reckons the heater should be able to hit temperatures of up to 1,700°C. That would make it suitable for a number of energy-intensive applications, including the production of steel, cement, glass and ceramics. Several big firms have signed on as partners for the pilot project. They include Shell, a British oil firm, Braskem, a Brazil-based chemicals producer, and CEMEX, one of the world's biggest cement-makers.

Electric heat will not be enough to entirely eliminate carbon emissions from heavy industry. That is because a good fraction of the sector's emissions comes not from burning fossil fuels, but from the chemistry of the processes they are powering. In cement-making, for instance, roughly half the carbon dioxide comes from heating the kiln with fossil fuels. The other half comes from calcination, the chemical reaction that transforms limestone into clinker.

It is a similar story with steelmaking, where iron is chemically liberated from ores that hold it as iron oxide. This is done by reacting the ore at high temperature with a mixture of carbon monoxide and hydrogen. That strips the oxygen atoms away, leaving pure iron. The oxygen, meanwhile, combines with the carbon to produce carbon dioxide.

That means that, even if the heat to drive those reactions was supplied by zero-carbon electricity, the rest of the emissions would still have to be dealt with somehow. Firms are working on modifying the chemistry in various ways, but no approach is yet ready for market.

But a technology does not need to solve a problem completely to be useful. Mr Rauramo reckons his firm's technology could eliminate perhaps 30% of heavy-industrial emissions. And, he says, it can do so without needing to invent anything fundamentally new. "It is a known science," says Mr Rauramo. "It has just not been applied in exactly the way we are doing it." ■

Just hook it up to a jet engine

Law and society in America

Runaway justice

Two books argue that the justices of America's Supreme Court are empowering themselves at the country's expense

The Supermajority. By Michael Waldman. *Simon & Schuster; 400 pages; $29.99.*
The Shadow Docket. By Stephen Vladeck. *Basic Books; 352 pages; $30*

THE SUPREME COURT of the United States did not start out as the powerful, at times imperious, institution of today. Under the Articles of Confederation of 1777, there were no federal courts at all. The third branch added by the constitution in 1789 was, at first, something of a third wheel. The justices met in the basement of the Capitol when the government moved to the District of Columbia in 1800. Congress paid the Supreme Court little courtesy, sending justices to "ride circuit" over the summer and even cancelling their term from April 1802 to February 1803.

Later that year, however, John Marshall, the fourth chief justice, boldly seized the power of judicial review—the ability to strike down laws that violate the constitution. A century and a quarter later, the tenth chief, William Howard Taft, insisted on liberating the justices from Congress's lair and installing them in a spectacular home of their own across the road.

The emboldened jurists now calling the shots in Taft's "marble palace"—the bronze front doors of which stand 17 feet (five metres) high and weigh six and a half tons apiece—are the cast of two new books. "The Supermajority" by Michael Waldman, head of the Brennan Centre for Justice at New York University, analyses the seismic effects of rulings made last year. "The Shadow Docket" by Stephen Vladeck, a law professor at the University of Texas, is the first book to pull back the curtain on the less visible (but increasingly influential) way the court is twisting the constitution in the shadows. Both authors aim to alarm.

Mr Waldman's focus is on the court's 6-3 conservative majority. Republican appointees have dominated the court since 1970, but in recapping three decisions of June 2022, "The Supermajority" shows that the rightward lean has gone full tilt. *Dobbs v Jackson Women's Health Organisation* abandoned rulings that for half a century provided a constitutional right to abortion. Justice Samuel Alito's approach in his majority opinion preserves "in amber 19th-century social norms", says Mr Waldman.

He also lambasts the supermajority for its extreme interpretation of the right to keep and bear arms. In *New York State Rifle & Pistol Association v Bruen*, Justice Clarence Thomas ignored "overwhelming evidence throughout history" that "prohibitions on carrying concealed weapons were just fine". And by striking down a plan to restrict greenhouse-gas emissions in *West Virginia v Environmental Protection Agency*, the court "hobbled" the government's ability to deal with climate change.

Casting aside precedents and revolutionising the law on contentious questions may be brazen, Mr Waldman notes, but it has happened before. In three other periods, the court "divided America": the infamous *Dred Scott* decision of 1857 paved the way for civil war; rulings in the early 20th century blocked worker reforms, including (for some time) the New Deal; and the liberal Warren Court of the 1950s and 1960s triggered a conservative backlash.

These historical sections in the book ▸▸

are thin; its analysis of the Warren Court, in particular, could be sharper. Mr Waldman writes that this period, with its expansion of rights in America, was the court's "greatest era"—yet he also criticises its justices for "making up rights to fit their political predilections". Somewhat implausibly, he implies that conservatives might have been less upset if decisions on contraception, abortion and criminal justice had been couched in less "groovy" and "psychedelic" terms.

The history that Mr Vladeck recounts is more nuanced, as well as being attuned to the argument of his book: that the court has damaged its legitimacy in abusing its "shadow", or emergency, docket. "Most of what the court does is behind the scenes," he explains, and "shrouded in obscurity".

The term "shadow docket" dates only to 2015 but the concept—any decision made without oral argument and, typically, with scant explanation and few justices disclosing how they voted—is as old as the Supreme Court. Until 2017 shadow-docket affairs were "almost entirely uncontroversial". That changed when Donald Trump's administration stretched the concept of "emergency" by regularly running to the justices. Across the four previous presidential terms, solicitors-general filed just eight emergency applications. Mr Trump's officials filed 41. The court was mostly obliging, granting at least part of his wishes—such as to divert funds to his security wall, ban travellers from Muslim countries and execute federal prisoners—28 times.

The dark side

Mr Vladeck offers a fascinating chronicle of the shadow docket's rise. He traces it to 1890, when the court gained more discretion over its regular docket and "inaugurated the practice of offering no explanation" when it declined to hear a case. The next step was a surge in last-minute execution appeals (a "death clerk" had to be nominated to handle the applications). A prototype of Mr Vladeck's critique came in 1984 when Justice William Brennan dissented from a 5-4 decision to reinstate an execution. He called it "an indefensible—and unexplained—rush to judgment" that was "insensitive, if not ghoulish".

The author's skill as a law professor shines in thorough, clear explanations of how the court has run roughshod over its own jurisprudence in shadow-docket cases involving abortion, religious liberty and election law. He highlights the silent but "stunningly impactful" role Justice Amy Coney Barrett played in her first weeks on the job. She added a fifth vote in favour of religious objections to pandemic public-health measures which, four months earlier, had been rejected by the left-leaning justices and Chief Justice John Roberts.

Whereas Mr Waldman's case rests on substantive disagreements with the justices, Mr Vladeck's is more even-handed. He praises an order he disagreed with for being "by the book" in terms of procedure, and faults another he liked for failing to include a reasoned explanation. He also notes recent signs of wiser use of the shadow docket as some justices respond to outside criticism (not least, though he takes no credit, from Mr Vladeck himself).

Reining in the court will be tricky. Mr Waldman's insistence that left-leaning Americans "must fall out of love with the Supreme Court" is odd, as three-quarters of Democrats already hate it. He is cheered by signs of a backlash to *Dobbs,* but does not show how this sentiment might lead to judicial term limits, one of his proposed reforms (the justices themselves could anyway strike those down, as he acknowledges). In shining a light on a tenebrous corner of the court's work, Mr Vladeck's agenda looks more modest. But the illumination in "The Shadow Docket" could help bring more principle, accountability and "procedural regularity" to the justices' work—and help stop a controversial institution going completely off the rails. ■

Albania's painful history

What lies beneath

TIRANA

A museum in Albania aims to commemorate the past and illuminate the present

Down you go, deep into one of the biggest hideaway bunkers of what was once the nastiest communist regime in eastern Europe. Now restored as a museum known as Bunk'Art 2, the underground labyrinth was completed only in 1986—a year after the death of Enver Hoxha, who became Albania's dictator in 1944, modelling himself on Josef Stalin and often matching him in his paranoia, purges and terror.

Carved out beneath the interior ministry in Tirana, Albania's capital, the bunker is a spooky, claustrophobic warren of dimly lit corridors, leading to around 20 poky chambers and a larger parquet-floored, wood-panelled cabinet room. Here the dictator could preside over his government in case of a nuclear strike on what was then the most isolated country in the world.

Unquiet ghosts

Albanians often refer to their homeland in those days as the North Korea of Europe.

Each room is emblazoned with captions laying out the horrifying statistics of repression under Hoxha, sometimes with videos of survivors describing torture and imprisonment. In a country of around 1.2m people in 1944, when the Germans were chased out and Hoxha's communists took over, between 25,000 and 34,000 are thought to have been jailed for political reasons (their offences could be extraordinarily trivial). Some reckon at least 5,000 were executed: no one is sure of the true figure. Thousands were sent to labour camps or "internal exile" in remote villages where you could be banished for ever. Trying to sneak abroad, an almost impossible quest that many undertook in vain, could merit 20 years behind bars.

The purges and executions persisted in waves right up to Hoxha's death in 1985—and hit the ruling class as much as the immiserated proletariat. His closest comrade and long-serving deputy, Mehmet Shehu, himself a mass-murderer, shot himself in murky circumstances in 1981. As was the custom, Shehu's entire family was jailed or banished; his eldest son also died by suicide. All but one of Hoxha's interior ministers came to a sticky end. He even executed his own brother-in-law, who had protected him when he was in hiding as a young revolutionary.

The aim of Bunk'Art is to persuade more Albanians to remember the past and delve into it more deeply—so as not to repeat it. According to the museum's creator, Carlo Bollino, an Italian media entrepreneur on friendly terms with the present government, a lack of knowledge has "prevented the wound of communism from healing". ▸▸

This, he thinks, is why "even today it is difficult to speak calmly about what happened in the communist period."

Mr Bollino laments the fact that many young Albanians "know little or nothing about the history of the dictatorship and are not even interested in learning about it". His concern is echoed by Margo Rejmer, the editor of a powerful anthology of interviews and memories. Called "Mud Sweeter than Honey", it illustrates the Kafkaesque craziness of the old system, as well as its cruelty. "Many people would like to talk about the past," Ms Rejmer writes. "But few are willing to listen. There's a widespread belief that everything has already been said." The book was published in 2018 to acclaim in Poland, her own country, but is unavailable in Albanian. At Bunk'Art, meanwhile, most visitors are foreign.

Fatos Lubonja, an outspoken ex-prisoner, is sceptical about the museum, noting that it memorialises the paranoia of the rulers, while the camps to which the oppressed were sent to rot are unmarked. He served 17 years in them after his private diaries and poetry were confiscated as his father, then head of Hoxha's radio and television service, was being purged. "It's not a real place of suffering," he says of Bunk'Art. People should be shown the "real gulag" where Albanians were tortured or worked to death. Mr Lubonja is offended that one of the two most hellish camps has been converted into a standard prison, while the other, at which copper was mined, has been bought by a Turkish company.

A big reason for the blanking of history is that it poisons today's politics. The ruling Socialist Party, led by Edi Rama, the prime minister, was born out of the old communist party. It entirely rejects the defunct ideology and has refashioned itself as a centre-left, social-democratic outfit that keenly embraces capitalism. Mr Rama himself laments the tendency of politicians to treat their opponents as enemies, in the style and language of the past. "We don't yet understand how to live together with people who think differently and are treated as the enemy," he sighs.

The families of those persecuted under Hoxha tend to support the Democratic Party, Albania's main opposition, which makes much of the Socialists' origins. But many Socialist politicians can also cite forebears who suffered under the tyrant, including members of the nomenklatura who fell foul of him. "Both [main] parties have the old communist mentality," says Besar Likmeta of the Balkan Investigative Research Network, the region's most independent journalistic outlet. "They're just Communist A and Communist B."

Mr Lubonja scolds them both for "manipulating" the past. "We have failed to create a culture of empathy," he says. Places like Bunk'Art are only a start. ■

Avian adventures

You elegant fowl!

What an Owl Knows. By Jennifer Ackerman. *Penguin Press; 352 pages; $30. Oneworld Publications; £16.99*

WITH A FACE as round as the first letter of its name and a stance as upright as the last—along with human-like features and a haunting cry—the owl has a mystical, mythical perch in the imagination. Difficult to spot because of their mostly nocturnal habits, and sporting cryptic plumage that helps them melt into landscapes, owls, writes Jennifer Ackerman, are the most enigmatic of birds.

Ms Ackerman is a natural-history writer who specialises in the avian world. In "What an Owl Knows" she offers an absorbing ear-tuft-to-tail appreciation of the raptor that Mary Oliver, a poet, called a "god of plunge and blood". Owls, it seems, know a lot. Ms Ackerman draws on recent research to explain what and how.

To begin with, she stresses, there is no generic owl, but rather a diversity of some 260 species found on every continent bar Antarctica. They stretch from the fire-hydrant-sized Blakiston's Fish Owl to the Elf Owl, which could fit in your palm. Most, but not all, are nocturnal. All hunt with brutal precision using beaks and talons to snatch prey ranging from mice to small deer. No holds are barred: the Northern Saw-whet sometimes beheads victims and stashes them to eat later. Owls, moreover, don't necessarily give a hoot. The Barred Owl launches a blood-curdling scream; the Barn Owl, "a nasal snore"; the Sooty Owl, a whistle like a falling bomb.

Among their "superpowers", as Ms Ackerman admiringly calls them, is the ability to fly almost silently, unlike noisy flappers such as hawks. Serrations on the leading edges of their wings dampen turbulence and a coating of velvety fibres muffles sound. Their vision is attuned to nocturnal hunting—their sensitivity to light is 100 times greater than a pigeon's—but, a researcher explains, they "basically see their world through their ears". The flat disc of the Great Grey's face (pictured) acts as a satellite dish that captures noise and directs it to the ears; using sound alone, it can seize a vole faintly scratching deep under snow.

With their unnerving stare and eerie ways, it is small wonder that owls provoke superstition—and flights of fancy, as in the owl who sails with the pussycat in Edward Lear's poem. In myths, stories and art, "owls speak of wisdom and luck, of misfortune and malevolence", the author writes. They were associated with Athena, Greek goddess of wisdom. In Belize they are the bearers of bad luck; in China they bring the good kind. Hedwig, the Snowy Owl who is courier and companion to Harry Potter, precipitated such a rush for pet owls in Britain that a sanctuary was created for birds dumped by foolish owners. J.K. Rowling was prompted to say publicly that owning an owl "belongs in fiction".

Hedwig aside, owls conjure magic just by appearing. On finding one, "my heart always skipped a beat," a field scientist tells Ms Ackerman. For her part, she says the birds changed the way she views landscapes, enabling her, for example, to see felled trees not as debris, but as owl nurseries. In a survey of cultural attitudes, a woman in southern Brazil was asked why owls are valued. "Because", she replied, "they enchant the environment." ■

How charmingly sweet you sing!

Post-colonial fiction

Between two worlds

Watch Us Dance. By Leïla Slimani. Translated by Sam Taylor. *Viking; 336 pages; $27. Faber & Faber; £16.99*

Studious and shy, Aïcha leaves the mandarin and olive groves of her parents' farm in Morocco for medical school under the "ashen skies" of eastern France. There, on the cusp of the student rebellion of 1968, she finds friendship as well as prejudice. "We don't do this kind of hair usually," the *coiffeuse* in Strasbourg says when Aïcha has her hair straightened so as to look like Françoise Hardy, a French star.

Leïla Slimani's new novel, the second in a planned trilogy, really takes off when Aïcha goes home to Morocco after four years of study. "Watch Us Dance" picks up the tale of Amine and Mathilde Belhaj, Aïcha's parents, whose Franco-Moroccan love story featured in Ms Slimani's previous work, "The Country of Others". Now, Amine's farm has prospered. Mathilde, lonely and tired of his infidelity, is fixated on the construction of a swimming pool. She rents Limoges porcelain tableware and invites smart friends to celebrate, then urges them to eat with their hands, "Moroccan-style".

This collision of cultures and expectations, as well as the hidden family dramas that unfold, make this novel one of Ms Slimani's most ambitious yet. In France, skirts are short and hopes are high. Aïcha flies back to Morocco dressed in knee-high brown leather boots and an orange vinyl jacket. She feels a fool. Home brings both comfort and hostility. She leaves for the Moroccan coast to join a friend, encounter Marxism and, at last, fall in love herself.

Ms Slimani is best known in the English-speaking world for "Lullaby" (published in America as "The Perfect Nanny"), her chilling thriller about a live-in childminder who murders her Parisian charges. "Watch Us Dance" roams far wider in both geography and historical context—interlinking the paradoxes of post-colonial Morocco with those of *soixante-huitard* France.

In the Belhajs' local town, "Nobody had learned the new Arabic street names." It seemed that "colonisation had never been anything more than a misunderstanding, a faux pas that the French now repented and the Moroccans pretended to forget." Aïcha's brother, Selim, ends up in an alternative colony on the coast, where the owner of the Hippie Café would "unfurl his prayer mat in a corner…while the hippies toasted the sexual revolution".

Translated into English by Sam Taylor, this is a story about rebellion and repression, belonging and appearance, love and its betrayal. It is infused with a raw earthiness. The skin of villagers "smelled of cumin and charcoal". A "gigantic metal claw" tears into the ground to build Mathilde's pool. Amine contemplates the soil of his farm, and his relatives who lie buried beneath it. In the end, as at the beginning, this is a novel rooted in the land: stolen, returned and forsaken by a younger generation that is seduced by a different world.

The collapse of civilisations

Things fall apart

Amongst the Ruins. By John Darlington. *Yale University Press; 304 pages; $35 and £25*

"This, I must confess, seems owing to nothing but to the Fate of Things," Daniel Defoe wrote glumly in 1724 of the decline of Dunwich. The town in Suffolk had once been the largest port on the East Anglian coast; in the 11th century its estimated population of 3,000 put it in the top fifth of recorded English settlements. A natural harbour at the mouth of the River Dunwich allowed trade with Europe. Wine came from Gascony, stone from Caen.

But its position was precarious. In 1086 the Domesday Book noted the loss of half the town's farmland to the sea. In 1328 a storm washed away most of the houses. The harbour silted up; the river itself rerouted north. Today the population is 200.

Dunwich features in "Amongst the Ruins", a survey of civilisational and communal collapse by John Darlington. The town's shoreline, composed of sand and gravel, led to difficulties, but the real problems were shifting tectonic plates and sea levels—the same processes, writes Mr Darlington, which "separated the United Kingdom from continental Europe during the last Ice Age". In his telling, nature always wins. It is just a question of when.

His book offers 17 case studies of destruction, organised into five themes: climate change, natural hazards, human disaster, war and the economy. They range from Neolithic Northern Ireland to Route 66 in America. The choices are eclectic, if also a touch parochial: four are in Britain, three more have been British colonies.

The causes of disaster overlap. People and companies continue to build in areas of extreme geological activity, for example, because economic and political concerns seem to outweigh the risks. Port Royal was the main British settlement in the Caribbean, a foothold off the coasts of Spanish-controlled Central and South America. Now in eastern Turkey, Ani was the capital of medieval Armenia, straddling the Silk Road at a meeting point of empires.

Some thought Port Royal lay on a moral faultline, too. It was "the very Sodom of the Universe"; in 1690 a fifth of its buildings were given over to brothels, gaming houses and taverns. By contrast, Ani was "the city of 1,001 churches". It took a single earthquake in 1692 to destroy Port Royal. Bigger and more robust, Ani was hit by three major quakes between 1132 and 1605, but was sunk by a Mongol invasion and new trade routes, among other woes.

Humans follow opportunities and natural resources. Humberstone, a mining town in the Atacama desert in Chile, was founded in the 19th century to feed the global market for nitrate in fertilisers and gunpowder. It was ruined by the invention in Germany of a commercial process to make ammonia out of atmospheric nitrogen. Chile's market share fell from 80% in the 1890s to 15% by 1950.

Perhaps the most basic resource is water. At its peak, the Sumerian city-state of Girsu irrigated some 3,000 square kilometres of land. A vast system of canals and dykes brought abundant water from the Tigris and the Euphrates—but also salts from the mountains, which in time wrecked the soil. Girsu's success caused its failure.

Mr Darlington, an archaeologist at the World Monuments Fund, is as interested in the conservation of cultural heritage—what societies preserve, how and why—as in the reasons for collapse. He questions the obsession with preserving the past. Change and loss are inevitable, he says; conservation is the careful management of those cycles, not a denial of them. "Letting go", he writes, should probably be "the default option". It is a provocative observation that he might have explored further.

Contemplating Dunwich, Defoe concluded that it was a *memento mori*—a reminder of earthly mortality and transience. "Towns and Cities Die, as well as we," he wrote. Readers of this thoughtful book may disagree. Societies are fallible, but also resilient; often they adapt and move on. The ruins themselves may matter less than what emerges from them. ■

Johnson Talk with the hand

A new book shows that gestures are a subtle and vital form of communication

"TIE AN ITALIAN'S hands behind his back," runs an old joke, "and he'll be speechless." The gag rests on a national stereotype: Italians are voluble and emotional, and all that arm-waggling supposedly goes to prove it.

Susan Goldin-Meadow of the University of Chicago has a rather different view. Emotions come out in lots of ways: facial expressions, posture, tone of voice and so on. But people are doing something different when they use gestures with speech, which she sums up in the title of her new book, "Thinking With Your Hands". It is a masterly tour through a lifetime's research.

Virtually everyone gestures, not just Italians. Experimental subjects, told after a research session that they were being watched for gestures, apologise for not having made any—but were doing so the entire time. Conference interpreters gesture in their little booths, though no one is looking. People born blind gesture when they speak, including to each other. A woman born without arms but with "phantom limb syndrome" describes how she uses her phantom arms when she talks—but not when she walks. All this suggests that cognition is, to some extent, "embodied"; thinking is not all done in your head.

The gesture under discussion here is mostly the "co-speech" kind. It is much more abstract than mime (in which exaggerated acting tells a story). Nor are these "emblematic" gestures like a thumbs-up or a finger over the lips for "Silence!" Like words, those are fixed within cultures (but vary between them). Instead, gestures that accompany speech are a second channel of information. Subjects watch a film in which a cat runs but are told to lie and say it jumped. They do so in words—while their hands make a running motion. People who say they believe in sexual equality but gesture with their hands lower when talking about women are not indicating women's shorter stature; they can be shown to have biases of which they may be unaware.

Gesture is also not sign language. Sign languages have clearly defined words and grammar, and differ from place to place just as spoken ones do. Professor Goldin-Meadow spends a lot of time on homesign—systems of signs typically developed by deaf children in hearing families who are not exposed to (and so never learn) a conventional sign language. Such children are essentially inventing rough but rich languages out of nothing, with features such as fixed word order and hierarchical grammatical structures much like those in fully fledged languages. Such homesign systems far outstrip their parents' gestures; a parent's raised finger meaning "Wait" may be adopted by a child to connote events in the future.

Returning to conventional gesture, the author keeps her focus on child development. Some students who fail at a tricky mathematics problem may gesture in a way that indicates they are on the verge of getting it; they should be taught differently from the ones whose gestures suggest that they are entirely at sea. Children who still use only one word at a time may combine a word and a gesture; this successfully predicts that two-word phrases ("Give ball") are just around the corner. And those taught to move their hands about when discussing a moral quandary with several perspectives soon start to see the problem from different points of view.

All this is rounded out in a final section offering practical advice. Teachers are encouraged both to use gestures themselves and to observe those their students make. Parents are taught to fill in the word a child is most likely to be missing when they gesture ("That's a dog") rather than adding information ("That's a fluffy one"). Children with language delays caused by brain injuries at or around birth, but who nonetheless gesture as much as their peers, are likely to catch up verbally by the age of about 30 months. Those who gesture less are more likely to need intensive early intervention. Children with Down's syndrome may express themselves better when taught to use a mix of gesture and speech rather than speech alone. Psychotherapists can be trained to look out for gestures hinting that patients are thinking something they are not yet ready to say.

In "The Crown", Lady Diana is warned that her hands may betray her real emotions, which could be dangerous; they are tied together so she can learn to speak without gesticulating. No one who reads this book could ever again think that gesturing shows only a lack of control. It is about thinking and communication, and is a sophisticated aid to both.

Courses

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 $ Jun 7th	% change on year ago
United States	1.6	Q1	1.3	1.0	4.9	Apr	3.8	3.7	May	-3.0	-5.4	3.8	81.0	-	
China	4.5	Q1	9.1	6.1	0.1	Apr	1.2	5.2	Apr‡§	2.5	-2.9	2.4 §§	-15.0	7.13	-6.5
Japan	1.9	Q1	2.7	1.1	3.5	Apr	2.4	2.6	Apr	3.2	-5.8	0.4	17.0	140	-5.2
Britain	0.2	Q1	0.5	0.4	8.7	Apr	6.2	3.9	Feb††	-3.3	-5.5	4.2	211	0.80	-1.2
Canada	2.2	Q1	3.1	0.7	4.4	Apr	3.3	5.0	Apr	-1.0	-1.5	3.4	25.0	1.34	-6.7
Euro area	1.3	Q1	0.3	0.9	6.1	May	5.8	6.5	Apr	1.6	-3.5	2.5	116	0.93	nil
Austria	1.9	Q1	0.4‡	1.0	8.9	May	7.6	5.1	Apr	1.1	-2.7	3.1	128	0.93	nil
Belgium	1.4	Q1	1.9	0.7	5.2	May	4.8	5.6	Apr	-2.1	-4.9	3.0	114	0.93	nil
France	0.9	Q1	0.7	0.7	5.1	May	5.6	7.0	Apr	-1.7	-5.0	2.9	112	0.93	nil
Germany	-0.5	Q1	-1.3	0.3	6.1	May	6.2	2.9	Apr	4.7	-2.5	2.5	116	0.93	nil
Greece	2.3	Q1	-0.3	2.0	3.0	Apr	3.9	11.2	Apr	-8.0	-2.3	3.8	-7.0	0.93	nil
Italy	1.9	Q1	2.2	1.2	7.6	May	6.4	7.8	Apr	0.1	-5.0	4.3	88.0	0.93	nil
Netherlands	1.9	Q1	-2.6	1.2	6.1	May	4.8	3.4	Apr	6.9	-2.4	2.8	121	0.93	nil
Spain	3.8	Q1	1.9	1.8	3.2	May	3.6	12.7	Apr	1.4	-4.2	3.4	96.0	0.93	nil
Czech Republic	-0.1	Q1	-0.2	0.2	12.7	Apr	11.4	2.8	Apr‡	-2.1	-4.6	4.5	-55.0	22.0	4.9
Denmark	2.8	Q1	1.0	0.5	5.3	Apr	5.0	2.8	Apr	9.8	0.7	2.8	111	6.96	-0.1
Norway	3.0	Q1	1.0	1.6	6.4	Apr	4.8	3.7	Mar‡‡	17.6	12.5	1.4	76.0	11.0	-14.1
Poland	-0.1	Q1	16.1	0.9	13.0	May	13.1	5.1	May§	-1.3	-4.0	6.0	-62.0	4.18	2.4
Russia	-1.9	Q1	na	-2.2	2.3	Apr	7.3	3.3	Apr§	6.0	-4.4	10.9	189	81.7	-24.2
Sweden	0.8	Q1	2.4	0.5	10.5	Apr	6.0	7.5	Apr§	3.4	-0.3	2.4	68.0	10.9	-10.0
Switzerland	0.6	Q1	1.1	1.1	2.2	May	2.6	2.0	May	7.5	-0.7	0.9	-9.0	0.91	6.6
Turkey	4.0	Q1	1.3	2.6	39.6	May	43.9	10.2	Mar§	-4.8	-4.4	14.4	-812	23.2	-27.8
Australia	2.3	Q1	0.9	1.6	7.0	Q1	5.5	3.7	Apr	0.8	-0.5	3.8	27.0	1.50	-7.3
Hong Kong	2.7	Q1	23.0	3.4	2.0	Apr	2.3	3.0	Apr‡‡	7.0	-1.4	3.5	55.0	7.84	0.1
India	6.1	Q1	5.3	6.1	4.7	Apr	5.6	7.7	May	-1.4	-5.7	7.0	-54.0	82.5	-5.8
Indonesia	5.0	Q1	na	4.7	4.0	May	4.0	5.5	Q1§	0.7	-2.7	6.3	-78.0	14,878	-2.8
Malaysia	5.6	Q1	na	3.9	3.3	Apr	2.7	3.5	Mar§	3.2	-5.0	3.8	-40.0	4.60	-4.3
Pakistan	1.7	2023**	na	1.5	38.0	May	30.3	6.3	2021	-2.9	-5.8	15.1 †††	233	287	-29.7
Philippines	6.4	Q1	4.5	5.3	6.1	May	5.7	4.8	Q1§	-5.3	-6.5	5.9	-79.0	56.1	-5.6
Singapore	0.4	Q1	-1.6	1.0	5.7	Apr	5.1	1.8	Q1	16.2	-0.1	2.9	1.0	1.35	1.5
South Korea	1.0	Q1	1.3	1.5	3.3	May	3.0	2.8	Apr§	2.5	-2.1	3.5	-2.0	1,304	-3.5
Taiwan	-2.9	Q1	-2.4	0.4	2.0	May	1.9	3.6	Apr	11.1	-2.2	1.2	-11.0	30.7	-3.9
Thailand	2.7	Q1	7.8	3.8	0.5	May	2.2	1.0	Apr§	2.1	-2.7	2.6	-35.0	34.7	-0.8
Argentina	1.9	Q4	-6.0	-3.6	109	Apr	106.5	6.3	Q4§	-2.4	-4.6	na	na	244	-50.2
Brazil	4.0	Q1	8.0	1.7	3.9	May	5.2	8.5	Apr§‡‡	-2.6	-7.6	11.1	-178	4.92	-0.4
Chile	-0.6	Q1	3.4	0.3	9.9	Apr	7.9	8.7	Apr§‡‡	-4.3	-1.9	5.4	-100	792	4.3
Colombia	3.0	Q1	5.9	1.6	12.4	May	11.7	10.7	Apr§	-4.2	-3.8	10.9	-35.0	4,224	-10.1
Mexico	3.7	Q1	4.1	2.1	6.3	Apr	5.5	2.8	Apr	-1.1	-3.7	8.9	-3.0	17.4	12.7
Peru	-0.4	Q1	-2.2	1.7	7.9	May	6.8	7.5	Apr§	-2.0	-1.6	7.3	-44.0	3.67	2.2
Egypt	3.9	Q4	na	3.0	30.5	Apr	25.8	7.1	Q1§	-1.8	-6.3	na	na	30.9	-39.6
Israel	3.5	Q1	2.5	2.8	5.0	Apr	4.1	3.6	Apr	4.3	-2.3	3.8	91.0	3.65	-8.5
Saudi Arabia	8.7	2022	na	2.0	2.7	Apr	2.2	4.8	Q4	3.7	-1.0	na	na	3.75	nil
South Africa	0.2	Q1	1.4	0.5	7.1	Apr	5.2	32.9	Q1§	-2.0	-4.7	10.9	96.0	19.1	-19.5

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 Jun 7th	% change on: one week	Dec 30th 2022
United States S&P 500	4,267.5	2.1	11.1
United States NAScomp	13,104.9	1.3	25.2
China Shanghai Comp	3,197.8	-0.2	3.5
China Shenzhen Comp	1,995.3	-0.4	1.0
Japan Nikkei 225	31,913.7	3.3	22.3
Japan Topix	2,206.3	3.6	16.6
Britain FTSE 100	7,624.3	2.4	2.3
Canada S&P TSX	19,983.7	2.1	3.1
Euro area EURO STOXX 50	4,291.9	1.8	13.1
France CAC 40	7,202.8	1.5	11.3
Germany DAX*	15,960.6	1.9	14.6
Italy FTSE/MIB	27,055.5	3.9	14.1
Netherlands AEX	761.6	1.7	10.5
Spain IBEX 35	9,359.8	3.4	13.7
Poland WIG	66,093.8	6.1	15.0
Russia RTS, $ terms	1,035.9	-1.8	6.7
Switzerland SMI	11,348.1	1.2	5.8
Turkey BIST	5,561.2	13.8	0.9
Australia All Ord.	7,310.4	0.5	1.2
Hong Kong Hang Seng	19,252.0	5.6	-2.7
India BSE	63,143.0	0.8	3.8
Indonesia IDX	6,619.8	-0.2	-3.4
Malaysia KLSE	1,378.7	-0.6	-7.8

	index Jun 7th	% change on: one week	Dec 30th 2022
Pakistan KSE	42,119.2	1.9	4.2
Singapore STI	3,179.6	0.7	-2.2
South Korea KOSPI	2,615.6	1.5	17.0
Taiwan TWI	16,922.5	2.1	19.7
Thailand SET	1,533.2	nil	-8.1
Argentina MERV	380,430.9	11.2	88.3
Brazil BVSP*	115,488.2	6.6	5.2
Mexico IPC	54,291.4	2.9	12.0
Egypt EGX 30	17,347.6	-0.8	18.8
Israel TA-125	1,790.5	2.5	-0.6
Saudi Arabia Tadawul	11,372.8	3.3	7.8
South Africa JSE AS	77,125.9	2.7	5.6
World, dev'd MSCI	2,878.0	2.8	10.6
Emerging markets MSCI	995.4	3.8	4.1

US corporate bonds, spread over Treasuries

Basis points	latest	Dec 30th 2022
Investment grade	156	154
High-yield	481	502

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

Commodities

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

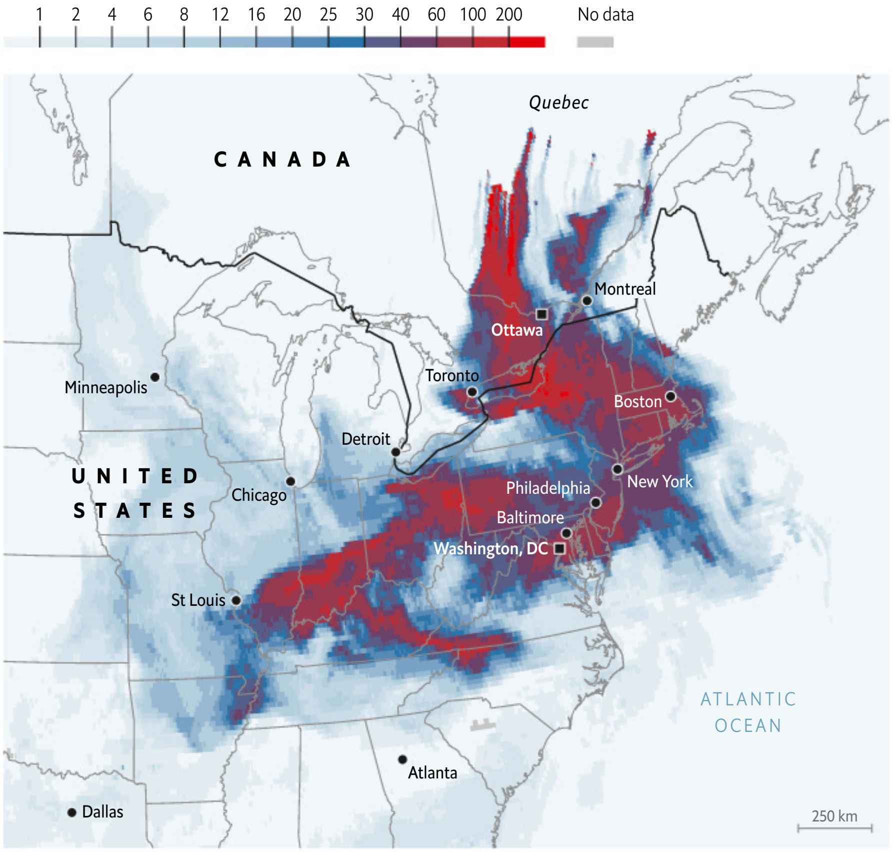
2015=100	May 30th	Jun 6th*	% change on month	year
Dollar Index				
All Items	140.2	140.9	-5.5	-23.2
Food	131.7	132.7	-4.7	-18.0
Industrials				
All	148.0	148.5	-6.1	-27.1
Non-food agriculturals	105.5	106.7	-3.7	-38.2
Metals	160.7	160.9	-6.6	-24.4
Sterling Index				
All items	172.4	173.3	-3.9	-22.2
Euro Index				
All items	144.9	146.1	-3.1	-23.1
Gold				
$ per oz	1,958.3	1,959.4	-3.3	5.8
Brent				
$ per barrel	73.6	76.3	-1.5	-36.9

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

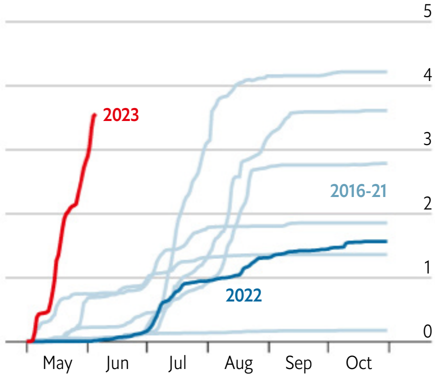
For more countries and additional data, visit
economist.com/economic-and-financial-indicators

→ Smoke from wildfires in Quebec has headed straight for America's big eastern cities

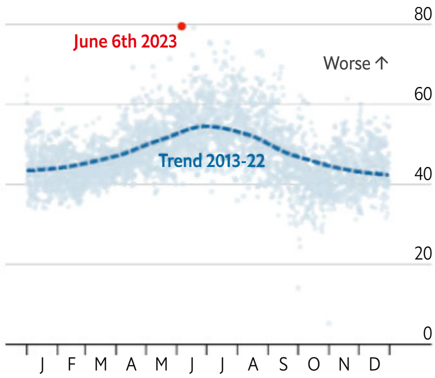
Near-surface smoke forecast, June 6th 2023, 12pm EDT
Micrograms per cubic metre



Canada, estimated area burned in wildfires
Million hectares



Quality of air breathed by the average American
Air Quality Index, daily



Sources: NOAA; EPA; AirNow; US Census Bureau; Canadian Wildland Fire Information System

Lavender haze

Dangerous smoke blackens the air in North America's most populous region

JUNE 6TH and 7th were literally dark days in New York. Smoke filled the air, shrouding the skyline in an eerie blur. Airports delayed incoming flights, and baseball games were postponed. Health officials told residents to stay indoors. Measured by Air Quality Index (AQI), which records overall pollution, New York, which normally lands in the middle of the global pack, ranked as the worst of any big city in the world. Conditions were nearly as bad throughout the eastern United States, with smoke lingering from Boston to Washington and as far west as St Louis.

The plumes emanated from wildfires raging across America's border. This May was the hottest in Canadian history, with average temperatures almost a full Celsius degree warmer than the previous record set in 1998, and the seventh-driest as well. Such conditions dry out vegetation and help fires start and spread. Sure enough, by early June the area burnt by wildfires in Canada was 13 times greater than normal, and far above the total for all of 2022.

The current fires are centred in Quebec, a region where smoke is less likely to threaten American air quality than in the west, because its winds generally blow east towards the Atlantic. However, a "heat dome", in which high atmospheric pressure traps hot air below, has formed over central Canada. This sends air, now laden with unusually large volumes of smoke, rotating clockwise towards a low-pressure area above New England, and from there down along America's eastern seaboard.

Such smoke clouds have become common in America's western and Plains states, and the AQI in cities like Portland, Oregon has reached levels similar to New York's recent maximum of 484. However, toxic plumes in the West mostly hover over rural areas. In contrast, smoke from the current fires in Quebec has settled over America's most densely populated region.

As a result, although the average AQI across American airspace is merely far worse than normal, the AQI now experienced by the average American resident is a modern record. Based on *The Economist*'s analysis of data available as we went to press, the average AQI of 80 on June 6th for all Americans—including those not exposed to smoke—ranks as the worst in the past decade, surpassing the 79 on June 18th 2021, when numerous cities suffered high ozone levels. Sadly, this record may not stand for long, because global warming is making wildfires more common.

The cost to public health will depend in part on how much people remain indoors. One academic study found that total visits to hospitals actually decline following extremely high smoke levels, because people stay at home and are less likely to suffer car accidents, sports injuries and the like. However, without proper filtration, pollutants still make their way indoors, and cases of respiratory ailments surge. Using the paper's estimates, at the recent level of pollutants in New York's air, hospital visits for asthma should roughly double. ■

Her special child

Vera Nikolaevna Putina, who claimed to be Vladimir Putin's real mother, died on May 31st, aged 97

After scraping flour from her hands with a large, sharp knife, Vera Putina went through the photographs. A very small child with a velvet cravat and smart strap shoes. A boy equipped for winter, in a balaclava and scarf, and for summer, with just a pair of shorts. A pupil in the back row at the Metekhi village school, the brightest in his class. All had the same blond hair, weak chin and sulky bottom lip; all had pale eyes, Russian eyes, like hers. Most also had the wary, sidelong look of an unhappy child. Yes, Vladimir Putin had been unhappy. And it was partly her fault. But there was no mistaking him when, in 1999, he left the shadows to become the president of Russia. What mother would not recognise her own son? Besides, he walked as he always had: like a duck.

The photos were only copies now. Soon after she made her claim, the KGB came to her house, took the originals away and told her not to talk. But this was the most exciting happening in the village for years. Metekhi was a dirt-poor farming place at the foot of the Caucasus in Georgia, on the Kura river. The houses were shoddy brick and patched cement, with rusty fences. The roads, though grandly named after Stalin, were mostly dirt. Vera's own house was peeling everywhere, though she kept it nice with lace curtains and had a bower of green vines for a garden. She was Russian, not Georgian, but with her hearty laugh and can-do attitude she was popular; and soon everyone, even the boys plucking frogs out of the river, knew that Vera was the mother of "the king of Russia".

She was 73 when she came forward, having seen him on her new television on the news. Until then, she had kept quiet. But she was convinced that Vladimir Putin, "Vova" as she called him, was her lost, special child. He was the result of a college affair, a mad fling after a dance with another student, Platon Privalov. When she later learned Platon was married, she broke it off the next day. But by then she was pregnant with Vova. She kept him for the moment, and when she met Giorgi Osepashvili, a Georgian soldier, in Tashkent and married him, Vova was part of the arrangement.

The marriage lasted, but it didn't go well. They argued all the time. Giorgi said he had money, but his parents' house in Metekhi, where he took her, was a half-ruined hut. He made a peasant out of her. And then Vova set them fighting. Not because he was a nuisance; he liked fishing and reading, especially Russian fables, and did beautiful calligraphy. True, he could get furious when he wrestled, refusing to lose, and he tormented the neighbours' chickens with his catapult, which she still kept. But he was mostly a quiet boy. Giorgi never beat him, just cut him dead, and talked loudly of kicking the "bastard" out. In the end, when Vova was nine, Vera sent him to her parents. But they were too ill to cope with him, and sent him to a military boarding school. After that she lost touch until she heard, somehow, that he was in the KGB.

This, of course, was not the origin-story Vladimir Putin told. The president's parents were given in his autobiography, "First Person", as Vladimir Putin senior and Maria Putina, who lived in Leningrad. During the siege of the city in 1941-44 their two infant sons died of starvation; Vladimir's father found his mother laid out with the corpses, but rescued her. Vladimir was born in 1952, exactly two years after the day, October 7th, when Vova was born to Vera. That was the president's story. Vera's was that Vova had to repeat first grade in his Leningrad school, because his Russian was not good enough; that accounted for the birth-year discrepancy. But Vladimir and Maria were only "foster-parents".

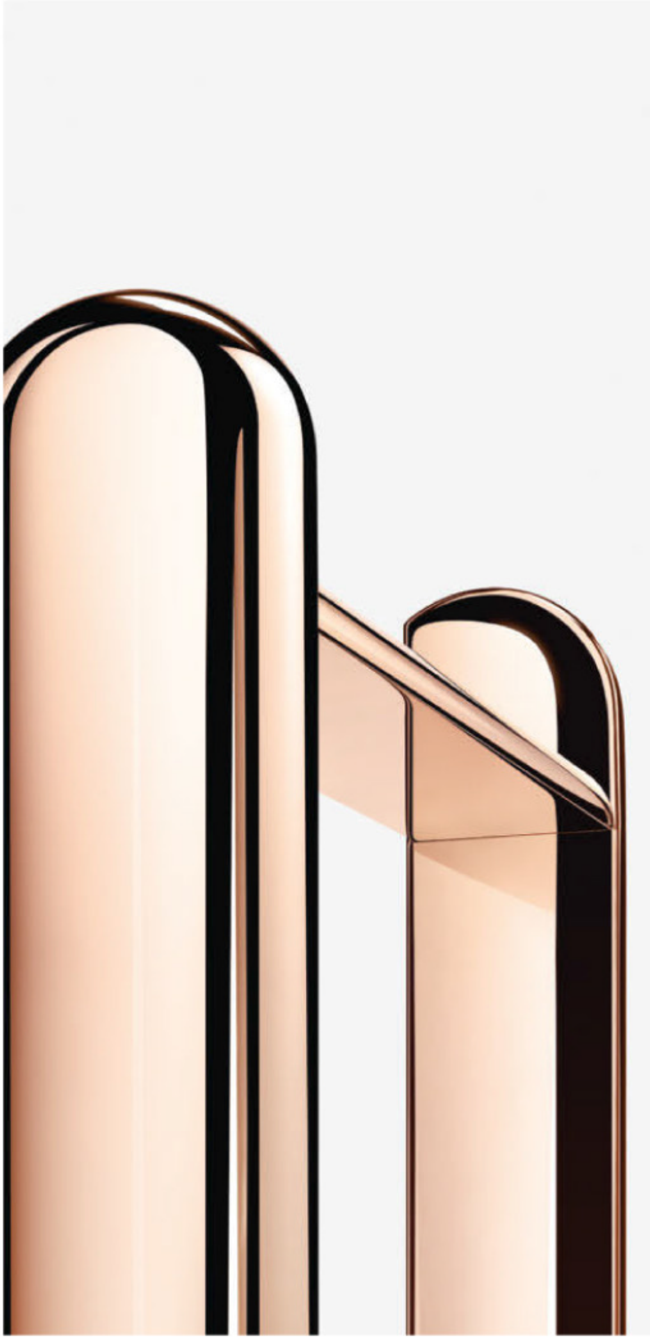
That idea did not fly in Russia, where the president ignored it and it sounded like Georgians making mischief. But beyond, and abroad, journalists were intrigued. They noted that Mr Putin gave almost no details of his childhood up to the age of ten. It was likely, too, that he would hide any Georgian connection, which made him half-foreign and invoked Stalin's ghost. Some facts stacked up: in 2008 the *Daily Telegraph* found that a Vladimir Putin had indeed attended Metekhi school for three years. Other events raised suspicions. In 2000 two journalists investigating Vera's story, a Chechen and an Italian, were killed in separate "accidents". At one point strangers, two men and two women, came to Vera's house and took blood for a DNA test. She never heard the result.

For as long as she could, until her daughters stopped her, she kept the story going. In 2003, when she was 77, she opened her house and her heart to a Dutch film-maker, Ineke Smits. In "Putin's Mama" she showed the rigours of her life in Metekhi, which after 52 years she had never really taken to. In Russia, she had sung and danced. Now, scarf tight on her head, boots laced on her legs, she trudged through mud, chopped firewood with a vigorous axe, fired piles of straw in an orchard, hoed the weeds from Giorgi's railed-off grave. ("Hi, how's things?" she casually asked him.) She drank bright red local wine, filtering it past her toothless gums.

As she laboured, she also mused about Vova. She wondered why the "foster parents", both of whom died in the 1990s, had never publicly talked of him. Presumably they too had been told not to. Then again, men who joined the KGB were supposed to forget their families. Well, Vova had certainly forgotten her.

She had not forgotten him. There were times, especially when he invaded Georgia in 2008, when she felt ashamed of him. But in general she felt more ashamed of herself. She wished he would make just one visit to Metekhi, when she would tell him she was sorry for sending him away, and explain that it wasn't her fault. Sometimes she actually dreamed that Vova came; but he never spoke to her, and then he would be called away. She thought those dreams occurred because she lit candles for him in church.

When the KGB had come to take the photos they left one behind. It showed a child of three in a short belted tunic. His fringe barely cleared his eyes and his eyes were gleaming, as if he had just stopped crying. He was not instantly recognisable as Vladimir Putin, as the others had been. The whole set-up looked much older. But what she recognised, Vera said, was that gleam in his eyes. Plausibly or not, he was Russia's ruthless president to her. ■




CARTIER