The Economist

Time's up for TikTok

Inside Putin's Russia

Crazy rich Indians

A special report on the oil industry

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# AMERICA'S PUMPED-UP ECONOMY

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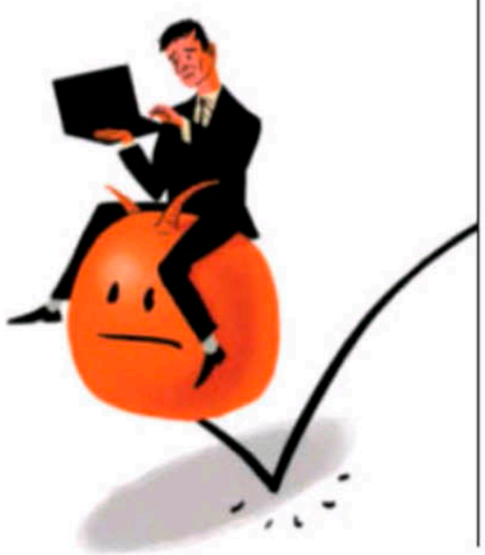





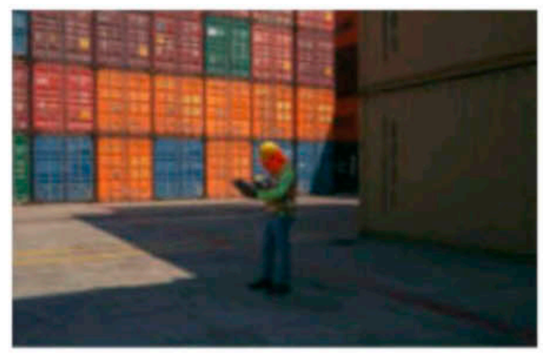







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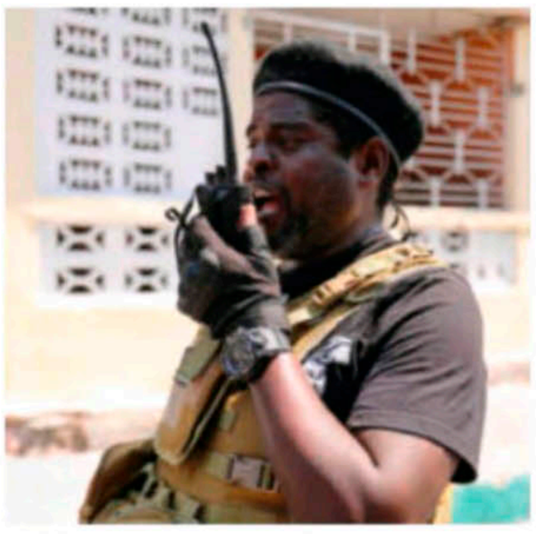


Ariel Henry agreed to step down as prime minister of **Haiti** once a new governing council is in place. Mr Henry has been out of the country for several weeks. In his absence Haiti became even more chaotic, with armed gangs, who now wield the real power, roaming at will. Jimmy "Barbecue" Chérizier (above), a prominent gang leader, had called for Mr Henry to go. Earlier America evacuated most of its embassy staff from Port-au-Prince.

The **Venezuelan** government announced the arrest of another prominent opposition member. It claims that Emill Brandt Ulloa had taken part in violent protests and insulted an official. María Corina Machado, the main opposition leader, who has been banned from running in July's presidential election, said Mr Brandt had been "kidnapped".

### A fox guarding the hen house

Juan Orlando Hernández, president of **Honduras** from 2014 to 2022, was found guilty by a court in New York of trafficking cocaine. Mr Hernández's election campaign promised to crack down on narcotic gangs. While he was in office Honduras received more than $50m from America towards his war on drugs. His wife is running for president in 2025.

**Israel** and Hamas failed to reach a deal that would have seen the release of some of the remaining hostages in **Gaza** in exchange for a temporary ceasefire and the freeing of hundreds of Palestinian prisoners. Negotiators had hoped that an agreement could be finalised before the start of Ramadan, the Muslim month of fasting. Joe Biden suggested that an invasion of Rafah, the city in southern Gaza where many Palestinians are now sheltering, was a "red line" and seemed to imply that America could limit its supply of weapons if Israel crossed it.

Mr Biden announced that America will build a pier off the coast of Gaza to enable the delivery of far greater quantities of **humanitarian aid**. Separately a boat bringing 180 tonnes of food left Cyprus. It is the first ship authorised to deliver aid to Gaza since Hamas took control of the coastal strip in 2007.

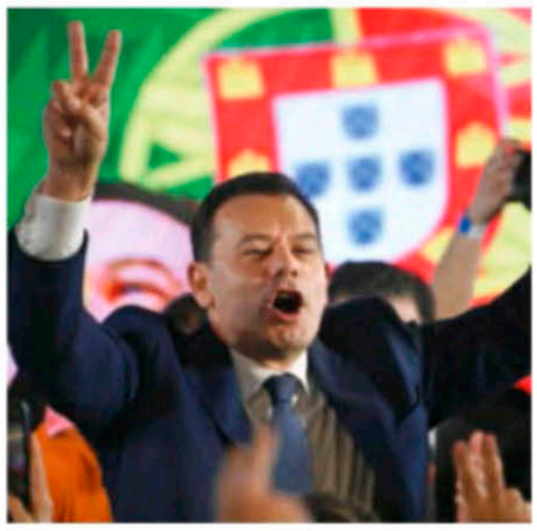
Almost 3m children in **Sudan** are acutely malnourished and nearly 230,000 children, pregnant women and new mothers may die in the coming months without urgent aid, according to Save the Children. A civil war that erupted last April has caused the world's biggest humanitarian crisis, with 8m Sudanese forced from their homes, according to the UN.

More than 300 pupils have been abducted from schools in **Nigeria** in recent weeks. In all more than 1,400 pupils have been kidnapped since 2014.

Groups of fighters who are based in **Ukraine** but claim to be Russian said they had conducted raids across the border into **Russia** to draw Kremlin troops away from the front line. The fighters say they oppose Vladimir Putin—his government said it had repelled the assault. Russia also had to defend itself against a wave of Ukrainian drone attacks, some of which targeted oil refineries.

Meanwhile the head of the Russian navy was reportedly sacked. Ukraine's offensive against Russia's **Black Sea** fleet has been highly effective. America thinks Ukraine has sunk 15 Russian ships over the past six months alone.

Nevertheless, the head of the CIA and the director of US national intelligence said that Russia was gaining the upper hand in the **war in Ukraine**, had increased its production of artillery shells and secured a supply of drones. The officials said that an American aid package to Ukraine, which is stalled in Congress, would enable it to hold the front line.



**Portugal** took a turn towards the right at a general election. The centre-right Democratic Alliance won the most seats in parliament but fell short of a majority. The Socialists lost 43 seats, pushing them into second place. Chega, a right-wing populist party formed in 2019, came third with 18% of the vote, giving it 48 deputies. Luís Montenegro, the DA's leader, has said he will not ask Chega for help in forming a government.

Geert Wilders conceded that he would not become prime minister of the **Netherlands** as talks continued to form a government, four months after an election. Mr Wilders's far-right Party for Freedom (PVV) won the most seats in the poll and still wants to be part of a new right-wing coalition.

Voters in **Ireland** overwhelmingly rejected two amendments to the constitution on family and the role of women. The first amendment sought to change marriage as the basis on which a family is founded to one that includes "durable relationships". The second wanted to scrap a reference to a woman providing care within the home. Opponents to both amendments maintained that the replacement wording to the constitution was confusing, and would have excluded non-family members in a new definition of "caregivers".

England's health service confirmed that it would no longer routinely prescribe **puberty blockers** following a review of a number of studies. It concluded that there was not enough evidence to allay safety concerns. It has decided that access to the blockers for children and young people with gender dysphoria should be available only in research programmes.

### A move backwards

**Thailand's** Election Commission took the first legal step towards banning Move Forward, a reformist party that came first in last year's election but was blocked from taking power by the royalist establishment. The commission bases its reasoning on a ruling by the Constitutional Court, which held that Move Forward's aim of changing the country's *lèse-majesté* laws, which forbid any criticism of the monarchy, was illegal.

The government in **India** implemented a controversial law that eases the path to citizenship for members of some religious minorities from neighbouring countries but excludes Muslims. Hindus, Sikhs, Christians and others who fled to India from Afghanistan, Bangladesh or Pakistan before 2015 will be granted citizenship. Rohingya Muslims from Myanmar, for example, cannot apply. The government denies that the law is discriminatory.

Joe Biden and Donald Trump both won enough **delegates** in the latest batch of primaries to secure their parties' nomination for president. Mr Trump's takeover of the **Republican Party** was formalised with the election of his champions to leadership roles on the Republican National Committee. Michael Whatley, a key ally, is the party's new chairman. Lara Trump, the wife of Eric Trump, one of Mr Trump's sons, is his deputy. Around 60 RNC staff were purged immediately after the appointments were made.

America's House of Representatives passed a bill which would require ByteDance, the Chinese firm that owns **TikTok**, either to sell the platform or to stop operating in America, TikTok's biggest market. The bill's supporters worry that China could lean on TikTok to massage content to its liking. TikTok became popular with its quirky video clips, but has morphed into a big provider of factual media. A third of American adults under 30 use it to catch up on the news. The bill now goes to the Senate.

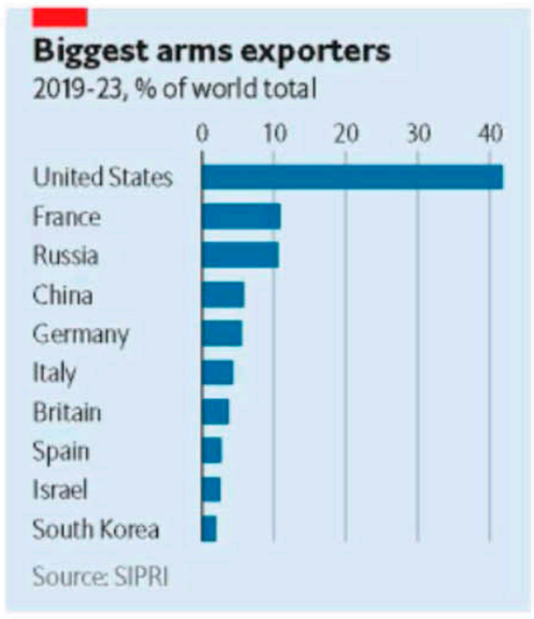
## All's well that ends well

**Sam Altman** was restored to the board at OpenAI. Mr Altman was sacked as chief executive by the previous board last November but swiftly reinstated in that job following a revolt by employees and investors. An independent review into those events has concluded that there was a "breakdown in the relationship and loss of trust" between the prior board and Mr Altman.

**Saudi Aramco** reported a net profit of $121bn for 2023, more than the combined profits of the West's five biggest oil companies. Aramco increased its dividend pay-out to $98bn, a big source of income for the Saudi state, and promised even higher payments this year.

America's annual rate of **inflation** rose slightly in February, to 3.2%. Separate data showed that American employers created 275,000 **jobs** last month. Although that was more than expected, January's red-hot figure of 353,000 new jobs was revised down to 229,000. Neither set of figures changed investors' expectations that the Federal Reserve will start cutting interest rates in June.

In **Argentina** the annual rate of inflation surged again, to 276% in February. But the month-on-month increase in prices slowed to 13%, from 21% in January. Javier Milei, the country's president, has embarked on economic reforms that he acknowledges are painful. UNICEF has warned that 70% of Argentine children could be living in poverty. Meanwhile, the government rolled over $50bn-worth of debt that was to mature this year for securities that are due next year, the largest debt-swap in Argentina's history. And the central bank cut its benchmark interest rate from 100% to 80%.




France increased its share of the **global arms-export** market to 11% in 2019-23 from 7.2% in 2014-18, according to the Stockholm International Peace Research Institute. France gained by selling more weapons to countries such as India, the world's biggest arms importer, taking some of Russia's business. Russia's share of the global market dropped to 11% from 21%.

**Reddit**, a social-media platform, will float its shares in New York on March 21st, according to Bloomberg. Reddit hopes to raise nearly $750m, which could be one of the biggest IPOs so far this year.

**Apple** said it would allow developers to sell apps in the European Union for download onto an iPhone without having to use its App Store. It is a big concession to European regulators; a new Digital Markets Act came into force this month. Developers will still have to comply with Apple's stringent safety standards, and be a "member of good standing" in its developer programme for at least two years.

One of China's biggest smartphone-makers accelerated its move into the electric-vehicle business. **Xiaomi** is launching its SU7 sedan on March 28th, with the first deliveries taking place soon after. The car will be available only in China. It will join a crowded market; existing EV-makers have started another round of price cuts to entice buyers.

**Cathay Pacific** reported an annual net profit of HK$9.8bn ($1.25bn), its first since 2019 and its biggest since 2010. The Hong Kong airline lagged behind most other international carriers in returning to post-covid profitability because of the pandemic measures that the city lifted at only the end of 2022. It expects to return to providing 100% of its pre-pandemic flights in the first quarter of next year.

By contrast, **Adidas** posted its first annual net loss in 30 years. Sales in North America dropped by 16%, in part because of the "negative Yeezy impact", according to the German sportswear company. Adidas cut its ties with Ye, formerly Kanye West, over his antisemitic remarks in 2022. But it has been selling off its inventory of Ye-branded products, which are still popular.

## Market demand

Britain's Office of National Statistics updated the basket of goods and services that it uses to calculate inflation. Reflecting the changing **tastes of consumers**, new additions include vinyl albums ("a record revival", according to the normally humourless number-crunchers), air fryers (which are "cooking up a storm" in sales) and gluten-free bread. Out go such things as hand sanitisers, sofa beds and roasting tins.

# Pumped up

**America's growth keeps defying the pessimists. Can that last?**

YOU HAVE to marvel at America's economy. Not long ago it was widely thought to be on the brink of recession. Instead it ended 2023 nearly 3% larger than 12 months earlier, having enjoyed one of the boomier years of the century so far. And it continues to defy expectations. At the start of this year, economists had been forecasting annualised growth in the first quarter of 1%; that prediction has since doubled. The labour market is in rude health, too. The unemployment rate has been below 4% for 25 consecutive months, the longest such spell in over 50 years. No wonder Uncle Sam is putting the rest of the world to shame. Since the end of 2019 the economy has grown by nearly 8% in real terms, more than twice as fast as the euro zone's and ten times as quickly as Japan's. Britain's has barely grown at all.

America's expansion is all the more striking when you consider the many things that could have killed it. As the Federal Reserve has fought inflation the economy has endured the sharpest rise in interest rates since Jimmy Carter was in the White House. The covid-19 pandemic, an intensifying trade war with China and the fight against climate change have together reshaped supply chains, labour markets and consumer preferences. Wars in Ukraine and Gaza have aggravated geopolitical tensions and worsened the strains on the global trading system.

Can America's remarkable strength persist? Threats to growth still hang over the economy. The longer interest rates stay high, for instance, the more damage they could do. Although inflation has fallen, it remains sticky above the Fed's 2% target, meaning that the Fed may be unable to fulfil investors' hopes for interest-rate cuts starting in June. Geopolitical tensions, meanwhile, look likely to spur economic fragmentation. Yet the biggest threat of all stems from November's presidential election. Neither Joe Biden nor Donald Trump seems likely to nurture the economic expansion should they return to the White House. Instead, their plans would endanger it.

To understand this, consider the reasons for the economy's extraordinary performance (see Briefing). A key plank was generous pandemic stimulus, which at 26% of GDP was more than double the rich-world average. This largesse fuelled inflation but also ensured fast growth: consumers have yet to spend all the cash they received in "stimmy" cheques. Even as the covid crisis passed, the government continued to borrow away. The underlying deficit over the past year was nearly 8% of GDP. That supported demand even as rates went up.

Strong demand has been met by growing supply. America has 4% more workers than it did at the end of 2019, thanks in part to rising workforce participation, but mainly owing to higher immigration. The foreign-born population is up by 4.4m, a figure which may undercount those who arrived illegally. And the expanding workforce is being put to productive use. America's flexible labour market has almost certainly made it easier for the economy to adapt fast to a changing world.

Other long-standing strengths have made America enviably placed to cope with geopolitical tumult. Its vast internal market encourages innovation and means it depends less on foreign trade than smaller rich economies do. Because the shale boom of the 2010s made America a net energy exporter, it has in aggregate benefited rather than suffered from the high energy prices that hit the wallets of Europeans.

The trouble is that each of the ingredients for growth can no longer be relied upon. It may be tempting for politicians to extrapolate from America's recent success and juice the economy with further stimulus. But that is becoming unsustainable. Official forecasts show that America will this year spend more on debt interest than national defence. More borrowing risks building up financial perils in the future.

At the same time, both Mr Trump and Mr Biden harbour populist and protectionist instincts that will only harm America's growth potential. The sugar-rush of stimulus helped mask the damaging effects of such policies during each president's first term. This time, however, the damage will not be disguised.

Mr Trump poses the graver threat. He has entertained a blanket 10% tariff on imports, which some of his advisers see as a mere starting-point. That would triple America's existing levies on goods imports, worsen inflation and raise the cost of imported parts for manufacturers. At the same time, Mr Trump has promised the mass deportation of illegal immigrants. This goes well beyond trying to secure the border against new unauthorised entrants—a reasonable goal—and poses a risk to the labour supply: in 2021 America's 10.5m irregular migrants made up an estimated 5% of its workforce.

A Trump presidency would also threaten the Fed's independence. Mr Trump says he would not reappoint its chairman, Jerome Powell, whose term expires in 2026, and whom he often criticised when in office. A pliant Fed at a time of big deficits—which Mr Trump might increase with more tax cuts—could threaten America's macroeconomic stability.

A second Biden term promises nothing as potentially catastrophic. Mr Biden has let the Fed get on with fighting inflation, and wants to raise taxes to reduce deficits. Yet he is also an economic nationalist. His State of the Union address on March 7th was littered with protectionist promises that the government would "Buy American", and statist ideas about controlling the price of everything from housing to Snickers bars.

## Muscle memory

Both Mr Biden and Mr Trump harbour a misplaced nostalgia for the 1950s and '60s, and justify their policies by painting today's economy as weaker than it is. Mr Trump thinks trade and immigration have made the country poorer; Mr Biden is deeply distrustful of big business. And where they do acknowledge America's strengths, both men attribute it to their own misguided interventionism. In fact, they are chipping away at the free markets which are the ultimate source of the country's wealth.

The truth is America has thrived as its companies and workers have innovated and adapted to a rapidly changing world. If the next president does not recognise that, America's pumped-up economy will eventually deflate. ■

Beyond Ukraine

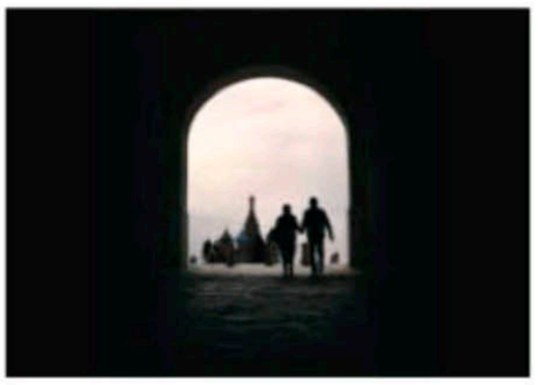
# Inside Putin's Russia

**The West doesn't have a strategy for dealing with a rogue but resilient Russia. It needs one, fast**

LIKE THE tsar he models himself on, Vladimir Putin is about to be anointed as Russia's ruler for another six years. The election he will win on March 17th will be a sham. But it should nonetheless be a wake-up call for the West. Far from collapsing, Russia's regime has proved resilient. And Mr Putin's ambitions pose a long-term threat that goes far beyond Ukraine. He could spread more discord in Africa and the Middle East, cripple the UN and put nuclear weapons in space. The West needs a long-term strategy for a rogue Russia that goes much further than helping Ukraine. Right now it doesn't have one. It also needs to show that its enemy is Mr Putin, not 143m Russian people.

Many in the West hoped that Western sanctions and Mr Putin's blunders in Ukraine, including the senseless sacrifice of legions of young Russians, might doom his regime. Yet it survived. As our study this week of life in Vladivostok shows (see Europe section), its resilience has several foundations. Russia's economy has been re-engineered. Oil exports bypass sanctions and are shipped to the global south. Western brands from BMW to H&M have been replaced with Chinese and local substitutes. In textbooks and the media a seductive narrative of nationalism and Russian victimhood is promulgated. Dissent at home has been strangled. Mr Putin's most charismatic political rival, Alexei Navalny, was murdered in the gulag in February. So far the Kremlin has had no difficulty controlling the brave crowds mourning him.

Over time the regime will face new vulnerabilities. The cumulative effects of being cut off from Western technologies will be a drag on productivity: think of wear-and-tear on Boeing planes, or having to rely on pirated software. Russia's increasing dependence on China may become a weakness. The militarisation of the economy will hurt living standards. The population will shrink by a tenth or so in the next two decades. And as the 71-year-old Mr Putin ages, a succession struggle will loom. It is always hard to predict when a tyrant will fall. However, a prudent working assumption is that Mr Putin will be in power for years.



During the cold war, the Soviet Union posed both a military and an ideological threat to the free world. The West successfully contained it and, after it collapsed, welcomed its democratic and market reforms. Mr Putin, who took over in 1999, has rolled back Russian democracy, slowly at first, but more rapidly after young, urban Russians staged mass protests in the 2010s. He blames the West for challenges to his rule, and seeks to safeguard his regime by trying to shut out Western influence and unite the Russian people in a struggle against a caricature of America and NATO. Today, Russia has only a medium-size economy and no coherent ideology to export. Yet it poses a global threat. The immediate danger is a defeat of Ukraine and, after that, attacks on neighbouring countries such as Moldova and those in the Baltics; but that is not where Mr Putin's ambitions end.

Consider new or unconventional weapons. Russia is reported to be experimenting with putting nuclear warheads into space. Its drones and cyber-warriors allow it to project force beyond its borders. Its misinformation industry spreads lies and confusion. This malign combination has destabilised countries in the Sahel and propped up despots in Syria and central Africa. It could also sway some of the plethora of elections the world will see this year. Many in the global south believe Russia's false narrative: that Mr Putin is saving Ukraine from Nazis, that NATO is the real aggressor and that the West seeks to foist its decadent social norms on everyone else. Russia's ability to hobble the global institutions established after 1945, not least the UN Security Council, should not be underestimated. It has morphed into a nihilistic and unpredictable foe of the liberal world order, bent on disruption and sabotage. It is like North Korea or Iran on steroids, armed with thousands of nuclear warheads.

What should the West do? America and Europe have bet on two strategies: defending Ukraine and sanctions. Arming and financing Ukraine's defenders remains the most cost-effective way to thwart Russian aggression, yet the West's resolve to keep doing so is scandalously wavering.

Sanctions, meanwhile, have been less effective than hoped. They can be counter-productive, and an excuse to avoid hard choices. Over 80% of the world, measured by population, and 40% by GDP, is not enforcing them, letting Russia trade freely and undermining the sanctions' perceived legitimacy. If the West tried to use secondary sanctions to force the world to comply, it would backfire, leading some countries to abandon the American-led financial system. In the long run the most plausible path is more modest: maintaining targeted sanctions on Kremlin-linked individuals and ensuring that advanced tech, which still tends to be Western, is expensive or impossible for Russia to obtain.

That means an effective Russia strategy needs to put more weight on two other pillars. The first is a military build-up to deter further Russian aggression. In Europe the weakness is glaring. Annual defence spending is less than 2% of GDP, and if Donald Trump wins back the White House, America's commitment to NATO may wither. Europe needs to spend at least 3% of its GDP on defence and prepare for a more isolationist Uncle Sam.

### A struggle of ideas

The West also needs to deploy one of its most powerful weapons: universal liberal values. It was these, as well as Star Wars and dollars, that helped bring down the Soviet regime by exposing the inhumanity of its totalitarian system. Western diplomacy must seek to counter Russian disinformation across the global south. It also needs to address Russian citizens rather than treat them as pariahs. That means highlighting human-rights abuses, supporting dissidents and welcoming Russians who want to flee their country. It means backing the forces of modernisation by promoting the flow of real news and information into Russia. And it means ensuring that there are humanitarian exceptions to sanctions, from medical kit to educational materials. In the short term there is little chance that Russia's elite or its ordinary citizens will boot out Mr Putin's regime. But in the long run Russia will stop being a rogue nation only if its people want it to. ■

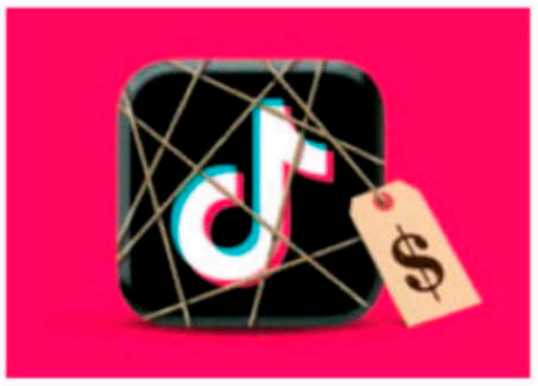
TikTok

# Time's up

**To stay on Western screens, the video app must cut its ties to China**

TIKTOK'S VIDEOS keep its users up late into the evening. Now the app's links to China are causing politicians to lose sleep, too. On March 13th America's House of Representatives passed a bill that would force TikTok's Chinese owner, ByteDance, to sell the app to an owner of another nationality, or else face a ban in America. If the Senate follows suit, the world's most downloaded app, by one measure, may start disappearing from screens.

Some fears about TikTok are overblown. True, it hoovers up users' data. But there is no evidence that it takes more than it claims (or indeed more than rivals such as Facebook). If Chinese spies want to find out about Americans, the country's lax data-protection laws allow them to buy such information from third parties. Banning Chinese apps that gather personal data would mean outlawing many more, cutting off Western consumers from some of the world's most dynamic digital services.



TikTok has also injected welcome competition into the social-media market. Six of last year's ten most-downloaded apps came from Meta, Facebook's owner. TikTok, which beat them to the top spot, has brought in a wave of innovation. Consumers everywhere are the winners.

Yet there is one reason why America's crackdown is justified. TikTok has evolved into a broad media platform with 170m users in America alone. A third of American adults under 30 consider TikTok a source not just of entertainment but of news. It is therefore a real concern that it has links to China, whose government is in deep ideological conflict with the West and sees the media as a tool of propaganda.

Most countries place some restrictions on foreign ownership of old media (ask Rupert Murdoch, who became an American citizen before taking over Fox). A bid by Abu Dhabi's ruling family for the *Telegraph* newspaper prompted Britain to announce this week that it will ban foreign governments from owning British publications. Yet TikTok is fast becoming more influential.

It is time for governments to apply the same logic to new media as they do to old. If anything, the new platforms require greater vigilance. A newspaper's editorial line can be seen in black and white; by contrast, every TikTok user gets a different feed, and the company does not provide adequate tools to examine its output in aggregate. Even if studies suggest bias—some allege a skew in TikTok's Gaza coverage, for instance—it is impossible to know whether TikTok's algorithm is responding to users' preferences, or to manipulation from Beijing.

TikTok admits it once blocked videos on subjects like Tiananmen Square, but insists it has changed. It has made expensive efforts to separate American users' data from others' and opened its code for inspection. But it has undermined itself, too. It argues that selling its American operations would be impractical, since they are so closely linked to the rest of the business—thus casting doubt on its claims of strict separation from Beijing. It has rallied users to its cause, pinging some last week to contact Congress. That only emphasised its potential political clout; some wavering representatives reportedly flipped against TikTok after their switchboards blew up.

The best outcome is one in which TikTok survives. It provides competition and innovation, as well as fun. The bill before Congress allows ByteDance to sell up, rather than simply shut down. If it is unwilling to do so—or if China does not let it—ByteDance could float TikTok as a public company. Americans and others benefit from freedom of choice. But it is time the same standards were applied to new media as old. That requires separating a platform as large and influential as TikTok from the sway of a country as manipulative and ideological as China. ■

The Gulf and Africa

# Promise and peril

**The Gulf's scramble for Africa brings economic rewards and geopolitical risks**

DURING THE cold war African leaders often sided with the West or the Soviet Union, extracting from them aid, arms, investment and other things they desired. After it ended, those wanting to build roads and ports generally did deals with China. Today African politicians are like customers in a geopolitical bazaar as middle powers—including Brazil, India and Turkey—extend their economic and diplomatic reach. Yet it is the rise of the United Arab Emirates (UAE)—and to a lesser extent Saudi Arabia and Qatar—that is the most striking. The Gulf's scramble for Africa promises great economic benefits, but also threatens to fuel horrific wars.

Gulf influence stems from cash. In November Saudi Arabia held its first Africa summit, at which it announced billions of dollars of investment. Even that is dwarfed by the UAE, which in 2022 made investment pledges in Africa worth seven times those of American firms. In the previous ten years it was the fourth-largest foreign direct investor in Africa, behind China, the EU and America. DP World, a Dubai-based firm, runs ports in nine African countries. Masdar, a renewables firm, says it will splurge $10bn in Africa. In 2020 and 2021 the UAE traded more with sub-Saharan Africa than America did. Dubai, with its secure property rights and light (some would say lax) financial regulation, is home to over 26,000 African businesses.

Diplomacy comes in concert with the money. The UAE and Saudi Arabia were invited to join the BRICS at the bloc's summit last year in Johannesburg. Qatar and the UAE increased the num- ▸▸

ber of their embassies in sub-Saharan Africa five-fold and nearly three-fold, respectively, from 2012 to 2022. Saudi Arabia has promised to open a dozen or so more posts. One-third of all new embassies opened globally in 2022 were in the Gulf, driven largely by reciprocal African diplomacy.

The attention will bring benefits to African states facing a funding squeeze. New Chinese loans granted to Africa slumped by 80% in the four years to 2022 over the preceding four. Africa's share of Western aid has declined because of the war in Ukraine. Some Western officials hope Gulf countries can fill the gap and help them see off their main geopolitical rival by channelling investment into mines that might otherwise end up in Chinese hands (see Middle East & Africa section).

**Too many warlords**

Yet turning Africa into an arena for the ambitions and rivalries of Gulf powers carries huge risks. The Gulf's dynastic autocracies are neither champions of African democracy nor of human rights. Nor is China, though it at least tends to prize stability and has been a big financial supporter of UN peacekeeping operations. The UAE, by contrast, is a loose cannon that arms warlords, spreads chaos and provides a haven for corrupt elites.

Exhibit A is Sudan, where the UAE has backed the Rapid Support Forces (RSF), a genocidal militia, which is waging a civil war against the national army. It is the world's largest humanitarian crisis, with about 25m people in need of aid. The UAE, which denies arming the RSF (the UN deems the allegations "credible"), seems to be courting a network of strongmen—sometimes with arms—as part of a contest for influence in the region between the Gulf states. Among the UAE's friends are Muhammad ("Hemedti") Dagalo, the RSF's leader; Khalifa Haftar, a warlord in Libya; Mahamat Déby, who took power in a coup in Chad; and Abiy Ahmed, who has led Ethiopia into a bloody civil war in Tigray.

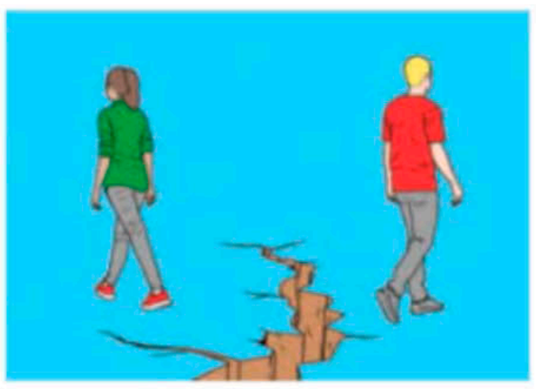
Oil and natural-gas wealth mean that the UAE, Saudi Arabia and Qatar will be enticingly rich partners for years (see Special report). But the ripples of mayhem spreading from Sudan and Libya offer a warning: the West must see the danger of outsourcing its Africa policies to countries that do not share its values; and African countries should know the risks of letting themselves be used as pawns in someone else's geopolitical games. ■

Angry young men

# Young men and women are drifting apart

**It's complicated. But better schooling for boys might help**

MEN AND women have different experiences, so you would expect them to have different worldviews. Nonetheless, the growing gulf between young men and women in developed countries is striking. Polling data from 20 such countries shows that, whereas two decades ago there was little difference between the share of men and women aged 18-29 who described themselves as liberal rather than conservative, the gap has grown to 25 percentage points. Young men also seem more anti-feminist than older men, bucking the trend for each generation to be more liberal than its predecessor. Polls from 27 European countries found that men under 30 were more likely than those over 65 to agree that "advancing women's and girls' rights has gone too far because it threatens men's and boys' opportunities". Similar results can be found in Britain, South Korea and China. Young women were likely to believe the opposite.



Unpicking what is going on is not simple (see International section). A good place to start is to note that young women are soaring ahead of their male peers academically. In the European Union fully 46% of them earn degrees, versus 35% of young men, a gap that has doubled since 2002. One consequence is that young women are more likely than men to spend their early adulthood in a cocoon of campus liberalism. Meanwhile, boys outnumber girls at the bottom end of the scholastic scale. Across rich countries, 28% of them fail to learn to read to a basic level. That is true of only 18% of girls.

Another big change is that, to varying degrees across the developed world, immense progress has been made in reducing the barriers to women having successful careers. College-educated men are still thriving, too—often as one half of a double-high-income heterosexual couple. Many men welcome these advances and argue for more. However, those among their less-educated brothers who are struggling in the workplace and the dating market are more likely to be resentful, and to blame women for their loss of relative status. And young women, by and large, are glad of past progress but are keenly aware that real threats and unfairness remain, from male violence to the difficulty of juggling careers and children. In short, most young women and worryingly large numbers of young men complain that society is biased against their own sex.

Young women tend to vote for parties of the liberal left. Angry young men, sometimes dismissed as toxically masculine by those parties, are being shrewdly wooed by politicians from the right and the far right. In South Korea their support helped an overtly anti-feminist president win power. In America polls are muddy but some pollsters think young men are souring on the Democrats. In Europe, where many countries offer a kaleidoscope of political choices, young male votes have helped fuel the rise of reactionary outfits such as the AfD in Germany, Confederation in Poland and Chega, which surged at Portugal's election on March 10th.

There is no easy solution to any of this. But clearly, more should be done to help boys lagging behind at school to do better. Some policies that might work without harming their female classmates include hiring more male teachers (who are exceptionally scarce at primary schools in rich countries), and allowing boys to start school a year later than girls, to reflect the fact that they mature later. Better vocational training could encourage young men to consider jobs they have traditionally shunned, from nursing to administration. Schooling boys better would not only help boys. Increasing the supply of educated and (one hopes) less angry men would be good for the women who must share the same world. ■

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### Ski someday

Climate change is a business risk for the ski industry that is not mentioned in your article ("Stoked", March 2nd). By selling season passes before the first snow, crafty corporate moguls have moved most of the financial risk of a bad winter onto individual skiers. If climate change shortens future ski seasons, this pricey pastime will become more elitist as skiers crowd mountains across fewer potential powder days. There's still time for the American ski industry to learn from Europe about how to move more skiers sustainably to the slopes, protecting winter sports for all.

KRISTOFER PETERSON
*Edinburgh*

Skiing recently in Breckenridge, Colorado, I enjoyed your reflections on the dynamics of the ski-resort business. Unlike your correspondent I was lucky to have bought my "Epic Pass", offering unlimited skiing, well in advance. This made the experience a bit less expensive, but it required a leap of faith about weather and snowpack several months in advance. The price increases have not dented demand. The slopes seemed busier compared with my first trip there in the 1990s. It will be interesting to see how the Epic concept will play out in Europe, where there has been much less consolidation among resorts.

Skiing has become more expensive, straining family budgets, especially since larger resorts have switched to "dynamic pricing". But the lifts in Breckenridge haven't been upgraded much, no seat warming or protective bubbles on chairlifts that we have come to appreciate in Europe.

THOMAS MEYER
*Basel, Switzerland*

### Artillery rounds

America's defence establishment continues to focus on capabilities and not on the specific context of a potential war ("Mission in flux", February 24th). When it comes to the Pacific, the army's new doctrine envisions vague campaigns of island-hopping rather than deterring the actual limited objective of China, which is to seize Taiwan. You quoted a Pentagon official who wasn't sure where else to fire a 155mm round in the Pacific "other than the water". The Chinese infantry who land on the limited suitable beaches of Taiwan, unable to dig into flooded rice paddies as they try to assemble forces to seize Taipei, would fear massed artillery barrages far more than costly hyper-sonic missiles or cyber-attacks.

ROBERT ROSE
*Fort Carson, Colorado*

### What exactly are you digging?

Let's not forget that large mining operations are financial speculations focused on mineral assets rather than mineral production ("In a hole", February 24th). Big mining companies remain fixed on accessing sizeable deposits, even when the grades of the deposits are notably low. Such large, low-grade deposits necessitate substantial investments in infrastructure and capital, generating significant waste in the form of large storage facilities for tailings (the by-products of a mine). Consequently, these projects become mired in intricate permitting processes.

We need a paradigm shift to embrace the concept that responsible mining extends beyond environmental and social considerations. This means adopting a new corporate vision prioritising production over asset speculation. What if the future of mining pivoted towards smaller, more manageable deposits, rather than a handful of massive ones?

DR DAVIDE ELMO
Professor of rock engineering
University of British Columbia
*Vancouver*

You bemoan the fact that mining companies are investing insufficiently in new capacity, putting the energy transition at risk. Yet for decades the industry has over invested, resulting in falling real mineral prices and the industry barely meeting its cost of capital.

Mineral markets are remarkably self-correcting. Although higher prices will be a consequence of mining companies reinvesting a smaller proportion of their free cashflows, new supply will eventually be incentivised. The mining industry will then be able to generate higher returns for shareholders and make larger tax and other payments to host regions and countries. With the right governance, this should go some way to help the industry tackle the many real ESG (environmental, social, governance) pressures it faces.

NEAL BREWSTER
Mining consultant
*London*

### Real levelling up

It is worth mentioning that the single biggest boost to Blackpool could come from the jobs and tax revenues that flow from fracking for gas in the area ("Lifting sands", February 24th). Unfortunately the middle-class eco-warriors who campaign against fracking have little concern for these things. With a serious fracking industry higher gas prices after the Ukraine invasion would have bankrolled the Treasury. As for emissions, more gas typically results in less coal consumption. And had Britain not been forced to get into so much debt to buy fracked gas from America then Labour might have been able to keep its £28bn ($36bn) a year green-energy plan. For many towns across the north of England this opportunity remains ripe for exploitation.

MATTHEW LEESE
*Sheffield*

### Moon shadows

Bouncing radar off the Moon may be an incredible achievement ("Reflections of reality", February 24th), but it almost caused a third world war. The Union of Concerned Scientists reported in 2015 that on October 5th 1960, America's nuclear command centre received signals from its early warning radar indicating that a massive Soviet nuclear attack was under way with a certainty of 99.9%. The warning was found to be a false alarm minutes before the president would have been required to issue counter-attack orders. The culprit was a rising Moon, which reflected radar waves back to the early-warning stations in Greenland.

The radar system was correct in concluding that it was seeing something big coming from the precise direction that a Soviet attack would have been launched, but it was not detecting missiles, only moonbeams.

ROBERT CHECCHIO
*Dunellen, New Jersey*

### Dogmatix speakers

Bartleby's ode to listening (February 17th) struck a chord, but in reality nobody in the office meeting wants to be the one who didn't contribute, so silence is rare. Juniors feel they must speak, to come across as intelligent. Seniors try to sound casual as they drone on. Those in the middle, the doers, perform a delicate verbal ballet, insightful yet careful not to outshine the seniors. As Laurensolivius said to Obelix when he suffered from stage fright in "Asterix and the Cauldron": "Say something! Come on, anything! Whatever comes into your head!" And so we do.

ZUBIN AIBARA
*Bülach, Switzerland*

### The X factor

Please stop, immediately, using the phrase "formerly known as Twitter" ("All in the family", February 17th).

BOB HUSTEAD
*Everglades City, Florida*

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# That's not all, folks!

WASHINGTON, DC

**Against the odds, America has escaped a hard landing, but there are still pitfalls ahead**

WHICH CARTOON character does the American economy most resemble? The consensus view in recent years, as propounded by a former Treasury secretary, a former president of the New York Federal Reserve and the chief economist of a big asset manager, is Wile E. Coyote, the dogged but hapless adversary of Road Runner. They were referring to the unfortunate predator's tendency to careen off a cliff, defying gravity for a few moments before plunging into the canyon below. America's run of heady growth, the analogy implied, could not persist amid rampant inflation; a reckoning was inevitable. But in fact, since late 2022, it is inflation that has plunged, whereas the economy has pulled off something that the coyote never managed and leapt across the canyon.

Since the end of 2019—a period that includes the covid-19 pandemic and its aftermath—America's economy has grown by about 8% in real terms (see chart 1 on next page). During that same time, the euro area has expanded by only 3%, Japan a piddling 1% and Britain not at all. America is the only big economy that is back to its pre-pandemic growth trend.

Alan Blinder of Princeton University has examined the 11 previous episodes over the past six decades in which the Fed raised interest rates to quell inflation. Most ended at the bottom of the metaphorical canyon, in recessions. The Fed did manage to guide the economy through a couple of less harmful descents, but has only once previously achieved a painless one, in 1994-95. Mr Blinder thinks its current steering is the most impressive, however, given the starting point: the economy was gripped by much higher inflation this time around, forcing the Fed to raise interest rates rapidly. "We're there. We've had the soft landing," he says.

Calling it a soft landing may in fact be an understatement, for what is most striking about the American economy at present is not its deceleration but its continued momentum. On February 26th the National Association for Business Economics published its quarterly survey of professional economists. Three months ago the median forecast was for growth of 1.3% this year; now it is 2.2%, just short of last year's 2.5% growth. Yet the steady expansion has not stopped inflation from falling: the same economists see it receding to an annual rate of 2.1% by the end of 2024 (using the Fed's preferred gauge), almost bang on the central bank's target of 2%.

It is not just economists who are upbeat. America's stockmarkets keep hitting new records. Corporate earnings are set to rise strongly this year. Ordinary folk, too, are growing more optimistic.

## Meep, meep

How exactly has America done this? One way of looking at its run of strength is to focus on demand. Every element of it—consumption, investment, foreign trade—added to growth last year, and may well do so again this year. Three factors have underpinned this broad-based strength: buffers, fiscal catalysts and diversification.

When the Fed jacked up rates in 2022, it seemed inevitable that the abrupt tightening would hobble the economy. That, after all, was the point: to bring down inflation ▸▸

by slowing growth. The median projection of Fed officials at the end of 2022 was that the unemployment rate would rise by a percentage point last year; many others assumed the damage would be much worse. Instead, it barely budged, remaining below 4%, close to a 50-year low.

That is because both consumers and businesses have been insulated to some degree from the chill of higher rates. The insulation is partly a product of the giant stimulus doled out by both the Trump and Biden administrations at the height of the pandemic. This marked America out at the time: in 2020 and 2021 its government deficit averaged 14% of GDP. In the euro area the average was 6%. Both directly (handouts) and indirectly (a quicker economic recovery) this support padded Americans' bank accounts.

Those savings have lasted a surprisingly long time. Researchers with the San Francisco Fed have estimated that households' excess savings (compared with the pre-pandemic trend) peaked at $2.1trn in August 2021. Early last year they thought this stash would be used up in a matter of months. But after data revisions towards the end of 2023, they concluded that households were sitting on an extra $400bn, enough to last through the first half of this year.

### Suffering succotash no more

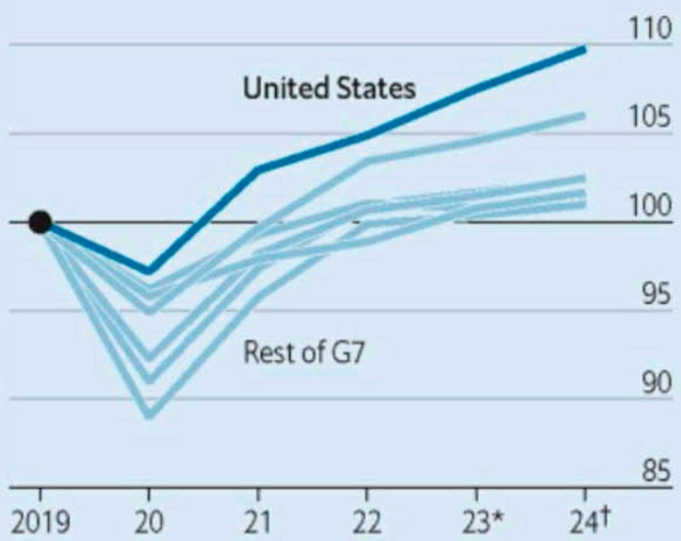
As time has gone on, the distribution of the excess savings has skewed towards richer Americans. They normally spend a smaller proportion of their income than the poor. But Ellen Zentner of Morgan Stanley, a bank, calculates that the top fifth of the population by income has recently accounted for 45% of consumption, up from 39% before covid, thanks in part to "revenge" spending on travel and luxury goods. "Wealthy consumers have drawn down their excess savings much more aggressively than their historical behaviour would have suggested," she says. This prodigality, in turn, has helped to propel the economy.

Another layer of insulation has come from fixed-rate lending. Home-buyers, for example, often obtain 30-year fixed-rate mortgages. The average interest on the stock of these is now about 4%, less than before the pandemic and well below the 8% rate on new mortgages last year. That has drawbacks: in order to keep their inexpensive mortgages, people who might otherwise have moved are staying put. But it does mean that many Americans do not feel the full force of higher rates.

Fiscal policy has also added to America's economic momentum. The government is running a gaping deficit. After narrowing to about 4% in 2022 it was back to 7.5% of GDP last year, a level typically seen only during wars or recessions.

**Ándale, arriba!** 1

G7 countries, GDP, 2019=100




Source: IMF *Estimate †Forecast

Yet not all deficits are equally stimulative. Unlike the gusher of spending when covid struck in 2020, last year's deficit stemmed in part from weak revenues (taxes on capital gains took a hit) and technical factors (high rates reduced the Fed's payments to the Treasury). Scholars at the Brookings Institution, a think-tank, find that the federal government's fiscal stance only modestly boosted growth last year.

Yet in another way fiscal policy has been an economic engine, and may still be revving up. Three big spending packages passed by Congress (on infrastructure, clean tech and semiconductors) are incentivising private firms and state governments to spend lavishly as well. Construction of factories is booming as makers of electric vehicles and semiconductors expand operations in America: altogether, investment in manufacturing added about 0.4 percentage points to GDP growth last year. Investment in infrastructure has been slower to rise but seems to be climbing now, too, with state and local governments piggybacking on federal funding for highways, power grids, airports and more.

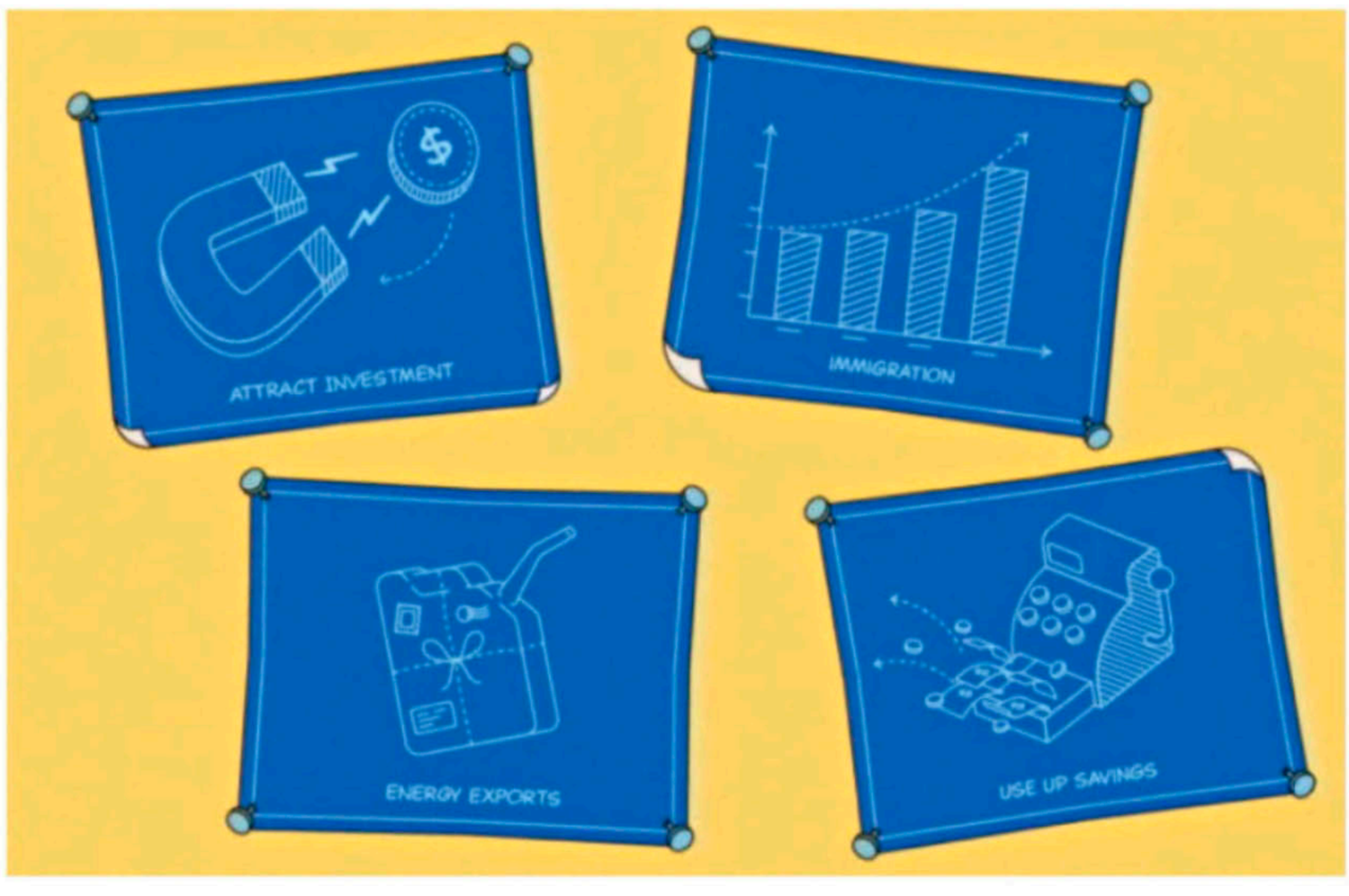
"These policies are starting to show up in the data. It delays the timing of a cyclical slowdown," says Satyam Panday of S&P Global, a credit-rating agency.

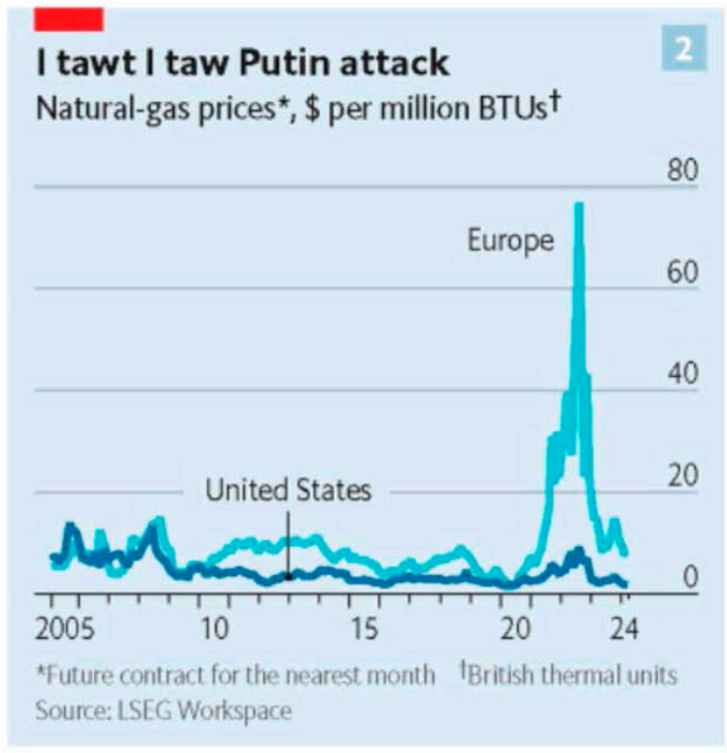
Finally, America, as a big producer of oil and gas, is benefiting from high prices elsewhere without suffering as much from them itself. Natural gas costs about a quarter of what it does in Europe, for example (see chart 2 on next page). Last year America became the world's biggest exporter of the liquefied sort (LNG). No wonder that foreign trade added about 0.6 percentage points to America's growth rate last year.

Strong demand is, however, only half the story. Were it not for a similar expansion of supply, all of the spending would have simply translated into more upward pressure on prices. That inflation has instead eased markedly is a sign of growth in America's productive capacity. At its most basic an economy's ability to supply goods and services is limited by how many of its people are working and how productive they are. Both of these factors have increased strongly in America of late.

Start with the labour force. America now has about 158m workers, nearly 4% more than at the end of 2019. In part that is because a higher share of working-age adults are employed. Yet by far the biggest driver of the expanded workforce has been immigration. The American-born labour force is a bit smaller than it was on the eve of the pandemic. The foreign-born labour force, in contrast, has swollen by more than 4m, or 16%, since the end of 2019.

While most of those entering via America's southern border end up in blue-collar jobs, there has also been an increase in immigrants destined for white-collar work. Student visas have rebounded strongly since the pandemic, with the total last year four times higher than in 2020. That has created a big reservoir of young, educated






workers for companies to hire. Looking at data that includes asylum-seekers, Tiffany Wilding of PIMCO, an investment firm, estimates that about 3m immigrants arrived in America last year, up from 1m in pre-pandemic years.

Even so, expansion of the labour force does not in itself account for the economy's overall growth. Consider the final quarter of last year: GDP rose by 3.2% at an annual rate but total hours worked increased by just 0.6%. This is only possible thanks to a surge in productivity. Workers in non-farm business were about 2.6% more productive than a year ago, according to official estimates. To be clear, no serious economist thinks such productivity growth is sustainable. Since the end of 2019 labour productivity has grown by 1.6% a year, less than a tenth of a percentage point faster than its pace from 2007 to 2019.

Nonetheless the jump in productivity over the past year is notable. The simplest explanation is that pandemic frictions have disappeared as supply chains have returned to normal, and that this has shown up in the data as an improvement in productivity. Some economists, though, are tempted to conclude that fundamentals may also be changing. One possibility is that increased competition in the labour market is engendering a reallocation of workers to higher-paying firms, which are potentially more productive, according to research by David Autor of MIT and Arindrajit Dube and Annie McGrew of the University of Massachusetts Amherst.

Julia Coronado of MacroPolicy Perspectives, a research firm, notes that the relative scarcity of workers has also prompted firms to invest in labour-saving technology, at a time when businesses software has been getting better. "It's possible that like the 1990s we're in the middle of a stronger productivity cycle, but that this time it is more focused on technology for businesses rather than consumers," she says.

Can the good times roll on? The factors that have led to America's strong performance over the past couple of years remain in place to varying degrees. Buffers for businesses and households are, by definition, thinner than two years ago, before the Fed jacked up rates. But the cheap loans that consumers and businesses took out before inflation struck will continue to shield them from higher interest rates for some time to come. Economists with Goldman Sachs, a bank, have calculated that the average rate on corporate debt will rise from 4.2% in 2023 to just 4.5% in 2025. "At some point higher rates will start to bite. But my take is that we may still have a little bit more runway," says Mr Panday of S&P.

The government's investment splurge in manufacturing and infrastructure is far from over. Indeed, as procedures for allocating the money are established, the fiscal stimulus may well accelerate. The Department of Commerce has just started approving big grants for chipmakers, such as a $1.5bn award for GlobalFoundries in February. Meanwhile, more LNG export terminals are coming online, which should lift American energy exports yet higher.

On the supply side, immigration may slow as the political climate turns harsher, but many recent arrivals are still joining the labour market. The Congressional Budget Office estimated in February that the current wave of immigration would, even as it slows, add about 0.2 percentage points to annual GDP growth from 2024 to 2034. As far as productivity goes, it is notoriously difficult to observe in real time but optimists think the improvements may soon become more evident. "This is potentially going to give us a stronger foundation for growth than we had in the last economic cycle," says Ms Coronado.

### Debt-rackin' varmints

It is not all roses. The labour market is showing a few cracks. Hiring has trended down since early 2022. Fewer workers are changing jobs (see chart 3). The main reason that unemployment has remained so low is that lay-offs have been modest. Yet that may be a sign not of confidence, but of concern. Companies may be hoarding workers, afraid to fire them after struggling mightily to hire them. What is more, America's doughty consumers may at last be losing steam. Delinquencies on credit cards and auto loans soared last year, rising above pre-pandemic levels, according to the New York Fed. "It's concerning to see that even before the unemployment rate increases," says Ms Wilding.

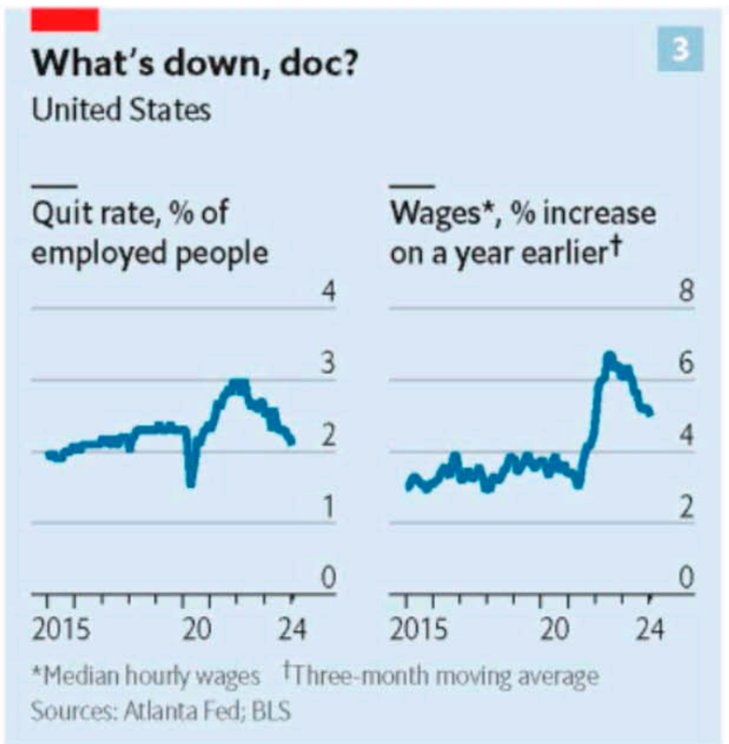
The finance industry, too, has some obvious vulnerabilities. Commercial property threatens to blow a hole in loan books, a problem that will be particularly acute for smaller lenders. And many banks, big and small, are sitting on hefty paper losses on their bond-holdings because of the rise in interest rates.

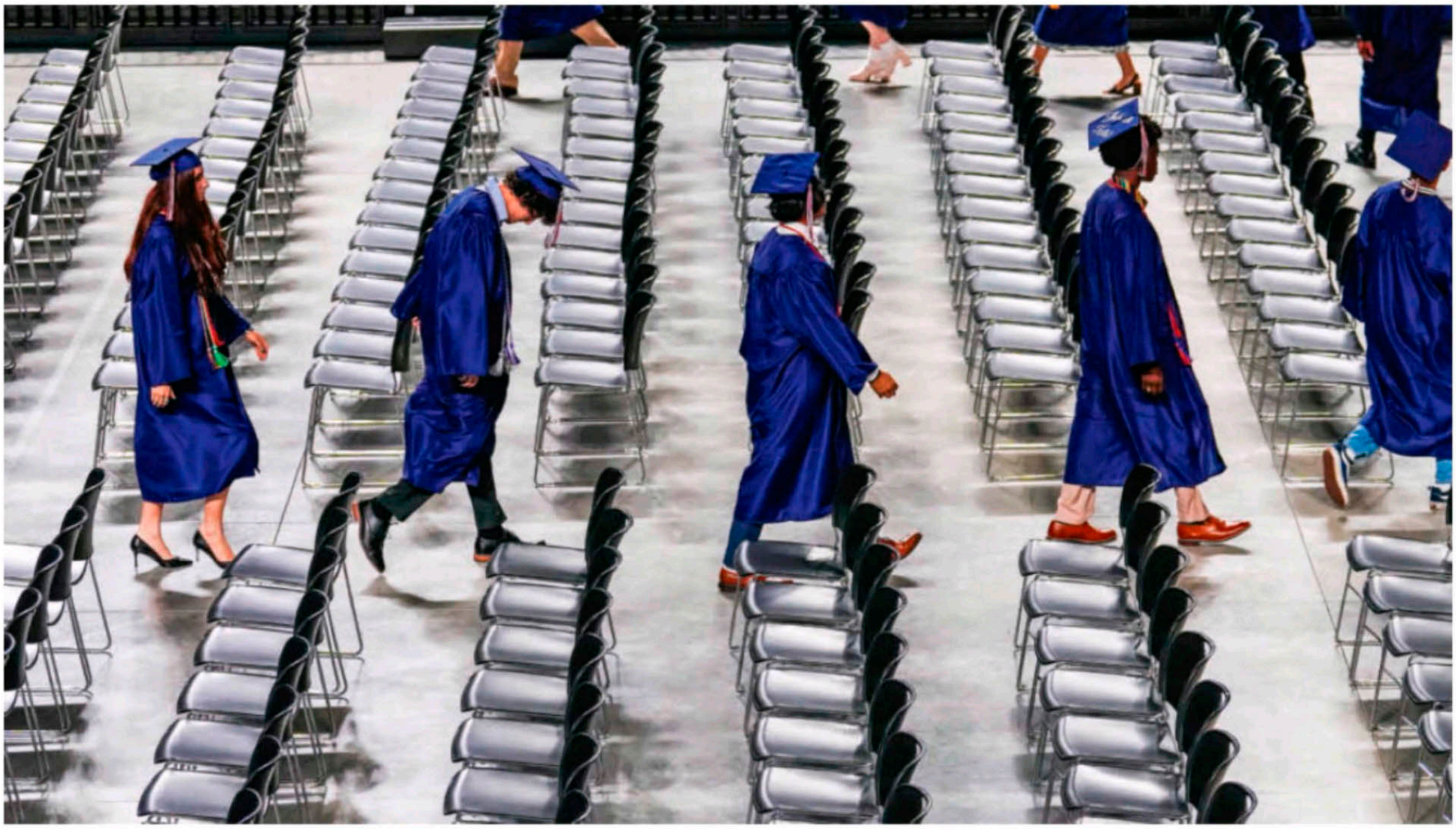
Even if these problems prove manageable, America's success has engendered another difficulty: how to unwind the rate rises of the past two years. No one knows with any certainty what the perfect interest rate is for the economy—the neutral level which is neither a spur to economic activity nor a drag on it. But it is clear that the central bank's current range for short-term rates of 5.25-5.5%, the highest in more than 20 years, will weigh on growth. The question for the Fed is when to begin to cut, and how quickly.

In this sense, declarations that America has achieved a soft landing look premature. It is true that growth has been remarkably resilient and that inflation has softened. But the final stretch of squeezing out inflation may prove arduous given that prices are still rising at an annual pace of about 3%, above the Fed's 2% target. At the same time, the central bank must start acting soon to bring rates back to a more normal level. Until both are achieved, things could yet go awry. Worriers often focus on a possible resurgence in prices. But the bigger danger may be that the Fed overprescribes its tough medicine. It is in this context that rising consumer debts and slowing labour markets look troubling.

Jerome Powell, chairman of the Fed, has said that to deliver the ideal glide path for the economy, the central bank should start reducing rates before inflation hits 2%. The Taylor rule, a formula for gauging the appropriate level of interest rates, suggests that the Fed may be waiting too long. Given that the rule implied, correctly, that the Fed was being slow to raise rates as inflation surged in 2022, Mr Powell might want to pay it more heed now.

"Higher rates are like termites on the economy," says Mark Zandi of Moody's Analytics, a research company. "With each passing day, they dig deeper into the foundations, and at some point a wind is going to blow the building over." America's post-pandemic economy has been a marvel, especially in comparison to other countries. But it will not be impervious to high interest rates for ever. ■





Education

# Soft bigotry

**American high schools are dropping academic standards. Low-achieving pupils may suffer the most**

SPRINGFIELD, IN MASSACHUSETTS, might seem an improbable setting for an education miracle. The city with a population of 155,000 along the Connecticut river has a median household income half the state average; violent crime is common. Yet graduation rates at the city's high schools are surging. Between 2007 and 2022 the share of pupils at the Springfield High School of Science and Technology who earned a diploma in four years jumped from 50% to 94%; at neighbouring Roger Putnam Vocational Technical Academy it nearly doubled to 96%.

Alas, such gains are not showing up in other academic indicators. At Springfield High scores on the SAT, a college-admissions test, have tumbled by 15% over the same period. Measures of English and maths proficiency are down, too. The pass rate on advanced-placement exams has fallen to just 12% compared with a national average of 60%.

The trend at Springfield High is all too common. Between 2007 and 2020 the average graduation rate at public high schools in America leapt from 74% to 87%. During this period pupils notched up gains in course credits and grade-point averages. Yet SAT scores fell (see chart 1 on next page). Results from the latest Programme for International Student Assessment (PISA), an international test of 15-year-olds, show that maths and reading literacy are flat or down. An analysis by *The Economist* suggests that schools are lowering academic standards in order to enable more pupils to graduate. And the trend is hurting low-performing pupils the most.

America has fretted about academic standards at its public schools for decades. In 1983 the Department of Education released a landmark report, "A Nation At Risk", which warned of a "rising tide of mediocrity" in the country's schools. The response was swift. Within five years 45 states had raised graduation requirements; and more than two dozen had introduced other reforms, including more comprehensive curriculums and higher salaries for teachers. Some states also started requiring graduates to pass "minimum-competency" exams, standardised tests introduced in the 1970s that evaluated pupils' ability to do eighth- or ninth-grade level English and maths.

But as graduation requirements were toughened up, coursework was watered down. A survey conducted in 1996 by Public Agenda, a policy research group, found that just half of public high-school students felt that they were being challenged academically. Another survey in 2001 found that only a quarter of pupils thought that their teachers had high expectations of them. Even the federal government acknowledged again that academic standards were falling short. A report by the Department of Education found that more than a tenth of maths coursework taken by the class of 2005 consisted of primary- and middle-school-level material. Only a third of algebra 1 students and a fifth of geometry students received "rigorous" instruction.

Grading got easier, too. The best evidence for this comes from comparisons of classroom grades with performance on state exams taken at the end of the school year. A study by Seth Gershenson of Amer- ▸▸

ican University found that between 2005 and 2016, 36% of North Carolina public-school students who received Bs in their algebra 1 courses failed their end-of-course exams. Pupils with Cs failed 71% of the time. Another study, by Chris Clark of Georgia College & State University, analysed maths courses at Georgia public high schools in 2007 and yielded similar results. "Some schools and school systems appear to be inflating course grades," Mr Clark concluded, "while others appear to hold their students to higher standards."

Such evidence suggests that academic standards at American high schools are too low. But are they getting worse? To answer this, *The Economist* assembled data on graduation rates and standardised test scores at 3,000 high schools across six states—Colorado, Georgia, Illinois, Massachusetts, Michigan and North Carolina—for school years from 2007 to 2022.

### Doing the maths

We found that four-year graduation rates in our sample increased during this period, even as test scores fell. Gains were greatest in high schools with the lowest test scores. In 2007 schools with scores on the SAT or ACT, another college-admissions exam, in the bottom tenth of our sample graduated half of their pupils; in 2022 they graduated two-thirds. As low-performing schools have passed more pupils, the relationship between test scores and graduation rates has weakened (see chart 2).

Just how far has the academic bar been lowered? To quantify this, we conducted a regression analysis of graduation rates between 2007 and 2022 that controlled for average ACT or SAT scores, dropout rates and school year. If academic standards were consistent over time, we would expect no underlying trend in graduation rates from year to year. Instead, we found that graduation rates drifted upward, even after controlling for changes in test scores and dropout rates.

Our analysis suggests that high schools are graduating thousands of students who, not long ago, might not have made the grade. Some states have lowered the bar more than others. In Illinois graduation rates are about one percentage point higher than we would expect based on academic performance alone; in North Carolina they are nearly eight points higher. Overall, we found that public high schools in our sample are inflating graduation rates by roughly four percentage points compared with 15 years earlier.

Sceptics will point out that the test-taking population is significantly different today than it was 15 years ago, and that this may be making test scores look worse than they actually are. "If more and more students are sitting for these tests," says Thomas Dee of Stanford University, "the composition changes over time in ways that probably bias scores downward." Such "compositional effects" do not appear to explain our results, however. The share of students taking the ACT or SAT in our sample actually fell from 78% in 2007 to 68% in 2022. This would suggest that, if anything, our estimates of graduation-rate inflation may be too low, rather than too high.

**Graduation inflation** 1

United States


*Four-year rate
Sources: US Department of Education; College Board

You might expect policymakers to be scrambling to shore up academic standards. In fact, they are doing the opposite. In May last year New Jersey's board of education voted to lower the passing score on the state's high-school graduation test, saying the current standards had "adverse impacts" on students. In November Oregon education officials scrapped its "essential skills" graduation exams in maths, reading and writing. At least four more states—Florida, Massachusetts, New Jersey and New York—are considering doing away with their own exit exams. In January Alaska's board of education voted to lower proficiency standards for the state's reading and maths exams.

The trend towards weakening standards can be blamed in part on No Child Left Behind, an education-reform law passed in 2002. It required states to track the share of students graduating in four years and set annual targets for improvement. Schools that failed to hit their targets faced sanctions, including possible closure. Although such policies were well-intentioned, they had perverse outcomes. To keep graduation rates up, teachers devised creative ways of raising grades: allowing students to retake exams, removing penalties for late assignments, adjusting grading scales. "We're doing what I call 'grading gymnastics'," says Eric Welch, a social-studies teacher in Fairfax County, Virginia. "There's a lot of pressure to hit the metric, regardless of how you do it," explains Peter VanWylen, a data consultant and former teacher in Memphis, Tennessee. "Nobody wants to lose their job and so there's this pressure to get the number where it needs to be."

Other concerns are also at work. "The push for educational equity, and in particular racial equity, has been used in a lot of places to push against higher standards for high-school graduation," says Morgan Polikoff of the University of Southern California. When New Jersey debated new testing benchmarks last year, one board-of-education member argued that a higher standard would be "unfair" to black and Latino students in urban districts. Oregon's decision to drop its graduation exam in November was based in part on a report by the education department which concluded that the test produced "inequitable outcomes" for "historically marginalised" groups.

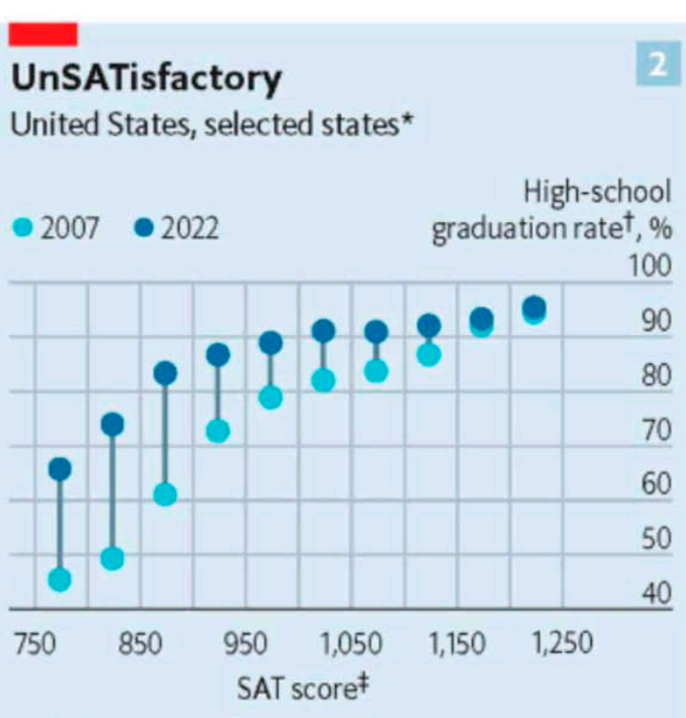
### Must try harder

Lowering standards, it is thought, can help narrow such achievement gaps. Yet it may have the opposite effect. A recent working paper by Brooks Bowden, Viviana Rodriguez and Zach Weingarten of the Universities of Pennsylvania and Texas at San Antonio analyses how a more lenient grading policy introduced by North Carolina public high schools in 2014 affected effort and academic performance. The authors found that after schools implemented the new grading scale, which led to more As and fewer Fs, students with low test scores showed up to class less often and put in less effort. The attendance of high-scoring students did not change. Although the policy led to slightly higher graduation rates, it also contributed to wider gaps in GPAs and standardised test scores between high- and low-achieving students.

This suggests that policies that lower the bar may harm the very students they are meant to help. "I don't think we're helping anybody by handing out higher grades or giving out graduation certificates," says Dr Bowden, one of the authors of the study. Better instead to set expectations high, reckons Dr Polikoff. "People rise to the expectations you set." ■

**UnSATisfactory** 2

United States, selected states*




*Colorado, Georgia, Illinois, Massachusetts, Michigan and North Carolina †Four-year rate
‡For states that administered the ACT, scores were converted to equivalent SAT scores
Sources: State departments of education; *The Economist*

Orthodox Judaism

# Sister Lysistrata

WASHINGTON, DC

## Ultra-Orthodox Jewish women are staging a sex-strike

IN ARISTOPHANES'S PLAY "Lysistrata", a young Athenian woman persuades the women of warring Greek states to deny their lovers sex in protest at an ongoing war. Together they vow not to raise their "slippers to the roof" or crouch down before a man "like a lioness on all fours". Soon bitter conflict erupts between the sexes and an angry chorus of men declares that there is no wild beast harder to tame than the woman.

More than two millennia later women in Kiryas Joel, an ultra-Orthodox Jewish enclave an hour outside New York City, are carrying out a similar strike. According to their leader, Adina Sash, 800 women refused to sleep with their husbands last Friday night, a time when intimacy is considered especially holy. More have since joined the cause. Unlike the Greeks they are not protesting against war but rather a religious system in which men can shackle women to unwanted marriages.

Under Jewish law a divorce is not finalised until a man gives a woman a *get*, a 12-line letter written in Aramaic that declares her no longer bound to him. Three rabbis must sign off on it. That has led to a global scandal where abusive men leverage *get*s for money and custody of children or withhold them to force chastity and singlehood on past partners.

In Kiryas Joel, an insular place where a woman must ask permission from her rabbi to report domestic violence to the cops, 29-year-old Malky Berkowitz has begged for a *get* for four years. Her husband Volvy has refused despite petitions from religious authorities. She is just one of many. "Malky is the face of every woman who has fought and gone through the system like a docile, demure, obedient sheep," says Ms Sash. Estimates of the number of "chained" women around the world, known as *agunot*, range from hundreds to thousands.

Their advocates have tried to get secular courts to recognise *get*-refusal as abuse. In Britain a 2021 amendment to the legal code deemed the practice criminally "coercive"; one year later the first man was jailed for it for 18 months. But in America change is coming more slowly.

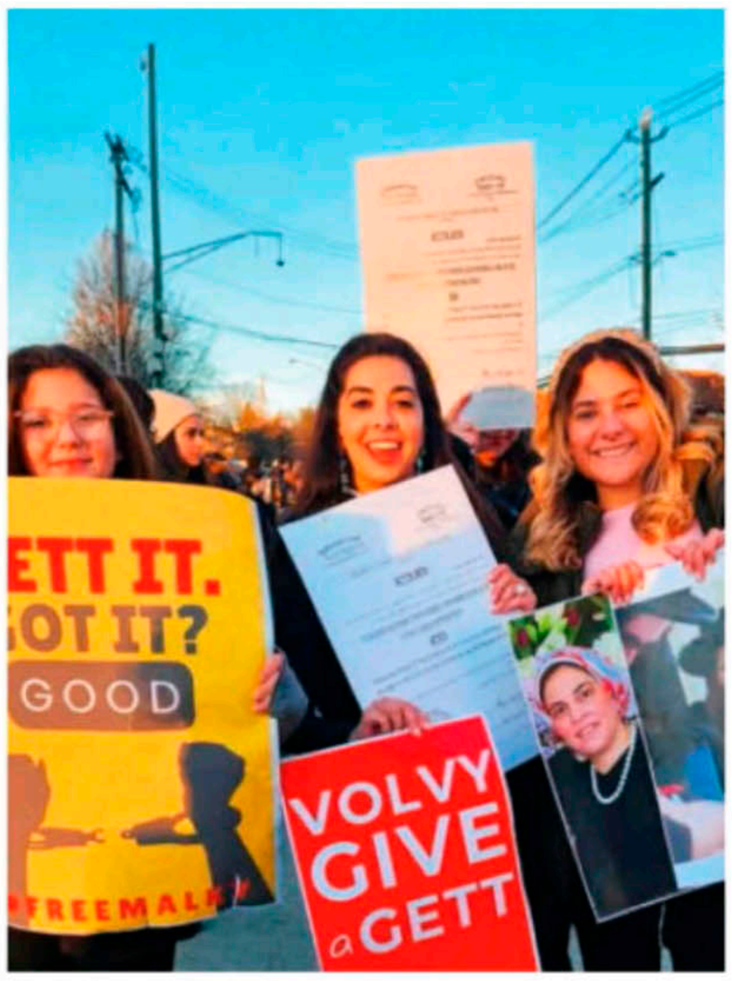
Criminal-justice reformers, who police over-policing, have pushed back on victims'-rights groups that want to increase penalties and make egregious cases felonies. Meanwhile recalcitrant men are working the legal system to their advantage: according to the Organisation for the Resolution of Agunot, a non-profit group, there has been a sharp rise in the number filing nuisance lawsuits claiming that women demanding *get*s are harassing or defaming them.

The intractability of it all made the American wives finally go for the nuclear option. Those who keep illicit smartphones tucked away in underwear drawers—internet is largely forbidden among the ultra-Orthodox—passed along the plan. The idea was simple: withhold sex to get your man to care enough to press other men to act. In a community where women are expected to shave and cover their heads for modesty and to marry near-strangers as teenagers, some are saying no to sex for the first time since they can remember.

Many women however, including Ms Berkowitz, don't quite know what to make of the protest. Louder voices are against it. Herschel Schacter, a prominent rabbi who runs the rabbinical school at Yeshiva University, declared the strike to be a violation of Jewish law and warned it could wreck marriages. Some young Orthodox men are calling Ms Sash a *shiksa*, a derogatory Yiddish term for a gentile woman.

In the story of Aristophanes's "Lysistrata" the carnal deprivation quickly becomes too much for the Greek men to bear. The play concludes with a lustful bunch of blokes brokering a truce between Athens and Sparta, just as the women demanded. Ms Sash hopes for her own sort of peace deal—that Ms Berkowitz be freed before the Sabbath sets in at dusk on Friday.

Asked if she plans to use this tactic in the future, she says she does not intend to incite more "feminist terror". The point is instead to teach the next generation of religious girls that if conventional methods of protest fail, they can find new ones. ■




Getting gets got

Passenger rail in America

# Choo choo choices

JUST SOUTH OF CHAMPAIGN

## Is Amtrak's investment and ridership boom sustainable?

AT 7PM ON A Friday night, the Illini service, a train that runs from southern Illinois to Chicago, ought to be pulling into the college city of Champaign. When your correspondent was on it in early March, it stopped short after the train coming in the opposite direction broke down. For three hours, passengers were trapped roughly 200 yards south of the station. At some point a student who had been loudly complaining to the conductor quietly opened the door and walked off into the night. A little after 10pm the train finally shunted its way to the platform and the rest of the passengers alighted. The next morning your by now rather grumpy correspondent proceeded to Chicago by bus.

Such stories of travelling by train in America are sadly common. The world's biggest economy has fewer miles of electrified railway than Iran. Only in the North East Corridor (NEC) between Boston and Washington, DC, do intercity trains run even vaguely like trains in other rich countries. Elsewhere, Mennonites, who do not use cars or fly, make up a remarkable share of passengers. And yet as bleak as it can seem, Amtrak, the national rail carrier, is in fact recovering well from the pandemic. In the latter half of last year, ridership was just 3% below its levels in 2019—previously the firm's best-ever year. And through his infrastructure law of 2021 President Joe Biden, an Amtrak superuser as a senator, has put aside $66bn for investment in passenger-rail infrastructure. Is a new golden age of train travel down the tracks?

The biggest recovery at the moment is on the NEC, an electrified track largely-owned and maintained by Amtrak directly. In 2023 trains there carried 12.7m people, a record high, and about 43% of all Amtrak passengers in total. The trains are well used in the north-east because they connect dense city centres and are nicer than the alternatives. "It's more enjoyable and more comfortable" than flying, says Miles Stanley, a regular passenger between Boston, New York and Washington. Ticket revenues on the corridor easily cover the cost of operating the trains, and generate a surplus used for maintenance.

Elsewhere, rail is either directly subsidised by Congress (for the long-distance lines) or by state governments (for the rest), and trains travel on tracks owned by freight companies, all too infrequently. Passenger numbers are recovering on ▸▸

those trains too, but far less fast than on the NEC. It does not help that ageing rolling stock means those journeys are often getting worse. Derailments are absurdly common, as are crashes at level crossings. Your correspondent was once delayed several hours on the City of New Orleans, a long-distance train, by a frozen whistle.

If Amtrak were a normal company, it would pour money into the NEC and run fewer loss-making long-distance trains. Yet as Jim Mathews, the president of the Rail Passengers Association, a lobby group for riders, is keen to point out, Amtrak is more like a government agency than a company. Its bosses are appointed by the president and each year it has to be funded by Congress. And so the firm has generally tended to spread money around the country to win political support. Already it operates in 46 of the lower 48 states, and in 251 congressional districts. "It is a little cynical," Mr Mathews admits.

For now, there is so much money around that the firm can invest in both. On the NEC, a civil-war-era tunnel near Baltimore where trains have to slow to a crawl is being rebuilt, something that ought to have happened decades ago. On the long-distance lines, new trains are being procured. But investment spending must be re-authorised in 2026, notes Yonah Freemark, of the Urban Institute, a think-tank. Another risk is that infrastructure-act money by law can be spent only on investment, not operational costs. Last year House Republicans proposed a 64% cut to Amtrak's day-to-day budget—which if carried out would make investment pointless.

Some rail boosters have bigger ideas. On March 8th Seth Moulton, a congressman from Massachusetts, filed a bill proposing $205bn in investment in high-speed rail. He worries that Amtrak is "trying to recreate services from the 1930s". Instead, he says it ought to build a brand-new fast train line, of the sort the Japanese or French have. This, he says, should be in Texas. "Showing that high-speed rail can succeed in a red state and get a lot of Republican support would change the conversation," he says. Indeed Amtrak is working on a proposal to do just that, in partnership with a firm Mr Moulton used to work for. It's certainly a platform. ■

Drugs

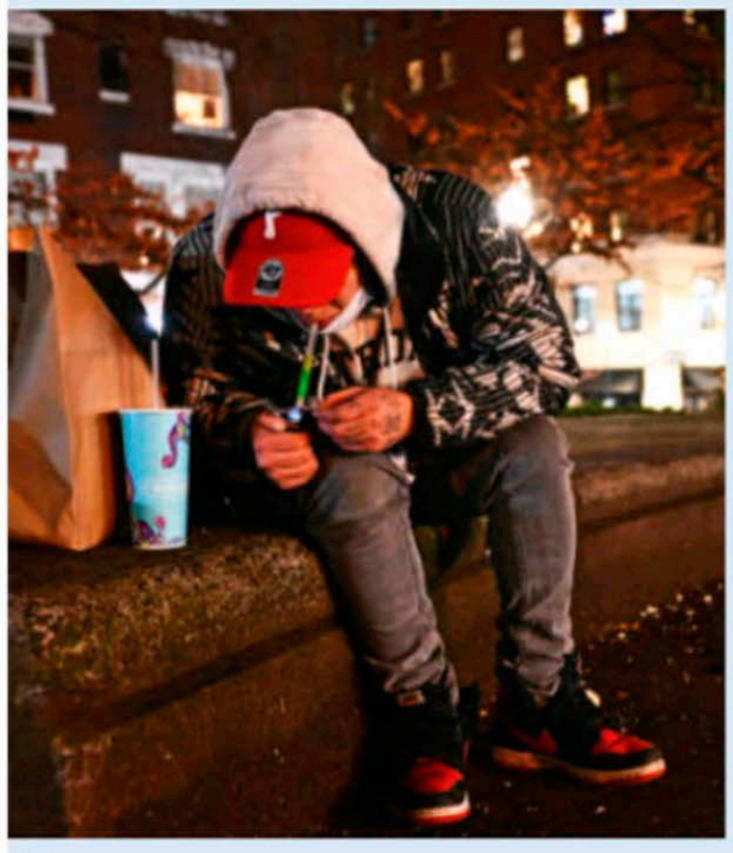
## Moving the needle

NEW YORK

**Time is called on Oregon's decriminalisation experiment**

FLORISTS ARE usually cheerful places. But Gifford's Flowers, in downtown Portland, has been going through it of late. It's been broken into three times and employees have been attacked and even bitten, says Jim Gifford, who has been running the store for half a century. Mr Gifford blames Oregon's decriminalisation of the possession of drugs, which, he says, has led to more "people in drug episodes" coming to his shop. "A blue city in a blue state should be leading," the lifelong progressive Democrat says. "But also not forgetting about the people that work hard and play by the rules."

In 2020 Oregonians voted to decriminalise the possession of small amounts of hard drugs, including fentanyl, methamphetamine and heroin. It was the first (and so far only) state in the country to do so. The change was a massive experiment in treating addiction as a public-health problem. But the state has now concluded that the experiment failed. This month, in the face of ever-increasing overdose rates and public complaints such as Mr Gifford's, the Democratic-controlled legislature overwhelmingly passed a measure recriminalising the possession of drugs. The governor, Tina Kotek, has said she will sign it.



Oregone

Overdose deaths have spiked in Oregon, increasing by 42% in the year to September 2023 (compared with a national increase of 2%). Researchers disagree on how much decriminalisation versus the spread in fentanyl is to blame, but none thinks that the state's experiment managed to decrease deaths. Oregonians are frustrated. Open-air drug use has become particularly blatant.

The replacement law makes the possession of a small amount of drugs a misdemeanour crime punishable by up to 180 days in jail. It does provide paths to addiction care, by offering drug offenders the chance to go directly to detox facilities instead of jail (and to try it again if the first time doesn't work). "It's time to reset our guardrails," Andy Mendenhall, the head of Central City Concern, an addiction-services provider in Portland, told lawmakers. He pointed to people who found choosing between prison and treatment to be a "powerful part of their pathway of recovery".

Praising the bill, Paige Clarkson, the district attorney in Marion County, believes that the new provisions will allow prosecutors to focus on drug dealers while prioritising treatment for addicts. "Police, sheriff's deputies, district attorneys, we don't want to criminalise addiction," she says. "We want to use the criminal laws to motivate those individuals to get healthy." Oregon's new regime would still be quite enlightened.

But its drug experiment is likely to become a cautionary tale anyway, says Floyd Prozanski, the state senator who led the charge in enacting it. Although he still believes in the mission, Mr Prozanski recognises that advocates are going to "have to rebuild the confidence of people not only in Oregon, but around the country. And realise that when we implemented it, we did it wrong."

New York City

## Tunnel troops

THE 7 TRAIN

**What to make of a military show of force on New York's subway**

NEW YORKERS have seen it all in the subway. They watch in appreciation as a rat carries a slice of pizza down a staircase. They feel powerless when someone in the throes of a mental-health crisis shouts and staggers on a subway platform. They are uplifted or perhaps annoyed when "Showtime" dancers backflip and hang from car handles and poles. Yet the recent arrival of armed soldiers near subway turnstiles has been unnerving.

Last week Kathy Hochul, New York's Democratic governor, deployed 750 members of the National Guard as well as 250 state police to assist New York City's police (NYPD) in searching bags at some subway stations. It is part of a plan aimed at improving subway safety, along with adding more cameras and implementing a pilot scheme to treat those suffering severely from mental illness.

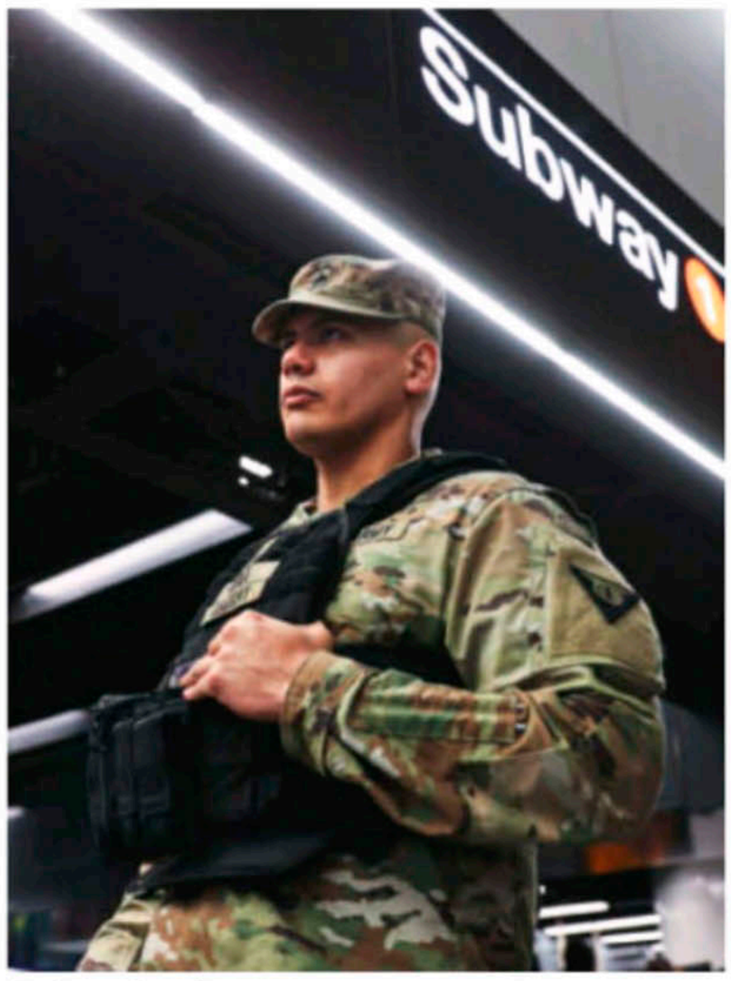
Violent crime in the city has declined so far this year, but crime on the subway is a different story: it rose by 47% in January, year over year. Most of that was down to more thefts. The vast majority of the system's 4m daily riders travel without incident. However, the abundance of individuals in crisis, coupled with some high-profile attacks, has raised alarms. A conductor's neck was recently slashed. A woman lost her feet after a man pushed her onto the tracks. A teenager fatally shot a man in a Bronx station. Eric Adams, the city's mayor, deployed 1,000 cops to the subway, at great expense and with some success.

Ms Hochul decided it wasn't enough. There is a long history of political point-scoring between New York City mayors and state governors. In this case Ms Hochul may have been motivated partly by labour concerns and cost. After the attack on the conductor some employees staged what looked like a work stoppage that caused delays. The union asked for more transit police. The governor chose soldiers, who are cheaper. The backlash was immediate and came from all sides. "Our transit system is not a 'war' zone!" John Chell, NYPD's chief of patrol, wrote on X. Others are worried about civil-rights violations.

When Henry Smart of John Jay College of Criminal Justice first heard about the National Guard being activated in New York, he wondered, "did something really bad happen?". The National Guard is a state-based military unit. Members are part of the army's reserve and can be deployed overseas, as they were regularly during the wars in Afghanistan and Iraq, but these days they are typically activated by state governors in an emergency. During the covid-19 pandemic they assisted with testing. During blizzards they clear snow and rescue people in danger. "We are efficient and task-orientated," says Mr Smart, a 15-year veteran of the Maryland National Guard. No better crew can fill a sandbag. But this is far from an emergency. And the National Guard is not a camouflaged crime-fighting force. It is not even permitted to make arrests.

Militarising crime fighting is seldom a good idea. "Deploying troops to the subway indicates we've lost a battle that we actually are winning," says Danny Pearlstein, of Riders Alliance, an advocacy group. It tells New Yorkers that we are in a "dire state of affairs", adds Donna Lieberman, head of the New York Civil Liberties Union when, in fact, the city remains one of the safest of its size in America. Jumaane Williams, the city's ombudsman, wrote on X that given the political consensus against the deployment, "you would think there would be at least a rethinking." So far Ms Hochul is holding firm, though she has at least stopped soldiers carrying long-rifles.

Rather than looking on aghast, some other cities are regarding Ms Hochul's decision to send in the troops with curiosity. Transit unions in Chicago and Philadelphia are calling on the National Guard to be deployed on their troubled systems. Cherelle Parker, Philadelphia's new mayor, has promised to beef up police patrols. So far, she and other local lawmakers do not want the National Guard involved. They are right to be wary. The theatrical use of soldiers does not stop crime. ■




Suboptimal

Health research

# Number blocks

WASHINGTON, DC

**The best dataset on American health care will soon be harder to access**

PRACHI SANGHAVI, a health-policy researcher at the University of Chicago, studies whether ambulances that provide medical care at the site of the emergency are better than basic ones that simply rush a patient to the hospital. (They are not.) She also studies whether the federal government's rating system for nursing home quality is any good. (That's a no, too). Her research helps Americans evaluate the country's health-care practices. Unfortunately her work is now at risk.

Dr Sanghavi's research uses data provided by the Centres for Medicare and Medicaid Services (CMS), the federal health-care agency that administers America's public-health insurance. CMS announced plans in February to change its data-sharing practices. The proposal raises the fees for data and makes access less convenient. Nearly 400 researchers, including Dr Sanghavi, from over 75 institutions across America have signed a letter in protest. They claim that the new restrictions will jeopardise ground-breaking research.

America does not have a national health-records system, so the CMS numbers are the best data available. Over a third of Americans are covered by CMS, and over 1bn medical claims a year are processed through the agency. This makes it a trove for researchers studying anything from health-care privatisation to the causes of the opioid epidemic.

The agency says it is changing the rules over concerns for data security. On the face of it, that sounds reasonable. CMS had a data breach just last year. Sensitive personal information, such as social-security numbers and mailing addresses, was compromised for over 600,000 people. Last month Change Healthcare, a health-care payment company bought by UnitedHealth Group, a large private insurer, was also targeted.

Under the current model of data-sharing, researchers can receive physical copies of the CMS data. They are then responsible for keeping the data secure, explains Alice Burns, a researcher at KFF, a health-policy think-tank. Unlike the CMS data that were hacked, the data for researchers do not contain individual names and social-security numbers.

However, they do contain sensitive information such as health diagnoses and a person's age, race and zip code. In some instances a determined hacker could be able to identify an individual, but it is highly unlikely, says David Maimon of Georgia State University, who studies cyber-security. The proposed policy requires researchers to switch instead to a virtual centre hosted by CMS.

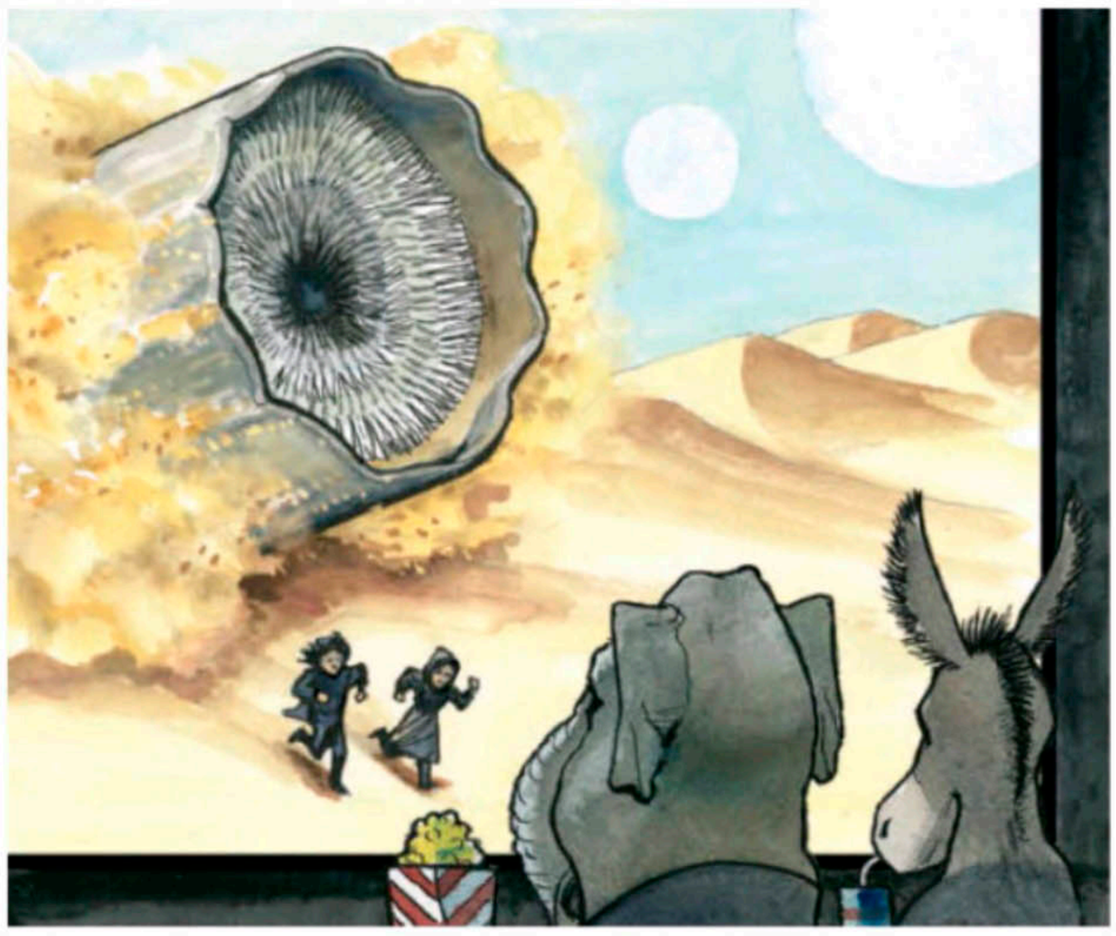
This is about balancing risk and benefit, says Haywood Talcove of LexisNexis Risk Solutions, a firm that sells fraud-prevention services. In this case the calculus seems lopsided. Since CMS has been hacked before, hoarding the data there doesn't make it secure.

The researchers say that the benefits of the current model far outweigh the security risks. The protesting scientists claim that less-established researchers and those at poorer academic institutions could lose access. "Why wouldn't we invite the best public-health experts in the world to look at the same data that we have?" asks Paul Mango, a former chief of staff at CMS under the Trump administration.

All is not lost. The changes have yet to go into effect, and the agency is accepting feedback from researchers until May 15th. But for now, the researchers would like to keep the status quo. Since the vast majority of older adults are on Medicare, these numbers give "a beautiful longitudinal view of a person's life", says Dr Sanghavi. It's hard to put a price on that. ■

# Lexington | Castle made of sand

*A new blockbuster film, "Dune", offers a warning about political heroes and their tribes*



FRANK HERBERT, the author of the science-fiction novel "Dune" on which a new blockbuster film is based, would have been amused to learn that ecologists along the Oregon shore are ripping invasive European beachgrass out of the ground. As a young journalist in the late 1950s, Herbert derived his inspiration for a tale about a desert planet from watching ecologists plant the grass to control encroaching sand dunes. The scheme worked, maybe too well: residents of the coastal towns that the grass helped prosper now long for the beauty of the dunes and regret the unintended consequences for native flora and fauna.

"They stopped the moving sands" was the title of the article Herbert never wound up publishing about the Oregon dunes. He admired the ecologists and their project. But as much as he prized human intelligence he feared human hubris, credulousness and other frailties. One character in "Dune" is a planetary ecologist, who, for complicated reasons—the novel has no other kind—finds himself overcome by natural processes he has been trying to manipulate, to help the native population by changing the climate. "As his planet killed him," Herbert writes, the ecologist reflects that scientists have it all wrong, and "that the most persistent principles of the universe were accident and error."

The persistence of "Dune" itself is a marvel. Some 20 publishers turned the manuscript down before a company known for auto-repair manuals, Chilton, released it in 1965. The editor who took the risk was fired because sales were slow at first. But popular and critical acclaim began to build, eventually making "Dune" among the best-selling and most influential of science-fiction novels, some of its imaginings, with their edges filed down, surfacing in "Star Wars".

No doubt the novel's endurance owes in part to Herbert's success, like Tolkien's, in wrapping an epic yarn within a spectacular vision given substance by countless interlocking details. He published appendices to his novel: a glossary, a guide to the feudal houses that jostle over his imperium, a study of the galactic religions and, of course, a paper on the ecology of his desert planet, Arrakis, known as Dune. That ecology yields a substance called spice that prolongs life and also supplies psychic powers, enabling navigators to guide ships among the stars: think potable petrol with the properties of Adderall and Ozempic. It is the most precious stuff in the universe.

The young hero, Paul Atreides, arrives on Arrakis when his father, a duke, is awarded control there. It is a trap set by the emperor and a rival house. His father dead and his surviving allies scattered, Paul flees with his mother into the desert and finds haven among its fierce people, the Fremen. As the spice unlocks latent mental powers in Paul, the natives recognise him as their messiah and—spoilers!—he leads them not just to avenge his father but, via control of the spice, to seize the imperial throne. Then comes a bit of a bummer, galactic jihad. More on that in a moment.

Herbert was thinking partly of T.E. Lawrence, oil, colonial predation and Islam, and the success of the novel may owe also to those echoes (along with the giant sandworms). But the novel's enduring popularity suggests more timeless resonances. There are nifty gizmos in Herbert's galaxy, but clever conceits keep them from stealing the show and making his future either too alien or, like other decades-old visions of the future, amusingly outdated. Personal force-fields have rendered projectile weapons harmless. Soldiers and nobles alike fight with swords, knives and fists.

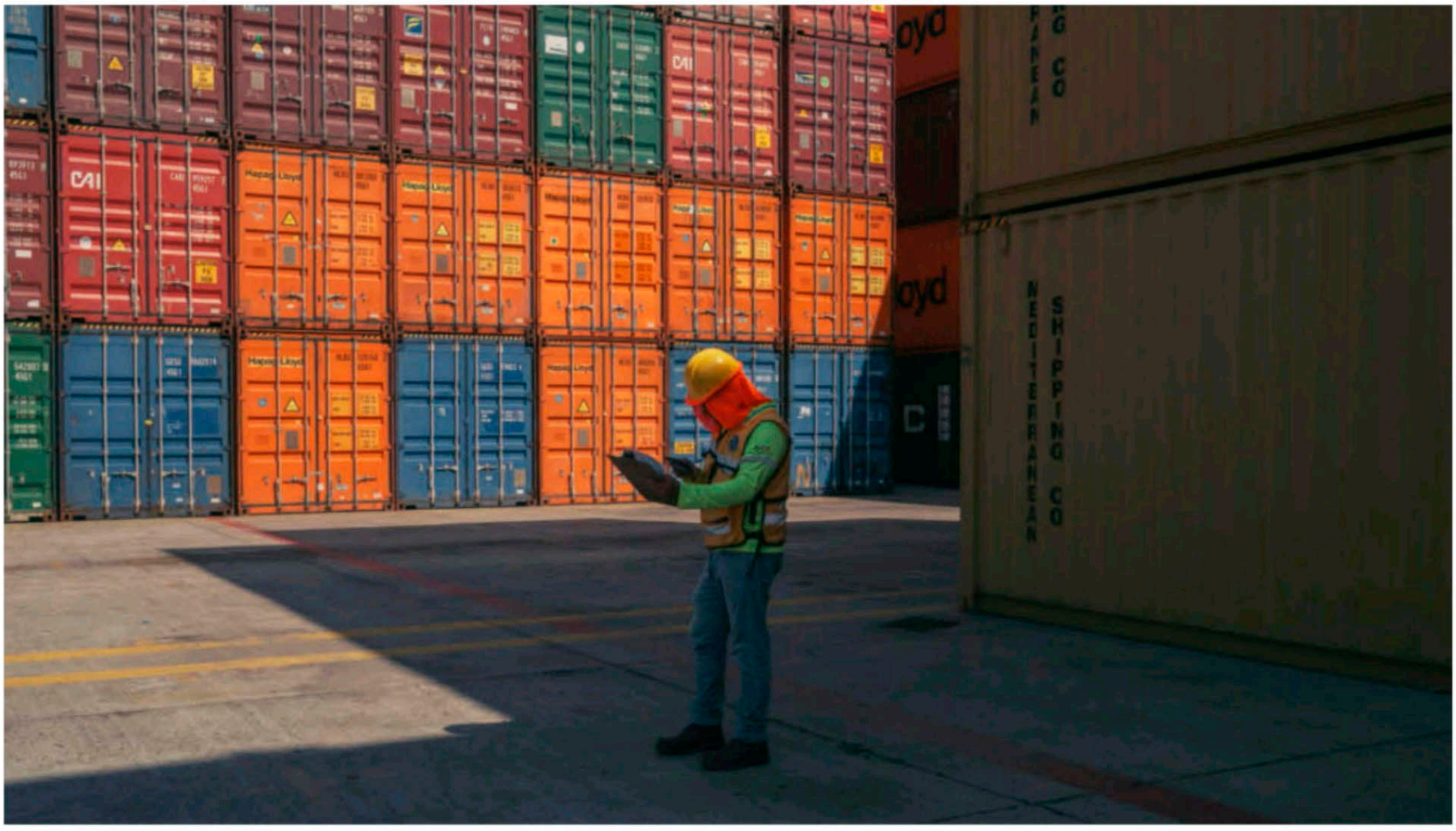
A more provocative gambit by Herbert was to set his tale thousands of years after the "Butlerian Jihad" or "Great Revolt", in which humans destroyed all forms of artificial intelligence. (Herbert once worried to an interviewer that "our society has a tiger by the tail in technology.") "Thou shalt not make a machine in the likeness of a human mind," has become a core injunction, resulting in a race to develop the mind's potential. Paul's mother is a member of a female sect, the Bene Gesserit, whose own hubristic enterprise is to manipulate the imperium's politics, and who for scores of generations have conducted a breeding programme to engender a superhuman intelligence—which, to their consternation, arrives in the form of Paul, whom they cannot control.

The new Dune movie is the second of two in which the director, Denis Villeneuve, has told the story with breathtaking imagery and, for the most part, with fidelity to the novel. The films deal elliptically with Herbert's themes of technological, economic and ecological change to zero in on his main matter, the dangers of political and religious power and of faith itself, secular or spiritual.

## Dread Kennedys

Paul's powers allow him to see many futures, and though he resists his role as messiah and the bloodlust he knows will come with it, he embraces that path in the end. Herbert, who died in 1986, told an interviewer in 1981 that he thought John F. Kennedy was among the most dangerous leaders of his times, "not because the man was evil, but because people didn't question him". In "Dune", the bad guys are so bad, and the good guys have so many virtues and face such tragic choices, it can be hard to recognise they are not so great, either. Herbert set out to lure readers into rooting for a tyrant. He wanted to leave them wary not only of the will to dominate but of the longing to submit.

Here the film lets the audience off the hook. A Fremen leader, strong-minded in the novel, becomes a clownish fanatic frantic to believe in Paul, in counterpoint to Paul's Fremen lover, Chani. Contrary to the novel, she emerges as the voice of democratic resistance to Paul's megalomania. Chani is all too easy for the audience to identify with. Of course they would resist, too. Of course they would never credulously identify with any tribe, never fall for any charismatic leader. Maybe at least some will leave the theatre asking themselves if that is really the case. ■




The China-Mexico-US triangle

# Stuck in the middle

MEXICO CITY

**Could Chinese trans-shipments spark a US-Mexico trade war?**

MEXICAN AND US officials were cheered by trade data released in February. It showed that Mexico overtook China in 2023 to become the number-one exporter to the United States (see chart on next page). The value of goods sold has been rising steadily, and reached almost $476bn for the year; the equivalent figure for Chinese goods fell sharply, from $536bn in 2022 to $427bn in 2023.

The last time Mexico overtook China, in 2002, it was a blip (and Canada held the top spot). Today its rise has the whiff of a new order for global trade. Data for January 2024 show the trend remains strong. United States' efforts to decouple from China and bring supply chains closer to home are intensifying, pushing trade through other countries. An updated free-trade agreement between the United States, Mexico and Canada, known as USMCA, has been in force since 2020. It supports Mexican exports of car parts, medical supplies and agricultural products to the United States.

But the third side of this trade triangle, between Mexico and China, is creating tension. China's firms did not sit idle while incentives were created for companies to look beyond its shores. They have been pushing into the same markets where the US aims to supplant China, including Mexico. This means many Chinese exports are simply taking "a slightly longer road to get to the same place", says Ana Gutiérrez of IMCO, a think-tank in Mexico City.

China appears to be promoting this strategy. In December the country's leaders said it was a priority to export products that are used to make finished goods, rather than the finished goods themselves. Mexico is an attractive beachhead into the United States because USMCA gives tariff-free access for goods made with enough North American content.

Mexico's official customs data show no sustained influx of goods from China. But some US officials and industrialists believe Chinese inflows are being undercounted, whether deliberately or not. The suspicion is that Mexico turns a blind eye to imports from China, and that those are then re-exported to the United States.

Steel and aluminium are the main concern. In February Katherine Tai, the United States Trade Representative (USTR), noted a "lack of transparency regarding Mexico's steel and aluminium imports from third countries". In December Mexico imposed tariffs of up to 80% on some steel imports from China, but US officials remain frustrated. Setting tariff levels is one thing; actually enforcing them is another.

"What we've seen is that USMCA has really become a US, China and Mexico deal, where China is trans-shipping a lot of product through Mexico," says Jeff Ferry of the Coalition for a Prosperous America, a group that represents manufacturers.

Electric vehicles are a looming concern. The price of the average EV in China is roughly half that in the United States, and China produces more than half the world's output. Without hefty tariffs in place, Chinese EV sales in the United States would probably boom, much as they have in other countries. President Joe Biden's administration is mulling raising tariffs on the vehicles above their current level of 25%.

USMCA has rules against unfair subsidies and market practices, which are common among Chinese companies. But in many cases no law or rule is being breached. Mexico offers Chinese automakers a path around the tariff wall because USMCA's rules of origin contain what one ▸▸

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US official calls "loopholes" that allow for the integration of Chinese components. An importer can assemble Chinese components in Mexico and label Mexico as the country of origin, obscuring Chinese involvement. "New tools may be needed," says the official.

There is already a large car-manufacturing industry in Mexico, and Chinese money is pouring in, especially to northern states that are the biggest exporters to the United States. In February BYD, China's most successful EV manufacturer, said it would make 150,000 vehicles a year in Mexico. BYD says that production will serve the local market, but many companies are eyeing the larger, wealthier market north of the border.

Chinese foreign direct investment in Mexico hit $2.5bn in 2022. Margaret Myers, of the Inter-American Dialogue, a think-tank in Washington, notes the "remarkable growth" of sophisticated manufacturing by Chinese companies in Mexico.

**A new trade line-up**

United States, imports from selected countries, $bn


Source: US Census Bureau

### No China in the chain

What might the United States do about this? In the case of steel and aluminium imports, it could copy its approach with the EU and Japan, where there are limits on the volumes that can be imported at lower tariff rates. Higher tariffs kick in after those limits have been reached. When the Trump administration lifted steel and aluminium tariffs on Mexico in 2019, it was on the condition that Mexico restrain export surges into the United States.

Electric vehicles are trickier. Some would like new rules to cut China out of supply chains entirely. "If you want to be a trading partner with the United States, we're not going to allow your country to be a stopping point for goods from China," says Mr Ferry. That would mean restrictive rules of origin and a tighter enforcement regime. It would also raise thorny questions about how to treat production by Chinese-owned factories in Mexico.

Robert Lighthizer, who was the lead trade negotiator during Donald Trump's presidency, has said that a first step would be to strip China of its most-favoured-nation status. That would automatically ratchet up tariffs on Chinese products across the board. Enrique Dussel of UNAM, a university in Mexico City, says this would unmoor the world trade system. "The United States [would be] saying 'adopt my rules or you're against me'."

If Mr Trump wins in November, he is likely to adopt a harder stance toward Mexico. As well as Chinese trade, there is also the issue of migration. But perhaps most importantly Mr Trump loathes trade imbalances. The United States' trade deficit with Mexico rose to $152bn in 2023, up 17% from 2022. In 2026 Mexico and the United States, along with Canada, have to discuss whether to extend USMCA's validity by another 16 years, to expire in 2052 instead of 2036. Mr Trump signed USMCA, but that is no guarantee that he would not scrap it, or use its extension as leverage to extract concessions from Mexico. He has already talked of a 10% import tariff on goods from all countries, which is not possible for Mexico and Canada under USMCA's rules.

Mexico seems unprepared, says Mr Dussel. Claudia Sheinbaum, who is expected to be elected Mexico's next president in elections on June 2nd, is promoting "nearshoring" to raise Mexico's economic growth to 5% of GDP annually. "Mexico has an enormous sign reading 'Welcome China'," says Mr Dussel.

The question confronting Mexico is the extent to which it is willing to risk its vital relationship with the United States, to keep that welcome sign shining. ■

Haiti's dead state

# Infinite regress

PORT-AU-PRINCE

**A new government is unlikely to free Haiti from insecurity and illegitimacy**

HAITIANS HAVE been demanding the resignation of Ariel Henry (pictured on next page), their unelected prime minister, since almost the moment of his appointment in July 2021. On March 11th, under pressure from foreign government officials gathered at a summit in Jamaica, and with the gangs that control Port-au-Prince, the capital, blocking his return to Haiti, Mr Henry finally said he would stand aside. Stranded in Puerto Rico, he was reduced to delivering the message via a video posted on social media.

Haitians celebrated in the streets, but their country needs rebuilding. A combination of gang violence and the contested legitimacy, impotence and unpopularity of successive governments has dogged Haiti's 11.6m people for decades. The country has not a single elected official. Its legislature sits empty. Haiti has been in freefall since July 2021, when Jovenel Moïse, who was president at the time, was murdered.

Mr Henry, who was appointed prime minister two days before the assassination, made things worse. He argued, with some good reason, that elections were not possible while Haiti was so insecure. But he also seemed keen to cling to power. His government's impotence left a vacuum to be filled by the gangs. Even before they blockaded Mr Henry's return, the UN reckoned they controlled 80% of the capital.

Mr Henry's resignation is, in theory, the first step on the path to long-overdue elections. Leaders at the Jamaica summit proposed a "transitional presidential council" of nine members drawn from political factions, the private sector, civil society and religious groups. That council would appoint an interim prime minister, who would rule while elections are organised.

Yet, as is common in Haiti, squabbling started within hours of the announcement. Multiple factions have made a claim to power. The "National Awakening for the Sovereignty of Haiti", a coalition, issued a statement saying that it was immediately installing a presidential council of three members in the National Palace. The coalition is led by Guy Philippe, a former senator who led an uprising in 2004 that ousted President Jean-Bertrand Aristide. Mr Philippe returned to Haiti last year after serving time in an American prison for laundering drug money.

He is not the only one with ambition. Jimmy Chérizier, a Haitian warlord better known as "Barbecue" who leads a group of gangs called G9, warned that decisions made outside the country would plunge Haiti into "further chaos". He said that his group would "figure out how to get Haiti out of the misery it's in now". Both men are disqualified from sitting on the Jamaican summit's version of the council: Mr Philippe for his criminal record and Mr Chérizier for being under UN sanctions. But refusing to give the gangs a seat at the table risks them overturning it. Politicians and political elites, who have long paid the gangs to do their bidding, may well use them to spoil an agreement they don't like.

This bodes ill for a transitional government, and for the UN-authorised security mission that is in the works. The Jamaican roadmap calls for the mission to go ahead. It bars anyone who opposes it from the transitional council. On March 11th the United States pledged an extra $100m to the cause, bringing its total donation to $300m. But troops are still in short supply. On March 12th Kenya, which has agreed to lead the mission, said that its deployment of 1,000 police officers cannot be sent until ▸▸

# How do we end pet homelessness?

Pet homelessness is not a subject that dominates the news headlines, but new research released by Mars shows that the issue is an urgent and global one—without a straightforward fix. The State of Pet Homelessness Project highlights that 362m cats and dogs are homeless across the 20 countries studied, including Japan, the UK, France, the US, South Africa and Brazil, with several common themes emerging.

## PAWS FOR THOUGHT

"Pets bring great benefits to our lives, but they also face challenges and can't advocate for themselves," says Loïc Moutault, global president, Mars Petcare. "When we talked to non-governmental organisations and animal welfare experts, it was clear that to address the root causes more effectively, data and insights were critical." This sentiment is underlined by Jeffrey Flocken, president, Humane Society International, who confirms that data will help "animal welfare organisations, policymakers and academics to better understand the issue [and] support the most impactful interventions".

The report identifies multiple strands to what is clearly a complex issue—each of which requires its own specific combination of actions to improve outcomes for pets. On the policy side, Mr Moutault believes that, when drawing up legislation, it would help to recognise the benefits pets bring. "Pets can play a positive role in tackling challenges policymakers are facing today from a public health perspective," he explains. "Both for physical health and mental health, there is significant research showing pets bring enormous benefits to people." He therefore advocates establishing policies that recognise the benefits of the human-animal bond.

Pet-friendly housing policies could help improve the situation. "Almost one in five people who are considering giving up their cat or dog say it's because they are moving and cannot take their pet, due to non-pet-friendly housing contracts," Mr Moutault explains.

**Key data points from Mars State of Pet Homelessness Project**

**1 in 3**
pets across the 20 countries studied was homeless

Almost
**1 in 2**
respondents had lost a pet in the past, with 60% never being reunited.

**14%**
of respondents were considering rehoming a dog

**15%**
were considering rehoming a cat

Almost
**1 in 5**
people who are considering giving up a pet say it's due to non-pet-friendly housing contracts

## CREATING BETTER OUTCOMES

Understanding the challenges facing pets is the first step to driving change, says Mr Moutault. Is a complete end to pet homelessness a realistic goal? Maybe not, he concedes. "What we are talking about is better life outcomes: one pet adopted, one pet reunited with an owner, one pet given preventative care. Making an impact one pet at a time."

To find out more visit:
**www.stateofpethomelessness.com**

MARS

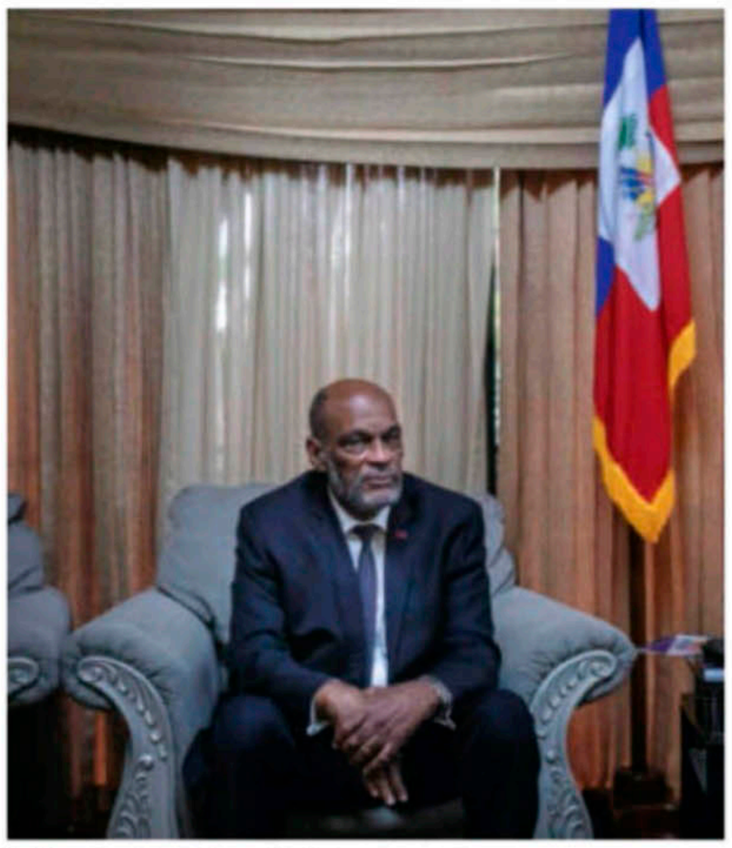
Produced by EI Studios for Mars

Haiti's new government is in place. It seems unlikely that the Haitian police can maintain security until that happens. They are outmanned and often outgunned by the gangs, despite the United States' assurances that it is supplying the police with equipment, resources and ammunition.

The United States says polls indicate that "the vast majority" of Haitians support the Kenya-led security mission. But it faces resistance, not least because it was initially requested by Mr Henry. He was largely seen to be doing so to prop up his rule. The last mission, run by the UN between 2004 and 2017, inadvertently introduced cholera and became notorious for reports of sexual exploitation and abuse against Haitians. Haiti will turn into "a Somalia in the Caribbean" if the force arrives, reckons Georges Duperval, a 58-year-old entrepreneur in Port-au-Prince, who opposes it.

Many Haitians say they want to throw off the shackles not only of foreign powers but of the elite Haitians who, they say, do their bidding. Unsavoury as he is, support for Mr Philippe is strong in Port-au-Prince and some areas around it.

Meanwhile Mr Chérizier seems in no mood to lay down arms. "We are making a bloody revolution in the country because this system is an apartheid system, a wicked system," he said this week. Many Haitians agree with this sentiment, says Mr Duperval. "From 2004 to today, elections have been controlled by the Haitian oligarchs," he says. "Now the Haitian people's eyes are open to this." ■



When all other lights go out

Semiconductors in Latin America

# A tempting package

**The chip wars have created opportunities for high-tech growth that are slipping by Latin America's biggest economies**

LATIN AMERICA is famous for many things, from magical realism to the Amazon rainforest. Semiconductor manufacturing is not one of them. But that could be changing. In July last year the United States and Costa Rica announced they would work together to "diversify and grow the global semiconductor ecosystem". Days later the US unveiled a similar partnership with Panama. Intel, a US chip manufacturer, then said it would invest $1.2bn in Costa Rica over two years. Mexico and Brazil, the region's biggest economies, claim to have ambitions in silicon.

Growing Latin American interest in chipmaking is driven by US attempts to loosen Asia's grip on the business. About 75% of the world's chips are made in Japan, South Korea, China or Taiwan. This irks US policymakers, partly because they covet manufacturing jobs for discontented blue-collar workers, and partly because they worry about relying on countries within China's potential sphere of influence for products as vital as chips. The protectionism these concerns have prompted may well end up boosting Latin America.

To see why, consider how chips are made. First they must be designed. Silicon Valley dominates this bit of the business, through companies like Apple, Nvidia and AMD. The second phase sees those designs etched into silicon wafers, creating electrical circuits which do the mathematics that draw Instagram feeds on phone screens, or manage the batteries of electric vehicles. Here, Asian countries dominate. During the final phase chips are assembled together into an electronic component, wrapped in protective casing, and tested to ensure that they work.

The US government is doling out billions in subsidies to entice chip companies to set up manufacturing facilities on its soil. As of last August, those blandishments had attracted $166bn in capital investment. But assembly, testing and packaging (ATP) is too labour-intensive to be profitable in the high-wage US economy. Making chips in Texas and Arizona only partially solves the problem of Asian reliance if they must still be shipped across the Pacific before they are used. More than 95% of ATP facilities are located in Asia. China alone holds 28% of the market.

This is where Latin America can help, and be helped. Relatively low wages make ATP investments viable; shared time zones make co-ordination with United States firms easier. Even a sliver of an industry projected to be worth $1tn a year by 2030 would be a boon to struggling economies. True, most of the value in the chip industry is in design and fabrication. But as chipmaking becomes ever more expensive, firms are turning to more advanced ATP to keep seeking out improvements. Asian economies found it to be a good way to climb the value chain. Replicating the success of South Korea and Taiwan is unlikely, but countries with no chip industry must start somewhere.

Intel's ATP facility in Costa Rica now employs some 4,000 workers. Panama is working with Arizona State University to improve the skills of its semiconductor workforce. These developments are encouraging, but countries like Panama and Costa Rica "probably lack the scale for a major chip ecosystem", notes Chris Miller, the author of *Chip War*, a book about the semiconductor industry. If chipmaking is to transform Latin America, bigger fish must get involved.

But the big fish are floundering. Mexico has much to gain from the re-ordering of the semiconductor supply chain thanks to its free-trade agreement with the United States. It has a long history of assembling electronic components. Chipmakers should be piling in. They are not.

One issue is that chipmaking consumes a lot of water, and Mexico is dangerously parched. Another is leadership. "In South-East Asia and India, there is high-level political support for semiconductor investments," says Mr Miller. Lack of that in Mexico blunts the effectiveness of otherwise supportive policies. In October Mexico introduced tax breaks of up to 83% on some ATP investments. That was enticing to chip firms, but it did little to reduce uncertainty. Chipmakers are left to hope that Mexicans will elect a more chip-friendly president when they go to the polls in June.

Brazil is also wishy-washy on semiconductors. Its officials, absurdly, talk up semiconductor "self-reliance", impossible for any country, rather than trying to get a mere toehold in the supply chain. President Luiz Inácio Lula da Silva has spent nearly a year talking chips with China, with nothing to show for it thus far.

While he and other Latin American leaders dither, the coffers of ATP operations in Asia spill over. Intel and Infineon, a German chipmaker, are spending some $22bn to build new chip packaging facilities in Malaysia. Vietnam and India have also won big projects. "Latin America is missing a big opportunity," says Mr Miller. "The window for action is closing rapidly." ■

Wealth in India

# Crazy rich Indians

MUMBAI

**India's new wealthy elites are younger and more adventurous**

ALL OF INDIA was transfixed, as February turned to March, by the spectacle of Anant Ambani's pre-wedding celebrations in Jamnagar, an unlovely industrial town in western India. Mr Ambani is the son of Mukesh Ambani, India's richest man and boss of Reliance, a giant conglomerate. Bill Gates, Mark Zuckerberg and Rihanna turned up, as did hordes of Indian business tycoons, cricket legends and Bollywood A-listers. The government temporarily converted the local domestic airport into an international one. For hundreds of millions of Indians following the lavish proceedings on TV, social media and in the papers, the festivities stood as shorthand for the tastes and power of India's rich.

The Ambanis and their fellow plutocrats are household names in India. But they are not representative of India's wealthy. Billionaires, almost by definition, are a select few. According to *Forbes*, a compiler of lists, there are just 186 of them in India. Far more consequential to—and representative of—India's economic story are the legions of dollar millionaires, whose ranks are expanding year by year. They have an outsize influence, relative to their numbers, on patterns of consumption, investment and growth. They tend not to make headlines or advertise their wealth.

There is no fixed definition of "rich" used by the businesses that cater to them. But one commonly accepted threshold for being a "high-net-worth individual" is possession of net assets of $1m or more, including the value of primary homes. That could inflate numbers by counting someone who works for a modest wage but inherits a large seafront flat in Mumbai—$1m buys 1,100 square feet (100 square metres) of prime property in the city. But it does not account for those who hold illicit cash, depressing the real figure. Experts assume that these things roughly cancel each other out to provide a decent picture of a country's wealthy people.

By that definition, India had around 850,000 dollar millionaires in 2022, a net addition of 473,000 from a decade earlier, according to research by Credit Suisse, a Swiss bank. Between 2012 and 2022 the number of dollar millionaires grew at an annual rate of 8.5%, outpacing average GDP growth of 5.6%. The economy is rebounding even more strongly now. As a result, wealth managers expect the number of dollar millionaires to expand by 15-20% per year. These are the new rich. No datasets exist delineating the demographics of this cohort. But it is possible to draw broad trends from the people who manage their money. One unifying theme emerges: India's new rich are nothing like the old.

First, they are more spread out. No longer do Indians need to live in top-tier cities like Mumbai, Delhi or Bangalore to get loaded. Jaideep Hansraj, who ran wealth management for 15 years at Kotak Mahindra, a big bank, and now heads the securities business, says the surge in investors from small cities is phenomenal. They come from "Indore or Bhopal or Lucknow or Kanpur. I mean...Bareilly. It completely bamboozles me," he says, referring to the sorts of cities an earlier generation of bankers would have sneered at. Rakesh Singh of HDFC, India's biggest bank by market capitalisation, says he has seen half-million-dollar investments coming from places like Jorhat in Assam, which most Indians would struggle to locate on a map.

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Driving this geographic diversification of wealth is India's improving infrastructure. This has lowered transport costs and sped up industrial shipments. It includes a big expansion in air connectivity, the spread of high-speed internet, and investment incentives from state governments keen to grab a piece of India's growing economy. Wealth managers, too, are expanding their operations to serve customers where they are.

A second change is in the average age of the wealthy. Where India's rich might once have had a median age above 50, now 40- and 30-something millionaires are common. Some have benefited from government land acquisition for infrastructure projects, reaping big sums from previously unproductive holdings. Many are first-generation businessmen making consumer staples such as wafers (potatoes, not silicon), clothes or poppadoms, or unsexy but essential goods necessary for a growing economy, such as rebar or ball bearings. A huge chunk are salaried professionals with company stock options or prudent personal investments. These are first-generation millionaires with "strong middle-class values", says Chethan Shenoy of Anand Rathi Wealth, which manages $6.6bn for nearly 10,000 clients.

The third major shift is in what the new rich do with their riches, in terms of both investment and consumption. They are much more comfortable with capital markets than their parents were. "Earlier I could go and have one standard conversation with 90% of my clients," says Nitin Chengappa, who heads private banking at Standard Chartered, an international bank. Today "diversification is the key. It's not just mutual funds. It's private equity, social causes, venture capital, what can I do in listed [companies], what can I do in non-listed?" The rich still buy plenty of gold and second homes, in India and abroad. But their interest in markets and their appetite for risk have increased, too.

That does not mean they shy away from consumption. Foreign holidays are a common indulgence, as are extravagant weddings and fancy cars. (Mercedes-Benz expects India to become its third-biggest market outside Germany in three years, up from fifth.) European luxury brands and hotels are an increasingly common sight in India's cities. Last year Dior held a show in Mumbai, and in 2022 the Swiss watch industry enjoyed a record year for exports to India. Tata, a big Indian conglomerate, has seen robust growth in its luxury-goods and five-star hotel businesses, especially from smaller cities. It is planning to open 25 hotels this year, many of them high-end. An international airport due to open in Mumbai next year will have a fifth of its parking spots reserved for private jets.

Two risks could stall the growth of India's new class of wealthy. The first is political, regulatory or tax changes. Risk-taking in investment and free-spending consumption are driven by confidence among the rich that they will only get richer. Political instability could prompt a retreat to safer investments and lower spending. And although they are mostly immune to domestic inflation they are particularly sensitive to changes in taxation, especially on income and luxury spending.

The other risk is that the rich might flee. Henley and Partners, a high-end immigration firm, reckons that 7,500 Indian millionaires moved abroad in 2022. Many more have quietly acquired second homes in Dubai, London or Singapore, as well as the right to move there as a way of keeping their options open. Most hope to send their children to foreign universities. Professionals with international firms are also highly mobile, tempted by higher quality of life, better schooling for their children and a cleaner environment.

India's new rich, like the previous elite, are a patriotic group. Many are keen to give back and help improve the lives of other Indians—while also having a good time. But even as they change, they would like India to change too. As one banker puts it, "As rich as you get you cannot do anything about the pollution." ■

**We are hiring a senior correspondent to cover India** The job will be based in India and involve travel. Extensive experience in India is helpful but not essential. Applicants should send a CV, a cover letter and an unpublished article of 600 words suitable for publication in *The Economist* to indiawriter@economist.com. The deadline is April 5th 2024.

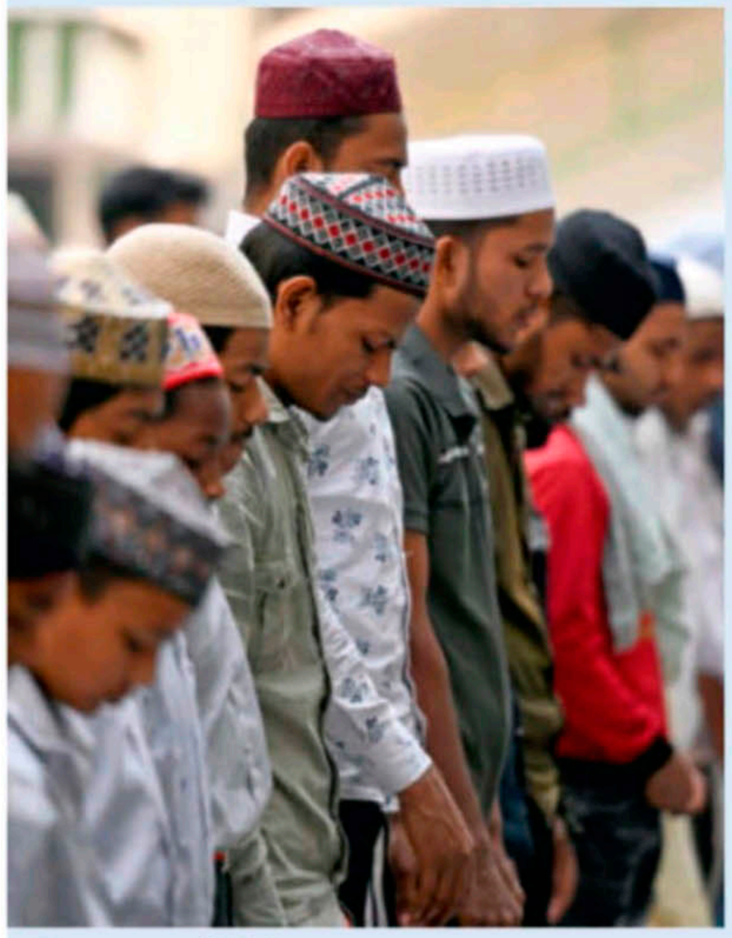
Religious politics in India

## A controversy over citizenship

### The government finally implements a contentious law

NARENDRA MODI prides himself on getting things done. Yet when it came to implementing the Citizenship Amendment Act (CAA), a campaign pledge of his Bharatiya Janata Party (BJP), his government dragged its feet. The rules for implementing the law, which offers persecuted religious minorities from some neighbouring countries an accelerated route to Indian citizenship, were published on March 11th, four years after it passed parliament.

The law is controversial because it does not include Muslims. The government says that is because they are not a minority in any of the relevant countries.



Concerned citizens

Yet some Indian Muslims worry the law could end up being used to challenge their own citizenship. Its exclusion of Muslims has certainly made it popular with the BJP's Hindu-nationalist base. There is a suspicion its implementation was timed to rally Hindu voters ahead of a general election due by May.

The act allows for applications by refugees from Bangladesh, Pakistan and Afghanistan, as long as they are Hindus, Sikhs, Buddhists, Jains, Parsis or Christians and arrived in India before the end of 2014. Within India, critics have challenged the CAA for explicitly linking citizenship and religion, which they say violates India's secular constitution. The fear that it could be used against Indian Muslims was exacerbated by another scheme, since suspended, to compel Indians to prove their citizenship in order to be included in a national register. The government denies that the law is discriminatory.

The opposition suspects the timing of the announcement. A Congress party spokesman said it was designed to distract from a Supreme Court ruling, earlier the same day, which rejected a plea by the State Bank of India to be given more time to publish details about donors in a controversial BJP-designed campaign-finance scheme. It also followed the sudden resignation of an election commissioner over the weekend, days before the election date was expected to be announced. So far, the renewed debate over the CAA has taken oxygen away from these stories.

Australia

# Spooked

SYDNEY

## An Australian spy chief triggers a debate about China

LAST MONTH Mike Burgess, Australia's chief domestic spook, sent shockwaves through Canberra when he declared that a former Australian politician had been recruited by a foreign spy ring and "sold out their country". The ring was later revealed to be Chinese. The politician remains unnamed. The claim triggered fierce speculation, and a debate about whether Mr Burgess was stoking paranoia. Australian intelligence agencies "will do anything to destabilise any meaningful rapprochement" with China, said Paul Keating, a former Labor prime minister, on March 5th.

Mr Burgess rarely pulls his punches. He has warned of similar threats in speeches for his Australian Security Intelligence Organisation (ASIO) since 2020. He often flags foreign meddling. Last year at the first public meeting of the Five Eyes, an intelligence-sharing group of America, Australia, Britain, Canada and New Zealand, he said that "the Chinese government is engaged in the most sustained...and sophisticated theft of intellectual property and expertise in human history."

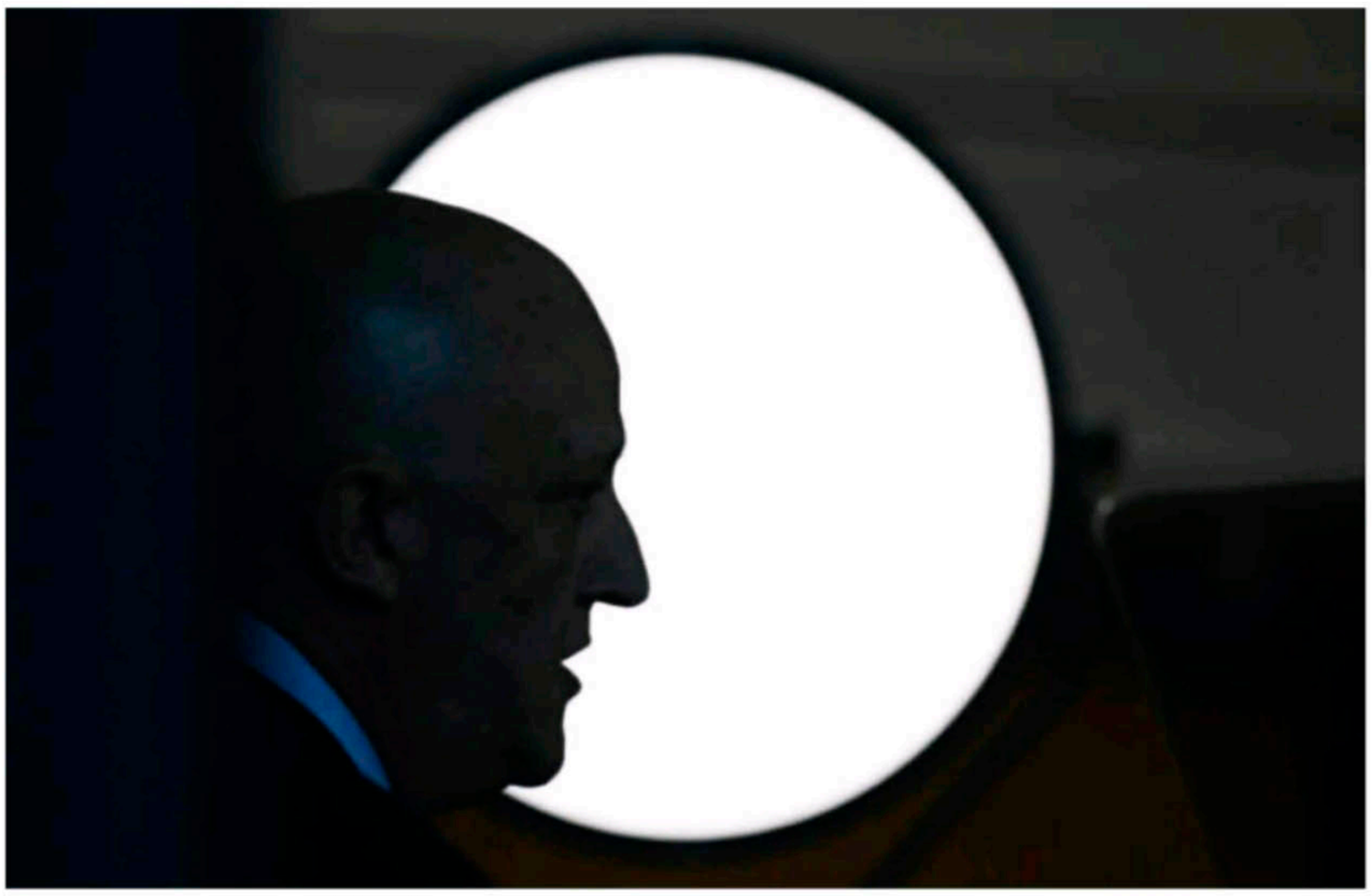
Declassifying the information last month served two main goals, according to Mr Burgess. The first was to educate Australians about the growing threat of both espionage and foreign interference (which involves a foreign government secretly influencing people and politics). The second was to send a message to China: "We want the A-team's bosses to know its cover is blown," he said. Underlying that may be a concern about complacency over China.

Since Australians elected a Labor government, led by Anthony Albanese, in 2022 the bilateral relationship has improved. Mr Albanese's government has not made major concessions to China and backs AUKUS, a submarine-building pact with America and Britain. However, it avoids calling out China publicly. As a result, China has lifted most of the trade restrictions it imposed on Australia in 2020, and may lift tariffs on wine shortly (see China section). Exports have boomed from A$147bn ($97bn) in 2020 to over $200bn in 2023. Most strategists agree that this is good news. But the "gap between what the government says and what it knows is big and getting bigger," says Rory Medcalf at the Australian National University in Canberra.

Some intelligence officials worry that Australians may miss the nuance, and that a "stabilised" relationship might be taken as a sign that the Chinese threat is abating. The share of Australians who say China is "more of a security threat than an economic partner" fell from 63% in 2022 to 52% last year, according to polling from the Lowy Institute, a think-tank in Sydney.

On the other side, the government is under fire from a small but vocal group of former Labor politicians. They are critical of what Mr Keating calls Australia's "mindless pro-American stance" and accuse intelligence heads of tub-thumping over China. Successive governments have given "free rein in security policymaking to hardliners in the defence and intelligence community", wrote Gareth Evans, a former Labor foreign minister, in December.

However, according to John Blaxland, the author of an official history of ASIO, "the threat of foreign interference is real." China has long courted influence with Australian politicians. ASIO now says that the "A-team" is grooming well-connected Australians online, with offers of "consulting" jobs. An unnamed "nation-state" is using "top-notch tradecraft" to probe critical infrastructure networks for weakness, according to Mr Burgess. Meanwhile, his job will only become harder. Australia's role in the Indo-Pacific power contest makes it a target. Under AUKUS, America will be sharing prized nuclear-propulsion technology with it. Foreign agents are already probing for information. ■



The name's Burgess, Mike Burgess

Missiles in India

# Hydra-headed nukes

## India is souping up its nuclear missiles

TO AN IDLE observer on Abdul Kalam Island, an Indian territory in the Bay of Bengal, the missile that shot into the sky on March 11th was little different from scores of similar launches that have occurred there since the 1980s. A more discerning bystander might have noted that it was the tenth test of the Agni V, India's first intercontinental ballistic missile (ICBM), capable of reaching any part of China. But even the most astute missile-watcher would not have known the significance of the launch, which lay inside the nose cone.

This month's launch is thought to be the first time that India has tested a missile with multiple independently targetable reentry vehicles, known as MIRVs, first developed by America in the 1960s. These are small warheads, crammed atop a single missile, each capable of striking targets hundreds of kilometres apart from one another. The test is a technological triumph for Indian scientists. It "marks a significant development for India's nuclear posture, and faster than we anticipated just a few years ago", write Hans Kristensen and Matt Korda, experts at the Federation of American Scientists, a research group. It could also affect nuclear dynamics in Asia.

MIRVs have three advantages for India. One is that they give the country greater assurance that its nuclear warheads would get through any future Chinese missile-defence system. Another is that, even if China (or, less likely, Pakistan) were to destroy a portion of India's missiles in a bolt from the blue, a small number of surviving missiles would still carry enough firepower to inflict existential damage in return.

The third is that MIRVs allow India to substitute accuracy for firepower. The country's test of a thermonuclear bomb in ▸▸

1998 is thought to have failed. MIRVs allow it to use a larger number of less powerful fission bombs to deliver the same effect as one large H-bomb. And there is another upside, says Christopher Clary of the University at Albany in New York. "Missiles, especially long-range ones, typically cost quite a bit more than warheads," he says. "So the cost saving for an equal number of warheads on target could be substantial." That will appeal to India: its defence spending is vastly lower than China's.

All this has drawbacks. MIRVs make it easier to launch a "disarming" first strike against an enemy's nuclear forces. Conversely, in stuffing many warheads into a single missile, they are also attractive targets for an enemy's first strike. That can encourage countries to build larger arsenals, and to launch them more quickly in a crisis. When America and the USSR began MIRVing their missiles in the 1970s, the technology contributed to an arms race.

Ashley Tellis, an expert at the Carnegie Endowment, a think-tank in Washington, has argued that India has little interest in using MIRVs for targeting Chinese or Pakistani nuclear missiles, a practice known as "counterforce". Its missiles are probably not accurate enough for that anyway, he notes. India will need many more tests to have confidence in its MIRV capability.

Nonetheless, Mr Kristensen and Mr Korda are concerned. China has deployed MIRVs on some missiles, they point out, while Pakistan tested them in 2017. In America and Russia, there is talk of re-MIRVing missiles that were downgraded to single warheads. "A world in which nearly all nuclear-armed countries deploy significant MIRV capability", they conclude, "looks far more dangerous." ■

## Banyan A rig too far

*A fraudulent election will not keep Imran Khan's fans at bay*

NAWAZ SHARIF'S Pakistan Muslim League party (PML-N) is back in power. Following elections last month, the thrice former prime minister's younger brother, Shehbaz, has been installed in the ruling post. His daughter, Maryam, is the new chief minister of populous Punjab. So why is Mr Sharif so glum? The 74-year-old "lion of Punjab" has said little publicly since the vote. Bunkered down in his mansion outside Lahore, he is said to be depressed.

He has reason to be. The PML-N's success is much less than Mr Sharif was promised when he returned home last year. He had spent four years in exile in London because Pakistan's generals—stage managers of its democracy—were against him. They rigged an election in 2018 in favour of his main rival, Imran Khan. But then they fell out with Mr Khan and reverted to the lion. A former cricketing god, Mr Khan is now in jail on graft charges. His Pakistan Tehreek-e-Insaf (PTI) party has been dismantled. PML-N was therefore expected to sweep the election and Mr Sharif to become prime minister for a fourth time. Instead, something unprecedented happened.

Despite the army's myriad ploys to prevent Pakistanis voting for Mr Khan, it seems most did so. Standing as independents, candidates linked to his party swept the country. Early counting put them on track for two-thirds of Punjab's seats and an overall majority. At which point the army intervened to a degree that might make a tin-pot tyrant blush.

Army agents were allegedly sent into counting stations with alternative tallies. Salman Akram Raja, a Supreme Court lawyer running as a de facto PTI candidate in Lahore, had been informed that he had won by 95,000 votes. And then—whoops—that he had lost to the PML-N candidate by 13,500. Mr Sharif's party would otherwise have faced oblivion. As it is, it won only 75 of 264 seats. It cobbled together a majority by striking a deal with the Pakistan Peoples Party, which is run by another fading dynasty, the Bhuttos.

This might seem like Pakistani business as usual. The country has been ruled by the army, directly or at varying degrees of remove, throughout its history. In a cycle that Mr Sharif has been through several times, the generals put a biddable civilian in power then, after he or she dares to act independently, switch to a different proxy or army rule. Thereby Pakistan has had four army dictators and none of its 20 civilian prime ministers has completed a five-year term. This helps explain why it is so badly governed. Having little prospect of a full term, Pakistan's civilian regimes abjure long-term decision-making in favour of populist giveaways and graft. As recently as 2006, Pakistanis were better-off than Indians; now the average income in India is 60% higher than that in Pakistan.

A big question arising from this latest turn of the wheel is whether the army can maintain control. There are two reasons to think it could struggle. The first is Mr Khan. Perhaps unwittingly, given his erstwhile compliance with the army, he has channelled Pakistanis' long-standing despond into anger at the military establishment. This has put Pakistani politics on new terrain. Had the army chief, General Asim Munir, responded to the vote count by calling a state of emergency, as his predecessors might have, he would have risked an uprising. "There is this sense that the gravy train needs to stop," says Mr Raja, an old acquaintance of Banyan. "We can't be forever governed by two families in cahoots with the powers that be."

The second factor endangering the status quo is a protracted economic crisis. The inflationary shocks experienced in many countries have in Pakistan combined with the effects of long-standing malgovernance to deliver chronic inflation, joblessness and balance-of-payment problems. Mr Khan's ousting in 2022 now appears well timed for him. Mr Sharif's decision to let Shehbaz lead an 16-month-long replacement government instead of calling early elections looks like a major blunder. It has hung the crisis around his party's neck. With Pakistan's 24th IMF bail-out set to expire this month, and a bigger loan urgently required, the new government will need to take measures that will make it even more unpopular than it is. Its prospects—and Mr Sharif's hopes of rebuilding his party—appear dire.

The same could be true for the army-run establishment that Mr Sharif has unhappily rejoined. It may have got away with its latest election heist. But in the process Mr Khan's supporters have made the army look desperate and vulnerable.

Global warming

# Climate saint or villain?

BEIJING

**China is supercharging the green transition—while burning mountains of coal**

AMONG THE words mentioned most often by Li Qiang in his "work report"—a sort of state-of-the-nation address—on March 5th was "green". His predecessor as prime minister used it nine times in last year's speech; Mr Li nearly doubled that (see chart 1 on next page). This is hardly surprising. China is a green-technology powerhouse: its batteries, solar panels and electric vehicles (EVs) lead the world. Chinese officials want such industries to spur future economic growth and China's own pursuit of energy self-sufficiency.

Yet for all the talk of "harmony between humanity and nature", as Mr Li put it, China emits more than a quarter of the world's greenhouse gases each year (see chart 2). Over the past three decades it has released more carbon dioxide into the atmosphere, in total, than any other country. That all adds up to a big question: is China a villain or a saint when it comes to climate change?

The case for villainy is straightforward. Already the world's leading polluter, China's emissions rose by about 5% last year. About half come from the power sector, which is dominated by coal-fired plants. Another third or so belch out of factories, particularly steel foundries (last year China produced 1bn tonnes of the metal, over half the world's total). Cars and lorries are the other big contributor, spewing nearly a tenth of China's emissions. To keep its vehicles running, China consumes more oil than any country bar America.

Defensive Chinese officials note that Western countries, which started industrialising long before China did, are responsible for the bulk of emissions over the past century. Today these countries outsource much of their manufacturing—and, therefore, emissions—to China. Yet, the defence continues, China's emissions per person are still only two-thirds of the level in America (which has less than a quarter of China's population). This is all fair enough, but none of it changes the fact that for the world to meet its climate goals, China will have to drastically reduce its emissions.

→ Also in this section

35 Tariffs on Australian wine

It has ambitions to do so. China has installed more renewable power than any other country. Government subsidies encourage the manufacture and purchase of green products, such as EVs. These policies have coincided with other big changes. After decades of building roads and railways—and producing masses of carbon-intensive steel and cement—China is moving into a less dirty phase of development. As a result, China's emissions are expected to peak in the next few years and certainly by 2030, which is the goal China has committed itself to in climate negotiations.

But experts are worried about what happens next. There is a risk that China's emissions plateau, rather than fall. Its goal of eliminating net emissions (or becoming "carbon neutral") by 2060 seems in doubt. Climate Action Tracker, a watchdog, calls China's policies "highly insufficient". Most countries, including China, have pledged to keep global warming since the Industrial Revolution well below 2°C. Climate Action Tracker reckons that China's level of ambition, if matched by all countries, would lead to as much as 4°C of warming compared with the pre-industrial average, a potentially catastrophic outcome.

Drive across China and it is not unusual to see carbon-spewing factories or belching smokestacks in proximity to enormous wind turbines or rows of solar panels. (Your car is likely to be electric, too.) This paradox lies at the heart of China's climate policy. The world's largest emitter of carbon dioxide is also its top source of green

technology. Chinese companies make 90% of the world's solar cells (the building blocks of solar panels), 60% of its lithium-ion batteries and over half of its electric vehicles. These industries are known as the "new three" in China.

For nearly two decades the Communist Party has focused on the new three as drivers of economic growth. A stimulus package to cushion the impact of the global financial crisis in 2008 showered billions of dollars in subsidies on green-tech manufacturers. They have since received billions more, while benefiting from China's control of many of the raw materials (such as lithium) that go into such products. Today the party calls climate tech a "new productive force", a buzzword for the high-value-added industries that it favours.

China hopes the new three will keep its economy humming as it moves away from its old model of growth, which relied on investment in low-end manufacturing, infrastructure spending and the property market. Last year clean-energy industries accounted for 40% of China's GDP growth, according to the Centre for Research on Energy and Clean Air (CREA), a think-tank in Finland. Rising green-tech exports (see chart 3) make up an increasing share of China's trade with the world. Last year the new three accounted for 4.5% of China's total exports, up from 1.5% in 2020.

### Driving progress

In some cases, this has led to a backlash from foreign governments. Take EVs, an industry China has boosted with cheap loans, equity injections, purchase subsidies and state contracts. Chinese firms have also coercively transferred technology from joint ventures with foreign carmakers. Rich-world policymakers are thus considering how to protect their carmakers from this state-backed competition.

But Chinese firms have also displayed hard work, foresight and innovation. Economies of scale have helped them to keep costs low. That has led to low prices, which have been driven down further by intense competition. There are around 150 carmakers in China, including foreign brands. EVs made in the country cost about a fifth less than those made in Europe. Similar dynamics are at work in other green-tech industries. For example, LONGi Green Energy Technology, a big solar manufacturer, says the average lifetime cost per unit of energy generated by its solar panels fell by 60% between 2015 and 2021.

While much of this technology is shipped abroad, China's case for sainthood depends in large part on its renewable-energy roll-out at home. In this area, things are moving quickly. China added 293 gigawatts (GW) of wind and solar capacity in 2023, more than doubling its previous record in 2022. (For comparison, Britain's total power capacity is less than 100GW.) Over a quarter of the new cars sold in China last year were electric or hybrid, according to Xinhua, the state news service. The widespread adoption of EVs has led analysts to conclude that the demand for petrol in the country may have already peaked.

China, then, might seem to be on its way to a green future. But there is a big problem: coal. Over half of China's energy comes from burning the black rock. That has fallen from about 70% in 2011. In total, though, more coal is burned every year as China's overall demand for electricity increases. Last year 47GW of new coal capacity went into operation, up from 28GW in 2022. Officials approved an average of two new coal-fired power plants a week.

Given the declining utilisation rates of existing coal plants, some of the planned ones may never be used. But for local governments, building a coal plant (needed or not) is a way to boost economic growth. The coal industry supports about 2.7m jobs. That makes it difficult to tame.

Coal suits Chinese leaders in another way, too. Their first priority is to ensure a reliable power supply. China has relatively little oil and gas, depending on imports of each. But it has vast reserves of coal. Last year China dug up a record 4.7bn tonnes of the stuff, a process that releases methane, another dangerous greenhouse gas. China is responsible for around 10% of all human-caused methane emissions.

Renewable power might seem like a solution to all this. But it doesn't provide China's leaders with the same sense of security as coal. For a start, green energy depends on nature's co-operation, whereas coal-fired power plants can be ramped up and down at will. Officials were spooked in recent years when droughts disrupted hydropower supplies, leading to blackouts in some areas. When Russia invaded Ukraine in 2022, sending oil and gas prices soaring, China doubled down on coal.

According to some observers, though, China has reached an inflection point. Energy generation from renewable sources is growing faster than electricity demand in the country, according to the International Energy Agency (IEA), an intergovernmental organisation. A rebound in hydropower availability is expected after a two-year low. The growth in wind and solar capacity is accelerating. And China is building nuclear power stations faster than any other country. These changes are "laying the foundation for coal consumption to decline from 2024 onwards", says the IEA.

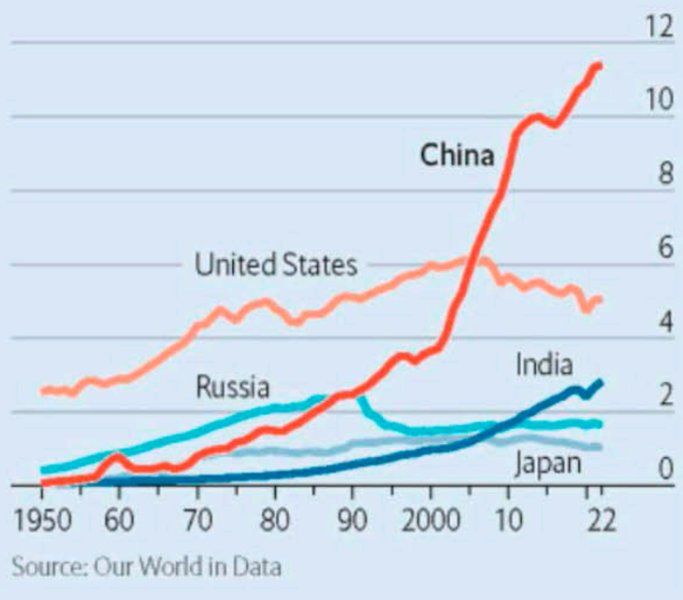
### Faster is better

The hope is that China moves even more quickly to roll out clean energy at home. There are two grounds for optimism, starting with technology. China has become the laboratory for the world on green tech. Last year $676bn was invested in the field in China, accounting for 38% of the world's total and more than double the amount that was invested in America, according to BloombergNEF, a research firm. It is also ahead on nuclear technology. In December it began operating the world's first "fourth generation" nuclear reactor, designed to use fuel more efficiently than previous models. Several other experimental reactors are also being developed in China, which aims to produce 10% of its electricity from nuclear power by 2035.

Another area to watch is hydrogen, a

**Chinese exceptionalism** 2

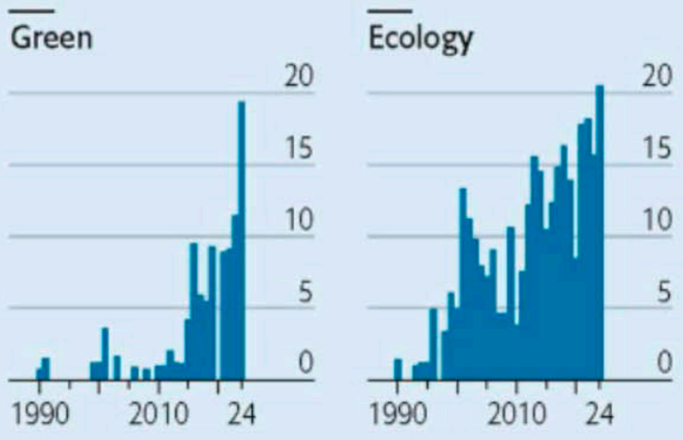
$CO_2$ emissions, annual, gigatonnes




Source: Our World in Data

**Climate-friendly words** 1

China, mentions of selected words in government work report*

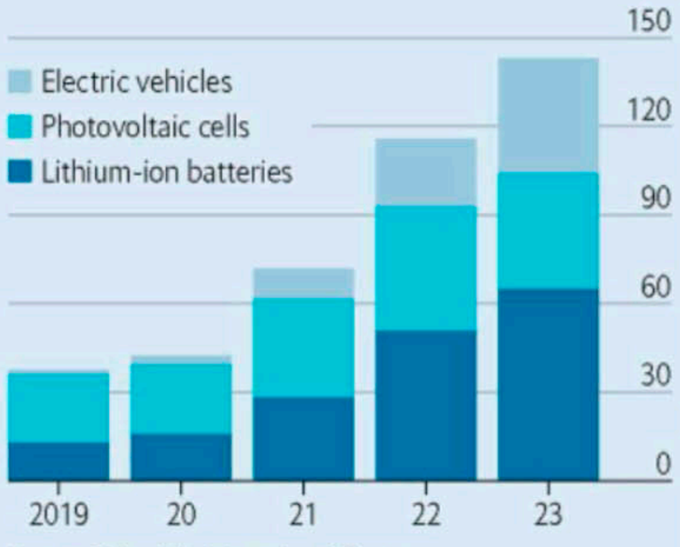



*Standardised to average report length

Sources: National People's Congress; *The Economist*

**The new three** 3

China, selected green exports, $bn




Source: China Administration of Customs

vast potential source of clean fuel. A giant machine called an electrolyser is often used to strip hydrogen from oxygen in water. Therein lies the rub: that process eats up energy and is expensive. But as electrolysers become more efficient and the cost of low-carbon energy declines, so-called "green" hydrogen might become economical. The IEA says the cost of producing hydrogen from renewable electricity could fall by 30% over the course of this decade. China is already playing a big role in the industry. It makes about 40% of the world's electrolysers. Several provinces have launched pilot projects aimed at producing green hydrogen and state-owned firms have pledged to build a 6,000km pipeline network to transport it by 2050.

Unexpected breakthroughs (call them miracles) in other areas, such as nuclear fusion, might qualify China for sainthood. But more mundane developments could also have a big impact at home. For example, making the power grid more flexible would allow China to better utilise the renewable energy it already has in place. At the moment, a surplus in one spot often goes to waste. But officials are making progress. They have built a network of power lines to help move renewable power from western China, where there are lots of wind and solar resources, to industrial centres in the east. And although China has less total energy storage in its grid than America, it is adding storage faster.

The other reason to hope that China's shift to renewables happens faster than expected is its scope for better policies. Here, too, the grid provides an example. Provincial governments have much control over their portions of it. They don't like relying on each other for energy. So some provinces prefer to use their own coal plants rather than cleaner sources located elsewhere. Reforms might allow renewable energy to be added to the grid faster.

Tighter rules on emissions would also help. At the moment China's carbon market covers around 40% of the country's emissions. Fines for breaking the rules are paltry. But that may all change this year, reports Bloomberg, citing an unpublished government plan. Seven industries are expected to be added to the market by 2030. These include big carbon-emitting sectors such as aluminium, cement and steel production. The government is also planning to increase penalties this year. Such efforts are increasingly necessary owing to pressure from abroad. From 2026 the EU will start taxing imports based on how much carbon was emitted while making them.

Whether Chinese officials will face pressure at home is another question. Few people in China express much concern about climate change. Most think the government is doing a good job when it comes to renewable energy. (Since 2012 it has cracked down on environmental NGOs and activists.) But opinions can shift quickly. A decade ago public complaints about air pollution grew so loud that the state was forced to act. It quickly imposed anti-pollution measures, though not the type of broad reforms that would lead to greater progress on the climate. Those may come if the effects of climate change become more tangible. China's coastline is vulnerable to flooding as sea levels rise. The arid north lacks drinking water. Last year droughts damaged crops across the country.

So far, though, the government is struggling to change. Take the six targets China set for itself in 2021, to be met by 2025. One was "strictly controlling" growth in coal consumption. Another was cutting carbon intensity—a measure of emissions generated per unit of economic output—by 18%. China is "severely off track" for all of these goals, says Lauri Myllyvirta of the CREA.

Nevertheless, Chinese officials continue to talk a big game about creating a green economy and achieving carbon neutrality. "We will advance the energy revolution, tighten control over fossil-fuel consumption and work faster to develop a new energy system," said Mr Li in his state-of-the-nation speech. But he added: "We will see that coal and coal-fired power play their crucial role in ensuring energy supply." Until that changes, China's case for climate sainthood will be weak. ■

China and Australia

## Vino vinci

HONG KONG

**A toast to the possible end of Chinese tariffs on Australian wine**

SO MUCH WINE has gurgled up in Australia in recent years that analysts have been measuring the surplus in terms of Olympic-size swimming pools. The last reading suggests the plonk would fill hundreds. Some 4,000km away, in Hong Kong, something similar is now happening. Cases of Australian wine are sitting in the city's warehouses, much more than Hong Kongers can imbibe (safely). Grudge-holding officials in Beijing are fermenting this trouble—but perhaps not for much longer.

China's case of sour grapes dates to 2020, when Australia's government called for an international probe into the origins of covid-19. Tensions between the countries had already been rising. For China, this was a tipple point. It placed trade restrictions on Australian products such as barley and beef. Later Australian wine was hit with tariffs that now range from 116% to 218%. China did not link the measures to the diplomatic spat, but they were widely seen as retaliation.

Until then, China's thirst for Australian wine had seemed unquenchable. Business took off after the two countries signed a free-trade agreement in 2015. In 2019 China drank up 40% of Australia's wine exports. Used to *baijiu*, a strong liquor, Chinese boozers like the bold flavours and high alcohol content of Australian wine, say some observers. Others point to the quality. But price may be the biggest factor. In 2020 Chinese winemakers complained that low-price Australian wine was hurting them.

The new tariffs caused the trade to "vanish overnight", says Eddie McDougall, an Australian wine producer. Sales of Australian wine to China were 99% lower last year compared with 2019. Many of the bottles originally destined for China are gathering dust.

At last China looks set to uncork the flow, as part of an effort to de-escalate its punitive trade war against Australia. The election of a new Australian government, led by Anthony Albanese, in 2022 gave China cover to back down. Tariffs on other goods were lifted last year. In a sign of improved relations, Mr Albanese met Xi Jinping, China's leader (pictured), in Beijing in November.

China is expected to wrap up a review of the wine tariffs this month. Australian producers are optimistic, which explains the glut in Hong Kong. They are storing wine there so that it can swiftly enter the mainland if the tariffs go. Hopefully the saga won't have a long finish.

Is that an Australian shiraz?

The Israel-Hamas conflict

# A bleak outlook

DUBAI

**Hopes for a truce in Gaza are giving way to fears of a long stalemate**

RAMADAN, THE Muslim month of fasting, was never going to be a joyful time in Gaza this year, but it was at least meant to be a hopeful one. For weeks Western and Arab officials laboured to strike a truce between Israel and Hamas before it began on March 10th. Palestinians in Gaza would have had a respite from five months of near-constant war. Dozens of Israeli hostages would have returned home. Diplomats hoped they could then turn the temporary ceasefire into a permanent one.

It was not to be. The talks failed, and the war continues. The death toll in Gaza has passed 31,000, a majority of them civilians, including 67 people who were found dead on the first day of Ramadan. Families are struggling to find food for *iftar*, the nightly fast-breaking meal. The more than 130 remaining hostages have now entered their sixth month of captivity, and dozens of them are thought to be dead already.

Negotiators are still talking. Ramadan was a symbolic deadline, not a final one. But their failure to meet it raises questions no one had wanted to answer. First is whether Israel will go ahead with a long-threatened offensive in the southern city of Rafah, where much of Gaza's population is now sheltering. Next, amid repeated warnings of looming famine, is how to increase the flow of humanitarian aid without a truce. Last is whether the war will now drag on for further months, with neither side able to declare victory nor willing to cut their losses.

In the run-up to the holiday, negotiators shuttled between Cairo, Doha and Paris for talks. They hoped to secure a six-week pause in the fighting. Hamas would have released roughly 40 Israeli hostages during that time, in exchange for hundreds of Palestinian prisoners. Israel was adamant that it would resume fighting once the deal expired. Still, it agreed in principle to a pause (a final deal would have required cabinet approval).

Yahya Sinwar, the leader of Hamas in Gaza, did not agree. His emissaries struggled to reach him during the talks (he is thought to be hiding underground somewhere in southern Gaza). When they did, just days before Ramadan, he insisted on a permanent ceasefire, a demand he knew that Israel would reject. Negotiators from Hamas grew obstinate. Asked to provide Israel with the names of surviving hostages, they refused.

No one can say exactly what Mr Sinwar is thinking. Diplomats in the region, however, believe he is gambling on two things: that continued scenes of death and deprivation in Gaza will increase international pressure on Israel, and that Ramadan will be a trigger for violence in Jerusalem and the Israeli-occupied West Bank. Both would push Israel to end its war for good, sparing Hamas the need to make concessions for another temporary lull.

The prospective offensive in Rafah has unnerved even Israel's closest allies. Joe ▸▸

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39 Gulf states in Africa

Biden, the American president, has warned Israel not to proceed without a plan for protecting the 1.4m civilians displaced to the city. "[We] cannot have 30,000 more Palestinians dead," he told MSNBC, a cable-television channel, on March 10th. His phrasing was somewhat garbled, but he called an invasion of Rafah a "red line" and seemed to imply that he might withhold shipments of offensive weapons if Israel crossed it (though Jake Sullivan, his national security adviser, was later careful to play down the idea).

As he has for weeks, Binyamin Netanyahu insists Israel will press forward. Rafah is Hamas's last redoubt, he argues, and Israel must attack its remaining battalions. "We'll go there. We're not going to leave them," the Israeli prime minister said in an interview with Axel Springer, a German media conglomerate. On the ground, however, there are still no signs of an imminent offensive. Israel has withdrawn many of its troops to Gaza's periphery, and to a corridor that bisects the enclave. Unless it remobilises some of the reservists it has sent home over the past two months, it lacks the manpower for a major offensive in a densely populated city.

### Watching and waiting

Hamas has kept up a drizzle of rocket fire on southern Israel, to demonstrate that it is not vanquished, but it is too battered to pose a serious threat. Israel's generals are thus in no rush to enter Rafah: they want time to allow their troops to rest and regroup, and may also want to avoid an offensive during Ramadan, which has been a catalyst for violence in the past. Clashes between Israeli police and Palestinian worshippers at Jerusalem's al-Aqsa mosque during the holiday in 2021 helped fuel a round of bloodletting across Israel and the occupied territories.

On March 12th a tugboat hauling 180 tonnes of food left the Cypriot port of Larnaca for Gaza. Organised by José Andrés, a Spanish-American chef and philanthropist, it is the first ship authorised to deliver aid to Gaza since Hamas seized the enclave in 2007. It was due to arrive as *The Economist* went to press. Smaller boats will probably ferry its cargo to shore, since it has nowhere to dock (the fishing port in Gaza city was bombed early in the war).

It is a trial run of sorts for a more ambitious plan to deliver aid. In his state-of-the-union address on March 7th, Mr Biden announced that America would construct a temporary pier on Gaza's coast to receive larger vessels. A warship left Virginia two days later carrying equipment; at least three others have embarked as well. It will take several weeks for them to reach the eastern Mediterranean, and several more to build the dock. The pier is unlikely to be operational until May.

Building it will be the easy part, though. The maritime route could bring thousands of tonnes of aid to Gaza each day, the equivalent of around 200 lorries. It will probably arrive in the northern half of the enclave, which is largely in ruins and slipping into anarchy. The 300,000 Palestinians who remain there have been worst affected by the lack of food. Once on land, supplies will have to be stored and distributed around Gaza. Aid workers are vague when it comes to the details of how all this will work—it is not yet clear where they will find the necessary warehouses and trucks, or how they will secure them.

Still, if Israel does delay its Rafah operation, and if some combination of airdrops, ships and lorries ease the worsening hunger in Gaza, the international pressure Hamas is hoping for may not materialise. Violence may not, either: tensions are high, but Jerusalem and the West Bank have been unexpectedly calm since October. It would not be the first time Mr Sinwar miscalculated. He believed that Iran and its proxies in the "axis of resistance" would join the fray after Hamas assaulted Israel on October 7th and was disappointed by the tepid response from his allies.

With no truce and no climactic battle, the alternative is stalemate. Israel will not be able to defeat Hamas absolutely or free all of the hostages, its stated goals for the war. It cannot even find Mr Sinwar, despite a months-long manhunt. What remains of Hamas, for its part, can hope for nothing more than to endure, at horrific cost to its own people. Ambitious plans for a new government in Gaza and post-war diplomacy will gather dust. That may suit Mr Sinwar, who sees mere survival as victory. It may also work for Mr Netanyahu, who fears that ending the war will also end his time as prime minister. But it is a bleak scenario for everyone else. ■


What lies ahead?

Gaza's war economy

# Shadowland

RAMALLAH

## Clans, gangs and dodgy businessmen prosper while Israel clobbers Gaza

AFTER THE trauma of repeated displacement from her home in Gaza city, Suha Alam felt there was little left to lose. Having fled to Gaza's southernmost city of Rafah, she messaged a friend still in the north to check on the family home, only to be told that looters had got through a hole in a broken wall and stolen everything.

Numerous displaced Palestinians say their homes in the north have been ransacked while they sought shelter in Gaza's south. Everything from televisions and kitchen appliances to furniture has been taken by Palestinian gangs, which aid workers say have been increasingly well organised in the north, even as Israel's army claims to be in full control of the area.

Much of the loot is then offered for sale in makeshift markets, where the victims of robbery have sometimes been able to buy back their own stolen goods, including furniture. These flea markets are part of an emerging patchwork economy where clans, local mafias and established businessmen can use their know-how and muscle, in some cases abetted by links to Israel and Egypt, to fill a vacuum.

Gaza's clans have long been power-brokers. They never went away under Hamas, whose cannier leaders learned not to pick quarrels with the larger families, preferring to operate in tandem or alongside them rather than in opposition. Aid officials and observers say the clans are involved in both types of crookery: in some cases they offer NGOs safe warehouses and merchants protection for their goods—for a fee; in others they arrange the theft of aid, which they later sell at extortionate prices.

In January reports that Israel's security chiefs favoured the idea of using Gaza's clans to help temporarily administer the strip drew widespread international criticism. Yet it is already beginning to happen. NGOs are indirectly employing the services of southern Gaza's biggest families to protect and help distribute aid to the lawless territory's desperate people. Videos circulating on social media depict men armed with sticks, sometimes with guns, riding on top of humanitarian convoys. Israel has cited this as evidence of Hamas stealing aid. But aid workers say in many cases members of powerful families have been hired to protect goods from desperate crowds that might ransack the lorries.

The rise of these families is "a recipe for internal strife", says Mkhaimar Abusada, a

Making a racket

professor of politics at Gaza's al-Azhar University (now destroyed) who has fled to Cairo. "These big clans will try to monopolise and dictate the lives of other Palestinian families," he warns, noting that some more established families were involved in extrajudicial killings during past periods of turmoil. One of them, the Dughmush, was involved in the kidnapping of a BBC journalist, Alan Johnston, in 2007. UN officials say that lorries trying to reach central Gaza have been stopped at makeshift roadblocks and ransacked by organised groups.

One aid worker said that, if the flow of food and medicine remains clogged, thus pushing up prices, "you are going to encourage these gangs and families to consolidate and then they simply become part of the landscape."

A Western diplomat involved in trying to arrange emergency supplies says he is exasperated. In December, he says, lorries owned by Palestinian businessmen with links to Israel carrying commercial goods were allowed through a crossing from Israel at Kerem Shalom, days before any humanitarian aid was let in. "The Israelis have a big hand in making the selections and creating these crazy prices," he adds.

As prices soar and so much aid is stolen and sold on, access to cash has become vital. The Palestinian Monetary Authority, based in Ramallah in the West Bank, is the closest thing the Palestinians have to a central bank. It has scrambled to put cash into the strip's few ATMs. Just six of Gaza's 91 are working. Pleas to get permission from Israel for engineers to fix the broken machines have fallen on deaf ears.

Jamie McGoldrick, the UN's humanitarian co-ordinator in Gaza, has said that one way to combat the growing anarchy, especially in the north, is to "flood" Gaza with aid so that it is not used for extortion or sold on the black market.

America's plans for a floating pier off Gaza's coast may well allow more supplies into the strip, but NGOs and the UN repeatedly say that aid alone cannot stave off a famine. To tackle the crisis, private Gazan businesspeople must be given their head. Yet commercial imports remain minuscule. Private business in Gaza has virtually collapsed since October 7th. But an aid official remarks: "With supplies so short, there is plenty of money to be made."

A handful of Israeli-vetted Palestinian businessmen with old ties to Israel have been able to bring goods into Gaza privately. But this can have disastrous consequences, as in February when 112 people were killed trying to get to aid in lorries brought in by Palestinian merchants. And traders uncertified by the Israelis have to co-operate with the clans or families to do the same. Corruption is inevitably rife. "You are allowing these six or seven individuals to control the economy," says a former official of the Palestinian Authority. "What is developing is warlordism—and it's Israel who decides." ■


Belgium and Congo

# Restitution gone wrong

## The return of a sacred mask stolen by Belgium stokes violence in Congo

WHENEVER A BELGIAN king takes an interest in the Congo, history looms large. In the late 19th century King Leopold II turned the territory into a giant slave plantation, murdering, raping and slicing off limbs in a ruthless bid to profit from its resources. So when Philippe, Belgium's current king, visited the Democratic Republic of Congo in June 2022, he did so in the spirit of atonement. He wanted to open a "new chapter" in the two countries' relations, he said, and handed over a precious wooden carving known as the Kakungu mask, one of thousands of cultural artefacts looted from Congo that Belgium has promised to give back.

Alas, violence seems to have followed Philippe into the Congo like Leopold's ghost. In the same month that he visited, ethnic conflict broke out in Kwamouth, a district just north of Kinshasa, the capital. It pitted the local Teke people against their neighbours, the Yaka and the Suku. The Kakungu mask is venerated by both the Suku and Yaka as an ancestral symbol of war. They believe it confers magical powers on their fighters, making them invulnerable to bullets and giving them the ability to disappear. These attributes had helped their ancestors resist colonisation.

According to the UN Group of Experts on the Congo, the return of the Kakungu mask has emboldened Suku and Yaka militias, who call themselves "Mobondo", to carry out vicious attacks on Teke communities. At least 300 people have been killed and some 160,000 have been forced to flee. The true death toll is probably far higher, though no one knows for sure because the Congolese army has sealed off the worst-affected areas. Humanitarian groups cite unconfirmed figures of more than 3,000 deaths. "Wait a few years and we'll start finding mass graves," says a journalist based in Kinshasa.

Although the return of the Kakungu mask may well have inflamed the violence, the conflict has deeper roots. It began with a disagreement over land rights. The Yaka and Suku had for years paid taxes to Teke customary chiefs in return for permission to farm the land. An attempt by those chiefs to increase the customary tax in early 2022 was the trigger for the initial clashes, which have spiralled into something verging on ethnic cleansing. The Mobondo appear to be trying to drive out the Teke from Kwamouth and nearby areas. ▸▸

The Congolese government has made things worse. It appointed a "pacification commission" to defuse the conflict in September 2022, led by a member of the Suku royal family, Fabrice Kavabioko, who is also known as King Mini-Kongo. But, according to a UN report, Mr Kavabioko is one of the figureheads of the Mobondo and "was accused of having been an instigator of the conflict". Many Teke thus felt that the government had sided with their rivals. Mr Kavabioko has reportedly said he was "entrusted with the mission...of restoring peace" and that he had done so.

Nearly 300 suspected Mobondo fighters have since been detained, according to Human Rights Watch, an international monitor. Yet over 1,000 more faced no punishment at all. Instead, under a deal apparently brokered by Mr Kavabioko, some were drafted into the Congolese army and sent to fight against M23, a Rwanda-backed rebel group active in the country's far east. "The lack of accountability for alleged perpetrators deepens mistrust among communities," says Thomas Fessy, a Congo researcher at Human Rights Watch.

Congo's army may have also been heavy-handed with Yaka and Suku communities suspected of harbouring Mobondo militants. Five soldiers have been convicted of rape or extrajudicial killings. Some reckon the government is blocking journalists and aid workers from entering Kwamouth for fear they will unearth evidence of further abuses by the armed forces. The Mobondo, meanwhile, continue to attack soldiers and civilians alike. ■

The Gulf and Africa

# Out of Arabia

ADDIS ABABA, CAPE TOWN AND KIGALI

**Gulf countries are becoming major players in Africa**

MINING INDABA, Africa's biggest mining conference, is a geological jamboree. But the latest bash, held in Cape Town in February, was also a geopolitical spectacle. For as well as the usual Chinese and Western firms there were arrivistes from the Gulf. Manara Minerals, a state-backed Saudi Arabian fund, has up to $15bn to spend on foreign mines. Also browsing is the International Holding Company, an Emirati conglomerate with a market capitalisation of $240bn, around that of Blackrock and BP combined; in November its minerals arm bought a 51% stake in a Zambian copper mine.

Gulf interest in African mining is part of a broader trend. The United Arab Emirates (UAE), Saudi Arabia and Qatar are increasingly influential in Africa. The continent is a destination for their capital, an arena for their rivalries and a test of their global ambitions. Dubai has become the crucial financial hub for African elites. As African leaders seek alternatives to dwindling Chinese loans and Western aid, the Gulf's rise is reshaping geopolitics on the continent, with effects good and bad.

Gulf-Africa relations go back centuries; archaeologists have found Arab coins at Great Zimbabwe, a medieval city-state. The Horn of Africa, separated from the Arabian peninsula by the Gulf of Aden and the Red Sea, has long been seen by Arabs as in their neighbourhood. Interest in the rest of Africa has focused on supporting Muslim charities and buying agricultural land, yet waxed and waned with the oil price.

That on-off relationship has become more consistent as Gulf countries assert themselves as middle powers in a multipolar world. Though their approaches differ, they share a belief that African countries are neglected by other states—and that because they are poor, influence is cheap. Sub-Saharan Africa has more than 20 times the population of the Gulf Co-operation Council countries (Saudi Arabia, UAE, Qatar, Oman, Kuwait and Bahrain), but a smaller GDP.

Economic ties are the clearest evidence of closer Gulf-Africa relations. In the 2010s annual average trade between sub-Saharan Africa and the UAE was less than half of that between the region and America. But since 2020 the sum of imports and exports between the UAE and sub-Saharan Africa has been larger. Over the past decade the UAE has been the fourth-largest foreign direct investor in Africa, behind China, the EU and America. It has come to the rescue of African states running short of hard currency, for instance bailing out Sudan in 2019 and Ethiopia in 2018. Recently it pledged to invest $35bn in Egypt. The millions of Africans in Gulf countries are a vital source of remittances back home.

The UAE has been particularly active in logistics and energy. It is China's main rival for African ports. DP World, a Dubai-based firm, runs ports in nine African countries and in October won a new concession in Tanzania. The Abu Dhabi Ports Group runs several more. These bolster the UAE's position as the hub between Africa and Asia, a role boosted by the Emirates airline.

The UAE is also helping Africa develop oil and gas projects at a time when some in the West are wary of falling foul of climate agreements. In December Morocco and the UAE agreed to build a pipeline that could take gas from Nigeria to the Mediterranean. At the same time, Emirati investors are among the biggest spenders on renewables projects in Africa. Masdar, a state-owned firm, says it will invest $10bn to increase sub-Saharan Africa's electricity-generation capacity by 10GW—a big boost given that, excluding South Africa, the region's installed capacity is 89GW, roughly the same as Mexico's. "They want to show that they can do these projects better than the West, and they want Africans to love them," says an adviser to Abu Dhabi.

November saw the first Saudi-African summit, the latest "Africa+1" event inspired by China's triennial gatherings. Sau-

Copper-bottomed investment

di Arabia announced it would invest more than $25bn in Africa by 2030, and give a further $5bn in aid. Having helped bail out Sudan and, reportedly, the Central African Republic (CAR) in recent years, Saudi Arabia has since pledged help to Ghana and other countries with debt crises.

Qatar's role in Rwanda shows how small investments (by Gulf standards) go a long way in Africa. The Qatar Investment Authority (QIA), a $500bn sovereign-wealth fund, has been a co-investor in a pan-African fund with the Rwandan Social Security Board, a domestic fund. QIA also has a 60% share in a project to build a new airport to the south of Kigali, the capital.

The Gulf states' appeal to Africa is three-fold. First, they have money to spend when others are pulling back. In the 2020s annual new Chinese lending to Africa is on average 10% of what it was during the 2010s ($1.4bn per year versus $14bn). In 2022 the share of Western aid to Africa was at its lowest since at least 2000. Second is speed: Gulf autocracies are seen as much faster than the West or the World Bank. In January Uganda picked an Emirati firm to build a $4bn refinery having ended a deal with an American group it said was taking too long. Third, the Gulf is seen as something of a model for African countries seeking to diversify away from natural resources. And "like the Chinese it does not hurt that they are courteous and roll out the red carpet, even for leaders of small countries," adds an adviser to an African president.

The Gulf's economic push is coupled with a diplomatic one. From 2012 to 2022 Qatar and the UAE more than doubled the number of embassies they have in Africa. Saudi Arabia plans to increase its diplomatic posts to 40 (from 28). African leaders have joined it in condemning Israel's invasion of Gaza. It is hard to imagine South Africa bringing its case at the International Court of Justice alleging genocide by Israel in Gaza without the support of Gulf countries including Qatar, which Cyril Ramaphosa, South Africa's president, visited in November, about six weeks before he launched the application.

Gulf attention to African problems has, at times, been effective. Qatar mediated between America and Rwanda over the release from prison last year of Paul Rusesabagina, the hero of the film "Hotel Rwanda". And in 2018 Saudi Arabia and the UAE helped broker a rapprochement between Ethiopia and Eritrea. Both Gulf states have contributed money to the fight against jihadists in the Sahel.

Yet Gulf states can also destabilise Africa, undermining Western aims in the process. That is especially true of the UAE, which is the most risk-taking in pursuing its geostrategic interests on the continent. So much so that for all Africans' talk about the UAE becoming the "new China" in terms of investment, the way it stealthily builds a network of strongmen is equally suggestive of Russia's Africa strategy.

The UAE has used economic might and supplies of weaponry to stitch together a web of clients in north-east Africa. These include Khalifa Haftar, a Libyan strongman; Muhammad Hamdan Dagalo, a Sudanese warlord better known as Hemedti; and Chad's president, Mahamat Déby. The UAE's support for Hemedti's Rapid Support Forces in Sudan's year-long civil war—during which his paramilitary force has been accused of genocide—has complicated Saudi- and American-led peace talks and is encouraging his opponent, the Sudanese Armed Forces, to seek weaponry from Iran. (The UAE denies arming the force.)

In addition, the UAE has forged a close relationship with Abiy Ahmed, Ethiopia's prime minister, funding infrastructure projects and supplying drones used in the civil war in Tigray. Eritrea and Somalia have sought Saudi Arabian support in opposing what they see as a UAE-backed plan by landlocked Ethiopia to recognise Somaliland, a breakaway part of Somalia, in exchange for a lease of land on the coast. "We're aware we don't have enough of an understanding of the UAE dynamics," says a Western diplomat in Ethiopia.

## With friends like these

The effects of Emirati adventurism are a reminder that the Gulf is hardly going to champion African democracy. The Saudis have welcomed juntas that took power via coups. In Somalia, Qatar and the UAE have accused each other of bribing rival politicians. America has imposed sanctions on firms based in the UAE for their alleged connections to al-Shabab, the Somali jihadist group, and to Wagner, the Russian mercenary force that had close links to Hemedti and other strongmen.

Then there is the role that Dubai, in particular, may play in enabling African corruption. Over the past decade, as European countries have at least pledged to tighten financial regulation, African business and political elites—often the same thing—have turned to Dubai. In 2021 there were more than 26,000 African companies in Dubai, an increase of around a third from four years earlier, according to the Dubai Chamber of Commerce.


Most capital flows from Africa into Dubai are perfectly legal—and rational, for elites keen to keep their cash. "Many Africans don't trust their own economies," argues Ricardo Soares de Oliveira of Oxford University. And in contrast to Chinese or Indians using Caribbean tax havens or Mauritius before bringing the money back home, "Africans don't do much round-tripping: it's mostly one-way."

Yet various reports suggest a more worrying side to Dubai. In 2020 a report by the Carnegie Endowment for International Peace, a think-tank, argued that "Dubai's property market is a magnet for tainted money." It identified 34 Nigerian governors, seven senators and 13 ministers with Dubai properties, the cost of which it says would seem to "exceed what their official salaries should permit". Also in 2020 the Sentry, a watchdog, claimed that Dubai imports around 95% of the gold coming from conflict hotspots such as Sudan, South Sudan, Congo and the CAR. Last year a report by Al-Jazeera, a Qatari news outlet, alleged that Zimbabwean elites have smuggled billions of dollars in cash and gold to Dubai. Hemedti has become rich, in part, by selling Sudanese gold via Dubai, says the UN.

Last month the UAE celebrated its removal from an official money-laundering "grey list". Yet Dubai remains home to many people accused by African and other states of graft, such as Isabel dos Santos, the daughter of Angola's ex-president. South Africa has for several years struggled to extradite from the UAE two of the Gupta brothers who allegedly orchestrated "state capture" under Mr Ramaphosa's predecessor. They all deny wrongdoing.

Dubai's openness—in ways good and bad—is not designed with Africa in mind. But its role as a one-way ticket for rich Africans and their money has a disproportionate impact back on the continent. "Africa may be small fry for Dubai but Dubai is huge for Africa," says Mr Soares de Oliveira.

The rise of the Gulf presents African leaders with a familiar choice. Do they use partnerships with outside powers for their self-interest or to benefit their citizens? For the West there is another challenge. America and European powers want to secure more African minerals, reduce the influence of Russia and China, and promote good governance. The Gulf countries may help with some of these goals some of the time, but are not reliable means to Western ends. As in other parts of the world, the ascendant petrostates have their own ambitions—and will pursue them ruthlessly. ■

The Economist

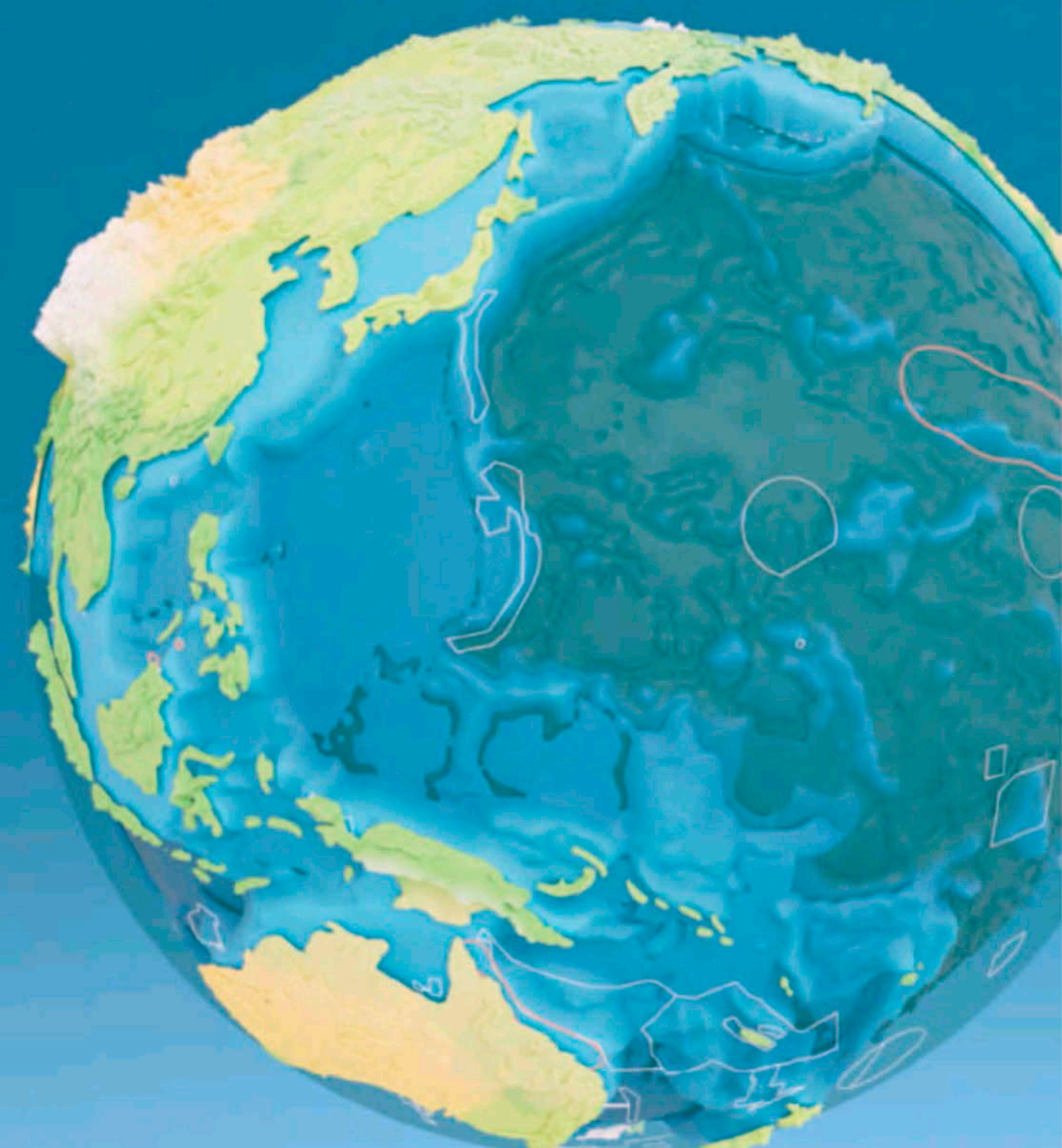
**SPECIAL REPORT:**
*The oil industry*



# The long goodbye

ECONOMIST IMPACT

World Ocean Initiative



# Beyond the surface

# A deep dive into the world of marine conservation

## Join us on an immersive journey as we explore the vast environmental and economic potential of marine protected areas

Marine protected areas (MPAs) have the power to transform our ocean by reviving damaged ecosystems, replenishing depleted fish stocks, and bringing economic and social benefits to local communities. But these sanctuaries cannot exist on paper alone. They must be carefully managed and enforced to harness their full potential.

With the clock ticking towards the UN's ambitious goal of safeguarding 30% of the ocean by 2030, Economist Impact, supported by Blancpain, invites you to experience the trials and triumphs of ten MPAs around the world.

**Beyond the Surface** takes you from the iconic Great Barrier Reef to the remote Prince Edward Islands, revealing the pioneering strategies of nations, local communities and conservationists.

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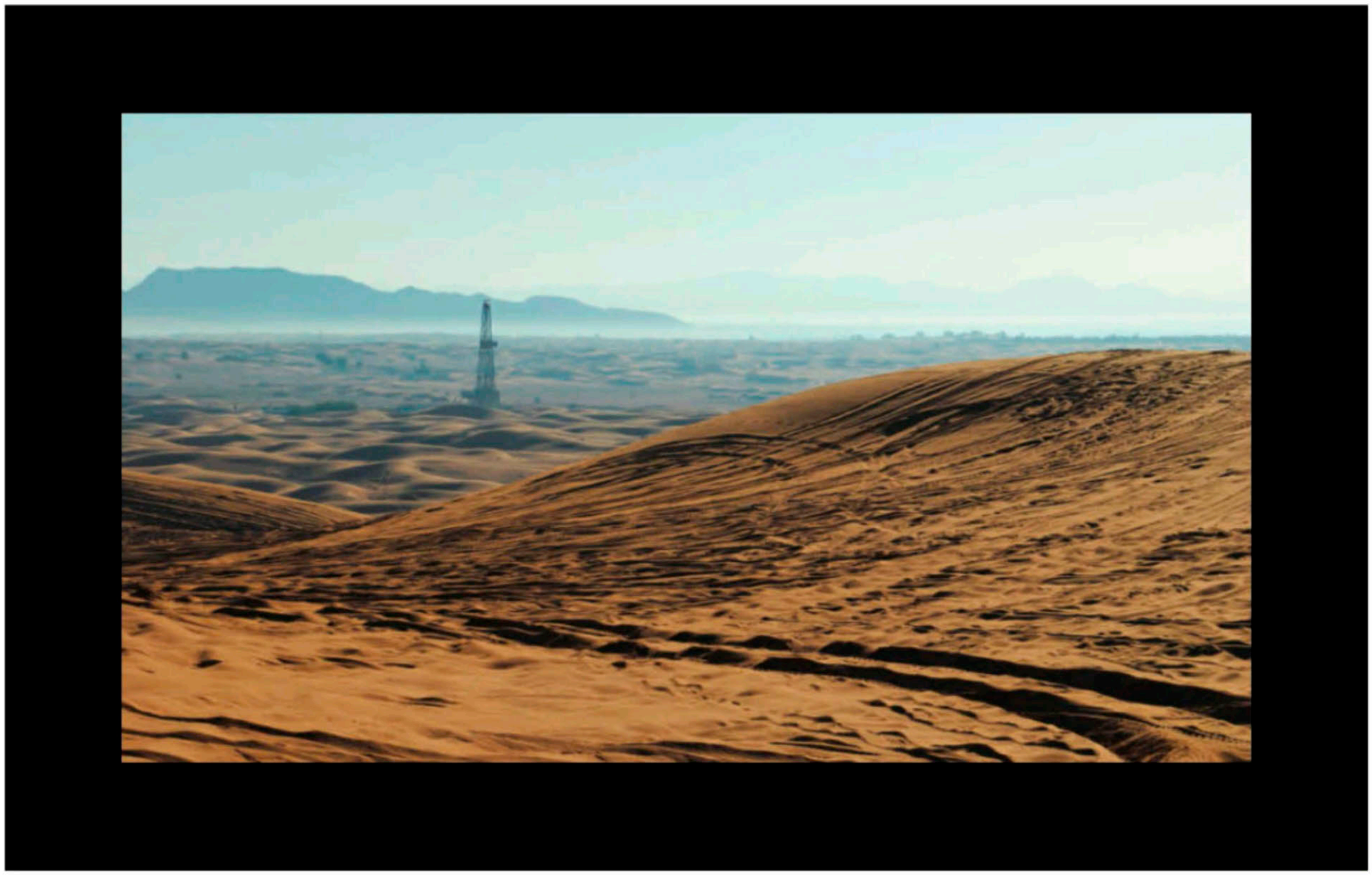


# Oil in a dangerous climate

**For the past 50 years the business and politics of oil have been dominated by matching supply to ever-increasing demand. The next 50 years will look different, argues Vijay Vaitheeswaran**

FLY WEST ACROSS the United Arab Emirates from Fujairah, a tanker-filled port on the Gulf of Oman, towards the Persian Gulf and you get a sense of the vulnerability arid lands have to climate change. The farms around Dhaid provide a splash of green, but homegrown food is scarce, homegrown staples next to non-existent. Drinkable water comes mostly from desalination plants. The heat is growing inhumane; outside work is banned during the hottest hours of summer afternoons.

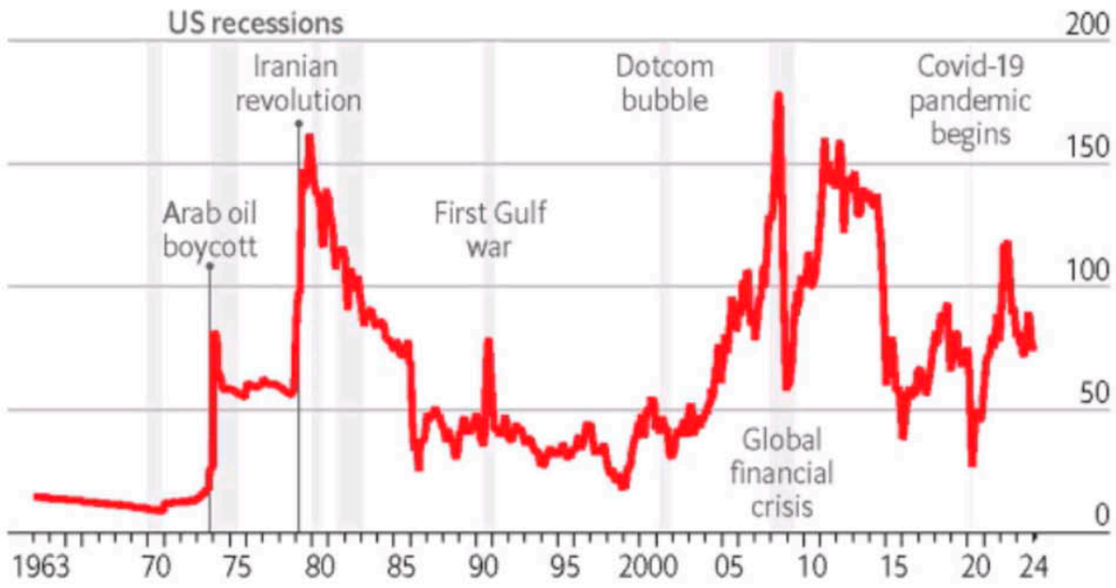
The Emiratis know their predicament. The gleaming cities of Abu Dhabi, Dubai and Sharjah are fully aware of the threats of sea-level rise. As you reach the Persian Gulf you can see a coast-protecting carbon-sequestering ribbon made up of millions of mangroves, their seeds planted by drone. At the same time those gleaming cities are built on oil. The UAE produces about 3m barrels of oil per day (bpd) and the state-owned producer, the Abu Dhabi National Oil Company (ADNOC), hopes to increase its production capacity to 5m bpd by 2030. The UAE is a major force in OPEC, the cartel of oil-producing nations. It is a hub for oil traders, too. In 2021, the Intercontinental Exchange, a commodity exchange with big operations in Europe, America and Asia, started trading a new oil futures contract for regional crudes delivered in Fujairah.

The emirates are thus the world in microcosm. The disastrous hazards of climate change are manifest. The oil industry has never been bigger. When demand slumped during the covid-19 pandemic some hoped that it would never return to its previous heights. But it has since surpassed them. In 2023 the world produced 101.8m bpd, according to the International Energy Agency (IEA). Carbon-dioxide emissions from oil in that year are estimated to have reached 12.1bn tonnes a year, according to the Global Carbon Project, an academic consortium, representing 32% of all industrial emissions. Any attempt to keep the increase in average global temperature since the 19th century "well below 2°C [3.6°F]", as required by the Paris agreement of 2015, has to see those emissions reduced both sharply and soon.

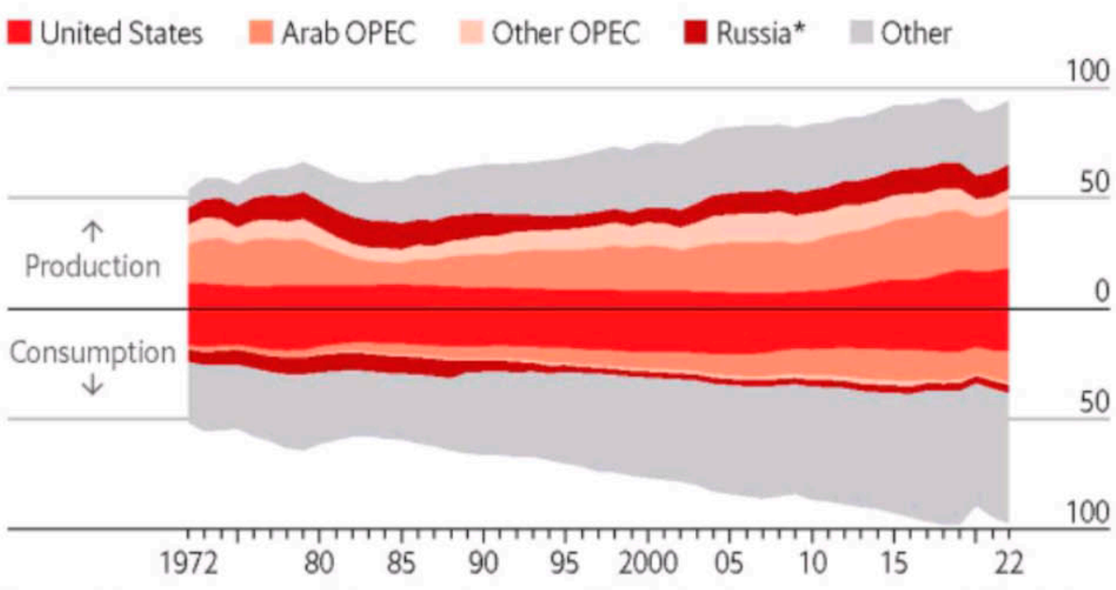
No one is being forced to buy oil (though in many places people receive subsidies to help them do so). And every economy needs it. Nevertheless, many of those pushing for emission cuts have a deep distrust of the industry which provides it to the world. That the oil industry has an interest in self preservation is hardly surprising. But it also has a history of attempting to undermine climate science so as to encourage climate-change denial even while its own scientists have known full well what was going on. It wields huge lobbying power which frequently (infuriatingly so, to opponents) prevails when climate action threatens its future profits. Oil companies which try to seem like climate goody-goodies—witness the attempt by BP, a British oil major, to rebrand itself as Beyond Petroleum in the 2000s—routinely revert to type when the associated business strategies fail to deliver the goods. ▸▸

## Going with the flow

Brent crude, $ per barrel, 2022 prices




Global oil production and consumption, millions of barrels per day




Sources: World Bank; Refinitiv Datastream; Bloomberg; BP Statistical Review; IEA *USSR until 1989

Oil-producing countries have worked to lower the ambitions of the annual conferences, known as COPs, held by the UN Framework Convention on Climate Change (UNFCCC) ever since the COPs began in 1995. They are a large part of the reason why, for decades, the COPs never specifically acknowledged the need to reduce the use of fossil fuels. When, in November 2023, thousands of diplomats, politicians, scientists, entrepreneurs, lobbyists and journalists arrived in Dubai for COP28 many did so itching for a fight about this, their indignation whipped up by the UAE's decision to appoint Sultan al-Jaber, the boss of ADNOC, as the COP's president.

But COP28 ended in December with a significant, though symbolic, step forward. Its final communiqué called on the countries of the world to contribute towards a transition "away from fossil fuels in energy systems...accelerating action in this critical decade, so as to achieve net zero by 2050."

To "call on" is not to require; to "contribute to" is not to wholeheartedly pursue. "Transitioning away" is not the "phasing out" many of the delegates would have preferred. In all those ways, the agreement was weak beer. But it still marked a historic turning point in climate negotiations: a declaration from the heart of the oil establishment that demand for the defining resource of the 20th century should start to fall. Though "we didn't turn the page on the fossil-fuel era in Dubai," Simon Stiell, the head of the UNFCCC secretariat, said afterwards, "this outcome is the beginning of the end."

**In October 1973, before OPEC imposed its embargo, a barrel of oil cost a bit more than $3. By March 1974 a barrel cost $13**

If that is true, it is not necessarily to the disadvantage of the UAE. The country sees itself as being able to keep going until the end of the end, if necessary. The best of the reserves around the Persian Gulf are both vast and relatively cheap to exploit. What is more, for the most part working them does not, in itself, emit as much carbon dioxide as does production in other places. Other things being equal a world reducing its dependence on oil will abandon higher-cost producers first.

But transitioning away still means a change in the fundamental dynamic of the oil industry, one which has shaped it and its relationship to the world economy for 50 years. In October 1973, infuriated by America's support for Israel in the Yom Kippur war, the Gulf nations in OPEC placed an embargo on sales to America and its allies. Before that embargo a barrel of oil cost a bit more than $3. By March 1974 it cost $13. Before the embargo the oil price had been stable for decades. Since 1973 it has been persistently, sometimes remarkably, volatile (see chart).

"It's hard to overstate the shock to the American psyche from the seemingly overnight skyrocketing of prices, stations running out of fuel and long lines," says Jason Bordoff, an energy policy expert whose father's petrol station in Brooklyn was besieged by angry customers. Now head of the Centre on Global Energy Policy at Columbia University, he remains convinced that the oil shock of 1973 and its successor, the shock which followed the Iranian revolution of 1979, "framed energy policy for half a century".

The 1970s showed what a range of economic, political and geopolitical effects oil-supply shocks can have. In developed countries the increases in prices and the central-bank reactions to them drove up inflation and stifled the economy. That set the scene for the rise of free-market politicians like Margaret Thatcher and Ronald Reagan in the years which followed.

Because many of the OPEC countries had little to invest in at home, the "petrodollars" they were raking in ended up invested in international banks, making them keen to lend. Developing countries, keen to borrow, saw their debt climb quickly. The IMF calculates that 100 developing countries saw their foreign debt rise by 150% between 1973 and 1977. The 1979 shock then sent interest rates soaring, triggering the third-world-debt crisis of the 1980s—sometimes called the lost decade of international development.

### Two score years and ten

Fifty years on is often a good time to look back on a radical change. It fits well with a human lifespan. It lets people born after the change understand better what is special about the world they have always known, what is necessary and what contingent. Those towards the end of life can provide first-hand accounts of the change and its aftermath.

That would be reason enough for taking stock of the world which the oil shock of 1973 created. But the turn acknowledged in Dubai last December makes the task more urgent. The post-1973 oil market has always been a tussle between the rate at which supply—sporadically co-ordinated by OPEC—and demand have grown. In a climate-constrained world that growth must end. Some imagine it plateauing; some insist it must fall far and fast. If, or as, that happens, the questions of the past—where will new supply come from, and how secure will it be—become further complicated by new worries: who will stop supplying, and what effect will that have. When demand is rising, overestimating the trend can lead to over-investment. When demand is falling, under-investment may be a bigger risk.

This special report will assess how oil consumers could come to demand less and the effects that shift can be expected to have on both OPEC and on the West's big oil companies. First, though, it will look at how much more resilient the oil world has grown to upsets since the shocks of the 1970s. ■

Supply shocks

# Crisis and after

**Supply shocks are more easily handled in a world where America has a lot of oil and markets have many players**

In January 2022 Brent crude, the benchmark against which the majority of crude oil is priced, soared above $87 per barrel for the first time since 2014. By early March, after Russia's invasion of Ukraine, the price had jumped another 50%. The markets were afraid that sanctions on Russia, one of the world's three largest oil producers, would sharply reduce worldwide supply.

Governments were worried about gas, too; if Russia turned off the taps what would happen to the European economies reliant on the stuff? The "World Energy Outlook" published that autumn by the IEA, an intergovernmental organisation which brings together big energy-consuming countries, proclaimed that the invasion's impact on oil and gas markets had brought about the world's "first truly global energy crisis, with impacts that will be felt for years to come". The shock of 1973 (which had, among other things, led to the creation of the IEA) was focused on oil alone and had its prompt effects in developed countries. The post-February 2022 energy crunch was felt more widely more quickly.

But if more of the world was vulnerable than it had been in the 1970s, the energy system was also more robust. In response to the shock of 1973 consumer nations set up petroleum reserves, co-ordinated by the IEA, with which they could counter sudden supply shocks. March and April of 2022 saw the largest-ever releases from those reserves, including major withdrawals from America's Strategic Petroleum Reserve (SPR).

Opening reserves offers some respite; America's treasury department calculated that the withdrawals from the SPR in the first part of 2022 lowered petrol prices at the pump by between 17 and 42 cents a gallon. But it is necessarily a short-term response. A greater source of resilience was the market itself. In the 1970s the oil market was a brittle, secretive enterprise. Over the decades which followed it grew into a sophisticated and largely transparent market worth over $2trn—bigger than the markets for the next ten commodities combined.

Edward Morse, who until recently ran commodities research at Citigroup, a bank, says the development of new ways of trading contracts and futures has, along with a much more liquid market, come to "provide an alternative world to the beggar-thy-neighbour approach that lay at the core of the Arab boycott and which has characterised OPEC politics since". As a senior figure at a trading house puts it: "We now have a much more global, interconnected system that responds to price. If an arbitrage opens up in crude or products...you'll see it happen." With Russia's export markets restricted, in practice, to China, India and Turkey, the market adapted to the new realities.

This did not just mean the efficient reallocation of supplies from countries other than Russia. It also meant that the sanctions were not as effective as those imposing them had hoped. Saad Rahim, chief economist of Trafigura, a commodities-trading goliath, points to the role played by middlemen in rerouting Russian oil away from its usual customers. Traders based in Dubai and Singapore have rejigged tanker fleets to send vast quantities of discounted oil through Indian refiners, changing established routes with astonishing agility.

Badr Jafar, head of Crescent Group, an Emirati firm with natural-gas operations in Iraq and Egypt, says he has seen a big rise in "grey-zone trading" of sanctioned crude, often through middlemen in the UAE. He says the lack of "secondary sanctions on Russia that would actually stifle this trend" shows a tolerance from the West. The success in getting Russian oil to market may see more grey-zone trading from other sanctioned countries, too.

Even when sanctions leak they still have an effect on the price the sanctioned country can get, and thus its income. And they erode future capacity. Sanctions aimed at stopping oil companies from getting the technology they need have holes of their own, but they still have an effect. Arjun Murti , a veteran market-watcher who writes about energy at a site called "Super-Spiked" says Iraq, Iran, Libya and Venezuela have never fully recovered the production levels they had before America sanctioned them. Some in the industry are impressed by how well Russia's resourceful oil sector has kept production going in the face of such sanctions; it remains to be seen, though, how long it can do so.

## Give me a shale play and a place to stand...

And then there was a third factor. Over the course of the 1980s and 1990s a small number of American entrepreneurs pursued an apparently quixotic interest in using high-pressure water laced with chemicals and grit to break up recalcitrant rocks. They believed that this hydraulic fracturing, or "fracking", an approach which had been the subject of government research in the 1970s, might get gas out of rocks that were too "tight" to yield it up under normal conditions. They were right. In the early 2000s fracking, coupled with advances in horizontal drilling, saw previously untappable shales produce gas in abundance.

Sometimes, in the oil business, geopolitics drives technology, as when the closing of the Suez canal in 1956 brought the supertanker into being. On other occasions new technology drives geopolitics. That is what has happened with fracking.

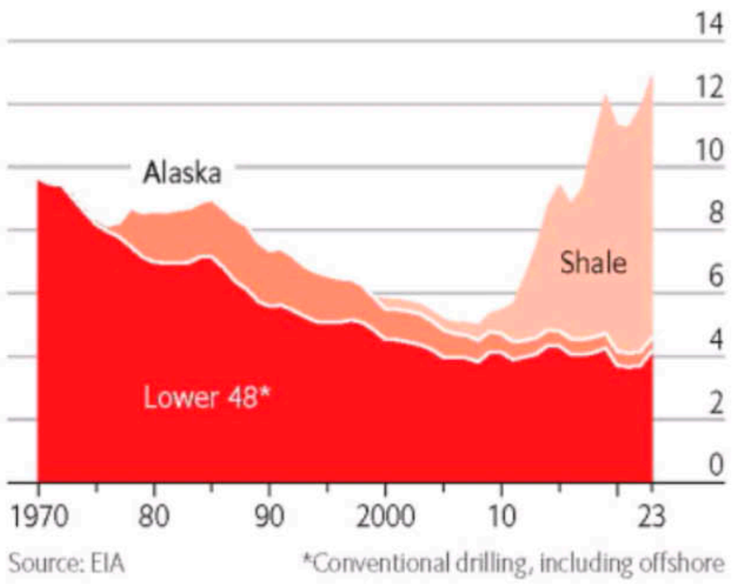
Shale-gas production quickly rose to the point where the American market was glutted. Liquefied natural gas (LNG) terminals originally intended for imports were thus reconceived as a way for shale-gas producers to access the higher prices offered on world markets. Between 2016, when the first American export terminal opened, and 2022 the volume of the world's LNG trade rose by 56%. Further growth in American LNG exports should see the trade overtake pipelines to become the main modality for cross-border natural-gas sales.

Because of this, the winter of 2022-23 was nothing like as bad for Russian-gas-deprived Europe as had been feared. The continent reduced demand through various measures and increased LNG imports by more than 50m tonnes, or 66%. Some 44% of that came from America, with customers in Asia selling their contracts to customers in Europe as the ships involved were at sea, re-routing the flow almost in real time. The spike during that period in LNG prices around the world, a serious blow not just to poor and natural-gas-dependent countries such as Bangladesh and Pakistan but also to middle-income countries such as India and Brazil, was part of what the IEA had in mind when signalling the global nature of the crisis.

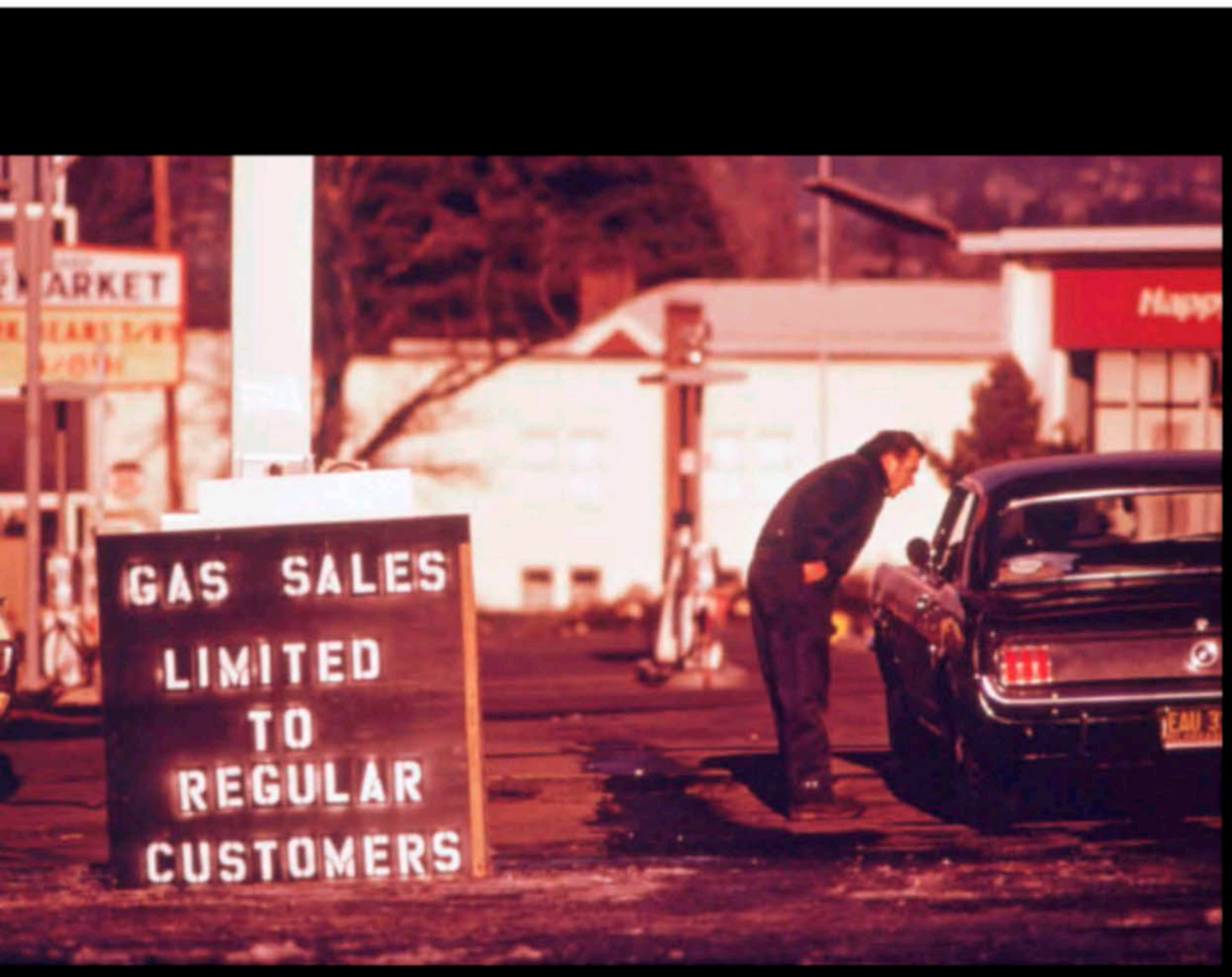
**New rush**

United States, crude-oil production

Millions of barrels per day




Source: EIA *Conventional drilling, including offshore




Not your father's oil crisis

The blunting of Russia's gas weapon is just one of the ways in which America's new drilling technologies changed the world. The fracking which worked for gas also worked, *mutatis mutandis*, for oil. Between 2005 and 2015 petroleum production in America rose from 8m bpd to 15m bpd and the country's oil imports fell from 14m bpd (an all-time peak) to 9m bpd. Having lost its long-held crown as the world's largest oil producer in the 1970s, falling first behind the Soviet Union and then Saudi Arabia, in 2018 America regained it. It is now not just the world's largest producer and consumer of both oil and gas but a net exporter of them, too.

This does not mean America has complete sway over the energy world. In oil it is a price-taker, not a price-maker; its shale sector cannot ramp production up and down in the way that Saudi Arabia can. But it does mean that the world's most powerful country no longer faces crippling worries about energy security. In the future protracted high prices will see the shale sector expand.

### ...and I will move the world

The geopolitical implications go beyond keeping Europe warm. America's lessened imports meant its worries about the flow of oil from the Gulf, a constant from 1973 through the Gulf war of 1991 and into the 2000s, began to wane. They also made it possible for more of the Gulf's oil to flow east. In the 2000s China's economy was growing at an unprecedented rate, and with it the country's thirst for oil. The addition of America's shale oil to the global supply thus came at an opportune moment. "US-China competition for resources...seemed inevitable in the mid-2000s", says Meghan O'Sullivan, director of the Belfer Centre at Harvard's Kennedy School of Government. But despite the fact that China's demand drove prices up, that competition did not become the flash point many feared, she says, because "energy was abundant". In 2013, the year after Xi Jinping took power, China overtook America to become the world's largest crude-oil importer.

With China's rise becoming the paramount geopolitical factor of the age, America's response was a "pivot" to East Asia—and thus away from the Middle East. That change in focus was put on clear display when, on September 14th 2019, two oil-processing hubs owned by Saudi Aramco, the country's national oil company, were crippled by missile and drone attacks staged, at least in part, by Iranian-backed Houthi rebels in Yemen. Aramco's production fell by 5.7m bpd.

In 1990 a fall in production of 5m bpd caused by the Iraqi invasion of Kuwait saw prices spike to a once-in-a-decade high—followed, six months later, by an American-led war. In 2019 America offered a token increase in the number of troops it had in the Gulf and some upgrades to their kit. If attacks on Saudi assets had continued or threatened stability, much more would surely have been done. But the American response, or lack of it, was keenly felt. "Abqaiq got attacked and the United States didn't raise a finger," says Jason Bordoff of Columbia; it marked a turning point.

Yet the change in America's priorities is hardly abandonment. And if it has created even a partial void, it is not one others are keen to fill. The increased role Asian economies play in the Gulf is plain for all to see. Chinese state enterprises are the leading investors in Iraq's oil sector and have invested in one of the biggest Saudi refineries. Chinese solar firms have made inroads into the UAE. On a state visit to the UAE in July 2023 Narendra Modi, India's prime minister, persuaded his hosts to start trade settlement in local currencies, not the dollar.

These economic ties do not, however, mean that Asian countries are keen to take on a role in ensuring the region's stability. Robin Mills of Qamar Energy, an advisory firm in Dubai, says relations between China and the Middle East are broad but shallow, with little attention paid to security. The deal normalising relations between Saudi Arabia and Iran that China brokered in 2023 suggests deeper engagement is possible, but it is likely to be slow.

The current turmoil in the region makes the case. For all its attempted pivot, America remains deeply involved and implicated in the conflict which began with the Hamas atrocities of October 7th. Asia's major oil consumers are not. They do not share America's interest in containing Iran, which in 2023 sold more than 90% of its crude to China. Few are committed to the support of Israel, or to backing America's effort to keep the Red Sea safe from the attacks Houthis are launching in support of Hamas.

Things would doubtless be different if it were transit out of the Gulf, rather than through the Red Sea, which was at risk. Something like a fifth of the world's oil flows through the Strait of Hormuz at the mouth of the Gulf. Since 1980 America has been committed to opposing outside influences in the Gulf, including by force of arms if necessary; assuring free passage through the strait is at the heart of that "Carter doctrine".

Despite its shale-oil wealth America still has a clear interest in staving off the shock to the world economy, not to mention the blow to its own prestige, which would ensue if the strait were closed. And Iran has every reason not to jeopardise the 1m bpd that it exports to China through the strait. It would take a big shift to change things. But that big shift is not unthinkable. If China mounted a blockade of Taiwan, or invaded it, America's response might include attempts to try and shut off China's supply of oil at ▸▸

the Strait of Hormuz or the Strait of Malacca, between Malaysia and Indonesia. It would be one of the many ways in which such a conflict could prove disastrous for the world economy.

Absent such greater global conflict, turmoil in the Middle East seems no longer enough, in itself, to roil oil markets which are sophisticated and global, and in which America can operate with the confidence of a major producer. The rise of LNG further stabilises the energy picture. But there are two caveats.

One is that climate politics might see countries try to restrict supply. It would be a hard task. To shut down another country's fuel exports is both hostile and difficult, as Russia's ability to keep exporting oil shows. To shut down your own exports penalises domestic industry and, in a world with large and liquid markets, is unlikely to do much to lower overall emissions.

Take the "temporary pause" in the granting of permits for new American LNG terminals which the Biden administration announced in January, citing the need to better understand the climate impact of increased gas exports. The pause is widely seen as a move to placate young voters for whom climate is a big issue and to whom the idea that America can at the same time be a leader on climate and the world's biggest oil and gas producer makes no sense. It will certainly not stand if Mr Biden loses the election.

Nor is it clear what an audit of the net climate effects would show. To the extent that less growth in American LNG exports is not simply offset by more from Qatar and Australia, consumers who might otherwise have used LNG might be tempted back to coal. In America natural gas kept cheap by being shut off from the world market might displace renewables.

The other caveat is that, for the moment, the oil market is quite slack. Though demand is at an all-time high, it is not as high as it might have been, in part because of China's economic woes. Stocks are robust, and the countries of OPEC have spare capacity.

Were the market to tighten, though, supply-side signals would then take on new meaning. And how tight the market ends up depends not just on demand but also, crucially, on what producers expected demand to be today when they made their investments yesterday. When it comes to the prediction of demand, concerns about climate change have a much bigger role. ■

Demand

# The end of oil, then and now

**It is possible to cut oil demand. That does not mean it is easy, or will be done well**

IN 1977 JIMMY CARTER told the American people it was time for "an unpleasant talk" about the energy crisis. The off-putting subject matter—the greatest peacetime "threat our country will face in our lifetimes"—was not just the need to import more oil at higher prices than almost ever before as a result of America's falling domestic oil production. It was the idea that America's falling production was a harbinger of reserves running out everywhere. It was time to think of a world without oil.

His belief in a fundamental constraint proved wrong both globally and within the United States. Increased production from Alaska's North Slope, made possible by the trans-Alaska pipeline system which the federal government had approved in response to the shock of 1973, saw a moderate bounce-back in American production in the years that followed. Another government measure taken in response to the embargo—in 1977 a Department of Energy project in Colorado demonstrated the feasibility of "massive hydraulic fracturing" as a way of releasing hydrocarbons from shales—would in the long run have an even greater impact.

**"We are quite good planning the supply but always wrong on demand"**
**—Patrick Pouyanné**

But if Mr Carter's long-term view was wrong, the mixture of policy and innovation that he championed still had a big effect over the decade which followed. And it is also central to today's attempts to bring about a world without oil by design, rather than stumble into one catastrophically.

The approach was based on two proven ways to reduce dependence on a fuel: use a different source of energy in its place; or improve the efficiency with which the fuel is used. Faced with much more expensive oil, utilities in America and elsewhere in the developed world took the substitution route and gave up on the fuel as a way of making electricity. In some places, such as France, Japan and Sweden, government-controlled utilities switched to nuclear power instead. In America the market-driven response was to switch to coal, in part because of ample supplies, in part because of the higher costs of nuclear energy.

The American government took a more active role when it came to efficiency. Corporate Average Fuel Economy (CAFE) standards were mandated by Congress in 1975. When they came into force in 1978 they required an average fuel efficiency of 18 miles per gallon (13 litres per 100km) across carmakers' product lines; by 1985 that was up to 27.5mpg. There were other efficiency programmes, too. And consumers economised off their own bat.

## Efficiency sufficiency

All told, American oil consumption fell by 17% from 1977 to 1985, even as the country's GDP rose by 27%. Coupled with similar responses elsewhere this led to a glut that almost destroyed OPEC by heightening the fundamental tension within any such cartel. In the long run the cartel as a whole stood to gain if its members limited production enough to raise prices; in the short run each member had an incentive to try and circumvent such limits.

As the swing producer, Saudi Arabia had the job of matching supply to demand. In 1985 it became sufficiently fed up with reducing its own output to try and constrain supply while other OPEC members broke their quotas that it turned on the taps. The oil price fell like a stone. With the exception of a spike when Iraq invaded Kuwait in 1990 it remained at its lowest post-1973 levels until the second half of the 1990s.

The response to the oil shocks was thus an example of the oldest adage in the oil market, that high prices are the cure for high prices. What followed in the late 1980s and 1990s was an example of a less storied corollary: low oil prices erode policies designed to lower oil consumption. In a world of cheap oil, measures aimed specifically at increasing the efficiency of its use fell by the wayside. In 2005 the total-fleet CAFE standards for American cars were the same as they had been in 1985.

But even without active encouragement one crucial measure of efficiency continued to improve long after oil prices took their downward slide: the amount of oil it takes to produce a given amount of economic output (see chart on next page). Research on the oil intensity of GDP conducted by Christof Rühl of CGEP and Tit Erker of the Abu Dhabi Investment Authority shows that from 1984 to 2019 the fraction of a barrel of oil required to produce $1,000 of income (at 2015 prices) fell by almost exactly 1% a year.

This does not mean less oil was used. It is possible to use something more efficiently and also to increase the amount you are using. Indeed, using something more efficiently can help drive such increases, because it raises the value of what you can do with the ▸▸

stuff. But lowered oil intensity does show that economic growth is not tightly coupled to oil use, which is an important proof of principle for decarbonisation. And because it happened without significant interventions, it suggests that with the right policies the trend could be steepened.

On a beautiful summer day last year, dozens of energy ministers, company bosses and international policymakers gathered at a conference a stone's throw from the palace of Versailles for an energy-efficiency summit hosted by the IEA. Fatih Birol, the agency's executive director, was keen to tell them that the adoption of energy-efficiency measures was both necessary and achievable. Countries representing some 70% of the global economy, he said, introduced efficiency policies in 2022. And that year's rate of improvement turned out to be much higher than the historical average. Later in 2023 many of the nations attending COP28 in Dubai signed a renewables and energy-efficiency pledge which committed them to doubling the average rate of energy-efficiency improvements over the rest of the decade from the current 2% a year to over 4% a year.

These measures are aimed at energy efficiency in general. For oil, in particular, there is also a new interest in substitution. For the first time since electricity utilities abandoned it in the 1970s and 1980s, a large oil-consuming industry has a new alternative.

In 2016 annual worldwide sales of electric vehicles (EVs) were still below 1m. In 2022 they surged past the 10m mark. In 2023 sales of EVs and plug-in hybrids reached almost 14m. This growth, originally driven by subsidies (though good engineering helped), is getting close to self-sustaining as economies of scale drive down prices. With EVs making up more than 10% of new-car sales worldwide, it is now plausible to imagine scenarios in which oil demand begins dropping faster than it has grown.

Perhaps the most influential of these scenarios is from the "Net Zero by 2050" report the IEA published in 2021, which featured a scenario in which radical action reduced net emissions to zero by mid-century. It saw oil demand drop by more than a quarter by 2030 and by three-quarters by 2050. Scenarios similarly constrained by net-zero targets produced by BP and BloombergNEF, an energy-research firm, produce similar results (see chart).

Some forecasters assumed that demand would never fully recover from the 20m bpd drop experienced at the nadir of the covid-19 pandemic, that peak oil demand was in the past. The IEA's original scenario fell at the first hurdle. But the agency maintains that even under today's policies oil use will peak this decade, and with more aggressive policies it could fall by a quarter by 2030.

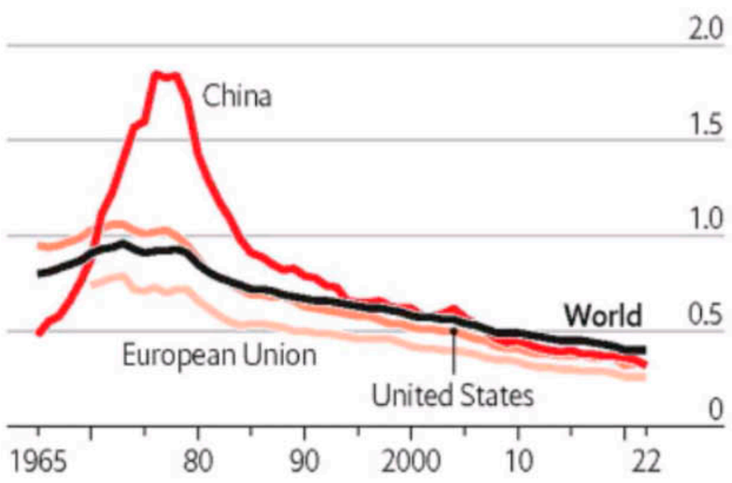
Under Dr Birol the IEA is an openly partisan reasoner. It knows the world needs demand to drop fast if warming is to be kept anything like in check. Others reach different conclusions. Some see the potential of EVs as overblown. Yes, sales have been peppy, but their share of the fleet is still only 2% worldwide. What is more, cars last a long time these days. Ben Dell of Kimmeridge, an energy-investment firm, says that without policy interventions fleet turnover takes a couple of decades, with older petrol vehicles being sent to poorer countries rather than simply being scrapped. Rystad, an energy-research firm, notes that passenger vehicles account for not much more than a quarter of global oil demand. Other sectors like aviation and shipping, which lack competitive alternatives to petroleum, may see increased efficiency but are less amenable to outright substitution.

Such considerations allow OPEC, ExxonMobil and others with preconceptions unlike the IEA's to imagine oil demand growing into the 2030s, and after that declining only slowly. Arjun Murti of Super-Spiked is truly bullish: Global oil demand is "on track to obliterate peak demand concerns fuelled by the IEA's infamous 'Net Zero by 2050' report...The oil industry is nowhere near being in its sunset phase." Daniel Yergin, a Pulitzer-prize-winning chronicler of oil's effects on the world as well as vice-chairman of S&P Global, a financial-data firm, observes that "a quarter-century is a very short time to change a $100trn global economy."

That said, sometimes a long-marginalised technology can make a sudden and dramatic difference. Fracking did it for supply; is it impossible that something else will do it for demand? It used to be quite widely accepted that haulage would not fall to electrification in the way passenger vehicles seem likely to. Today that once-conventional wisdom seems much less of a sure thing. A sustainable substitute for jet fuel seems unlikely, but the right incentives could see a fair bit of shipping move to methanol instead of bunker fuel. And if technology is hard to predict, so is policy. Could intensifying climate impacts speed things up at some point? Or will voters reward politicians who slow things down?

**More from less**

Barrels of oil consumed per $1,000 of GDP
2015 prices




Sources: "Oil intensity: the curious relationship between oil and GDP", by C. Rühl and T. Erker, Columbia Centre on Global Energy Policy, 2021; World Bank

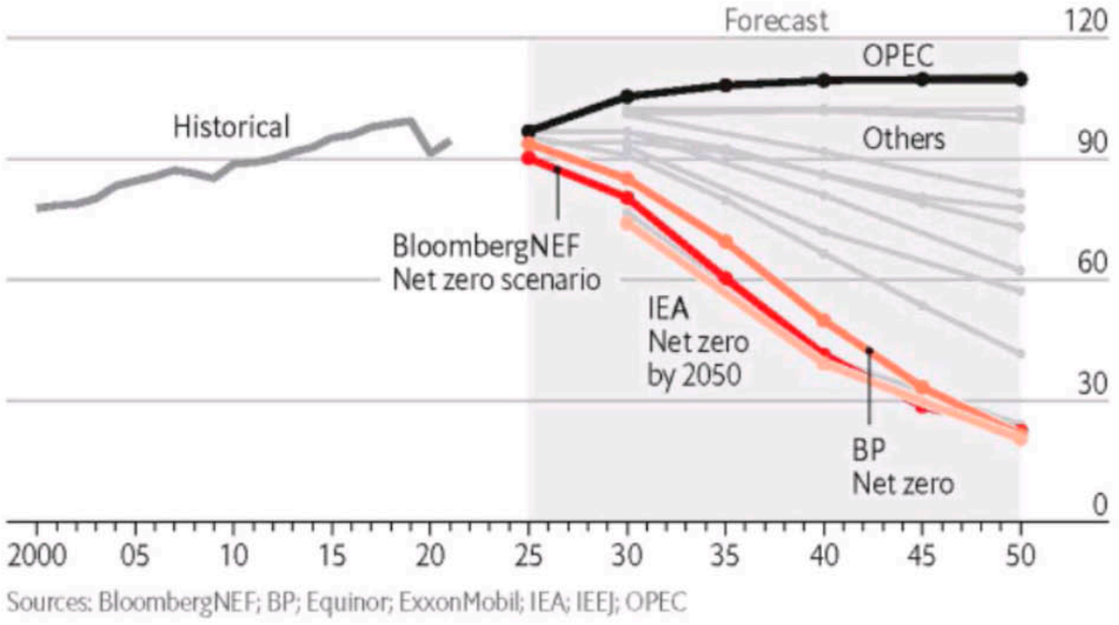
## It goes to show you never can tell

Such divergent views might seem like cause for despair. They are not, though, all that unusual. Forecasts of demand for oil are frequently all over the place. In "Energy at the Crossroads" (2005) Vaclav Smil, a polymathic Canadian professor who wields what may be the most influential pocket calculator in the world, forswears all attempts at forecasting. Among his justifications are the forecasts he himself and others made at an IEA meeting in 1983. As ever the predictions ranged widely; yet in a number of cases the whole range ended up missing the mark. One of the all-too-high cases was oil demand in 2000; the experts had underappreciated the improvements in efficiency that were already under way. "The only small consolation that I can draw", Dr Smil says about that particular set of predictions, "is that my...forecast was less ridiculous than that of the World Bank's chief economist."

And back then oil demand was still concentrated in a relatively small number of developed economies. This century, as the latest of the *World Energy Outlooks* produced by BP points out, has seen a ▸▸

**Pay your money, take your choice**

World oil demand, millions of barrels per day




Sources: BloombergNEF; BP; Equinor; ExxonMobil; IEA; IEEJ; OPEC

"shift in the centre of gravity of global oil markets". In all three of its scenarios the developing-world share of global demand, 55% in 2021, reaches 70% in 2050, and the factors influencing its oil-relevant policies vary greatly from economy to economy. China remains a huge consumer, but becomes less important with time as a marginal buyer. Its very aggressive electrification means its demand could soon start dropping. By 2030 it will be India which contributes most to global demand growth; consumption in Africa and South-East Asia is set to follow fast.

The sheer range of scenarios ensures that most of them are not accurate. Indeed, it is quite possible that uncertainty will remain not just high, but become even higher than it has been in the past. When it comes to increasing supply, the oil industry has a fairly good sense of what is possible at what price. The only time since the 1980s when demand consistently pushed prices up in spite of this was during the unprecedented rise of China. Patrick Pouyanné, the CEO of France's TotalEnergies, recalls how that ended the doldrums of the 1990s: "The lesson is that we are quite good planning the supply but always wrong on demand."

If the oil market is tight, changes in policy by big consumers could roil it. Jason Bordoff worries that a "jagged" energy transition might see new instabilities driven by policies affecting demand. "Could policy in consuming economies be a source of instability and policy shocks, both with climate policies and how clean energy is deployed?" he asks. It is hard not to answer "Yes". ■

OPEC and the national oil companies

# Last men standing

**The petro-states of the Gulf will grow more powerful as the world consumes less petroleum**

THE RUN-UP to a special OPEC symposium held in Vienna last July saw concerted efforts to show the cartel to be effective and united. Pressure from Russia, one of ten countries that align themselves with OPEC's policies to form what is known as OPEC+, for a higher production quota was faced down in April, when it agreed instead to cut production along with the rest of the cartel. A squabble between Saudi Arabia and the UAE, which had demanded an increase in its quotas to accommodate a planned big expansion in production capacity, was resolved in June.

Then, in a surprise move, Saudi Arabia announced a further, unilateral 1m bpd cut in its own oil production from July. This "lollipop", as it was termed by Prince Abdulaziz bin Salman, the self-confident Saudi energy minister, was intended to further shore up prices to the benefit of its fellow cartel members. It was a welcome sweetener. 2022 had been a bumper year with OPEC's net oil exports totalling $888bn, a real increase of 31% over the pre-pandemic figure three years earlier. But soft demand, especially from China, and lower oil prices were taking the edge off. In the end OPEC's net oil export revenues in 2023 dropped to $656bn.

"Saudi Arabia has played its cards very well," Christyan Malek of JPMorgan Chase, a bank, observed at the time. With OPEC+ controlling 40% of the world's oil production, the card sense of the cartel's dominant power matters a lot. Saudi Arabia's clout within the cartel comes not so much from the level of its production (Russia produces roughly as much), but more from its singular willingness to allow significant capacity to sit idle. As the swing producer it can stabilise or raise prices by reducing production or soften the market by increasing it. Lower prices cause disproportionate harm to producers whose costs are higher than the kingdom's—that is, to almost all the rest of the cartel.

That clout does not come cheap. In 2022 Saudi Aramco posted profits of $161bn, the largest ever seen at a publicly listed firm. The lollipop was one reason that the quarterly profits it reported in November 2023 were nearly a quarter lower year-on-year. Production capacity is costly. Spare capacity is, in the short term, money left on the table. Saudi Arabia's post-lollipop 9m bpd leaves it 3m bpd below what it could be producing—roughly equivalent to the entire production of Kuwait.

Some, such as Badr Jafar of Crescent Group, an Emirati business, think the Saudis use this power to keep things on an even keel. They act "as a kind of beneficial central bank for oil supply", he says, "with price stability [the] primary objective." Others are less charitable. Saudi Arabia has twice flooded the market to lower prices, in 1986 so as to punish the cartel members who were not adhering to the cartel's production quotas, and in 2014 to hurt US shale-oil producers. In its attempt to squeeze a recalcitrant Russia into cutting production in 2020, when covid lockdowns were crashing demand, it kept its taps so open that oil prices became negative; for a short while traders had to pay for the stuff to be taken off their hands. Edward Morse, formerly of Citibank, argues that on balance the Saudis are "a very disruptive entity in the market despite claims of being a force for stability."

Adnan Shihab-Eldin, who was acting secretary-general of OPEC in 2005, sees the stability Mr Jafar praises and the disruption Mr Morse deplores as natural poles for a strategy that inevitably "oscillates between going for market share and going for stabilisation in a comfortable price range for both producers and consumers". He says he would grade OPEC's stabilising of oil markets at between a B+ and a B-. But he adds that he would give it an A for its surprising endurance: "People have written it off every decade."

In 1960 OPEC's founders—Iran, Iraq, Kuwait, Saudi Arabia and Venezuela—were seeking collective bargaining power in their negotiations with the international oil companies—the "Seven Sisters"—over the amount of oil revenue that should revert to the country in which the oil was produced. Daniel Yergin, author of a magisterial history of the oil business in the 20th century, "The Prize", says the shocking impact of the grouping's entry into geopolitics in 1973 came from three conditions being met at once.

The first was the blow dealt to the pride of the Arab members by the defeat of forces they had bankrolled in the war against Israel. The second was an America with its eye off the ball. As the Watergate scandal neared its endgame Richard Nixon was becoming increasingly erratic and distracted. The third was that the Seven Sisters had been underinvesting in capacity at a time when demand was growing quickly. The market was very tight.

The effect on the fortunes of the oil producing states was remarkable. Jim Krane of Rice University's Baker Institute calculates that by 1975 Saudi oil revenues were $26.7bn, 40 times higher than they had been ten years before. The revelation of what oil could mean led to more countries deciding that the share of oil revenues they deserved was 100%. The share of oil reserves controlled by the Seven Sisters and other private-sector firms fell from 85% in 1970 to 12% in 1980.

**"The only thing worse than OPEC controlling the world oil market is OPEC not controlling it"—a former adviser to George W. Bush**

Beyond state coffers, the longer-term results were more mixed. In 2010 Sheikh Zaki Yamani, who as the energy minister of Saudi Arabia became a global figure in the 1970s, said the embargo's aim had been "not to hurt the economy, just to attract international public opinion" to the plight of the Palestinians. On that basis, hardly a success. So that would be zero for two. And ▸▸

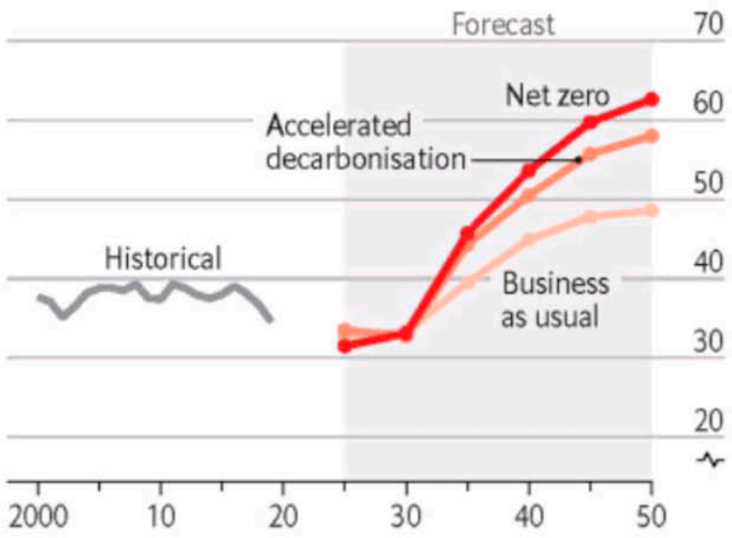
not much more than a decade after the first shock the cartel came a cropper when Saudi Arabia's attempt to discipline the market in 1986 sent the price plummeting to a third of what it had been. Only with Chinese demand in the 2000s did OPEC begin to take on some fraction of its former glory.

It is not all-powerful. Its members cheat on their quotas as they always have. But the results of its perpetual and imperfect trade-off between market share (and with it, influence) and high prices (and with them, income) matters. This should be an affront to all free-marketeers. But many have made their peace with it. The cartel is part of the furniture of geopolitics.

Robert McNally, who was President George W. Bush's energy adviser, says studying oil's painful price cycles shows that "the only thing worse than OPEC controlling the world oil market is OPEC not controlling it." Meghan O'Sullivan, who also worked in the Bush White House and is now an adviser to the secretary of state, Antony Blinken, points to the booms and busts which have bedevilled the oil industry from its early days and suggests the market "seems to require some kind of intermediary". Before OPEC, the oil market was tightly controlled by the Seven Sisters in the 1950s and 1960s and in the 1930s by the Texas Railroad Commission. OPEC's distinction lies in the endurance Dr Shihab-Eldin points out—and in the fact that its interests are not always aligned with the West's.

**All roads lead to Riyadh**

OPEC, market share of global oil supply, %
By scenario




Source: BP

What does this endurance look like in a world with a structural decline in demand driven by climate policy? For the Gulf states the outlook is rosy. They produce a lot of oil cheaply and have the capital needed to produce more. Predictions of future supply see more of it coming from them, and the faster the world decarbonises the further their concentration goes.

Saudi Arabia and the UAE are reducing domestic oil usage to allow more exports. The Saudis are following the UAE towards nuclear energy. Both are deploying renewables at home and looking to export them overseas. Masdar, an Emirati green-energy company run by Sultan al-Jaber before he moved to ADNOC, its oil-producing part-owner, plans to install 100GW of renewable capacity around the world by 2030, a plan which if achieved would make it one of the world's biggest operators of wind and solar power.

Gulf oil has the advantage of being less carbon-intensive than other oil: low in carbon content and easy to extract. The UAE is leaning into this. ADNOC has committed $23bn to decarbonisation projects, including $4bn for shipping onshore carbon-free electricity to power its offshore operations. The same money could be used to expand production. The emirates chose instead to produce more cleanly. Western oil majors are pursuing decarbonisation strategies because investors demand them. As with hosting the UN's COP28 climate conference, the UAE's aim is to be seen as supplier of choice in a climate-concerned world.

Other members of OPEC+, and national oil companies (NOCs) beyond the cartel, cannot or do not want to be part of this trend. Many have reserves that are expensive to access (what the trade calls "high lifting costs") or have greenhouse-gas-intensive operations. Sonatrach, the Algerian NOC, emits three to four times as much carbon-dioxide-equivalent per unit of oil and gas produced as do the goliaths of the Gulf. Whereas the oil majors in the West put about 15% of their capex into decarbonisation, Wood Mackenzie, a consultancy, finds that on average state firms spend less than 5% of their capital that way, despite the efforts of outliers like the UAE and Malaysia, where Petronas plans to devote 20% of its capex to decarbonisation. Some do not need to. But those which must seek capital in international markets will find it increasingly difficult if they do not.

Firms like Indonesia's Pertamina, Angola's Sonangol and Mexico's Pemex will struggle as reserves dwindle and production costs rise. But the investments that might keep them in business look unlikely to pay off if demand were to drop substantially. A recent analysis by the Natural Resources Governance Institute, an Ameri-

Consider the alternatives

can watchdog, suggests that, of the $1.8trn that NOCs plan to invest over the next decade, $1.2trn is in projects which would not break even under the IEA's net-zero scenario.

Even if the real decline in demand is slower than that, many NOCs still have an incentive to produce as much as they can with the kit they already have at hand, a strategy known as "pump and slump". If they do so too blatantly, though, they may attract the ire of Saudi Arabia and see prices fall beneath their feet.

The massive investments the Gulf countries' sovereign-wealth funds are making in private-equity and venture-capital funds abroad and in sectors like tourism, sports and finance at home means that their incentives are to keep the oil price from doing undue harm to the world economy. That does not mean a low price. The IMF believes Saudi Arabia needs $80 a barrel to cover its lavish spending. A bit more is always welcome; you never know when it might be nice to supersize a football league. But pushing prices sharply up for short-term gain looks unlikely, as does any attempt to use the price politically. "The oil weapon is not on the agenda," says Dr Yergin.

The logic is sound. But leaders of countries can change, and priorities change with them. Another geopolitical crisis could put the oil weapon back in play. The world economy is more resilient than 50 years ago, but what remains true now is that the power to wield such a weapon is in the hands of so few. As Fatih Birol, the IEA's boss, puts it with admirable restraint, "Concentration in one or two countries is risky—even if they are the most innocent." ■

Oil companies without the oil

# The fork

**If the oil age is destined to spend its last days in the Gulf, what is Big Oil to do?**

WAEL SAWAN, the boss of Shell, is not planning to cede the world of oil production to the advantaged countries of the Gulf in the immediate future. He says the company hopes to compete with the Gulf "to the point of discomfort". But he also acknowledges that "there is no chance for any of the investor-owned companies to be the last man standing."

As of today, those oil companies look in reasonably good shape. In the late 2010s the industry spent a lot less than usual on ensuring future production, with bosses grumbling about how climate-based regulations, anti-oil activism and environmental, social and governance (ESG) concerns made their lives impossible. When it further cut capex during the pandemic demand slump, Daniel Yergin of S&P was one of those publicly worrying about a new era of "pre-emptive underinvestment" built on the mistaken assumption that "sufficient alternatives to oil and gas would already be in place at scale by now."

In truth, investors had a simpler reason for withholding their cash in the pre-pandemic years: the industry's pathetic returns. The oil and gas industry was the worst performing sector of America's benchmark S&P 500 share index from 2010 to 2020, in large part due to the money-sucking shale boom. Since then the investor-owned firms have boosted efficiency, slashed costs and ditched assets. Natasha Kaneva of JPMorgan Chase has calculated that $1m spent on upstream capex in America in 2023 yielded twice as much oil as did the same amount spent in 2014.

Investors have taken note of this more efficient use of capital, and also of the bumper profits which followed the return of demand when lockdowns ended and Russia invaded Ukraine. Upstream investment rose to $500bn in 2022, halfway back up to its 2014 peak of $700bn. For worries about supply being jeopardised by under-investment, in the near term it now makes more sense to look at the high-cost national oil companies (see previous story).

Nevertheless, a recent survey by BCG, a consultancy, found that 84% of investors worldwide thought it important for oil and gas companies to demonstrate profitable growth from low-carbon investments by 2025. Over half the investors based in Europe said they felt pressure to divest from fossil fuels.

A sense that this reluctance will only strengthen has shortened the firms' outlook on investments in their core business. "They are not going into ten-year projects," says Edward Morse, formerly of Citi. Instead they want "short-cycle" projects with the lightest carbon footprint and lowest cost per barrel. A prime example is ExxonMobil's massive recent find in Guyana, which moved from deepwater discovery to production in just a couple of years. Everyone knows such low-hanging fruit is rare.

## Enhancing old rationales

In a sector that will have to shrink there is much to be said for getting out. This is certainly the view among some of the NOCs. In electrification-mad China CNOOC says decarbonised energy will make up over half of its total production by 2050. Colombia's Ecopetrol and Thailand's PTT are also moving into renewables. Some European oil companies have tried similar shifts. Unfortunately, as a study by the Oxford Sustainable Finance Group points out, the project developers and utilities which dominate the renewables business typically pay less for their capital than oil companies, and so can make do with lower returns. It is in part because of their turn towards renewables that shares in European oil companies are trading at a hefty discount against their American peers.

Both BP and Shell have been back-peddling on their embrace of green electrons. BP is making investments in fossil fuels of which there was no inkling in its forecasts of a few years ago. Its hydrocarbon output in 2030 will be just 25% below the 2019 level, rather than the 40% it once touted. Shell's Mr Sawan told an investor day last year that the company is "not particularly differentiated" in the renewables sector. Instead, he is positioning Shell to be a "premium player for molecular energy today and into the future".

Molecular, here, is a bit of jargon which can cover both established fossil-fuel businesses and new ventures which involve other energy-related gases and liquids: biofuels, hydrogen and carbon dioxide itself. Again, some NOCs are interested in this. Saudi Arabia has plans for both hydrogen production and carbon-dioxide sequestration. Tengku Muhammad Taufik, the boss of Malaysia's Petronas, wants to use the firm's many depleted oil fields to sequester carbon dioxide from across South-East Asia. But Big Oil's technological acumen may offer it a real advantage.

At a massive refining and petrochemical complex in Baytown, Texas, ExxonMobil is building what it says will be the world's first full-scale natural-gas-fired clean-hydrogen plant. It will turn methane and water (in the form of steam) into 28m cubic metres (1bn cubic feet) of hydrogen a day and a smaller but still substantial flow of carbon dioxide. The hydrogen will be used elsewhere in the plant or sold on while an underground repository receives 10m tonnes of carbon dioxide a year.

Those 10m tonnes a year on their own would make the Baytown plant one of the largest carbon capture and storage (CCS) projects in the world. But there are a lot of other installations in the greater Houston area that may soon be required to clean up their acts. ExxonMobil hopes to get the total amount of carbon dioxide it disposes of up to 50m tonnes a year by 2030 and twice that by 2040. In the long term, the company reckons that carbon-capture services, which it could sell to industry, and low-carbon businesses like hy-

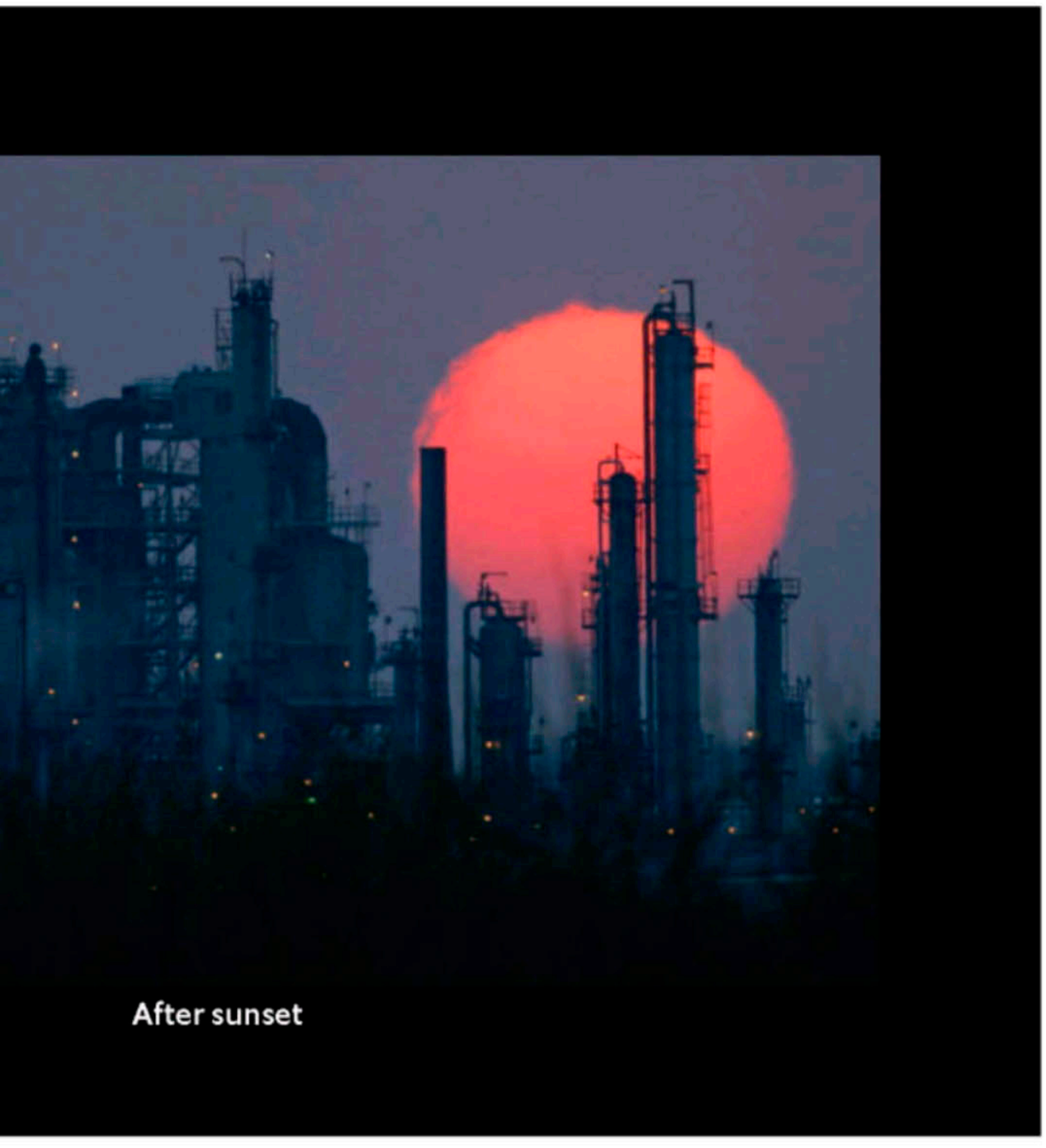
drogen and biofuels could become a market in the "trillions of dollars".

ExxonMobil and its peers are confident that they can make the storage bit of CCS work because they have a lot of relevant experience. Pumping carbon dioxide into depleted oil wells can be a way of squeezing a lot more oil out of them, a process called enhanced oil recovery (EOR). If the carbon dioxide can be shown to stay down the well after the oil comes out, the companies involved can get a tax credit for carbon sequestration on top of the value of the oil recovered.

**Pumping carbon dioxide into depleted oil wells can be a way of squeezing more oil out of them**

Last July ExxonMobil paid $5bn to acquire Denbury, which owns a large pipeline network for getting carbon dioxide to wells that need their recovery enhanced. In August Occidental Petroleum, which is something of an EOR specialist, paid $1.1bn for Carbon Engineering, a Canadian startup which has developed technologies to extract carbon dioxide from thin air, a process called direct-air capture (DAC). Vicki Hollub, the chief executive of Oxy, as the company is known, has grand plans for this DAC technology. Oxy has received a grant from the American government worth up to $600m towards the $1bn-or-more required to build a commercial-scale DAC facility in Texas—one capable of removing 1m tonnes of carbon dioxide from the atmosphere every year.

Oxy plans to build over 100 plants at this scale so as to allow the company to offer barrels of oil attached to "verified decarbonisation credits". These credits would guarantee that an amount of carbon dioxide equivalent to that produced when the oil in the barrel is burned has been sucked back out of the atmosphere at one of Oxy's plants. Ms Hollub says the ability to sell net-zero-emission oil of this sort would give her firm the "social licence to operate" it needs to stay in the oil business.



After sunset

When Ms Hollub says that "we're not going to move away from oil and gas," those who believe that much of the push into CCS, DAC and fossil-fuel-derived hydrogen is intended merely as cover for fossil-fuel business-as-usual no doubt feel vindicated. Even climate hawks generous enough to overlook the oil industry's shameful history of promoting climate denialism it knew to be nonsense will be disturbed by the idea of using DAC to produce "green" gallons of petrol, rather than to offset emissions from processes where avoiding them is very much harder.

You do not need to buy into Oxy's plans, though, to think that the best way to decarbonise some industrial plants will be through CCS, that hydrogen may be a good solution for some problems or that DAC has some sort of future role. Oil firms have the balance-sheets, project-management skills and engineering know-how needed to do that. Such businesses look like a better fit for them than renewable electricity (other than in offshore developments, perhaps, where Big Oil has relevant expertise).

## A surplus of stones

The idea that the oil age will come to an end is not new; nor is the idea that it will end because of alternatives rather than shortages. "The stone age did not end for lack of stones," Sheikh Yamani, Saudi Arabia's energy minister during the first two oil shocks, told his counterparts at OPEC oil ministries, "and the oil age will end long before the world runs out of oil." When he said it, it was a warning about high prices encouraging the search for alternatives. Now, with global warming perilously close to 1.5°C above the pre-industrial level, the meaning is different—and more urgent.

Demand is not set to wither organically in the face of better alternatives or as a response to high prices. Its putative decline will follow a policy-driven trajectory. But that trajectory is not set, and will not remain steady. In the face of such uncertainty it makes sense for some to try and get ahead and move on to other things while others double down, insisting that demand will last. Some will win, some will lose, and the spread of options may mean that supply shocks are minimised in a way that could not be guaranteed if everyone was getting out.

But there is a second concern. The end of the stone age did not mean that, after bronze-orientation day was over, stone was done. The world still uses a great deal of stone. Some in the oil industry seem to think that the same will apply to them; road transport may escape them, as electricity generation has, but with hard-to-displace products like jet fuel still needed and some DAC to clean up its products and image the industry will endure. Such die-hards will lobby ferociously for policies that slow the transition away from them, just as the boosters of renewables argue their opposite case. The difference is that those lobbying for survival will do so more ferociously than those who simply fancy a bit more growth.

The shock of October 1973 showed both suppliers and consumers that they did not fully understand how far into the oil age the world had passed, and how that had made possible a remarkable geopolitical upset. Today's crisis is one of consumers not knowing how to get where they have to go, and producers not knowing how, if at all, they can survive the journey. It is not as dramatic. The prospect of a ruined climate makes it yet more important. ■

**ACKNOWLEDGMENTS** A list of acknowledgments and sources is included in the online version of this special report

Russia

# A plebiscite and a funeral

**Russians go to the polls in a sham election for their president after the murder of his main rival**

AT THE END of this week millions of Russians will take part in the re-election of President Vladimir Putin, the country's longest-serving dictator since Stalin. In a land where opposition politicians are dead, in prison or in exile, where speaking truth to power is a criminal offence and where a paranoid autocrat is happy to kill hundreds of thousands of his own people and his neighbours in order to assert and maintain his power, an election seems entirely unnecessary, a strange charade or a quaint anachronism.

The three-day voting exercise that will begin on March 15th is not an election in the way most people in the Western world understand one. Had Russia been a democracy, Mr Putin would have left power in 2008, when his second and constitutionally last term in office expired. But where war is peace, ignorance is strength and freedom is slavery, the essence of this election is the absence of choice.

With no viable alternative or proper scrutiny, Mr Putin is certain to get the result he wants. Russia's only independent election-monitoring organisation, Golos, has been designated a "foreign agent" and its co-founder is in jail. Yet the inevitability of the result will not make the ritual of voting for Mr Putin redundant. For his regime it is crucially important.

The Soviet leaders who also held fake elections, sometimes with only one candidate on the ballot, could still rely on the legacy of the Bolshevik revolution and victory in the second world war. Mr Putin's tyranny is both more personal and less ideological. It derives its legitimacy from its use of violence and the carefully maintained appearance of popular support. The spectres of external enemies—the West and Ukraine—and internal ones (foreign agents) are invoked to buttress it.

In essence, says Greg Yudin, a Russian political philosopher and research fellow at Princeton University, Mr Putin's presidential election is a form of acclamation—a ritual public expression of approval towards imperial officials that goes back to the time of ancient Rome. (Moscow, it should be recalled, once saw itself as the "Third Rome".) Its role is not to change who is in power, but to give an injection of legitimacy to an ageing dictator. "The decisions are already made by the leader; the role of the people is to say yes—to acclaim," says Mr Yudin.

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## A murderous tsar

Ever since Mr Putin came to power in 2000, his regime has cultivated passivity, turning people off from active politics and calling on them only for the purpose of such public acclamations. As Alexander Selikhov, a celebrated Russian footballer, said after casting his first-ever ballot paper in the 2018 presidential elections, "I've voted for the tsar." Just such a ritual is depicted in "Boris Godunov", the great tragedy by Alexander Pushkin. Godunov, a late 16th-century courtier who was elected tsar by an assembly of servicemen and clergy, is greeted by the people, who are gathered in front of the Kremlin. They duly display their approval, while privately discussing rumours that Godunov had murdered the legitimate heir to the throne.

One person who understood the essence of this ritual acclamation, and who tried to reclaim elections as true political expressions, was Alexei Navalny, Russia's ▸▸

recently slain opposition leader. Though he knew that power in Russia could not be changed through the ballot box, he saw elections as a way of registering dissent. His call in 2011 to vote for any other party than Mr Putin's United Russia mobilised both voters and observers, forcing the Kremlin to rig that year's parliamentary vote so blatantly that it prompted the largest protests in Russia's post-Soviet history.

### Voice from the grave

Though Navalny was incarcerated in one of the harshest penal colonies in the Arctic and charged with extremism, while his organisation was outlawed and some of his allies flung in jail, he continued to challenge Mr Putin and mobilise people. Rather than telling his followers to ignore the fake election, he urged them to turn it into an event where people could manifest their agency, even though they did not have their own candidate. Two weeks before his death, he called on millions to turn up at midday on March 17th—the last day of the three-day voting period—to vote for anyone but Mr Putin, to spoil their ballot papers, or simply just to gather and talk.

"If they decide to kill me, it means that we are incredibly strong," Navalny said shortly before returning to Russia in 2021 and being arrested the moment he landed. But even in harsh solitary confinement he continued, in court appearances and letters, to support people who believed that his version of Russia as a modern European nation was still possible.

By murdering Navalny a month before his "election", Mr Putin wanted to show that there was no alternative to himself and his older, imperialist version of Russia. Unable to contest them at the ballot box, Navalny continues to do so from his grave. His funeral on March 1st became a visible act of defiance.

Despite threats and intimidation, tens of thousands of people in Moscow and across the country have come together to grieve and pay tribute to him. According to Moscow public transport data, between March 1st—the day of the funeral—and March 3rd 27,000 more people than usual used the metro station nearest to the cemetery. Many more people came on foot or by car. They queued for hours, holding candles and photographs of Navalny, singing psalms and chanting "Navalny", "No to war" and, with remarkable bravery, "Putin is a murderer".

They covered his grave with a mound of flowers. Young and old, well-heeled and poor, they did not hide their faces from the pervasive surveillance cameras and the many masked policemen. The soundtrack from "Terminator 2", one of Navalny's favourite films, and Frank Sinatra's "My Way", which were played at his funeral, have now become tunes of resistance.

Those who attended the funeral were struck by the atmosphere not only of personal grief but also of solidarity. People shared food and tea, and embraced each other, well aware that this might be the last time they could protest in such large numbers. And not just in Moscow. Over the past two weeks spontaneous "flower memorials" and shrines to Navalny have sprung up in more than 230 Russian cities, where people have laid flowers and lit candles at monuments to victims of past political repression, in courtyards and entrances to buildings. "Funeral tradition [has] merged with political protest," wrote Alexandra Arkhipova, a social anthropologist.

Yulia Navalnaya, the widow who has stepped up to carry on her husband's legacy, has called on his supporters to maintain this protest and "to use election day to show that we are there and we are many, we are real living people and we are against Putin." Mr Putin plainly fears her. On March 12th Leonid Volkov, Navalny's chief of staff before his death, was attacked outside his home in Lithuania and beaten with a hammer. It bore all the hallmarks of a Putin-ordered attempt at intimidation.

Turning up at midday on March 17th will not lead to a change of power in Russia. But in a country where symbols and gestures carry more weight than statements, Navalny's funeral protest has already cast a shadow over Mr Putin's acclamation. As the holy fool in "Boris Godunov" says when urged to pray for Godunov by the Kremlin churches, "No prayer for the Herod-Tsar...Our Lady won't allow it." ■

Vladivostok

# A window into wartime Russia

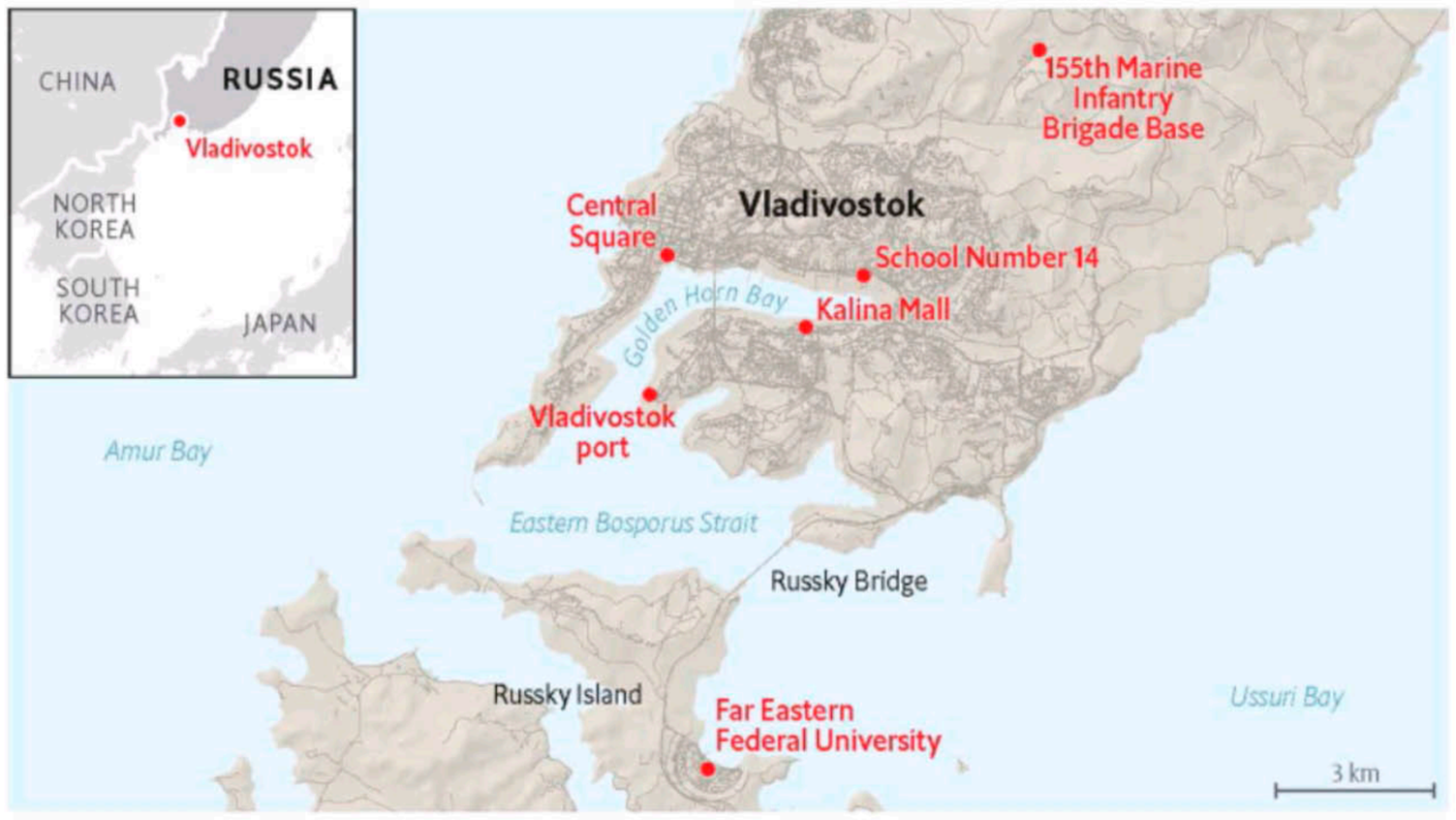
**Vladimir Putin's invasion of Ukraine is transforming the far-eastern city**

IN RUSSIA THE day begins not in the capital, but in the far east. When Vladimir Putin announced his "special military operation" against Ukraine on February 24th 2022, much of Moscow was asleep. But in Vladivostok, on Russia's eastern border, many people were already having lunch. When Russia votes in presidential elections from March 15th to 17th, Vladivostok's results will be among the first to be tabulated. Mr Putin will win the sham contest. Yet the country he will rule is a different one from when his current term began.

Perched at the edge of Mr Putin's would-be empire, some 7,000km from Ukraine, Vladivostok is a good place to observe how the impact of the war has rippled across Russia. The country has become more repressive at home, and more isolated abroad. But its economy and society have proved resilient, and Vladivostok demonstrates that. As Ilya Lagutenko, the front man of Mumiy Troll, the city's most famous rock band, puts it on a recent album, the city has always been one that "made historical zigzags with the ease of a hitchhiking teenager".

Founded in 1860, Vladivostok served as the Russian empire's outpost in its vast far-eastern territories, which had once been

Ruling the east




partly under Chinese control. The city was off-limits to foreigners during the Soviet era, but came to symbolise a new openness after the Soviet Union collapsed. Russian and Western politicians alike spoke of a "Europe from Lisbon to Vladivostok". Such talk largely stopped after Russia annexed Crimea and fomented a war in eastern Ukraine in 2014. Relations with the West soured and the Kremlin renewed its focus on a "pivot to the east".

The latest phase of the war has changed fates across the city. For some, it has been a tragedy; for others, an opportunity. Take Vladivostok's former mayor, who was convicted of taking bribes from an undertaker and sentenced to 16 and a half years in prison in 2023. Late last year he was given an early release to serve in the armed forces.

By and large, Russians, as they have done throughout history, have adjusted to their new realities. As one scholar in Vladivostok puts it: "Have there ever been easy times in Russia? We're used to this, we're adaptive." To get to know Vladivostok in 2024, *The Economist* analysed open-source information, crunched numbers, and spoke with residents by phone and over the internet. The journey begins where the city itself began.

### The gateway to China

On any given day, dozens of ships bob in **Vladivostok's port**, which has become a lifeline for Russia. While container shipments fell sharply after the invasion, those coming through Vladivostok recovered quickly (see chart on next page).

The port has been the centre of life along the Golden Horn Bay since 1859, when Nikolai Muravyov, the governor of tsarist-era eastern Siberia, arrived to survey the region aboard a corvette built in New York. The following year the Russian imperial flag went up above a settlement that Muravyov's team called Vladivostok, meaning "Rule the East". (China kept referring to the city by the name Haishenwai, or "Sea Cucumber Cliffs".) Settlers arrived by ship, including many Ukrainians who boarded steamers from Odessa, enticed by promises of free homesteads.

The ships filling the port today are testament to the growing importance of trade with Asia. The trend began long before the full-scale invasion of Ukraine and it has helped Russia weather the impact of Western sanctions. Two-way trade with China reached a record high of $240bn last year, up by 64% from 2021. In Vladivostok, China alone accounted for three-quarters of imports through the port.

But the window to Asia is not wide enough. Getting goods to and from the port is expensive and time-consuming. Demand for freight on the country's eastern railways is nearly twice as high as capacity. And China is extracting a price: it has begun using Vladivostok, with Russian permission, as a domestic terminal to ferry goods from landlocked provinces in its north-east. Some locals jokingly call the port Haishenwai again.

Some goods coming through the port may end up at the **Kalina Mall.** When it opened in February of 2019 it billed itself as the biggest shopping centre in Primorye, with a supermarket, an IMAX cinema and Western fashion boutiques.

Western sanctions targeted Russia's war machine, not shopping malls. But some politicians also hoped that disruptions to daily life would fuel popular resistance to the war. Ukraine called on consumer brands to leave Russia. At least 373 big Western firms have completely severed ties, according to the Kyiv School of Economics (KSE), a Ukrainian university. Yet plenty of others—more than 2,000, by the KSE's count—decided to stay.

In Kalina there were 36 shops bearing foreign brands when it opened in 2019; there are 26 now. While some big names left, in their place are analogues that peddle similar wares, such as Limé, an up-and-coming Russian fashion brand (see floor plan on next page). In some cases Russian partners continued operating foreign brands' shops. "I can go to the store and buy a new iPad, there's no problem," one Vladivostok shopper scoffs.

### Putin's history lessons

While daily life carries on much as before, the government has sought to alter the underlying fabric of society. Schools across the country are now mandated to hold Monday morning lessons aimed at inculcating traditional values. At **Vladivostok's School Number 14**, which serves students from primary school to high school, these "Important Conversations" have included benign topics, such as volunteering and mums, but also patriotic fare, such as the Russian *Spetsnaz* (special forces). School Number 14 was even renamed in honour of Yevgeny Orlov, a soldier with the Wagner mercenary group who was killed on the battlefield in eastern Ukraine.

High schools have also been supplied with new history textbooks that portray Russia as under constant threat from conniving forces in the West that seek its demise. The war in Ukraine is described as defensive. School Number 14 marked the arrival of the "truthful" new books with a cheery post on its social-media accounts.

Some lap up the new material. Others go through the motions, much as many did with mandatory classes in "scientific communism" for university students during the Soviet era. Those who resist the state openly face harsh consequences.

When Mr Putin announced the full-scale invasion of Ukraine, Alexei Galimov thought it was fake news. Born and raised in Vladivostok, Mr Galimov belongs to the Seventh-Day Adventist Church, and has many friends who visited a church college in Bucha, a small town north of Kyiv.

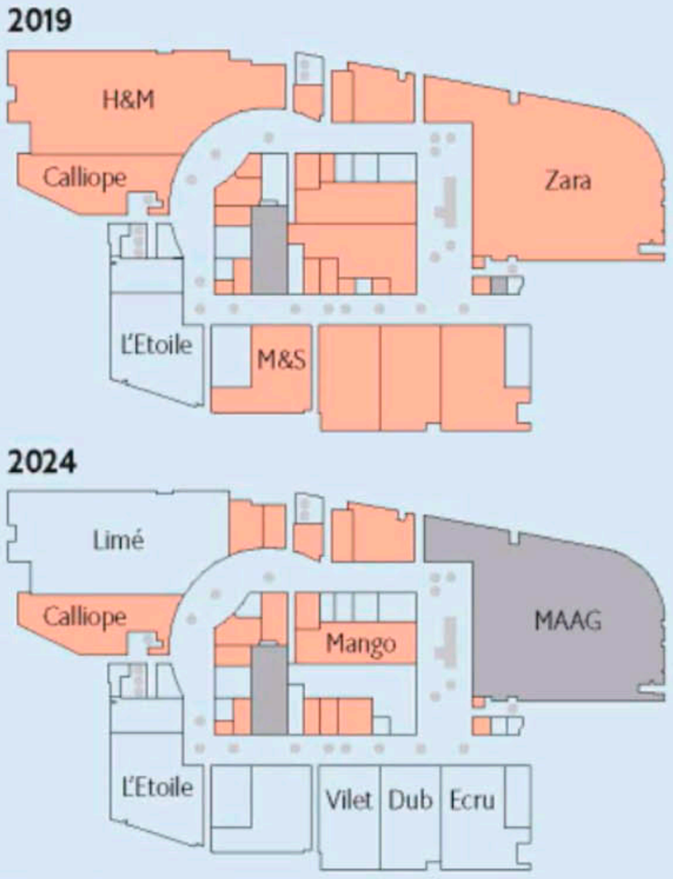
### Fight ye not

In February 2023 he wrote a Bible verse on a poster—"Do not kill"—and walked onto **Vladivostok's Central Square**. The first person he saw raised a fist and smiled. Others patted him on the shoulder. "Many people don't support what's happening in the country," he recalls. Police soon bundled Mr Galimov into a freezing bus.

Vladivostok was long a hotbed of opposition to the authorities in Moscow. But in recent years those networks have been uprooted, part of a broader campaign of repression. Some 80-90% of former staff and volunteers at the Vladivostok office of the late opposition leader Alexei Navalny's foundation have left the city, reckons Yuri Kuchin, who used to run it. "The political opposition is afraid and in hiding," he says, speaking from exile in Europe.

That fear did not deter Mr Galimov, at least not initially. On the first anniversary of the invasion, he made a new sign, with a

**Rebranding**
Floor two of the Kalina Mall in Vladivostok




*Some shops are operated by Russian owners independently of their original Western brands

**Rising in the east**
Russia, shipping container loads*, '000
By selected port


Source: Kiel Trade Indicator *Ten-day moving average

new Bible verse, from the second book of Chronicles: "Fight ye not...for ye shall not prosper." Several days later, officers broke into his apartment at 5.30am, pinned him to the floor and charged him with "discrediting the Russian army".

As he awaited his court case, he and his family fled, just as hundreds of thousands of other Russians have done. When Navalny was pronounced dead in an Arctic prison on February 16th, Mr Galimov joined a small protest in America, where he has requested asylum. This time his signs read: "Kremlin Killers Belong in The Hague" and "PUTIN IS A DICKHEAD". On March 13th police arrested the head of the Vladivostok office of the would-be presidential candidate Boris Nadezhdin.

## Marching orders

Russia's Pacific Fleet is tasked with defending the country's eastern flank. An early sign that Mr Putin's invasion plans were serious came when some of these units appeared near the border with Ukraine. Among them was the elite **155th Marine Infantry Brigade**, based on the hilly northern side of Vladivostok. Ukraine's intelligence services allege that it ended up in Bucha and took part in the massacre and torture of civilians.

The fighting has taken a toll. According to BBC Russia and Mediazona, independent media that monitor Russian combat deaths, 237 members of the 155th Brigade have been confirmed dead. The outlets reckon that their counts, which rely on announcements of funerals or memorials, miss at least half of the true total.

Yet despite the losses the 155th has managed to remain an effective fighting force. High salaries have enticed many men to fight. Others believe in the cause they are purportedly fighting for. As Tatiana (not her real name) explains, her late son enlisted with the brigade because he felt a threat from NATO and from "open Nazism" in Ukraine. "We all know that NATO is a source of evil," she says. "He died a hero in every sense of the word."

Vladivostok's fate could have been different. When Mr Putin returned to the presidency in 2012, after a four-year hiatus as prime minister, the city was one of his first stops. That year's Asia-Pacific Economic Cooperation (APEC) summit took place at the spiffy new campus of the **Far Eastern Federal University** there. The assembled leaders pledged to promote "prosperity in the coming years". Eighteen months later, Mr Putin annexed Crimea and instigated a war in eastern Ukraine.

The Russian government launched a new gathering, the Eastern Economic Forum, in 2015, at the same location as the APEC summit. In 2018 the plenary session featured Mr Putin alongside Xi Jinping, China's president; Abe Shinzo, Japan's prime minister; Lee Nak-yon, South Korea's prime minister; and Khaltmaagiin Battulga, Mongolia's president.

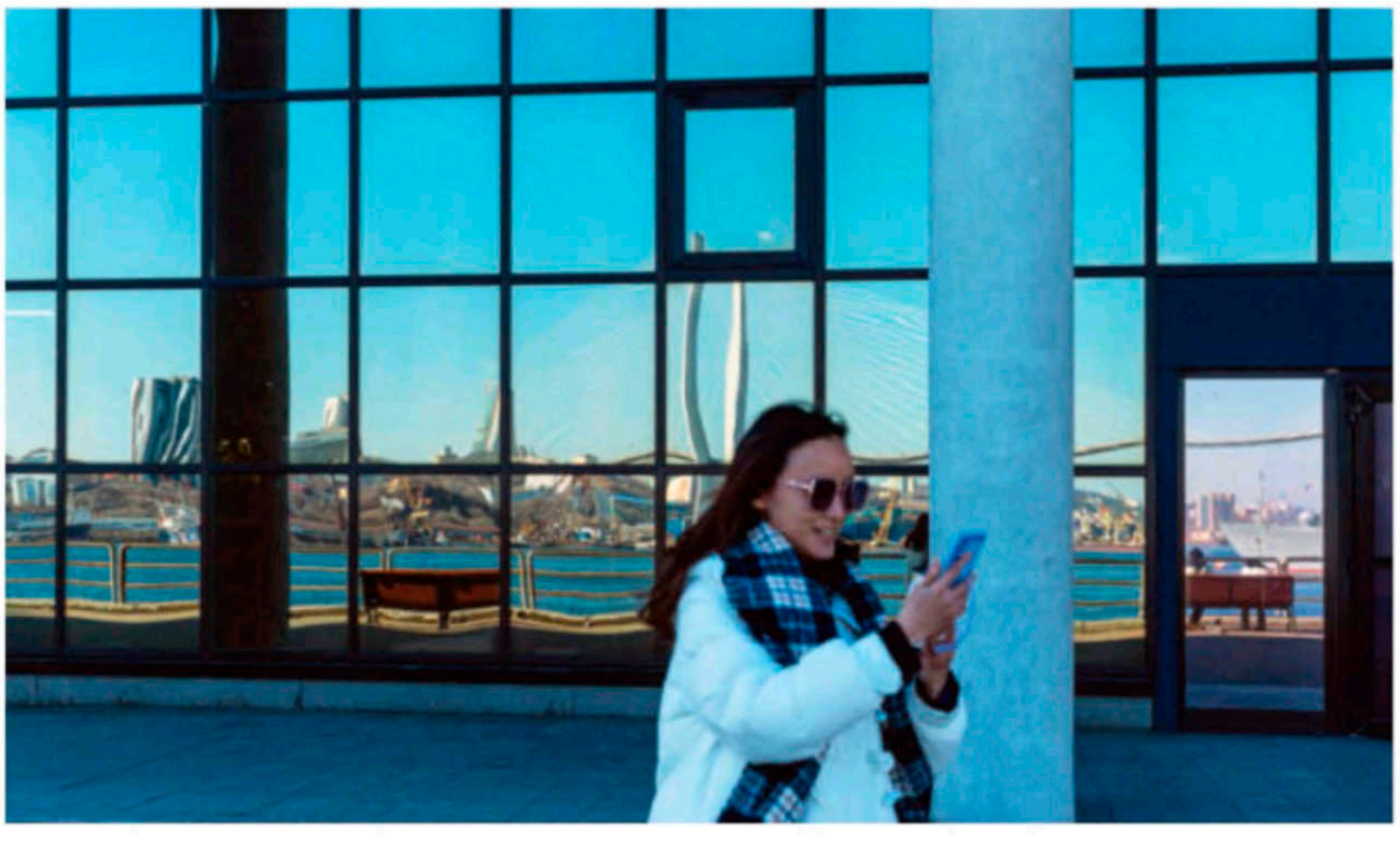
Few are now willing to share the stage with Mr Putin. The most prominent visitor during last year's event was Kim Jong Un, North Korea's leader, who inspected Russian military wares and toured an aquarium on the university campus. He did not join the forum on stage—in fact, no heads of state did. For the plenary session in 2023, Mr Putin had just one guest: Pany Yathotou, Laos's deputy prime minister.

For those looking to leave Vladivostok, the airport offers the quickest way out. Modernised ahead of the APEC summit, the airport was serving more than 3m passengers a year by 2019. In January that year—before war and pandemic disrupted travel—international flights accounted for more than half those coming or going from Vladivostok airport, according to data from Flightradar24, a website that tracks air traffic in real time.

That has since changed. This January over 80% of all flights to or from the airport were domestic. International flights were available only to China, Thailand and Uzbekistan. (A fourth destination may soon be added: plans are afoot to restart direct flights to and from Pyongyang.) The new routes may not be convenient. But as with much of wartime life, says one Vladivostok resident, "people find ways". ■

**Read the full story**

To read much more of our exploration of how Vladimir Putin's war in Ukraine has changed Vladivostok, and to take advantage of its maps and other interactive features, please visit **economist.com/vladivostok**



Portugal's election

# The surge of the hard right

**A once-boring democracy receives a jolt**

NEXT MONTH the Portuguese will celebrate 50 years since their "Carnation Revolution" overthrew the right-wing dictatorship that had run the country for decades. It will be a reflective moment for many reasons. Portugal has mostly been a model of democratic transition and stability since 1974. Now it faces a period of political turmoil after an election on February 10th gave no party a clear path to govern.

The elections came early. Portugal had voted only two years ago, when voters gave one of their traditional centrist parties, the centre-left Socialists, a solid majority. António Costa, in office since 2015, returned as a strengthened prime minister.

That was until prosecutors brought down his government by arresting an aide in an influence-peddling case. Mr Costa was not directly accused—and has denied any wrongdoing—but stepped back to fight the allegations. The president, Marcelo Rebelo da Sousa, called an election, rather than allow a successor to Mr Costa to run the Socialist government.

The centre-right Democratic Alliance, led by the conservative (and oddly named) Social Democratic Party, came a narrow first, giving its leader, Luís Montenegro, the first shot at forming a government. The Socialists lost seats and their leader, Pedro Nuno Santos, said they would not try to reconstitute a rickety multiparty coalition of the kind the party led after 2015.

But the big news was the rise of Chega, a populist right-wing party of the kind proliferating across Europe. In 2022 it went from 1% of the vote to 7%; this time it took 18%, and will have at least 48 deputies in the 230-seat National Assembly. With the Social Democrats and Socialists at just 79 and 77 respectively, neither can reach a governing majority. But both have refused to negotiate with Chega.

Led by André Ventura, Chega started as an undisciplined right-wing splinter from the centre-right. It began by bashing Roma people and crime, but over time began to focus on immigration and corruption. Its slogan, "Portugal needs a cleaning", could refer to all of the above. "This is the night that the two-party system in Portugal ended," said Mr Ventura to cheers. He also referred to Chega as the "central piece" of the legislature, implying that he wanted Mr Montenegro to call upon him for support. In other words he seems to want power, not to make a racket in opposition.

Portugal can congratulate itself on its past half-century. Unlike next-door Spain, whose dictator died in his bed, it overthrew its dictatorship and dealt more straightforwardly with its legacy. Perhaps partly for this reason, the two centrist parties are closer to each other in policy and in temperament; politics has been reassuringly boring much of the time.

Portugal has had one of Europe's strongest economies, so Chega's rise may look odd. But its citizens may not vote with mere GDP growth in mind. Some may be discomfited by the growing number of immigrants, many from former colonies.

So one of the few countries in western Europe that has held off the hard right now has such a party with a strong presence in parliament, and all the attendant problems of governability. The centrist Portuguese spirit that has kept extremism at bay for decades will strive to retain stability. ■

Ukraine's southern front

# Not so quiet

ORIKHIV

**The Russians are being held off, so long as the ammunition lasts**

A RUSSIAN SOLDIER pops up beside his infantry-fighting vehicle which was hit but not destroyed. He makes a dash for another one, then starts digging beside it. He is 15km away, close to Robotyne, where there has been fierce fighting since Russia captured the eastern Ukrainian town of Avdiivka on February 17th. The man's every movement is being scrutinised on screens in the basement of a block in Orikhiv. Now an attack drone hovers over him. From its live feed a shell can be watched plummeting straight towards him. When the smoke clears there is no body. Maybe the soldier heard the drone and scrambled under the vehicle just in time to save his life.

In the wake of Avdiivka's fall, Russian forces have captured outlying villages and attacked several other small eastern towns such as Kostiantynivka and Pokrovsk. To Avdiivka's south the front line slopes gently towards the Dnieper river, just below the industrial city of Zaporizhia. Last summer Ukraine had high hopes its troops would punch through the Russian lines here and drive on through to the Sea of Azov. The counter-offensive failed, but not before the Ukrainians captured the villages of Robotyne and Piatykhatky. Since Avdiivka's fall, Russian troops have sought to recapture Robotyne, whose fall would be symbolic because of its earlier liberation.

In the Orikhiv basement bunker, Ukrainian men, back from the front, are sleeping and scrolling on mattresses. Outside, empty artillery-shell cases pile up. The sound of shelling from Robotyne to the south is constant. The commander, who goes by the call sign Chief, says his men are desperate for more Soviet-calibre artillery shells but still have a stock of NATO-standard ones. Avdiivka fell not just because of a shell shortage but because of the sheer mass of men and munitions the Russians threw at it, he says. Despite his lack of shells, he does not expect the line to crumble here. He concedes that the Russians, by sacrificing a lot of men, have in places narrowed the no-man's land between them.

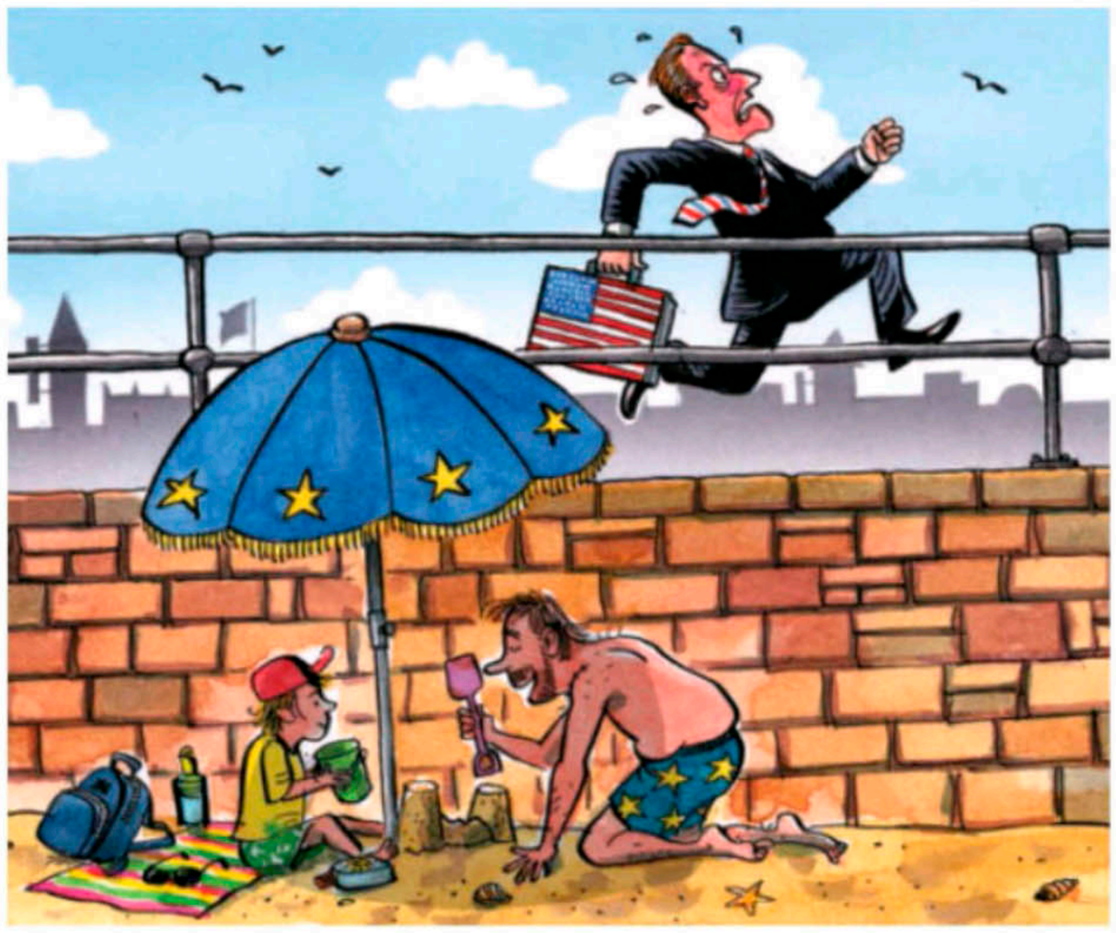
Above ground Orikhiv is a ghost town. Every building has been damaged or destroyed. There is no gas, electricity or mains water. Soldiers say there may be 1,000 civilians left out of a pre-invasion population of almost 14,000. .

In a secret location elsewhere on the front, Cartel, an artillery commander's call sign, sits at three large screens. One shows nine live drone-surveillance feeds. His men have 12 howitzers, all of which use Soviet-calibre shells. He says he would feel "comfortable" if he had 150 shells a day at his disposal but often has only 20 or 30.

Cartel says his Russian opposite numbers have also had fewer shells to fire recently, perhaps since they used so many in their tussle to take Avdiivka; but they still have more than he does. In the last few days, he says, the Russians sprayed 40 shells randomly at the Dnieper river end of the front. Cartel had a delivery of shells on March 3rd and used ten of them to take out two Russian artillery positions near Robotyne. Like Chief, he sounds unruffled by Avdiivka's fall. But asked what will happen if the shell shortage continues indefinitely, he says calmly: "We will die and, after that, Europeans will die." For now though, the southern front is "tense but stable". ■

# Charlemagne | Hanging in there

*Europe's economy is a cause for concern, not panic*



As Europe debated a single currency three decades ago, its politicians hoped to reverse a worrying trend: America's economy was growing faster, poised to leave Europe in its wake. In 1994 the 27 countries now in the EU had a combined GDP just shy of their transatlantic rival's, adjusted for purchasing parity. Two spurts of frothy growth in America followed by one spectacular bust in 2008 conveniently left the European economy back where it began—at around 97% of America's size. More surprisingly, the protracted euro crisis culminating in the early 2010s, which hobbled Europe just as America discovered how to frack vast oil deposits, also did little to change the situation: by 2016 the ratio was still 97%. Surely the America-first bombast of Donald Trump, covid-era turmoil, the emergence of trillion-dollar tech firms in America and the return of war on the European continent (with an energy crisis to boot) would consign the near-parity to the annals of economic history? Not so. The EU finished 2022 with annual output a little over 96% of America's. It is at the same level in the age of ChatGPT as it was at the time of cassette tapes.

The comparison is both worse and better than it looks for Europe. Its overall economic growth has been juiced by poor ex-communist countries such as Poland and Romania as they caught up with the rich world, while western European ones including France and especially Italy have flagged. The EU is home to many more people than America, so its citizens are on average about 30% worse off than New Yorkers or Texans. But as America's population has risen by a quarter since 1994, while ageing Europe's has grown far less, the two economies are in fact somewhat closer in terms of income per person than they were at the time of Bill Clinton and Jacques Delors. Factoring in working hours, which are both shorter and on a steady decline in the EU, leaves European workers with even less to blush about. Put very simply, the French and their neighbours toil a third less than Americans, earn a third less, and are a lot more tanned by the end of August.

In the absence of creating tech giants, one booming industry in Europe is that of fretting that the continent is falling behind. The naysayers think this time the old continent's economic goose really is cooked. One culprit is the strong dollar, which leaves Europe looking beleaguered when its economic output is compared with America's using market exchange rates. This is largely irrelevant: GDP per head in euros looks smaller in dollars when the greenback is strong, but the baguette bought with that euro is also worth fewer dollars, leaving Europeans no worse off. Even on a like-for-like basis, however, some Euro-gloom may be warranted. America's economy has been on a tear of late, while every EU data release is an exercise in figuring out which bits are in recession.

Europe is in the midst of a "competitiveness crisis", in the words of Isabel Schnabel, a grandee at the European Central Bank (ECB). As if to underline the seriousness of the situation, the EU has appointed not one but two former Italian prime ministers to opine on the future of its economy. Enrico Letta will soon release a report on the single market. Mario Draghi, also a former ECB boss, will follow with an opus on "the future of European competitiveness" due in June. Many of their recommendations will be copy-pasted from a report written by Mario Monti, yet another Italian former prime minister (how the slowest-growing big country in Europe cornered the market in economic advice is anyone's guess), which the EU published in 2010. Then as now, Europe often knows what it needs to do—deepen the single market, make cross-border financing easier and so on—yet not how to do it.

But getting the diagnosis right is the first step. For are things really so grim? Europe is back to having a trade surplus and a fiscal deficit that looks a lot better than America's these days, points out Sander Tordoir of the Centre for European Reform, a think-tank. What growth it can eke out is more equally spread, resulting in more social mobility. Carbon emissions are falling faster than in America. Unemployment is pretty low just about across Europe these days; an ageing society means concerns will soon turn to a shortage of workers, not jobs.

"Competitiveness" is a nebulous term used by lobbyists to push their favoured policies. Often the suggested cure is worse than the supposed disease. Europe could jack up its growth rate by borrowing money and showering subsidies on firms, as America is doing, but has mostly avoided it, sensibly. European industry could become more competitive by slashing wages, or firing lots of workers: this is not the outcome policymakers will hope for. Corporate chieftains think Europe could boost this elusive competitiveness by easing green rules, another dead end. Importing lots of migrants would boost GDP but has political implications.

## Economy class

There is much for Europe to fret about, of course. The continent has few corporate giants, and many old firms with little to fear from new entrants and so little incentive to innovate. A strengthened single market, which would provide cheaper capital and lots of customers, would help. Europe seems to be investing less in building productivity-enhancing AI models but also in deploying them, says Guntram Wolff of Bruegel, another think-tank. The continent is the world's most open big economy in a time of geopolitical tension. If cheap Russian gas remains offline for years, some energy-intensive European industries may never recover.

Economists speak of societies having to pick between making guns or butter—a question that has resurfaced as the need for defence spending has become apparent. Europeans have long forsaken both to spend time at the beach instead. Some have argued this was foolish, that social goodies like heavily subsidised health care or retiring early would not be possible for long without more economic growth. Perhaps now they are right. But it would not be the first time Europe's resilience had been underestimated. ■


Investigation

# The ancient deal that saved the Barclays

**Was the twin brothers' business empire built on a fraud?**

ON MARCH 13th Britain's government said that it will introduce a new law to prevent foreign governments from owning British newspapers and periodicals. The law will take a "broad definition" of what counts as state influence. Foreign officials will be excluded, even if they are using their own wealth. Only small passive stakes will be allowed.

The law is all about the *Spectator* and the *Telegraph*, two pillars of Britain's right-wing press. They are up for sale because last year Lloyds Banking Group threatened to bankrupt the companies controlling them, over debts worth about £1.1bn ($1.4bn). The Barclay family, which is the ultimate owner, refinanced these loans with funds from RedBird IMI, an American outfit backed by sovereign money from the United Arab Emirates. The second stage of the deal envisaged the business being taken over by its white knight, raising the prospect of the *Spectator* and the *Telegraph* belonging to an Arab government.

Those plans are now in disarray. RedBird IMI may settle for a minority stake; or, more likely, it will walk away. If so, a range of bidders could be interested, including the owners of the *Daily Mail*, the Murdoch-owned News Corp or Sir Paul Marshall, a hedge-fund boss and big shareholder in GB News, a right-leaning television channel. A bid from any of these could lead to another investigation. As the process drags on, the Barclays will remain on the scene. The great irony, we have found, is that Sir Frederick and Sir David Barclay, who bought the *Spectator* and the *Telegraph* without any impediment two decades ago, also deserved a proper inquiry of their own.

*The Economist* has investigated the twin brothers and their businesses, drawing on over 10,000 pages of documents, including official papers unsealed between 2003 and 2018 under government secrecy rules. Our investigation goes back to the 1970s, when Sir Frederick, who is 89, and his twin, Sir David, who died in 2021, were on the verge of insolvency. At the time the brothers faced personal ruin because almost all their companies were unlimited—meaning that they had no protection from their creditors. If they were to survive they needed to resort to desperate measures.

A 50-year-old deal is ancient history, but there are reasons why it is still relevant today. The Barclay family is best known in Britain for their media interests, but they also own property and an online retailer. Thanks to these, they feature in the *Sunday Times*'s latest rich list in 27th place, with a fortune put at £6.42bn. They got rich by trading assets using borrowed money. Had they gone spectacularly bankrupt in the 1970s, nobody would have been willing to lend them the cash they needed to buy the Telegraph Group in 2004. Without that deal in the 1970s, today's billion-pound conglomerate would never have existed.

Another reason to delve into history is that the 1970s was the last moment in which an outsider can gain an understanding of the workings of one of Britain's highest-profile business groups. This transaction transferred a lot of Barclay assets offshore. After it, the family empire became increasingly complex and impenetrable. ▸▸

→ Also in this section

49 Bagehot: Tories as trade unions

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— Northern Ireland's new government

— Capital-markets protectionism

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Our digging provides a unique insight into the complexity and subtlety with which the brothers juggled their assets.

It also reveals how secrecy goes hand in glove with knowing the right people. At the start of their careers the brothers worked with business associates who could help them raise capital and find lucrative deals. Later, as their right-wing media interests show, their connections involved Tory politics, too. In 1991, within a year of resigning as prime minister, Margaret Thatcher moved into a house in Chester Square in London recently vacated by Sir David. She lived there until her last months, when she moved into the Ritz hotel, which was then owned by the Barclays.

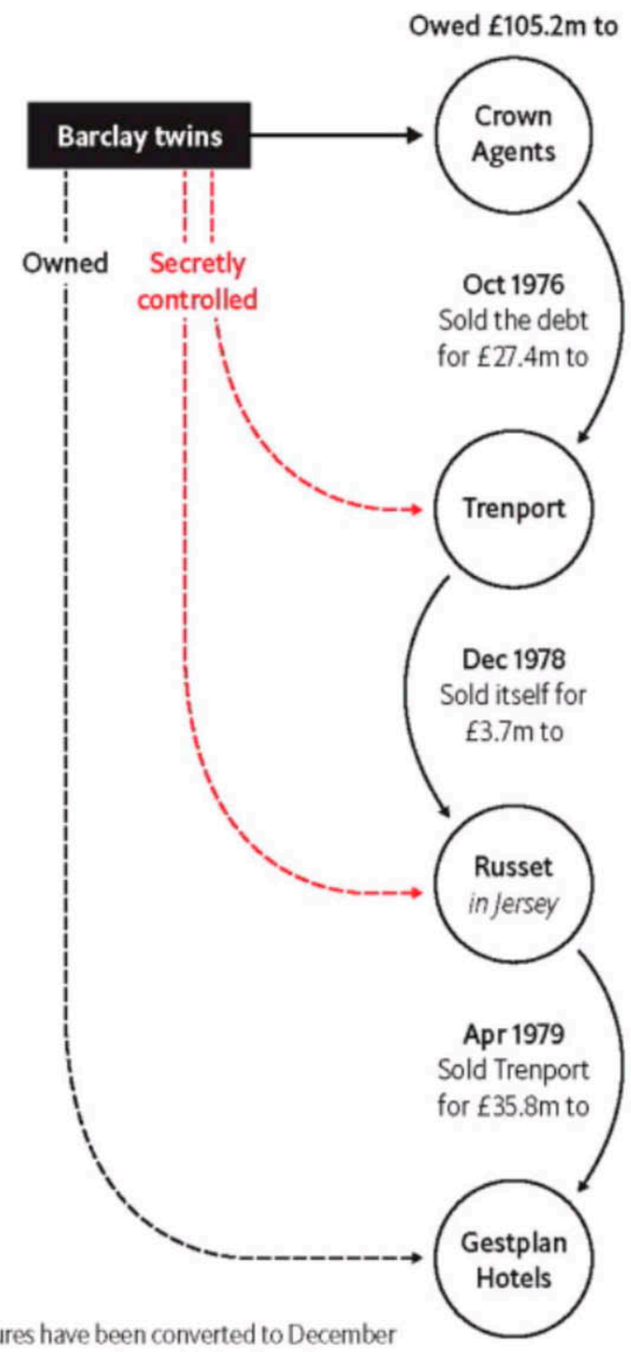
A third reason our investigation matters is that we have found strong grounds to believe that this ancient deal may have involved fraud. We also have cause to suspect the brothers of avoiding or even evading taxes on profits worth tens of millions of pounds in today's money. Over the years, many journalists have dug into Sir Frederick and Sir David. So far as we know, our investigation is the first to ask whether the brothers committed a criminal offence originally punishable by prison.

The business that the Barclay twins built has since passed to their children. Aidan, Sir David's oldest son and the head of the family today, was a director of one of the family's companies involved in the transactions we have investigated. Although that gave him a legal responsibility for the business, there is no suggestion that he was aware of its role.

We put our findings to Sir Frederick and members of his family. They offered no comment. However, given that the rules governing who is a fit and proper newspaper owner are once again under debate, our questions are more relevant than ever.

Born in 1934, the Barclay twins ran small businesses in the 1950s, later branching into property, buying hotels using money borrowed from the Crown Agents, a government-backed lender. The Arab oil embargo in 1973 led to a property crash and a banking crisis. In 1976 the Barclays' debts were growing by £963,000 a month, peaking at £105.2m (all the figures in this article have been converted to December 2023 prices, using a retail-price index). The pressure to call in the receivers was becoming irresistible.

The story revolves around three transactions (see diagram). The first, in October 1976, staved off bankruptcy by buying out the Barclays' biggest creditor at a steep discount, in effect slashing their debts and interest payments. As part of this transaction, the brothers signed statutory declarations, formal oaths under a legally binding pledge. A civil servant recorded at the time that the brothers had vowed they "had no present or future interest in the equity" in the buyer of the debt. Although we do not have the original statutory declarations, we believe these descriptions are accurate and complete and can think of no reason why they may not be.




Figures have been converted to December 2023 prices, using a retail-price index

However, our research suggests that the brothers secretly controlled the buyer, a company called Trenport Investments, using a pair of frontmen, two brothers called Leslie and Harold Bolsom. We do not know how the Barclays and Bolsoms first met but both owned or had owned hotels in west London. Trenport was supplied with financial, legal and business services by loyal Barclays people, not Bolsoms people. The fees for the loan Trenport took out to buy the Barclays' debt turned up in the accounts of the Barclays' hotel group. Trenport's third director, who sat alongside the Bolsoms, was the father-in-law of the man who for decades provided the Barclays with business services.

We have identified what looks like the Bolsoms' pay-off for their efforts. In April 1977, five months after Trenport bought the Barclays' debt, they started a business that was to run a nightclub called Le Privé in a Barclays hotel. This was initially financed by the Barclays, not the Bolsoms. After it had lost £1.8m, the Barclays paid the Bolsoms £941,000 for it, and promptly closed it down. As part of this generous deal Aidan Barclay, who was then 22 years old, joined the nightclub's board.

If the Barclays did indeed control Trenport through the Bolsoms, they were breaching the terms of the statutory declarations—at least as the civil servant described them. That is a criminal offence.

The second transaction in December 1978 involved the Barclay twins buying Trenport. For this they used another of their companies, called Russet Investments. This bought £3.7m-worth of new shares issued by Trenport, giving it control of the company. At the time Trenport had £8.2m of cash on its balance-sheet, as well as the Barclays' remaining debts, which by then stood every chance of being repaid in full. In addition £2.6m of dividends that Trenport had awarded to the Bolsoms had still not been paid out. The Bolsoms lost their claim on that money, too.

If the Bolsoms were really Trenport's owners, why would they sell their claim to assets worth many tens of millions of pounds for just £3.7m? The answer is that they had no choice. Trenport had an "irrevocable" option requiring the new shares to be issued. On that basis, the Bolsoms were not the true owners of Trenport and probably never had been—a breach of the statutory declarations.

In the third transaction in April 1979, the twins openly bought Trenport off Russet using one of their British companies, called Gestplan Hotels. Gestplan paid almost ten times what Russet had just four months earlier. Because Russet was based in Jersey, which is a separate financial jurisdiction from the mainland, this moved a large pot of Barclays money offshore.

We have looked into the tax status of the brothers and their wives, and we believe that they were probably resident as UK taxpayers at the time. If we are right about the statutory declarations, the Barclays may have worried that advertising their ownership of Russet was an unnecessary risk. If so, and if these offshore profits belonging to Russet were not declared, the Barclays were guilty of tax evasion, which is a crime.

Taxpayers may have lost in a second sense, too, because the original owner of the Barclays' debt had been the Crown Agents, which was owned by the British government. The sale was a terrible deal for the taxpayer. Of the Barclays' other creditors, National Westminster Bank, the Norfolk Capital Group and City and Country Properties all received full payment on loans totalling £17.4m. Keyser Ullmann, a bank, received an estimated 85-90 pence in the pound for its loans of £48.5m. The Crown Agents received just 26 pence. ■

**Read the full story**

*The Economist*'s full investigation into the Barclays, including some of the documentation we uncovered as part of our research, is online now. Visit **economist.com/barclaytwins**

# Bagehot | The enemy within

*How the Conservative Party came to resemble the trade unions*


THE 50TH birthday party of the Centre for Policy Studies (CPS) on March 6th was a swish affair. Rishi Sunak, the prime minister, and scores of Conservative MPs tucked into champagne and pork in the gothic splendour of the London Guildhall. There was much to celebrate. Founded by Margaret Thatcher and Keith Joseph in 1974 to "think the unthinkable" about Britain's stalling post-war economy, its ideas and policies had powered her administration. The think-tank's principles remain the government's lodestars, Mr Sunak declared. "In no small part, we live in the world created by the Centre for Policy Studies."

But triumphalism was mixed with gloom. It fell to Michael Spencer, chairman of the CPS, to share the bad news. Lately the Thatcherite revolution has not been going so well. Britain has struggled to produce growth that would have been the norm 20 years ago, he said. It is saddled with high debt and high taxes.

The government is in part a victim of external shocks in the form of covid-19 and the war in Ukraine. But much of the blame lies with Conservative backbenchers, whose approach to governing has come to resemble that of the trade unions whose strikes drove inflation, blackouts and shortages 50 years ago. Back then the CPS gave Thatcher her blueprint for breaking the shop stewards. Now the Tories themselves are the problem.

Some Tory MPs see themselves less as part of a project of national government, more as delegates sent to negotiate with it. Their job is to extract benefits for their voters and to see off reforms that threaten them. Leaders of Tory factions issue dark threats of industrial action in the form of "vote strikes" or a calendar of sabotage they term the "grid of shit" (a phrase of which Arthur Scargill, a miners' leader from the 1980s, would have been proud). In the 1970s trade-union leaders ambled up Downing Street to extract bumper pay deals over beer and sandwiches; today backbenchers arrive for breakfast rolls to exert pressure on behalf of their constituents and supporters.

Those Tory supporters are disproportionately found among the old. That is a problem. Britain's most pressing challenge, says Robert Colvile, the CPS's current head, is demography. As the population ages, keeping spending on the over-65s at its current 10% share of GDP would require the economy as a whole to expand by nearly 3% a year. Yet much of the Tory party ducks this looming crunch, much as the unions of the 1970s refused to engage with post-war governments' trilemma of combining full employment, low inflation and high wage growth. Fifty years ago Joseph wanted to convince Tory MPs to take on the Labour-backing unions. Mr Colvile wants them to reckon with their core vote.

"Our role in society is to look after our members, not run the country," shrugged Joe Gormley, a miners' leader from the 1970s. The same attitude prevails among Tory MPs at budget time. The public finances are fragile: Jeremy Hunt's promise to reduce Britain's debt as a share of GDP in five years' time rests on heroic assumptions about spending restraint. Rather than confront that challenge, each year backbenchers present the Treasury with lists of tax cuts for their favoured groups (inheritors of large estates, pub landlords, motorists, dog-owners and so on) and pleas for "levelling up" cash for their areas. Their rhetoric is Thatcherite; their behaviour is clientelist. To his credit, at the budget on March 6th, Mr Hunt favoured tax cuts that will benefit workers and reward firms that invest. A smart party would have cheered them as proof they were grappling with intergenerational justice. Instead, some Tory MPs moaned that their older voters had been neglected.

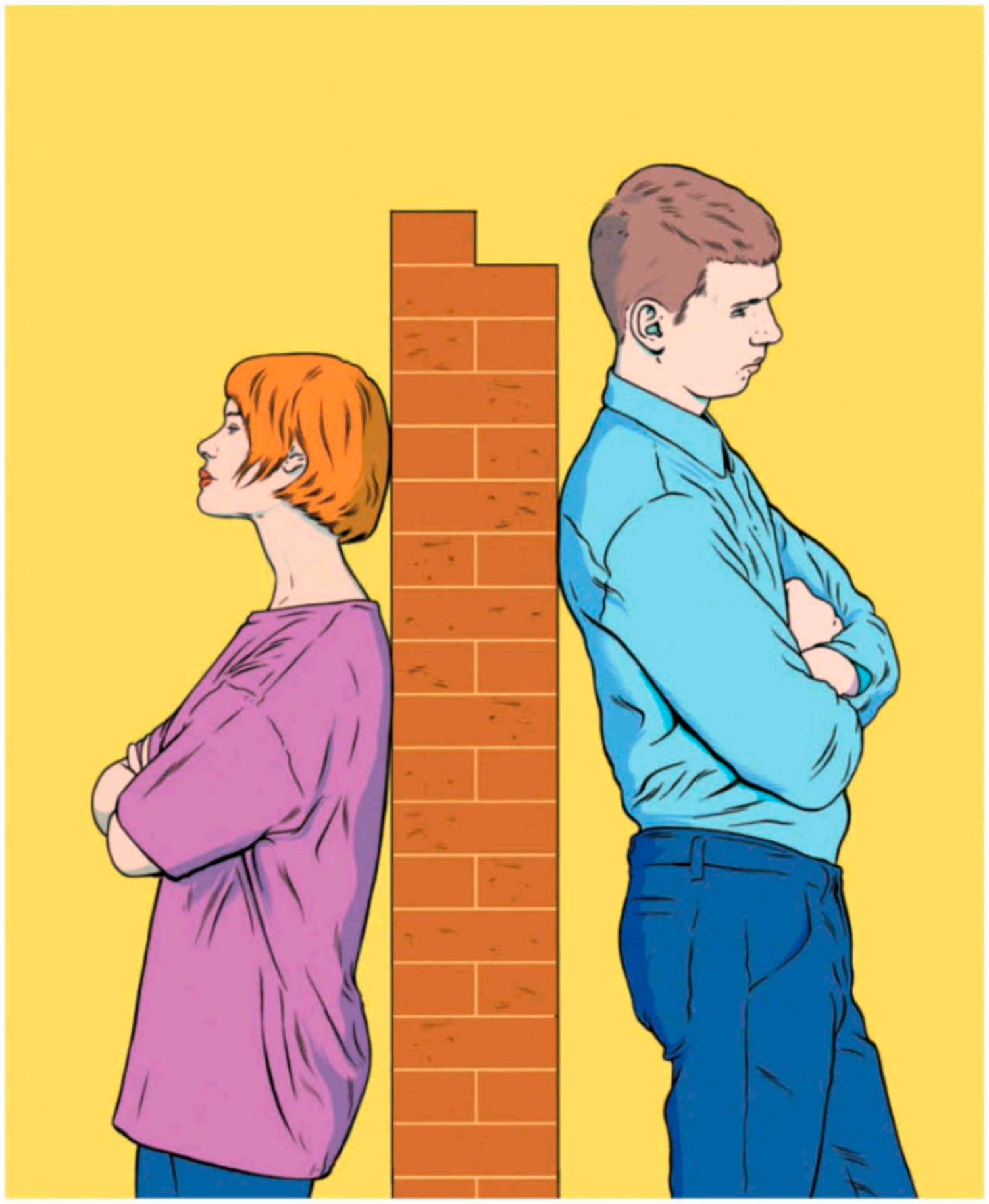
Keeping a lid on taxation (due to hit 37.1% of GDP by 2029, the highest share since 1948, according to Britain's official fiscal watchdog) means tackling productivity. Yet when productivity-enhancing measures threaten the well-being of the core Tory electorate, MPs go on strike. The CPS wants sweeping liberalisation of Britain's planning rules; successive governments have caved to Tory backbenchers who have fought like picketing miners to restrict building. Britain's housing shortage is the Conservative equivalent of the "closed shop", which shielded unionised workers from pay competition. Insiders, who own homes, benefit from rising asset prices; outsiders pay the price.

Restraining spending would also mean reinventing the welfare state. Over 14 years in government, several schemes to fund adult social care—among them duties on property, payroll taxes and insurance schemes—have been proposed and then strangled. Like the carworkers' unions that fought off modernisation, a desire to see off short-term pain has prevailed over the long-run benefits of a reformed social-care system.

## Which side are you on, boys?

In 1974 the unions appeared unstoppable. Yet they were sowing the seeds of their own demise. Many union leaders knew their pay demands were unsustainable but they spurned repeated pleas from sympathetic Tory and Labour governments to reform labour relations. The government became "a gigantic Las Vegas slot machine that had suddenly got stuck in favour of the customer", said Tom Jackson, a postmen's leader at the time. As the number of losers from inflation grew, Thatcher could reap the electoral rewards of taking on the "enemy within". The unions failed to compromise when they had the upper hand, and paid the price.

Therein lies the lesson for Tory trade unionists. Demography and sluggish growth are straining the post-cold-war model of low-ish taxes and a generous welfare state. But when their electorate faces hard choices, Tory backbenchers protect their voters' short-term interests. In failing to forge new settlements on taxation, public services and Britain's ability to get things built while they have enjoyed influence, the Tory militants are set to hand the initiative to a future Labour government. They have left it to their opponents to think the unthinkable. ■



Young men and women

# Divided in youth

ATLANTA, BEIJING AND WARSAW

**Diverging worldviews between the sexes could affect politics, families and more**

IN A TRENDY food market in Warsaw, Poland's capital, two female engineers are discussing how hard it is to meet a nice, enlightened man. Paulina Nasilowska got a big pay rise a few years ago. Her boyfriend asked: "Did you have an affair with your boss?" He is now an ex-boyfriend.

Ms Nasilowska's friend, Joanna Walczak, recalls a man she met on Tinder who revealed that he was a "red-pill" guy (a reference to "The Matrix", a film, meaning someone who sees reality clearly. In the "manosphere", a global online community of angry men, it means realising that men are oppressed.) He thought household chores and child care were women's work, and that women could not be leaders. They didn't have a second date.

Typically for young Polish women, Ms Nasilowska and Ms Walczak support parties of the liberal left, which take women's issues seriously and promise to legalise abortion. Young Polish men, they complain, hew more to the right, or even to the far right. Consider last year's election. Then the top choice for 18- to 29-year-old men was Confederation, a party that touts free-market economics and traditional social values. ("Against feminists. In defence of real women" is one of its slogans.) Some 26% of young men backed it; only 6% of their female peers did.

Young Polish men have their own set of complaints. Feminism has gone too far, say two firemen in their 20s in a small town. Lukasz says he used to be able to go to a village dance party and "the women there were wife material." Nowadays "they're all posting shameless pictures of themselves on social media," he laments. The media are "all biased and pushing the culture to the left", complains Mateusz (neither man would give a surname). People no longer admit that men and women often want to do different kinds of work.

In much of the developed world, the attitudes of young men and women are polarising. *The Economist* analysed polling data from 20 rich countries, using the European Social Survey, America's General Social Survey and the Korean Social Survey. Two decades ago there was little difference between men and women aged 18-29 on a self-reported scale of 1-10 from very liberal to very conservative. But our analysis found that by 2020 the gap was 0.75 (see chart 1 on the next page). For context, this is roughly twice the size of the gap in opinion between people with and without a degree in the same year.

Put another way, in 2020 young men were only slightly more likely to describe themselves as liberal than conservative, with a gap of just two percentage points. Young women, however, were much more likely to lean to the left than the right, with a gap of a massive 27 percentage points.

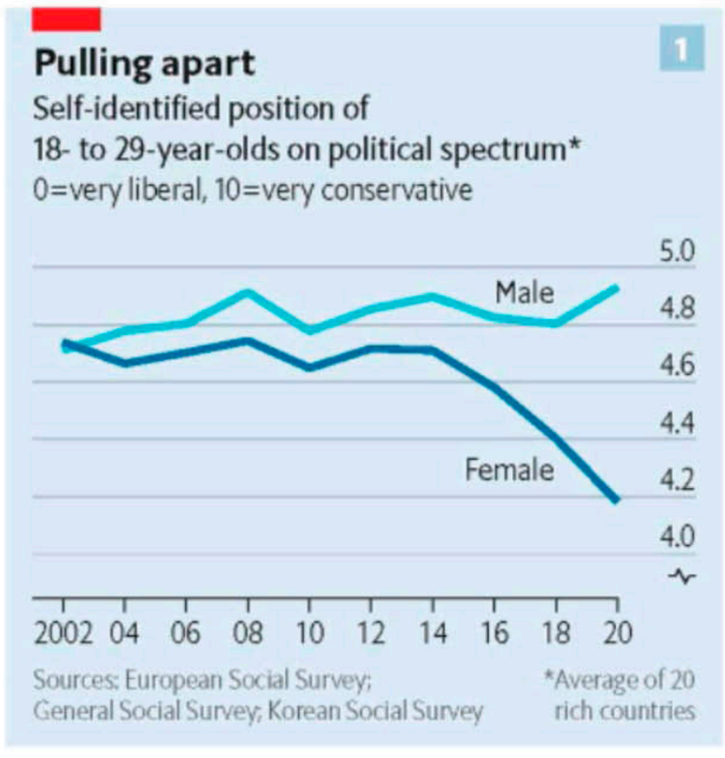
In all the large countries we examined, young men were more conservative than young women (see chart 2 on the page after next). In Poland the gap was 1.1 points on a scale of 1-10. It was a hefty 1.4 in America, 1 in France, 0.75 in Italy, 0.71 in Britain and 0.74 in South Korea. Men and women have always seen the world differently. What is striking, though, is that a gulf in political opinions has opened up, as younger women are becoming sharply more liberal while their male peers are not.

For young women, the triumphs of previous generations of feminists, in vastly increasing women's opportunities in the workplace and public life, are in the past. They are concerned with continuing injustices, from male violence to draconian abortion laws (in some countries) and gaps in pay to women shouldering a disproportionate share of housework and child care. Plenty of men are broadly in their corner. But a substantial portion are vocally not. Young women's avid liberalism may spring from a feeling that there is much work still to be done, and that opposition to doing it will be stiff.

The gap does not translate straightforwardly into voting patterns, but it is visible. One poll found that 72% of young

American women who voted in House elections in 2022 backed the Democratic candidate; 54% of young men did. In 2008 there was barely any gap. In Europe, where many elections offer a wide array of parties, young women are more likely to support the most left-wing ones, whereas young men are more likely to favour the right or even the radical right.

In France in 2022 young men were much keener than young women on Eric Zemmour, a presidential candidate who wrote a book rebutting Simone de Beauvoir, France's best-known feminist. Germany's election in 2021 saw the largest ever left-right gap between the votes of young women and men, according to Ansgar Hudde of the University of Cologne. In Portugal, where the far-right Chega party surged in an election on March 10th, support for it is concentrated among voters who are young, male and less educated. And South Korea in 2022 elected an overtly anti-feminist president; more than 58% of men in their 20s voted for him. Some 58% of women in their 20s backed his rival.




### Young and cranky

The attitude gap between the sexes is also visible in how they view each other. People in 27 European countries were asked whether they agreed that "advancing women's and girls' rights has gone too far because it threatens men's and boys' opportunities." Unsurprisingly, men were more likely to concur than women. Notably, though, young men were more anti-feminist than older men, contradicting the popular notion that each generation is more liberal than the previous one. Gefjon Off, Nicholas Charron and Amy Alexander of Gothenburg University use a Dutch analogy to illustrate the difference between young (18-29) and old (65+) European men. It is as great, on this question, as the gap between the average supporter of Geert Wilders's radical-right Party for Freedom and the Liberal Democrats.

A similar pattern holds in other advanced countries. Although a higher share of young British men think it is harder to be a woman than a man than think the opposite (35% to 26%), they are likelier than old British men to say it is harder to be a man than a woman. Young British women are more likely than their mothers to believe the opposite. Nearly 80% of South Korean men in their 20s say that men are discriminated against. Barely 30% of men over 60 agree, making their views indistinguishable from those of women in their 20s or 60s.

In China pollsters do not ask about voting intentions, but they find a similar divergence between young men and women when it comes to gender roles. Yue Qian of the University of British Columbia and Jiaxing Li of the Shanghai University of Medicine and Health Sciences looked at survey data for 35,000 Chinese people. In their analysis they found that young men were much more likely than young women to agree with statements such as "men should put career first, whereas women should put family first" and "when the economy is bad, female employees should be fired first."

Young Chinese men's views were not much different from those of older men, whereas young women's views were far more egalitarian than their mothers'. Claire, a market researcher in Beijing (who uses an English name to preserve her anonymity), says she wants a partner who will treat her as an equal and share the housework. "I think most Chinese men would fail that test," she sighs. Dr Qian notes that when Chinese parents go to "matchmaking corners" in parks, they brag about their sons' jobs and degrees, but hide their daughters' achievements, fearing they will put off potential suitors.

What is going on? The most likely causes of this growing division are education (young men are getting less of it than young women), experience (advanced countries have become less sexist, and men and women experience this differently) and echo chambers (social media aggravate polarisation). Also, in democracies, many politicians on the right are deftly stoking young male grievances, while many on the left barely acknowledge that young men have real problems.

But they do, starting with education. Although the men at the top are doing fine, many of the rest are struggling. In rich countries, 28% of boys but only 18% of girls fail to reach the minimum level of reading proficiency as defined by PISA, which tests high-school students. And women have overtaken men at university (see chart 3 on the next page). In the EU, the share of men aged 25 to 34 with tertiary degrees rose from 21% to 35% between 2002 and 2020. For women it rose faster, from 25% to 46%. In America, the gap is about the same: ten percentage points more young women than men earn a bachelor's degree.

Differences in education lead to differences in attitude: people who attend college are more likely to absorb a liberal, egalitarian outlook. The education gap also leads to differences in how men and women experience life, work and romance. To simplify: when a woman leaves university in a rich country, she is likely to find a white-collar job and be able to support herself. But when she enters the dating market (assuming she is heterosexual), she finds that, because there are many more female graduates than male ones, the supply of liberal, educated men does not match demand. Charelle Lewis, a 26-year-old health-care worker in Washington, DC, complains that men her age have "a little-boy mindset".

The dating scene can also be bleak for men who did not go to university. Upwardly mobile women reject them. Michal Pazura, a young Polish dairy farmer, takes a break from inflating tractor tyres and recalls a girlfriend who "didn't like the smell" of the farm and left him to live in a town. "I wanted a traditional, stable lifestyle. She wanted fun." Male farmers have such a hard time finding spouses that a reality show called "Farmer Wants a Wife" is one of the most popular on Polish television. "It's hard to say what young women want in a man these days," says Lukasz, the Polish fireman. Previously, they just wanted a man with "a stable income, who could fix things in the house...and who had a driving licence", he recalls.

Will the gulf in attitudes affect how many of today's young people eventually couple up and have kids? It is too soon to know. But for those who think the rich world's tumbling birth rates are a problem, the early signs are discouraging. In America, Daniel Cox, Kelsey Hammond and Kyle Gray of the Survey Centre on American Life find that Generation Z (typically defined as those born between the late 1990s and early 2000s) have their first romantic relationship years later than did Millennials (born between 1980 and the late 1990s) or Generation X (born in the decade or so to 1980), and are more likely to feel lonely. Also, Gen Z women, unlike older women, are dramatically more likely than their male peers to describe themselves as LGBT (31% to 16%). It remains to be seen whether this mismatch will last, and if so, how it will affect the formation of families in the future.

The backlash against feminism may be

especially strong among young men because they are the ones who feel most threatened by women's progress. Better jobs for women need not mean worse ones for men—but many men think it does. Older men are less bothered, since they are more likely to be established in their careers or retired. Younger men, by contrast, are just starting out, so they "are most likely to perceive women's competition as a potential threat to their future life course", argue Dr Off, Dr Charron and Dr Alexander. In a recent study, they found that young European men are especially likely to resent women (and feel that feminism has gone too far) if unemployment has recently risen in their area, and if they perceive their society's institutions to be unfair. Anti-feminist views, they add, are a fair predictor of right-wing authoritarian ones.

Not all male grumbles are groundless. In some countries, divorce courts tend to favour the mother in child-custody disputes. In others, pension rules are skewed. Men enter the labour market earlier and die younger, but the retirement age for women in rich countries is on average slightly lower. In Poland it is five years lower, so a Polish man can expect to work three times longer than he will live post-retirement, while for a Polish woman the ratio is 1.4, notes Michał Gulczyński of Bocconi University. This strikes many men as unfair. Mateusz, the Polish fireman, recalls when a left-wing lawmaker was asked, if she was so keen on equal rights, what about equalising the pension age? "She changed the subject," he scoffs.

Another factor that particularly affects young men is conscription. They are the first to be called up; women are often exempt. In South Korea, where military service is universal for men and notoriously gruelling, it fuels male resentment. In Europe conscription is no longer common, but Russia's invasion of Ukraine has made young men in neighbouring countries, such as Poland, more scared they may be drafted, says Mr Gulczyński.

Social media, the lens through which young people increasingly view the world, may have aggravated polarisation. First, they let people form echo chambers. When homogenous groups of like-minded people discuss an issue, they tend to become more extreme, as individuals vie for affirmation by restating the in-group's core position in ever-stronger terms, and denouncing those who dispute it.

When groups of frustrated young men link up online, the conversation often descends into misogyny. In male-dominated Chinese chatrooms the phrase "feminist whore" is common, along with a pun that inserts the character for "fist" into "feminist" to make it sound more aggressive.

Once a man joins an angry online group, the pressure to remain in it is strong. Benjamin, a student in Washington, DC, says he used to be a "red-pill guy ...working as a janitor, eating McDonalds and wallowing in self-pity". He'd watch classes online about how to boost his self-confidence and pick up women. When he quit the manosphere, his friends taunted him as a "blue-pill" (someone fooled by the establishment) or a "cuck" (a weak man).

Second, algorithms hook users with content that terrifies or infuriates, making the world seem both more frightening and more unjust than it is. Women who click on #MeToo stories will see more of them; ditto for men who click on stories of men being falsely accused of rape. Each may gain an exaggerated idea of the risks that they personally face.

"When you go into a gym to work out and a woman's in your line of vision, you look at her and all of a sudden you're famous on TikTok for being a sexual harasser or something," says Kahlil Rose, a 28-year-old conservative man in Atlanta. This has not happened to anyone he knows. But he has seen it on his phone, so it looms large in his consciousness. Benjamin, the student in Washington, offers a similarly gloomy perspective: "Men my age are afraid to get married because they hear a cautionary tale: woman cheats, files for divorce and takes everything he worked for."

Women see a different world online. Julia Kozik, a student in Warsaw, follows a tip she saw on TikTok. When she rides in a cab, she tears out a strand of hair and puts it under the seat in case she is abducted and the police need DNA evidence. "I avoid men at all costs, mostly," she says.

The political left has done a fair job of persuading women that it cares about their problems. But it has not figured out how to talk to men, argues Richard Reeves, a liberal scholar, in "Of Boys and Men". Progressives often assume "that gender inequality can only run one way, that is, to the disadvantage of women". And they apply labels like "toxic masculinity" so indiscriminately as to suggest that there is something intrinsically wrong with being male. Rather than drawing immature boys and men into a dialogue about their behaviour, this "is much more likely to send them to the online manosphere, where they will be reassured they did nothing wrong and that liberals are out to get them".

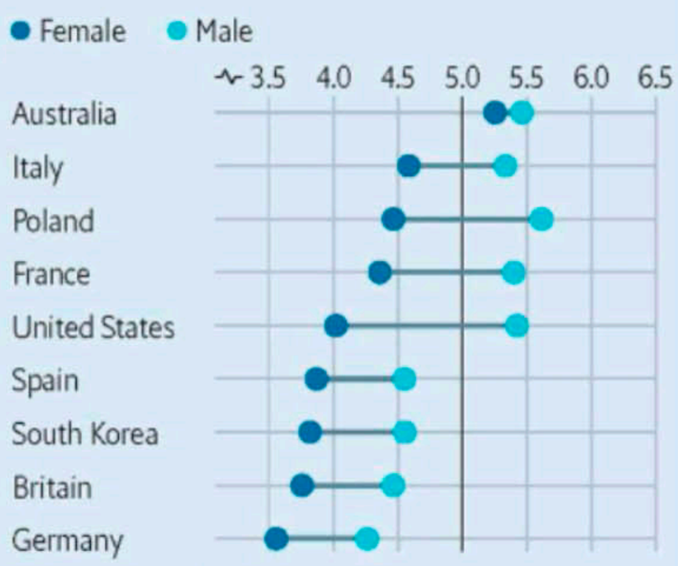
### Making America virile again

Some politicians on the right, by contrast, have found ways to connect with disgruntled males. Donald Trump is an obvious example. He cultivates "an image of virility and manliness", argues Mr Cox of the Survey Centre on American Life. He appealed to young men who don't follow the news by showing up at an Ultimate Fighting Championship event. He also tends "to side with men in cultural conflicts". In 2018 he decried what he said was a shift in the burden of proof in cases of rape and sexual assault: "It's a very scary time for young men in America when you can be guilty of something you may not be guilty of...That's one of the very, very bad things that's taking place right now." Progressives may dismiss this as the self-interested griping of a serial abuser. But there's reason to believe that Mr Trump's macho behaviour "resonates with young men", says Mr Cox.

What neither side has done well is to tackle the underlying problems that are driving young men and women apart. Most important, policymakers could think harder about making schools work for underperforming boys. Mr Reeves suggests hiring more male teachers, and having boys start school a year later, by default, since they mature more slowly than girls do. Also, since "the desegregation of the labour market has been almost entirely one-way", the state could beef up vocational training to prepare young men for occupations they currently shun, such as those involving health, education or administrative tasks. If such reforms help more boys and men adjust to a changing world, that would benefit both men and women. ■

**2 Space between us**

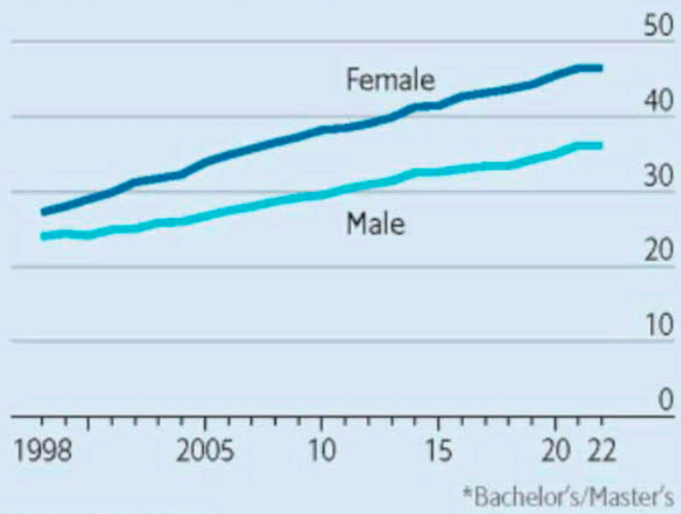
Self-identified position of 18- to 29-year-olds on political spectrum, 2022 or latest
0=very liberal, 10=very conservative




Sources: Australian Social Survey; European Social Survey; General Social Survey; Korean Social Survey

**3 Top of the class**

OECD countries, students graduating* as % of population of typical graduation age




Source: World Bank

*Bachelor's/Master's degree or equivalent

TikTok in America

# Tick, tock

**Congress starts the clock on a TikTok ban. Now what?**

LISTEN CLOSELY and you can hear the influencers wail. On March 13th America's House of Representatives passed a bill barring app stores and internet providers from distributing "foreign-adversary-controlled applications". The target is clear: TikTok, a hit short-video app to which 170m Americans are glued for an average of 56 minutes a day.

TikTok's position in America has long been precarious. Although the firm is based in Los Angeles and Singapore, it is a subsidiary of ByteDance, a Chinese tech darling. That has fed bipartisan fears that the Chinese government could use it to spy on American citizens or shape public opinion. TikTok has denied that the Chinese government wields any influence over it, and has sought to assuage concerns by enlisting Oracle, an American software giant, to fence off the data of American users into local servers and inspect its source code. It points out that American investors, such as Carlyle and General Atlantic, are among ByteDance's biggest shareholders.

If it becomes law, the bill would compel ByteDance either to sell TikTok's American operations within six months or to shut them down. Pressure for such a move has been building since TikTok's boss, Shou Zi Chew, was hauled before Congress last March. The firm was nevertheless caught off guard by the speed with which America's typically sleepy lawmakers have acted.

The proposal gained momentum partly as a consequence of disquiet over the app's handling of misinformation and anti-semitic content following Hamas's attack on Israel in October. TikTok's efforts to stall the bill failed spectacularly. On March 6th it sent a notification encouraging users to lobby Congress against the legislation. That seems to have backfired: some undecided lawmakers were persuaded that TikTok does indeed hold sway over voters. In the event 352 of them backed the bill; only 65 were opposed.

But before President Joe Biden can sign the bill into law, which he says he will do, it must first pass the Senate. Given its bipartisan popularity you might think this was a formality. Not so. Donald Trump, who as president almost forced TikTok into a sale in 2020, has changed his tune. On March 8th he complained that banning TikTok would benefit Meta, the social-media colossus which owns Facebook and Instagram—and which, unforgivably, exiled Mr Trump from its platforms after his supporters stormed Congress in January 2021. The motivation for his intervention may not be entirely public-spirited. A week earlier Mr Trump met Jeff Yass, a hedge-fund billionaire and prospective donor whose investment firm, Susquehanna, happens to own a stake in ByteDance.

Republicans in the Senate may follow Mr Trump's cue—he has, after all, just sealed their party's nomination for the presidential election this November. Lindsey Graham, who is both vociferous in his criticisms of TikTok and sycophantic in his adulation for Mr Trump, said on March 10th that he was unsure how he would vote. ▸▸

→ Also in this section

If the bill does become law it is likely to face a challenge in the courts, probably on free-speech grounds. Still, there is a reasonable chance that TikTok would have to shut up shop in America. A year ago the Chinese government said it would oppose a sale. Hours before the House vote it denounced America for "resorting to hegemonic moves when one could not succeed in fair competition". ByteDance, which reportedly generated $110bn of revenue last year, is believed to make around four-fifths of that in China, where it operates TikTok's sister app, Douyin, and Toutiao, a news aggregator. Although its investors would lobby to allow a sale, China's government could prove intransigent, dooming the American business. It could also feel the need to retaliate against American firms operating on the mainland.

Were advertisers forced to shift their spending from TikTok, America's homegrown social-media companies would be in for a windfall. Not all will benefit equally. According to Kepios, a research firm, 82% of global TikTokers use Facebook, 80% scroll Instagram and 78% watch YouTube, which is owned by Google's corporate parent, Alphabet (see chart). Only 53% use X, the debating forum formerly known as Twitter, and a mere 35% are on Snapchat, a messaging app. If Americans redirect the roughly 3trn minutes of attention they lavished on TikTok last year to other apps already on their phones, Meta and Alphabet, the dominant duo in online advertising, will be the winners.

His grudge against Meta notwithstanding, Mr Trump may have a point when he grumbles that the firm will be the biggest beneficiary. Reels, a TikTok-like offering embedded into Instagram, has gained more traction than similar ones from YouTube and Snapchat. Many TikTok influencers already repost their content on Meta's app. After India banned TikTok (and dozens of other Chinese apps) in 2020 following a skirmish on its border with China, Instagram surged in the country. In 2019 it was the sixth-most downloaded app in India. By 2021 it was top of the charts.

Meta will not be so lucky if ByteDance's investors succeed in persuading China's government to allow a divestiture. The American firm would doubtless be barred from snapping up TikTok on antitrust grounds, as would Alphabet. The list of other potential suitors is limited by TikTok's price tag, which could run to 12 figures if ByteDance, fearing knock-on crackdowns elsewhere, throws in TikTok's operations in other countries.

Amazon, America's e-commerce champion, may take a look, given TikTok's growing focus on incorporating shopping into its app (though it, too, would face pushback from trustbusters). Apple and Netflix, which both passed when TikTok was sounding out a sale in 2020, could reconsider, given slowing growth in iPhone sales and streaming subscriptions, respectively. Back then Oracle teamed up with Walmart, a retail behemoth, to buy minority stakes in TikTok. But that deal fell through after Mr Trump left office. After its $28bn acquisition in 2022 of Cerner, a health-records business, Oracle is probably now too indebted to mount a bid.

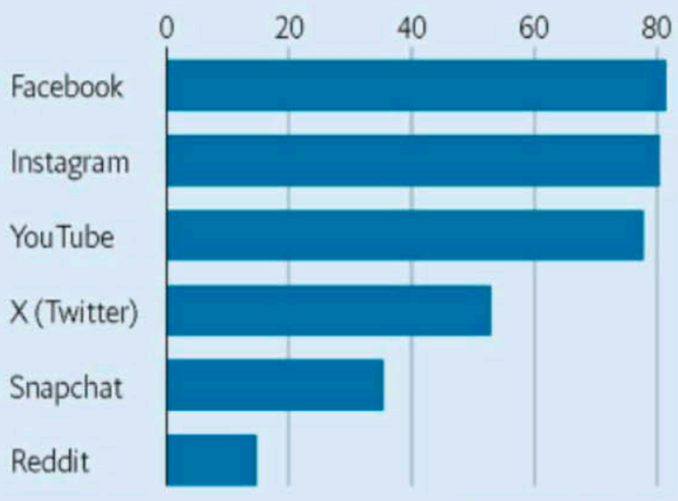
Microsoft, another American tech titan, could weigh in. Its own bid four years ago to acquire TikTok's business in America, Australia, Canada and New Zealand ended after ByteDance balked at giving it full control of the app's data and source code. But the company has long coveted a greater presence in consumers' lives, which may bring it back to TikTok—if ByteDance were to loosen its terms. Other mashups have also been suggested. Bobby Kotick, former boss of Activision Blizzard, a video-game studio which Microsoft acquired last year, has reportedly pitched the idea of a bid for TikTok to various partners, including Sam Altman of OpenAI, maker of ChatGPT.

However, as the artificial-intelligence race heats up, it seems doubtful that China would want to hand TikTok's data or clever algorithm to any American interests. An alternative would be to sell off TikTok as a standalone business rather than merge it with an existing one. This would dodge antitrust concerns. But the deal's size could again be a problem. The largest amount ever raised in an initial public offering was for a $26bn stake in Saudi Aramco, a state oil leviathan, in 2019. The largest leveraged buy-out in history was that of TXU, a utility, for $45bn in 2007. The value of TikTok would exceed even that, though it helps that ByteDance's American investors could swap their stakes for a slice of the new company.

Assuming it can be untangled from Bytedance, an independent TikTok would need to hire plenty of techies to replace the ones in Beijing. Still, a separation could pay off. Mark Shmulik of Bernstein, a broker, reckons that the firm became less aggressive in expanding its business than it could have been, as it sought to keep a low profile. It could do more to link its servers with those of advertisers—the better to track the efficacy of their spending, as Meta has done—and to speed up the roll-out of TikTok Shop, its e-commerce platform. In less than a decade a Chinese-linked TikTok has managed to upend the social-media business in America and beyond. An untethered one would keep being disruptive—if it is allowed to exist. ■

**What if it's gone for Reels?**

TikTok users*, % who use other selected social-media platforms, Q3 2023




Source: Kepios *16- to 64-year-olds

Commercial vehicles

# A freighted question

**Lorries and vans are electrifying—sluggishly**

YOU MAY think that if you splashed out $100,000 for a vehicle you would take delivery of something flash—a Porsche, say. In fact, many such buyers care less about the badge on the bonnet and more about how much load the thing can carry. For this is also the price of a large lorry.

Commercial vehicles such as lorries and vans keep supply chains humming and deliveries moving. They also make lots of money for their makers. In 2023 vans accounted for a third of the €190bn ($207bn) in sales at Stellantis (whose largest shareholder, Exor, part-owns *The Economist*'s parent company). Daimler Truck, the world's biggest manufacturer of medium-sized and large lorries, earned revenues of €56bn last year. Ford Pro, the American car giant's commercial arm, made a net profit of $7.2bn on sales of 1.4m units, compared with $7.5bn at Ford Blue, its car division, which sold twice as many vehicles. Lorries made by Volvo and Daimler rake in margins typical of an upmarket carmaker.

Given both the already high upfront cost and the attention buyers pay to operating expenses, you might expect commercial vehicles to go electric fast—not least because they are also disproportionately heavy emitters (lorries and buses spew over a quarter of the carbon on EU roads). Business buyers value this total cost of ownership more than individual motorists, who may pay a premium to salve their climate conscience. Alas, for many businesses the calculation continues to favour petrol and diesel. Can that change?

Even in China, which in 2023 accounted for 85% of global sales of heavy-duty e-lorries (the largest sort), just one in 25 such vehicles was green, compared with one in three new passenger cars. In Europe the figure is one in 70, and one in seven for passenger cars. When an EU ban on sale of

cars with internal combustion engines comes into force in 2035 only three-quarters of lorries may be electric, according to BCG, a consultancy. IDTechEx, another consultancy, forecasts that zero-emission lorries will make up 13% of sales in America by 2030, far short of President Joe Biden's goal for 50% of car sales.

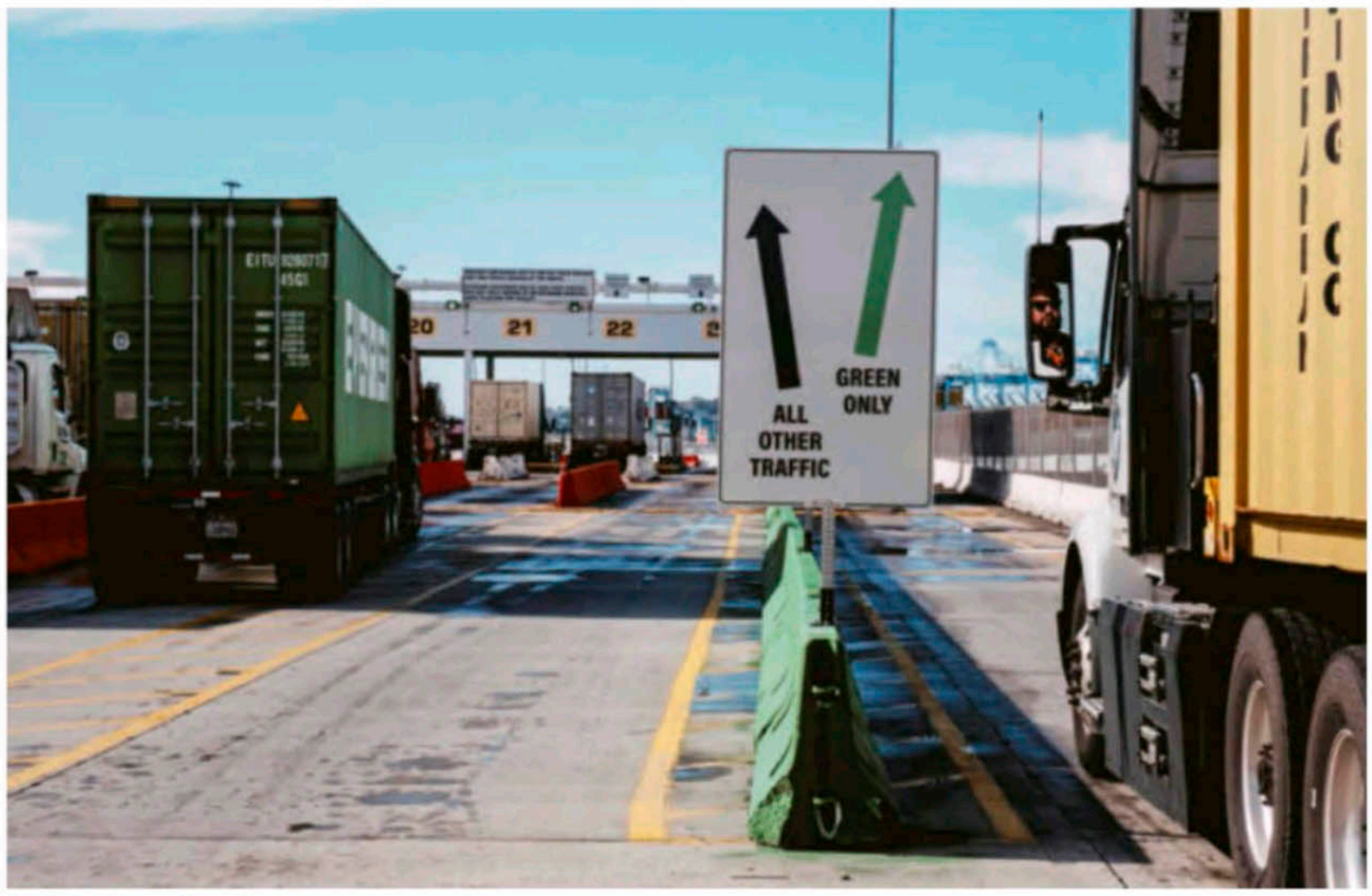
In the next six years electrification is likeliest for smaller vehicles operating over shorter routes, such as last-mile delivery services, thinks Alexander Krug of Arthur D. Little, one more consulting firm. The economics of small e-vans look compelling. Batteries can be smaller and vehicles can be recharged overnight at depots. Electric vans that travel relatively short distances in a day but cover lots of miles in a year could have a 10% cost advantage over conventional ones, calculate consultants at McKinsey. Uwe Hochgeschurtz of Stellantis notes that going electric can also insure against ever tougher emissions rules in cities. Lars Stenqvist, Volvo's technology chief, sees no reason why cities in Europe should not run electric bin lorries.

Even if they are not yet cheaper, going electric allows delivery firms such as FedEx and DHL to help merchants they serve meet carbon-cutting pledges which many shoppers demand. FedEx has set a target for half its parcel-delivery vehicles to be electric by 2025. DHL wants the same for 60% of its last-mile vehicles by 2030. Amazon has 10,000 electric vans on American roads and hopes to have 100,000 by 2030.

The economics are a heavier lift for heavy-duty vehicles. Optimists note that plenty of routes are well within current e-lorries' range. America's Department of Transportation reckons that last year the distance travelled by three-quarters of all goods ferried by road in the country was less than 250 miles (400km). Volvo calculates that 45% of goods in Europe travel less than 300km. Marco Liccardo, head of technology at Iveco, an Italian lorrymaker (also part-owned by Exor), expects electric lorries to reach total-cost parity with conventional lorries in 200km runs between logistics hubs in a couple of years.

Regulators are trying to speed things along. In America they have proposed requiring that half of sales of new buses and a quarter of new heavy-duty lorries be all-electric by 2032. Buyers of such clean vehicles can also count on tax credits. The EU is requiring cuts of 15% to the average emissions of carmakers' fleets by 2025 from their level in 2019, and of 43% by 2030.

So far this is having little effect. Only a few electric models are on sale. The large and bulky batteries they require drive up the purchase cost. Electric trucks set businesses back between two and three times as much as a diesel one does, and have limited range. The largest trucks, of which 2m or so were sold worldwide in 2023, are the hardest to wean off internal combustion. Volvo shifted 6,000 electric ones last year, just 2% of its total sales.



Life in the slow lane

Even if the cost disadvantage can be overcome, that leaves the problem of infrastructure. Van fleets can recharge overnight at depots and lorries on shorter routes can be charged at either end, while they are loaded or unloaded. However, longer routes will require public charging stations. And dedicated fast chargers for lorries need far more power than for cars, plus lots of parking space. The fastest chargers that top up cars in a few minutes would take around 90 minutes for a lorry.

A few "megawatt chargers", which are ten times faster, are in operation in Germany and the Netherlands. But a Europe-wide charging network requires investments of up to €36bn, estimates PWC, a consultancy. One to refuel lorries with hydrogen—a zero-emissions alternative to batteries—would not be cheap either. Cash-strapped governments are unlikely to want to foot the bill. On March 12th the Biden administration unveiled a strategy to build public charging for lorries. But even if the plan works, it will not happen overnight.

### Watch out for speed bumps

Vehicle makers themselves are another problem. Moving swiftly to an all-electric world would "write off seven or eight years of profit", says Robert Falck, boss of Einride, a Swedish commercial-vehicle start-up. Whereas legacy carmakers were forced into electrification first by Tesla and then by cheap but decent Chinese models, the lorry business has faced less disruption. Tesla unveiled the Semi, its electric lorry, in 2017 but started shipping it only in late 2022 and has a fleet of around 100 on the road. Its plans to produce 50,000 a year by the end of 2024 look wildly optimistic. Nikola, which launched to great fanfare in 2014 and in 2019 struck a joint venture with Iveco to develop zero-emission lorries, has struggled. Its founder was jailed in 2023 for misleading investors. Its market value has crashed from $29bn in 2020 to around $900m. Last year its joint venture with Iveco was disbanded and it sold just 35 hydrogen-fuel-cell vehicles. It has paused production of its battery lorries.

Startups eyeing last-mile delivery vans have had similarly mixed fortunes. Ramping up production and raising capital is proving tough. Lordstown, an American firm, and Volta Trucks of Sweden have gone bust. Arrival, a British one, is teetering on the brink, despite an order of 10,000 vans from UPS, a rival of FedEx and DHL. Rivian, which in 2019 signed a deal to sell 100,000 vans to Amazon, and Canoo, which counts Walmart among its customers, are struggling to make vehicles at scale and are burning cash. Other manufacturers, such as REE and Tevva, which make battery-powered vans and lorries in Britain, or Harbinger and Workhorse, which make medium-sized trucks in America, are hopeful but have even further to go.

The threat to legacy lorrymakers from China is also far less acute than in the market for passenger cars. As with electric cars, China has stolen a march on everyone else in commercial EVs, thanks to its world-beating battery industry (and strong government incentives). Maxus, a British brand acquired by SAIC, a Chinese carmaker, is selling vans across Europe; one model was Britain's best-selling electric van in December. BYD, China's biggest electric-car company, has exported a handful of large battery-powered lorries to America.

But China's lorrymakers will find life harder in foreign markets even than its carmakers, which are viewed with suspi-

cion by many Western governments. One car executive calls Europe's strict regulations for lorries "the equivalent of tariffs", adding that this makes Chinese commercial EVs uncompetitive on the continent.

Mr Falck hopes to shake up the market with a new business model, which he calls "Uber for freight". Volvo and Iveco are trying to increase the appeal of their electric lorries with a financing deal that sidesteps high upfront costs in favour of customers paying by use. Einride goes a step further, owning its own fleet of vehicles (built by partners and financed by investors) and providing the lugging of goods as a service. The company already operates fleets for Maersk, a shipping giant, AB InBev, a brewer, and Lidl, a supermarket chain. That is an interesting path to electric freight. But it, too, looks long and winding. ■

Saudi Aramco

# Not beyond petroleum

NEW YORK

**The world's oil colossus isn't cooling on crude just yet**

HAS SAUDI ARABIA stopped believing in a future for petroleum? In recent weeks the question has hung over Saudi Aramco. The desert kingdom's national oil goliath has a central position in the world's oil markets. Its market value of $2trn, five times that of the second-biggest oil firm, ExxonMobil, is predicated on bountiful reserves of crude and a peerless ability to tap them cheaply and, as oil goes, cleanly. So the Saudi energy ministry stunned many industry-watchers in January by suspending the firm's plans to expand oil-production capacity from 12m to 13m barrels per day (b/d). Did the kingpin of crude finally accept that oil demand would soon peak?

For an anwser, all eyes turned to Aramco's results for 2023, reported on March 10th. No one expected a repeat of the year before, when high oil prices and surging demand propelled its annual net profit to $161bn, the highest ever for a listed firm. But analysts and investors were still interested in the extent of the decline in revenue and profit, in any changes to capital-spending plans and, possibly, in the unveiling of an all-new strategy.

Profits did fall, to $121bn, though that was still the second-best tally in Aramco's history. Thanks to a recently introduced special dividend, the firm paid nearly $100bn to shareholders last year, 30% more than amid the bonanza of 2022, and promised to hand over even more in 2024.

Shovelling a larger chunk of a smaller haul to owners could, on its own, imply that Aramco is indeed less gung-ho about its oily future. Except that the rich dividend was accompanied by two developments that point in the opposite direction. First, Aramco is rumoured to be preparing a secondary share offering that could raise perhaps $20bn in the coming months—a move typically associated with expansion rather than contraction. Second, more tangibly, it is ramping up capital spending. Investments rose from less than $40bn in 2022 to some $50bn last year. In a call with analysts on March 11th Aramco confirmed that suspending the planned capacity expansion will save around $40bn in capital spending between now and 2028. But, it added, this does not mean it is not investing. On the contrary, the aim is to spend between $48bn and $58bn in 2025, and maybe more in the few years after that.

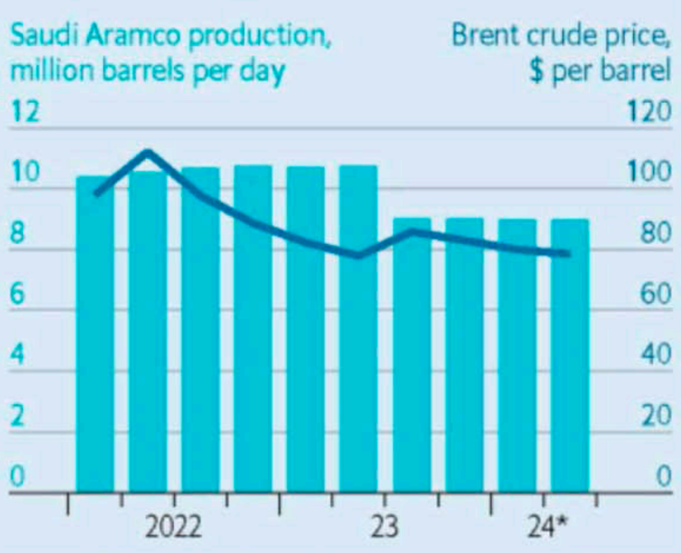
A bit of that money will go to clean projects such as hydrogen, carbon capture and renewables. Some will go to cleanish ones, such as expanding Aramco's natural-gas production by over 60% from its level of 2021 by 2030, and backing liquefied-natural-gas ventures abroad. But most is aimed at ensuring that Aramco can maintain its ability to pump up to 12m b/d of crude. Given its actual output of around 9m b/d (see chart), this does not hobble its ability to move markets. If anything, it strengthens Aramco's position, for it implies spare capacity of 3m b/d—above the firm's historic average of 2m-2.5m b/d, according to Wood Mackenzie, a consultancy. Aramco is, in other words, committed both to pumping oil and to preserving Saudi Arabia's role as the market's swing producer.

That is in part because it is also committed to pumping money into the economic vision for Saudi Arabia championed by Muhammad bin Salman, the kingdom's crown prince and de facto ruler. This became more evident on March 7th, when Aramco announced the transfer of 8% of its shares, worth $164bn, out of the hands of the government and into the Public Investment Fund (PIF), a vehicle for Saudi sovereign wealth which Prince Muhammad has tasked with diversifying the economy (see Finance & economics section). This leaves the PIF with 16% of Aramco, compared with the 2% or so that is owned by minority shareholders (the rest remains directly in the government's hands).

Saudi Arabia's plans to suspend the expansion of production capacity do not, then, reflect a U-turn away from hydrocarbons. Rather, the pause is born of a hard-headed assessment of market realities: a surge in oil production in the Americas, soft demand in China and cuts to output from the OPEC cartel (of which Saudi Arabia is a member). As Amin Nasser, Aramco's chief executive, summed it up in the results presentation, "Oil and gas will be a key part of the global energy mix for many decades to come, alongside new energy solutions." And so will Aramco. ■

**Locked stocks and barrels**

Oil




Sources: Bloomberg; LSEG Workspace *Forecast

Business in China

# Domestic strife

SHANGHAI

**China's online nationalists turn on Chinese brands**

EXCITABLE CHINESE netizens have long inveighed against foreign brands' perceived insults of Chinese culture. Nike, an American shoemaker, was once attacked for depicting a man beating a dragon in a game of basketball. Marriott, an American hotel chain, was hit with an online campaign after it listed Taiwan and Tibet as countries. Dolce & Gabbana, an Italian fashion label, got an earful in 2018 over an ad that showed a Chinese model clumsily eating Italian food with chopsticks.

Now China's online nationalists are taking aim at a new target. In the past two weeks they have besieged Nongfu, a bottler of spring water whose founder, Zhong Shanshan, is China's richest man. Its sin? Typography. The Chinese character for tea used on Nongfu's new beverage includes four brushstrokes resembling plus signs. To the online nationalists, the stylisation resembles the Yasukuni shrine in Tokyo, where Japanese generals who committed war crimes in China are commemorated.

It takes a wild imagination to spot the likeness. But Nongfu's critics are, it seems, a wildly imaginative bunch. They have unearthed other pro-Japanese symbolism. A mountain on its water bottles, one of China's most recognisable logos, is Mount Fuji, supposedly. Set against a white backdrop, Nongfu's red plastic bottle cap becomes, unmistakably, the Japanese flag. What is more, the name of Mr Zhong's son, Zhong Shuzi, sure sounds Japanese (in a worse betrayal, he is an American citizen). ▸▸

A few local brands have been accused of mimicking Japanese style in the past. Miniso, a homeware retailer, was pilloried in 2022 for selling figurines in Chinese garb and labelling them as geishas. But the latest furore looks both more severe and broader. The Nongfu imaginings are already doing real damage. Daily sales of the spring water fell by more than 30% over the past fortnight. A few 7-Eleven convenience stores have vowed to stop carrying the products. The company's market value is down by about 5% since the drama began, costing shareholders some $4bn.

And Nongfu is not the only firm in the nationalists' sights. Li-Ning, a Nike rival known for tracksuits with "China" emblazoned in Chinese characters on the back, has drawn criticism over the supposed likeness between a new line of jackets and Japanese military uniforms from the second world war. One netizen wrote on Chinese social media that if he were caught wearing one, his grandfather would shoot him dead. Even Huawei, a technology giant that in the West is synonymous with Chinese patriotism and pride, has come under fire. Its transgression was to call its new homegrown semiconductors Kirin in English. The word is a Japanification of Qilin, the chips' Chinese name, which refers to a mythical beast.

State media have told the self-appointed culture police to calm down. One prominent nationalist, Hu Xijin, has called for an end to the madness. That only infuriated many of his erstwhile supporters, who turned on him instead and now call him a "traitorous running dog" on social sites. As Mr Hu is finding out the hard way, nationalism, both online and in the real world, is easier to whip up than it is to contain. ■

## Bartleby Working from nowhere

*Every location has got worse for actual work*

WORK WOULD be so much better if you could get work done. It has always been hard to focus amid the staccato rhythms of meetings, the relentless accumulation of messages or the simple distraction of colleagues thundering past. But since the covid-19 pandemic, every single place of work has become less conducive to concentration.

Start with the home office. The promise of hybrid working is that you can now choose your location depending on the task at hand. If you need to focus on work, you can now skip the commute, stay home and get your head down. This tactic would have worked well in 2019, when no one else was ever at home. Now there are likely to be other people there, too, grabbing the best spot for the Wi-Fi, merrily eating your lunch and talking loudly to a bunch of colleagues in their own workplaces. Home has become a co-working space but without any of the common courtesies.

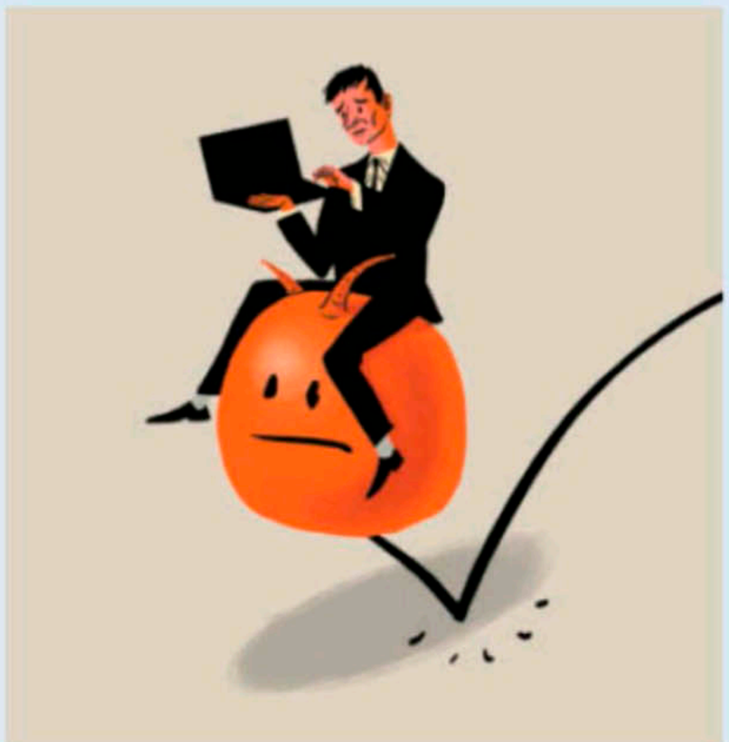
Even if none of your family or flatmates is at home, they now know you might be. That spells disaster. Parcels are delivered with monotonous regularity; large chunks of the day are spent being photographed on your own doorstep holding intriguing packages that are not for you. Children who want food or money know where to track you down.

Worst of all, jobs that once required a day off can now be done at no personal cost by booking them in for days when someone else is at home. "Are you going in today?" might sound like an innocuous question. It should put you on high alert. It means that a bunch of people with drills will storm the house just as you settle down to the laptop.

One natural response is to head to the place you were trying to avoid—the office. But its role has changed since the pandemic. It was never a great place for concentrating (the periods of lockdown were glorious exceptions). But it has become even less suitable now that the office is seen as the place where collaboration and culture-building happen.

Before you might have been able to sit in a cubicle, fenced off from other people; now openness is in vogue, which means fewer partitions and greater visibility. Before you might have had a normal chair and a desk; now you will be asked to wobble awkwardly on a tall stool at a champagne bar. Before you were interrupted; now you are being given an opportunity to interact. There is much more emphasis on meetings, brainstorming, drinking, eating, bouncing around on space-hoppers or whatever appalling activity builds team spirit. There is much less emphasis on single-minded attention.

Home is heaving, the office is off-putting. What about other places, like co-working spaces and coffee shops? These too have got worse since the pandemic, for two reasons. First, there is more competition for spaces. Everyone else who is finding it hard to concentrate has had exactly the same idea of heading to a third location.



Second, online meetings have made it acceptable to reach everyone everywhere. It used to be said that you are never more than six feet away from a rat; now the same is true of a Zoom call. Wherever you are—homes, offices, cafés, libraries, monasteries—someone is within earshot, yapping away about something that manages to be both tedious and impossible to ignore: the plight of local papers in Maine, the risk calculations behind Solvency 2 or why Denise is so impossible to work with.

There are ways around the concentration problem. One is to become richer: everything is so much easier if you have another wing of the house, or indeed another house. Another is deliberately to swim against the hybrid tide: if Monday is the day when most people work from home in order to focus, the office is going to be a better place to work that day. The most common and least healthy answer is to defer focused work until the evenings and weekends.

This is not a lament for the pre-pandemic world. Just because each location has got worse as a place to do focused work does not mean that things have got worse overall. Hybrid work allows people to pick the most appropriate locations for specific tasks. The option of occasionally staying at home, even if home is noisier than it was before 2020, is still better for many workers and employers than the pre-covid norm of coming into the office every day. But wherever you are, other people are more likely to be there or to have a greater expectation of interacting with you. The ability to concentrate is sold as a benefit of flexibility. It can be the price you pay for it.

# TURNING GARBAGE INTO GOLD

**The British winners of the first Spogomi World Cup approached the event with a sporting mindset and came away with a heightened environmental awareness.**

The first rule of Spogomi is you should talk about Spogomi. "We would love to be involved in spreading the fun and see more people getting involved in such a great sport," says Jonny Winship, a member of the British team that won the inaugural Spogomi World Cup on November 22nd 2023.

Invented in 2008 by Kenichi Mamitsuka, Spogomi gets its name from "sports *gomihiroi*", the latter word meaning to pick up rubbish in Japanese. Teams collect litter in designated areas within a strict time limit, scoring points for the weight of collected items with a multiplier for particular categories. One gram of cigarette butts is worth three points versus only 0.1 per gram for burnable rubbish. Competitors lose points for rule breaches such as running, going out of bounds or collecting bulky items.

**"Spogomi is an entertaining sport that can generate great interest and be easily accessible by people indifferent to environmental issues. I felt that this could become a movement with great potential to spread in Japan and worldwide."**

Unno Mitsuyuki, executive director
**Nippon Foundation**

### Working towards the first world cup

Spogomi built up to its first world cup with the support of the Nippon Foundation, a non-profit organisation dedicated to social innovation. "We have been undertaking initiatives related to the ocean for almost 60 years," says Unno Mitsuyuki, the foundation's executive director. Since 70-80% of marine litter comes from land sources, the foundation's "Change for the Blue" initiative encourages all kinds of people to take action against the problem.

The foundation became interested in Spogomi because it is an entertaining way of fighting pollution that is accessible to a diverse audience, including those currently indifferent to environmental issues. "I felt that this could become a movement with great potential to spread in Japan and worldwide," says Mr Unno.

Promotion of Spogomi began with an annual competition for high-school students in 2019, followed by a national tournament for adults. An animated video of the competition helped attract the parent company of global fast fashion brand Uniqlo as a sponsor for the eventual world championships. Two million dollars in funding enabled the hosting of qualifiers in 21 countries as well as the world championship. "Thanks to this support, we managed to turn Spogomi into a worldwide sports event, raising awareness of the issue of ocean pollution."

### Tackling litter by the tonne

Teams collected around 4.5 tonnes of litter in preliminary events held in 47 Japanese prefectures, and another 3.9 tonnes in the international qualifiers. At the final round in Shibuya, competitors picked up 548kg.

Sarah Parry, along with her partner, Alex Winship, and his brother Jonny, made up the winning British team. They beat 20 other national teams to take home gold medals, collecting just over 57kg for a score of 9,046.1 points, close to 3,000 points ahead of runners-up Japan, with Italy in third place.

Spogomi is a family affair for the victors—it was Sarah's older brother, Stephen, himself a winner of the qualifying round in Brazil, who first introduced them to the sport. He even shared some successful tactics and inspired the team's hopes of winning a trip to Japan for the final.

The sport is "physically demanding", Sarah says. "It requires fast-paced speed walking while carrying several kilos of litter over a distance of one to two miles at a time," in two 45-minute sessions. There is also a lot to think about: team members work as their own timekeepers and must contend with the hazards of traffic and pedestrians as well as with competing teams.

Alex emphasises the value of having a diverse group in winning at Spogomi. "Someone small, nippy and agile, like Sarah, someone who can be loaded up like a donkey to carry the weight, like myself, and if possible someone with a mix of strength and speed, like Jonny." Sarah has run more than 30 marathons, Alex runs and goes to the gym, and Jonny plays football.

**A sport that wins hearts to conservation**

Though the winners' interest in sports and fitness played a part in their victory, Spogomi is intended to be a game that anyone can participate and succeed in. Alex highlights how the rule against running levels the playing field for people of different ages and abilities. Teamwork, strategy and tactics are important enough that he is reluctant to share tips. "We're hoping to win again, so I don't want to water down our competitive advantage," he says.

Bearing out Mr Unno's hope that Spogomi could attract people who are not yet engaged with environmental issues, the winners had not previously been involved with conservation. "I felt a little guilty after we won," Alex says. "A good chunk of the teams at the final were involved in initiatives where they were litter-picking on a regular basis."

But the experience of competing has made the team advocates for the activity. "As a team, we have been invited back to Japan in 2025, for the next World Cup, by the Nippon Foundation," says Sarah. "We are excited to see what we can achieve between now and then for the sport and to benefit the environment."

**Visit the official Spogomi World Cup page at https://spogomi-worldcup.org/en/, and follow the winning team on Instagram @spogomi_teamuk**

日本財団 THE NIPPON FOUNDATION

# Schumpeter | Casino capitalism

*Elon Musk is not alone in having Delaware in his sights. So does Sin City*

AT THE TURN of the 20th century the prime state to register businesses in America was New Jersey, home to America's biggest trusts such as Standard Oil. Other states, including its diminutive next-door neighbour, coveted the spigot of easy money that came from business incorporation. "Little Delaware, gangrened with envy at the spectacle of the truck-patchers, clam-diggers and mosquito-wafters of New Jersey getting all the money in the country into her coffers, is determined to get her little tiny, sweet, round, baby hand into the grab-bag of sweet things," the *American Law Review*, a journal, wrote at the time.

It succeeded. As New Jersey tightened its laws in response to the antitrust fervour of the 1910s, businesses realised the grass was greener across the Delaware river. The resulting corporate migration has turned Delaware into America's incorporation capital. In 2022, 1.9m firms were incorporated in the state, almost two for every one of its citizens. More than two-thirds of the *Fortune* 500 list of America's biggest firms by revenue are registered there (as are a few entities linked to *The Economist*). In Wilmington, its biggest city, office towers stand as their faceless business domiciles. Business taxes and fees generated about $2bn for the state in 2022, a big part of its annual budget.

No surprise, then, that now other states are keen to get their own sweet, round mitts on the spigot by offering businesses even juicier incentives. Some aggrieved tycoons, such as X's troll-in-chief, Elon Musk, are helping make the anti-Delaware case for them. To assess their chances, your columnist visited Nevada, which has long wanted to make itself as amenable to business registration as it is to nuptials. As Benjamin Edwards, a law professor at the University of Nevada, Las Vegas, puts it: "There is dreary Wilmington and the Texas wastelands. Or there is fabulous Vegas."

Las Vegas's business courts are a far cry from Wilmington's Court of Chancery. They are in the general courthouse, so you are checked for weapons before you enter. Their location on the 16th floor provides a sense of being high above the hurly-burly. Yet the first case Schumpeter heard was down to earth, concerning mould in a rental property. A paper on the desk of Mark Denton, the judge in that case, is a reminder of the state's long battle to be taken seriously. "Transforming Nevada into the judicial Delaware of the West: How to fix Nevada's business courts", from 2016, pointed to three problems. Business judges did not publish their opinions, which made the system unpredictable. They were forced to work on business and non-business cases, which made it slow. And Nevada had two business-court districts, Las Vegas and Reno, which meant some laws were interpreted differently. Nevada, the paper concluded, had a lot to fix before taking on Delaware. It still does.

You do not find such soul-searching in Wilmington. When your columnist last visited, the sense of entitlement for setting the de facto corporate law of the land was palpable. He dined, with obligatory tie, at the Wilmington Club, a place for corporate lawyers to eat, drink and discuss the business rulings of the day over brandy and cigars. Read some of the erudite judgments that have emerged recently from the Court of Chancery, interspersed with discussion of the "soritical paradox" and Shakespeare, and they leave little doubt that business law is as prized in blue-blooded parts of Wilmington as slot machines are in red-blooded Vegas. Delaware's pre-eminence is seldom questioned.

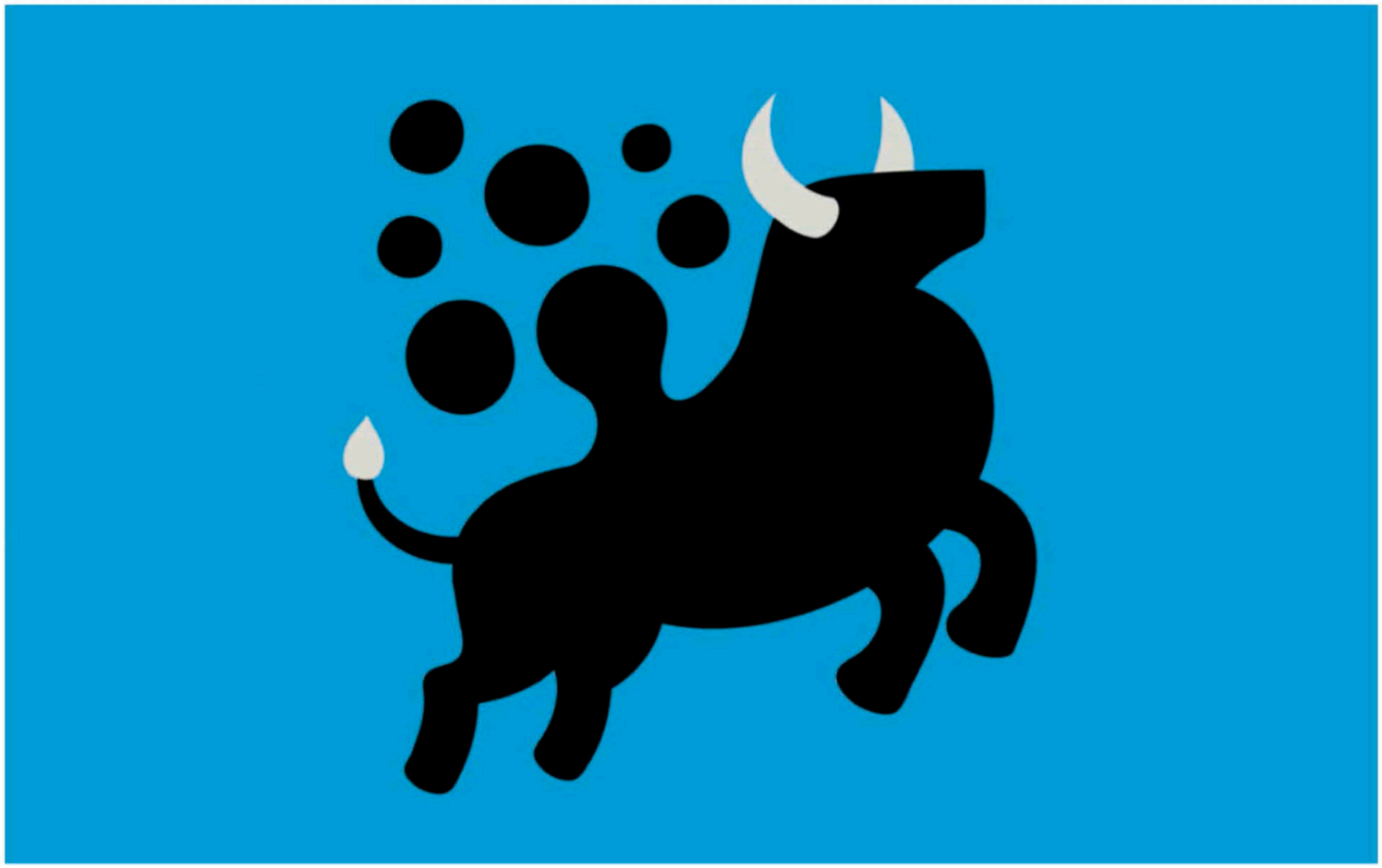
Now is one of those rare times. A flurry of rulings has been a cause for disquiet. The most prominent critic has been Mr Musk, who attacked Delaware in January after the Court of Chancery voided his $56bn pay package as boss of Tesla. In response, he reincorporated Neuralink, his brain-implant firm, in Nevada, and has filed to move SpaceX, his rocketry business, to Texas. TripAdvisor, an online travel firm chaired by Greg Maffei, a media baron, is decamping to Nevada—to save money and spare the board "unmeritorious litigation", it says. A Court of Chancery judge recently ruled that Delaware could not stop the move, though he allowed shareholders to sue for compensation.

Delaware's defenders instinctively dismiss its critics. At a gathering this month at the Tulane Corporate Law Institute in New Orleans, panellists noted that in the past some of Delaware's loudest antagonists, such as Conrad Black, a publisher, were later convicted of fraud (Lord Black was pardoned by Donald Trump when he was president). Yet law professors say recent rulings—not just Mr Musk's case but also Delaware's efforts to push back against agreements through which controlling stockholders, such as private-equity firms, govern their listed subsidiaries—have raised concerns about the unpredictability of Delaware judgments. Some buy-out firms are said to be thinking of moving to Nevada.

Francisco Aguilar, Nevada's secretary of state, highlights its selling points. Nevada leans in favour of controlling shareholders in their "constant tension" with minority investors, he says. He points to the "accessibility" of state lawmakers to business-owners who want to influence corporate statutes—highly unDelaware-like behaviour. But Mr Aguilar also acknowledges local shortcomings. Nevada's low fees partly reflect poor service. Its business-filing system has been "duct-taped together" for too long, he says, and is in the midst of a $15m upgrade. Faced with such constraints, firms looking for an alternative to Delaware have often preferred Wyoming or North Dakota, he admits.

### Stick or twist

If Nevada offers loose shareholder protections in order to woo businesses, the danger is that investors will value firms that move there less highly. This means that Delaware has little to fear from Nevada—or any other state—for the time being. But the competition could still turn out to be healthy, even if it involves rivals offering laxer corporate standards, by keeping Delaware on its toes. It may even make the First State less insufferably smug. ■



Share prices

# From bull market to bubble?

**Stockmarkets are surging. Investors are delighted—but also nervous**

TWO YEARS ago, pretty much everyone agreed that one of the great bubbles was bursting. An era of rock-bottom interest rates was coming to a close, shaking the foundations of just about every asset class. Share prices were plunging, government bonds were being hammered, crypto markets were in freefall. Wall Street's prophets of doom were crowing with delight. The consensus of the previous decade—that inflation was dead and cheap money here to stay—looked as ludicrous as the groupthink of any previous financial mania. Thus the pendulum was about to swing: from exuberance to scepticism, risk-taking to cash-hoarding and greed to fear. It would take a long time to swing back.

Or not. The trough in American stocks came in October 2022. Less than 18 months later stockmarkets around the world are back at all-time highs (see chart 1 on next page). America's in particular is on an eye-popping run, with the S&P 500 index of large firms having risen in 16 of the past 19 weeks. The value of Nvidia, a maker of microprocessors essential for artificial intelligence (AI), has risen by more than $1trn in the space of a few months. Bitcoin hit another record on March 14th. Disorientingly for those who blamed the previous mania on near-zero interest rates, this comes after a brutal campaign by central bankers to yank them back to more normal levels. Once again, every conversation about markets veers unerringly back to the same question: is this a bubble?



For many, the parallel that springs to mind is not the most recent bull market but that of the late 1990s, when the dotcom bubble inflated. Then, as now, new technology promised to send productivity and profits to the moon, the innovation in question being the internet rather than artificial intelligence. Bulls in the 1990s were right that advances in telecommunication would transform the world and spawn new corporate giants. Yet plenty still ended up losing their shirts—even by betting on firms that went on to be wildly successful. The canonical example is Cisco, which, like Nvidia, made hardware crucial for the new age. Although in the most recent fiscal year its net profit was $12.8bn, up from $4.4bn in 2000 (both in today's money), those who bought shares at their peak in March 2000 and are still holding today have taken a real-terms loss of nearly 66%.

Cisco therefore illustrates the defining feature of bubbles. They inflate when investors buy assets at prices that are entirely unmoored from economic fundamentals such as supply and demand or future cash flows. The question of what the asset is "worth" goes out of the window; all that matters is whether it can later be sold for more. That in turn depends on how many people the speculative frenzy can pull in and how long it can last—in other words, how mad the crowd becomes. Once buyers run out, the craze dissipates and there is ▸▸

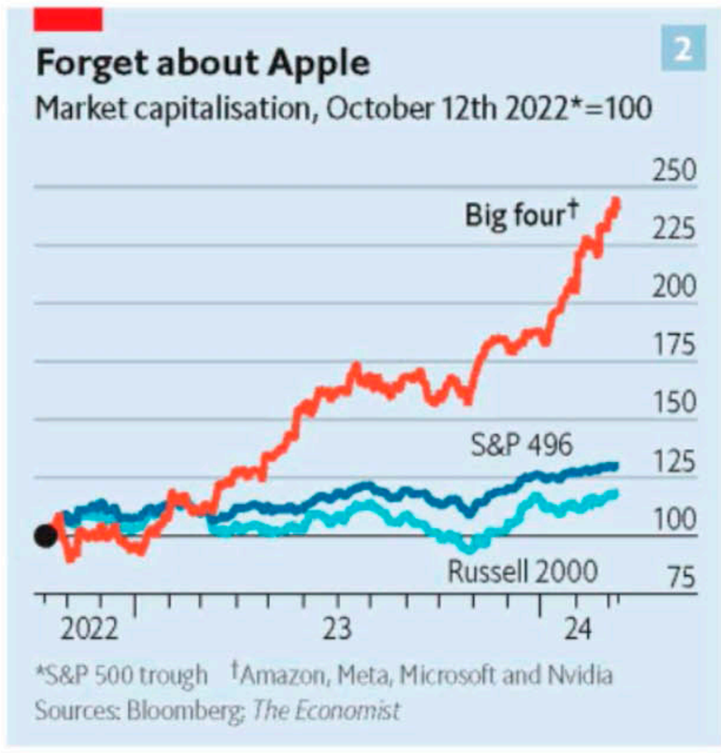
nothing holding prices up. Predicting the size of the subsequent fall is as much of a fool's game as trying to time the top.

The good news is that this sort of mania is some way off. Researchers at Goldman Sachs, a bank, have analysed the valuations of the ten biggest stocks in America's S&P 500 index, around which much of the AI hype has revolved. With prices at an average of 25 times their expected earnings for the coming year, they are on the expensive side. But they are cheaper than they were last year, and a bargain compared with the peak of the dotcom bubble, when prices were 43 times earnings.

There are other tell-tale signs that, in spite of soaring share prices, euphoria is absent. Bank of America's latest monthly survey of fund managers finds them more bullish than they have been for around two years, but not particularly so by long-term standards. Their average cash holdings are low, but not extremely so, meaning that they have not piled into the market with everything they have (and are also not hoarding cash in anticipation of a plunge, which they were in the late 1990s). Among retail investors, the crowd that typically sustains the final and most dangerous stage of a bubble, there has been no repeat of the stampede into tech funds and meme stocks witnessed in 2021.

### Manic episodes

What, then, would it look like if things were to take a euphoric turn? A strong signal would be for gains that have so far been concentrated in a few mega-cap stocks to spread through the market more broadly. The winning streak of the past few months has been dominated not by America's "magnificent seven" tech giants, but by just four of them. Amazon, Meta, Microsoft and Nvidia have left the other 496 stocks in the S&P 500 in the dust. Those others, in turn, have recovered from the shellacking of 2022 far better than the smaller firms represented in the Russell 2000 index (see chart 2). If investors really do start throwing caution to the winds, expect them to start betting on riskier corporate minnows as well as on giants—especially those that manage to shoehorn the letters "AI" into their annual reports.




A corollary is that the pipeline of initial public offerings (IPOs) ought at last to start gushing. In both 1999 and 2021 it got going, with rising share prices and ebullient investors proving irresistible to bosses searching for capital. A puzzling feature of the current bull market is that it has taken place amid an IPO drought. EY, a consultancy, estimates that firms going public in America raised just $23bn in 2023, compared with $156bn in 2021. It might be that bosses are simply more worried about economic headwinds than investors are. In a euphoric market such level-headedness becomes impossible to maintain.

Similar dangers stalk professional money-managers, whose job is to beat the market whether or not they think it is moving rationally. When pockets look dangerously overvalued, it makes sense to avoid them. But in a bubble, avoiding overvalued stocks—which, after all, are the ones rising the most—starts to look suspiciously like routine mediocrity. As the dotcom frenzy reached its peak, Julian Robertson, one of the 20th century's most revered hedge-fund managers, stalwartly refused to buy tech stocks. His investors eventually revolted and withdrew their money, forcing his fund to close right as the crash was about to start. Hence another sign that a bubble is about to pop: some of the market's gloomier voices are fired.

Investors do not yet seem excitable enough for any of this to take place. But as in 2021, cheaper debt could help get them in the mood. Lenders are shovelling money in the direction of risky high-yield (or "junk") corporate borrowers, narrowing the spread they pay above the yield on government debt. When the Federal Reserve's officials meet on March 20th, any hint that rate cuts are imminent could be exactly the sort of high for which investors are looking. Just have some paracetamol on hand for the comedown. ■


Global trade

# God bless America

NINGBO

## China's economic bright spots reflect the success of the country's rival

IF AMERICA'S ECONOMY begins to deteriorate, people in Ningbo will be among the first to know. The eastern Chinese port, home to 9.6m residents, contains a sprawling industrial district. Its goods are prepared for export, and are shipped abroad via a deepwater harbour, which is one of the world's busiest. The coast of Zhejiang province is dotted with similar entrepôts, where thousands of mostly family-owned firms have built up a diverse manufacturing base over the past 40 years. They make everything from textiles and car parts to electronics and machine components.

Ningbo is also a city of political importance. Although private industry, rather than state-backed enterprise, has thrived in the region, it has nevertheless been held up as a model of "common prosperity"—Xi Jinping's way of dealing with wealth inequality. And amid a gloomy overall outlook, with much of the country mired in a property crisis and suffering from weak consumer demand, surprisingly strong exports and fading fears of a recession in America have combined to make Ningbo one of China's most optimistic cities.

Official data released on March 7th showed that China's exports surged by 7.1% year on year in the first two months of 2024. This is especially impressive given that some analysts had expected growth of less than 1%. Even exports to America climbed 5% year on year, after having tum- ▸▸

Behind the iron curtain

bled by nearly 7% in December. The figures were sufficiently encouraging that policymakers at China's annual congress in Beijing disclosed a version of them a day ahead of the expected release date.

Little surprise, then, that the atmosphere in Ningbo is more cheerful than in other Chinese cities. Part of this, locals say, can be attributed to its relatively easy covid-19 years. In 2022 many large Chinese cities were locked down for months on end. Ningbo, perhaps by dint of luck, avoided a full-city lockdown and closed few factories. When Shanghai was shut down in April and May that year, halting lorries bound for its port, some traffic was rerouted to Ningbo's busy harbour.

The good cheer has limits, though, which suggests that cities such as Ningbo may not drive China's recovery. A downturn in foreign demand would be devastating for the region. Local factories experienced a brief taste of this as China reopened in early 2023. Empty containers began stacking up in Ningbo's port, indicating a lack of overseas purchases. An official who visited the city last March says he anticipated a disaster for the city and other export hubs. Fortunately, part of the phenomenon was explained by excess shipping containers returning to China for the first time since the start of the pandemic. The drop in demand was a blip.

Ningbonese factory bosses have other concerns. The family-controlled nature of their firms makes financing from banks more difficult to secure. As larger manufacturers in southern cities such as Shenzhen enjoy government support for technology upgrades—involving robotics and the internet of things—local companies are finding it tough to keep pace.

And although the most recent export data beat expectations across the board, things improved from a very low base. Analysts at HSBC, a bank, expect trade uncertainty to persist. Meanwhile, demand is shifting: that from poorer markets, such as Africa and South America, is surging, according to the most recent data; that from America remains strong; but that from Australia, the EU and Japan is falling.

How well will Ningbo adapt? Many manufacturers got their start supplying foreign brands. More recently, they have begun selling directly to customers in the rich world through Amazon, an online marketplace, and Temu and Shein, two Chinese e-commerce sites, notes Hing Kai Chan of the University of Nottingham Ningbo China. They are unlikely to have developed similar channels in the markets now growing strongly. If rich-world demand fizzles out, Ningbo's happy days could come to an end. Instead of developing a new path to prosperity, China's optimistic city is riding on the coat-tails of the country's geopolitical rivals. ■

Commodities

## Life's a beach

### How Chinese solar-panel production is upsetting sand markets

SAND IS EVERYWHERE. Yet only a certain sort can be used to make the ultra-clear glass required for smartphones and solar panels. It must have a silica concentration of more than 99.9%, against less than 80% for construction material. This high-quality sand is scarce: of the 50bn or so tonnes extracted each year, less than 1% can be used to produce regular glass. A tiny fraction of that is pure enough for solar panels.

As China's leaders seek to revive the country's economy, and to rebalance it away from property, they are throwing cash at manufacturing firms. The result is likely to be a surge in production, especially in sectors that Xi Jinping sees as important to China's future, such as lithium-ion batteries, electric cars and solar panels, many of which require vast amounts of sand. As a result, demand will probably rise higher still. Prices are already hovering near record highs; last year they came to around $55 a tonne.

The market is opaque and fragmented. But Crux Investor, a data firm, notes that the price of high-quality sand has risen twice as much as that of lower-quality stuff over the past five years, owing to the expansion of green manufacturing and the growing popularity of smartphones. Prices are buoyed by the fact that most Asian countries control exports so as to prevent environmental degradation. In America, where fine sand is mostly found in freshwater rivers, tough regulation makes extraction hard.

Some manufacturers are now looking for alternatives. One option is to refine sand used for regular glass, which tends to be 99.5% silica. The problem is that doing so is itself expensive.

Miners, both legitimate and otherwise, therefore spy an opportunity. The black market, estimated to be worth hundreds of billions of dollars a year, is likely to grow. Australia and Brazil are perhaps best placed to profit from the legal boom, according to Brian Leeners of Homerun Resources, a miner. Although these countries are best known for their sparkling white beaches, they also have significant reserves of industrial sand. These reserves are often farther from human settlements than those elsewhere, making extraction simpler. Mining companies report that until recently the price of sand was not high enough to cover shipping costs. Soaring prices have changed the equation.

Neither country is in China's sphere of influence. As such, they may help make Western supply chains more resilient. Mr Leeners points out that Brazil's shipping lanes are also less prone to disruption, since they avoid the drought-hit Panama Canal and the Red Sea, which is under bombardment by Houthi rebels. Other commodities essential for the green transition, including cobalt, nickel and lithium, have seen prices jump, only to fall subsequently when new supplies or cheaper alternatives are discovered. Once permits have been acquired for extraction, high-quality sand could be the next to follow this path. The wait will, however, be an uncomfortable one for many manufacturers.

The post-oil economy

# Princely demands

RIYADH

**Saudi Arabia's investment fund has been set an impossible task**

ABOUT A DECADE ago, a flashy, deep-pocketed investor made an appearance. Saudi Arabia's Public Investment Fund (PIF) had a mandate to go big, and was ready to: it picked up a $3.5bn stake in Uber, placed $45bn in the world's largest technology-investment fund, SoftBank's Vision Fund, and provided half the capital for a $40bn infrastructure fund run by Blackstone, a private-equity giant. It has since bought stakes in everything from Heathrow Airport and Nintendo to Hollywood studios and French hotels. Last year it deployed more than $30bn of fresh capital, making it the highest-spending wealth fund in the world (see chart).

Yet even as the PIF splurges abroad, its mandate at home is becoming more important. That is because of crown prince Muhammad bin Salman's plan to transform Saudi Arabia's economy, known as "Vision 2030", in which the PIF is expected to play a vital role. It has been instructed to invest at least 150bn riyals ($40bn) at home each year. The intention is also to raise its holdings from 3.5trn riyals to 7.5trn riyals by the end of the decade, with luck creating millions of jobs as the economy moves away from oil. After a strong 2022, the kingdom's GDP fell by 0.9% last year—its worst performance since 2002, aside from years of pandemic or financial crisis—making the task more urgent.

The PIF's role as a fulcrum of the Saudi economy means it is unlike any other sovereign-wealth or public-pension fund. Norges Bank Investment Management, Norway's sovereign-wealth fund, has tasks and governance that are distinct from the country's pension fund and finance ministry. Singapore's GIC has to replenish its government's budget, but its investments are focused on profits. In Qatar the state fund mainly invests abroad. As the PIF attempts to meet the ambitions of its political masters, it faces three challenges.

The first concerns funding. The PIF currently receives most of its capital through asset transfers and capital injections from the government. On March 7th the Saudi government revealed that 8% of Saudi Aramco's equity, worth about $164bn, had been transferred to the fund, doubling its stake in the state oil giant. The fund also receives dividends from investments and holdings, and can tap debt markets. It raised $11bn by issuing bonds on international capital markets last year, and has already raised another $5bn this year. On top of this, the fund borrowed at least $12bn in long-term loans last year. In the past, the central bank's foreign-currency reserves have been transferred to it, too.

**Black gold**

Public investment funds, capital deployed, $bn
2023


Source: Sovereign Wealth Fund Institute

Many of these sources will come under pressure. Not only is the fund expected to keep spending more, but as demand for oil slows the Saudi government will become less munificent. By 2030 millions more Saudis will have entered the workforce. The state employs many locals on higher wages than the private sector, with salaries counting for 40% of its total spending, meaning this will strain its budget. Bosses at domestic firms, many part-owned by the PIF, now talk of cost-cutting. And since the fund has eagerly tapped debt markets, interest payments are growing. Its cash dropped to $15bn at the end of September, from around $50bn at the end of 2022.

The PIF's desire to boost growth across the Saudi economy also means it invests in firms at various stages of evolution, complicating efforts to sustain consistent returns. Over the past five years the fund has established 93 companies. Over the 13 "strategic" sectors that the PIF has been tasked with developing, from health to sports and tourism, returns vary widely. Portfolio companies range from ROSHN, a property developer, to NEOM, a vast smart-city under construction, and Riyadh Air, an airline yet to become operational.

All of this leads to the PIF's second challenge: boosting returns. Since 2017, when the fund was tasked with implementing Vision 2030, its investments have returned about 8% a year. This is just above its minimum target of 7%, but far below the private-equity-style returns it really aims to achieve, admits one executive. Such ambitions are loftier than those pursued by most sovereign-wealth funds, which are more reserved owing to the difficulties of making big returns with diversified holdings and such large pools of money. So far the PIF has been able to pick assets that promise both economic development and strong returns, while tapping dividends from these holdings. As its role expands, that will become increasingly difficult.

Moreover, private-equity-style valuation methods, which depend on past performance and projections of future cash flows, are tough to apply to many of the companies and projects in which the PIF is now investing. NEOM, for instance, is ex-

Electrifying Riyadh

pected to cost around $500bn. But how and when it will begin to offer consistent cash flow is up for debate, making the investment more akin to a venture-capital one. In other areas, such as health and infrastructure, the fund's role has the air of impact investing, where the goal is to achieve certain social ends as well as secure profits. This sort of investment is normally characterised by returns that deteriorate with scale and perform better when held for a long time, according to researchers from Harvard Business School and the International Finance Corporation, part of the World Bank. As the PIF expands, another problem is emerging: portfolio firms often overlap and compete with one another, cannibalising returns. In effect, this means taking money from your left pocket to put in your right, the executive sighs.

The final challenge is attracting foreign investment into Saudi Arabia. As the fund grows bigger, foreign money would assist its ambitions. It would also enable domestic firms to expand their horizons and access new markets, thereby reducing the chances of ending up in competition with one another. And it would allow the PIF to exit some of its investments, which would push the private sector to fend for itself.

But last year, after an IMF-approved data revision, Saudi Arabia attracted just 53bn riyals in foreign direct investment in the first three quarters, an amount equivalent to 2% of GDP. The aim is to entice over double that by 2030. "We can wait for investors but it will take time, so let's go and do it [ourselves]," says a Saudi minister, "while being inviting to others." It could be a very long wait. So far, global investors seem happier to take Saudi Arabia's money than to put their own money into the country. ■

## Buttonwood Show me the money

*The private-equity industry has a cash problem*

HOW MUCH MONEY are your private-equity investments making? The question is easy to answer for other asset classes, such as bonds or publicly traded stocks. All that is required is the price paid at purchase, the price now and the time that has elapsed between the two. It is less obvious how returns for private-equity investments should be calculated. Capital is earmarked for such investments, but it is only "called" once the investment firm has found a project. There is little information about value once invested. Cash is returned in lump sums at irregular intervals.

An alphabet soup of measures are supplied to investors, which are known as "limited partners". There is IRR (the internal rate of return, calculated from returns to a specific project), MOM (the estimated value of a fund, as a "multiple of money" paid in) and a dozen more besides. All have flaws. Some rely on private valuations of assets, which might be flattering; others do not take into account the cost of capital. But nitpicking seems pedantic so long as one measure stays high: cash distributions measured as a share of paid-in capital, known as "DPI". This concerns the money that private-equity firms wire to the pension funds and university endowments that invest in them each year, as a share of the cash those investors have paid in. Unlike IRR or MOM it is hard to game and takes into account the meaty fees charged for access to funds.

Over the past quarter of a century, private-equity firms have churned out distributions worth around 25% of fund values each year. But according to Raymond James, an investment bank, distributions in 2022 plunged to just 14.6%. They fell even further in 2023 to just 11.2%, their lowest since 2009. Investors are growing impatient. It is now possible to buy jumpers and T-shirts emblazoned with the slogan "DPI is the new IRR" on Amazon, an online retailer. According to *Bloomberg*, a news service, an investor recently showed up to a private-equity firm's annual meeting wearing one.

It is understandable that DPI has fallen. As interest rates climbed, equity valuations dropped. Private-equity managers get to choose when to sell their portfolio companies. Why would they sell in a down market? Possible paths for them to exit investments, such as taking a firm public or selling it to another company, have been all but shut off. In the years following the dotcom bubble, which popped in 2000, and the global financial crisis of 2007-09, distributions from private investments dropped similarly.

Still, this slump might prove more damaging than previous ones, for a couple of reasons. First, allocations to private equity have risen. Pension funds rely on income streams—dividends from companies that they own, coupon payments from bonds and, now, distributions from private equity—to make payments to retirees. A decade or two ago, a lean year from private equity might not have mattered much. Now things are different.

Second, previous lean periods coincided with there being few other investment opportunities for pension funds and university endowments, and plentiful ones for private-equity managers. Some of the best returns private equity has posted have come after crises or the popping of bubbles, when managers could pick up firms for a song. But the past two years have offered few such opportunities. With interest rates high, arranging financing has been difficult; although valuations fell, they did not plummet. The result is that firms are sitting on a record $2.6trn-worth of "dry powder"—capital committed by investors, but not yet invested. At the same time, pension funds are itching to buy more bonds, owing to the high yields that are now on offer.

How might this situation resolve itself? Stockmarkets are reaching all-time highs, and valuations in private markets tend to follow those in public ones. The initial-public-offering pipeline is filling up nicely. Exits are becoming possible. If all this carries on, distributions might well begin to flow. Yet this is just one future scenario. Much of the market's recent strength reflects the success of the biggest technology firms, which have been pumped up by excitement about what artificial intelligence will do to profits. And private-equity funds tend to own health-care and home-maintenance firms, rather than software ones. Moreover, American inflation looks worryingly stubborn, auguring higher rates. Investors in private equity will only be able to relax when they have their cash in hand once again.

Inflation success

# Bullet dodged

## Russia's economy once again defies the doomsayers

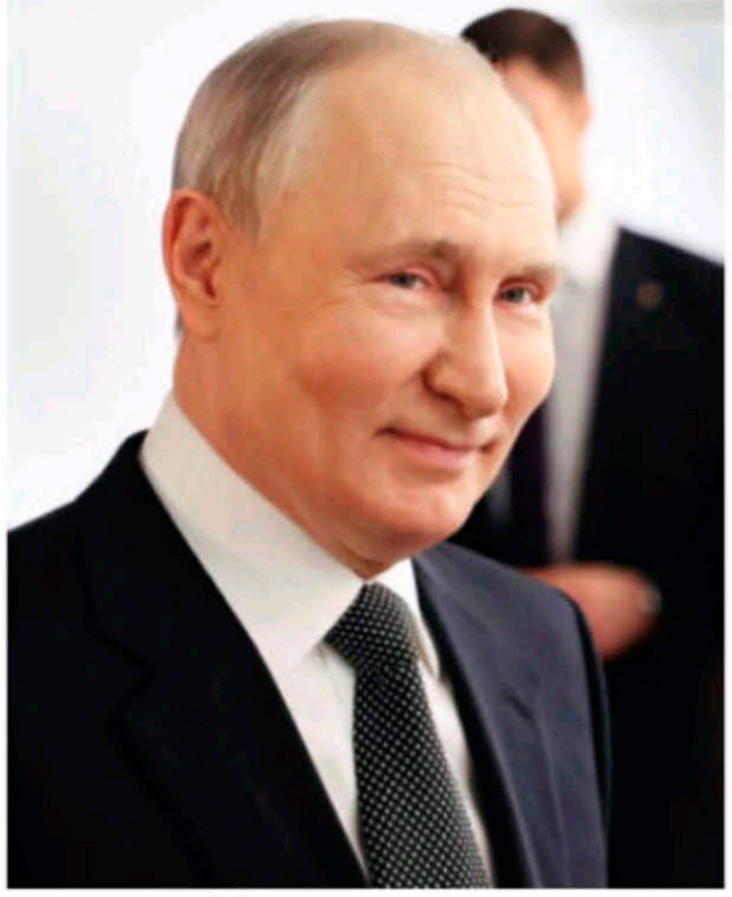
IN THE TWO years following Vladimir Putin's invasion of Ukraine, Russia's economy has repeatedly defied the doomsayers. A financial collapse, widely predicted in the spring of 2022, never came to pass. The economy fell into recession, but it was less severe than expected and passed quickly. Inflation was the most recent scare. Last year prices accelerated rapidly; economists believed they could spiral out of control. Even Mr Putin was worried. In February he urged officials to give "special consideration" to rising prices.

Once again, however, the Russian economy seems to be proving the pessimists wrong. Data released on March 13th showed that prices rose by 0.7% month-on-month in February, down from 1.1% at the end of last year. The annual rate of inflation is stabilising at around 7.5%. Forecasters expect it to fall to just 4% before long; household expectations of future inflation have flattened. Russia's presidential election was due to begin on March 15th, after we went to press. The result is a foregone conclusion. If it was competitive, these figures would do Mr Putin no harm.

Russian inflation surged last year owing to a fiscal splurge larger than the one implemented during the covid-19 pandemic. As Mr Putin doubled down on his invasion of Ukraine, he increased spending on everything from transportation equipment and weapons to soldiers' salaries. Total government outlays rose by 8% in real terms. Demand for goods and services soared beyond the economy's capacity to provide them, prompting sellers to raise their prices. Workers became particularly difficult to find, not least because hundreds of thousands were called up and tens of thousands fled the country. By October last year nominal wages were growing at an annual pace of 18%, up from 11% at the start of the year. This provoked price inflation in labour-intensive services such as health care and hospitality.

Who deserves credit for the turnaround? The finance ministry is advancing its claim. Last year its officials successfully lobbied for exchange-rate controls, which compel exporters to deposit foreign currency in the Russian financial system. The wheeze has probably supported the rouble, which has appreciated in recent months, reducing the price of imports.

Central-bank officials think that their peers in the finance ministry are economic know-nothings who mess with markets at their peril. They believe their policy—of more than doubling interest rates since July 2023—should take the credit for the inflation slowdown, and they are probably right. Higher rates have encouraged Russians to put money in savings accounts rather than spending it. Tighter monetary policy has also curbed lending. In December retail lending grew by 0.6% month on month, down from 2% for most of 2023.



A proud pariah

Few other central banks have been quite as tough. Yet Russia still seems to be heading for a "soft landing", in which inflation slows without crushing the economy. The performance of the economy is now in line with its pre-invasion trend; GDP grew in real terms by more than 3% last year (see chart). Unemployment remains at a record low and there is little evidence of corporate distress. Indeed, the rate of business closures recently fell to its lowest in eight years. Meanwhile, the Moscow Exchange is hoping to see more than 20 initial public offerings this year, up from nine last year. And the latest "real-time" data on economic activity are reasonably strong. Consensus forecasts for GDP growth this year of 1.7% therefore look too pessimistic.

Russia's economic resilience is in part the consequence of past stimulus. In recent years corporations and households have built up large cash balances, allowing them to continue spending even in the face of high inflation, and avoid default in the face of high borrowing costs. As in other parts of the world, falling demand for labour has mostly resulted in a decline in unfilled vacancies rather than in a lower number of people in employment. Figures from HeadHunter, a recruitment site, suggest that the ratio of open positions to jobseekers has stopped rising. Having struggled to find workers in recent months, bosses are reluctant to let people go unless they absolutely must.

Sanctions-busting has also juiced the economy. Russian production facilities formerly owned by Westerners have reopened under new management, as the central bank points out in a recent report. At the start of the war, sanctions made it hard for Russian firms to source inputs, delaying production. Now, though, companies have set up durable supply chains with "friendly" countries. Well over half of goods imports come from China, twice the share from before the invasion.

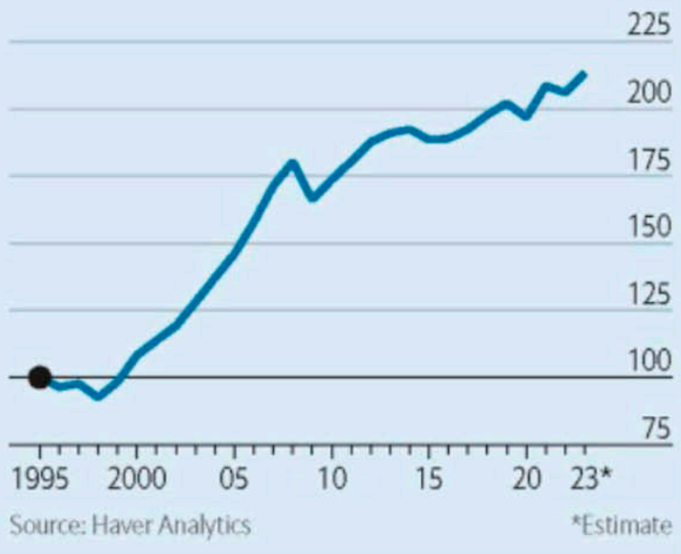
As new trading relationships have bedded in, Russian exporters have dared to raise prices, supporting revenues and profits. The discount on oil Russia offers to Chinese customers, for instance, has fallen from more than 10% in early 2022 to about 5% today. And it is not just oil. Mr Putin boasts about soaring ice-cream exports to China, noting last week that he "treated my friend, President Xi Jinping", to a lick.

As every Russian knows, inflation is never truly defeated. Central-bank officials continue to fret that inflation expectations remain too high. The biggest worry is that the rouble may depreciate, either because of lower oil prices, another round of serious sanctions or if China loses interest in supporting Mr Putin. These are serious concerns. Nevertheless, the pariah economy is once again back on track. ■

**What war?**

Russia, GDP, 1995=100

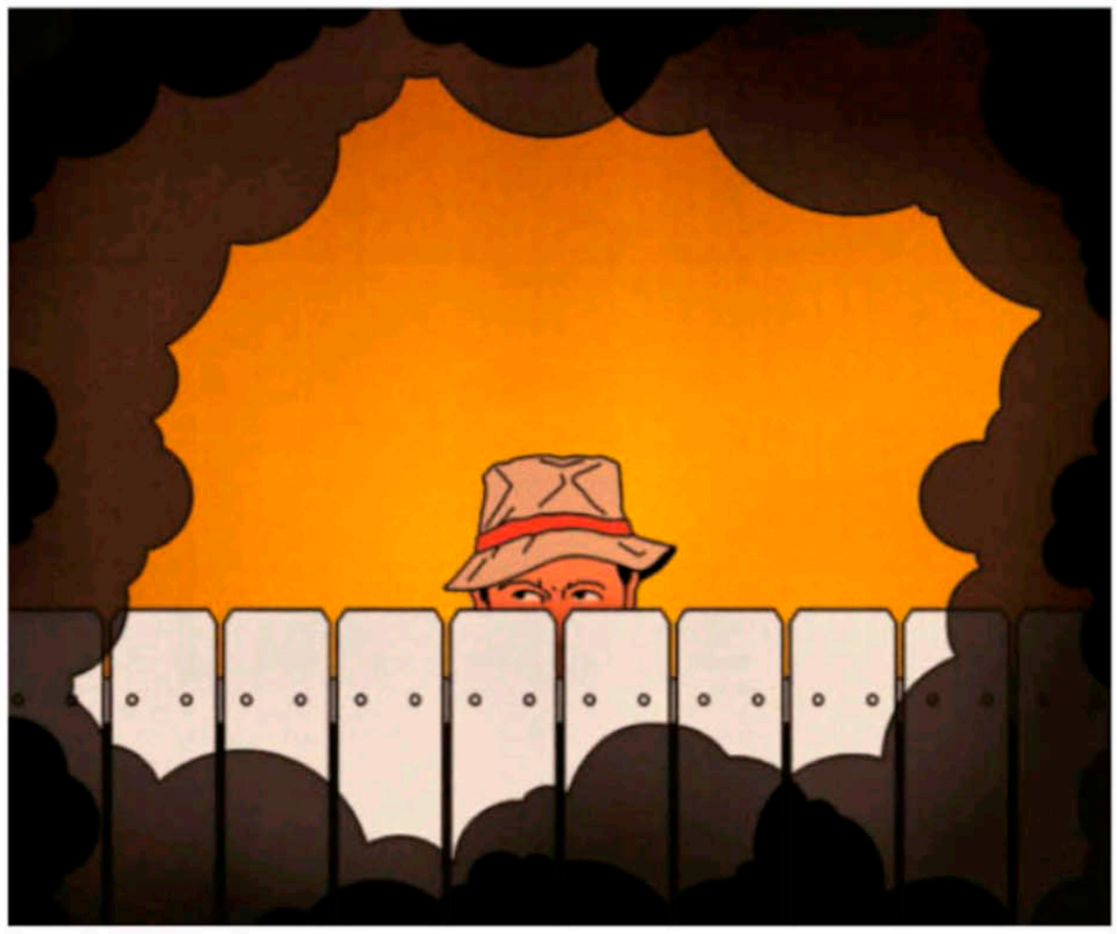
Local currency




Source: Haver Analytics *Estimate

# Free exchange | Anti-environmentalists

*NIMBYs often oppose new buildings on green grounds. In doing so, they increase carbon emissions*



A SHOPKEEPER'S SON smashes a window, causing a crowd to gather. Its members tell the shopkeeper not to be angry: in fact, the broken window is a reason to celebrate, since it will create work for the glazier. In the story, the crowd envisions the work involved in repairing the window, but not that involved in everything else on which the shopkeeper could have spent his money—unseen possibilities that would have brought him greater happiness. The parable, written by Frédéric Bastiat, a 19th-century economist, sought to draw attention to a common form of argument, which has come to be known as the broken-window fallacy.

If the window were to be broken today, the crowd might have a different reaction, especially if they were NIMBYs who oppose local construction. Their concern might be with the "embodied carbon" the shopkeeper's son had released when breaking the window. The production of a pane of glass can require temperatures of more than 1,000°C. If the furnace is fuelled by, say, coal, the replacement window would carry a sizeable carbon cost. Similarly, the bricks, concrete and glass in a building are relics of past emissions. They are, the logic goes, lumps of embodied carbon.

Conserving what already exists, rather than adding to the building stock, will avoid increasing these embodied emissions—or so NIMBYs often suggest. The argument is proving to be an effective one. On March 12th the EU passed a directive requiring buildings constructed after 2030 to produce zero emissions over their lifetime. The city of San Francisco directs would-be builders towards an "embodied-carbon-reduction-strategies checklist", which starts with the suggestion that they should "build less, reuse more". Last month the British government attempted to quash proposals from Marks & Spencer, a department store, that would involve rebuilding its flagship shop in London, on the grounds demolition would release 40,000 tonnes of embodied carbon.

At their worst, such rulings are based on a warped logic. Greenhouse gases that have been released by the construction of an existing building will heat the planet whether the building becomes derelict, is refurbished or is knocked down. The emissions have been taken out of the world's "carbon budget", so treating them as a new debit means double counting. Even when avoiding this error, embodied emissions must be treated carefully. The right question to ask is a simpler one: is it worth using the remaining carbon budget to refurbish a building or is it better to knock it down?

Choosing between these possibilities requires thinking about the unseen. It used to be said that construction emitted two types of emissions. As well as the embodied sort in concrete, glass and metal, there were operational ones from cooling, heating and providing electricity to residents. The extra embodied-carbon cost of refurbishing a building to make it more energy-efficient can be justified on the grounds of savings from lower operational-carbon costs. Around the world, buildings account for 39% of annual emissions, according to the World Green Building Council, a charity, of which 28 percentage points come from operational carbon.

These two types of emissions might be enough for the architects designing an individual building. But when it comes to broader questions, economists ought also to consider how the placement of buildings affects the manner in which people work, shop and, especially, travel. The built environment shapes an economy, and therefore its emissions. In the same way as the emissions from foot-dragging over the green transition are in part the responsibility of climate-change deniers, so NIMBYs are in part responsible for the emissions of residents who are forced to live farther from their work in sprawling suburbs.

To most NIMBYs, the residents who are prevented from living in new housing are an afterthought. Yet wherever else they live, they still have a carbon footprint, which would be lower if they could move to a city. Density lowers the per-person cost of public transport, and this reduces car use. It also means that more land elsewhere can be given over to nature. Research by Green Alliance, a pressure group, suggests that in Britain a policy of "demolish and densify"—replacing semi-detached housing near public transport with blocks of flats—would save substantial emissions over the 60-year lifespan of a typical building. Without such demolition, potential residents would typically have to move to the suburbs instead, saving money on rent but consuming more energy, even if the government succeeds in getting more drivers into electric vehicles. Although green infrastructure, pylons and wind turbines all come with embodied carbon, not building them comes with emissions, too, from the continued use of fossil fuels.

## Compromising on quality

Deciding such choices on a case-by-case basis makes little sense. Britain's planning system, in which the government considers whether one particular department store will derail the national target to reach net-zero emissions, is especially foolish. The more sensible approach is to use a carbon price, rather than a central planner's judgment. Putting a price on the remaining carbon budget that can be used for new physical infrastructure, as well as the services that people use in their homes, means that the true climate cost of each approach has to be taken into account. Under such a regime, energy-efficient homes close to public transport would be worth more. Those with less embodied carbon would be cheaper to build. Developers that demolished and densified would therefore often be rewarded with larger profits.

Targeted subsidies, especially for research and development into construction materials, as well as minimum-efficiency standards, could bolster the impact of carbon pricing, speeding up the pace at which the built environment decarbonises. What will never work, however, is allowing the loudest voices to decide how to use land and ignoring the carbon emissions of their would-be neighbours once they are out of sight. ■

De-desertification

# Uncharted waters

**New technologies could harvest much-needed moisture from the planet's atmosphere**

EVEN IN THE most speculative reaches of science fiction, there is no escaping humanity's dependence on liquid water. Luke Skywalker, the hero of the original "Star Wars" trilogy, grows up on his uncle's moisture farm, extracting water from Tatooine's arid atmosphere. The residents of the desert world Arrakis, accessible to anyone with a copy of Frank Herbert's novel "Dune" (or with three hours to kill at their nearest cinema), likewise use windtraps to steal precious liquid from the air.

Engineers on Earth, too, are increasingly looking to the atmosphere for water. They have good reason to do so. Even in the depths of Chile's Atacama Desert, often called the driest place on Earth, estimates suggest that fog and dew can generate some 200ml of water per square metre. Elsewhere, the atmosphere is even more generous. Worldwide, it is estimated to contain 12,900 cubic kilometres of water, roughly the volume of Lake Superior. Moreover, models indicate that evaporation driven by global warming will increase these levels by 27% over the course of the next 50 years.

Tapping this invisible reservoir is a priority. As Earth's temperatures rise and its population grows, ever more people are likely to run short of water. More than 2.3bn are currently living in water-stressed countries and analysts predict that further droughts will force roughly a third of these to move from their homes by 2030.

Collecting water from the air is nothing new. The Inca, who are widely thought to have invented the technique, placed buckets under trees to collect the condensation from heavy fog drifting in off the sea. On the Canary Islands laurels, junipers and pines have come to be known as "fountain trees" for their association with fog harvesting. People dwelling in the arid mountains of Oman have long built cisterns under trees for the same reason.

Modern atmospheric water harvesting follows many of the same principles. Instead of using leaves as condensation traps, however, which drip over an impractically large area, modern traps instead consist of sheets of very fine polymer mesh. As fog flows through the sheets, tiny droplets of water stick to the polymer fibres. These droplets grow until gravity pulls them into a compact trough and, thence, a reservoir. While collectors vary in size, a 40-metres-square collector in a reasonably foggy area yields around 200 litres a day, enough to supply 60 people with drinking water.

Further improvements are possible. A team led by Urszula Stachewicz at AGH University of Krakow in Poland found that the sheet could be made even more productive by changing the way in which its polymer threads were manufactured. Dr Stachewicz theorised that careful manufacture via a process known as electrospinning could lend the sheet a slight electrical charge that would prove attractive to water droplets in fog. In experiments conducted in 2021 she and a team of colleagues found that such sheets yielded 50% more water.

This past August, she and Gregory Parisi, a PhD student at Rensselaer Polytech- ▸▸

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nic Institute in New York reported yet further improvements by adding titanium dioxide ($TiO_2$) to the mesh. Previous work had shown that titanium dioxide could be rendered superhydrophilic (intensely attractive to water) upon exposure to ultraviolet light—a hindrance under extremely foggy conditions, as water would stick to the mesh rather than trickle into the cistern. When fog was light, however, Dr Stachewicz and Mr Parisi found that a $TiO_2$-enhanced mesh became 30% more effective. Her fog collectors are now being used at sites on three continents.

Further inland, where fog is scarce, other solutions are needed. One effective approach involves harnessing the water already present in the air. When the temperature drops, the water-carrying-capacity of air decreases with it. This leads to excess water condensing onto surfaces, a process most often seen as dew. It is common in water-saturated places like Britain, but anywhere with little wind and an average relative humidity of 70% or greater can cajole water out of the air.

A key way to do this is with radiative cooling, a phenomenon that occurs at night when certain materials (like aluminium) radiate enough heat to cool below the ambient temperature of their surroundings. After sunset, water condenses on these materials, forms droplets and trickles off. Chambers built of these radiative materials sometimes include adsorbent inner surfaces to which water in the air readily sticks. When humid air drifts into such chambers, it loses its water upon exposure to the cool conditions before drifting out. One big benefit is that such techniques work best in places like deserts, with clear skies, high daytime temperatures and cool nights.

An important limitation of radiative cooling has long been its relative ineffectiveness by day. That changed in 2021 when Dimos Poulikakos and his then-doctoral-student Iwan Haechler, at ETH Zurich, crafted a piece of glass with a layer of silver at the bottom and a layer of silicon polymer, sandwiched between layers of chromium, at the top. The silver layer reflected away the incoming sunlight while the sandwiched polymer allowed the device to shed heat in the form of infrared radiation. This cooled the glass by up to 15°C below ambient temperatures, driving condensation even during the heat of the day. Paired with a heat shield, a condensation chamber built with this glass helped produce 1.2 litres of water per square metre a day.

Another challenge posed by radiative cooling systems is that water needs to be wiped off the surface of the collection chambers. This requires power, typically from nearby turbines or solar panels, which can be expensive. To cut costs, Dr Poulikakos and Dr Haechler applied a superhydrophobic coating to the surface of the chamber, forcing water droplets off the surface and making it possible for the device to function without electricity.

Such technology is indeed affordable, with the prototype itself costing less than $50. But in many regions where water is desperately needed, humidity levels are too low for dew harvesting to be feasible. In places like these, the most promising options are those that make use of superabsorbent materials.

Many salts, chemical cousins of the familiar sodium chloride, will readily snatch water out of the air. With this in mind, an engineering team led by Peng Wang at King Abdullah University of Science and Technology in Saudi Arabia studied the effectiveness of hollow nanocarbon capsules filled with lithium chloride. In 2020 the researchers reported that these capsules could capture more than double their weight in water vapour from ambient air when relative humidity was below 60%. Similar techniques using other salts have proved capable of gathering water in humidity levels as low as 10%.

The findings are promising, but the technology has yet to advance beyond the prototype stage. The problem is inefficiency; even Dr Wang's world-leading capsules can only produce 1.6 litres of water per kilogram of lithium chloride over the course of ten hours in very arid conditions. Better than nothing, but inadequate for sustaining a community.

Between them, though, these technologies suggest a brighter future is possible. Areas so dry as to have gone without rainfall since modern records began may one day yield enough water to sustain settlement. And not just on a fictional planet. ■

Dogs

# Puppy fat

**A gene mutation predisposes some Labradors to obesity**

MUCH LIKE their human owners, dogs are experiencing an obesity epidemic. One recent study of British pooches found that one in 14 is too pudgy, putting them at higher risk of conditions like arthritis, shortening their lifespan and making walks more of a drag. Certain breeds, like Labradors, are particularly prone to fatness. Purebred Labs are around 70% more likely to be overweight than mixed-breed mutts. A new study, published in the journal *Science Advances*, has identified one reason why—a genetic quirk makes some Labradors prone to obesity.

The study, led by Eleanor Raffan, a veterinary geneticist at the University of Cambridge, focused on a gene known as POMC, which is found in humans as well as dogs. In a previous study, published in 2016, Dr Raffan and her colleagues found that obese Labradors were much more likely than slimmer dogs to be missing a small section

The Lab assistant will see you now

of DNA in the gene, a so-called deletion mutation. In the latest study the researchers set out to identify how this genetic variant, which is present in a quarter of Labs, might cause them to gain weight.

Their first finding was that dogs with the mutation seemed to be hungrier than dogs without it. This conclusion rested on the results of a "sausage-in-a-box test". Experimenters recorded the Labs' reaction to a meaty treat that they could see and smell, but couldn't eat. On average, dogs with the POMC mutation spent almost twice as long looking at, or playing with, the tantalising box than did those without.

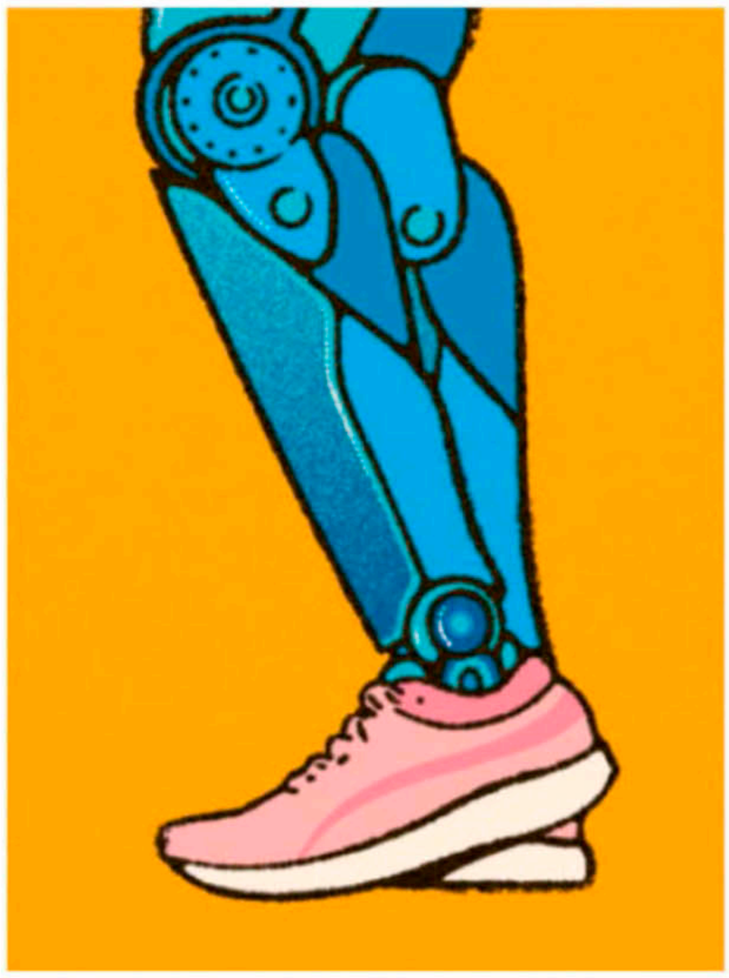
The POMC mutation seemed to boost how much the dogs wanted food, but not how much they liked it. Dogs with and without the mutation were just as likely to be put off their kibble if it had been slathered with lime juice, and just as likely to binge at mealtimes. The authors suggested that Labs with the mutation may be more inclined to snack between meals.

The mutation also slows metabolism. In another experiment, dogs were encouraged to sleep in a respiratory chamber which measured the volume of oxygen and carbon dioxide breathed in and out. The results suggested that Retrievers with the POMC mutation burned 25% fewer calories at rest than those without, indicating that hungry dogs may need to stick to a particularly light diet to stay slim.

Many other factors are likely to influence canine obesity. The authors have only found the POMC deletion in Labradors and Flat-Coated Retrievers, despite testing for it in other portly breeds. But in these dogs the mutation is probably here to stay, as selective breeding to eliminate it would require a huge reduction in an already limited gene pool. The scientists also suspect that the variant may make dogs easier to train—it is present in around three-quarters of Labrador assistance dogs.

Dr Raffan's work also provides insights into POMC mutations in humans. People with these rare mutations report extreme hunger and many become obese as children. Scientists investigating the effects of genes typically study rats and mice, but in the case of POMC there are important genetic differences between rodents and other mammals. The authors identified a protein which is affected by POMC mutation in the Labradors, but is not present in mice. They think it may be involved in human weight control too.

Medication targeting the faulty human POMC pathway has already been developed. In 2020, setmelanotide, a drug that mimics one of the proteins POMC produces, was approved for human use. It is unclear whether it would work in dogs, and with a daily price tag of at least £240 in Britain ($330 in America), it is unlikely to be prescribed to even the most pampered pets. ■



Machine learning

# AI boot camp

**New techniques are speeding up how large language models are trained**

IT IS NO secret that building a large language model (LLM) requires vast amounts of data. In conventional training, an LLM is fed mountains of text, and encouraged to guess each word before it appears. With each prediction, the LLM makes small adjustments to improve its chances of guessing right. The end result is something that has a certain statistical "understanding" of what is proper language and what isn't.

But an LLM that has only undergone this so-called "pretraining" is not yet particularly useful. When asked for a joke to cheer your correspondent up, for instance, the pretrained model GPT-2 just repeated the question back three times. When asked who the American president was, it responded: "The answer is no. The president is not the president." Clearly, teaching an LLM to do what humans want requires something more.

One way to align such models with users' expectations is through reinforcement learning from human feedback (RLHF). OpenAI, an American startup, introduced this technique in a preprint published in March 2022. It was a major ingredient in its recipe for ChatGPT, which was released eight months later.

RLHF normally involves three steps. First, human volunteers are asked to choose which of two potential LLM responses might better fit a given prompt. This is then repeated many thousands of times over. This data set is then used to train a second LLM to, in effect, stand in for the human being. This so-called reward model, designed to assign higher scores to responses a human would like, and lower scores to everything else, is then used to train the original LLM. As a final touch, a machine-learning technique called reinforcement learning tweaks the knobs and levers of the original LLM to help reinforce the behaviours that earn it a reward.

This way of doing RLHF is quite involved—using two separate LLMs takes time and money, and the algorithm used for reinforcement learning is, to quote Rafael Rafailov at Stanford University, "quite painful". This has meant that, outside of OpenAI, Google and their rivals, nobody has really exploited its full potential.

It now turns out that the same results can be achieved for a fraction of the effort. Dr Rafailov and his colleagues, including Archit Sharma and Eric Mitchell, presented this alternative in December 2023 at NeurIPS, an AI conference. Their method, Direct Preference Optimisation (DPO), relies on a satisfying mathematical trick.

This trick hinges on the observation that for every reward model there is a specific theoretical LLM that would get full marks, and every LLM likewise has a theoretical reward model that would give it flying colours. (Just as, more prosaically, every pair of trousers has a theoretical person on whom they would sit perfectly, and every person has a theoretical pair of trousers that would best fit.) This observation that each LLM conceals an implicit reward model allowed the researchers to tinker with this model directly. In the old regime, the LLM learned from the reward model, which learned from the data. Now, the LLM can learn directly from the data.

According to the authors, removing the middleman makes DPO between three and six times more efficient than RLHF, and capable of better performance at tasks such as text summarisation. Its ease of use is already allowing smaller companies to tackle the problem of alignment, says Dr Sharma. A year ago only a few world-leading models, such as Google's Gemini and OpenAI's GPT-4, could afford to use RLHF. But as of March 12th eight out of the ten highest-ranked LLMs on an industry leaderboard used DPO. Mistral, the French startup seeking to rival OpenAI, uses it. Meta, a social-media giant, has integrated it into a home-grown LLM.

Further improvements are sure to come. For one thing, the consensus view is that the big AI labs have made improvements to their proprietary algorithms since they stopped publishing details in 2022. But the problem of getting an LLM to do what a human would want and expect is far from done and dusted. After all, even other humans occasionally struggle. ■

Sound engineering

# So to speak

**A flexible patch could help those with voice disorders be heard once more**

THE HUMAN voice, with all its power to mesmerise audiences, woo loved ones and irritate neighbours, is a delicate thing. Each person's distinctive sound is produced when air from the lungs causes the vocal cords, folds of muscle tissue in the larynx, to vibrate. These vocal cords can easily get damaged by stress, infections, or overuse. It is not just overzealous performers who are at risk of straining their voiceboxes—according to a 2005 study, 30% of the population will experience a voice disorder at some point in their life.

In a study published in the journal *Nature Communications* this week, a group of bioengineering researchers from the University of California, Los Angeles, have put forward an attractive solution. They have designed and tested a soft patch that can be stuck onto a person's neck, where it will pick up muscle movements and, with the help of machine-learning algorithms that process the signals, translate them into audible speech.

Even though the team's device is an early prototype, it has the potential to offer a substantial improvement on current alternatives. When a person loses their voice today, the easiest fix is to resort to typing, texting, or writing notes to communicate. Typing can be slow and inconvenient, says Jun Chen, the paper's lead author, and writing legible notes is only possible in good lighting. More sophisticated solutions such as electrolarynxes, external devices held against the throat to produce the vibrations necessary for speech, can require special training to use, and surgical interventions are often off-puttingly invasive. A patch would theoretically be able to clear all these hurdles.

The mechanism behind Dr Chen's device is a principle known as the magnetoelastic effect. When magnetic nanoparticles are embedded into soft materials like elastic or silicone polymers, their magnetic properties can change as the material is stretched. That's because each deformation causes the particles either to rotate or move relative to one another, changing the magnetisation of the material. When embedded in a patch with a hem of copper coils generating a background magnetic field, the movements of the particles can be accurately captured as variations against this background.

When the throat muscles move under the silicone patch, the resulting magnetic-field variations can also be converted into electrical signals. In a test with eight participants, the researchers captured the signals arising as the subjects spoke and lip-synched five different sentences (including: "Hope your experiments are going well!", "Merry Christmas!" and "I love you!"). They then trained a machine-learning model to recognise the distinct shapes of the electrical signals associated with each sentence. This algorithm was then able to predict which of the five sentences the participants spoke—whether aloud or in silence—with more than 90% accuracy.

The design of the patch brings additional benefits. In addition to stretchiness, the patch remains sticky on sweaty skin, and can be used continuously for 40 minutes without heating up.

There is a way to go yet. For now the device can only recognise the five phrases it was trained on. Plus, individual differences in vocal folds means the algorithm has to be personalised to each user. To make it practical at scale, the researchers will need to collect a lot more data. ■

City life

# Construction sights

**New York City is covered in illegal scaffolding. AI could help bring it down**

THE CITY that never sleeps is also, it seems, unable to take down scaffolding. New Yorkers have grown so sick of the ugly structures, and the accompanying ground-level cages in place to protect and divert pedestrians, that Eric Adams, the mayor, last year launched a campaign to clear them from the streets.

Now computer scientists in the city have made a hit list of possible targets. Using AI to sift through thousands of hours of dashcam footage, the researchers identified some 5,000 scaffolding sites across all five boroughs, of which 500 were found to have no permit. "This city is the best but also kind of a disaster," says Wendy Ju, a computer scientist at Cornell Tech in Manhattan, who worked on the project.

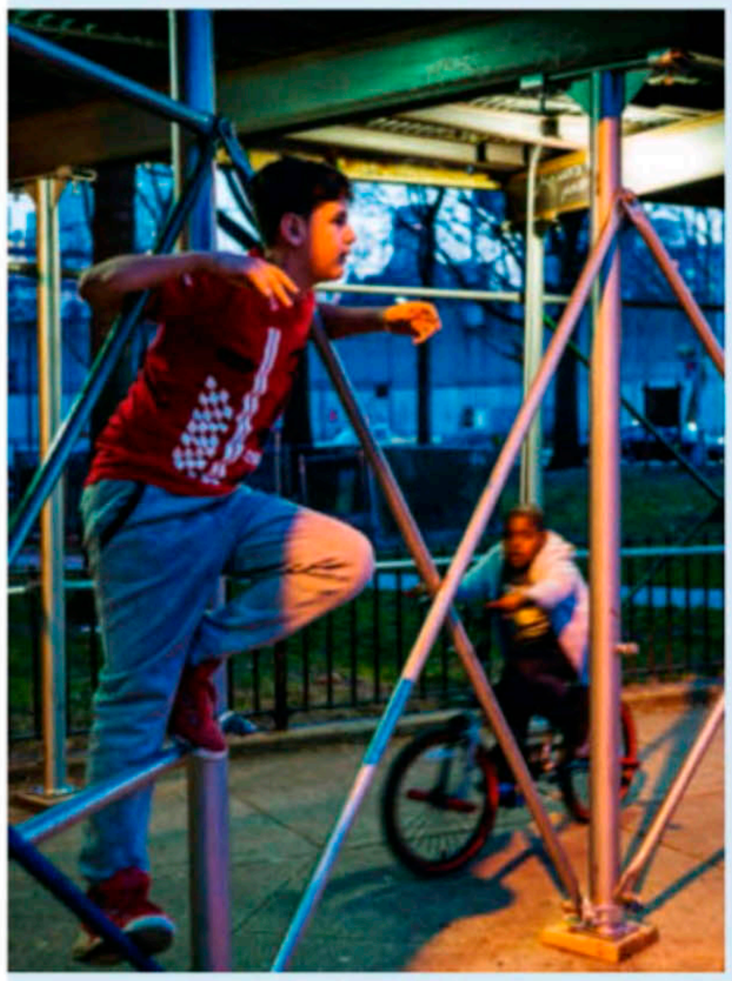
New York's steady submergence beneath scaffolding is a classic example of a well-meaning policy producing bad side-effects. (Or in this case, sidewalk effects.) Shocked by deaths from falling masonry, officials in 1980 introduced compulsory façade inspections every five years.

As a result, city records show more than 8,000 current permits for scaffolds, which often include what New Yorkers call "sheds"—dark and claustrophobic street-level tunnels. Many remain in place long after the permit expires because building owners find it more convenient to leave the scaffolding in place between inspections. As part of his ongoing war on sheds, Mr Adams celebrated the removal of 21-year-old scaffolding from a Harlem street that had become a local landmark in its own right.

To get a street-level view of the problem, the Cornell scientists trained an algorithm to find scaffolding in images and then set it loose on a huge data set collected between August 2023 and January 2024 by cameras fitted to ride-sharing vehicles. They then asked the computer to find all the sheds in a colossal 29,156,833 geotagged images.

The researchers went on to cross-reference scaffolding identified by the AI with records of approved projects. The 500 or so unpermitted sheds discovered don't necessarily contravene the rules, as city regulations do allow some without permission (for emergency work, for instance). But they would seem a good place to start investigating.

The scientists are waiting until the results are accepted for an upcoming conference before sharing them with city officials. They also want to convert the data into an interactive map that will show residents the location of scaffolding, tell them how long it's been there and reveal whether or not it has a permit. Soon, New Yorkers will be able to sleep easy once again.



Hopping on the tube

Silicon Valley scribbles

# Bonfires of vanities

**Why is it so hard to write a good book about the tech world?**

**Burn Book.** By Kara Swisher. *Simon & Schuster; 320 pages; $30. Piatkus; £25*
**Filterworld.** By Kyle Chayka. *Doubleday; 304 pages; $28. Heligo Books; £22*

WHEN PEOPLE ask Michael Moritz, a former journalist and prominent tech investor, what book they should read to understand Silicon Valley, he always recommends two. "They are not about Silicon Valley, but they have everything to do with Silicon Valley," he says.

One is "The Studio" (1969) by John Gregory Dunne, an American writer who spent a year inside 20th Century Fox watching films get made and executives try to balance creativity with profit-seeking. The other, "Swimming Across" (2001) by Andy Grove, a former boss of Intel, a chipmaker, is a memoir about surviving the Holocaust. It shows how adversity can engender grit, which every entrepreneur needs.

That Sir Michael does not suggest a book squarely about the tech business says a lot. Silicon Valley has produced some of the world's most gargantuan companies, but it has not inspired many written accounts with a long shelf life. Wall Street, by contrast, claims a small canon that has stood the test of time, from chronicles of meltdowns ("Too Big to Fail"), to corporate greed ("Barbarians at the Gate") to a fiction-alised account ("The Bonfire of the Vanities") that popularised the term "masters of the universe".

Why not the masters of Silicon Valley? Part of the problem is access, as is often the case when writing about the powerful. Tech executives may let their guards down at Burning Man, but they have been painstakingly trained by public-relations staff not to get burned by writers. This has been the case for a while. When John Battelle was writing "The Search" (2005), about online quests for information, he spent over a year asking to interview Google's co-founder, Larry Page. The firm tried to impose conditions, such as the right to read the manuscript in advance and add a footnote and possible rebuttal to every mention of Google. He declined. Google ended up granting the interview anyway.

Journalists who manage to finagle access can feel they owe a company and its executives and, in turn, write meek and sympathetic accounts rather than penetrating prose. Or they cannot break in—or do not even try—and write their book from a distance, without an insider's insights.

Two new books demonstrate how hard it is to write well about Silicon Valley. "Filterworld" is an outsider's account of the Valley's impact, which reads as if it was entirely reported and written in a coffee shop in Brooklyn. The book laments how "culture is stuck and plagued by sameness" and blames Silicon Valley's algorithms, "the technological spectre haunting our own era of the early 21st century".

This is the sort of tirade against tech that has spread as widely as Silicon Valley's apps. It is not wrong, but nor is it insightful. The author, Kyle Chayka, who is a journalist for the *New Yorker*, never reconciles the tension between the cultural "sameness" he decries and the personalisation everyone experiences, with online users possessing individual feeds and living in separate information bubbles. Nor is this a ▸▸

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wholly new phenomenon. People have been complaining about globalisation eroding local culture since "recorded civilisation" began, the author concedes. In 1890 Gabriel Tarde, a French sociologist, lamented the "persistent sameness in hotel fare and service, in household furniture, in clothes and jewellery, in theatrical notices and in the volumes in shop windows" that spread with the passenger train.

"Burn Book" is a better, though imperfect, read. Kara Swisher, a veteran chronicler of Silicon Valley, is both an insider and an outsider. She has attended baby showers for tech billionaires' offspring and even hosted Google's top brass for a sleepover at her mother's apartment. But she has a distaste for the Valley's "look-at-me narcissists, who never met an idea that they did not try to take credit for".

In delicious detail, she offers her verdict on the techies who have become household names, such as Facebook's founder: "As sweat poured down Mark Zuckerberg's pasty and rounded face, I wondered if he was going to keel over right there at my feet." That was in 2010, before he had gone through media-training galore. Much as Truman Capote, an American writer, was willing to skewer the socialite swans of New York, Ms Swisher delights in prodding some of her subjects to make readers smile and squirm, such as media mogul Rupert Murdoch ("Uncle Satan") and Amazon's Jeff Bezos (who has "a genuinely infectious maniacal laugh").

Ms Swisher does not have Capote's élan, but her book succeeds where many fail because she explores the relationship between subject and writer, which lurks in the background of most tech books. In detailing her interactions with tech bosses over three decades, she shows how the industry became more furtive and destructive, less free and fun.

While Ms Swisher uses her memoir to hold up a mirror, unfortunately she does not gaze at it long. After chronicling the internet for the *Washington Post*, *Wall Street Journal* and her own outfit, Recode, she moved from the Valley to the swamp—Washington, DC—acknowledging that "I had become too much a creature of the place" and "part of the scene in a way that was starting to feel uncomfortable".

Still, she declines to tease out some of the more complicated aspects of covering the Valley, such as the thin line between source, friend and adviser, and exactly how she covered the Valley dispassionately when her then-wife was a Google executive. Despite her journalistic ferocity, the reality was that Ms Swisher could not eviscerate many of her subjects, because she depended on them accepting her invitation to speak at her annual conference, one of her major sources of income, and on her podcast. She was not just "part of the scene"—she played a leading role.

Of course, journalists are not the only ones who deal with personal conflicts that affect how and what they write about tech. Too many in the Valley pursue books to buttress their personal brand, like a website or résumé that just happens to have a spine (but reads as spineless). This explains why so many venture capitalists have ventured into book-writing. The best of the lot is "Zero to One" (2014) by Peter Thiel, an early investor in Facebook, and Blake Masters, a student who took a class taught by Mr Thiel at Stanford. However, explaining how to build a monopoly, as it does with welcome and rare frankness, is probably something Mr Thiel and his peers regret, considering the scrutiny Silicon Valley has since elicited from regulators. Monopolies are not so in vogue these days.

Yet the simplest explanation for why it is so hard for a book about Silicon Valley to hit the mark is probably the most obvious: timing. The snail's pace of research and publishing is badly suited to Silicon Valley's speed. Today's pressing book idea is next year's stale one. Innovation cycles and companies' futures often pivot too quickly.

Take Adam Lashinsky, a journalist who wrote a book about Uber. He watched as the company faltered and tried to keep his text up to date. His aptly titled "Wild Ride" was published in 2017, a month before the dramatic firing of Uber's boss, Travis Kalanick. Mr Lashinsky has since sworn off writing about tech. His next book is about William Safire, a dead newspaper columnist. It is a subject that will not go out of date—and not try to control the narrative. ■

Media sensations

# True crime's first crime

**The Witch of New York.** By Alex Hortis. *Pegasus Crime; 336 pages; $29.95 and £22*

IT WAS CHRISTMAS DAY in 1843, and men were gathered in a tavern on Staten Island for a festive drink. They set down their pints when they heard shouting. After extinguishing the flames engulfing George Houseman's home, they inspected the wreckage. In a corner of the kitchen, they found the charred remains of his wife and young daughter. A post-mortem revealed evidence of blunt trauma.

Houseman, an oysterman, was at sea. People soon started to direct blame at his sister, Polly Bodine (pictured). She had slept at the house on December 23rd, as she often did when her brother was away, and

Bodine, who cast a spell on the press

was thought to be the last person to see the victims alive. When word reached Bodine that villagers were starting to pin responsibility for the murders on her, she fled, but a couple of days later she turned herself in to the authorities.

"The Witch of New York" reconstructs the events and subsequent trials in great detail. Alex Hortis, a crime historian, can do so because the press seized on the case and delighted in recounting its grisly details. Journalists for the emerging "penny press"—cheap newspapers that specialised in the lurid and schlocky—shuttled to and from New York with dispatches from the crime scene.

Bodine turned out to be the perfect subject, for not only was she a suspected murderess and arsonist—she had a colourful personal life, too. She had fled an abusive marriage and returned to live with her parents; her husband was in prison for bigamy. Yet Bodine was no lonely spinster. She had taken a lover in the city and was eight months pregnant when the murders were committed. She became a lightning rod for her contemporaries' feelings about sex.

The printing presses ran hot for years, publishing sensationalist stories and denigrating illustrations. If facts could not be had, wild invention sufficed. (The rumours covered everything from her supposed abortions to other murders she might have committed.) So fervid was the press coverage of Bodine that it made due process impossible. After an initial mistrial in Staten Island, a retrial there had to be abandoned, as three days of jury selection failed to proffer 12 unbiased men.

A new trial took place in Manhattan, but after a guilty verdict was delivered, the Supreme Court ruled that Bodine had been denied a fair hearing. Afterwards potential jurors were quizzed extensively about their impressions of the case, and selection came close to impossible. After three ▸▸

weeks and several thousand prospective jurors, the third and final trial was moved to Newburgh, some 60 miles (97km) away. There Bodine was found not guilty.

It is an engaging story, skilfully told. The case pulled stars into its orbit. Both Edgar Allan Poe and Walt Whitman wrote about the trials; James Fenimore Cooper fictionalised the grim tale in a novel. P.T. Barnum exhibited a hideous witchy waxwork of Bodine in his American Museum. (He comes across as a rather less genial fellow than "The Greatest Showman", a musical film, would have you believe.)

Mr Hortis says Bodine "probably" did commit the crimes; the reader will finish the book with reasonable doubts. Guilty or not, Bodine's case set a dangerous precedent, ushering in an age of "tabloid justice" that "undermines legal justice and obscures truth". It also established a pattern of public shaming and lewd speculation about female defendants. Interest in sordid, violent crimes has not abated in the years since: to read "The Witch of New York" is to understand the ancestry of the current true-crime craze. The reporters covering Bodine's case showed that justice was less important than entertainment. ■

Archaeological sites

# In ruins

ROUSAY

**Climate change is unearthing and erasing history all at once**

IT LOOKS, AT first glance, like a pile of rubble. But hidden beneath the sandbags and tarpaulin is the Knowe of Swandro, an archaeological site that contains the remains of Iron Age and Norse settlements (pictured). Every summer a team of archaeologists descends on Rousay, one of the Orkney Islands, off the north coast of Scotland, to sift through the evidence.

Time is not on their side. Rising sea levels and more frequent storms are washing away sediment where the site sits. Scotland now experiences more winter rainfall than had been predicted for 2050, according to a study by the James Hutton Institute, which conducts environmental research. Coastal erosion has destroyed most of the Knowe's crown jewel, a dwelling from the Iron Age. "The final third" will break apart and disappear "within the next couple of years", predicts Stephen Dockrill, who co-leads the excavation.

UNESCO, the cultural arm of the United Nations, estimates that one in six cultural heritage sites is threatened by climate change. Hundreds of sites on the Scottish coastline face threats similar to Swandro. At Vindolanda, in the north of England, the waterlogged soil that preserved Roman tablets for millennia is drying out. In Iraq, an ancient city is being buried under tonnes of sand. And in the Arctic, indigenous artefacts are being destroyed as the permafrost thaws.

On the climate change to-do list, archaeological preservation is, understandably, not a top priority. The International Council on Monuments and Sites declared a climate emergency only in 2020. Archaeologists complain of shallow co-ordination efforts among climate policymakers.

Funding is the main problem. Archaeology tends to be bankrolled by land developers. But when it comes to climate change, there is "no one to pay for it", says Jorgen Hollesen from the National Museum of Denmark. Moving sites and other mitigation efforts, such as building protective armour, is costly. Many just have to wait and see what happens.

Digging deeper, it is not all doom and gloom. Changing weather patterns and rising temperatures have brought some unexpected benefits. Several of the most exciting discoveries of recent years, from Nazi warships in the Danube to ancient rock carvings in the Amazon, were revealed after severe drought. Storms can also expose hidden gems. Skara Brae, a Neolithic site also in Orkney, was concealed by sand dunes until disturbed by a storm in 1850. A centuries-old shipwreck reappeared under similar circumstances this year.

Archaeologists and heritage institutions must answer two pressing questions, says Dr Hollesen: "Which sites should be saved, and which sites should be allowed to decay?" In poor countries, paying for preservation can be hard to justify, though UNESCO provides funding to its designated World Heritage sites. (Sub-Saharan Africa has 103; Italy has 59.) Countries with fewer resources will get priority in funding, says Lazare Eloundou Assomo, the head of UNESCO's World Heritage Centre.

A hole lot of trouble

Given the number of sites under threat and limited resources available, many will be lost. As sites are damaged or disappear, historical knowledge and tourism may also go away. According to Mairi Davies of Historic Environment Scotland, which works on preservation, communities must come to terms with changing landscapes—and adapt accordingly. Sites such as Swandro are turning to laser scanning and other technologies to capture a digital record for future generations. "We have to have conversations about loss and what people value," Dr Davies says. In the end, what survives will be determined by what people "can come to terms with losing". There is not enough money to save them all. ■

Literary retellings

# Once upon a time, again

**James.** By Percival Everett. *Doubleday; 320 pages; $28. To be published in Britain by Mantle in April; £20*

ON A MOONLIT night in Hannibal, Missouri, a slave called Jim watches two white boys hiding in the grass. The "little bastards" think he cannot see them. "They were always playing some kind of pretending game where I was either a villain or prey, but certainly their toy," Jim thinks. Huck and his friend, Tom Sawyer, rustle and giggle: "Those boys couldn't sneak up on a blind and deaf man while a band was playing." Jim decides to indulge them anyway—because "it always pays to give white folks what they want." Stepping into the yard, he calls out into the night, "Who dat dere in da dark lak dat?"

So begins "James", a novel by Percival Everett that reimagines Mark Twain's "Adventures of Huckleberry Finn" from Jim's perspective. Mr Everett, a professor of English literature at the University of Southern California, is known for producing genre-defying works, ranging from a satire of the publishing industry that inspired the film "American Fiction" to a murder mystery about lynchings in the American South. ("The Trees" was shortlisted for the Booker prize in 2022.)

In retelling Twain's classic American tale with a twist, Mr Everett joins a long tradition of writers who have dragged marginalised characters into the centre of new (old) tales. The modern trend began with "Wide Sargasso Sea" (1966), when Jean Rhys gave a voice to Mr Rochester's wife,

the "madwoman in the attic", from "Jane Eyre" by Charlotte Brontë.

Two types of retellings have been popular recently. One involves feminist revisions of books focused on men. "Circe" (2018) by Madeline Miller retold the "Odyssey" from the perspective of Circe, a minor goddess; Pat Barker's "The Silence of the Girls" (also 2018) imagined the "Iliad" from the viewpoint of a Trojan queen taken as a slave by Achilles. Last year "Julia" by Sandra Newman retold George Orwell's "1984", offering meat and mind to a previously scrawny character.

"James" is an example of another sort of retelling, which gives prominence to non-white characters from tales previously focused on white ones. This is not entirely new: in "The Wind Done Gone" (2001), Alice Randall rewrote Margaret Mitchell's "Gone With the Wind" from a slave's perspective. As readers demand fresh perspectives, more authors are trying their hand at adaptations. Successful ones do not just tweak familiar stories but create something entirely new, therefore reading as original and defiant.

The shift from Huck's perspective to Jim's is such an act. Consider the opening scene. In Twain's original novel, first published in America in 1885 (and banned in Massachusetts shortly afterwards because of its bad language), the boys sneak up on Jim to "play something on him". They see him as dumb and superstitious. (The N-word appears around 200 times in the novel, which has made the book a frequent flashpoint in schools.)

The brilliance of Mr Everett's retelling is to imagine Jim's interiority while maintaining the integrity of Twain's scene. Jim sees the boys in the grass but pretends not to. His narration is intelligent and witty, but when he speaks aloud, he plays dumb. With a few lines, Mr Everett has turned Twain's tale on its head.

"James" unfolds in this fashion, making familiar scenes feel startling and new. You do not need to read the original to enjoy the revision, however; Mr Everett's tale stands on its own. As in Twain's novel, Jim runs away to avoid being sold to a new slave-owner and separated from his family. Huck fakes his death to get away from his abusive father. The unlikely pair escape by raft down the Mississippi river, encountering all kinds of dangers and obstacles on their journey.

Jim, who has secretly taught himself to read and write, finds paper and ink. "I am called Jim," he writes. "I have yet to choose a name." He discusses morality with Huck, who wonders if he's "doin' wrong" by helping Jim escape. "If'n ya need sum kinda God to tells ya right from wrong, den you won't never know," Jim advises wisely.

In Mr Everett's telling, Jim's slave dialect is a put-on. He drops it around other slaves, but reverts to "lawdy, lawdy" when a white person appears. "White folks expect us to sound a certain way and it can only help if we don't disappoint them," he explains. He advises slave children to mumble, sound stupid and use "correct incorrect grammar". Making whites feel safe and superior is a matter of survival.

When Jim and Huck are separated, Mr Everett invents new trials for Jim that are darker and bloodier than anything in Twain's text. The central thread, however, remains the relationship between the runaway slave and the boy. Huck protects Jim in the wilderness, but Jim also feels responsible for Huck, who grows increasingly uncomfortable with slavery. Toward the end, Mr Everett introduces a twist, as well as action-packed scenes of revenge that read like they are destined for re-enactment on the big screen. "My name is James," Jim declares at one point. "I'm going to get my family." (You can almost hear the dramatic score that will accompany these lines and might wonder which actor will play Jim.)

Whether or not "James" is a commercial success, the trend of retellings is only likely to continue. Writers have always looked to classic tales to comment on contemporary times. Shakespeare's "Hamlet" adapted the Danish legend of Amleth. Milton's "Paradise Lost" rewrote the Bible's Book of Genesis. Readers love the comfort of a familiar story remixed with surprising twists and provocative insights. For publishers, that makes retellings a good bet—easy to market and sure to sell. ■

Lessons in decryption

## The duck and the dissident

### Hidden memorials to Alexei Navalny reveal the long afterlife of Aesop's fables

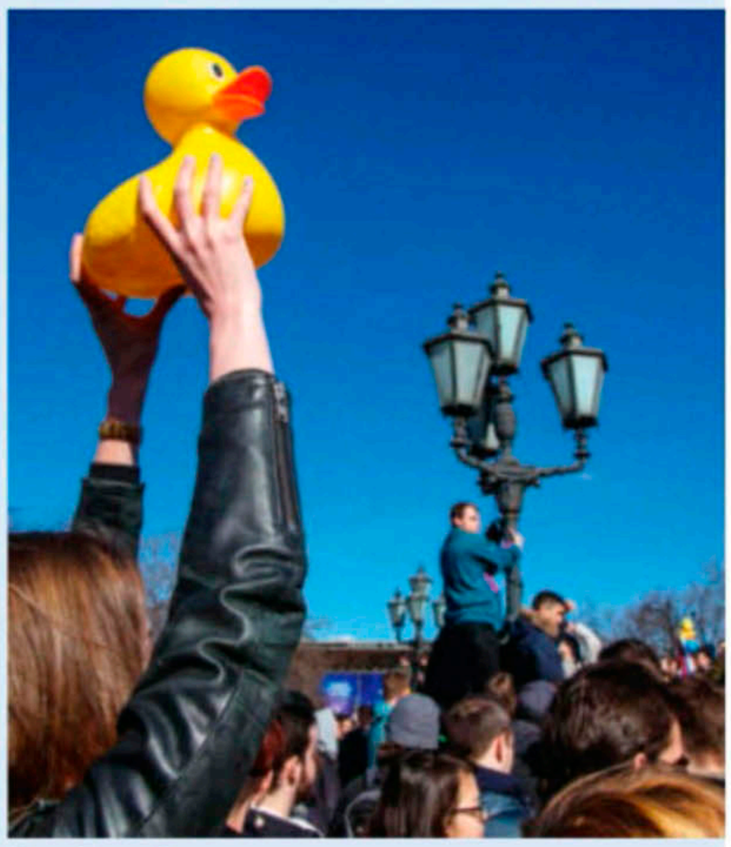
IN LATE FEBRUARY 2024, rubber ducks started landing in unlikely places. One was spotted peering through roses in St Petersburg; another was illuminated by plastic torches next to a tributary of the Volga river. When Alexei Navalny, Russia's most prominent opposition leader, was alive, rubber ducks symbolised his fight against corruption. Since his death on February 16th, they have played a different role: to protest against the regime that murdered him, while evading censorship.

Aesop, a slave in Ancient Greece, is credited with invoking talking animals to tell tales about morality. In Russia, images of animals carry coded meaning. There is a herd of examples, such as stickers of a goose cawing. (The sound made by a goose is written as "ga-ga-ga", similar to "Ha-aga", the Russian pronunciation of The Hague, where Vladimir Putin, Russia's president, should be tried for war crimes in Ukraine.) Graffiti of a crossed-out fish is another allusion to Ukraine: *net voine* (no to war) in Russian has a similar number of letters to *net voble* (no to salt-cured fish).

"You need to avoid your censor, and you know that censor is watching you all the time," explains Alexandra Arkhipova, a social anthropologist in Paris. She refers to these anonymous Russian symbols as "Aesopian language", a term that originated in the late 19th century. (Many credit Mikhail Saltykov-Shchedrin, a satirist, for popularising it, though he preferred the phrase "the language of slaves".)

The Soviet Union's founding Bolshevik, Vladimir Lenin, resented that he had to use Aesopian language (before he seized power and censored other people). In 1917 Lenin lamented that he wrote "with an eye to the tsarist censorship ...with extreme caution, by hints, in an allegorical language—in that accursed Aesopian language".

It would be preferable for coded language not to be needed in the first place. But cloaked expression is better than no expression. Ahead of Russia's sham election on March 15th-17th, Dr Arkhipova is monitoring government voting posters. A recent one in Moscow had "Navalny" scrawled across it. Another appeared normal, with official red, blue and white. A closer look reveals the phrase "for Russia without Putin".



Duck and cover

Art with history

# Where museums shop

MAASTRICHT

**A fair in a small Dutch city offers perspective on taste and collecting trends**

THE PAINTINGS are spotlighted, so you can see every brushstroke and crack. Next to each work is a placard, outlining its history and to whom it once belonged. Here is an elaborately framed painting, probably offered by the King of Naples to Pope Benedict XIV in the 18th century (pictured). Nearby is a 470-year-old portrait of a sibyl wearing ermine, once owned by Paul Newman and Joanne Woodward, two American actors. The artwork on display in Maastricht is reminiscent of a museum exhibition, except for one catch. Here, everything is for sale.

Every March since 1988 the European Fine Art Foundation (TEFAF) has put on a fair in the small Dutch city, best known as the birthplace of the modern-day European Union (the treaty that created it was signed here in 1992). Now this is where museums and art aficionados come to shop. "Maastricht", as art-world insiders call it, is "the most important fair by a mile for classical paintings and works of art", says Jonathan Green, a gallerist based in London. The eight-day fair opened on March 7th.

Maastricht is not the only fair where expensive art is sold, but it probably boasts the largest concentration of museum curators on the hunt for their next acquisition. Among this year's 50,000 visitors were some 300 museum directors—including Laurence des Cars, who runs the Louvre in Paris—and 650 curators. It is the premier destination for old art, as opposed to the contemporary paintings that fairs like Art Basel in Switzerland and Miami favour. Maastricht is the "Met of art fairs, and Art Basel is MOMA", says Eric Lee, director of the Kimbell Museum in Fort Worth, Texas.

What happens before the fair begins is also unusual. Dealers set up their stands, only to be forced to leave. For a day and a half 230 specialists come in to vet works' authenticity, as well as their descriptions and stated provenance, bringing x-rays and other technical machines with them.

The specialists have the right to ask for descriptions to be changed. Objects can be removed if the experts believe they are inauthentic; they are locked in a cupboard until after the fair. "You come back in and hope to God that nothing has been thrown out," says one dealer, who calls Maastricht "the best-vetted fair in the world".

Each year "tens" of objects are removed, according to Will Korner of TEFAF. But the strict vetting process means dealers work especially hard to ensure their offerings can withstand scrutiny. This gives confidence to buyers, including museums, whose acquisition committees want to be confident they are buying the real deal.

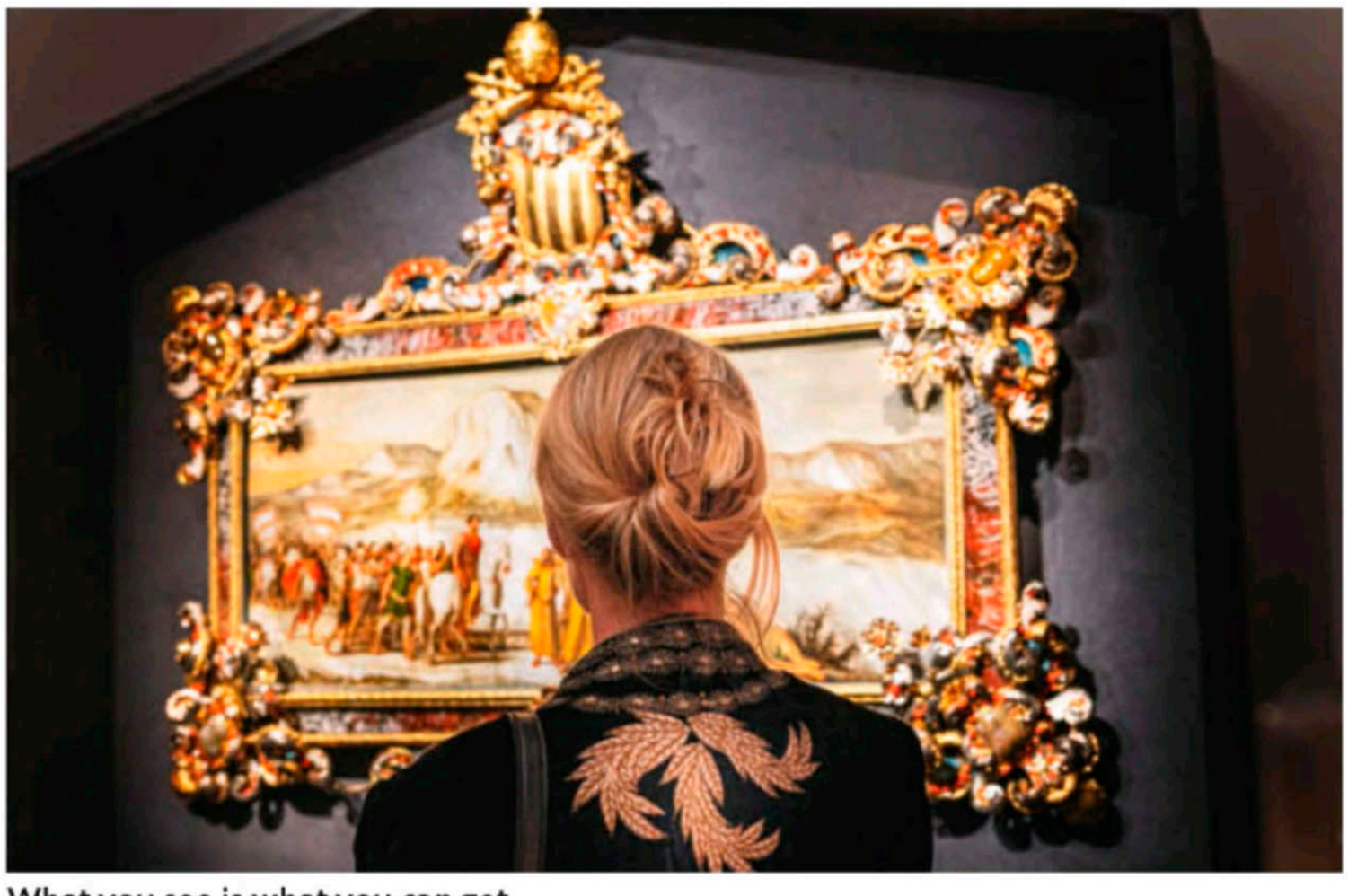
As well as being a destination to ogle breathtaking art, Maastricht offers a window on the art world and current collecting trends. The fair is best known for Old Master paintings, but the number of contemporary dealers in attendance has been growing—because that is where most of the activity in the art market is. Last year European Old Masters (defined as work produced by artists born between 1250 and 1820) accounted for less than 4% of the value of sales at auction globally, according to a new report by Arts Economics, a research firm. In 2003 it was 16%.

Masterpieces by historically significant artists still do well. In 2021 a painting by Sandro Botticelli, the Italian artist of Venus-on-the-half-shell fame, sold for $92m, for example. But the middle has fallen out of the market, owing to changes in aesthetics and interior design. Many of today's art collectors favour large, colourful canvases by living or recently living artists, to complement their minimalist furniture and large, white walls. ("Park Avenue" taste is how one dealer describes an old Dutch landscape he has for sale, which is now out of favour.)

Social media have changed what sells, says Christophe van de Weghe, a contemporary-art dealer. Old Masters do not photograph as well, and, given the paintings' age, buyers need to check their condition in person. So dealers of Old Masters are trying to become more masterful at marketing. "We're trying to sell more blood, sex and mythology," says Patrick Williams of Adam Williams Fine Art, a gallerist based in New York. (However, images of bloody Christ on the cross are not in vogue: secular works are more popular among younger collectors and those from the Middle East and Asia.) People at Maastricht talk about "wall power": images that can catch the eye and spark conversations.

Who painted the canvas matters, too. The "biggest trend in the current market is women," says Alexander Bell, co-chairman of the Old Masters painting department at Sotheby's, an auction house. Should anyone doubt it, one stand at Maastricht displayed three paintings by female artists adorned with a large sign: "Wall of Ladies". Museums are avid buyers, as they seek to expand the works and backgrounds of the artists they exhibit. But there are not many to choose from. "It's a bit of a frenzy" for female artists, says Mr Williams: "Any time we get them, we sell them immediately."

The reality is that there is less and less for sale by both women and men from bygone centuries. Unlike contemporary art, more of which is created every day, the supply from dead artists is—for obvious reasons—limited. More is disappearing into museum collections or being given by donors to institutions. "The trade is becoming more challenging, because of a scarcity of high-quality paintings available to sell," says Mr Green. To optimists this suggests that Old Masters as a category are undervalued. At least, that's what buyers at Maastricht like to think. ■



What you see is what you can get

# 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 $ Mar 13th | % change on year ago |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| United States | 3.1 | Q4 | 3.2 | 2.5 | 3.2 | Feb | 4.1 | 3.9 | Feb | -3.0 | -6.3 | 4.2 | | 64.0 | - | |
| China | 5.2 | Q4 | 4.1 | 5.2 | 0.7 | Feb | 0.3 | 5.2 | Jan‡§ | 1.7 | -3.8 | 2.3 | §§ | -44.0 | 7.19 | -4.0 |
| Japan | 1.2 | Q4 | 0.4 | 1.9 | 2.1 | Jan | 3.3 | 2.4 | Jan | 3.6 | -5.2 | 0.8 | | 43.0 | 148 | -9.9 |
| Britain | -0.2 | Q4 | -1.4 | 0.2 | 4.0 | Jan | 6.8 | 3.9 | Dec†† | -2.9 | -3.9 | 4.0 | | 36.0 | 0.78 | 5.1 |
| Canada | 0.9 | Q4 | 1.0 | 1.1 | 2.9 | Jan | 3.9 | 5.8 | Feb | -1.0 | -1.2 | 3.4 | | 64.0 | 1.35 | 1.5 |
| Euro area | 0.1 | Q4 | -0.2 | 0.6 | 2.6 | Feb | 5.4 | 6.4 | Jan | 2.4 | -3.3 | 2.4 | | 12.0 | 0.91 | 2.2 |
| Austria | -1.7 | Q4 | 0.2‡ | -0.7 | 4.2 | Feb | 7.7 | 5.0 | Jan | 1.6 | -2.2 | 2.8 | | -11.0 | 0.91 | 2.2 |
| Belgium | 1.5 | Q4 | 1.4 | 1.4 | 3.6 | Feb | 2.3 | 5.5 | Jan | -0.9 | -4.5 | 2.9 | | -3.0 | 0.91 | 2.2 |
| France | 0.7 | Q4 | 0.2 | 0.9 | 3.1 | Feb | 5.7 | 7.5 | Jan | -1.1 | -4.9 | 2.8 | | -25.0 | 0.91 | 2.2 |
| Germany | -0.2 | Q4 | -1.1 | -0.1 | 2.7 | Feb | 6.0 | 3.1 | Jan | 7.2 | -2.2 | 2.4 | | 12.0 | 0.91 | 2.2 |
| Greece | 1.1 | Q4 | 0.6 | 2.2 | 3.1 | Feb | 4.2 | 10.4 | Jan | -5.7 | -2.1 | 3.2 | | -105 | 0.91 | 2.2 |
| Italy | 0.6 | Q4 | 0.7 | 0.7 | 0.9 | Feb | 5.9 | 7.2 | Jan | 0.3 | -7.2 | 3.6 | | -59.0 | 0.91 | 2.2 |
| Netherlands | -0.5 | Q4 | 1.3 | 0.1 | 2.7 | Feb | 4.1 | 3.6 | Jan | 9.3 | -2.1 | 2.6 | | -2.0 | 0.91 | 2.2 |
| Spain | 2.0 | Q4 | 2.5 | 2.5 | 2.9 | Feb | 3.4 | 11.6 | Jan | 2.1 | -4.0 | 3.1 | | -48.0 | 0.91 | 2.2 |
| Czech Republic | -0.2 | Q4 | 1.0 | -0.4 | 2.0 | Feb | 10.7 | 3.0 | Jan‡ | -0.6 | -3.9 | 3.8 | | -85.0 | 23.1 | -4.2 |
| Denmark | 3.2 | Q4 | 8.2 | 0.9 | 0.8 | Feb | 3.3 | 2.9 | Jan | 10.5 | 2.2 | 2.4 | | -11.0 | 6.81 | 1.9 |
| Norway | 0.5 | Q4 | 6.2 | 0.8 | 4.5 | Feb | 5.5 | 3.9 | Dec‡‡ | 15.6 | 16.0 | 3.5 | | 40.0 | 10.5 | 0.4 |
| Poland | 1.0 | Q4 | nil | 0.5 | 3.9 | Jan | 11.4 | 5.4 | Feb§ | 1.7 | -4.7 | 5.4 | | -58.0 | 3.91 | 11.5 |
| Russia | 5.5 | Q3 | na | 3.6 | 7.7 | Feb | 5.9 | 2.9 | Jan§ | 2.4 | -1.8 | 12.7 | | 196 | 91.3 | -17.7 |
| Sweden | -0.1 | Q4 | -0.2 | nil | 5.4 | Jan | 6.0 | 8.5 | Jan§ | 5.6 | -0.2 | 2.3 | | -11.0 | 10.2 | 3.4 |
| Switzerland | 0.6 | Q4 | 1.2 | 0.8 | 1.2 | Feb | 2.1 | 2.2 | Feb | 10.0 | -0.7 | 0.7 | | -40.0 | 0.88 | 3.4 |
| Turkey | 4.0 | Q4 | 3.9 | 4.5 | 67.1 | Feb | 53.9 | 9.8 | Jan§ | -4.0 | -5.0 | 25.3 | | 1,441 | 32.1 | -40.9 |
| Australia | 1.5 | Q4 | 1.0 | 1.9 | 4.1 | Q4 | 5.6 | 4.1 | Jan | 1.2 | 0.7 | 4.0 | | 25.0 | 1.51 | -0.7 |
| Hong Kong | 4.3 | Q4 | 1.8 | 3.2 | 1.7 | Jan | 2.1 | 2.9 | Jan‡‡ | 8.6 | -3.4 | 3.7 | | 16.0 | 7.82 | 0.3 |
| India | 8.4 | Q4 | 8.0 | 6.9 | 5.1 | Feb | 5.7 | 8.0 | Feb | -0.6 | -5.8 | 7.0 | | -33.0 | 82.9 | -0.9 |
| Indonesia | 5.0 | Q4 | na | 5.0 | 2.8 | Feb | 3.7 | 5.3 | Q3§ | 0.4 | -2.5 | 6.6 | | -18.0 | 15,575 | -1.4 |
| Malaysia | 3.0 | Q4 | na | 3.8 | 1.5 | Jan | 2.5 | 3.3 | Jan§ | 1.5 | -5.1 | 3.9 | | -19.0 | 4.69 | -4.3 |
| Pakistan | nil | 2023** | na | nil | 23.1 | Feb | 30.8 | 6.3 | 2021 | 0.2 | -8.0 | 14.2 | ††† | -151 | 280 | 0.3 |
| Philippines | 5.6 | Q4 | 8.7 | 5.6 | 3.4 | Feb | 6.0 | 4.5 | Q1§ | -2.8 | -6.3 | 6.2 | | 5.0 | 55.4 | -0.8 |
| Singapore | 2.2 | Q4 | 4.8 | 1.1 | 2.9 | Jan | 4.8 | 2.0 | Q4 | 19.8 | -1.6 | 3.0 | | -8.0 | 1.33 | 1.5 |
| South Korea | 2.2 | Q4 | 2.5 | 1.3 | 3.1 | Feb | 3.6 | 3.2 | Feb§ | 2.3 | -2.9 | 3.3 | | -6.0 | 1,314 | -1.0 |
| Taiwan | 4.9 | Q4 | 9.7 | 1.4 | 3.1 | Feb | 2.5 | 3.4 | Jan | 13.2 | -0.1 | 1.2 | | 5.0 | 31.5 | -2.7 |
| Thailand | 1.7 | Q4 | -2.3 | 1.9 | -0.8 | Feb | 1.2 | 1.1 | Jan§ | 1.3 | -2.7 | 2.8 | | 35.0 | 35.7 | -3.2 |
| Argentina | -0.8 | Q3 | 11.3 | -1.6 | 276 | Feb | 133.5 | 5.7 | Q3§ | -3.3 | -6.1 | na | | na | 850 | -76.4 |
| Brazil | 2.1 | Q4 | -0.1 | 2.9 | 4.5 | Feb | 4.6 | 7.6 | Jan§‡‡ | -1.3 | -7.5 | 10.7 | | -223 | 4.98 | 5.2 |
| Chile | 0.6 | Q3 | 1.3 | nil | 3.6 | Feb | 7.6 | 8.4 | Jan§‡‡ | -3.4 | -2.4 | 5.7 | | 14.0 | 943 | -15.2 |
| Colombia | 0.3 | Q4 | 0.1 | 1.1 | 7.7 | Feb | 11.7 | 12.7 | Jan§ | -3.4 | -4.2 | 9.9 | | -255 | 3,908 | 21.9 |
| Mexico | 2.5 | Q4 | 0.3 | 3.2 | 4.4 | Feb | 5.5 | 2.8 | Jan | -0.8 | -3.3 | 9.2 | | 28.0 | 16.7 | 12.2 |
| Peru | -0.4 | Q4 | 0.9 | -0.6 | 3.3 | Feb | 6.3 | 8.5 | Jan§ | 0.6 | -2.8 | 6.9 | | -111 | 3.68 | 3.3 |
| Egypt | 2.7 | Q3 | na | 3.8 | 35.7 | Feb | 33.9 | 6.9 | Q4§ | -1.9 | -6.4 | na | | na | 48.5 | -36.2 |
| Israel | -4.6 | Q4 | -20.7 | 1.7 | 2.6 | Jan | 4.2 | 3.2 | Jan | 5.6 | -4.1 | 4.2 | | 49.0 | 3.64 | -0.6 |
| Saudi Arabia | -0.8 | 2023 | na | -0.9 | 1.6 | Jan | 2.3 | 5.1 | Q3 | 2.7 | -2.1 | na | | na | 3.75 | nil |
| South Africa | 1.2 | Q4 | 0.2 | 0.6 | 5.4 | Jan | 6.1 | 32.1 | Q4§ | -2.0 | -5.2 | 10.2 | | 18.0 | 18.6 | -2.0 |

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

## Markets

| In local currency | Index Mar 13th | % change on: one week | Dec 29th 2023 |
|---|---|---|---|
| **United States** S&P 500 | 5,165.3 | 1.2 | 8.3 |
| **United States** NAScomp | 16,177.8 | 0.9 | 7.8 |
| **China** Shanghai Comp | 3,043.8 | 0.1 | 2.3 |
| **China** Shenzhen Comp | 1,768.6 | 2.7 | -3.8 |
| **Japan** Nikkei 225 | 38,696.0 | -3.5 | 15.6 |
| **Japan** Topix | 2,648.5 | -3.0 | 11.9 |
| **Britain** FTSE 100 | 7,772.2 | 1.2 | 0.5 |
| **Canada** S&P TSX | 21,970.1 | 1.7 | 4.8 |
| **Euro area** EURO STOXX 50 | 5,000.5 | 1.7 | 10.6 |
| **France** CAC 40 | 8,137.6 | 2.3 | 7.9 |
| **Germany** DAX* | 17,961.4 | 1.4 | 7.2 |
| **Italy** FTSE/MIB | 33,885.4 | 1.6 | 11.6 |
| **Netherlands** AEX | 860.3 | 0.4 | 9.3 |
| **Spain** IBEX 35 | 10,560.5 | 3.6 | 4.5 |
| **Poland** WIG | 81,647.3 | 1.1 | 4.1 |
| **Russia** RTS, $ terms | 1,142.4 | -0.8 | 5.4 |
| **Switzerland** SMI | 11,790.5 | 2.1 | 5.9 |
| **Turkey** BIST | 8,910.2 | 1.9 | 19.3 |
| **Australia** All Ord. | 7,989.5 | nil | 2.0 |
| **Hong Kong** Hang Seng | 17,082.1 | 3.9 | 0.2 |
| **India** BSE | 72,761.9 | -1.8 | 0.7 |
| **Indonesia** IDX | 7,421.2 | 1.2 | 2.0 |
| **Malaysia** KLSE | 1,538.1 | 0.4 | 5.7 |

| | index Mar 13th | % change on: one week | Dec 29th 2023 |
|---|---|---|---|
| **Pakistan** KSE | 64,048.4 | -2.4 | 2.6 |
| **Singapore** STI | 3,160.7 | 0.8 | -2.5 |
| **South Korea** KOSPI | 2,693.6 | 2.0 | 1.4 |
| **Taiwan** TWI | 19,928.5 | 2.2 | 11.1 |
| **Thailand** SET | 1,384.5 | 1.0 | -2.2 |
| **Argentina** MERV | 1,050,711.0 | 5.1 | 13.0 |
| **Brazil** BVSP* | 128,006.1 | -0.7 | -4.6 |
| **Mexico** IPC | 55,848.7 | 1.0 | -2.7 |
| **Egypt** EGX 30 | 31,013.9 | 4.3 | 24.6 |
| **Israel** TA-125 | 1,934.5 | -2.7 | 2.5 |
| **Saudi Arabia** Tadawul | 12,723.2 | 1.3 | 6.3 |
| **South Africa** JSE AS | 74,258.6 | 0.9 | -3.4 |
| **World, dev'd** MSCI | 3,396.2 | 1.2 | 7.2 |
| **Emerging markets** MSCI | 1,046.5 | 1.8 | 2.2 |

**US corporate bonds,** spread over Treasuries

| Basis points | latest | Dec 29th 2023 |
|---|---|---|
| **Investment grade** | 111 | 154 |
| **High-yield** | 360 | 502 |

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

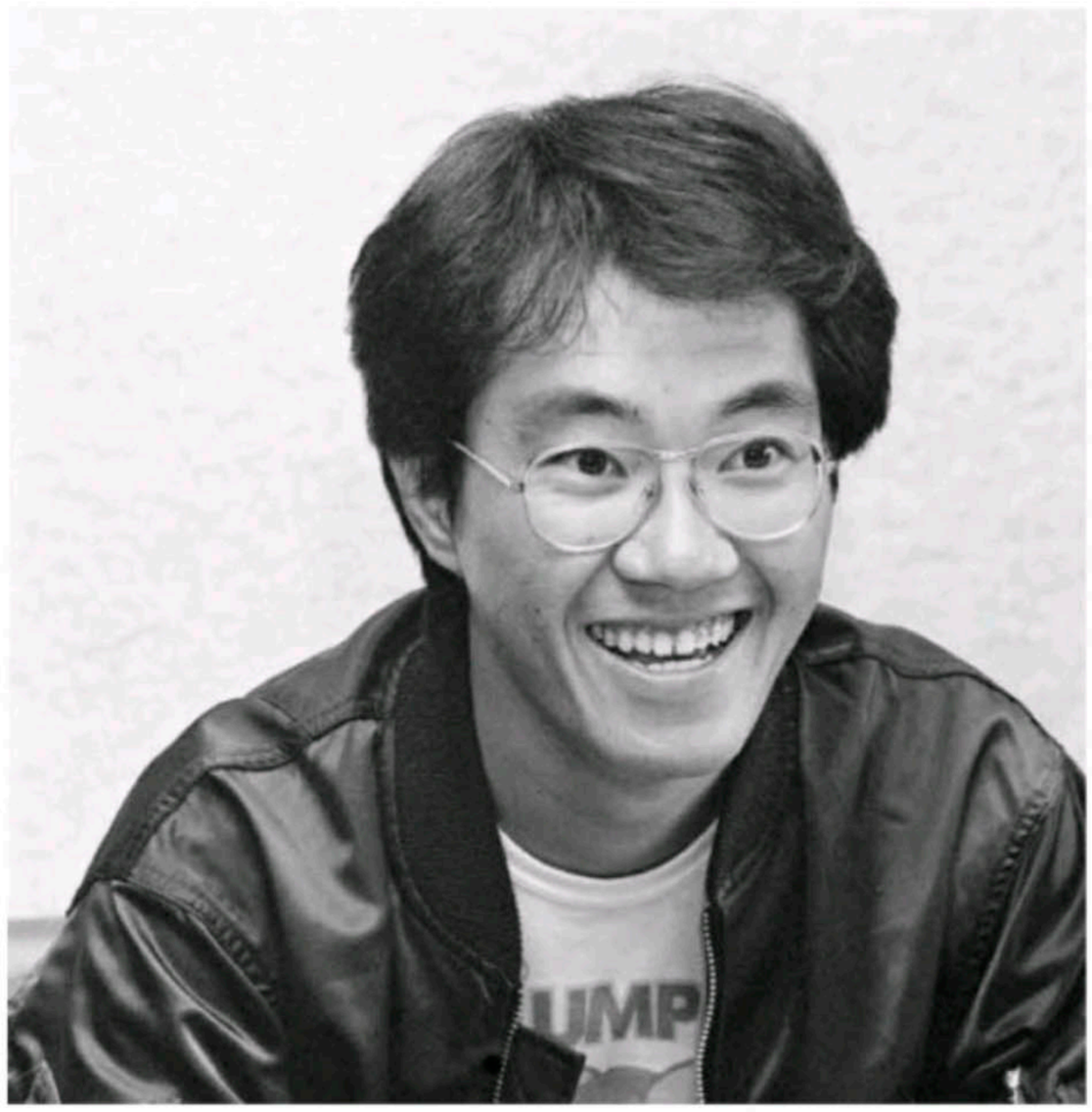
## Commodities

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

| 2020=100 | Mar 5th | Mar 12th* | % change on month | year |
|---|---|---|---|---|
| **Dollar Index** | | | | |
| All Items | 126.4 | 126.3 | -1.1 | -6.2 |
| Food | 132.4 | 134.8 | 1.0 | -4.6 |
| **Industrials** | | | | |
| All | 121.5 | 119.2 | -3.0 | -7.6 |
| Non-food agriculturals | 134.4 | 135.5 | 2.5 | 4.3 |
| Metals | 118.2 | 115.1 | -4.6 | -10.7 |
| **Sterling Index** | | | | |
| All items | 127.6 | 126.9 | -2.5 | -10.9 |
| **Euro Index** | | | | |
| All items | 132.9 | 132.2 | -2.9 | -7.8 |
| **Gold** | | | | |
| $ per oz | 2,127.1 | 2,163.1 | 8.4 | 13.6 |
| **Brent** | | | | |
| $ per barrel | 82.9 | 82.6 | -0.5 | 6.5 |

Sources: Bloomberg; CME Group; Fastmarkets; FT; LSEG Workspace; LME; NZ Wool Services; S&P Global Commodity Insights; Thompson Lloyd & Ewart; Urner Barry; WSJ. *Provisional.

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



# From strength to strength

**Toriyama Akira, master of manga, died on March 1st, aged 68**

HE HAD LOST it again. It must have slipped down somewhere, between his papers and the low table he liked to work at. He was so careless with his stuff—all his stuff. But this was urgent. With steadily rising anxiety, he rummaged through his office. No sign. And yet he couldn't draw properly, therefore couldn't function, without it.

It was his pen-holder he was looking for. His old wooden pen-holder, pinkish-cream and black. Nothing to look at. Over the years he had worn it down with sharpening, sandpapering and simply drawing manga, Japan's dynamic version of the graphic novel. He had customised it, cutting the business end so that the nib went in deeper. Whenever it broke, he had fixed it. Of course he had tried others, but he couldn't get on with them. Over thousands of pages, with that little scratching sound it made (he often used the worst paper), it had become his beloved and his friend.

Toriyama Akira's whole career was mapped out by it. He was 14 when he bought it, randomly, somewhere. It drew the first story accepted by *Weekly Shonen Jump*, the best manga magazine, when he was 23, and the first one *Shonen Jump* serialised, "Wonder Island". For four years from 1980 the pen-holder worked overtime on "Dr Slump", his first colour comic, which when printed as a separate volume sold 35m copies in Japan. But far greater things were to come. In 1984, having retired Dr Slump, he introduced a character who, for the first time, carried manga successfully to the West and then across the globe.

That character was Son Goku, the greatest hero on Earth, and his story was "Dragon Ball". The plot was simple enough, based loosely on a classic Chinese novel, "Journey to the West". Goku was a human boy, but with oddities: a monkey's tail and extraordinary strength. Rather than keep failing at his martial arts lessons, he teamed up with a girl, Bulma, who was on a quest to collect seven magic balls scattered over the Earth by a terrifying dragon. Each time they were all collected, the dragon granted one wish. Then it scattered the balls again.

There was no reason why such a story should ever end, and it hardly did. It ran for ten years in *Shonen Jump*, filling 42 volumes, before migrating to 153 anime TV episodes and to film. As it ran it changed. Goku aged, became a father, acquired greater powers and took on more and more snarling enemies. He lost, even died, but was revived, still with his orange *gi* and his shock of black hair, which turned blond as his power level rocketed to over 9,000 and electricity blazed from his hands. The earlier volumes had part-likeable villains and fights staged as tournaments, but by "Dragon Ball Z" in 1989-96 all-in brawls were exploding from almost every page. Cries of Haya!!! Arghh!!! and HWOOO!! spiralled out of the frames as the characters sprang to destroy each other. That crazed action was what teenage boys in America, reading the comic books or watching on Toonami, especially seemed to go for.

His new fame and new wealth astonished Mr Toriyama. Dr Slump's success was surprising enough, when the main star was not the genius inventor with his crazy machines but Arale-chan, a plump, shortsighted robot girl in blue dungarees. Now the whole world had apparently gone mad for "Dragon Ball", which he had thought up only to make Japanese boys happy. Fans of his work found grand themes there of friendship, kinship and hard work, but he went only for fun, gags and kung-fu fighting, and seldom sat down to draw with any idea of where the plot was going. He made it up as he went along. The surest part of the exercise was the perfect fit of the pen-holder in his hand, perfectly conveying to the blank page his characters' next expression.

Manga had not been his first idea of how to spend his life. He went into design, but it didn't suit him. By his early 20s he was broke, reduced to begging 500-yen notes from his mother. Since that could not go on, and he was good at drawing, he tried manga. On one level he loved it, letting his imagination rip unconfined. But it was really rough, too. Working on Dr Slump, he once pulled four all-nighters in a row to meet his relentless deadlines at *Shonen Jump*, even calling on his family to ink in the black bits. He scarcely believed it was possible to do so much drawing. That part got easier: the colouring was soon done digitally, and eventually the characters left the page for the screen. But then new characters would come into his head to be thrown into even wilder adventures, into other universes, or through time. Goku's great wish was to defeat ever-stronger enemies, one-on-one, so his creator provided them in numbers. None pleased him more than the Great Demon King Piccolo, Goku's first arch-enemy. Piccolo went swathed in a white cloak, white turban and terminally brooding look, but he came good in the end, and saved the Earth.

Plenty of other projects flowed first from that pen-holder, including "Chrono Trigger" and designs for the video game "Dragon Quest". Each anime or film (22 were based on his characters) was overseen by him. It was hardly surprising, given his workload, that he was a recluse. But that was his temperament anyway. With friends he would laugh, joke and talk nonsense, but he had very few. Most were manga artists, as his wife Yoshimi was. Living out in Kiyosu City, where he was born, rather than Nagoya, where he had his studio, he liked to play the rural hermit. His author portrait was a cartoon, usually smoking; his public persona became "Robotoriyama", "Tori" for short, a cartoon cyborg with a gas mask and grabber arms. Sometimes Tori would wear Goku's orange costume, the same one that now graced a statue on a street in Tokyo, toyshops from Shanghai to Paris and Macy's Thanksgiving Parade. At other times he wore green coveralls, like a workman.

As a workman, he needed his special tools. Fans noticed that after he mislaid his old, precious pen-holder while finishing the serial "Sand Land" in 2000, losing it for good this time, he drew manga much less. He explained the tragedy as his excuse for being lazy. Yet perhaps it was a sign, nonetheless, that together they had fought, and yelled, and leapt, and saved mankind, just enough. ■

# Caution:
# elephant in the room

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