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On the cover

The fate of the French president matters far beyond France: leader, page 7. Emmanuel Macron has had a remarkable run which looks likely to continue; but things are getting harder: briefing, page 14

Recession roulette A toxic mix of risks hangs over the world economy: leader, page 8. Are labour markets in the rich world too tight? Page 55. Why bonds are signalling recession even as stocks have been buoyant: Buttonwood, page 58

The Rubicon of Russia's war crimes Investigate and charge Russian war criminals, even if they are never brought to justice: leader, page 8. As Russian soldiers fall back from the capital, they leave behind evidence of systematic war crimes, page 37

Lockdown in Shanghai Extreme restrictions in China's financial hub indicate a failure of policy, page 29. Raging outbreaks show that Omicron is deadly in unvaccinated people: graphic detail, page 73

What follows the smartphone? In Silicon Valley the search is on for the next big tech platform: leader, page 10, and analysis, page 49

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The world this week

5 A summary of political and business news

Leaders

7 **France votes**

Why Macron matters

8 **War crimes**

Indict is right

8 **The world economy**

Recession roulette

9 **The politics of paranoia**

Imaginary hobgoblins

10 **Technology**

After the smartphone

Letters

12 On gay people in Florida,

Hollywood, oligarchs,

the Falklands war, school

closures, exchange rates,

Europe

Briefing

14 **The French election**

Mr Macron's new challenge



By Invitation

Estonia's prime minister, Kaja Kallas, describes her response to the atrocities in Ukraine in an online essay, economist.com/by-invitation



United States

17 Farming boom, rural bust

18 The Supreme Court

19 Amazon gets a union

19 The opioid crisis

20 Filling up in New Jersey

21 The baby business

22 **Lexington** Bill Burns and the bear



The Americas

23 Corruption in Brazil



Asia

25 Sri Lanka's collapse

26 Pakistan's political crisis

27 **Banyan** Indian autonomy

28 Korean tensions

28 AUKUS missiles



China

29 Shanghai's lockdown

30 Hong Kong's next leader

31 Worries about food

32 **Chaguan** The party studies Soviet history



Middle East & Africa

33 Sudan faces collapse

34 Graft in Mozambique

35 Single women in Egypt

35 Battered Benghazi

36 Taxing the Middle East



Europe

- 37** Russia's war crimes
38 Ukraine fights back
40 Educating Ukrainian refugees
40 Turkish sanction-busting
41 Hungary's election
42 **Charlemagne** Resisting Orbán

**Britain**

- 43** Post-Brexit immigration
44 Reviving the Thames
46 **Bagehot** The cruel state

**International**

- 47** Mercenaries in Ukraine

**Business**

- 49** The headset race
51 Elon Musk's Twitter habit
51 How MBAs boost profits
52 Targeting Toshiba
52 Beijing warms to New York
53 **Bartleby** The secret of hybrid working
54 **Schumpeter** Buy an EV, boost globalisation

**Finance & economics**

- 55** Tight labour markets
57 The Fed and QT
57 America's housing market
58 **Buttonwood** Stocks and inflation risk
59 China's real-time data
59 Banking in India
60 Sterling's appeal
61 **Free exchange**
 Experiments in China

**Science & technology**

- 62** How to meet global climate goals
64 How brains age
64 Universal smells
65 The colourfulness of birds

**Culture**

- 66** The meaning of time
67 Californian fiction
68 Rule by strongmen
69 **Home Entertainment**
 A radio pioneer
69 War reporting for children
70 **Johnson** Beyond the giga-zone

**Economic & financial indicators**

- 72** Statistics on 42 economies

Graphic detail

- 73** Covid-19 has never spread faster than in Asia today

Obituary

- 74** Mario Terán, the man who killed Che Guevara

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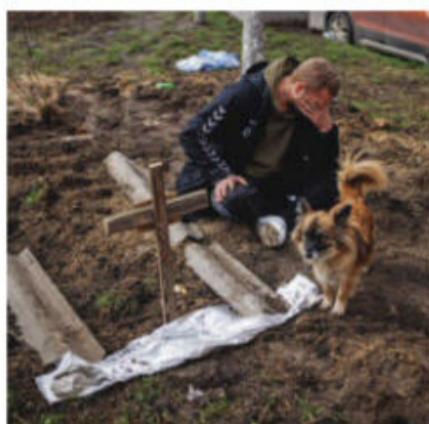
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Having failed to take Kyiv, Russian troops retreated, leaving behind evidence of **war crimes**. In one town, Bucha, dozens of corpses were found. Some had had their hands tied behind their backs before being shot. Survivors described the cold-blooded murder of Ukrainian men suspected of resisting the invasion. Ukrainian officials said that the bodies of at least 410 civilians, including children, had been found in areas around the capital. The Kremlin said the evidence of atrocities was faked by the Ukrainian government. Russian forces are now regrouping in eastern Ukraine, perhaps hoping to seize all of Donbas.

Volodymyr Zelensky, Ukraine's president, urged the **UN Security Council** to remove Russia as a member. He also called for a tribunal for the Russians who gave the orders to commit atrocities. Russia has a veto on the council and can block any such move.

America, in conjunction with the European Union and G7, announced new **sanctions** on Russia, extending a ban on new investment to all areas of the economy and freezing the assets of Vladimir Putin's daughters. America's Treasury Department stopped American banks from facilitating repayment of Russian debt, in effect blocking Russia from reimbursing holders of its bonds.

Lithuania ended imports of Russian gas, the first country in the EU to do so. The Baltic nation has been weaning itself off Russian energy for years by building a terminal to import liquefied natural gas from other suppliers.

Vladimir Zhirinovsky, a Russian ultranationalist and leader of the misnamed Liberal Democratic Party, died aged 75. He once suggested that Russia seize Alaska from America and dump Ukrainians there. He never held power, but helped Mr Putin by sounding more extreme. He ran for president six times.

Viktor Orban's party, Fidesz, increased its supermajority in **Hungary**. Six opposition parties had united to try to stop Mr Orban's erosion of democracy. Hungarian media, which are largely under Mr Orban's thumb, painted them as deviants and warmongers. They won 35% of the vote. The European Union began moves to cut off aid to Mr Orban's corrupt regime until it stops violating the rule of law.

Aleksandar Vucic won a second term as **Serbia's** president. His government has refused to join sanctions on Russia. Dependent on Russian gas, Serbia has tried not to annoy Mr Putin while still hoping to join the EU one day.

Imran Khan, **Pakistan's** prime minister, pulled off a last-minute trick to avoid a no-confidence vote by dissolving parliament and calling for fresh elections. The opposition took the matter to the Supreme Court, arguing that Mr Khan's move was unconstitutional.

Sri Lanka's festering economic crisis spiralled into high political drama as fuel supplies dwindled, food shortages worsened and power cuts stretched on, leading to protests that demanded the resignation of Gotabaya Rajapaksa, the president. Mr Rajapaksa dismissed most of his cabinet and imposed, and then lifted, a state of emergency.

Carrie Lam decided not to seek a second term as **Hong Kong's** leader. Her tenure was marked by big pro-democracy protests, which led to tighter Chinese control of the territory. More recently she has been criticised for mishandling a

surge in covid-19 cases. Hong Kong now has the world's second-highest death rate from the virus.

Rodrigo Chaves won the presidential election in **Costa Rica**. Mr Chaves, an economist, positioned himself as an anti-establishment outsider. Both his campaign and that of his main rival were dogged by scandal.

The embattled president of **Peru**, Pedro Castillo, introduced a state of emergency and a curfew in Lima, to quell violent protests about rising food and fertiliser prices. The lockdown was lifted, but problems for the left-wing Mr Castillo remain. Since coming to office in July he has faced two impeachment attempts, and has appointed four different cabinets. His approval rating is just 25%.

In **Britain** it emerged that Akshata Murty, the wife of Rishi Sunak, the chancellor, is non-domiciled for tax purposes. As a result she does not pay tax in Britain on income earned abroad (Ms Murty is an Indian citizen and owns shares in Infosys, an IT services company founded in India by her father). The news came on the same day that millions of Britons on squeezed incomes started paying a higher rate of tax under a policy championed by Mr Sunak.

Three Republican senators said that they would join Democrats in backing **Ketanji Brown Jackson's** appointment to the Supreme Court, all but assuring her confirmation on the Senate floor.

Oklahoma's legislature passed a bill that would ban **abortion** in all instances, except where the woman's life is in danger. Performing the procedure would be punishable by up to ten years in prison. The governor has indicated that he will sign the bill.

A defection from the ruling coalition in **Israel**, possibly because of a dispute over food

Coronavirus data

To 6am GMT April 7th 2022

Weekly confirmed cases by area, m



Estimated global excess deaths, m

With 95% confidence interval



Vaccine doses given per 100 people

By country-income group



Sources: Johns Hopkins University CSSE; Our World in Data; UN; World Bank; *The Economist's* excess-deaths model

→ For our latest coverage please visit economist.com/coronavirus

in hospitals during Passover, left the prime minister, Naftali Bennett, without a majority in parliament. But the opposition leader, Benjamin Netanyahu, who preceded Mr Bennett, looks unlikely in the short run to bring the government down.

The main sides in **Yemen's** civil war agreed to a two-month truce starting on April 2nd, the first day of the fasting month of Ramadan, in the hope of renewing negotiations for a durable peace. Within days there were claims of breaches by both sides.

A human-rights group accused Malian troops and the **Wagner Group**, a mercenary firm with Kremlin ties, of rounding up and murdering 200-400 civilians in Moura, a town in central Mali.

A court in **Nigeria** sentenced an atheist to 24 years in prison for blasphemy. The former Muslim was arrested after he said on social media that there is no afterlife.

Elon Musk said he looked forward to making “significant improvements to **Twitter**” following his appointment to the board. This came after Mr Musk revealed that he had built a 9.2% stake in the company, becoming its largest individual shareholder.

Known for his mischief-making, Mr Musk polled his followers this week to ask if they wanted an edit button that could fix errors in tweets (they of course said yes). Twitter is already working on an edit feature, but one that won’t alter tweeted conversations.

Workers at an **Amazon** warehouse on Staten Island voted by a wide margin to form a union, the first time that employees of the giant retailer have decided to unionise in America. Amazon, which has vigorously fought attempts to organise labour at its premises, said it was disappointed. Celebrations by activists were tempered by news that a similar vote at a warehouse in Alabama, the second at that facility, looked like it was heading for defeat.

As it grapples with unions on Earth, Amazon is looking to the skies for its next big adventure. It has secured deals with three space-rocket firms, including Blue Origin, to provide heavy-lift launch services for **Project Kuiper**, Amazon’s scheme to put a constellation of satellites in low orbit that will deliver broadband. It is planning 83 launches over a five-year period.

The crisis over the future of **Toshiba** deepened when its second-biggest shareholder wrote an open letter calling on the Japanese conglomerate to consider selling itself to a private buyer (Bain Capital is expected to submit a proposal soon). The letter described Toshiba as a once iconic company that is now a “corporate-governance embarrassment”.

The minutes from the **Federal Reserve’s** latest meeting showed that it is preparing to reduce the balance-sheet that

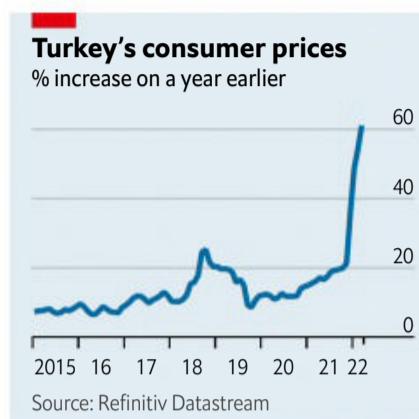
it has accrued over the pandemic from as early as May, and at a pace considerably faster than had been expected. The yield on the ten-year US Treasury note, which rises when bond prices fall, climbed to a three-year high.

The British government outlined its strategy for providing up to 95% of **electricity from low-carbon sources** by 2030. It gave a firm commitment to increase offshore-wind capacity to 50GW, from 10GW today, and offered vaguer pledges on other renewables. More controversially, it hopes to increase nuclear-power capacity to around a quarter of energy demand by 2050.

Germany’s government took control of **Gazprom Germania**, the division of Russia’s Gazprom that operates natural-gas storage hubs in the country, after it was suddenly acquired by two firms. The legal and commercial standing of the acquiring firms is unclear, said the government, and seizing Gazprom Germania was necessary to safeguard gas supplies.

The Russian **rouble** has rebounded from its dramatic fall at the start of the war in Ukraine and is trading at the

same exchange rate against the dollar as just before the invasion. This is in part because of the money Russia still receives from energy exports and also because of capital controls imposed by the central bank.



Turkey’s annual inflation rate hit 61% in March. Food prices were up by 70% year on year, energy costs by 103% and transport by 99%. The country imports most of its oil and gas from Russia. The political opposition blames Recep Tayyip Erdogan, the president, for suppressing interest rates because he wants to prioritise economic growth. Despite surging inflation the central bank cut its main rate by five percentage points over the final months of 2021.

JetBlue tried to bump a rival takeover offer for **Spirit Airlines** by offering \$3.6bn for the business. In February Frontier,

another low-cost carrier, agreed to pay \$2.9bn for Spirit (the companies value that deal at \$6.6bn once the assumption of net debt and operating leases is included). Spirit will consider JetBlue’s proposal.

The first quarter of the year was the worst for **stockmarkets** since the start of the pandemic. With investors fretting over war, surging prices, inverted yield curves and sagging tech shares, the S&P 500 was down by 4.9% over the three months, the NASDAQ by 9.1%, Hong Kong’s Hang Seng by 6% and the German DAX by 9.3%. Russia’s main index, the MOEX, fell by 28.6%.

The war in Ukraine and stock-market volatility are two big reasons why there are fewer **billionaires** this year. *Forbes* compiled its annual tally using share prices and exchange rates on March 11th. Russia has 34 fewer of them (there are still more than 80 in the country, though their total net worth has fallen by almost half). China lost 87 because of the government’s crackdown on big tech. Globally there are 2,668 billionaires with a collective worth of \$12.7trn. With a net worth of \$219bn, Elon Musk overtook Jeff Bezos to top the list for the first time.



Why Macron matters

France's president is a cautionary tale for centrists everywhere

WHEN HE WAS first elected president of France in 2017, Emmanuel Macron immediately became a standard-bearer for radical centrist. He was young, clever and eminently reasonable. Also, it was a time of panic for liberals.

Britain had voted the previous year to leave the European Union. America had just elected Donald Trump. Across Europe populists were climbing in the polls, even in sober places like Sweden, Denmark and Germany. The far left were in power in Greece. Italy's Northern League would soon enter government as half of an all-populist coalition that flirted with leaving the euro and rebuffed migrants rescued in the Mediterranean. All around the rich world politicians who promised to raise walls, ignore experts and turn back the clock to an imaginary golden age were in the ascendant. No wonder Mr Macron's triumph in one of Europe's most pivotal countries brought sighs of relief.

On April 10th Mr Macron will face voters once again. This time he is running not so much on his aspirations for the radical centre, but on his record as a nuts-and-bolts reformer, on his vision for world affairs, and as a leader who has reinvigorated French politics. In one sense, Mr Macron looks as if he will soon be able to say his record has been vindicated. Our election model gives him a 98% chance of making the second round on April 24th and a 78% chance of winning re-election (albeit a number that has recently been shrinking—see Briefing). Victory would be a remarkable achievement. Not since Charles de Gaulle in 1965 have the French re-elected a president who has a majority in the assembly. However, the closer you look, the more liberals around the world should see Mr Macron as a cautionary tale.

It is in economic policy that his centrist has been most successful. Before taking office in 2017, he argued that France should be open to globalisation, but try harder to equip its citizens with the skills they needed to adapt to change. His pro-market labour and regulatory reforms embodied this philosophy and they have led to an impressive rebound in employment and new-business creation. Rather than trying to preserve redundant jobs, he has boosted training and early education. At the European level, he was a driving force behind the establishment of the NGEU, a €750bn (\$818bn) jointly guaranteed fund to help Europe's weaker economies dig themselves out of the hole into which covid-19 had cast them.

He has, however, left plenty to do in a second term. Mr Macron has been too eager to reach for the levers of state control, whether capping electricity prices or meddling in the management of hypermarkets. For all his ENA-honed competence, he has failed to restore hope to France's left-behind. Though his supporters would be quick to point out that covid got in the way, he has failed to overhaul the labyrinthine pensions system.

As an international statesman, Mr Macron correctly identified the threat to the Western order from a rising China and an irascible Russia. His solution was to attempt to boost the European Union—a forum where France's voice counts—even if that undercut the institutions that bind the West together. Rather than confront Vladimir Putin, Russia's president, he argued for

building bridges. He wanted to downplay NATO, which he accused of suffering "brain death", by building up a European counterpart. Yet, as the war in Ukraine has shown, America's role in defending Europe is indispensable. Although his efforts to defeat jihadists in the Sahel were courageous and laudable, they have yielded few results and are now unravelling. His dealings with a puerile post-Brexit Britain were petulant—and just what Britain's unserious prime minister wanted.

It is in reinvigorating French politics that Mr Macron has most fallen short. In the election in 2017 he trounced Marine Le Pen, a nostalgic nationalist, by 66% to 34%. If she makes it to the second round, which is likely, the polls today say Mr Macron would win only narrowly, by 53% to 47%. The proportion of French who tell pollsters that they will vote for a candidate of the nationalist right or the anti-capitalist left in the first round is 51%, slightly more than voted that way in 2017.

In other words, five years of government by the world's centrist standard-bearer has eroded support for the centre. There are many reasons for this. War and the pandemic have polarised politics, and not only in France. Mr Macron also sometimes repels voters with his aloof Jupiterian manner. Critics dub him "*le président des riches*". The label sticks, partly because he cut France's unworkable wealth tax, but mostly because his manner

is that of the high-flying banker he once was. Mr Macron also faces a problem that responsible politicians always face when running against populists. He offers policies boringly grounded in reality. They say whatever will stir up voters, whether or not it is true (see Leader).

The last reason is that Mr Macron has shown an illiberal neglect of institutions. Although the old politics had too many time-serving deputies, the parties of the centre-left and centre-right have become sideshows in presidential politics. True, responsibility for renewal lay with them, but he made their job harder by poaching their best talent. What is left is a contest between Mr Macron and a cacophony of extremists on the left and the right. As a result, the nearest thing France has to an opposition leader is Ms Le Pen—a historic admirer of Mr Putin who would flout EU rules by favouring French citizens for everything from housing to jobs. Her 21% chance of becoming president is alarmingly high.

In 2016 Mr Macron wrote: "If we don't pull ourselves together in five years or ten years, [Ms Le Pen] will be in power." What should centrists make of the worrying fact that, despite all he has done, his words are as true today as they were then?

One lesson is that complex trade-offs struggle to defeat slogans. Politics is so much about tribes and identity that material gains in terms of jobs and economic growth are necessary but not sufficient for re-election. Another is that one person cannot sustain the radical centre. That is not only because too much is riding on each re-election and on a successor turning up, but also because, as centrists know, individuals are flawed. French centrism and its Anglo-American liberal cousins are systems. They require constant renewal, through argument and competition. Mr Macron still has our vote, but he needs company. ■



War crimes

To indict is right

Investigate and charge Russian war criminals, even if they are never brought to justice

EVIDENCE OF RUSSIAN war crimes litters Ukraine, but however much Ukrainians and some Russians wish differently, no one—least of all Vladimir Putin, Russia's president—is likely to spend a single day in prison for them. Nonetheless, it is important that the atrocities are investigated. This is partly to commemorate those who were tortured, raped and murdered. It is also to expose the Kremlin's lies to a world too inclined to let them pass. And public indictments of Russian troops would serve as a warning that may help deter the next round of killing.

Ukraine's prosecutor-general said on April 3rd that 410 civilians had been killed around Kyiv. Many more bodies will be found. *The Economist* saw the corpse of the mayor of Motyzhyn, a suburb, blindfolded and shot, apparently by Russian forces, along with her family (see Europe section). We heard details of the murder of Ukrainian men in Bucha, ordered by a Russian commander. Human Rights Watch, a charity, reports that Russian soldiers threw a smoke grenade into a basement in Vorzel, near Irpin, then shot a woman and her child as they emerged.

Evidence like this has rightly caused a worldwide outcry. Ukraine's president and Poland's prime minister have accused Russia of genocide. Joe Biden, America's president, has called the enormities in Bucha a war crime. And the UN secretary general asked for an investigation into the killings, alongside the several already under way.

Investigators are likely to find that Russian forces should be indicted, even if they have not killed on such a systematic scale as to have committed genocide. The Geneva Conventions, which Russia has signed, outlaw war crimes, including wilful killing, causing great suffering and targeting civilians. The murders in Bucha would count. So would the bombing of the Mariupol theatre on which the Russian word for children was written large enough for targeters to see from the sky. Russia's invasion was itself a crime of aggression, as defined by the International Crimi-

nal Court (ICC), which tries individuals for actions under international law. And Russia's vast and indiscriminate shelling of Ukrainian cities is a crime against humanity, defined by the ICC as participation in and knowledge of "a widespread or systematic attack directed against any civilian population".

Unfortunately, indictments are unlikely to bring Russian war criminals to justice. Having been thrown out of the Council of Europe on March 16th after the invasion, Russia has started ignoring the European Court of Human Rights. Neither since 2016 has it recognised the ICC. That does not stop the ICC bringing a case or issuing arrest warrants against Russians, but enforcement needs the UN Security Council (UNSC) to refer Russia to the court—and, as a permanent member of the council, Russia could veto any such move. Russia does recognise the International Court of Justice, which hears disputes between governments, but that court also enforces its rulings in the UNSC.

One response is to send Ukraine more arms and impose more sanctions on Russia. America will ban new investment there. The European Union has proposed blocking its ships and lorries and banning imports of coal. The EU should do more, and limit purchases of oil and gas, too.

The other response is for the courts to press on with their investigations. Russian forces have a duty to protect Ukrainians, but they are treating them as if they are tools of war. Because the West, like Ukraine, rejects the Russian view that people are a means to an end, it should back the courts' efforts to show that every life matters. The legal process will also shed light on Russia's lies, to the shame of Mr Putin's international backers. Even now the Kremlin has said the atrocities were faked, then used the UN to blame the Ukrainians and accuse them of being Nazis. And should those who wish Mr Putin's regime to fall be satisfied, indictments may help ensure that war criminals lose power with him. Who knows, they may even end up in a jail cell. ■



The world economy

Recession roulette

A toxic mix of risks hangs over the world economy

JUST A YEAR ago the world's economists were celebrating a rapid rebound from recession. Now they are worrying that the next downturn could be looming. In America the Federal Reserve is preparing to do battle with high inflation by raising interest rates sharply and shrinking its balance-sheet. In Europe expensive energy is sapping consumers of spending power and making factories costlier to run. And in China an outbreak of the Omicron variant of the coronavirus has led the authorities to impose the strictest lockdowns since the start of the pandemic.

It is a gloomy combination for global growth, and the outlook is darkening. Several economies could even suffer recessions,

though at different times depending on the obstacles they face.

The economy in the United States is overheating. The annual rate of consumer-price inflation is 7.9% and hourly wages are 5.6% higher than they were a year ago. America has nearly twice as many job openings as it does unemployed workers—the highest ratio in 70 years. For much of 2021 central bankers hoped that Americans who left the labour force after the pandemic struck would return, helping cool the labour market. In the past six months their prayers have been answered: more than half the missing workers of prime working age have returned (see Finance & economics section). Yet wage growth has risen anyway, ►

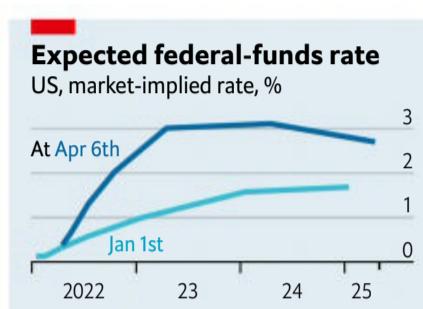
► perhaps because workers are negotiating hard as rising prices erode living standards.

The Fed needs both wage and price growth to cool if it is to hit its 2% inflation target. It is expected to raise short-term interest rates, which started the year below 0.25%, to over 2.5% by December, and to continue to raise rates above 3% in 2023. This week the central bank trailed a plan to shrink its \$8.5trn bond holdings, starting in May, at a much faster pace than during the last period of “quantitative tightening”.

Hitting the monetary brakes, though necessary, endangers growth. History suggests that the Fed finds it difficult to cool the jobs market without eventually tipping the economy into recession. It has pulled off a “soft landing” only three times since 1945. And it has never done so while battling high inflation. Bond investors are betting that in two years’ time the Fed will have to cut rates again as the economy weakens. Given the record, a recession in the next two years looks likely.

Europe has an inflation problem, too, but it is so far caused by expensive imported energy and food more than by overheating. Russia’s invasion of Ukraine and Western sanctions threaten the continent’s energy supply. Gas prices for next winter are five times higher than in America, and spending on household energy is almost twice as high as a share of GDP (partly because Europe is poorer). As energy prices have surged, consumer confidence has slumped. Firms are struggling, too: French industrial production fell in February.

The euro area’s economy will probably still grow in 2022 as a whole. But it looks fragile. Should Europe stop importing Russian gas—whether because it chooses to or the Kremlin decides



to cut off the supply—the danger of a recession will rise.

The threat to global growth from China’s Omicron outbreak is the most severe and immediate. China reported over 20,000 new cases of the virus on April 6th (see China section). Because the government is committed to eliminating covid-19, Shanghai’s 26m residents, and those of other big cities with outbreaks, are under lockdown. If the past relationship between lockdowns and GDP holds, China’s real-time output will be 7.1% lower than in a world with no restrictions, according to Goldman Sachs. Lockdowns will also disrupt global trade, which is still struggling with a hangover from earlier in the pandemic. Shanghai is the latest global port to see hundreds of ships back up offshore, waiting to load or unload.

Xi Jinping, China’s president, has urged officials to cut the costs of its restrictions. But if it opens up too soon, mainland China will see a wave of infection and deaths like that which recently plagued Hong Kong. That would scare consumers and become a source of economic disruption in its own right. Until China vaccinates its elderly in sufficient numbers using the most effective jabs, lockdowns will be an enduring feature of its economy and a source of global volatility.

The blame for the world economy’s many troubles lies squarely with policymakers. The Fed’s job is supposed to be to take away the punchbowl just as the party gets going; it has instead presided over a blowout. Europe’s governments let the continent become dependent on Russian natural gas. And China’s difficulty in suppressing Omicron was predictable, and widely predicted. Economic trouble often strikes as a bolt from the blue. Today’s recession scare was avoidable. ■

The politics of paranoia

Imaginary hobgoblins

Scaremongering works. Fans of the truth should fear it

HUNGARY’S WAY of life is under attack, if you believe the ruling party. A Jewish billionaire plots to flood the country with a million Muslims. Perverts want to teach its children sexual deviance. The opposition are spoiling for war with Russia. The only way to stay safe is to back Viktor Orban, the prime minister. On April 3rd his party, Fidesz, won roughly half the vote and, thanks to gerrymandering, two-thirds of seats in parliament (see Europe section). Mr Orban called it a triumph for “our brand of Christian democratic, conservative, patriotic politics”. It was actually a victory for the paranoid style.

The threats the regime describes are largely imaginary. Hungarians are free to follow their traditions if they choose. George Soros has no power over their borders. There is no global conspiracy to corrupt Hungarian children. And the fact that the opposition do not share Mr Orban’s admiration for Vladimir Putin does not mean they are warmongers. No matter. Since Mr Orban took office in 2010 he has won control of nearly every significant media outlet. The opposition leader, Peter Marki-Zay, had only five minutes on public television during the campaign—barely enough to introduce himself, let alone dam a river of lies.

Mr Orban’s victory entrenches a corrupt and semi-authoritarian regime in the heart of the European Union, the world’s pre-

mier club of liberal democracies. Every year he is in office, he erodes more democratic checks and balances. Most of the opposition united against him during this election, worrying that if they did not stop him now, it would be too late. They failed.

Hungary has shown once again how well fearmongering works. Voters are never more attentive than when hearing about threats, even phoney ones. Because of social media, unscrupulous politicians can easily spread vivid, viral footage that appears to support their scare stories. If such types win power, they are likely to abuse it. Even in a liberal democracy, as Hungary once was, a determined would-be strongman can chip away at independent institutions, such as the media or the courts, until his voice drowns out every other.

Mr Putin’s regime is very different from Mr Orban’s, which does not kill people. Yet their styles overlap. The Kremlin also lies to scare voters into seeking the big man’s protection. Its mouthpieces tell Russians that they are about to be attacked by the West, which has been developing bioweapons in Ukraine, a country run by Nazis. None of this is true, but viewers of Russian tv hear little else. Many therefore rally around their president. Many believe the fresh lies with which their ruler reinforces his old ones, for example that the photos of Ukrainian civilians tied

► up and murdered in Bucha are a “staged provocation by the Kiev regime”. *The Economist* sent a reporter to check; he came back with his clothes stinking of death.

Thousands of kilometres away, in another very different country, a third leader is inventing threats as a way to cling to power. A no-confidence vote against Imran Khan, the prime minister of Pakistan, was scheduled for April 3rd. The deputy speaker of parliament, an ally of the former cricket star, declared it a plot by the United States and cancelled it (see Asia section). Political chaos ensued. Mr Khan is said to have lost the support of Pakistan’s army, which often meddles in politics. He no doubt calculates that in a fresh election, which he has called, it will do him no harm if voters believe he stood up to a wicked American conspiracy. There is no evidence of one.

Starting on April 10th, under a political system unlike Hungary’s, Russia’s or Pakistan’s, French voters also face a choice be-

tween hope and fear (see Briefing). Marine Le Pen relies on exaggeration rather than lies, and tries to put a respectable face on fearmongering. She frets about France’s “submersion” by a flood of immigrants. She proposes to ban public wearing of the hijab and give French people priority over foreigners, even EU citizens, in jobs, housing and welfare. That would violate the principles of the EU. If she were a marginal figure it would not matter, but she may conceivably be the next president of France.

Mass-killing dictators like Mr Putin are rarer today than during the cold war. More common are leaders who win power by sowing fear and division. For all their many differences, such leaders all pose a threat to tolerance and decency (see Culture section). To defeat them, liberals must neither underestimate them, as they did Donald Trump in 2016, nor copy their tactics. In the long run, lies must be fought with truth, painstakingly researched and patiently expressed. It will be a long struggle. ■

Technology

After the smartphone

In Silicon Valley the search is on for the next big tech platform

FIFTEEN YEARS ago Steve Jobs announced three new products: a music player, a mobile phone and an internet communicator. As Apple’s then-boss gave his presentation, his audience slowly realised that the three products were in fact a single gadget: the iPhone. Cue applause, cue Apple’s renaissance, and cue a new era in technology as the smartphone overtook the desktop PC as the centre of personal computing.

Today even Mr Jobs might be surprised by how many uses have been found for his versatile device. The small screen has come to handle banking, networking, map-reading, gaming and much more. Apple and other phonemakers have been enriched not only by hardware sales (worth \$530bn last year) but by controlling what happens on the platform, from app stores (which raked in \$135bn) to mobile ads (worth nearly \$300bn).

Yet there is mounting evidence that the smartphone era is fading. Phone sales have been in gentle decline since 2016, as slower technological improvement has led to people upgrading less often. In rich countries, already saturated, the decline is especially marked. So tech innovators and investors are on the hunt for the next big thing, in hopes of winning not just a juicy hardware market but the potential to control the platform on which everything takes place.

The current big idea is virtual-reality (VR) headsets, spurred on in part by pandemic lockdowns. More promising, but further off, are glasses for experiencing augmented reality (AR), in which computer graphics are overlaid on the real world. Most of America’s big tech firms—among them Apple, Google, Meta and Microsoft—as well as Asian giants like ByteDance (TikTok’s Chinese owner) and Sony, are developing or already selling VR or AR headsets. What has so far been a niche market is about to become very crowded (see Business section).

Any claim to have discovered the next big platform deserves caution. There have been plenty of false starts. Tablets were proclaimed as a rival to the smartphone, yet Apple still makes six times as much money selling iPhones as it does from iPads.

Smart homes were seen as another possible mega-platform, but so far Alexa and her like serve mostly as jukeboxes and egg-timers. In-car tech is another platform that has proved useful and valuable, but hardly threatens to become the centre of anyone’s digital life. It is easy to imagine headsets, which are now used mostly for gaming, getting stuck in a similar niche.

What does seem to be under way, however, is a gradual movement by consumers towards a constellation of new wearable devices. These include voice-activated smart headphones, which can make calls, read messages and more, and smart watches, which handle scheduling, navigation and fitness. A growing array of health-tech gadgets measure everything from blood sugar to sleep patterns. In America unit sales of these “wearables” are already close to sales of smartphones.

These gadgets are more like accessories for the phone than replacements. But as computing shifts away from the pocket and towards wrists and ears, a growing share of consumers’ attention and spending is seeping away from the phone, too. As VR and AR glasses become lighter and cheaper, they could form the most powerful part of the wearable cluster.

People are not about to ditch their phones, any more than they threw out their laptops a decade ago. But as they interact more often with earphones or, soon, glasses, more of them will come to use their phone as a kind of back office, primarily there to provide processing muscle for other gadgets. As chips get even smaller, phones may not be needed even for that.

Don’t expect any of this to happen right away. Internet-enabled phones were launched in the late 1990s and failed to catch on outside offices. AR headsets—bulky, pricey and so far used only in industry—are at a similar stage. Yet when technological tipping-points are crossed, things can change fast. Four years after Mr Jobs introduced his iPhone, smartphones outsold all laptop and desktop computers worldwide. Silicon Valley’s latest great hope is still a work in progress. But if and when the right product appears, the future may arrive very quickly. ■





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The Floridian inquisition

The Economist's explainer on "Why Florida is banning lessons on sexual orientation and gender identity" (March 30th) neglected to mention Florida's history of removing queer people from classrooms. Between 1956 and 1965, Charley Johns, a member of the Florida state Senate and a former governor, oversaw an investigation "to understand and effectively deal with the growing problem of homosexuality" in Florida's schools. The resulting and definitely not-safe-for-work report was chillingly titled "Homosexuality and Citizenship in Florida".

The Johns Committee, as it was colloquially known, worked with local police to forcibly remove students and educators suspected of being anything but straight. Suspects were pressed to out themselves and forced out of Florida's academic institutions. Florida's "Don't Say Gay" act, signed into law recently by Ron DeSantis, is just the latest attempt to scrub the existence of queer people from educational settings.

JULIAN VALDIVIA
Fort Myers, Florida

Hollywood loses the plot

As the Ukrainian people are bombed, driven from their homes, and forced to live without heat or food, Hollywood fusses over a beautiful woman in a ballgown, miffed at having been likened to an equally beautiful star from a movie that is 25 years old ("Have the Oscars lost their way?", digital editions, March 28th). Said beautiful woman's husband takes it upon himself to smack around the comedian who made the comparison, then wins the Oscar for best actor, gives a tearful speech, and basks in a standing ovation from the room. The next day he offers an apology that reads as if it has been written by a roomful of publicists and lawyers. No wonder they call it La La Land.

MARGARET MCGIRR
Greenwich, Connecticut

Tories love Russian money

"A brief history of Londongrad" (March 12th) reviewed "Butler to the World", Oliver Bullough's new book on Russian money in the British capital. Although it is obviously a topical tome for these blighted times, the review was nevertheless bereft of one key detail: the Conservative Party's insatiable love of Russian oligarchs' cash. Like a three-legged chair, the review toppled over rather spectacularly by omitting the role that the Tory party has played during its long tenure in government in courting, cuddling and sucking at the breast of hundreds of Russian oligarchs.

Boris Johnson and David Cameron do appear briefly, but the wholesale shovelling of crooked cash into Britain under the sole tutelage of the Conservatives for the past decade is somehow absent. The reviewer calls for a "change of philosophy" to rectify such embrace of criminality. But whose philosophy exactly? Yours? Mine?

NICK WEST
Bath

The Falklands political effect

Without the Falklands war British politics could have taken an even more dramatic turn than you describe ("Not even past", April 2nd). Polling day for the Beaconsfield parliamentary by-election took place on May 27th 1982, as a British victory in the war came in sight. The Conservative campaign featured a personal appeal from Margaret Thatcher to "support our troops", with its party agent pictured in second-world-war battle dress.

Unsurprisingly, the Liberal/SDP Alliance candidate (me) only achieved a respectable second place, although relegating the Labour nominee (one Anthony Blair) to third. Had this previously very true blue seat followed the pattern of Croydon, Crosby and Hillhead with an Alliance victory, then it is a reasonable assumption that the Alliance would have out-polled Labour in the gen-

eral election of 1983. Would that not have broken the mould of two-party politics?

PAUL TYLER
Stroud, Gloucestershire

A blizzard of school closings

The Economist's nose for weather is as keen as ever. The recent flurry of activity that closed American schools for "snow days" is an early gust from a much larger storm brewing in primary education ("Say it ain't snow", March 19th). Weather-related emergency school closures are becoming unbearably frequent. The best data come from California, where the number of schools that closed for weather rose 800% from 2016 to 2019. Anecdotally, school closures due to fires, floods, mud, heat, storms and snow are on the rise across the whole country (a high school was destroyed recently by a tornado in Jacksboro, Texas).

Remote learning, which many saw as a temporary pandemic measure, is the best tool available to mitigate the effects of climate change on education. Now is the time for communities to permanently adopt a remote-resilient digital curriculum and prepare for a future when a significant fraction of learning happens remotely. Under the surface, that is what New York's snow-day plan is all about.

ISAAC VAN WESEP
President
Work on Learning
Boston

Currency precision

The Daily Chart on "Why is the rouble so resilient?" (March 31st) stated that the one-year forward exchange-rate for the Russian currency is a measure of the market's expected exchange rate, given the interest-rate differential between Russia and America. This is not strictly incorrect, but it is slightly misleading.

The forward exchange-rate is purely a reflection of the interest-rate differential, based on the current spot rate. It is an arbitrage value and not

a market prediction in itself. All expectations of the future value of a currency are priced into the spot rate.

ANDY HILL
International Capital Market Association
London

Europeans are doing their bit

Charlemagne chastised the European public for "living as if nothing were amiss" during the energy crisis and war in Ukraine, and urged us to do things like turning down the thermostat to help save fuel (March 26th). Actually in Portugal, many deaths during the winter months are related to low temperatures in homes. Charlemagne made a comparison with the energy crisis of the 1970s. But times have changed since then, even if Europeans are today living with higher fuel prices and raging inflation.

This is an era of austerity economics, coupled with a pandemic that has especially affected Europe's young adults. We face unemployment, stagnant salaries, surging food costs and soaring rents. To suggest that we aren't sacrificing anything is uncalled for. The behaviour of Europeans is not a cause of shame. We are doing a lot; and note the generous European response to Ukrainian refugees.

INÊS VASCONCELOS
Estoril, Portugal

Regarding Britain's dismal chilly weather and the Roman bathhouses that tried to make Roman Britain bearable ("Life in a cold climate", March 19th). I recall from my schooldays a Latin textbook with a cover picture of a Roman legionnaire with the title, "O me Misserum". It didn't take a Latin scholar to work that one out.

DAVID ROSSINGTON
Lincoln



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DIRECTOR, UNU-IIGH Kuala Lumpur, Malaysia

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Standing out from the crowd

AMIENS AND PARIS

Emmanuel Macron has had a remarkable run which looks likely to continue; but things are getting harder

ON APRIL 6TH 2016 a 38-year-old former investment banker who, two years before, had been appointed as a minister in France's Socialist government announced that he wanted to change French politics. Standing in front of an audience in his home town of Amiens he declared that the old divisions between left and right were not relevant to 21st-century challenges. Matters such as climate change, or Europe, split the established mainstream parties as much as they held them together. It was time for a "political movement" that would be "neither on the left nor the right".

The event was the talk of France's politi-

cal classes. But maybe only the man on the stage believed that the movement he was starting would go as far as it has. "At the time we didn't even know if Emmanuel Macron would run for the presidency," recalls Brigitte Fouré, the mayor of Amiens.

In May 2017 Mr Macron won his first ever elected office, leaving the established Gaullist and Socialist parties in his wake and squarely defeating Marine Le Pen of the National Front to become president of the republic. That June his movement, "La République en Marche", took 53% of the seats in the National Assembly. Mr Macron had a legislature at his command.

By occupying a broad centrist space, and borrowing talent from both the Socialist Party and the Republicans, Mr Macron has accomplished much in the five years since then. As he returns to the polls—the first round of the presidential election is on April 10th, with the two candidates who get the most votes then pitted against each other in a run-off two weeks later—he has a lead that most other heads of large democracies could only dream of. He looks likely to be the first French president to win re-election while enjoying a majority in parliament since Charles de Gaulle in 1965. But the elections also show the troubling side of the *bouleversement* in which Mr Macron upended the party system: the resilience of the extremes.

One of the remarkable things about 2017 was that the two mainstream parties managed just 26% of the first-round vote between them, with neither making it into the second round. They will fare even worse this time. As of April 6th, *The Economist*'s poll of polls suggested that Valérie Pécresse, from the centre-right Republicans, and the Socialists' Anne Hidalgo would together secure a mere 11% of the vote. The three leading radical populists—Ms Le Pen and Eric Zemmour on the right, and Jean-Luc Mélenchon on the left—will dwarf this figure with a combined 46%. Add in small fry on the fringes and those telling pollsters they will vote for candidates beyond the historic mainstream make up 54% of the electorate.

Mr Macron's victory in 2017 was in part due to the extremists' success keeping the mainstream out of the second round. In a head-to-head race he trounced the hard-right Ms Le Pen. With Britain having chosen Brexit the year before, and America having put Donald Trump in the White House, this triumph by a charismatic if untested standard-bearer for broadly liberal, internationalist centrism was heralded as a setback for populism of global import.

With the Gaullists and Socialists still nowhere, there is a 90% chance that this election's second round will be a re-run of 2017's. Its result, though, looks like being a great deal closer: the number of people willing to shift their allegiance to Ms Le Pen from other candidates is much higher than it was. No poll of second-round voting intentions has as yet shown Ms Le Pen as the winner. But our poll of polls puts the likely result at 53% to 47%. In many systems that would be a landslide. Compared with 66% to 34% last time it looks worryingly close. At this stage in 2017 our statistical model of the election gave Ms Le Pen a 1% chance of overall victory. On April 6th this year the equivalent number was 21% (see chart 1 on next page).

By the standards of his recent predecessors, Mr Macron's first mandate must be

seen as something of a success (see chart 2). A form of pragmatic, post-partisan policymaking has pushed through a range of reforms—lower taxes, a more flexible labour market, better training and early education, IVF for gay women, and more. Parliamentary politics has become more consensual. There has been scarcely a whiff of rebellion in parliament. It feels quite normal to see Bruno Le Maire, France's long-serving finance minister and once a presidential primary candidate for the Republicans, working closely alongside Olivier Dussopt, the budget minister, previously a Socialist deputy. Such harmony has made possible, among other things, a post-covid recovery plan that saw France's economy recover to pre-pandemic levels faster than any other G7 country apart from America.

Some of the fruits of his tenure are easily seen in Mr Macron's native Amiens, a modest northern city of red-brick houses nestled in what were once the battlefields of the Somme, their soil and memories the strongest of all cases for European unity. Unemployment has fallen. Nursery education is now compulsory (and free) for all from the age of three, as it is across the country. In poorer neighbourhoods, early-primary class sizes have been halved and free breakfasts brought in as part of Mr Macron's promise to tackle inequality with better education.

New businesses have opened their doors, and some existing ones have expanded. Amazon has built a distribution centre on the city's outskirts, employing over 1,000 people. A tyre plant has expanded; so has one making laundry products. "Over the past five years, economic activity has really developed in Amiens," enthuses Ms Fouré, the mayor, despite being a supporter of Mr Macron's presidential rival, Mrs Pécresse. A startup called Ynsect, which breeds and processes insects for animal feed and fertiliser, is building the world's biggest vertical mealworm farm. "This government has been particularly pro-business," says Antoine Hubert, Ynsect's boss. "The number and size of start-ups in recent years has exploded."

But there have been close-downs, too. One of the iconic moments of the 2017 campaign was when Mr Macron faced enraged trade unionists burning tyres outside a Whirlpool factory in Amiens; the firm was shipping work out to lower-cost economies elsewhere in the EU and the factory faced closure. The presidential hopeful spent nearly an hour urging them not to believe the "empty promises" offered by the likes of Ms Le Pen, who vowed to stop the factory from closing. "I can't tell you I'm going to save your jobs," Mr Macron declared candidly. But he would try.

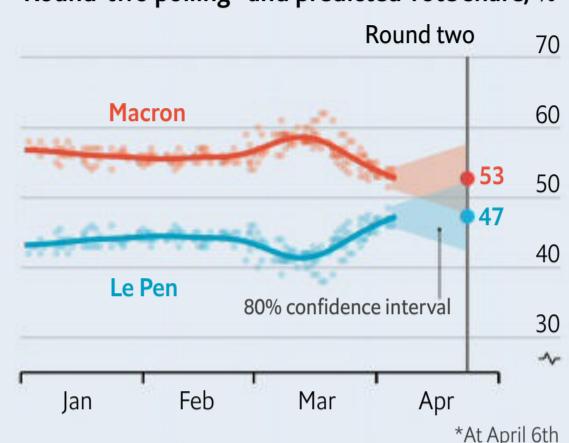
Today weeds are growing in the car park of the Whirlpool factory; a sculpture made from 18 steel tumble-dryer drums domi-

Don't panic?

French presidential election 2022



Round-two polling* and predicted vote share, %



nates its deserted entrance hall. Twice new owners promised to keep the plant going. Twice they failed. "It's a disgrace," says Frédéric Chantrelle, a former union representative. Less than half of the 280 former employees have found another permanent job. Other industrial workplaces have suffered similar fates. Work in distribution warehouses has not replaced the muscular camaraderie of the factory floor. "Socially, the closure has destroyed a lot of people," says Mr Chantrelle angrily: "We can't say that Macron as a guy from Amiens has exactly been a lucky charm."

Disillusion among blue-collar and low-paid workers is one of the reasons the populist vote has not gone away. The single

most popular choice for blue-collar voters is Ms Le Pen: 36% say they will back her in the first round, next to 20% for Mr Macron and 19% for Mr Mélenchon, according to Ifop, a polling group. She attracts 28% of the vote of those with incomes below €970 (\$1,055) a month, next to 25% for Mr Macron and 21% for Mr Mélenchon.

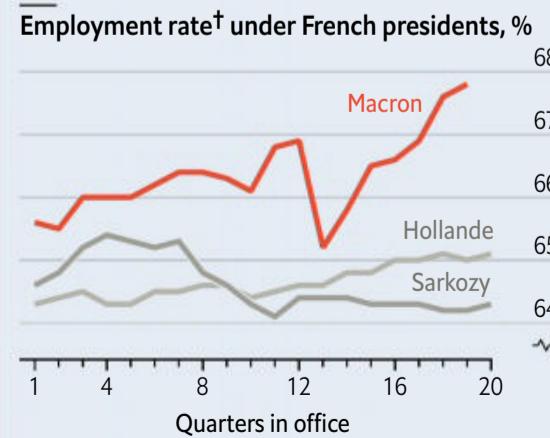
Let them eat crickets

Discontented working-class voters are hardly a novelty; for the first eleven years of Mr Macron's life the Communist Party ran Amiens town hall. Part of Ms Le Pen's success has been attracting more of them to a party which, when her father founded it in the 1970s, was based on xenophobia, anti-Semitism and nationalist nostalgia linked to the loss of French Algeria.

Ms Le Pen has distanced herself from some of that heritage, not least when she changed the party's name from the National Front to the National Rally in 2018. Mr Zemmour, a former tv pundit, has embraced its most reactionary and xenophobic elements. He promises to "save France" from the "great replacement" of its population by foreigners and Islam; he has been convicted of incitement to racial hatred. At one point he edged ahead of Ms Le Pen in the polls, but as a devotee of Vladimir Putin he was knocked back badly by the invasion of Ukraine. (Ms Le Pen and Mr Mélenchon have also had nice things to say about Mr Putin, but voters have so far minded less, if at all). A large majority of his supporters will probably transfer their allegiance to Ms Le Pen in the second round.

That is hardly surprising. More untoward is the evidence that she will pick up votes from the left and the centre in unprecedented numbers. According to Ipsos, in 2017, 7% of those who had supported Mr Mélenchon and 20% of those who supported the centre-right candidate in the first round transferred their allegiance to Ms Le Pen in the second. This time polls put the numbers saying they will do so at 17% and 34% respectively. Many left-wingers, in-

Not a bad record



*Alternative question: "Do you have confidence that Macron can manage the coronavirus epidemic in France?"

†15- to 64-year-olds Sources: Kantar; Insee

cluding 48% of the Green vote and 49% of Mr Mélenchon's, will abstain or spoil their ballot papers rather than support Mr Macron against her.

No longer seeming beyond the pale is Ms Le Pen's great success. Some of it is cosmetic; changing the name of a party hardly changes its essence (though there have been some expulsions). As Gilles Finchelstein and Raphaël Llorca note in a study for the Fondation Jean-Jaurès, a think-tank, Ms Le Pen's written programme is still focused on immigration, "Islamism", and "national preference" for the French. The fact that Mr Zemmour makes the running on such matters, though, allows her to speak about them less, and to seem more moderate in the process.

She has, on the face of it, moderated her stance on the EU. She no longer talks of abandoning the euro. But her vision of Europe is a long way from Mr Macron's. She looks for inspiration not to its centre, but to its edge, in the form of Hungary's "illiberal democrat" Viktor Orban, a thorn in Brussels' side (see Europe section). After Mr Orban was re-elected on April 3rd Ms Le Pen tweeted a photo of herself beaming alongside him and the message: "When the people vote, the people win!" She calls Mr Macron "the president of chaos".

By concentrating on the cost of living, pictures with her many cats on social media and a nationalist promise to restore order as a "president of French unity", Ms Le Pen is offering an improbably calming appeal. She has positioned herself as a leader close to the people and their concerns—something Mr Macron has never managed.

Rural voters respond to this positioning well, with 32% saying they will back her in the first round, compared with 12% in the Paris region. Fine-grained analysis of last time's results in south-west France by Jérôme Fourquet, a political analyst, shows that her vote was particularly strong in former agricultural communes, places where vineyards have given way to new housing estates and out-of-town shopping centres. They are places where concerns about identity, globalisation and change are easily played to, and Ms Le Pen is campaigning there accordingly.

In "Révolution", a book he published as a candidate in 2016, Mr Macron himself warned about the danger of neglecting this "peripheral France". "If we don't pull ourselves together", he wrote, "in five years or in ten years the National Front will be in power." But on taking power he ignored his own warning.

In 2018 it was in this car-dependent semi-rural France, where McDonald's drive-throughs sit next to newly built roundabouts decked out with kitsch sculpture, that people first put on high-visibility jackets—*gilets jaunes*—to complain about the way in which an increase in carbon tax-

ation had pushed up the price of motor fuel. Their protests spread throughout the country. As French uprisings always do, they evoked echoes of 1968, 1848 and 1789. The government backed down.

It was the low-point of Mr Macron's presidency and a wake-up call. He has since tried to put aside his imperious governing style and show that he can connect with ordinary people. But nothing he has done has provided a lasting bridge for the gap between him and them. He has never really shaken off his image as the "president of the rich" and embodiment of the Parisian elite.

Between the tramlines and the oxen

His policies, though, belie that image. By introducing a flat tax of 30% on investment income and ending the wealth tax in favour of a lighter "mansion tax", he has indeed helped the rich. But France is no outlier when it comes to poverty or inequality of the sort that might explain an unusually high protest vote. Jobs are not just more plentiful; an expansion of apprenticeships and training schemes is helping more young people into work. During the pandemic Mr Macron vowed to spend "whatever it costs" to keep businesses going and people in jobs, and he did, pushing the level of public spending up from 55% to 59% of GDP in 2021. To some extent, though, the reward for success is to have it taken for granted. Unemployment was the voters' third biggest worry in 2017. Now it does not make the top ten.

Instead, they worry about the cost of living, where Ms Le Pen is focusing her efforts. Mr Macron, who since 2018 has known better than most the political risk of rising fuel costs, has subsidised petrol prices and capped energy-price hikes. Ms Le Pen goes further, promising to cut VAT on petrol and energy bills to 5.5%, to lower

motorway tolls and, for good measure, to bring back the wealth tax. Some former supporters are aghast at how left-wing her programme is.

A centre-right or centre-left party might easily do much the same. But such has been Mr Macron's success at building a broad centrist church, and so poor have been the legacy parties' efforts to re-establish themselves, that there is no strong, credible moderate opposition available. Mr Macron's vision of a realignment to bring together progressive pro-European centrists from the old left and right in order to beat conservatives and nationalists of all sorts has ended up legitimising the populist politics he promised to fight as the only opposition left.

On April 2nd the Macron campaign held a glitzy rally in a packed indoor sports arena in La Défense, west of Paris. In front of a crowd waving EU flags as well as French ones, Mr Macron warned that "the extremist danger today is even greater than it was a few months ago, a few years ago" and that his victory was not guaranteed. Playing to fear, rather than hope, is not his strong suit. But as Roland Lescure, a deputy in Mr Macron's campaign team, points out, "Pandemics and war don't lend themselves easily to optimistic politics."

For all his faults, Mr Macron remains an energetic, serious, ideas-driven leader with a knack of defying expectations. "The way he managed the pandemic was better than we could have expected," says Cindy, an amateur marathon runner from Montpellier who did not vote for him in 2017 but went to his rally in La Défense. Rasmene Sawadogo, an accountant from Lille who also travelled to Paris for the rally, points approvingly to Mr Macron's "energy, clairvoyance and pragmatism" over matters such as Europe and nuclear power.

The lines on his face and grey in his hair speak of the crises Mr Macron has faced in the presidency. The less haughty tone he has begun to adopt hints at lessons learned from past mistakes. His campaign's slogans are "Avec vous" ("With you") and "Nous tous" ("All of us").

But the campaign—a toxic one, tinged with genuine worries, half-truths, and outright lies—is not helping him. Among other things, a lack of serious policy debate means that the specific policies on which he is campaigning are unexamined, which may make them harder to implement even if his party and its smaller allies maintain their majority in the legislative elections set for June, especially if his victory over Ms Le Pen is narrow. The change he promised in 2016 is at best only half delivered, and the strangely unifying insurgency that brought him to power is ill-suited to winning over the voters who remain unconvinced. Governing France could turn out to be even harder next time around. ■



Picture this

**Farming**

Fields of gold

RUGBY, NORTH DAKOTA

Why an agricultural boom does not help rural America

FOR A PICTURE of the evolution of modern agriculture, you could do worse than visit the barn on Philip Volk's farm, near the city of Rugby in North Dakota. Inside the ageing building is hundreds of thousands of dollars-worth of equipment. A huge red combine harvester sits next to the green "air seeder", which looks a little like a bread slicer, and a tractor larger than a tank. Pulled by the tractor, which follows a GPS-guided map automatically, the air seeder cuts through the soil and, in just a week or so, sows the entire crop, which on Mr Volk's farm is mostly spring wheat. Five to six months later, the combine harvester picks it all up almost as quickly, and then trucks take it down the road to a grain elevator, where it is graded and loaded onto trains that carry it out to the west coast, mostly to be shipped to Japan.

With a team of four (and a few more relatives and neighbours roped in at harvest time) Mr Volk is able to farm 5,000 acres (2,000 hectares) of land. His great-grandfather, who immigrated to America from Germany, had to plough the land with horses, then sow it manually, with dozens,

if not hundreds of workers. The farm's first tractor, purchased by Mr Volk's grandfather almost a century ago, still sits in the barn. It is dwarfed by the modern contraptions next to it, and would not be much use on the farm now. "I would not want to go back and sit on an open-cab tractor and have the toil my grandfather had," says Mr Volk.

America's farmers face interesting times. On the plains of North Dakota and Montana, as across the border in Saskatchewan in Canada, the biggest crop is spring wheat, which is planted in April and harvested in late summer. Planting on farms in Montana has begun already; Mr Volk

will start soon. Thanks to the war in Ukraine, wheat prices are the highest they have been since 2008, meaning that farmers ought to make a lot of money. But they have to adjust for much higher input prices, too, particularly for fertiliser and fuel. And drought for much of the past three years has lowered output.

Despite the higher prices, Mr Volk reckons that he will plant only 5-10% more wheat this year than he would have done without the war, because the risk of spending so much on inputs is too high if the crop does not actually come through. "Two weeks of the wrong weather can change the story in a heartbeat," he says.

That is bad news for the consumers of wheat, in particular poor people in countries in north Africa which rely on now-lost Ukrainian and Russian supplies. Over half of American wheat is exported. But it ought to be good news for farmers, since a glut is unlikely to push prices down again soon.

American farmers are making good money. Net farm income last year increased by 25%, according to the Department of Agriculture (USDA), to its highest level since 2013. The department reckons that it may dip slightly this year, partly because of reduced government support linked to covid-19, and partly because of higher input costs. But only slightly. The price of farmland, an indicator of the profitability of farming, as well as interest rates, is the highest it has ever been. Farmland in Iowa, America's most agricultural state, has sold for over \$20,000 an acre. ➤

→ **Also in this section**

18 The Supreme Court's 116th justice

19 Amazon gets a union

19 The opioid epidemic

20 Filling up in New Jersey

21 The baby business

22 Lexington: Bill Burns and the bear

In recent years politicians in Washington, DC, have funnelled money to farmers at an astonishing rate. In 2020 farmers received three times the normal level of subsidies, says Vincent Smith, an economist at Montana State University, thanks to payments related to covid and to Donald Trump's trade wars, which went outside the normal system of farm subsidies, passed in farm bills by Congress every five years. Total payments, most to 200,000 or so large farmers, amounted to \$49bn (in 2022 dollars) or 0.2% of GDP (see left-hand chart). By comparison, spending on food stamps, which are also administered by the USDA and go to 40m people, was \$87bn.

Yet despite all this cash, rural America is in deep decline (see right-hand chart). According to the 2020 census, two-thirds of rural counties lost population from 2010 to 2020, and the total population of rural America fell for the first time in history. The counties that grew were mostly not farming ones but pretty places where people go to retire, near mountains or the ocean, or those with lots of oil. The mid-western areas which grow most of America's food are shrinking fastest. Pierce County, where Mr Volk's farm is, lost 8% of its people, even as North Dakotan counties farther west, where there has been a shale-oil boom for 15 years, grew prodigiously.

Fuelling folly

The reason why is visible in Mr Volk's barn. As farming becomes more profitable, so do the gains from mechanisation. Today, just 6% of jobs in rural areas are directly linked to farming, points out Anne Schechinger, an agricultural economist for the Environmental Working Group, a research NGO. Most farms, even small ones, "are highly capitalised agribusinesses growing one or two commodity crops and employing very few people", she says. Mr Volk says his farm is about as small as can be competitively run, to cover the costs of the hardware. Over the decades, it has gradually grown bigger as neighbours have retired and split their land up among heirs—many of whom

end up selling their bit to Mr Volk.

Subsidies, largely in the form of crop insurance, help to ensure the food supply continues, and protect farmers from going bust during downturns. But they also determine what America farms— incentivising farmers to grow vast amounts of soybeans and corn, as well as wheat, which is mostly exported. Corn (maize) is boosted not only by direct subsidies but also by the Renewable Fuel Standard, which forces refiners to blend ethanol made from corn into petrol, in turn pushing up the value of the crop. Such crops are best grown on large, mechanised farms. Fresh fruit and vegetables, which Americans ought to eat more of, are more expensive to grow, and require more labour, but farmers receive almost no subsidies for them.

Even if farmers are getting wealthier, the communities they live in are not. Mr Volk says that when he went to school, there were 40 children on his school bus. Today his youngest son goes on the bus with fewer than ten classmates. His eldest son is likely to take over the farm, but future children may have to go to a boarding school. It is harder to find people to serve as voluntary officials on the school board and county government. Many young people end up moving to places where the job opportunities are more exciting, if not necessarily more profitable. Over half of the churches that used to serve the community have closed. "It shrinks the community," Mr Volk says.

Congress is beginning to consult on its next farm bill, which is due to pass next year. Even with prices as high as they are, most observers expect subsidies to stay steady or even grow. Farmers have been pushing for payments to encourage them to reduce CO₂ emissions, says Mr Smith. "And as far as I know, every major lobbying group endorsed that notion, preferably at very substantial levels." Helping out farmers is politically popular, not least because rural communities are over-represented in Congress. Yet the subsidies may in fact be sustaining the decline of rural America. ■

Rural bliss and blight

United States

Farm subsidies

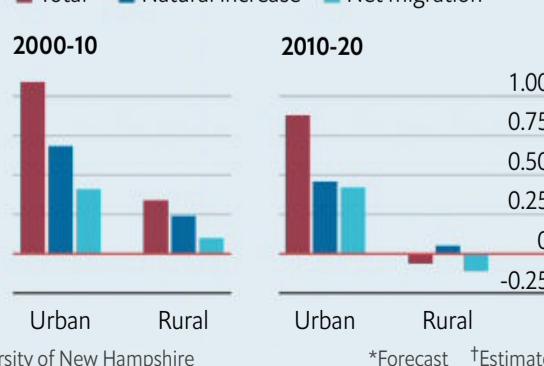
\$bn, 2022 prices*



Sources: Department of Agriculture; Carsey School of Public Policy, University of New Hampshire

Annual average population change, %

Total Natural increase Net migration



The Supreme Court

Confirmation bias

NEW YORK

Ketanji Brown Jackson has the votes to become America's 116th justice

THE CONSTITUTION directs the Senate to offer presidents "advice and consent" on their Supreme Court nominees. Alexander Hamilton imagined that inter-branch co-operation would be a "source of stability". The Senate would put "an excellent check" on presidents and thwart the appointment of "unfit characters".

Ketanji Brown Jackson, President Joe Biden's pick to succeed Justice Stephen Breyer, who is retiring this summer, is on the brink of narrowly winning Senate confirmation. She will be the fourth person of colour and the first black woman to serve on the court. But Hamilton might have been puzzled had he witnessed the three-week process leading to this moment.

Few of the 47 Republicans vowing to oppose Ms Jackson's nomination professed concerns about her character or her fitness. She won near-universal praise for her intellect and qualifications: two Harvard degrees and three judicial clerkships, including to Justice Breyer; two federal judgeships; and service as a federal public defender. Senators of both parties complimented her on her poise and charm.

For Susan Collins and Lisa Murkowski, Republicans who supported Ms Jackson's ascent last June to the court of appeals for the District of Columbia circuit, her appearance before the Senate Judiciary Committee in March was strong enough to win their votes again. Senator Mitt Romney, who opposed Ms Jackson last year but switched his vote, called her a "well-qualified jurist and a person of honour". Ms Murkowski lamented "the corrosive politicisation of the review process".

Republican criticism of Ms Jackson ranged from routine to caustic. Senator Thom Tillis said he worried the nominee would "legislate from the bench", a sentiment repeated by many Republicans despite Ms Jackson's vow to "stay in my lane" and avoid intruding on the duties of the legislative branch. Other charges included her refusal to answer questions about whether more seats should be added to the Supreme Court (a matter that rests in the hands of Congress, not the justices).

A few Republicans aimed to paint Ms Jackson as soft on crime by focusing on sentences she gave to people convicted of child-pornography offences as a district-court judge. Several conservative commentators dismissed these claims; one called them "meritless to the point of dem-

► agoguery". That did not stop Senator Tom Cotton contrasting Ms Jackson with her namesake, Justice Robert Jackson, who went to Nuremberg to prosecute Nazi war criminals after the second world war. "This Judge Jackson", Mr Cotton said, "may have gone there to defend them."

Ms Jackson deflected questions about critical race theory, how to define a woman and where, on a ten-point scale, she rates her religiosity. She recounted that when she was a freshman walking through Harvard Yard another black woman, seeing self-doubt on her face, admonished her to "persevere". Senator Cory Booker recited a poem by Maya Angelou where "bitter, twisted lies" could not keep a woman down. Ms Jackson showed patience and command—traits she may need to draw upon as one of three liberal justices on a court with six conservatives.

The hearings, however historic, cast a pall over Hamilton's vision of fruitful cross-branch collaboration. Lindsey Graham, a Republican who voted for Ms Jackson last year, not only flipped his vote but gave a dose of realpolitik during the Senate Judiciary Committee meeting on April 4th. If Republicans controlled the Senate (a distinct possibility after this year's midterms), he said, Ms Jackson "would not have been before this committee". ■

Unionisation at Amazon

Not quite primed

STATEN ISLAND, NEW YORK

Workers of America, unite?

WATCHING THE votes come in, Madeline Wesley, treasurer of the Amazon Labour Union (ALU), becomes emotional. "We really had nothing," she says between sobs. By a margin of ten percentage points, staff at JFK8, an Amazon warehouse on Staten Island, New York, opted to form the firm's first American union. The ALU hopes it will not be the last. "I expect Amazon unions will be popping up all over now," Ms Wesley adds, now smiling.

Plenty look set to try. Organisers say that since the result on April 1st, workers in more than 50 Amazon buildings have been in touch. The ALU is optimistic about a vote at another Staten Island warehouse later this month and the Teamsters union, one of America's largest, has promised to try to organise other Amazon staff. Success can be contagious. A first Starbucks café in America unionised in December; now almost 200 have filed for votes. National conditions seem favourable: a pro-union president is in the White House, the labour



Today Staten Island, tomorrow...

market is tight and some 60% of Americans say that the reduction in union representation has been bad for workers.

Not so fast. The ALU gained traction as a local, worker-led movement, (unlike the less successful big-labour-led drive at an Amazon warehouse in Bessemer, Alabama). Asked why he backed the union despite being happy with his pay and breaks, one Amazon worker replied: "I know the guy." That may be hard to replicate. It was not "a traditional union campaign where an outside organisation came in and told the workers what was best for them", says Julian Mitchell-Israel, an ALU activist.

Amazon itself opposes unionisation, arguing that "having a direct relationship with the company is best for our employees". At Staten Island, it made that case in mandatory meetings and in posters across the warehouse. Nationally, it spent over \$4m last year on anti-union consultants.

"Amazon is going to keep fighting as hard as they possibly can," says Adam Seth Litwin of Cornell University's labour-relations school. One option is to draw out negotiations at JFK8: "delays around the first contract have become *de rigueur* strategy for businesses in the situation that Amazon is in now," Mr Litwin explains. Less than half of union certifications result in a contract. Without one, firms can push for decertification, and copycat campaigns can lose their lustre.

Private-sector union membership has decreased in America for decades. Defying that trend will be hard: those nearly 200 unionisation elections at Starbucks are just a sliver of the 9,000 company-owned cafés. In his final message to shareholders Amazon's ex-boss, Jeff Bezos, pledged to make it "Earth's Best Employer". It is unlikely to become its most unionised. ■



Hear more on this story on our "Money Talks" podcast at: economist.com/unionpod

The opioid epidemic

A lethal shift

WASHINGTON, DC

Black Americans have overtaken white sufferers in opioid death rates

THE TYPICAL face of America's opioid epidemic has long been that of a white man from a post-industrial town in the Appalachian mountains. White victims have accounted for 78% of the more than 500,000 opioid-overdose deaths since the late 1990s. In 2017 counties in Appalachia experienced rates 72% higher than the average for the rest of the country.

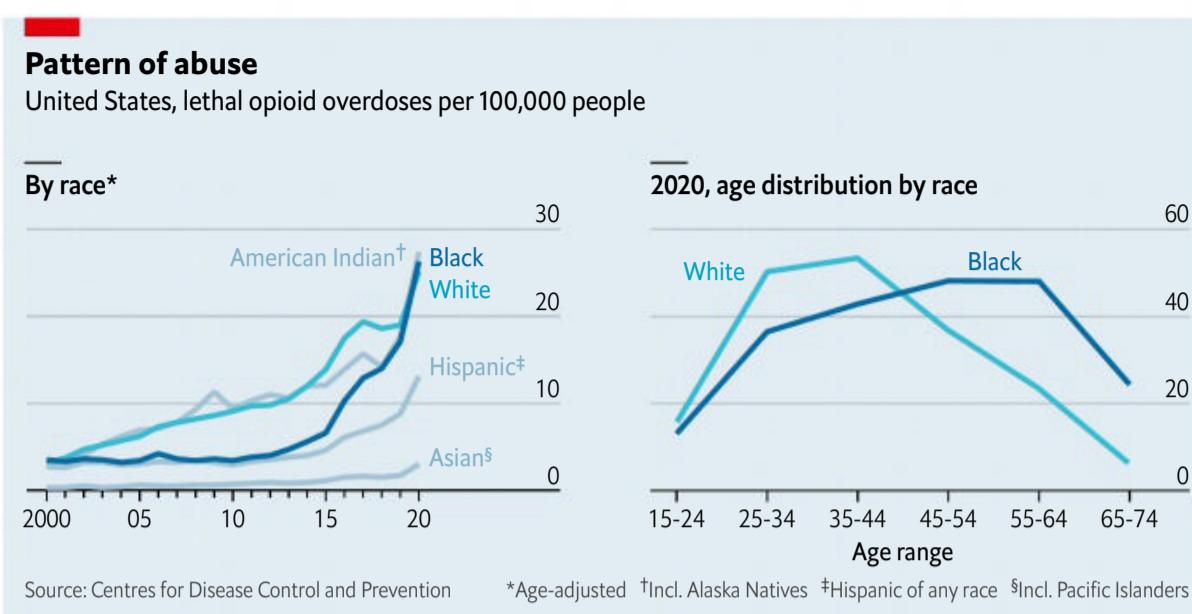
African-Americans were, for once, far less affected. But that has changed. In 2020 their rate of opioid-related deaths surpassed white people's—the culmination of a grim trend some five years in the making (see left-hand chart on next page).

The first wave of the epidemic was caused by drug companies and doctors pushing prescription opioids. Researchers theorise that twisted beliefs (that African-Americans are more likely to divert pills for street use, and are less sensitive to pain so do not need them anyway) helped to insulate them from the scourge relative to white Americans. Then, from 2010, came a second wave: as regulators clamped down on prescription pills, many addicts turned to illicit opioids, notably heroin. White addicts continued to fatally overdose at over twice the rate of black users.

Fentanyl, a synthetic opioid up to 50 times more potent than heroin, brought a third wave. Though it is also a prescription painkiller, its illicit form—mainly made in Mexico with materials from China—has contaminated drugs. Its low cost and powerful high make it attractive: dealers can dilute the more expensive drugs they sell, such as cocaine, heroin or methamphetamine, while strengthening their effect.

Fentanyl's march across black communities has been particularly quick and deadly. Since it seeped into the drug market around 2013, opioid-related deaths among the white population have more than doubled, but those among African-Americans have more than quintupled. There is little evidence that during this time more African-Americans suffered from opioid use disorder (OUD), so the deaths are not being fuelled by a burgeoning group of new, intentional opioid users. Rather, the drugs they have been using, opioids or not, have grown more deadly with the spread of fentanyl.

Especially so for older black men. In 2020 black men aged 55 to 64 died at over 2.5 times the rate of older white men (see right-hand chart). Andrew Kolodny, medi-



cal director of opioid-policy research at Brandeis University, describes some of these victims as survivors of the heroin epidemic that devastated inner cities in the 1960s and 70s. Unaware that a more powerful synthetic opioid had contaminated their supply, "older black men who managed to beat the odds and survive for decades started dying," explains Dr Kolodny.

George (not his real name), a 55-year-old West Baltimore native, has struggled with addiction since he was a teenager. In the four decades since he was first handed powdered heroin wrapped in a dollar bill the landscape has changed: "You used to be able to get a quality bag of heroin. Now you have this synthetic drug out here on the streets everywhere." He now uses fentanyl regularly and estimates he has overdosed on it four times in the past couple of years. "When you're messing with this stuff, everything's a blur," he says. "I don't know how I keep outliving people, but I really don't want to leave this Earth an addict."

The poison has crept into stimulants, too. Overdose deaths attributed to psycho-stimulants used with opioids have risen. Some are referring to this as a fourth wave of the epidemic. For those unaccustomed to opioids or "speedballing" (mixing stimulants with opioids), fentanyl is "a shock to the system, shutting down your breathing and heart rate", says Keith Humphreys, a professor of psychiatry at Stanford University. Some 35% of African-Americans who died of overdoses in 2020 had both cocaine and fentanyl in their system, compared with 16% of white victims.

Poor people are more than twice as likely to die of opioid overdose. One-fifth of African-Americans live in poverty. Fully 40% of all homeless people and 38% of prisoners are black (compared with just 13% of the overall population). These are all potent risk factors. And though an estimated 65% of America's prisoners suffer from a substance-use disorder of some sort, there is little access to good treatment either during incarceration or upon release.

Treatment for OUD is woefully inadequate

across the country, but African-Americans often face extra barriers. Studies have found that medications for treating OUD, as well as naloxone (a life-saving medication that reverses opioid overdoses), are doled out unevenly. A study of data from Medicaid, the government insurance programme for the poor, across several states with some of the highest opioid-overdose rates found that between 2014

and 2018 black people with OUD were 28% less likely to use OUD medications.

Studies in various cities, including San Francisco and Los Angeles, suggest that African-Americans have less access to naloxone, too. In Detroit between 2019 and 2020, white addicts received 28% of naloxone administrations, though they accounted for 17% of the city's opioid overdoses; although 80% of overdoses were among black people, they received only 67% of naloxone administrations. This does not necessarily mean black addicts are being denied naloxone. Those who use opioids alone, are homeless or live in communities with little trust in first responders might be less likely to call for help.

Such disparities strengthen the case for local interventions that deal with the unique hurdles certain communities face. Other solutions are more sweeping, like expanding access to Medicaid and reducing red tape around OUD medications. But underlying all these is a straightforward calculus that applies to all Americans, black or white: "It has to be easier to get treated than it is to continue using," says Dr Kolodny. "You have to flip it." ■

Filling your tank in New Jersey

To pump or not to pump?

FRANKLIN LAKES, NEW JERSEY

That is the question in the only state that still bans self-service petrol stations

DRIVE ANYWHERE in New Jersey and you will almost certainly see a bumper sticker or a car magnet bragging that "Jersey girls don't pump gas". For 73 years, New Jerseyans have relied on petrol-station attendants to fill their cars and lorries, rather than do it themselves. It is a point of pride for many to say they do not know how to pump petrol, as much a part of local identity as pork rolls or salt water taffy at the Jersey shore.

Might the Garden State join the other 49 and allow drivers to serve themselves? A combination of record fuel prices and a shortage of pump attendants means that changing the 1949 law is gaining support—including from the owners of the state's petrol stations, who have historically opposed any reform. In the past high-school and college students were happy to take on attendant jobs, which require a day's apprenticeship. But now Ebbie Ashabi, who owns two stations and delivers petrol to more than 50 others, says, "We cannot find people."

Some station operators are paying \$17 an hour, \$4 more than the state's minimum wage, and still are short-staffed. They have no choice but to shut down pumps for hours at a time, causing long queues at the ones that remain open.

Yet most New Jerseyans like the status quo. A recent Rutgers University poll showed that 73% do not want to pump petrol themselves. Some have antiquated notions about pumping being dangerous. Declan O'Scanlon, a state lawmaker who supports the reform, points out that: "It is absolutely true, Jersey girls are hotter than girls anywhere else. It is not true that they are more flammable."

This reform would still leave the state with the most stringent full-service requirements in America. "We are proposing giving the consumer a choice," says Sal Risalvato, head of an association representing New Jersey petrol stations. It would save 15 cents a gallon, he notes.

Phil Murphy, the governor, has called full-service "part of our fabric" and changing it "a political third rail in New Jersey". Nicholas Scutari, president of the state Senate, is currently blocking the measure, but has said that if public sentiment changed, or if data showed that it would dramatically reduce costs, he would reconsider. Most New Jerseyans, pragmatic and sceptical by nature, would agree, says Micah Rasmussen of the Rebovich Institute for New Jersey Politics, at Rider University. "We're not giving away something for nothing."

Surrogacy

Battlegrounds of the baby business

WASHINGTON, DC

America's childmaking market is a legal and ethical minefield

WHEN THE man who had paid Melissa Cook to bear three embryos, created from his sperm and the egg of an anonymous donor, informed her that he had run out of money and she would have to abort at least one, she refused. Her worry that he would not be able to look after the children grew when she learned that the surrogacy broker she had used in California had not properly checked the man's ability to be a parent. She sued, arguing that the state law authorising surrogacy contracts was unconstitutional because it treats babies "as a commodity or as chattel". This and successive attempts to retain her parental rights failed. When the triplets were born Ms Cook was not allowed to see them.

Six years later, having exhausted all legal avenues, including an attempt to get the case before the Supreme Court, Ms Cook remains consumed by anxiety about the children, all boys, according to Harold Cassidy, her lawyer. "The last we heard he had lost his house and they were moving from motel to motel," he says. Robert Walmsley, the man's lawyer, says that is not true and that arguments made in court filings that the man was unfit to be a parent because he was deaf and mute are "grossly offensive and discriminatory".

The case illustrates the legal and ethical messes that can arise in a surrogacy market that is largely unregulated. America has no federal law governing such arrangements. Most states allow paid surrogacy; some regulate it loosely. National data are scarce. The Centres for Disease Control and Prevention says 18,400 babies were born to gestational surrogates (that is, using a donor egg) between 1999 and 2013. The fee paid to a surrogate can range from \$30,000 to \$60,000 out of a total cost—including *in vitro* fertilisation and fees for brokers and lawyers—of \$10,000-180,000.

Three of the six states that once prohibited the business have legalised it: New Jersey in 2018, Washington in 2019 and New York in 2021. Poorer places have shut it down: Cambodia, India, Thailand and Nepal have outlawed cross-border surrogacy. Most European countries prohibit commercial surrogacy. Ukraine, where it is legal and a lot cheaper than in America, had become a big market, before Russia's invasion. But those who can afford it have long favoured America, with its advanced medical technology, healthy supply of egg donors and aggressive lawyering.

Demand is rising across the rich world. Surrogacy brokers say they have observed the practice becoming more socially acceptable as celebrities have talked about using surrogates. Many agencies say gay couples constitute a growing proportion of their clients (lesbian couples who want children can mostly use sperm donors). That has influenced the lobbying of fertility-rights groups, which increasingly portray access to paid surrogacy as a gay-rights issue. On the other side of the argument, a belief that no one has a right to pay a woman to carry a baby has unified some conservatives and some feminists.

Mother and child reunion

Proponents of paid surrogacy point out that the market self-regulates in important ways. Unlike the business of buying sperm, it depends on the use of assisted reproductive technology, which is regulated federally. Brokers prefer surrogates with health insurance. Risa Levine, a lawyer who campaigns for better access to fertility treatments, says that if health insurance covered the cost of surrogacy it would bring new layers of protection and transparency. Some businesses now include some costs associated with surrogacy in benefits packages. Research suggests 15-20% of surrogates are army wives.

To help avoid situations in which a surrogate, overwhelmed by maternal feeling,

decides she wants to keep a baby, many agencies stipulate she must already be a mother. Opponents say that neither this, nor the use of donor eggs, which is now what most surrogacy involves, circumvents a bond between mother and child.

Parental disputes about what should happen to an unborn baby, generally amid divorce, are more common than conflicts between parent and surrogate. New York's law allows one parent to use embryos that both once wanted, without forcing the other to pay child support. If a baby is born with a physical defect that might have prompted an abortion had it been known about earlier, the state's law forces parents to accept custody.

Yet laws and contracts cannot fix everything. A contract may stipulate that abortion decisions are up to the paying parents, but no court would force a woman to go through with one. Health is also a concern. More than half the babies born in America to gestational surrogates are twins or triplets, which can take a dangerous toll. "My body, my choice", a refrain used by abortion-rights activists, is often cited by proponents of surrogacy to counter that worry. "Why do we fight so hard to allow women to choose not to have a baby but assume some aren't equipped to decide to become a surrogate?" asks Ms Levine.

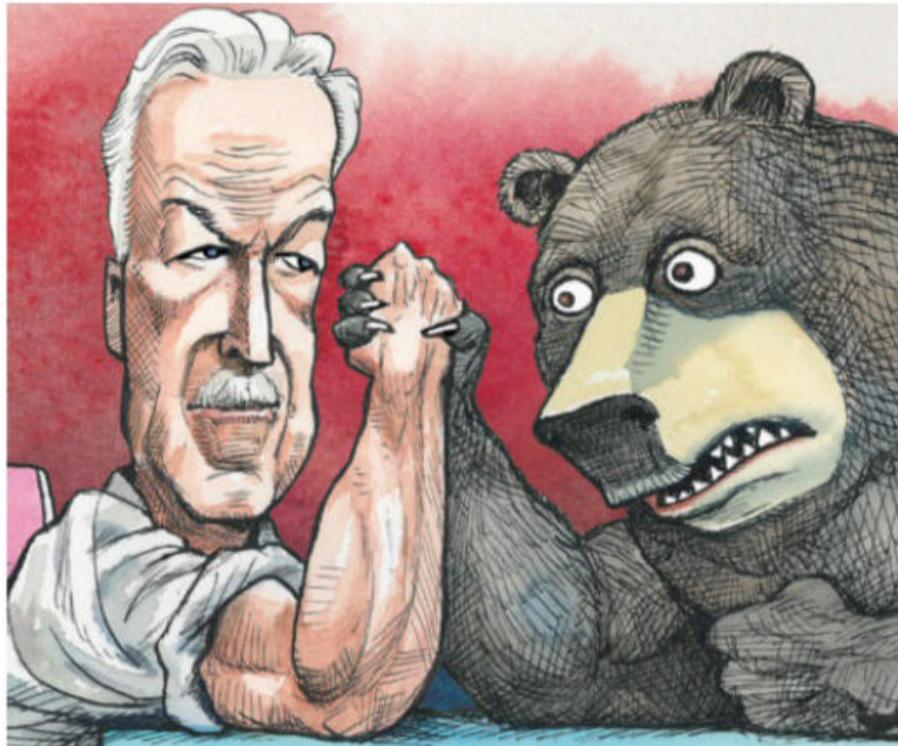
The greatest fears concern children. In some states with little regulation, lawyers turn to procedures used in adoption, including background checks on prospective parents. Britain, where unpaid surrogacy is allowed but contracts cannot be enforced, is considering mandatory checks on both surrogates and parents. That is unlikely to happen in America. It could be "discriminatory", says Mr Walmsley, the lawyer. "Do we do background checks on everyone who has a child?" ■



When it all works out like a dream

Lexington | Bill Burns and the bear

The CIA director is at the heart of the administration's capable Ukraine effort



EARLY LAST year Jordan's security service uncovered a plot against the kingdom's ruler, Abdullah, involving his half-brother, Saudi Arabia and some Bedouin tribes. William Burns, the CIA director and a former ambassador to Jordan, recognised the threat this represented to a crucial American ally. He hotfooted it to the White House to brief Joe Biden—"the first customer", in CIA parlance—who immediately called King Abdullah to express his strong support. Once the crisis had passed, the Jordanian became the first Arab leader to visit Mr Biden.

The incident, little noticed at the time, was a foretaste of the attributes Mr Burns has brought to Langley. Decisive, discreet and experienced, the 66-year-old former career diplomat—often described as the most accomplished envoy of his generation—combines expertise with influence. Fluent in Russian and Arabic, he has served five presidents and had two postings in Moscow: the first amid the chaos of Boris Yeltsin's leadership, the second, as ambassador, during Vladimir Putin's early tenure, as America's relations with Russia darkened. He knows the Russian leader well. And few advisers are as trusted by Mr Biden, whom the spy chief has briefed for almost three decades, including on the Iran nuclear deal, which he negotiated for Barack Obama in 2015.

America's Putin-whisperer

He has duly taken a lead role in the Ukraine crisis. After American and British spies uncovered Russia's war-planning last October, Mr Burns was dispatched to Moscow to warn Mr Putin that his intentions were clear and of the consequences they would invite. Perhaps Mr Putin, stewing in his dacha over covid-19 and his many grievances, would have spoken to no other emissary. Doubly convinced that war was likely, Mr Burns then helped lead a successful effort to convince sceptical European allies of Mr Putin's plans by making the Anglo-American intelligence on them public. Rarely has America's intelligence community, a scapegoat, rightly or wrongly, for many foreign-policy blunders over the decades, achieved such a clear win. It has been hailed as one of the most creative and successful uses of intelligence in many years.

Ukraine remains a disaster, of course. Yet at a time when American foreign policy is increasingly viewed through a distorting po-

litical lens—as either a great triumph or humiliating defeat—the administration's response to the crisis is a reminder that clever diplomacy usually produces something in between. Diplomacy is an exercise, in Henry Kissinger's careful phrase, which Mr Burns quotes admiringly, in "the patient accumulation of partial successes". In the spy chief's own contribution to that painstaking task, three qualities stand out.

One is the indispensability of deep subject knowledge. Most recent foreign-policy blunders—from the abrogation of the Iran deal by Donald Trump to George W. Bush's invasion of Iraq—were made in profound ignorance of the world that America was presuming to shape. Mr Burns's views on Russia, by contrast, are informed by a deep appreciation of it as well as understanding. As ambassador, he discussed Russian spirituality with Alexander Solzhenitsyn, was grilled by the Duma foreign-affairs committee, spoke at the funeral of a journalist murdered on Mr Putin's birthday and travelled the Russian land mass relentlessly. A one-man repository of America's institutional knowledge of Russia, Mr Burns represents a tradition of serious American diplomacy that has been underappreciated by American policymakers. "There is simply no one who knows Russia better," says Jake Sullivan, the national security adviser. It is no coincidence that one of Mr Burns's first actions at the CIA was to launch a drive to recruit more Mandarin-speakers. He recognises that America, no longer the world's policeman, cannot hope to shape a world it does not understand.

Another Burns attribute is his institutionalism. On Mr Trump's first day in office the president delivered an unhinged speech to America's spies while standing by the Memorial Wall in Langley that lists the CIA members who have died in service. He also ignored the intelligence briefings the agency prepared for him. Even if his spy chiefs, Mike Pompeo and Gina Haspel, had been more competent and likeable they could not have prevented the demoralisation and attrition this caused. Mr Burns's effort to fix the damage has involved repurposing as well as reassuring the CIA.

He has launched two new mission-centres, one covering China and the other technology and transnational threats such as climate change. The second, which is dedicated in part to keeping abreast of technological developments in the private sector, illustrates how rapid socioeconomic change is forcing intelligence agencies to expand into areas beyond espionage. The administration's creative use of the intelligence on Ukraine is another example of that: it was informed by a desire to cut through the chaos of open-source intelligence reports as well as by fear of Russian disinformation. Agency sources point to internal contentment with that policy, notwithstanding the CIA's customary obsession with secrecy, as proof of its confidence in Mr Burns.

The third quality is collegiality, which is a common feature of Mr Biden's foreign-policy team. Mr Sullivan and Antony Blinken, the secretary of state, seem similarly unencumbered by the petty jealousies that usually plague the cabinet. Mr Burns's current prominence, including in roles that Mr Blinken might have been expected to perform, appears to have ruffled no feathers among his peers. It helps that he and they have worked together for years.

They also all appear to enjoy Mr Biden's trust. Perhaps not since William Casey, Ronald Reagan's spy chief, has a CIA director enjoyed such easy access to the president as the current one enjoys. The only significant criticism Mr Burns faces (which his memoir suggests he shares) is that it is in his careerist nature to be too accommodating to power. No one accuses Mr Burns of being egocentric. At a bleak time, Mr Biden is lucky to have him to hand. ■



Brazil's election

How corrupt was Lula?

SÃO PAULO

It's complicated

ON APRIL 9TH, Luiz Inácio Lula da Silva, commonly known as Lula, is expected to announce he is running for the presidency of Brazil. For many Brazilians, it will be a moment to savour. The last time Lula held office, from 2003 to 2010, his welfare programmes lifted millions out of poverty. His gruff charisma charmed Barack Obama, then the president of the United States, who called Lula “the most popular politician on Earth”. When he left the presidential palace, with 11 trucks packed with gifts from well-wishers, his approval rating was 80%. As Brazilians reel from a poorly handled pandemic and stubborn inflation, it is not surprising that Lula leads Jair Bolsonaro, the populist incumbent, by double digits in most polls.

Yet opponents prefer another superlative for the ex-president. He is “the biggest corruptor in Brazilian history”, Ciro Gomes, a centre-left foe, said last year. Mr Bolsonaro and his son Flávio, a senator, who are themselves mired in allegations of graft, refer to him as “the nine-fingered thief” (as a young man, Lula lost a finger in

a factory accident). Rivals will not want voters to forget that Lula was handed a 12-year sentence on charges of money-laundering and corruption, and watched the previous election from prison.

Ahead of elections in October, these two narratives jostle for supremacy. Most supporters of his Workers’ Party, the PT, believe him when he says he was the innocent victim of a conspiracy to prevent his return to politics. Many in the business elite believe he is a crook. The truth is murkier and, like corruption in Brazil more generally, maddeningly complex.

Start with the process that brought Lula down: the “car wash” scandal, or Lava Jato. What began in 2014 as an operation to catch small-time currency dealers above a petrol station soon reached further than anyone could have imagined. It revealed that companies had been bribing politi-

cians in exchange for huge contracts, exposing systemic corruption.

The public were furious. The probe entangled hundreds of businessmen and politicians. It extended to 11 countries and touched a dozen current or former Latin American heads of state, including Lula. He was convicted of accepting bribes in the form of a beachfront apartment and renovations on a country house, neither of which he owned. In an investigation which recouped over \$5bn in stolen money, there were far more “vulgar” and “flagrant” crimes, notes one Lava Jato prosecutor. But Lula was its biggest fish.

Then the net ripped. A series of blunders had already undermined Lava Jato, which had long stretched beyond its capacities. Leaked messages released by the Intercept, an investigative website, revealed that Sergio Moro, the judge, had been collaborating with Deltan Dallagnol, the prosecutor, against Lula. Mr Moro’s impartiality had already been thrown into question when he became Mr Bolsonaro’s justice minister. “The ex-president was a victim of a manhunt,” says Cristiano Zanin Martins, Lula’s lawyer.

The Supreme Court agreed. Last year it ruled that Mr Moro had been biased, weeks after a justice had annulled Lula’s convictions. All in all, two dozen cases against Lula and his family have been archived, suspended or closed—because of tainted evidence, procedural errors or technicalities. Lula, who has always denied all charges, ➤

→ Also in this section

— Bello is away

seems vindicated. "I was wronged. I've already proved my innocence," he told *The Economist* last year.

Not all are convinced. A survey in February found that 51% of all those asked, and 22% of those who had voted for the PT, did not believe that the archiving of one of the cases against Lula proved his innocence. His lawyers say this is because of a "trial by media". Critics say that he has not been absolved. "Everything archived, nothing cleared up", read a recent headline in one Brazilian weekly.

The rags and machines humming

Consider the case of the Swedish planes. One of Lula's sons received 25m reais (\$740,000) from a lobbyist, ostensibly to promote American football. That lobbyist was at the same time working for a Swedish plane-maker which went on to win a controversial tender for new fighter jets. Prosecutors accused Lula, who had left office at this point, of influencing his protégée and successor Dilma Rousseff to agree to the deal. On March 2nd it became the last case against Lula to be shelved, because of tainted evidence.

Another case involved a country house in Atibaia owned by business partners of another one of Lula's sons. Odebrecht, a construction company, claimed it paid to renovate it. Testimonies and court documents placed Lula and his belongings at the site. Someone at the institute which bears Lula's name received updates by email about maintenance issues, skunk-traps and peacock chicks. Yet despite what was presented in the trial, Mr Moro had not received enough evidence to justify opening the case in the first place, said the Supreme Court justice who refused to reopen proceedings. Other cases could be revived by the federal court, but that would take years. Final judgment will probably come from a historical study, not a court ruling.

Critics have a second, graver complaint about Lula: that he presided over systemic corruption. During his first term in office the PT illegally used public money to pay politicians a *mensalão*, or monthly stipend, in return for support of its programme. The policies they enacted helped many Brazilians, but at a high moral cost.

Lava Jato also showed that under the PT state-owned companies routinely awarded padded contracts to corrupt firms, mostly Odebrecht. Malu Gaspar, a journalist who has written a book about the firm, describes how Marcelo Odebrecht, its CEO, asked the department of "Structured Operations" (or the specialist bribery team) to tot up its PT "donations". In the final two years of Lula's government, these payments amounted to 200m reais (around \$115m in 2010).

Lula has always maintained that he did not know about either the policy of *mensa-*

lão or the Odebrecht payments. But two of his chiefs of staff, Antonio Palocci and José Dirceu, were at the heart of both scandals. In public, Lula decried Odebrecht as a "criminal organisation". However on the company's spreadsheet of colourful code names, their accountants called him "Amigo"; after he left office he toured Africa and Latin America on their dime.

But it would be "very inaccurate" to say that only the PT behaved in this way, says Caio Rodriguez, Odebrecht's lead counsel during Lava Jato. The investigation mainly focused on them because they were in the federal government. But he notes that, in terms of quantity, the bribes Odebrecht gave at a state level to the main opposition group, the Party of Brazilian Social Democracy, were roughly the same. In terms of the numbers of legislators investigated, the grubbiest was one of Mr Bolsonaro's old parties, the Progressive Party, not the PT. Historically, too, "there is no difference" between the PT and previous governments, says Fernando Limongi, a sociologist. It was "business as usual".

If Lula wins, will it be different this time? A lot will depend on how much Lava Jato has disrupted the usual state of affairs. One significant change is that firms that bribe politicians now face crippling legal and financial punishments if they are caught. That may deter future wrongdoing.

Yet despite the headlines, Lava Jato did not end impunity in Brazil. It investigated and prosecuted individuals, partly by using similar methods to American anti-corruption task-forces, such as plea bargaining. But it was unable to root out a culture of corruption. The powerful fought back. Blunders and lapses by prosecutors, including Mr Moro, have led to hundreds of convictions being overturned. Political meddling in the investigation has weakened trust in the justice system. Bribery

and embezzlement continue, and the public no longer care as much as they did. Corruption was for years the number one issue for voters; surveys now rank it fifth or sixth. With inflation at 11%, they have other problems to worry about.

And although Mr Bolsonaro came to power promising to vanquish graft, he has quietly capitalised on the backlash against Lava Jato. The president has hobbled key institutions which fight against corruption, replacing their leaders and reducing their powers. He fired the head of the federal police. Mr Moro says this was to stop an investigation into his sons. Mr Bolsonaro denies it. Mr Moro quit as justice minister in protest. Finally, by creating a "secret budget", Mr Bolsonaro has served up millions of dollars in pork to some of the dirtiest members of Congress. In 2020 he announced the end of Lava Jato for good.

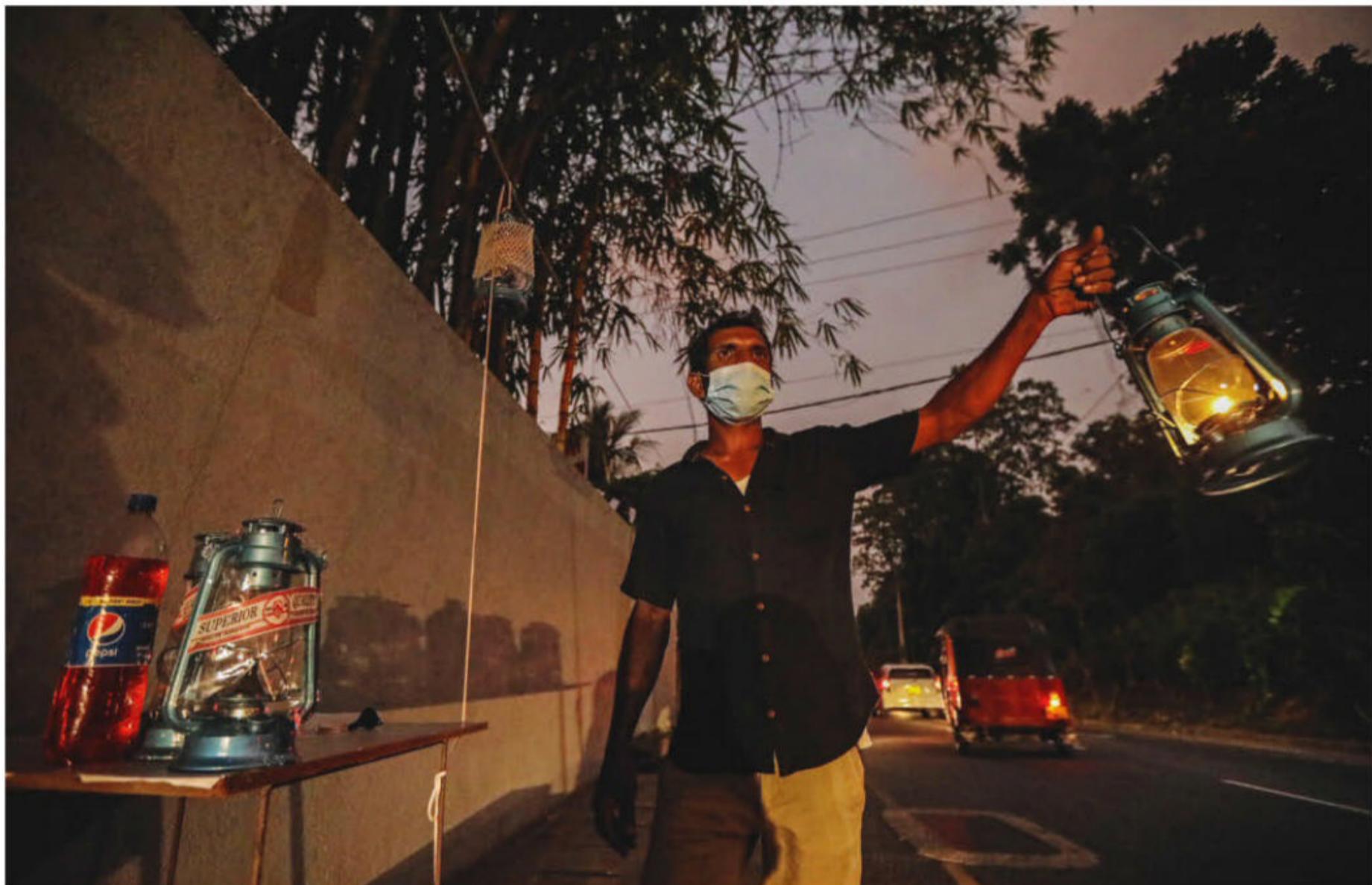
At the car wash

Anti-corruption efforts are now weaker than they have been for years, says Bruno Brandão of Transparency International Brazil, a watchdog that championed Lava Jato. Lula may try to reverse this decline, reckons Silvana Batini, who was on the Lava Jato task force in Rio de Janeiro. As president—and unlike Mr Bolsonaro—Lula appointed a prosecutor-general from a non-partisan shortlist. He strengthened the federal police. After huge protests in 2013 Ms Rousseff introduced the law which laid the foundations for Lava Jato. Despite the corruption within its own ranks, the PT bolstered the institutions that eventually brought them down.

Lula is unlikely to give a nuanced explanation of all this to voters, let alone a *mea culpa*. Instead he is suing people. On March 22nd he won damages from Mr Dallagnol, the prosecutor in the leaked memos, for a defamatory PowerPoint the latter had presented before any case had been opened. Lula's lawyers called the compensation "a symbol of the historical reparation that is due". Their client called his accusers "messianic brats". Three other cases against detractors are pending.

On March 31st Mr Moro, who pitched himself as a "third way" candidate for the presidency, announced he would suspend his campaign. A few days later, he seemed to change his mind. Such indecision increases the likelihood of a showdown between Lula and Mr Bolsonaro, and also of a tighter race. It is a contest which will make strange bedfellows. Before Mr Bolsonaro became president, Geraldo Alckmin, the former governor of São Paulo, said that Lula returning to power would mean going back "to the scene of the crime". Now Mr Alckmin is expected to be Lula's running mate. His volte-face may smack of opportunism. But in October many Brazilians may end up making a similar choice. ■





Sri Lanka

Lights out

COLOMBO AND DELHI

A deep economic crisis has created a political one

UNTIL VERY recently Gotabaya Rajapaksa, still Sri Lanka's president as *The Economist* went to press, was secure in his job. After all, he had done much to consolidate his power. Following his election in 2019 he dissolved the legislature and filled the government with relatives and cronies. A thumping win for his coalition in parliamentary elections in 2020 enabled him to change the constitution, handing himself even more power.

Yet over the past few weeks Mr Rajapaksa's hold on the country of 22m people has been slipping. Sri Lanka's economy is in free fall. The rupee has declined by more than 30% against the dollar since the central bank abandoned its peg a month ago (see chart on next page). Fuel and food have been in short supply for weeks. Sri Lankans wait hours in the heat to buy cooking gas at exorbitant prices—if they can get it at all. Power cuts of up to 13 hours a day have crippled businesses, including the

budding tech industry. Exams have been postponed for lack of paper. Hospitals across the country are running out of essential drugs. Even well-off Sri Lankans, usually insulated from such crises, have found themselves facing shortages.

All this is a product of long-running economic imbalances, external shocks and government mismanagement. An earlier Rajapaksa government headed by Mahinda, Gotabaya's brother, borrowed heavily to finance infrastructure projects that have yet to generate returns. The current one slashed taxes, which bashed government

→ Also in this section

26 Imran Khan's sticky wicket

27 Banyan: India's illusion of autonomy

28 Rising tensions in the Koreas

28 AUKUS goes hypersonic

revenue just before the pandemic halted tourist arrivals (a big source of foreign currency). It briefly banned fertiliser imports to save dollars, hitting food production.

The government then delayed going to the IMF until March, hoping that returning tourists and help from China would tide it over. But just as tourism began to recover, Russia's invasion of Ukraine pushed up commodity prices yet again, making imported fuel and food dearer still.

Economic hardship has driven people into the streets. Even middle-class types, who usually steer clear of protests and until recently approved of Mr Rajapaksa's brand of strongman ethno-nationalism, now put the blame for the crisis squarely on the president. "These are people who keep liquor cabinets at home, not those who come to politically-organised protests for a packet of rice and half a bottle of arrack," says Feroze Kamardeen, a playwright in Colombo.

It has not helped that Mahinda's son (and minister of youth and sports), was spotted fly-boarding in the Maldives as Sri Lankans struggled to buy food. People are fed up. "Go home Gota!"—the president's nickname—read the signs mounted on everything from broomsticks to pets' collars. By "home" they mean America, where Mr Rajapaksa lived for several years.

The government, failing to read the ➤

► public mood, has responded with a mix of intimidation and ineptitude, producing a political crisis to compound the economic disaster. On April 1st Mr Rajapaksa, apparently spooked by demonstrations outside his home, declared a state of emergency. That gave the army wide-ranging powers to quell unrest. When this failed to dissuade protesters, he imposed a weekend-long curfew and a ban on social media. People returned to the streets anyway.

On April 3rd the president changed tack. He restored social media and dismissed his cabinet, leaving only himself and Mahinda, now prime minister. The next day he lifted the curfew and named four new interim ministers, including a finance minister to replace another Rajapaksa brother who had previously held the job.

Stability remains elusive. Ali Sabry, the new finance minister, resigned on April 5th after just 24 hours in the post. On the same day Mr Rajapaksa's coalition partners withdrew their support, leaving the government without a parliamentary majority. The president revoked the state of emergency a few hours later. Protesters still want the remaining Rajapaksas gone, but Gotabaya has given no indication that he will resign. The opposition has rejected his call to join an interim government. It seems reluctant to take charge in the middle of a crisis. Sri Lanka cannot afford to run a fresh election.

The country must pay \$7bn, roughly 9% of pre-crisis GDP, in debt and interest payments, most of it dollar-denominated, by the end of the year. A \$1bn bond payment is due in July. Sri Lanka's dollar reserves are nearly gone and it has had no access to global credit markets for two years. India has extended credit lines and assistance worth some \$2.5bn, and has postponed payments on debt owed to its central bank.

But Sri Lanka urgently needs a stay on other debt repayments to avoid a messy default. It will also need further lines of credit or aid—perhaps through the World Bank's existing pandemic-relief mechanism—to import food and fuel over the

coming months while it negotiates how to restructure longer-term debt and regain access to bond markets.

The lack of a stable government will make those discussions all the more difficult. Initial talks with the IMF began this week but official negotiations may be delayed until the president manages to appoint a new finance minister. Yet a bail-out by the fund is a crucial first step towards solving the crisis. Other creditors are unlikely to agree to new loans or the restructuring of existing ones without its backing.

Things are not entirely hopeless. Both the decision to talk to the IMF and the appointment of P. Nandalal Weerasinghe, a respected economist who was due to take over as the new head of the central bank on April 7th, suggest that the government may have grasped the seriousness of the situation. Whether it can convince furious Sri Lankans that it deserves a chance to fix the mess is another question. ■

Pakistan's political crisis

Not cricket

ISLAMABAD

Imran Khan is trying every trick in the book to stay in power

IF IMRAN KHAN'S opponents hoped their push to unseat him would move at the blistering pace of a Twenty20 cricket match, the Pakistani prime minister has instead dragged them into the slog of a five-day Test. Tension had been building as Mr Khan's precariously ruling coalition frayed. It looked as if enough defectors had joined the opposition to bring down his government in a no-confidence vote in Pakistan's National Assembly on April 3rd. But the prime minister, who captained Pakistan's triumph in the 1992 World Cup cricket final, bowled a googly. He declared the bid to unseat him a foreign conspiracy, dodged the floor vote, dissolved parliament and called for fresh elections.

Opposition legislators cried foul. They said Mr Khan had violated the constitution by getting the deputy speaker of the assembly, a close ally, to quash the vote on vague grounds of a national security threat. The Supreme Court was called in to umpire the mess. The judges have refused to be rushed. On April 6th they held a third day of hearings, and were due to resume on April 7th. Pakistan is meanwhile in constitutional deadlock.

If the judges rule against Mr Khan, the no-confidence vote will be held and he will almost certainly be out of power, less than four years into his five-year term. A new government, probably a broad coalition

led by Shehzad Sharif, the brother of Mr Khan's predecessor Nawaz Sharif, would then be in charge.

The court could rule instead for fresh elections under a caretaker government. By law such a vote should take place within 90 days, but officials say it might take longer to prepare. This could give Mr Khan what he wants, which is time to mount a counter-offensive against opponents he berates as corrupt. The court could also simply dither. The longer the legal stand-off ensues, the less inclined the judges would be to reconstitute the assembly and reimpose the vote, the opposition fears.

The crisis has flared quickly and reflects a rapid downturn in Mr Khan's fortunes. The 69-year-old won power in 2018 on an anti-corruption platform, promising to dislodge the country's venal political elite. He also vowed to create an Islamic welfare state.

But though he had some success averting damage from the pandemic, extending a social safety net and offering health insurance, Pakistan's worsening economy is hurting ordinary people. Inflation is almost 13% (see chart). The Pakistani rupee trades at more than 180 to the dollar, 50% more than when Mr Khan took charge. The World Bank says GDP per person has fallen from nearly \$1,500 in 2018 to \$1,200 in 2020. Mr Khan's confrontational style and insistence on jailing "corrupt" political opponents also left little room to manoeuvre while defending a slim majority.

But many believe the biggest factor in his fall has been a breakdown in relations with the chief of the army staff, General Qamar Javed Bajwa, though Mr Khan denies a rift. The army for its part has always insisted, implausibly, that it is politically neutral. For years, Mr Khan's opponents have charged that he owes his ascent solely to the powerful, unaccountable military establishment that has ruled Pakistan directly for much of its history and pulled strings for much of the rest.

General Bajwa and Mr Khan appeared to clash in October over who should be head ►



► of the armed forces' formidable Inter-Services Intelligence (ISI), a sprawling agency with covert fingers in many pies, including Afghanistan. The suspicion that Mr Khan wished to disrupt the military line of succession in order to have his own man in the top job proved too much for General Bajwa, some analysts believe.

Mr Khan's railing against America and its allies may also have alarmed the army. The prime minister appeared in Moscow, shaking hands with Vladimir Putin, on the very day that Russia invaded Ukraine. That was perhaps seen as an embarrassment—

though not by Mr Khan, who has roused supporters by declaring that America is conspiring with the opposition to oust him for daring to pursue his own foreign policy, and for seeking good relations with Russia and China. Yet Mr Khan has given no evidence of any plot and America dismisses the charge as baseless.

Cosy relations with the army are unlikely to resume, whatever the Supreme Court rules. This could spell trouble for Mr Khan, regardless of whether his fate is handed back to parliament, or to the polls. Yet the prime minister's populist gambit—

casting his looming parliamentary defeat as international persecution abetted by a traitorous opposition—may prove tactically deft. Polling by Gallup suggests that 36% of Pakistanis buy the conspiracy line. Among shopkeepers in a commercial district of Rawalpindi that voted for his party in 2018, many accept his claim that the West is out to get him. "America will never want Imran Khan in power, because he is not a yes-man," says Mohammed Zahid, who sells embroidered women's tunics. "External powers don't like that our country now has true leadership." ■

Banyan Enmeshed

India's vaunted strategic autonomy is an illusion

IN THE EARLY evening of March 9th a supersonic cruise missile blasted skyward from a site in northern India. Within 200 seconds it had streaked across the Pakistani border. When it smacked to the ground just minutes later, it was 124km inside the territory of India's nuclear-armed enemy. Luckily no one was harmed. Lucky, too, that Pakistan did not respond to the intrusion, except to ask an embarrassed India what had gone wrong.

The answer is still not clear, though India did say that there had been a regrettable mishap. What is known is that the wayward projectile was a BrahMos missile. Estimated to cost some \$2m each and fired from land, sea or air, the nuclear-capable weapon is one of the most potent India possesses. It is also among the most visible products of a deep, decades-long partnership between state-run Indian and Russian arms-makers. Even its name, combining the Brahmaputra and Moskva rivers, suggests a *sangam*, or confluence, of interests.

This entanglement is one of the reasons why, seven weeks into Russia's war on Ukraine, India finds itself in an uncomfortable position. The trouble is not just the sight of so much Russian armour, of exactly the sort that still makes up most of India's own arsenal, getting smoked on the plains around the Dnieper. It is also the attachment of the Indian state to a historic partner that could do something so capricious, destructive and stupid as to try to devour Ukraine.

That has forced Indian diplomats into a marathon of fast talking and fancy footwork. The question they have struggled to answer is one that Joe Wilson, a Republican congressman from South Carolina and self-declared "friend of India", pressed on Lloyd Austin, Amer-

ica's defence secretary: how, he asked in a congressional hearing on April 5th, could a fellow democracy like India be persuaded to join its "natural allies" in the West?

Some Indian officials are blunt about the dilemma. "We know Putin is a shit," says one lawmaker from the ruling party, before explaining that reliance on critical Russian spare parts and technology limits room for manoeuvre in Delhi. Defending India's 11 successive abstentions in UN forums since the invasion—except for a strongly worded statement that "unequivocally condemned" the massacre of civilians in the suburbs of Kyiv—others speak of a long tradition of non-alignment. They note that just as leaders in Delhi declined to condemn Russia, they similarly abstained from blasting America when it stomped into Iraq. Some more boldly say that Ukraine is Europe's problem, that India is simply asserting its own freedom to choose, and who says India belongs to the West anyway?

India's Western suitors, keen not to alienate a country that is key to their own plans for managing China, have now

muted their criticism of its position. Within India, the government's prickly resistance to what is portrayed as Western high-handedness and hypocrisy has been popular. For the time being, then, it looks like India may pay little price for breaking with the democratic pack over Ukraine. Indeed, it may profit from buying discounted Russian oil.

Yet the self-congratulatory patter now echoing in Delhi's corridors of power, about having told bossy Westerners where to get off, may be premature. The Ukraine crisis has sent fawning envoys scurrying to India's capital. But it also reveals the country's underlying weaknesses. Dependence on imported arms is one of these. The BrahMos project, for example, is 24 years old. Most of its inputs are now Indian-made, but Russian parts remain crucial.

Economic vulnerabilities, such as a near-total reliance on imported fossil fuels, have also come into sharp relief. Facing crucial state elections in February, India's government held down petrol prices from mid-December to mid-March. Now soaring back up to Ukraine-boosted global levels, they are causing a painful shock. No wonder those Russian oil discounts look so tempting.

Josh Felman and Arvind Subramanian, a pair of economists, argue in a recent article that India's rulers may be fooling themselves into believing that the country's apparent military and economic heft translates to major-power status. In fact, an undersized domestic market for consumption and a small tax base with which to pay for defence upgrades mean that India remains a middling power in need of rapid, sustained economic growth. Their advice: India "must look past the illusion of size and reconcile itself with strategic realities".



The Korean peninsula

Bursting into Hwasong

SEOUL

North Korea is testing missiles again. Nuclear weapons may be next

AT A CEREMONY on April 1st Suh Wook, South Korea's defence minister, boasted that South Korea could "accurately and swiftly strike any targets in North Korea". Kim Yo Jong, a high-ranking North Korean official and the sister of Kim Jong Un, the country's dictator, quickly fired back, accusing the "scum-like guy" of "senseless bluster" for threatening a "pre-emptive strike". She later added that the South Korean army would "face a miserable fate little short of total destruction and ruin" if it were to attack.

The colourful exchange comes at a time of rising tensions. For over four years the North has refrained from testing nuclear weapons or the intercontinental ballistic missiles (ICBMs) needed to deliver them to America's shores, supposedly because the weapons' development had been completed. Now both programmes appear to be coming out of hibernation.

In late February and early March North Korea conducted two big rocket launches which it claimed were to test reconnaissance satellite equipment. American spooks suspected those launches were laying the groundwork for future weapons tests. Then on March 24th something went up that both sides agreed was an ICBM. North Korea said it was a Hwasong-17, a previously untested missile larger than anything in its arsenal. It backed up this claim with footage of the launch, which paid homage to 1980s action movies. In it a leather-jacketed Mr Kim taps his watch, dramatically tears his sunglasses from his face and nods gravely, as if signalling the start of the action. The launch itself is filmed from several angles.

America and South Korea said the video was doctored. The launch, they said, was probably of the smaller Hwasong-15, which has already been tested. That is plausible. North Korea has faked missile-test footage before. Colin Zwirko, an analyst at NK News, a Seoul-based outlet, thinks the regime may have been trying to make up for a launch that failed on March 16th. Whichever missile it was, North Korea's self-imposed moratorium on ICBM testing is over.

More worrying still is the prospect that nuclear tests will soon follow. Satellite imagery shows new activity around one of the tunnels at Punggye-ri, North Korea's only known nuclear-testing facility, which Mr Kim shut down in 2018. Analysts believe that testing could resume by mid-April.



Highway to the danger zone

That would coincide nicely with the 110th anniversary, on April 15th, of the birth of Kim Il Sung: Mr Kim's grandfather and the founder of North Korea's hereditary dictatorship. A large military parade is planned. Mr Kim likes to celebrate big occasions with a bang. Every nuclear test conducted during his reign has fallen within a week of his birthday, his father's birthday or the anniversary of the country's founding.

Domestic worries may be one reason for the renewed activity. Everyday life for ordinary North Koreans has become notably grimmer since the start of the pandemic. Mr Kim sealed the country's borders, causing severe food shortages and battering the informal markets that provide many locals with a living. Mr Kim might be hoping that tests and martial pageantry will bring a little cheer. If indeed the regime did doctor the footage of the latest launch, the intended audience may well have been viewers at home.

But Mr Kim doubtless also wants to improve his military capabilities and thus his leverage in negotiations with adversaries, with the eventual goal of being accepted as a nuclear power. Though he has already shown that he can send ICBMs skyward, he has yet to prove that the missiles can deliver a payload to their targets. He may also be trying to develop low-yield nuclear weapons. Such devices could sit on shorter-ranged missiles aimed at the South, and help further Mr Kim's ambition to fire multiple warheads from a single ICBM.

Mr Suh's term ends in May, along with that of his boss Moon Jae-in, South Korea's current president, who tried to win over Mr Kim. The incoming president, Yoon Suk-yeol, takes a harder line. He repeatedly endorsed the idea of pre-emptive strikes on the campaign trail. The noise on the Korean peninsula—both from missiles and rhetoric—is about to get much louder. ■

The Indo-Pacific

AUKUS goes hypersonic

A strategic submarine pact turns its attention to a new breed of missiles

SI X MONTHS ago America and Britain said they would help Australia acquire the crown jewels of the defence world: nuclear-powered submarines. The AUKUS pact, announced on September 15th, reflected Australia's fear of China's growing power; America's willingness to break old taboos to counter it; and Britain's eagerness to bolster its role in Asia. The three countries also promised to co-operate in areas from cyber capabilities to quantum technologies. Now these allies are turning their attention to hypersonic missiles.

Such projectiles travel at sustained speeds of Mach 5 while manoeuvring. There are two sorts. Hypersonic cruise missiles, like Russia's Kinzhal, employed in Ukraine on March 18th, are powered by air-breathing engines. Hypersonic glide vehicles, like Russia's Avangard and China's DF-17, go up on rockets, but glide down over long distances.

China has "outpaced the United States in graduating hypersonic-specialised engineers, publishing open scientific papers, and constructing hypersonic wind tunnels", noted a report by CSIS, an American think-tank, in February. The Pentagon carried out a successful hypersonic test in mid-March (it was kept quiet to avoid raising tensions with Russia) but several previous ones failed. So it is not hard to see why America wants to collaborate with allies.

America and Australia have been working on an air-launched hypersonic cruise missile under the cheesy rubric of SCIFIRE for 15 years, taking advantage of the Woomera test range in southern Australia, one of the world's largest, and Australia's seven hypersonic wind tunnels. Britain is further behind, but gave a \$12m contract to Rolls-Royce, an aerospace company, to work on suitable engines in 2019. The trio plan to swap notes "to accelerate our programmes", says a British official.

This evolution of AUKUS shows that Western allies see a pressing need to pool their resources and talents to keep pace with China. It might also future-proof the pact. America and Britain have been sharing information on nuclear propulsion technology with Australia since February; that sort of thing is so sensitive that it will stay within the club of three. But collaboration in other areas—which will now also include electronic warfare—might allow other Sino-sceptic partners, like India or Japan, to plug into AUKUS in the future. ■

**Covid-19**

Shanghai swoons

SHANGHAI

A clumsy lockdown of China's financial hub is testing the "zero-covid" strategy

THE EFFORT to stamp out covid-19 in Shanghai has taken on the characteristics of a military campaign. The army has published photos of planes offloading personnel and supplies. Tens of thousands of medical workers have marched into the city. At least as many covid patients will be spirited out—bused to field hospitals in neighbouring areas, sometimes hundreds of kilometres away. The rest of the city's 25m residents will remain locked down as the fight against the virus drags on.

For two years China's business and finance hub remained relatively unscathed by covid. Shanghai was evidence of the government's skilful handling of the pandemic. The country's "zero-covid" approach, involving mass testing and strict lockdowns to crush outbreaks, led to fewer deaths and stronger economic growth than in other big countries. Xi Jinping, the president, has hailed the strategy as a great success—and proof that China's socialist system is superior to Western democracy.

But the situation in Shanghai is testing all that. Not since the start of the pandemic, when the government sealed off Wu-

han, a city of 11m people, have the country's covid measures come under such scrutiny. The campaign in Shanghai has been nothing short of a mess, say residents. They have faced varying restrictions since early March and are now confined to their homes. Food shortages are a problem. People complain of going without medicine. In China's largest city the government's strict covid controls are stoking anger.

For weeks the authorities in Shanghai experimented with a looser approach. They used targeted lockdowns on housing compounds to contain the virus. But the highly transmissible Omicron variant continued to spread. The government tried to quash any talk of harsher measures in the offing, even detaining people for spreading rumours. "We're not going to use the

lockdown strategy for now," said Zhang Wenhong, who runs Shanghai's covid response, on March 25th. Three days later a two-phase lockdown was announced. First the east side of the city was closed for four days, then the west side. Even that proved ineffective. So, as the staggered lockdown came to an end, the government closed the entire city indefinitely.

Unsurprisingly, the authorities were unready to support people during the hastily conceived lockdowns. And residents themselves were given little time to prepare. Some rushed to supermarkets, leaving aisles empty. Getting basic provisions has become a struggle. Messaging boards linked to Weibo, a popular Twitter-like platform, have been inundated with pleas for help. One woman said her father, who is suffering from cancer, was blocked from leaving his home and is "considering suicide". A man sought epilepsy medication for his young son; he "did not dare consider the consequences" of failing to obtain it. Videos show people fighting over boxes of food. This correspondent has struggled to obtain potable water.

Abandoned warehouses, expo centres and shipping containers have been converted into makeshift isolation centres for those who test positive. Videos show patients protesting against a lack of food, water and treatment. Health workers have been filmed striking people or pulling them by their hair from their homes. But the authorities' most controversial policy has been separating covid-positive chil-

→ Also in this section

30 Hong Kong's next leader

31 Is China hoarding grain?

32 Chaguan: Soviet-history lessons

► dren from their parents. Videos of dozens of children, some just months old, lying five to a bed, caused an uproar. The government has since said that infected parents could accompany their covid-positive offspring, and that healthy parents of infected children with special requirements could apply to go with them.

People have also been angered by the leaked recording of a phone call purportedly between a Shanghai resident and an official from the local office of the Chinese Centre for Disease Control and Prevention. On the call, which *The Economist* has not verified, the official says Shanghai's policies have been driven by political considerations, not public-health concerns. She says that co-ordination between hospitals has been poor and that medical supplies are running low. People with mild or no symptoms should quarantine at home, she suggests, contradicting official policy. She also says tests have been rigged to show negative results in order to free up capacity in the overwhelmed health system while appearing to adhere to the government's zero-covid mandate.

News of the call was quickly followed by a visit to Shanghai by Sun Chunlan, a deputy prime minister in charge of fighting covid, who reiterated the state's "unswerving adherence to the dynamic zero-covid approach". Until recently that strategy has seemed broadly popular, as it has allowed most of China's 1.4bn people to lead relatively normal lives. But the fast spread of Omicron means the number of people caught up in the state's covid controls is growing, including all of Shanghai's residents. The grumbling is getting louder on social media, despite the state's best efforts to censor it. Complaints from Shanghai resonate loudly among China's leaders: the city is of immense political importance, being home to many of the country's rich and powerful.

There is no easy remedy for its sufferings. Mr Xi is expected to gain a third term

as party chief later this year, in violation of recent norms. He does not want that moment of triumph to be overshadowed by pandemic-related chaos. A relaxation of controls might cause an even bigger surge of infections that could imperil far more of the country's rickety health infrastructure. But maintaining them would be risky, too. Analysts believe the measures are dealing a big blow to China's economy, which may not grow at all this quarter compared with the last (see Finance section).

What effect this will have on China's politics is a subject of much speculation. One name to watch is that of Li Qiang, Shanghai's party secretary and a close ally of the president. Experts expect Mr Li to be picked for the seven-member Politburo Standing Committee, the country's most

powerful political body, later this year. Some think he will become the next prime minister. But the mess in Shanghai may dim Mr Li's prospects. In Hong Kong, central-government frustration with the city's handling of a recent covid wave could be one reason why Carrie Lam has announced she will not stand again as the territory's chief executive (see next story).

For now, cases in Shanghai continue to rise. Food is growing scarcer. Residents have been filmed on their balconies, chanting to be set free. But most old people have not been vaccinated and relatively few Chinese have natural immunity. A large outbreak in the country could result in millions of deaths. The effort in Shanghai may look like a military campaign, but it is to avoid a broader war. ■

Politics in Hong Kong

A new sheriff in town

John Lee, a tough ex-cop, looks set to become Hong Kong's leader

LESS THAN three years ago, news of her imminent departure would have been greeted with joy on the streets of Hong Kong. Carrie Lam, the territory's leader (pictured, right), was reviled by the pro-democracy protesters whose demonstrations in 2019 snowballed into the biggest unrest of its kind in the territory's history. But Mrs Lam's announcement on April 4th that she would not seek another term in office—meaning she has less than three months to serve—stirred little cheer. The central government plans to replace her with a tough ex-policeman, John Lee (pictured, left). What the public thinks matters little.

Interaction between the Communist Party in Beijing and Hong Kong's chief executive, as the city's leader is known, is shrouded in secrecy. So it is hard to work out whether Mrs Lam had a choice. She said she had told the central authorities a year ago that she did not want another five-year term, "entirely" for family reasons. But that could be a smokescreen. The party probably wants her to go. Newspapers in Hong Kong that are under the party's thumb have expressed no disappointment about her decision. They have intimated that Mr Lee, who was Hong Kong's security chief during the upheaval, is a shoo-in to succeed her.

One reason for wanting a new leader may be Mrs Lam's handling of the territory's latest wave of covid-19, for which it was ill prepared. Thousands of people, most of them elderly, have died: vaccination rates within this group are low. Despite (and be-

cause of) Hong Kong's "zero-covid" policy, which matches mainland China's, medical facilities have been overwhelmed by covid patients. The central authorities have been quick to punish local leaders on the mainland for much smaller outbreaks within their jurisdictions. Hong Kong notionally enjoys a "high degree of autonomy", but the party may want to make a point that on this matter, no laxity is allowed.

Officials in Beijing may also resent Mrs Lam's seeming failure to anticipate the unrest in 2019, which was triggered by her ►



Party people

China tightens up

Effective lockdown index*



*Quantitative measure of mandated and voluntary social distancing. Seven-day moving average
†Excluding China

Source: Goldman Sachs

► plan to introduce a bill that would allow criminals to be extradited for trial by the mainland's party-controlled courts. But the party's support for Mr Lee suggests it does not have big misgivings about her handling of the protests: he was her main adviser on how to police them.

According to Hong Kong's mini-constitution, the Basic Law, the chief executive is selected locally and appointed by the central government. In practice the party controls the selection process, too. Mrs Lam timed her announcement with the start of a two-week period during which aspiring candidates for the post must secure sufficient nominations from the 1,500 members of an election committee, stacked with the party's loyalists. On May 8th the committee will choose the winner by vote. Most members will cast their ballots as the party wishes. Last year changes were made to the composition of the committee to make it even more compliant.

Since the end of British rule in Hong Kong in 1997, the party has selected people either with broad experience in the territory's civil service (such as Mrs Lam) or who are prominent business leaders. All of them have struggled to keep both the leadership in Beijing and Hong Kong's public happy. None has yet served two five-year terms, the maximum allowed.

The choice of Mr Lee is a striking departure from the norm. He has spent most of his career as a police officer. Even on the security-obsessed mainland, local leaders are rarely people with such a specialist background. Only in the past decade has the 64-year-old served in a more political role, first as under-secretary and then as secretary for security (a cabinet post, in effect). His only experience outside the security realm has been in the past year, as Mrs Lam's deputy. On April 6th he resigned from that post and declared his bid for the chief-executive position.

It is easy to see why the party would like him. He has enthusiastically embraced the draconian national-security law that the central government imposed on the territory in 2020 to prevent a resurgence of the previous year's unrest (tougher police tactics and pandemic social-distancing measures having helped to stifle it). The police have used the new bill, and colonial-era laws, to arrest thousands of people for protest-related offences.

Crushing dissent in Hong Kong remains the party's priority. On the day that Mr Lee announced his campaign, a businessman in Hong Kong with close ties to China's leadership, Lo Man Tuen, published an article in the local press. It said the territory needed an "iron man" leader who could resist "American and British pressure" and implement the security law with "no second thoughts". The party seems to think Mr Lee fits the bill. ■

Food security

A big appetite

BEIJING

When China worries about food, the world pays

THE COMMUNIST PARTY has a way with words. Take the prosaic topic of food security. The pandemic, geopolitical tensions and heavy rainfall last year (which may lead to a wretched wheat crop) threaten China's grain supply. Lately officials have been echoing the exhortation of President Xi Jinping that "the people's rice bowl must be firmly held in their own hands at all times." In non-party-speak, the government is thinking hard about how to keep the world's most populous country fed.

Past leaders have at times struggled with this task. Tens of millions of Chinese perished in the famine caused by Mao Zedong's ruinous policies in the late 1950s. Such a catastrophe is inconceivable today. But rows with Australia and Canada have made Chinese officials worry that the copious amounts of grain the two countries supply might one day be cut off. They note that soyabean imports from America plunged when Donald Trump launched his trade war. The conflict in Ukraine adds another layer of concern. Though China has tacitly backed Russia's invasion (and abruptly lifted its ban on Russian wheat), the turmoil could mean less, or pricier, food in Chinese bowls. Last year Ukraine supplied China with 29% of its imported corn and 26% of its imported barley.

Global food prices were rising even before the war started to affect the supply of grains and fertiliser ingredients. The con-

flict scares China for another reason, too. The harsh sanctions imposed on Russia by Western countries make China nervous that it would face similar punishment were it to invade Taiwan. How, officials in Beijing ask, can China rely on such fickle foreigners for its basic needs?

The regime has dealt with these concerns in two important ways. It has stockpiled food—or, as critics say, hoarded it. Over the past five years China's purchases of everything from soyabbeans to pork have soared. America's Department of Agriculture predicts that by the middle of this year China will hold 69% of the world's maize (corn) reserves, 60% of its rice and 51% of its wheat. All this to feed 18% of the world's population. Last year a Chinese official said that the country's grain stocks were "historically high" and that it had enough wheat to meet demand for 18 months. China's big purchases have pushed up global prices, say analysts.

In the longer term China may hope to diversify its suppliers. This will be difficult, says Zhang Hongzhou of Nanyang Technological University in Singapore. So it is also trying to become self-sufficient. One benchmark calls for Chinese producers to meet 95% of the country's demand for basic grains. On rice they pass. On sorghum and barley they fail. On maize and wheat they come close. Genetically modified crops would help. The government favours the technology, but it has been slow to introduce it because of public concern.

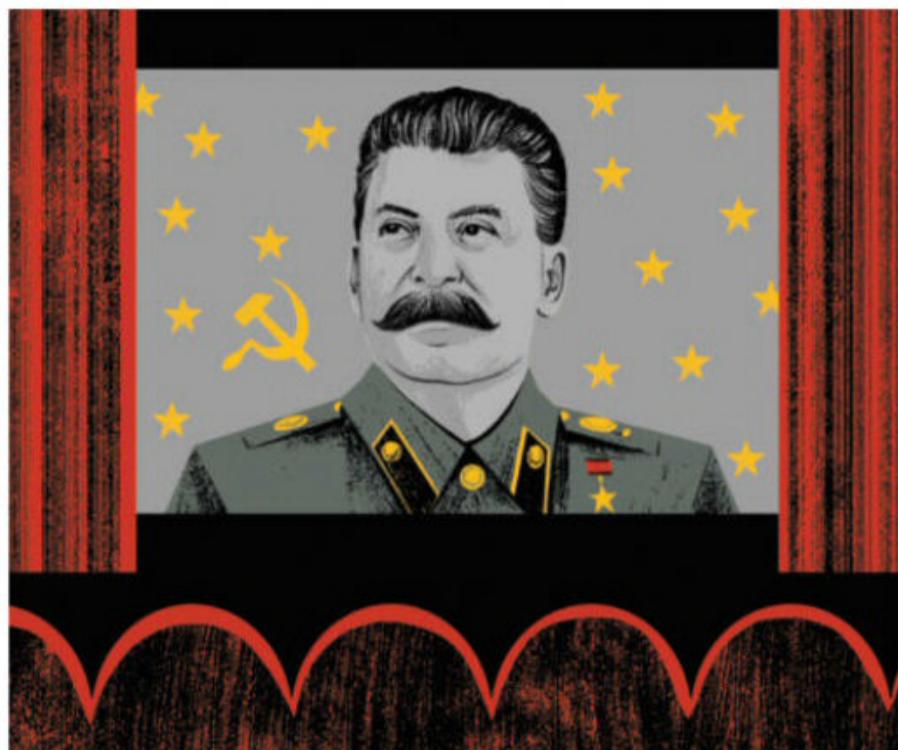
"Even if China decides it wants to be self-sufficient, it is now pretty much impossible," says Dr Zhang. That may not stop it from trying, though. Mr Xi, a fervent nationalist, wants more of what China consumes to be made at home. Or, as he put it last year: "The rice bowl must mainly contain Chinese grain." ■



Enough to fill a few bowls

Chaguan | The history boys

Don't underestimate Xi Jinping's ideological bond with Vladimir Putin



ACH NEW Russian atrocity in Ukraine prompts a question about China. Surely, foreign governments wonder, China's leader, Xi Jinping, must distance himself from Vladimir Putin soon—if only to avoid harming his own national interests?

Alas, the history of outsiders telling leaders in Beijing how to judge China's interests is long, and littered with disappointment. The Ukraine conflict is no exception. One reason for this involves geopolitics, and an argument made by Chinese officials and state media, as well as in special classes being organised by universities to give academics and students a “correct understanding” of the war. This says that Mr Putin attacked Ukraine in self-defence, after America encroached on Russia by pushing European nations into the NATO military alliance. No matter that this turns history on its head, and ignores the pleas of ex-Soviet satellite states to join NATO as a defence against Russian aggression. To China, NATO enlargement is a hostile act which calls to mind American alliance-building in Asia. That makes Russia an invaluable partner in a global contest against American bullying, which China can ill afford to abandon. By this cold logic, Ukraine's agonies are a distraction.

A second explanation for China's embrace of Russia is harder to see and hear, for it involves an indoctrination campaign within the Communist Party. This draws lessons from the “tragedy” of the Soviet Union's disintegration. It takes its lead from Mr Xi, who casts the Soviet collapse as a crisis of lost communist faith. Several times during his first decade as leader, Mr Xi has condemned Soviet party leaders and officials for becoming a self-serving caste and for losing political control of the army. Above all, Mr Xi blames the Soviet collapse on “historical nihilism”, jargon for allowing ideological foes to dwell on dark episodes in history.

A new, 101-minute Chinese documentary made for internal party use, “Historical Nihilism and the Soviet Collapse, Reflections on 30 years since the Disintegration of the Soviet Party and Nation”, takes up that charge. Though not widely publicised, the film has been studied since late last year. There are brief reports of screenings all around China, in central and provincial government bodies but also at universities and law courts, municipal party committees and at least one local forestry bureau: evidence of a campaign ordered from the top. The film has not been released

in cinemas or on television, but may be found online.

The film lionises Stalin. It blames famines that followed his collectivisation of agriculture on rich peasants hoarding grain. It denies that his political purges killed millions, though it admits to some excesses. The documentary calls it slander to accuse Adolf Hitler and Stalin of jointly launching the second world war (Poland, which the two tyrants invaded from the west and the east, might disagree). It expresses outrage at those who question whether some Soviet-era heroes and martyrs are inventions. And it accuses the West of scheming to undermine the Soviet Union for decades by handing Nobel prizes to dissenting writers, inviting reform-minded officials on academic exchanges and, by the late 1980s, supporting civil society and a free press. The film's villains include Stalin's successor, Nikita Khrushchev, whose denunciation of Stalin's personality cult is called “90% lies”. The last Soviet leader, Mikhail Gorbachev, is blamed for capitalist policies that—the film asserts—destroyed a planned economy that had outperformed America's. There follow scenes of post-Soviet chaos crafted to appal watching officials, involving toppled communist memorials and mobs attacking former oppressors. Then comes the Putin era, with proud war veterans and goose-stepping troops in a sunlit Red Square, over the strains of Russia's national anthem. Mr Putin is hailed for commissioning new, patriotic history books.

The film is revealingly odd. It reflects some obsessions of Putin-era Russia, from celebrating wartime victories to paranoia about Western infiltration. But its defence of collectivisation and of the planned economy would strike even Putin loyalists as bizarre: they believe in crony capitalism, not Marxism. Nor does the Kremlin propaganda machine expend energy downplaying Stalin's cult of personality, or insisting that long-ago heroes literally existed. These choices are more Chinese than Russian. Time and again the film defends aspects of the Stalin era that bring to mind Communist China's founder, Mao Zedong. Mao set in motion rural famines and political purges that killed millions. His planned economy left the country bankrupt. He ordered the masses to learn from the faked or invented achievements of model communes and model heroes, often to disastrous effect. Meanwhile the film praises aspects of Mr Putin's record that also apply to Mr Xi. China's leader has had history textbooks rewritten and passed laws against disrespecting martyrs and heroes. Under Mr Xi, such values as freedom of speech are called tools of Western subversion, designed to topple the party through “peaceful evolution”.

Backing Russia's war is good domestic politics

Above all, the film helps Mr Xi by suggesting that intensely personalised rule is no bad thing, at one point showing young Russians kissing images of Mr Putin. Later this year Mr Xi is expected to seek a third term as party chief, upending norms put in place after the horrors of Mao's decades-long reign. Reports about screenings of the documentary end in strikingly similar ways: officials stress the importance of “correct” history, then conclude that what matters most is loyalty to the Communist Party of China and to Mr Xi.

There is a warning here for foreign governments wondering why Mr Xi will not repudiate Mr Putin's crimes. China's support for Russia is in part geopolitical, with Mr Putin seen as an irreplaceable comrade in a fight with America. But it involves domestic political calculations, too. Chinese ideologues see benefits in identifying Mr Xi's brand of nationalism with Mr Putin's. As long as that holds true, asking Mr Xi to disown Russia and side with the West is like asking him to break with himself. ■

**Sudan's crisis**

After the tyrant

Sudan faces collapse three years after the fall of its genocidal dictator

BREAKING FAST at sundown during Ramdan, which started on April 2nd, will not be the usual joyful family occasion for many Sudanese this year. The communal *iftar* will be blighted by the shortage, and spiralling cost, of wheat and other basics. Some expect this year's Ramadan to explode into a confrontation between a frustrated, immiserated people and the country's brutal military regime.

Few Sudanese can remember a time when their country was in such a bleak state. The currency is in free fall, having plunged by more than a quarter since October. Inflation is officially 260%, but probably even higher. Some 9m people (out of a population of about 44m) face "acute hunger", says the UN's World Food Programme, and this number could double by September. Khartoum, the capital, is rocked by daily anti-regime protests and the often-violent response of the security forces, who have killed about 90 people over the past five months (see chart on next page).

Blame this mess on a military coup led by General Abdel Fattah al-Burhan in October, which reversed Sudan's fragile transi-

tion to democracy. This had started three years ago after protesters took to the streets to eject Omar al-Bashir, a ruthless Islamist despot who had ruled the country for 30 years. As he was about to fall in April 2019, the army seized power, hoping to keep its grip on politics and the economy. But demonstrations and international pressure pushed the generals into a pact with the leaders of the protests, whereby they promised to hand control to civilians by 2021 ahead of elections that were due to take place this year.

Western donors and multilateral banks pledged tens of billions of dollars in assistance and debt relief to support the democratic transition. But the second coup in October has stopped much of that help

from reaching Sudan, or delayed it. America, the World Bank and the IMF have halted the flow of at least \$1.4bn in aid and assistance. The junta, running short of funds, has cut the once generous subsidies it lavished on wheat and fuel. But it is doing so without the Western aid-funded safety nets that were meant to cushion the blow to the country's poor. They are furious; more protests are likely.

All these woes have been compounded by Vladimir Putin's war. More than 80% of Sudan's wheat imports come from Russia and Ukraine, and the conflict has already interrupted supplies. Last month the local price of wheat rose above \$550 a tonne, an increase of 180% compared with a year ago.

The generals running the country, meanwhile, are desperate for cash to keep the government functioning. To plug holes in the budget they are increasing taxes on businesses. This looks like wishful thinking, since few businesses pay much tax at all, says Kholood Khair, an analyst in Khartoum; many are struggling to survive. More notably and more opaquely, the generals have gone begging for funds from countries that used to back the old regime. They may be hawking Sudan's few remaining assets in exchange.

General Burhan recently visited the United Arab Emirates (UAE) to get pledges of support for Sudan's banks and currency, as well as investment in unspecified "development projects". One of these may involve DP World, the UAE's port operator, which for years has had its eye on Sudan's ➤

→ Also in this section

34 Mozambique's trial of the century

35 Single women seeking flats

35 Battered Benghazi

36 Taxing the Middle East



▶ main container terminal at Port Sudan on the Red Sea. But workers at the port bitterly oppose privatisation, fearing it may lead to job losses. An earlier attempt to bring in a Philippine port operator was scuppered after workers went on strike and paralysed the port, which handles 90% of Sudan's international trade.

The generals are also cosying up to Russia. It has long coveted a naval base on the Red Sea and is also a keen buyer of Sudan's gold. Both topics were probably on the agenda when the deputy head of Sudan's junta, Muhammad Hamdan Dagalo (better known as Hemedti), visited Russia on the eve of its invasion of Ukraine. Mr Dagalo heads the Rapid Support Forces (RSF), a vicious paramilitary outfit that controls many of Sudan's illicit gold mines. He is thought to be the regime's link to Wagner Group, a Russian mercenary outfit (see International section) that Western diplomats accuse of involvement in the illicit gold mines. Sudan's government denies it.

The timing of Mr Dagalo's visit to Moscow cannot have been a coincidence. Russia needs more of Sudan's gold to buttress its economy against Western sanctions. Gold accounts for about 40% of Sudan's exports and is thought to be smuggled out of the country via the UAE and then on to Russia. This may help explain why both the UAE and Sudan abstained on the UN vote condemning Russia's invasion of Ukraine. On his return from Moscow, Mr Dagalo said he had "no problem" with Russia opening a naval base in Sudan and that the country presents a "great opportunity for Russian investments".

Yet such desperate dealmaking may not buy the regime stability. Mr Dagalo's deepening ties to Russia are exacerbating tensions between him and General Burhan. And they are fuelling anger among the protesters, who believe Russia supported the coup last year.

The generals need to worry not only about protests in the capital but also about rising violence in the western region of Darfur, where government forces and the

Janjaweed, a militia that is now part of the RSF, committed genocide in 2003. This week a suspected leader of the Janjaweed appeared at the International Criminal Court in The Hague to face charges of war crimes and crimes against humanity, the court's first case relating to conflict in Darfur. Yet the prospect of justice is not bringing peace. Last month at least 48 people were killed in clashes in the area.

When Sudanese rose up three years ago to topple their genocidal dictator, they hoped to build democracy and prosperity. Instead, after two coups they face a political crisis, a shrinking economy and a rise in violence. These threaten the "very existence" of Sudan, said Volker Perthes, the UN's special representative to the Horn of Africa. "Unless the current trajectory is corrected," he told the UN Security Council last month, "the country will head towards an economic and security collapse, and significant humanitarian suffering." ■

Corruption in Mozambique

Wine and punishment

MAPUTO

Courts debate the secret debts that bankrupted a country

IN 2013 A Lebanese businessman sent an email to Ndambi Guebuza, the son of Armando Guebuza, who was then president of Mozambique. It promised that a chartered flight would soon leave France for Maputo, the Mozambican capital, carrying an unusual cargo: 7,427 bottles of wine. What did the email mean? When the public prosecutor asked about it at an ongoing trial, the younger Mr Guebuza shot back. "Do you, madam, want some wine?" he fumed, before alleging that the whole process is a political stitch-up.

Ndambi Guebuza is one of 19 high-profile defendants on trial in Maputo on charges including bribery, embezzlement and money-laundering (which they deny). The accusations relate to a series of deals in 2013 and 2014 which saw state-backed firms borrow more than \$2bn, mostly in secret. Although the money was earmarked for fishing boats (pictured) and maritime security, American regulators say that at least \$200m was pocketed by Mozambican officials and bankers from Credit Suisse, which helped arrange the deals. The revelation of the hidden debts in 2016 pushed the country into default and sparked court cases on three continents.

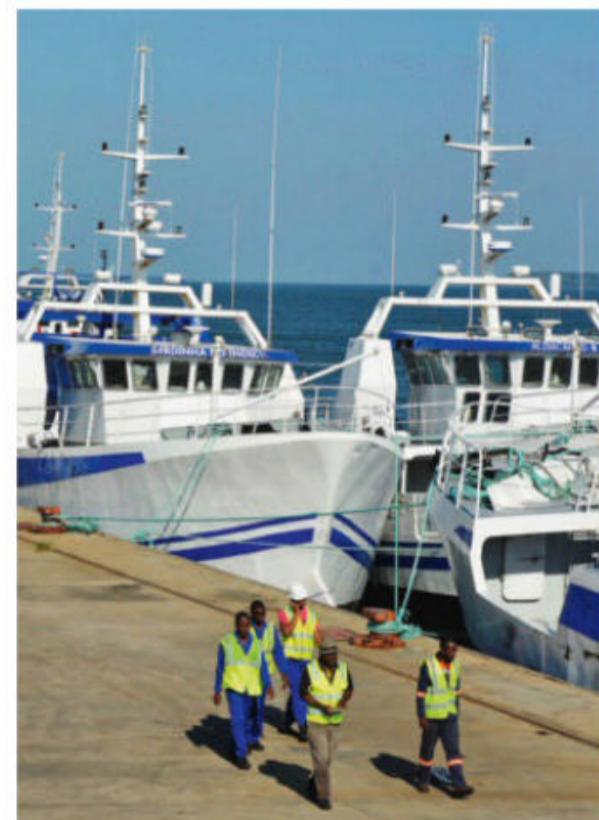
One of those cases is the trial in Maputo, held in a marquee at a maximum-security prison and broadcast on national television. The hearing wrapped up last

month, with a verdict expected in August. Between legal minutiae, it offered a lurid glimpse into the lives of Mozambique's super-rich, and allegations of how they splurged ill-gotten gains on posh flats and fleets of sports cars.

In February the former president, Mr Guebuza, took the stand—as a witness, not a defendant—and used the opportunity to make a subtle dig at his successor, Filipe Nyusi. It was "strange", he said, that Mr Nyusi claimed to know nothing about how the corrupt deals were made, despite having been defence minister at the time. That is a sign of how politicised the issue has become, as rival factions jostle for influence within Frelimo, the ruling party. "Those groups are fighting to control the party to be able to control the state and take advantage of it," says Edson Cortez, the director of the Centre for Public Integrity (CIP), a Mozambican NGO.

Despite its internal ructions, Frelimo retains a strong grip on power and does not want its dirty laundry aired in public. Mozambique and America are still tussling over who can extradite Manuel Chang, the former finance minister who signed off the deals and currently sits in a South African jail. Activists say he would be more likely to spill the beans in an American courtroom than in his home country.

It would not be the first American intervention. Three former Credit Suisse bankers who cooked up the loans have pleaded guilty to related charges in a New York courtroom. Last October the bank itself agreed to pay \$475m to regulators in America and Britain for misleading investors and violating anti-corruption laws. The ruling said that the bank had ignored warning signs, including a due-diligence report which described the contractor who ►►



Something fishy in the net

► received the money as “an expert in kickbacks, bribery and corruption”. VTB, a Russian bank which was also involved in the deals, agreed to pay \$6m to regulators.

None of that money has gone to the people of Mozambique, although Credit Suisse has said it will waive \$200m of the unpaid debt that it is trying to recover. That would be scant compensation for the crisis that the scandal caused. When the debts were revealed in 2016, donors halted aid to the government, the IMF packed its bags, the currency collapsed and growth slowed. A study by CIP and Chr. Michelsen Institute, a Norwegian research outfit, estimated that if these indirect effects are included, then the cumulative costs of the loans

add up to nearly \$11bn, almost as much as Mozambique’s GDP in 2016.

The debt itself is still outstanding. Some of it is now in the hands of investors who were not involved in corruption. Fiona Huntriss of Pallas Partners, a lawyer for some of them, says that “innocent lenders” should be paid “what is long overdue to them”. The government of Mozambique counters that it should not have to pay because the state guarantees for the debts were issued illegally. That question will be settled in yet another court case, due to start in London next year, in which virtually every party to the matter is suing everyone else. The legal proceedings may rumble on, but justice remains elusive. ■

Sexism in Egypt

What would the neighbours think?

CAIRO

Why single women find it hard to rent a flat

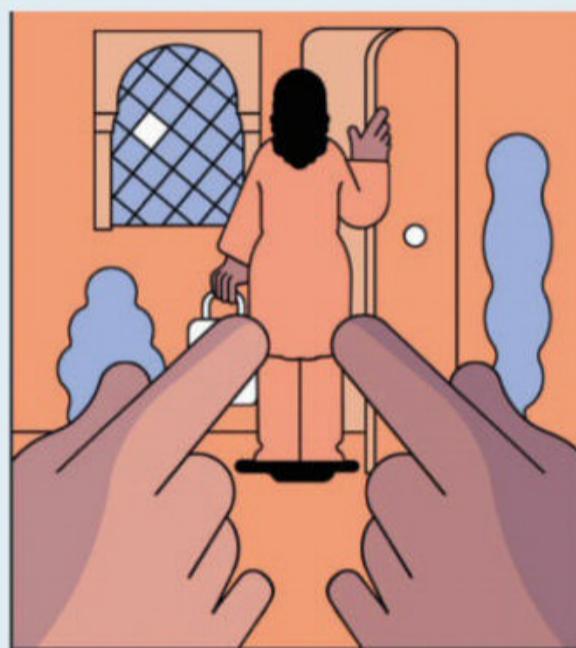
WHEN LAYLA (not her real name), an Egyptian woman, got divorced in her mid-30s, her parents assumed she would move back home. But she wanted to share with female flatmates. “What are we, Americans?” her mother wailed. No woman in her family had ever lived on her own, widows included, or with independent female friends. For an unmarried woman in Egypt, fleeing the nest can be tricky. It helps if she is wily, or rich, or lives in a neighbourhood that caters to foreigners.

Persuading the family is usually the first hurdle. Arguing simply for freedom would be valiant but often unwise. Better to cite the bad traffic as your reason. That helped convince Layla’s mother, because they both tend to be car sick. Having her own flat would shorten her commute.

Finding an amenable landlord can be awkward, too. Few let to single women, since that may damage the building’s reputation or ruffle its other residents’ moral feathers. Some let on condition that a lone woman must have no visitors.

Once an unmarried woman clinches a rental deal, she must often fend off nosy neighbours and doormen, says Basmalah, another singleton, who also spoke under a false name. Boyfriends sometimes have to sneak in when the doorman is on a coffee break. Hers took the stairs, since the lift would give away the floor he was stopping at. Luckily one of her doormen mistook her for a foreigner: she did not disabuse him. They tend to wink at those loose-living Westerners.

Some women simply fork out for freedom. Landlords in affluent neighbourhoods are often more liberal. Bribing the doorman may be the way to keep



him out of your hair. Paying for your own furniture can help, too. Egyptian police routinely question people living in rented flats in big cities. They keep a closer eye on furnished ones, says Layla, since journalists, political activists, foreigners and people selling sex are too transient to have their own furniture. Layla lugs around a futon: it buys a bit of privacy.

Single Egyptian women often help each other navigate their country’s mores. They have been known to have money sent to a stranger through social-media groups if she gets kicked out of her place and needs a hotel room. When a woman leaves a flat that permits singles, she may make sure that a friend is next in line. Basmalah knows the names of all the women who lived in her flat for the previous ten years. She and her best friend made a pact always to live in separate flats. If one gets chucked out, she will have a place to go to.

Libya’s second city

Smashed and forgotten

BENGHAZI

No one seems willing or able to save it

THE GOLD-LEAF lanterns on the railings around the tomb are modelled on those that embellish Buckingham Palace. The crenellated walls glimmer with Italy’s finest marble. A huge chandelier within hails from Egypt. The shrine to Omar al-Mukhtar, Libya’s anti-colonial scholar-cum-warrior hero, has been handsomely restored, two decades after a jealous Muammar Qaddafi dumped it in the desert.

But peer out through its arched windows and all you see is the surrounding ruin of Benghazi, Libya’s second city. Much of what was once a charming Italian city, with cafés, art-deco cinema and royal palace, is a smashed ghost town. The courthouse where Libyans rose up against Qaddafi in 2011 is awash with sewage. “Lost homeland”, reads a graffito on a chipped colonnade adorning the old Bank of Rome. Services have collapsed. Rubbish is piled up in the streets. Waste flows into the sea. Schools recently had to close after they were flooded in a storm. War profiteers and smugglers have moved in.

Like those other fine cities of the Middle East—Aleppo, Mosul and Raqqa—Benghazi was sacked in order to wrest it from Islamist rule. For three years Khalifa Haftar, a former general turned warlord who commands the self-styled Libyan National Army (LNA), shelled this capital of Libya’s eastern region (once called Cyrenaica) from land, sea and air, until it fell to him in late 2017. Egypt, France, Russia and the United Arab Emirates all lent him a hand, then left him to run it as his base.

The UN has proposed no recovery plan for Benghazi. On March 21st the Italian government hosted an architectural jamboree, which many participants attended by video, calling for the city’s regeneration. However, Libya’s power brokers in Tripoli, the country’s capital in the west, are preoccupied with arguing over oil revenues and who should be prime minister. “There’s no real will to rebuild our city,” laments Atif al-Hasiya, a Benghazi engineer.

Mr Haftar nonetheless promotes himself as its protector. “With one hand we build, with the other fight terror,” reads a slogan on a sheet flapping in the wind along the corniche. Locals speak only of the terror, inflicted mainly by Mr Haftar’s men, and say he squanders funds on military ventures and salaries for his fighters, who claim to number 127,000. In 2018 the UN reported that a brigade led by one of his

sons had raided the city's central bank, stealing \$300m in local and foreign currency. "His sons are worse than Qaddafi's," says a Benghazi businessman in exile.

Journalists in the city are monitored and muzzled. Mr Haftar's critics are liable to disappear. The *Wall Street Journal* reported in 2020 that he hoards a stash of gold, originally from Venezuela. Since he reopened Benghazi's port in 2018, it has become an entrepot for captagon, an amphetamine manufactured in Syria. "Drugs is Benghazi's main growth business," says a local academic. Dealers are said to launder money in fancy clothes shops and restaurants along Venice Street. Jewellers catering to gangsters are thriving.

Benghazi's people had hoped that Abdul

Hamid Dbeibeh, Libya's beleaguered prime minister based in Tripoli, would set about rebuilding Benghazi. Last May he unveiled a reconstruction package that included the city. He was likened by optimists to Rafiq al-Hariri, the Lebanese tycoon who used his own company to rebuild Beirut after its civil war (before he was assassinated). Various unfinished projects, such as an Olympic stadium that Mr Dbeibeh had overseen under Qaddafi, might possibly be completed. But Mr Haftar's gunmen barred Mr Dbeibeh from visiting their stronghold, and the funds never materialised. A general election scheduled for December raised hopes of breaking the deadlock but has been repeatedly put off. Meanwhile Benghazi moulders away. ■

of Egyptians work off the books in informal jobs. Less than half of Tunisians have bank accounts. The last time Lebanon conducted a census was in the 1930s. Tax inspectors are often overworked and reliant on pen and paper rather than databases. Evasion is widespread. A report in 2018 by Bank Audi, a Lebanese lender, estimated that it cost the exchequer \$5bn a year (10% of GDP at the time).

Authorities often blame this, wrongly, on the informal sector. Most Egyptians labouring in the black market should pay no income tax or a top marginal rate of just 2.5%. Even if the taxman found them all, the extra revenue would be meagre. The bigger problem is a tax system skewed towards the rich. Egypt's corporate-tax rate of 22.5% is five points below the African average, while its top income-tax bracket of 25% ranks as one of the continent's lowest. It also has no inheritance tax.

Many rich and middle-class Arabs prefer buying property to shares, seeing it as safer and more lucrative. Yet governments collect little property tax. Jordan's finance ministry estimates that it brought in just 115m dinars (\$162m) from property last year, just 1% of tax revenue.

Some countries assess property tax on rental rates rather than the value of the building, which leads to puny bills. Egypt calculates these only once every five years, with increases capped at 30% per assessment, even though property values in some parts of Cairo rise by as much as 25% a year. Rich Egyptians who play the stock-market are subject to a 10% capital-gains tax. But if they invest that money in property, the tax rate can drop below 1%.

Oil-exporting Gulf states do not levy income tax, fearing it would upset citizens and make their countries less attractive to migrants. Corporate-tax rates are low, ranging from zero to 15%. Instead they, too, lean on consumption taxes. Saudi Arabia introduced a 5% VAT in 2018, then tripled it in 2020 (a move the IMF advised against). It will account for 79% of tax revenue this year. Poorer Saudis will be hit hardest. Rich ones tend to do their big-ticket spending outside the kingdom.

Instead of making tax systems more progressive, Arab states are seeking ever more desperate ways to raise revenue. Last year a parliamentary committee in Egypt approved a 3% tax on purchases in duty-free stores (which may need a new name). Tunisia now charges people 100 millimes (3 cents) for paper receipts in shops. This is the fiscal equivalent of looking under the sofa cushions for spare change.

Such measures will not make much of a dent in deficits, but may anger citizens. In 2019 the Lebanese government tried to put a 20-cents-a-day tax on WhatsApp calls. It became a trigger for mass protests that brought the government down. ■

Taxes in the Arab world

Collecting from the wrong people

CAIRO

Arab states are raising tax revenue, but too much of it is from the poor

LIFE IN EGYPT gets more expensive by the month. Sitting in a café on a shady street, Mahmoud, a software developer, runs through the new taxes and fees. A value-added tax (VAT) was introduced at 13% in 2016, then hiked to 14%. A few years ago the government added a tax of ten Egyptian pounds (\$0.55) to Mahmoud's monthly phone bill. His cigarettes go up a pound or two whenever the treasury needs a puff of extra cash. Last time he got a new driving licence, it cost 15 times more than before.

The one tax that has not soared is the one on his most valuable investment, a rental property he bought in 2016. He says it has appreciated by \$100,000 or so, a 25% increase. But his annual property-tax bill has remained almost flat, at less than 1% of the apartment's value.

Arab countries have long lagged in collecting taxes. In 2015 the IMF estimated they raised the equivalent of 13% of non-oil GDP, compared with 17% in other emerging markets. Christine Lagarde, then the fund's director, told an audience in Abu Dhabi in 2016 that Arab states should "re-engineer their tax systems" and boost revenue.

They got the message—up to a point. Since 2016 five Arab countries have brought in VAT. Governments have imposed a spate of other levies on everything from mobile phones to cinema tickets and sought non-tax revenue by raising fees.

If they are getting better at taxing their citizens, though, they are often taxing the wrong ones, imposing a big burden on those who can least afford it. Consumption (or indirect) taxes, such as VAT, are highly

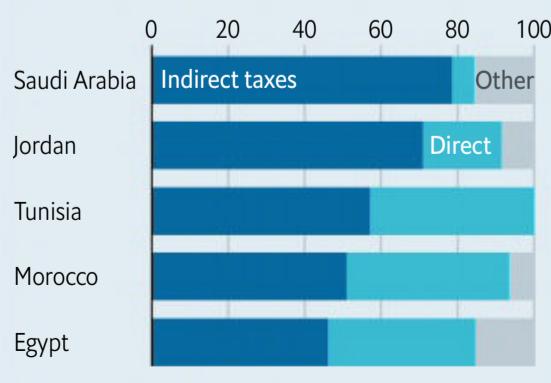
efficient but generally regressive. They tax what you spend; the poor spend more of their income than the rich. In the OECD, a club of mostly rich countries, indirect taxes raise about one-third of tax revenue. In recent decades the proportion has fallen.

Arab states are going the opposite way (see chart). Egypt collected 46% of tax revenue from goods and services in the fiscal year 2020-21, up from 40% six years before. Indirect taxes are more than half the take in Tunisia, and three-quarters of it in Jordan, where they add up to 12-13% of GDP.

The appeal is simple. Value-added taxes raise a lot of cash without distorting economies much (which is why European welfare states love them). And outside the Gulf, most Arab countries have only a patchy picture of what their citizens do and how much they earn, which makes it hard to levy direct taxes. Some two-thirds

The taxman cometh, for some

Share of total taxation, %
2022* or latest available



Source: Government statistics

**Ukraine**

After the battle

KYIV

As Russian soldiers retreat, they leave evidence of war crimes

THE LAST time that Andriy Dvornikov spoke to his common-law wife was on March 5th. He called, speaking very quietly, to say he was in trouble. He had been trapped at a Ukrainian checkpoint in Bucha, a suburb to the north-west of Kyiv, when it came under artillery fire. He was taking shelter in the basement of a nearby house along with seven other men.

One of them, Ivan Skyba, described what happened next. Russian soldiers found the group later that day and moved them to a base. They were told to take their clothes off and lie face down. Their captors searched their telephones and bodies for symbols and tattoos. To make the Ukrainians talk, the Russians killed one of them—“a short, bespectacled guy from Ivano-Frankivsk”, in Mr Skyba’s words.

Mr Dvornikov, who had fought in Donbas in 2015-16, had a paratrooper’s tattoo. After a few hours of torture, an order was issued to kill them. A soldier asked his commander what he should do. The answer was “*yebashit*” (“fucking do them in”), but “do it away from the base.” Mr Sky-

ba says they were led to the side of the building and shot. He took a bullet in his side, but it went through his body. He survived by playing dead on the concrete floor. As soon as he heard there were no voices, he fled over a fence to a nearby home. Other Russian soldiers later found him there, but spared his life. Witnesses in Bucha stress that some Russian soldiers were polite. “Some of them even said sorry,” says one.

As Russia’s “liberators” have retreated from Kyiv back towards the Belarusian border, they have left a landscape of atrocities. In all, said Ukraine’s prosecutor-general on

April 3rd, 410 civilians had been killed around Kyiv. As investigators collected evidence of war crimes and bodies were put into black plastic bags, *The Economist* was able to verify reports of what appears to have been a summary execution.

We found nine bodies lying at the side of a builder’s yard in Bucha that had been used as a Russian base. All had gunshot wounds to the head, chest or both. At least two of the victims had their hands tied behind their backs. The smell of decomposition, among other things, suggested they were killed before Ukrainian forces liberated Bucha on March 31st.

Such massacres have shocked the world. “Genocide”, Ukraine’s President Volodymyr Zelensky called it. The American president, Joe Biden, said that what happened in Bucha was a war crime and that Vladimir Putin, Russia’s president, should face an international tribunal for it, though the chances of that seem remote. The Kremlin said the whole thing was a “heinous provocation of Ukrainian radicals” and cynically demanded a UN Security Council meeting. At it, Mr Zelensky said: “We are dealing with a state that turns its veto at the UN Security Council into [a] right to [cause] death.” The EU swiftly proposed new sanctions, which would ban Russian coal and close its ports to Russian vessels. But it stopped short of imposing an embargo on oil and gas exports, the cornerstones of Russia’s economy.

The atrocities in Bucha fit a pattern. ►

→ Also in this section

38 Ukraine fights back

40 Educating Ukrainian refugees

40 Turkish sanction-busting

41 Orbán’s ugly victory

42 Charlemagne: Resisting Orbán

► Terror, torture and murder have been Russian military tactics for as long as Vladimir Putin has been in power. "This is not an excess, this is the system which deems extreme violence to be the most effective way of suppressing resistance," one Russian expert explains. This method was honed during Russia's second war in Chechnya.

In February 2000, barely a month after Mr Putin assumed Russia's presidency, his riot police and soldiers entered Novye Aldi, a suburb of Grozny, Chechnya's capital, and went from house to house murdering civilians, according to eyewitness accounts gathered by Memorial, Russia's main human-rights organisation, which was banned last year. Sweeps like these became known as *zachistka*, or "mopping-up" operations. Between 56 and 82 civilians were killed and at least six women were raped in Novye Aldi.

The European Court of Human Rights found the Russian state guilty in that case, as well as others. But in Russia the crimes were never prosecuted, giving a sense of impunity to the armed forces. It was those who documented the crimes who suffered. In 2009 Natalya Estemirova of Memorial was abducted from her home in Chechnya and killed. Anna Politkovskaya, a reporter for *Novaya Gazeta*, was gunned down three years earlier in Moscow.

An information blockade imposed by the Kremlin has made it easier for Russian forces to get away with murder. So has the acquiescence of the Russian public, who tended to dismiss the war in Chechnya as

something that was happening far away. Western governments did not, for the most part, let it get in the way of doing business with Russia.

A cult of aggression has grown like a weed. Coverage of the first Chechen war in the mid-1990s, when Russia still had free media, was dominated by stories of tragedy and despair. But the second Chechen war was dominated by the propaganda of military heroism. Violence was hailed as proof of masculinity. "Many [veterans] deliberately emphasise their ability to commit violence," says Elena Racheva, a social anthropologist at Oxford. One told her: "I always had principles. My principle was not to leave enemies alive."

From the early 2000s the Kremlin has led a campaign of military-patriotic mobilisation. Encouraged by state television, today's soldiers look to a father who fought in Afghanistan and Chechnya and a grandfather who fought in the Great Patriotic War of 1941-45 as their role models. The war in Ukraine is framed as a re-enactment of the latter, with Ukrainians cast as Nazis.

On April 1st the Russian defence ministry released a video featuring Aleksei Shabulin, a commander of a battalion that carried out a *zachistka* around Kyiv. "My great-grandfather went through the entire second world war and up to the year 1953 chased the fascist devils...through Ukrainian forests," he said. "I am a glorious successor of this tradition. Now my time has come and I will not disgrace my great-grandfather—and I will go all the way." ■

The battlefield

The turning tide

Ukraine sees a window of opportunity to push Russia back

ON MARCH 28TH Ukraine's general staff warned that the Russian army, within striking distance of Kyiv, still wanted to take the capital. A week later that army had largely evaporated from both sides of the Dnieper river north of the city. As Russian troops retreated to Belarus and Russia, pursued by Ukrainians, Kyiv began returning to normal. No shots, shells or missiles have been heard since March 30th. Non-essential shops are re-opening. Vitaly Klitschko, the mayor, has urged civilians to wait until the end of the week to return; not all are heeding his advice. But although the battle is won, the war is not.

Russia says its war aim is now to "liberate" Donbas in eastern Ukraine; some think that Vladimir Putin, Russia's president, wants to do so by Victory Day on May 9th, the date that commemorates Nazi Germany's surrender in 1945. Before the war began in February Russia controlled a third of the territory; since February 24th it has taken a lot more, including some of Mariupol, a port city.

Whether it has enough manpower to take it all remains open to question. By fo- ►

The sixth week of war: Victories and war crimes



The battle of Kyiv ended in victory for Ukraine as the invading forces withdrew under fire to Belarus and Russia. But as they retreated, they left behind evidence of summary executions and torture, which are war crimes.



410

Number of murdered civilians in Kyiv. Claimed by Ukraine's prosecutor-general on April 3rd

Refugees



As the tide turned, the number of refugees fleeing Ukraine each day continued to decline. On April 4th the UNHCR recorded 32,000 new arrivals in neighbouring countries, compared with more than 150,000 a day at the start of the war.

cusing its efforts in fewer places, Russia hopes to muster superior numbers. It has accordingly pulled back forces that were heading towards Kyiv from Sumy in north-eastern Ukraine. Units that were in Belarus are also being moved into western Russia, according to railway-tracking websites.

The problem for Mr Putin is that these forces are spent. A quarter of his initial invasion force may have been wounded or killed. Out of 125 battalion tactical groups (BTGs) gathered for the invasion, 29 have been "rendered non-combat effective", says a Western official, meaning they have had to be taken out of action or amalgamated with others. Fixing them and moving them east could take around a month.

Beyond that, there is not much left in reserve: Russia committed three-quarters of its BTGs to the war. Since then it has scraped together additional forces from wherever it can find them, including the exclave of Kaliningrad, wedged between hostile NATO states, and its garrisons in Georgia, which it invaded in 2008.

Then there are conscripts. On April 1st Russia announced its annual draft of men aged 18 to 27, with the aim of conscripting 134,500 for a year. Conscripts cannot legally be sent to war without four months of training. In reality, some of last year's batch were sent in regardless. But Russia could not send them on a large scale—nor properly mobilise its pool of reservists with previous experience—unless Mr Putin formally acknowledged that his "special military operation" was, in fact, a war.

And even if he did that, national mobilisation would take until the summer.

So this is a good time for Ukraine to press its counter-attack: on every day during the final week of March, it gained more territory than it lost. But as long as Russian troops remain in Belarus, Ukraine cannot shift all its forces to Donbas. It has to protect Kyiv and defend its supply lines from the west. Nonetheless, it should be able to shift some units to the east and south, and to do so faster than Russia can.

Ukraine, which mobilised fully on February 24th, probably has adequate manpower—it is currently drafting another 10,000 to 20,000 men. Western arms continue to pour in. The Czech Republic is providing Soviet-made T-72 tanks. More important, it says that, with Slovakia, it may allow Ukraine to use its facilities to repair equipment. Australia is sending armoured fighting vehicles. On April 5th America said it would send another \$100m of anti-tank systems. But Ukraine will also need less eye-catching things like Soviet-era artillery ammunition to feed its guns in a long war of attrition.

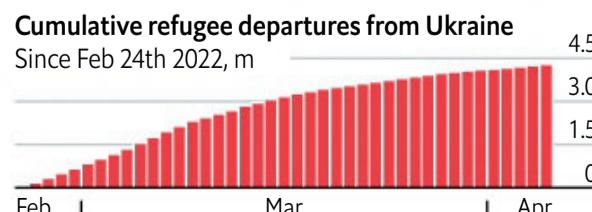
That is the sort of war that may be developing. Russia's original aim was to envelop Ukrainian forces in Donbas by striking their rear, converging on the city of Dnipro. Were it to try that now, having abandoned Kyiv and Sumy, its own flanks would be vulnerable to Ukrainian attacks from the north—it would risk being encircled itself.

So Russia is shifting to a more "brutish" approach, says Michael Kofman of CNA, a

think-tank: "It looks as though they're going to frontally assault Ukrainian forces to steadily squeeze them out of Donbas." That would involve advancing south from Izyum, north from Mariupol and pressing in areas like Severodonetsk, where Ukrainian forces are trapped in a salient.

In Donbas, Russia enjoys the advantage that its air force is stronger than it was around Kyiv, and Ukrainian air defences patchier. A frontal assault would also mean shorter supply lines, while the passage of time will mean less mud to contend with. Even so, Russia still seems to be repeating elementary mistakes it made in the first days of the war. "Even as late as [April 6th], we're still seeing single files of Russian armour attempting to advance down roads, and then coming into problems when it's met by Ukrainian resistance," says the Western official.

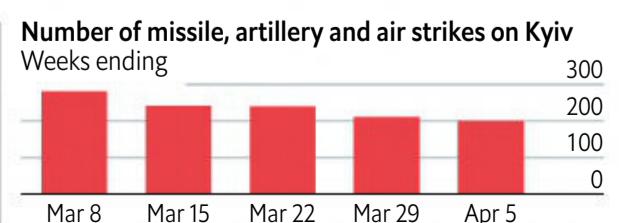
Mr Putin's gamble is that he can wear down Ukraine's army before his soldiers lose the will to fight. Some think, however, that a Russian collapse may come first. Mark Cancian of CSIS, another think-tank, reckons that as casualties mount, supplies run out and morale dwindles, Russia's generals will eventually have to come together and force Mr Putin to face facts. But there seems likely to be a lot more fighting before that. "This has similarities to major set-piece battles from prior world wars," says Mr Kofman. "And now it's going to come down not just to manpower and materiel, but also intangible factors—skill, force, employment and morale." ■



Ukraine fights back



Although Ukraine has taken back large areas in the north, Russia is pressing hard in the south and the east. Analysts expect it will continue its attempts to occupy the whole of the Donbas area. Residents have been urged to flee Kharkiv.



Educating refugees

From battleground to playground

WARSAW

Polish schools are coping with an influx of pupils from Ukraine

YULIA BODAR's classroom was once a bedroom in a Warsaw flat. Now it boasts desks at which a dozen small children, refugees from Ukraine, are learning to write. Ms Bodar, a new refugee herself, is a teacher at Materynka, a school that offers the Ukrainian curriculum from several makeshift sites in Poland's capital. Before the war began it had about 200 pupils, largely children of economic migrants. Now it has around 1,000. Larysa Vychivska, one of its founders, says her school is taking in about 20 new pupils each day.

At least a quarter of Ukraine's 7.5m children have left the country since the conflict started in February. They need not only food and shelter, but brain food, too. So far more than 160,000 have registered to attend Polish schools. Przemysław Czarnek, the education minister, says Poland may ultimately have to find room for 700,000 new pupils. That would mean expanding its school system by 14%.

At Janusz Korczak Primary School in Warsaw, almost every class has new pupils. Staff are pleased to help, but no one thinks it ideal to plonk new arrivals into normal lessons when few speak Polish. Some teachers ask Ukrainian children who were enrolled before the crisis to interpret, or use Google Translate.

The latest hope is to school newcomers separately in preparatory classes. Magdalena Berucka runs one of the few primary schools in Warsaw that offered such classes before the conflict started. She is now short of staff and space. Schools that have never tried such classes will find it hard to set them up in a hurry.

In theory online learning could help. Teenagers nearing graduation see little value in switching to foreign schools, and those from relatively peaceful parts of Ukraine can sometimes access remote classes with their old teachers. But many pupils are torn between attending Polish classes in the daytime and trying to keep up with the Ukrainian curriculum at night, says Tetyana Ouerghi, a teacher in Warsaw.

Ukraine's refugee children are receiving more help than migrant kids elsewhere in the world. The UN thinks only about half of all children who have fled across an international border are getting lessons of any kind. Among children old enough for secondary school, only one-third were in class. Lost years of schooling damage youngsters' prospects long after the tur-

Education Cannot Wait

POLAND

REFUGEE

CAMP

Hungary's election

Unstoppable strongman

Viktor Orban wins again. But his country is increasingly isolated

AS ELECTION DAY dawned on April 3rd, the coalition of parties trying to unseat Viktor Orban, Hungary's reactionary prime minister, hoped that the polls showing them trailing by six percentage points were wrong. It turned out they were, but in the other direction. Mr Orban's governing Fidesz party won 53% of the vote, while the opposition United for Hungary alliance took just 35%. Fidesz increased its margin in parliament and retained the two-thirds supermajority needed to alter the constitution. The opposition's candidate, Peter Marki-Zay, was plucked from obscurity a few months ago, and will most likely return to it. Mr Orban, the European Union's longest-serving leader, won a fourth consecutive term and looks stronger than ever.

The prime minister claimed the win as a vindication of his ideology of illiberal nationalism. Since taking office in 2010 he has changed the constitution to benefit his party, nimbled the courts and seized control over most of the media. The EU has chided his government for violating the rule of law, misusing its funds and fostering corruption. Mr Orban casts himself as an underdog defending his people against EU bureaucrats, the international left and George Soros, a Hungarian-born Jewish philanthropist whom he accuses of plotting to flood Hungary with Muslim immigrants. "We have such a victory it can be seen from the moon, but it's sure that it can be seen from Brussels," Mr Orban crowed after the results were in.

Also on his list of enemies is Volodymyr Zelensky, Ukraine's president. Mr Orban has long had friendly relations with Vladimir Putin, and claimed to be getting a discount on Russian gas. He has been the most reluctant member of the NATO and EU coalition in the war in Ukraine, fiercely arguing against sanctions on Russian energy exports. In recent weeks Mr Zelensky has demanded that Mr Orban decide which side he is on. Mr Orban retorted that the opposition would drag Hungary into the war; they denied this, but many voters believed it. Government figures released after the election showed Hungary is actually paying Russia market rates for its gas.

The opposition's defeat leaves in ruins its effort to build a coalition to stop the hollowing-out of Hungarian democracy. Because most MPs in Hungary are elected from single-member districts, smaller parties struggle to win seats. After years of de-



No match for the machine

feats, in 2020 six parties, ranging from the nationalist right to the metropolitan left, joined forces in the United for Hungary umbrella grouping. They ran primaries to select candidates for parliament and for prime minister. Party leaders set aside their own ambitions to back Mr Marki-Zay, a conservative mayor who unexpectedly won the prime-ministerial primary.

Now that coalition looks dead. Ferenc Gyurcsany, a former prime minister who leads the centrist Democratic Coalition party, seemed to question whether holding a primary had been a good idea. Peter Jakab, the leader of the hard-right Jobbik party, reproached Mr Marki-Zay for lacking a clear focus. Joining the centrist coalition was devastating for Jobbik, which lost

most of its voters to Fidesz or to Our Homeland, a new nationalist party.

A report from the ODIHR, a European election watchdog, said the election lacked a level playing field. The main problem was not tampering, though there was some of that. There were reports across the country of "chain voting", in which voters smuggle their ballots out of polling stations so that they can be filled in by party organisers and then given to other voters to submit, in exchange for payment. But the more important issues were media bias and government support for Fidesz. Mr Orban uses Hungary's state media as a propaganda megaphone, and most private outlets are controlled by oligarchs friendly to Fidesz. The opposition received little airtime, and what it got was overwhelmingly negative. It could spread its message only via a few independent news websites which most voters outside Budapest rarely read.

Under Mr Orban, the billions of euros in aid which the EU sends to Hungary each year have flowed largely to supporters of Fidesz. Hungary has the worst record of fraudulent use of EU funds of any country in the union, according to OLAF, the EU's fraud-investigation agency. Mr Orban's friends and relatives have grown rich. The EU has blocked Hungary from accessing its covid-recovery fund, and on April 5th it triggered a procedure that could cut off the rest of the aid it sends to Hungary until the country stops violating the rule of law.

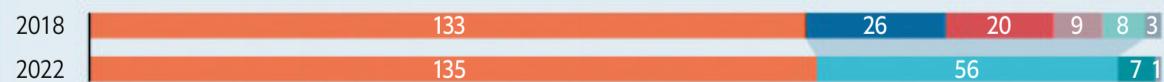
Mr Orban's win reinforces his increasingly autocratic government. His next move may be to complete the takeover of the judiciary, according to an analysis by Political Capital, an independent think-tank in Budapest. Despite the unfair electoral system, members of the opposition took most of the blame upon themselves. A Socialist MEP apologised on Facebook for failing to understand most of the country. Many opposition members were at a loss how to proceed. Asked how he expected to take up the fight in four years, an organiser of a liberal NGO had no answer: "I'm hoping to leave the country." ■

So much for unity

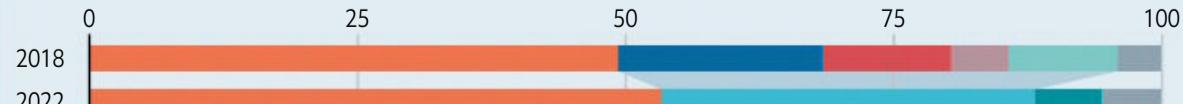
Hungary, parliamentary election

■ Fidesz ■ United for Hungary ■ Jobbik ■ MSZP ■ Democratic Coalition ■ Other UfH ■ Our Homeland ■ Others

Seats won



Share of the vote, %



Source: National Election Office

Charlemagne | Vaccinated against Viktor

Hungary cannot shake off Viktor Orban, but the rest of Europe will cope



FROM A CYNICAL European perspective, Viktor Orban's election triumphs are like covid-19 waves: nasty and seemingly inevitable, but less concerning once you have worked out how to live with them. And so it seems with the Hungarian prime minister's victory at the polls on April 3rd, his fourth in a row. The size of Mr Orban's win surprised the pundits. Yet the symptoms for the rest of Europe will be relatively mild. In recent months Hungary has been in the diplomatic equivalent of quarantine, thanks to its insistence on staying in a bubble with Russia. Better yet, Europe may have found new ways to combat this long-running affliction. Potent though it is at home, Mr Orban's brand of "illiberal democracy" may finally be fading in virulence.

True, Mr Orban's victory is one of a long series of unwelcome triumphs by practitioners of despot-lite politics. His resounding win will cheer strongmen who like to add a veneer of democratic legitimacy to their autocratic regimes, from Recep Tayyip Erdogan in Turkey to Vladimir Putin in Russia. But Mr Orban's influence beyond Hungary—not least in America's Trumpian swamp—comes from his contrived defiance towards liberal "elites" in Brussels and elsewhere. Sitting at Europe's top table while flouting its rules is a core part of the Orban shtick. The more his European peers rant ineffectually about Hungary misspending EU funds, hobbling the media, bashing gay people and subverting courts, the more Mr Orban looks like he matters.

No one, in the EU or elsewhere, can turn Mr Orban back into the liberal politician he once seemed to be. Yet Europe has a rare opportunity to isolate and neutralise him. If it works, Mr Orban, the EU's longest-serving leader currently in office, will become a politician whose relevance barely extends beyond Hungary's borders.

Three things have changed since the last time Fidesz triumphed at the polls, in 2018. The first is Russia's invasion of Ukraine. This may have helped Mr Orban win: state-backed media unquestioningly relayed his baseless claim that the opposition would drag Hungary into war with Russia. But positioning himself as the closest thing to an ally Mr Putin has in the EU—by opposing sending weapons to Ukraine, and balking at many proposed sanctions—has stripped Mr Orban of allies. Fidesz's election victories used to be cheered by some of Hungary's neighbours, such as Po-

land and Slovakia. This win, by contrast, was greeted the way office workers greet the news that a deskmate has covid. The only noteworthy message of congratulations came from Mr Putin.

Until now, Europe has been forced to tolerate Mr Orban's behaviour because he had allies. Countries in the Visegrad Group, comprising Hungary, Poland, the Czech Republic and Slovakia, long elected leaders who shared Mr Orban's illiberal leanings. This club-within-a-club stymied even the largely symbolic wrist-slapping the EU can mete out to those who break its rules: anyone bar the country being targeted could veto a move to strip it of voting rights in EU meetings, for example. But the Czech Republic and Slovakia have in recent years elected more centrist politicians. Poland, run by the Law and Justice party, still leans illiberal and had stuck with Hungary the longest. Now it is sharply criticising Mr Orban for his pro-Russian stance. Hungary is in a club of one.

Second, Europe has new powers to bring wayward members to heel. An unspoken deal paved the way for a slew of central European states to join the EU in 2004. Richer countries already in the club would agree to funnel lots of cash to Hungary and others to improve their infrastructure and so forth. In exchange, the "new" Europeans would guarantee open economies, free courts, unrestrained media and other liberal requirements. On returning to power in 2010 (after a first stint from 1998-2002), Mr Orban realised that he could take the money without honouring his side of the bargain. European taxpayers ended up funding projects that made his cronies fabulously rich. Yet even brazen defiance of EU principles did not stop the flow of cash.

Now it might. A €750bn (\$818bn) fund to ease the economic effects of covid, known as Next Generation EU, required member states to satisfy Eurocrats that the money would be well spent. Poland and Hungary are the only two countries to have been rebuffed, both over infringements of the rule of law. Poland seems likely to get its share soon: its ruling party has made gestures to comply with EU demands that it stop nobbling the court system, and other members want to reward it for taking in most of the refugees from Ukraine. Hungary has begged for the €7bn earmarked for it, to no avail. On April 5th Ursula von der Leyen, the president of the European Commission, said a new mechanism to withhold even regular EU funds from countries not abiding by European norms would be used for the first time against Hungary. It stands to lose up to €24bn over the next five years; Poland will be spared. Mr Orban can remain defiant, but he may run out of money.

Buda-pest

Perhaps most importantly, war on the continent has worn down whatever patience Europe once had towards those who seek to undermine it. Mr Putin's behaviour has shown that indulging autocrats, in the hope that trade with liberal countries will lead them to change their ways, doesn't work. Angela Merkel, a fan of that approach in her time as German chancellor, repeatedly blocked attacks on Mr Orban. Until a year ago she made sure Fidesz was allowed to remain in the European People's Party, the alliance of centre-right parties in the European Parliament. Now she is gone.

None of this is likely to be enough to change Mr Orban's ways. For the next four years at least he will continue to dominate his unfortunate country, and his cronies will continue to loot it. But an isolated Hungary stripped of EU funding will stand as a cautionary tale to other would-be strongmen in the bloc: there are limits to what they can get away with. There is no cure yet for Orbanism. But in Europe, at least, it looks like it can be contained. ■

**Immigration**

Just what the doctor ordered

GLOUCESTER

Filipino nurses are leading a new phase of immigration to Britain—the third since the second world war

LAST MAY Raymond Padilla, a former journalist from the Philippines who arrived in Britain in 2005, was elected to Gloucester City Council. Filipino reporters called his victory historic; it also seemed improbable. Gloucester, in the west of England, is not hugely diverse. At the time of the most recent published census, in 2011, only 14% of its inhabitants were anything other than white and British. The city does not even have a Filipino restaurant. When immigrants want a taste of home, they make do with Thai food.

But the number of Filipinos in Gloucester is growing. That is largely because of its hospital, where Mr Padilla works as a nurse. “We’re all over the place because hospitals and care homes are all over the place,” he says. And that growth hints at a profound change in the pattern of immigration to Britain.

Since the second world war Britain has gone through two big phases of immigration. First came migrants from former colonies such as India, Pakistan and Jamaica, who often availed themselves of free

movement within the empire and Commonwealth, just as the British colonists had done. As the Sri Lankan writer and activist Ambalavaner Sivanandan put it: “We are here because you were there.”

Then came a European phase. In 2004 Britain was one of only three EU countries to open its labour market to citizens of the Baltic and eastern European countries that had just joined the bloc. In the two decades to 2020-21 the European-born population in Britain rose from 1.5m to 3.9m, and from 35% to 41% of the foreign-born population, according to the Labour Force Survey.

The European phase ended in December 2020 when Britain enacted a new, post-Brexit immigration system. Free movement to and from continental Europe ceased. But Boris Johnson’s government made work permits easier to obtain.

Companies no longer had to prove that they had tried to hire a native Briton for a role, and the salary threshold that skilled migrants are required to clear was lowered from £30,000 (\$39,000) to £25,600. For health-care workers the threshold is even lower, at a mere £20,480. In another change, foreign students in British universities are now allowed to work for at least two years after graduating, restoring a right that they had held under the previous Labour government.

Sixteen months into the new regime, the consequences are clear. Despite the many disruptions of covid-19, Britain is issuing more work and study visas (see chart). The vast majority are not going to Europeans. In 2021 people from India received almost 99,000 study visas, up from a low point of 16,000 in 2015. Nigerians were granted 10,000 skilled-worker visas and 43,000 study visas—about as many as in the previous four years put together.

Filipinos received almost 10,000 skilled-worker visas, putting them in third place behind Indians and Nigerians. The country has become an essential source of nurses (the picture shows a training session in Manila). In the six months to September 2021, fully 3,040 Philippines-►

→ **Also in this section**

44 Commerce on the Thames

46 Bagehot: The cruel state

— **Read more at: Economist.com/Britain**

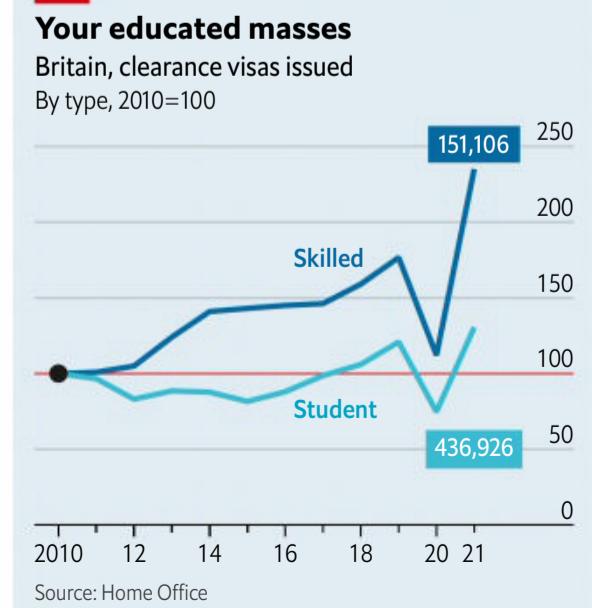
► trained nurses joined the National Health Service. That is more than the number of new NHS nurses trained in Northern Ireland, Scotland and Wales put together. Britain's covid-19 vaccination drive began in December 2020 when a Filipina matron, May Parsons, injected Margaret Keenan.

Britain's third phase of immigration looks in some ways like the first, post-imperial phase. As well as Indians and Nigerians, Britain is issuing more skilled-worker visas to people from Kenya, Pakistan and Zimbabwe—all former British territories. But the rising number of visas going to Filipinos and others with scant historical ties to Britain, such as Brazilians, reveals the difference. If the first phase of immigration was post-imperial, and the second European, this one is global and middle-class. Britain smiles on nurses, coders and students from everywhere, and on fruit-pickers from nowhere (although they are eligible for temporary-worker visas).

Filipinos are likely to keep moving to Britain, at least for a few years. The government has pledged to hire 50,000 nurses by 2024, points out Billy Palmer of the Nuffield Trust, a health-care think-tank, and "we're not going to get it from our domestic supply." An American economist, Michael Clemens, has shown that emigration from a country tends to rise until it reaches a level of income equivalent to about \$10,000 per person at purchasing-power parity, before declining. The Philippines happens to be near the peak of the curve.

Another reason to think it will continue is that Britons, who showed their dislike of free movement from Europe by voting to leave the EU, seem happier with the focus on skilled immigrants. Polling by Ipsos MORI shows that the proportion who want to see immigration reduced fell from 67% to 42% between February 2015 and February 2022. Three-quarters of Britons favour letting immigrants take health-care jobs (asylum-seekers coming across the Channel are less popular; see *Bagehot*).

A bigger problem in the next few years



might be attracting enough skilled immigrants. Real wages have stagnated and sterling is weak, reducing the value of remittances. And now that Britain is trying to recruit the global middle class, it is up against other rich, English-speaking countries. "Australia, Canada and Britain are all trying to compete for those skilled workers," says Kate Hooper of the Migration Policy Institute in Washington, DC. So is America, when politics allows.

In Gloucester, Mr Padilla is doing his bit—and not only by helping new immigrants settle. Sometimes when he rings a British customer-service helpline he is put through to a call centre in the Philippines. Recognising the accent, he switches to speaking Tagalog. At the end of a call, the call-centre worker tends to ask: so, is life better in Britain? He tells them it is. ■

Deliveries via the Thames

Bluer, greener

Could barges and boats substitute for vans and lorries?

ON A RECENT Thursday morning, the stretch of the Thames that winds through central London is largely deserted, save for the odd river bus or barge moving in with the tide, carrying empty containers to be filled with rubbish. It's a far cry from the glory days of the 19th and 20th centuries, when ships moored at the city's Royal Docks, once the largest in the world.

In the post-war years, new container vessels became too big for London's Victorian-era docks. Deliveries moved east; the city's last dock closed in 1981. It is now generally cheaper to transport goods to their final destination by road than by river. Cheaper, but not greener. As firms seek to cut emissions, some wonder if the Thames might be an answer.

Londoners have zoom parcels delivered each year, but the lorries and vans that carry those packages snarl up traffic and pump out fumes and carbon. The Port of London Authority (PLA), which wants to increase river traffic, says that barges carrying heavy freight emit less than half as much carbon as the five or so lorries it takes to haul an equivalent amount of goods. Vans are even more carbon-intensive because they take relatively few goods for the amount of emissions they spew.

Hence rising interest in the river. Since September 2020, DHL, a delivery firm, has delivered 50,000 parcels via the Thames in a pilot scheme designed to cut down on carbon emissions. Electric trucks carry parcels from Heathrow airport to Wands-

worth pier. The packages are then ferried to Bankside pier, before couriers take them to their final destination by bike.

Tideway, the firm managing the Thames Tideway Tunnel, a colossal project to upgrade London's Victorian-era sewer system, brought most of its materials to its 21 riverside sites in barges. The most construction-heavy phase of the project required about 140,000 lorry trips, less than a third of what would have been needed without using the river.

Whether big carbon savings will flow from greater use of the Thames is unclear, however. The Tideway Tunnel is a one-off project, and the motivation for using the river was largely to do with safety. Parcel delivery currently costs five times more by river than by road, estimates WSP, a consultancy. Tides and topography put natural limits on the river's capacity. How comparatively green the Thames stays depends on how easily firms can cut emissions from other modes of transport.

More river use will also require more infrastructure, in particular wharves and piers. The PLA must retrofit pedestrian piers in the city for parcel unloading, and hold on to those wharves that still exist to store heavy freight. A big increase in commercial traffic would mean tussles with residents and developers, who pay a hefty premium to be close to the water.

Even so, the Thames is set to become busier. The PLA's goal is for 20m parcels to be delivered annually; scaling up would make river delivery more cost-competitive. Firms want to be seen to cut emissions: DHL has recently expanded its pilot scheme. Worsening congestion on London's roads may also shift the calculus, especially for time-sensitive deliveries. The river will never regain its status as a dominant commercial artery, but the tide is gently running its way again. ■



Bank management



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Bagehot | Of moral panics and ethical spasms

Voters upset by the treatment of Ukrainian refugees are getting what they asked for



BRITONS WHO have offered to host Ukrainian refugees face a familiar obstacle in the form of the Home Office. But they also have support from some unlikely allies. The *Daily Mail*, which has railed against asylum-seekers for years, is leading the charge. "Britain is only granting ONE visa for every TEN refugees" shouted the newspaper recently; it would normally only complain if the ratios were reversed. Conservative MPs have attacked Priti Patel, the home secretary, for failing to let people in, rather than for failing to keep them out. Scepticism about refugees has melted among the British public. Support for resettling Ukrainian refugees in Britain (at 76%) rivals the approval ratings for the queen.

Moral panics, when people demand an authoritarian crackdown against the villain of the hour, are common in British politics. Less noticed but just as frequent is the inverse. Call it an ethical spasm. For a brief moment, newspapers, MPs and voters combine to demand a more liberal, generous approach from the government. Moral panics tend to leave a mark. The statute book is littered with knee-jerk but permanent laws on everything from dangerous dogs to paedophiles. Unlike their authoritarian cousin, ethical spasms rarely leave a trace. Once the moment passes, the state turns nasty again.

When it comes to Ukrainian refugees, the Home Office can be forgiven for not predicting the latest twitch. Cruelty is a feature of Britain's asylum system, not a bug. Welcoming refugees is a reversal of previous policy. Indeed, the department has spent the past year coming up with schemes of near comic-book villainy to deter migrants from crossing the Channel. These plans have ranged from wave machines to processing arrivals on St Helena, an island in the South Atlantic. (A deal to process asylum-seekers in Rwanda is now being mooted.) An engine built to reject people has suddenly been told to accept people, akin to slamming a car into reverse while speeding along a motorway.

Yet at the same time that the government is attempting to remove obstacles for Ukrainians, it is planning to make them higher for others. The Nationality and Borders bill working its way through parliament will make irregular entry into Britain a criminal offence, even if someone is seeking asylum, which is probably illegal under international law. According to one Conservative

peer, the proposal is "largely unnecessary...mean-minded and at times approaches the vindictive". It is nonetheless likely to become law, in this parliamentary session or the next.

The asylum system is not the only area where generosity momentarily interrupts a miserly norm. During the pandemic the government increased universal credit, a benefit payment, when it became clear that millions more would end up on it. Rather than expose middle-class voters to the reality of the day-to-day welfare system, the Treasury coughed up an extra £20 (\$26) per week—about £1,000 extra per year—to make it more generous.

If benefits were too low during a lockdown, when it was practically illegal to spend money on some things, then they are probably too low in normal times. Yet Rishi Sunak, the chancellor, felt comfortable removing the temporary increase. In the spring statement last month, Mr Sunak left those still on working-age benefits with a real-terms cut. A plurality of British voters support higher benefits. But Conservative voters tend to want them to be the same or lower. Mr Sunak declined to ramp up benefits for the same reason he opted not to seize the means of production: it is not what Conservative chancellors do.

A recent backlash against brutal policing followed a similar pattern. In 2021 footage of police breaking up a vigil in memory of Sarah Everard, a 33-year-old raped and murdered by an off-duty police officer, triggered outrage. A similar outcry occurred in 2010 during student protests, when truncheon met middle-class student's skull and the often rough-and-ready tactics of the British police were revealed to a new audience. Yet rather than guaranteeing the right to protest, the government is making it easier for police to arrest demonstrators for vague reasons such as being noisy. The British public's views on crime and punishment are Old Testament. A politician who promises draconian policing will receive more votes than one who promises a liberal approach.

Nanny for me, but not for thee

There are two explanations why ethical spasms rarely last. The charitable one comes down to ignorance. For most people in Britain, the state is kind. People come into contact with the parts of it that are still just about adequately funded, such as schools and the health-care system. Meanwhile the state pension, a benefit that most people enjoy eventually, has become more generous.

The state is predominantly nasty only to an unfortunate minority. The bulk of Britons are born there and so have little contact with the immigration system. Dealings with police are limited to asking for directions, rather than being thrown headfirst into a van. Most people have jobs and no experience of a harsh benefits system. Once a topic passes out of the public's eye, it is forgotten.

Another explanation is less forgiving, but more likely. Voters would rather have a nasty state than a nanny state. The two most popular governments of the past few decades—Labour under Tony Blair and the Conservatives under Boris Johnson—have had an authoritarian bent. Hammering protesters and cracking down on asylum-seekers has been a potent mix.

Cruelty is a choice, not a state of nature. But it is a choice voters seem to prefer. A more generous welfare system would result in higher taxes, which Britons are loth to pay for anything other than health care. Politicians with a bias towards kicking people out are more attractive than those who want to let people in. Bluntly, the state is nasty because voters have asked for it to be. The welcome mat has been rolled out for Ukrainians fleeing war. But it will be rolled up again soon enough. ■

**Mercenaries**

Vladimir's army

PARIS

How Russia's Wagner Group may affect the war in Ukraine

LOOK ONLY at the top of the photograph of four men posing in military garb and the mood seems light. One man smiles. Another puffs on a cigarette while staring straight into the lens. But glance down at their feet and you see a severed head on the concrete floor. Before beheading their victim, the men had made a video of themselves laughing as they smashed his hands and feet with a sledgehammer. The incident took place in Syria in 2017. The victim is reported to have deserted the Syrian army, and his killers were probably Russian. At least one has been identified as an operative from Wagner Group, a Russian mercenary outfit with connections to Russian military intelligence that, not for the first time, is reportedly operating in Ukraine.

The most high-profile Russian mercenary group, Wagner has ties that lead right to President Vladimir Putin. It first came to prominence in Ukraine in 2014 as Russia tried to break off the Donbas region in the east. Then, Wagner provided one of the services Mr Putin values from mercenaries:

deniability. Its men could pass more plausibly than Russian soldiers as separatist fighters. Since then the group has deployed to a host of countries, including Syria, Libya, Mali and the Central African Republic (CAR), as well as dabbling in Sudan and Venezuela, always to prop up or install strongmen favoured by Mr Putin.

In Ukraine today, Mr Putin can no longer hope for deniability from Wagner, nor for much benefit from another service he prizes from mercenaries—lowered casualty counts among soldiers whose families might wonder why their loved ones were sacrificed. Since Russia already has some 190,000 troops in Ukraine, even a few thousand Wagner mercenaries have small chance of changing the outcome of the war. But they may make its conduct still more savage. For service in Ukraine, Russian recruiters have reached out to those who were turned down in the past for having too little experience or suspect backgrounds. “They’re taking anyone and everyone,” says Ilya Rozhdestvensky, a

Russian journalist with long experience tracking mercenaries.

The group reportedly takes its name from Hitler’s favourite composer, Wagner, the call sign of its founder, Dmitry Utkin. Mr Utkin is a veteran of Russia’s military intelligence, the GRU, who fought in both Chechen wars and later commanded an elite *Spetsnaz*, or special forces, unit. Wagner’s ties to the Russian armed forces go on. Its training camp in Russia is near a GRU facility. In Libya, Syria and Venezuela, Russian military aircraft transported Wagner operatives in and out; in Libya the Russian armed forces also reportedly kept them well supplied. A shopping list of military hardware including tanks, an advanced radar system and hundreds of Kalashnikov rifles was found in a Wagner document recovered in Libya. Some of the gear could probably have been provided only by the Russian armed forces.

Wagner operatives often use passports issued by a special desk linked to the Ministry of Defence—the same desk that issued the passports of the two men who attempted in 2018 to assassinate Sergei Skripal, a former Russian spy, in Britain. In 2020, when Belarus surprisingly arrested 33 Russians who seemed to belong to the Wagner Group, Mr Putin took a personal interest and worked to secure their release. “They’re not independent at all,” summarises Kimberly Marten of Barnard College at Columbia University.

Like all mercenary outfits in Russia, the Wagner Group does not officially exist, because Russian law does not permit mercenary activities. Yet in 2018 Mr Putin acknowledged its existence, suggesting its work was fine provided it took place outside Russia's borders. "They have every right to work and promote their business interests anywhere in the world," he said. Small wonder that Russia's authorities have shown little interest in holding Wagner forces accountable for their behaviour, including the torture in Syria.

Some 10,000 men are believed to have served with Wagner since its inception, most of them former Russian soldiers with combat experience. Recruiters are said to prefer those with specialised military skills and without criminal records. The work is well paid: mercenaries in Africa receive as much as \$4,000 per month.

Though Wagner mercenaries have been dispatched on missions that served Russia's geopolitical interests, the organisation has also made plenty of money along the way. In most places Wagner operates, such as Mali or CAR, it is paid by the local government. Sometimes the deal is sweetened with control of gold or diamond mines granted to Wagner or to companies linked to the group's main backer, Yevgeny Prigozhin. In Syria Mr Prigozhin was cut into oilfields; in Mali Wagner is reportedly pocketing \$10m a month.

At times, Mr Prigozhin appears to have had tensions with some Russian officials, such as the defence minister, Sergei Shoigu. In 2018 American air strikes killed about 200 Russian mercenaries who attacked an American-backed Kurdish outpost near Deir al-Zour in eastern Syria; Russia's regular army reportedly did little to avert the slaughter. Yet Wagner seems to have recovered from such setbacks, perhaps thanks to Mr Prigozhin's connections in the Kremlin.

Mr Prigozhin served time in a Soviet prison as a young man, and upon his release he opened a hot-dog stand in St Petersburg. From that humble start he diversified into restaurants that drew the city's elite. After Mr Putin became president in 2000, he began bringing high-powered guests to Mr Prigozhin's establishments; President George W. Bush reportedly dined on duck-liver pâté, black caviar and steak with morel mushrooms at New Island, a Prigozhin-owned restaurant floating in the Neva river. Juicier contracts for Mr Prigozhin to feed the armed forces soon followed. He was later entrusted with more serious missions, including the mercenary group that became Wagner and the internet "troll farm", the Internet Research Agency, that was indicted by Robert Mueller, a special prosecutor, for spreading disinformation online to interfere with the American presidential election in 2016.

For all its lucrative business, Wagner's record is mixed. It served Mr Putin's purposes in the Donbas in 2014 and after. And in Syria, Wagner mercenaries are believed to have played a key role in recapturing the city of Palmyra from Islamic State and in helping Russia's armed forces to keep Bashar al-Assad in power. But in 2019, when Wagner was hired to fight jihadists in northern Mozambique, its fighters beat a rapid retreat after at least seven of them were killed. In Libya about 1,000 Russian mercenaries have fought for Khalifa Haftar, a rebel general, against the unrecognised government. They have not overthrown the government and have been accused of war crimes, including murdering civilians. In CAR, about 2,000 Wagner mercenaries are propping up President Faustin-Archange Touadéra, but are far from vanquishing the rebels out to topple him.

In the past six months about 1,000 Wagner operatives have arrived in Mali. They have already been accused, in a UN report, of taking part with Malian soldiers in trussing up about 30 people, dousing them in petrol and burning them alive. Human Rights Watch, a pressure group, says Russian mercenaries with Malian forces summarily executed some 300 suspected Islamist fighters, an incident it calls "the worst single atrocity reported in Mali's decade-long armed conflict." Meanwhile, jihadists continue to advance.

Mission creeps

Reports of Wagner's arrival in Ukraine appeared just days after the invasion. Ukraine's security services announced that mercenaries had been dispatched to assassinate Volodymyr Zelensky, the president, and other officials. Yet there has been no independent confirmation of that, and analysts and journalists who track the group reckon their use for such a sensitive mission is improbable. Mercenaries do not ap-

pear to be fighting beside the Russian soldiers who invaded from Russia, Belarus and Crimea. Ukraine has released information about only two fighters with Wagner connections among the many Russians taken prisoner; those men said they fought with the group in the past, but came to Ukraine with the regular Russian army.

Instead, mercenaries are reportedly moving into the parts of Donetsk and Luhansk that were already occupied, to reinforce separatists trying to break through Ukrainian lines. On March 28th the British Ministry of Defence said it expected Wagner to deploy more than 1,000 mercenaries in eastern Ukraine, including senior leaders. So far, those heading to Ukraine do not appear to be from the core group. "They're using the old Wagner infrastructure—the base, the recruiting channels," says Ilya Barabanov, a Russian journalist who has reported extensively on the group. "But it's not what we're used to calling 'Wagner'." Ukraine's military intelligence says the mercenaries are a new incarnation of Wagner called "Liga", Russian for "league". They are being offered more than 200,000 roubles (\$2,367) per month, several times more than regular soldiers typically get.

Russia may also be turning to Syrians and others who once fought beside Wagner. Mr Shoigu, the Russian defence minister, claimed to Mr Putin that 16,000 "volunteers" from the Middle East were ready to fight in Ukraine. Videos from CAR also show armed African men declaring they want to fight for Russia. Though there is little evidence of more than a trickle to Ukraine so far, foreign fighters might add more bulk than mercenaries alone. Yet they may not prove particularly motivated. Many would probably be "press-ganged" into it, as they were when Russia sent Syrians to back Mr Haftar's failed push in Libya, argues Ms Marten. During a decade of civil conflict, Syrian soldiers showed more aptitude for stealing household appliances and selling drugs than fighting.

Western intelligence suggests some Wagner mercenaries may be leaving Libya for Ukraine. Perhaps even a few are departing from CAR. But for now the signs of redeployments are limited. "No one cancelled the other commercial contracts," Mr Barabanov notes. Indeed, well after the war in Ukraine began, Wagner sent more mercenaries to Mali, says a French military official. "We think that there will be no major impact to deployments in Mali and CAR," he adds. Even if more Russian mercenaries do arrive in Ukraine, their record suggests they may contribute less to the momentum of the conflict than to the lengthening list of war crimes. ■



A view to a paycheque



Headset wars

Seeing and believing

Tech firms are betting that “extended reality” glasses could be the next big product—and perhaps the next big platform

WITH EYES like saucers, nine-year-old Ralph Miles slowly removes his Quest 2 headset. “It was like being in another galaxy!” he exclaims. He has just spent ten minutes blasting alien robots with deafening laser cannons—all the while seated silently in the home-electronics section of a London department store. Sales assistants bustle around, advertising the gear to take home today. “That would be sick!” enthuses Ralph. “Don’t get him started,” warns his dad.

Children are no longer the only ones excited about “extended reality”, a category which includes both fully immersive virtual reality (VR) and augmented reality (AR), in which computer imagery is superimposed onto users’ view of the world around them. Nearly every big technology firm is rushing to develop a VR or AR headset, convinced that what has long been a niche market may be on the brink of becoming something much larger.

Meta, Facebook’s parent company, has sold 10m or so Quest 2 devices in the past 18 months; Cambria, its more advanced head-

set, is coming this year. Microsoft is pitching its pricier HoloLens 2 to businesses. Apple is expected to unveil its first headset by early 2023 and is said to have a next-generation model in the pipeline. Google is working on a set of goggles known as Iris. And a host of second-tier tech firms, from ByteDance to Sony and Snap, are selling or developing eyewear of their own.

The tech giants spy two potentially vast markets. One is the kit itself. Only around 16m headsets will be shipped this year, forecasts IDC, a data firm (see chart on next page). But within a decade sales may rival

→ Also in this section

51 Elon Musk’s Twitter habit

51 How MBAs boost profits

52 Buy-out barons circle Toshiba

52 Beijing warms to New York

53 Bartleby: Hybrid expectations

54 Schumpeter: EV recoupling

those of smartphones in mature markets, believes Jitesh Ubrani of IDC. “Some people ask, ‘Do you think this is going to be as big as what smartphones created?’” says Hugo Swart of Qualcomm, which makes chips for both headsets and phones. “I think it’s going to be bigger.”

That points to the second, still more tantalising opportunity: control of the next big platform. Apple and Google have established themselves as landlords of the smartphone world, taxing every purchase on their app stores and setting rules on things like advertising, at the expense of digital tenants such as Facebook. Whoever corners the headset market stands to acquire a similarly powerful gatekeeping position. “It is going to be the next big wave of technology,” says Mr Ubrani, “and they all want to make sure they get a piece of that.”

The search for the next platform comes as the last one shows signs of maturing. Smartphone shipments in America fell from a peak of 176m units in 2017 to 153m in 2021, according to IDC. The advertising model that has powered firms like Facebook and Google is under attack from privacy advocates. In response, Mark Zuckerberg, Meta’s boss, has bet the future of his company on the “metaverse”. Microsoft’s CEO, Satya Nadella, has said that extended reality will be one of three technologies that shapes the future (along with artificial intelligence and quantum computing). Sundar Pichai, his counterpart at Alphabet, Google’s corporate parent, said last year ➤

► that AR would be a “major area of investment for us”. Venture-capital funds pumped nearly \$2bn into extended reality in the last quarter of 2021, a record, according to Crunchbase, a data company.

Some 90% of headsets sold today are VR. Since buying Oculus, a headset-maker, for \$2bn in 2014, Meta has captured the market, with 80% of VR sales by volume in 2021. The Quest 2, which offers a convincing (if mildly nauseating) experience with no need for an accompanying computer, has been a hit since its launch in 2020, helped by lockdowns and a \$299 loss-leader price. Last Christmas the Quest’s smartphone app was the most-downloaded in America. Smaller rivals like HTC, a Taiwanese electronics firm, and Valve, an American games developer, which make VR gear for gaming, are being squeezed. Pico, a headset-maker owned by ByteDance, TikTok’s Chinese owner, is doing well in its home market, where Meta is banned.

Meta’s VR strategy still revolves around ads. It is selling headsets as fast as it can in order to build an audience for advertisers, says George Jijashvili of Omdia, a firm of analysts. Horizon Worlds and Venues, its virtual spaces for hanging out, claim 300,000 monthly visitors. To the irritation of some of them, Meta has already experimented with running ads there. The Cambria, a more expensive “pass-through” headset that combines a VR-like screen with front-mounted cameras to display footage of the world outside, will train cameras on users’ faces. That will enable the capture of facial expressions in virtual form—as well as the monitoring of which ads eyeballs linger on.

Meta is also monetising its app store. From next year the market for VR content will surpass that for VR hardware, reckons Omdia. One of Mr Zuckerberg’s motives for pushing the new platform is to liberate Meta from dependence on phonemakers for the distribution of its apps. The firm has become a digital landlord itself, with the power to tax Quest-store purchases in the same way that Apple and Google take a cut of smartphone app sales (Meta declines to say how much it charges).

While Meta ramps up its efforts in VR, others are experimenting with the knottier technology of AR. Unlike VR, which takes you to another place, AR is “anchored in the world around you”, says Evan Spiegel, boss of Snap. His Snapchat social-media app has long provided AR filters for phones, allowing users to turn themselves into cartoon characters or virtually try on products like clothes and make-up with the help of their device’s camera. Snap is now toying with hardware, building a prototype set of AR Spectacles, which have gone out to a few hundred software developers.

Your correspondent wandered through a floating solar system and was chased

around Snap’s London offices by holographic zombies as he tried out the Specs, which at 134 grams look and feel like a chunky pair of sunglasses. The downside of their slender styling is a battery life of 30 minutes and a tendency to overheat. Limits in optical technology restrict the field of view to a square in the middle of the lens, meaning that overlaid graphics are seen as if through a letterbox. Snap’s main reason for making the device is to discover use cases for AR headsets when they become widely adopted, says Mr Spiegel. In the hardware market, “We have a shot. But our goal is still really on the AR platform itself.”

For now, AR glasses are a niche within a niche. High cost and wobbly performance limit their appeal. IDC expects industry shipments of 1.4m units this year. The top seller in 2021 was Microsoft’s HoloLens 2, a \$3,500 device used by big clients including America’s armed forces (whose order for 100,000 pairs provoked complaints from Microsoft staff that they “did not sign up to develop weapons”). Magic Leap, a startup in Florida, will launch the second generation of its AR glasses, with a wider field of view, in September. It is targeting industries like health care and manufacturing, rather than consumers.

Despite VR’s dominance of the headset space, AR sparks more excitement about mass adoption. Even with Meta’s relentless promotion of virtual concerts, office meetings and more, few people use VR for anything other than gaming: 90% of the \$2bn spent on VR content last year went on games, according to Omdia. Tim Cook,

Apple’s boss, has criticised VR’s tendency to “isolate” the user. “There are clearly some cool niche things for VR. But it’s not profound in my view,” Mr Cook has said. “AR is profound.” Apple has shown notably little interest in the immersive metaverse that excites Mr Zuckerberg.

Apple’s upcoming pass-through headset will give a taste of the AR experience. A pair of true AR glasses are still in early development. These first products are said to be aimed at designers and other creative professionals, rather like its high-end Macintosh computers. Still, the firm’s entry into the industry could prove to be a watershed. “Apple’s ability to drive adoption is probably unparalleled in the market,” says Mark Shmulik of Bernstein, a broker. It will hope to do brisk business in China, giving it an edge over Meta. IDC predicts that in 2026, 20m pairs of AR glasses could be shipped worldwide, making them about twice as popular as VR goggles are today.

Argumented realities

The big question is whether headsets can go beyond gamers and professionals, and become a true tech platform rather than just an accessory. Today’s AR and VR gear is good at solving “very specific pain-points”, says Tony Fadell, a former Apple executive who helped develop the iPhone. A generalisable platform such as an iPhone “is a whole different story”, he says. “And I don’t believe it,” he adds, at least for the next five years. In the foreseeable future, Mr Fadell thinks, headsets will be a bit like smart watches, popular but not revolutionary in the way the smartphone has been.

Mr Spiegel agrees that headsets will not fully replace phones, just as phones have not done away with desktop computers. But, he points out, “one overarching narrative is that computing has become way more personal.” It has moved from the mainframe, to the desktop, to the palm of the hand. The next step, he believes, is for computing to be “overlaid on the world around you” by AR. Desktop computing was mainly about information processing, and smartphones were mainly about communication. The next era of computing, he suggests, will be “experiential”.

In this scenario headsets could be part of a broader ecosystem of wearable technology that draws consumers’ attention—and spending power—away from the smartphones that have hypnotised them for the past decade and a half. With smart watches, smart earphones and, soon, smart spectacles, the phone could become personal computing’s back office rather than its primary interface. Gadgets on your eyes would complement the “things on our wrists, things on our ears and things in our pockets”, thinks Mr Shmulik. One day, he speculates, “you might even forget that you’ve got your phone.” ■



Elon Musk and Twitter

Another Musk-have

SAN FRANCISCO

A stake in Twitter may be a meme too far for the world's richest man

WHAT WILL he do with it? That was the big question after Elon Musk let it be known on April 4th that he had amassed a stake of 9.2% in Twitter, making him the social-media firm's largest shareholder. Will the world's richest man buy more shares or even take Twitter private? Will the boss of Tesla take a hands-on role in Twitter's management? Will the libertarian troll push to bring back Donald Trump, kicked off the platform after inciting an assault on the Capitol in January 2021? Speculation mounted after Twitter said a day later that Mr Musk would join its board.

As is his wont, Mr Musk will reveal his plans in his own time and probably in his own tweets to the 80m people who follow him on the platform (not many fewer than followed Mr Trump before he got the boot).



CEO, chairman, social-media baron

In posts published before he announced the investment, he complained that Twitter "serves as the de facto public town square" but fails "to adhere to free-speech principles". He urged the company to open up the algorithm that decides which tweets users see. In light of his well-documented sympathies for cryptocurrencies and their

underlying technology, the blockchain, he could try to turn Twitter into a decentralised service controlled by users.

It is hard to see how that would make the company more profitable. Investors rejoiced anyway. Some may be believers in the "Elon markets hypothesis", which holds that stocks should be valued based not on fundamentals but on their proximity to Mr Musk. Others may hope that he can really shake things up. Twitter has been a much bigger cultural success than a commercial one. Before Mr Musk's move sent its share price up by a third, the firm's market value had been languishing around \$30bn, not much higher than where it was when it went public in 2013. By comparison, its social-media rival Meta (née Facebook), briefly became a \$1trn company and its market capitalisation is up more than five-fold in the same period despite a recent tumble (it is currently worth \$631bn).

Whatever Mr Musk's designs for Twitter, one near-certainty is that they will require money, time and attention. That raises another question: is the self-styled Technoking overextending himself?

Financially, he isn't. The investment in Twitter, which cost less than \$3bn, is chump change for Mr Musk—about 1% of his net worth. A bigger concern, especially to investors in his other firms, is over his workload. Twitter comes on top of several big corporate commitments. Besides running Tesla, a \$1.1trn electric-car giant with nearly 100,000 employees, he heads up SpaceX, a privately held rocketry firm valued at \$100bn. He also helped found two drilling startups, one making big holes to build tunnels (The Boring Company), the other making tiny ones to implant electrodes in the brain (Neuralink). Adding a Twitter board seat to his résumé may overtax even a functioning workaholic and astute delegator like Mr Musk. Now 50 years old and the father of eight, he has been putting in 100-hour weeks for decades, as he recently revealed in an interview.

Where Mr Musk may be most overextended is in his trolling—not so much of his numerous critics (though he does plenty of that in his spare time) but of regulators. America's Securities and Exchange Commission was already after him for allegedly violating a court agreement to have his tweets lawyered before publishing, reached after he tweeted in 2018 that he had "funding secured" to take Tesla private, which he ended up not doing.

The Twitter investment may get him into further trouble. He made it public a few days after the deadline for such disclosures. And his filing suggested that he would be a passive investor, which seems at odds with his joining the board. Expect his Twitter habit to raise even more eyebrows now that he is no longer just a big user but a large shareholder, too. ■

Business education

Degrees of unconcern

Bosses with MBAs are good for profits but bad for workers

HARVARD BUSINESS SCHOOL is all about its graduates' "lifelong impact" on society. INSEAD exhorts its alumni to "drive business as a force for good". Believe these and other MBA prospectuses, and a student arriving as an ordinary human being will leave as a virtuous do-gooder. Such claims have always strained credulity. A new working paper by Daron Acemoglu, Alex He and Daniel le Maire, a trio of economists, puts numbers on the disbelief.

The authors look at newly appointed CEOs in America and Denmark. They find those with MBAs increase returns on assets in the five years after their appointment—by a total of three percentage points on average in America and 1.5 points in Denmark. But that is not because they boost sales, ratchet up investments or raise productivity. Rather, the higher returns are the result of suppressing workers' wages, which fall by 6% in America and 3% in Denmark over the five years after an MBA takes charge. In short, ushering MBAs into corner offices seems to boost shareholder value by slicing the pie in certain ways, not by making the pie bigger.

The researchers put this phenome-

non down to change in business-school syllabuses. MBA programmes, says Mr He, have over the years grown less focused on technical aspects of finance and management, and more obsessed with maximising shareholder value and corporate leanness. The result, he and his colleagues contend, is that workers have increasingly been seen as "costs to be reduced" rather than an investment in human capital.

People drawn to MBA courses in the first place may, of course, simply be more ruthless than holders of other degrees. But there may be something to the syllabus hypothesis. Chief executives who earned their MBAs after 1980 were likelier to stint on employees than graduates from earlier MBA classes. If the general shareholder-friendly zeitgeist which took hold around that time were the whole explanation for this intergenerational difference, then MBAs and non-MBAs ought to be equally affected. The study shows this was not the case. Further work will be needed to see whether feeding MBAs modules such as "Re-imagining Capitalism" (Harvard) and "Business and Society" (INSEAD) does anything to reverse the trend.



Toshiba

In search of an ending

TOKYO

Foreign private-equity barons circle a fading jewel of corporate Japan

TOSHIBA WAS once synonymous with Japan's industrial might. Of late the conglomerate, which has made everything from memory cards to nuclear reactors, has become a byword for drama. Japan's business press writes of "Toshiba Theatre", which began with accounting fraud a decade ago and has continued to the present day in a series of "slapstick" struggles between management and shareholders. Toshiba's share price has underperformed domestic and foreign rivals, as well as the broader Japanese stockmarket (see chart).

The latest plot twist comes amid talk of a buy-out led by Bain Capital, an American private-equity group. This raised hopes among investors for some sort of resolution to the saga. Toshiba's market value has risen by a quarter in the past month.

The opening act in the Toshiba specta-

cle was tragic. The firm cooked its books to inflate profits by \$1.2bn between 2007 and 2014. Implicated executives bowed deeply in apology. A new crop of leaders had to apologise again two years later when a big bet on Westinghouse, an American nuclear-power company, went sour. To remain solvent, Toshiba sold its prized memory-chip unit to a Bain-led consortium and issued a block of new shares. Foreign activist investors spied opportunity. Effissimo Capital Management (ECM), a Singaporean asset manager, amassed a stake of nearly 10%, making it the single largest shareholder in the company.

That set the stage for a protracted second act of tragicomedy. As shareholders pushed for better returns and more transparency, Toshiba executives squirmed. Some colluded with the Japanese government to stop the activists from getting seats on the board in 2020, according to an independent inquiry. A year ago a surprise bid to take the company private collapsed, bringing the CEO, Kurumatani Nobuaki, down with it. Tsunakawa Satoshi, a former boss who returned to the job after Mr Kurumatani's ousting, argued instead that the group should be split up.

This plan, too, faltered, and on March 1st Mr Tsunakawa fell on his sword. At an extraordinary general meeting three weeks later, shareholders killed the management's proposal for a split into two businesses, one focused on electronics, the other on infrastructure. At the same time, they also rebuffed calls from Toshiba's second-largest investor for the group to court buy-out offers.

The impasse set the stage for act three. On March 31st ECM announced it had signed an agreement to sell its stake to Bain if regulators gave the nod to the American firm's bid. A deal would be hefty. Toshiba's market value is \$17.5bn; a premium could add a few billion, putting it in striking distance of the top ten leveraged buy-outs in history. Given Toshiba's history (which stretches back to 1875) and prominence (it employs nearly 120,000 people), the transaction would also mark a big advance for both foreign investors and private equity in Japan, which has not historically been welcoming to either.

Hurdles remain. Japanese laws regulating foreign investment were amended in 2020 to increase oversight of industries important to national security. Toshiba has interests in several, including nuclear power, defence, chips and quantum computing. Regulators helped scuttle earlier buy-out bids. Bain appears to have learned from those experiences, and is said to be in discussions with Japanese funds and companies to form a consortium that would be palatable to the government. But "many issues" must still be resolved, Bain acknowledged. The curtain is far from closed. ■

Business in China

Double-entry book-keeping

SHANGHAI

Chinese regulators warm to American listings

IN MOST COUNTRIES the state has no business in most commercial secrets. The Chinese authorities have long taken a different view, considering the review by foreign regulators of accounting documents drawn up in China for Chinese companies listed outside the mainland as an infringement on sovereignty, potentially punishable by death. The government softened its stance in 2020, when some such documents were shared with a Hong Kong accounting body. Now it seems ready to open the books to American regulators, who have been keen for a peek for more than a decade, in order to ensure the soundness of Chinese securities listed in New York.

On April 2nd the China Securities Regulatory Commission (CSRC) indicated that it will allow American inspections of Chinese accounting papers. The concession from the Chinese government is a breakthrough in one of the costliest regulatory spats in capital-markets history.

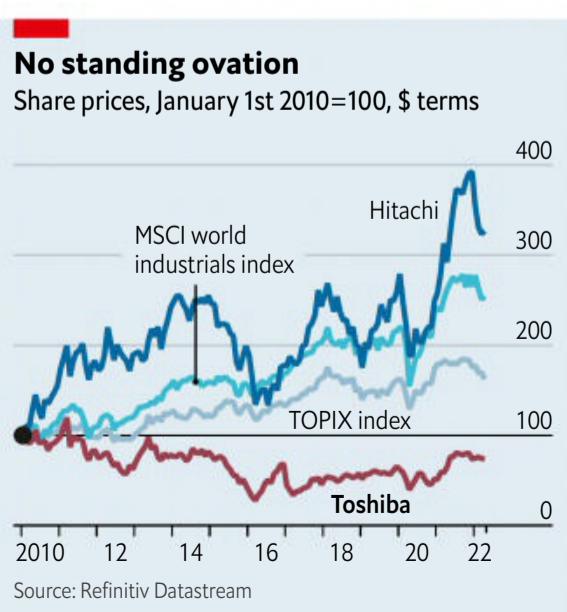
Without the reviews, an American law from 2020 could eventually force nearly \$1trn-worth of Chinese stocks off New York's exchanges. Although this would not happen until 2023 at the earliest, the mere prospect has exacerbated a sharp sell-off in Chinese technology stocks abroad, already battered by a broad clampdown on the tech industry at home. The NASDAQ Golden Dragon China Index, which tracks Chinese firms listed in New York, is down by two-thirds from its peak in February 2021. The publication last month of a list of 11 candidates for delisting by America's Securities and Exchange Commission (SEC) shaved another \$260bn from the collective value of American-listed Chinese stocks. ►

Cross-border trades

Stockmarket indices, Jan 1st 2020=100, \$ terms



Sources: Bloomberg; Refinitiv Datastream



Market sentiment was boosted by the CSRC's decision to cut a clause in securities rules that "on-site inspections will be dominated by domestic regulators or depend on the conclusions of inspections by domestic regulators." The Chinese stocks have recouped most of the losses sustained after the SEC's warning. Still, investors remain wary. The shares trade far below their prices a year ago, and they have performed worse than either Chinese tech firms listed in Hong Kong or American tech stocks overall (see chart on previous page).

One reason is growing concern over

geopolitical friction between China and the West. This, reckons Deutsche Bank, "has permanently impaired" valuations of Chinese stocks in America. It is also unclear how China's newfound fondness for information-sharing will work in practice. The CSRC proposes setting up a "cross-border regulatory co-operation mechanism" to conduct the inspections. This may fall short of American demands for independent reviews. The CSRC also retains the power to approve foreign inspections. Investors may distrust its assurances that it would only rarely deny such approval be-

cause of the sensitivity of the material.

And doubts persist about how much protection American oversight would actually afford investors. Chinese regulators with full access to accounts have failed to spot many a fraud. Chinese executives seldom face punishment in their home country for defrauding American shareholders, says Soren Aandahl of Blue Orca Capital, a Texan short-seller which has uncovered mischief at some Chinese firms. Until that changes, an incentive to fiddle with the numbers will remain. After all, books don't get uncooked merely by being opened. ■

Bartleby The value of clarity

Clear expectations are the secret to making hybrid work a success

WHITE-COLLAR WORKERS tend to like hybrid working. Research by Nicholas Bloom of Stanford University suggests that, on average, employees reckon the blend of in-person and remote work is a perk equivalent to an 8% pay increase. The biggest attraction of days spent working from home is the absence of a commute. Other benefits include not having to get ready for the office: the proportion of people wearing a fresh set of clothes drops by 20 percentage points when they are not commuting.

Executives have been keener to get people back into the office full-time, so that employees can bond with peers, absorb the corporate culture and appreciate the awesome power of laundry. But even sceptics have accepted that hybrid working will be part of the post-pandemic future: in his annual letter to shareholders this week, Jamie Dimon, the boss of JPMorgan Chase, said he thought that about 40% of the bank's staff would be hybrid. The job now is to make sure that hybridisation works as well as it can for both employees and employers. That depends on one ingredient above all: clarity. Things function best when everyone knows what is expected.

Start with the shape of the hybrid week. One of the great theoretical attractions of hybrid working to employees is that they get to choose what days they come in. But the point of in-person working is to spend time collaborating and bonding with their colleagues: that is much more likely to happen if companies are clear about who they want in the office on which days of the week.

Clarity also maximises the benefits of work-from-home days. If office time is best spent in a whirlwind of collaborative brainstorming and socialising, home days are logically the time when



solo and focused work should get done. That requires bosses to do what comes unnaturally to them, by resisting the temptation to interrupt at will.

It is easier to do that if expectations are clear. Anne Raimondi of Asana, a work-management platform, says the firm expects people to come in on Mondays, Tuesdays and Thursdays, and has a "no meetings" day on Wednesday. If a manager wants to have a meeting that day, they have to "recontract" with their team and explain why it is needed.

By the same token, being explicit when a reply is needed on an email saves everyone scurrying around in a desperate bid to answer the boss first. Defining what kinds of work can be done asynchronously and what requires everyone to get together is a recipe for fewer, better meetings. Encouraging a set of do-not-disturb protocols makes it less likely that employees will be bothered unnecessarily.

Clear protocols also make hybrid meetings go better. Harry's, a shaving firm that has published its guidelines for hybrid working, expects each attendee to have

their own screen and promises not to keep discussing the matter at hand once remote colleagues have left the meeting (though commenting on who is wearing the same clothes as they did yesterday is presumably fine).

Some of this will be deeply alarming to managers who worry about slippery slopes. First you give people space to focus at home, and soon enough you cannot contact anyone because they have changed their settings on Slack and are binge-watching "Bridgerton".

There are three answers to such worries. First, expectations are firmly in the gift of managers. Asana's no-meetings day does not extend to meetings with customers, for example.

Second, burnout is as much of a risk as slacking. New research from Microsoft finds evidence for what it calls a "triple-peak day". As well as the usual large crests in activity in the early morning and after lunch, around 30% of employees at the tech giant also experience a smaller, third bump in work in the late evening. That may be a sign of people getting work done when it suits them—or of the workday extending relentlessly into every waking hour. Setting expectations, over things like how quickly notifications need to get a response, can help determine which one it is.

Last, good performance is not defined by employees' locations at specific times of the day but by what they achieve—what Mr Bloom calls "managing outputs, not inputs". If bosses can articulate what counts as productive activity, and evaluate it regularly, it matters less whether employees are at headquarters or staking out the spare bedroom. Managers may have concerns about hybrid working, but it is pretty clear what will make it successful.



Schumpeter | The catfish effect

Save globalisation! Buy a Chinese EV



SCHUMPETER IS NOT a car owner. He bought his last one, a diesel-fuelled Volkswagen, in 2015, days before the emissions-cheating scandal erupted. He was so appalled that when the car's engine caught fire he vowed never to buy another and took to a bike instead. He has lived in emissions-free smugness ever since. At least he did—until increasing numbers of electric vehicles (EVs) started to swish past, signalling even more virtue. Now his car envy has returned—but with a dilemma. Some of the most appealing EVs in Europe are either made in China (Tesla) or by Chinese-owned firms (MG). Given concerns about the decoupling of trade into ideological blocs, should that be a dieselgate-sized worry?

To answer that question, first examine what is known in China as “the catfish effect”, the idea that a predator makes weaker rivals swim faster. For years China led the world in production and purchase of EVs. However, the cars were heavily subsidised and shoddy. They were a response to the government’s desire to scrub the air and leapfrog the internal-combustion engine, a technology in which China was a laggard. Delighting customers was an afterthought. No Chinese EV-maker was as world-beating as Huawei became in smartphones—before America blackballed it in 2019.

That same year Tesla set up shop in Shanghai and began rolling Model 3s off the production line. It became, says Gregor Sebastian of the Mercator Institute for China Studies in Berlin, the epitome of a catfish. The effect was similar to the benefit that production of Apple’s iPhone in China brought to the country’s smartphone market, where local suppliers had to raise their game to meet international standards. Chinese carmakers’ ambitions likewise rose. The result has been an accelerated shift towards electrification. BYD, a battery manufacturer turned China’s biggest seller of EVs and hybrids, said on April 4th that it had ceased making full combustion-engine vehicles. As with Tesla, its sales are booming.

As yet, no Chinese EV-maker is an export powerhouse. Stock-market analysts are playing up the potential, hoping this will bring Tesla-like valuations, says Tu Le of Sino Auto Insights, a consultancy. But most of China’s EV exports are by wholly foreign brands, such as Tesla, or those with Chinese partners, such as BMW. Foreign marques account for most of the 296,000 Chinese-made EVs and plug-in hybrids sold abroad last year—more than

quadruple the number in 2020. Because of high American tariffs, the favourite destinations are Europe and South-East Asia.

China’s biggest EV firms are adopting a variety of export strategies to catch up. SAIC, a state-owned car company, is making inroads in Europe under the cover of MG, a classic British sports-car brand that it bought in 2007. It keeps its Chinese identity hidden behind the alluring octagonal nameplate, which may be why sales hit more than 52,000 in Europe last year, double the year before, many of which were EVs. BYD, as well as Nio, which hopes to take on luxury marques like Mercedes, have made EV-friendly Norway the springboard for their forays into Europe. In South-East Asia the strategy is to “attack the villages to surround the cities”, says Scott Kennedy of the Centre for Strategic and International Studies, a think-tank in Washington. That means selling low-cost EVs where Western companies do not venture, in order to strengthen supply chains. Taxi fleets are a popular target for firms like BYD.

Until recently it was considered a long shot that such low-cost brands could penetrate developed markets as well as developing ones. The EV market in China includes scores of also-rans and it begs for consolidation. The firms lack the overseas sales networks of global rivals. Yet they have their own built-in advantages, including access to the best battery supply in the world and in some cases more sophisticated software than European rivals. China is also taking international safety standards more seriously.

If its EV-makers thrive, it would be good for more than just the car market. The more high-quality Chinese products appeal to international consumers, the more of a stake China has in preserving global trade. EVs encompass many of the strategic tensions that burden the trading system. They are heavily reliant on semiconductors, which has become a sore point in China, and on batteries, Chinese dominance of which is a bugbear for the West. They are hugely subsidised. The harvesting of personal information to improve traffic routes, charging and self-driving technology raises thorny questions about privacy, data storage and cyber-security. The EV industry is also exposed to trade wars: since 2018 America has levied 25% tariffs on Chinese battery cells, electric motors and other EV components. The European Union, with its green agenda, is less overtly protectionist for once.

Most Western carmakers have enough of a stake in keeping supply chains open, and in maintaining access to China’s own market, that they would prefer not to erect more trade barriers. They know, however, that China is using them as catfish to improve its own industry. At any point it could decide that they have done their job. That could throw the entire global market, including China’s, into turmoil.

Completing the circuit

Yet the catfish effect can work in both directions. Last month Bloomberg reported that CATL, China’s battery behemoth, was considering building a \$5bn factory in North America. In response Jim Greenberger of NAATBatt International, a battery trade body, said he would welcome this as long as CATL brought battery-manufacturing tech and know-how in order to foster technology transfer to American firms.

That, of course, is the magic of globalisation. Over time, competition and co-operation lead to the exchange of ideas, benefiting all. It will not last if geopolitical tensions, heightened by Russia’s pounding of Ukraine, splinter the world economy into competing blocs. If buying a Chinese car feels unfamiliar, remember that you are supporting globalisation. Not bad as fringe benefits go. ■



The jobs boom

Too much of a good thing

OMAHA AND PARIS

Are labour markets in the rich world too tight?

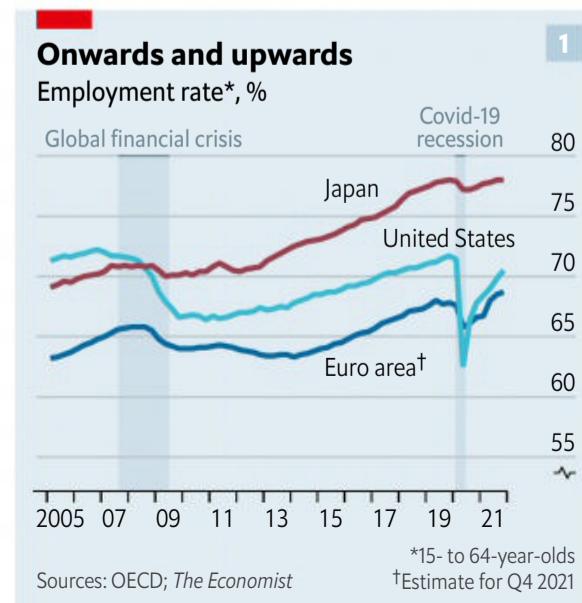
LAST MONTH Jerome Powell, the chairman of the Federal Reserve, identified the most uncomfortable trade-off in economics. “Today’s labour market”, he said at a press conference, is “tight to an unhealthy level”. In most places and at most times a fall in unemployment, or a rise in the number of people in work, is welcome. But labour markets can become too strained, creating worker shortages that stop production and cause wages to spiral, which can feed into overall inflation.

Mr Powell fears that America has crossed the threshold from good-tight to bad-tight, one reason why the Fed is signalling that higher interest rates are on the way. Increasingly, though, labour markets elsewhere in the rich world are also straining at the seams.

Almost nobody saw this coming. When the pandemic struck in 2020, most economists believed that the rich world was in for a long spell of high unemployment, similar to what happened after the financial crisis of 2007-09. In April 2020 America’s unemployment rate hit 14.7%. Had joblessness declined at its post-financial-crisis

pace, the unemployment rate in March this year would have been over 13%.

In fact, it is 3.6%. And America, by many standards, is a laggard. A rise in the number of Americans who have decided they do not want to work at all, and who therefore do not count as unemployed, means that the share of 15-to-64-year-olds with a job is slightly below its level at the end of 2019



→ Also in this section

57 Goodbye, QE. Hello, QT

57 Housing-market froth

58 Buttonwood: Stocks and inflation risk

59 Tracking China’s economy in lockdown

59 An Indian megamerger

60 Why punters like the pound

61 Free exchange: Experiments in China

(see chart 1). In one-third of rich countries, however, this share is at an all-time high. Even among the other two-thirds, which includes America, the median shortfall in the employment rate is just one percentage point. It adds up to the quickest and broadest-based jobs boom in history.

Canada and Germany are among the countries with record employment rates. The same is true of France, known for its high joblessness. The working-age employment rate in Greece is three percentage points above its level in 2019. Across the OECD group of mostly rich countries there are about 20m more jobs than had been forecast in June 2020. The number of unemployed people chasing unfilled vacancies is the lowest it has been in decades (see chart 2 on next page). Even as pricey energy and rising interest rates provoke concern about the economy, there is little sign from “real-time” indicators that demand for labour is dropping.

Why is the jobs recovery so fast? One reason is the nature of the shock that hit the economy in 2020. History shows that financial crunches—tight monetary policy, banking disasters and so on—cause prolonged pain. But economies usually recover speedily from “real” disruptions such as natural disasters, wars and, in this case, a pandemic. In 2005 Louisiana’s unemployment rate soared after Hurricane Katrina but quickly fell back (though part of the adjustment came from people moving away). After the second world war European labour markets rapidly absorbed

► soldiers returning from the front lines.

Government policy has also boosted jobs. In 2020 countries including Australia, Britain, France and Germany launched or expanded job-protection or furlough schemes. At the peak over a fifth of European workers remained technically employed even as they twiddled their thumbs. When lockdowns lifted, they could quickly return to their roles—rather than having to search and apply for work, which takes time and thus keeps unemployment elevated. America launched a modest job-protection scheme, but its efforts were largely targeted at maintaining peoples' incomes via stimulus cheques and topped-up unemployment benefits.

Stimulus schemes shored up families' finances. Many households also reined in spending in 2020, allowing them to accumulate huge savings. The stockpile is now being spent on everything from consumer goods to housing, raising demand for workers in areas such as online retail and property services (including an extra 200,000 estate agents in America).

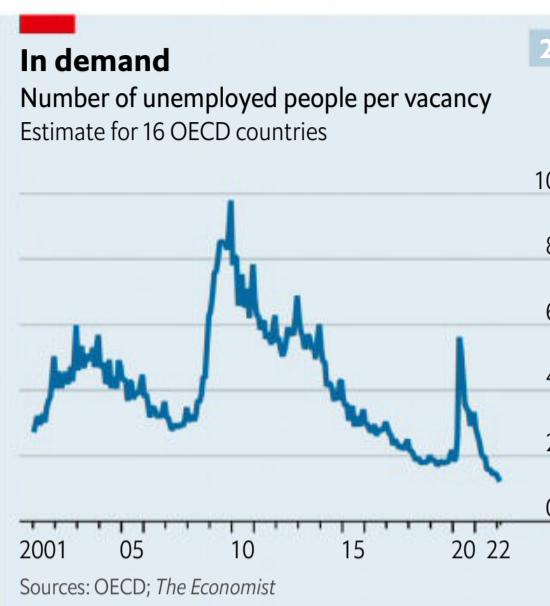
Nice workers if you can get them

With labour demand so strong, employers are having not only to increase the number of jobs but also to improve their quality. Amazon exaggerated when, last year, it said it would try to be "Earth's best employer", but many other companies are promising similar things, whether by offering employees better in-office benefits (such as tastier cafeteria food) or better compensation packages (free college tuition). In 2021 venture investors put more than \$12bn into global HR tech startups, roughly 3.6 times the capital invested in them in 2020, according to PitchBook, a data provider.

Bad employers are having a tough time. The share of Americans worried about poor job security is near a historical low. In Britain the share of full-time workers on a "zero-hours contract", where there are no guaranteed hours, soared after the financial crisis but is now falling. Many of the gig-economy firms that grew in the early 2010s by relying on an army of underemployed workers are struggling to find staff. Whether in London, Paris or San Francisco, hailing a ride is harder than it used to be.

The best measure of labour-market tightness is pay, which distils the relative bargaining power of workers and firms into a single number. In some places the situation is clearly getting out of hand. Wheeler County, Nebraska, is a heavily agricultural place a long way from anywhere. In December unemployment fell to around 0.5%. Jobs at a nearby Chipotle Mexican Grill pay \$15-16.50 an hour, at least twice the federal minimum. Some firms claim to be raising wages by 30% or more.

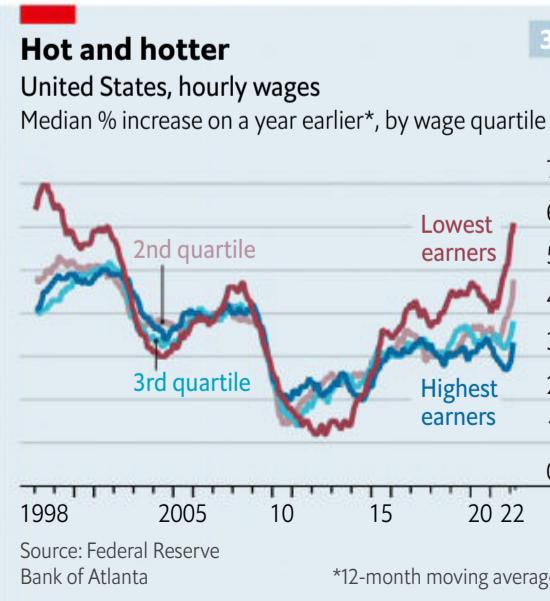
Some countries still look decidedly un-Nebraskan. Japanese wage growth is eas-



ing, not accelerating. In December the "special wage", which includes winter bonuses and typically makes up about half of total cash wages in that month, fell by 1% year on year. German wage growth is doing nothing special. Canada's is respectable but it is hard to make the case that things are out of control.

On average, however, labour markets across the rich world are clearly getting tighter. America's is plainly overheating. In March average hourly earnings were 5.6% higher than a year earlier, on the headline measure. Another gauge suggests that the lowest-paid are seeing bigger rises (see chart 3). Goldman Sachs, a bank, produces a wage tracker that corrects for various pandemic-related distortions. It is more than 5% higher than a year ago, the fastest rate of increase since the data began in the 1980s. Almost all wage measures in America show unusually rapid growth (by comparison, manufacturing wages rose by an annual average of 4.1% in 1960-2019).

Before the pandemic, underlying French wage growth was in the region of 1-2% a year. Now it is close to 3%. Italy looks similar. On March 23rd Norway's central bank noted that "wage inflation has been higher than projected, and wage expectations have risen." Britain is particularly striking. On Goldman's measure, un-



derlying pay there is rising at an annual rate of about 5%. Surveys of businesses suggest that even faster growth over the coming year cannot be ruled out. Across the G10 large economies as a whole wages are rising by at least 4% a year.

Is this sustainable? To most people wage growth of 4% hardly sounds malign. But the arithmetic is inescapable. At 4% wage growth, labour productivity (ie, the value of what workers produce per hour) must grow by at least 2% a year in order to be consistent with an inflation target of 2%. Businesses would pass on half their extra hourly wage costs to customers in the form of higher prices, but would absorb the other half since they would be selling more goods and services, or producing them more efficiently.

Productivity growth of 2% a year is not unachievable, but it would be a lot stronger than it was before the pandemic. Although productivity growth does seem faster than normal, our analysis of data from OECD countries suggests that it falls short of 2%. It may yet rise as companies reap the gains from their large investments in remote-working technologies and digitisation. Hopes of higher productivity, however, must be weighed against fears of still-higher wage growth.

If heady wage growth cannot be sustained, how might it fall? One long-floated possibility in those countries with lagging overall employment rates is that people who have left the workforce return, boosting the supply of labour. Fear of covid-19 might eventually fade and child care might become easier to find, easing worker shortages and causing wage growth to fall.

This hope is receding, however. Although many Americans have returned to the workforce over the past six months, wage growth has not slowed—in fact, it has accelerated. *The Economist* calculates that in September there were nearly 1.9m "missing" workers aged 25 to 54, based on participation rates in January 2020 and adjusting for population growth. By March 2022 this had fallen by more than half to about 750,000—or less than two months' worth of job growth at the recent pace. There are another 1.3m missing older workers, but most are over 65 and likely to have retired permanently (and the number of missing over-65s has been growing).

It is likely, therefore, that in America and elsewhere labour markets will have to be cooled the old-fashioned way: by central banks raising interest rates, making it a little more attractive to save than spend and choking off demand for labour. The Fed has already increased rates by 0.25 percentage points, and is expected to do so by a total of 2.5 points this year. America may prove an example of what happens when policymakers respond to a labour market that has become dangerously hot. ■



The Federal Reserve

Goodbye, QE. Hello, QT

WASHINGTON, DC

The Fed prepares a little-understood policy tool

QUANTITATIVE EASING, or QE, once an unconventional tool of monetary policy, has become commonplace over the past decade. During the pandemic alone the Federal Reserve bought a staggering \$3.3trn in Treasuries and \$1.3trn in mortgage-backed securities as it sought to keep borrowing costs low. The reverse process, quantitative tightening (QT), when central banks shrink their balance-sheets, has been far rarer. The Fed is the only central bank to have truly attempted it, and it had to stop abruptly in 2019 because of market ructions. So its plan for reducing its assets—trailed in the minutes of its meeting in March, published on April 6th—takes it into relatively uncharted territory.

Officials like to downplay the significance of QT. When at the Fed's helm, Janet Yellen compared it to watching paint dry. Jerome Powell, her successor, says it will operate in the background. In truth it is akin to dismantling an auxiliary engine for the economy, with only hazy knowledge of the consequences.

As Lael Brainard, a member of the Fed's board, noted on April 5th, this round of QT will be more aggressive than the Fed's previous iteration. With inflation racing ahead and the labour market tight, the central bank wants to cool the economy quickly. Coupled with interest-rate rises, QT is likely to be a drag on growth.

So far the Fed has reinvested the proceeds of maturing bonds in order to maintain its stock of assets. The minutes suggest it is likely to shrink its balance-sheet

not by making active sales, but by letting some maturing bonds "roll off", without reinvestment. The roll-off may start in May. Come July, all going well, the Fed will raise the maximum roll-off to \$95bn per month, split between \$60bn of Treasuries and \$35bn of mortgage-backed bonds. At full tilt, the Fed could shrink its balance-sheet by more than \$1trn over a 12-month period, twice as fast as its first go at QT. "Even if it's done in a predictable way, this is a big adjustment for markets," says Brian Sack of D.E. Shaw, an investment firm.

Multiple rounds of bond-buying by central banks since the financial crisis of 2007-09 have yielded some understanding of how QE works. It signals a commitment to ultra-low interest rates. It suppresses long-term rates. And it supports liquidity, ensuring that markets operate smoothly.

QT looks like QE in reverse. Instead of creating central-bank reserves (held by the private sector) by purchasing bonds, the central bank drains reserves by refraining from reinvesting as bonds mature. The three channels through which QE works also operate in reverse. First, QT sends a signal that rate rises are coming. Notably, it was in early January, when the Fed discussed a faster approach to QT than many had expected, that market rates shot up.

The second channel—QT's direct impact on yields—involves heroic guesstimates. Some analysts think the Fed will shrink its balance-sheet by \$3trn over the next three years (taking it to about 20% of GDP, down from 36% now). Mark Cabana of Bank of America reckons this could equate to anywhere between a quarter point and 1.25 percentage points of rate increases—a remarkably wide range. Mr Powell has also noted the uncertainty about QT: "We have a much better sense, frankly, of how rate increases affect financial conditions."

When the Fed raises interest rates, it is raising overnight borrowing rates, which then ripple along the yield curve. With QT, the main impact is on longer-term yields. For some economists, such as Kristin Forbes of the Massachusetts Institute of Technology, this means that QT could be more potent than rate rises, since it would target hot segments of the credit market, such as mortgages (see next story). The Fed has said that it will stick with rate increases—the devil it knows—as its main tool. If, however, QT does hit longer yields, it may need fewer rate rises to tame inflation.

The final channel is liquidity. As the Fed buys fewer bonds, there may be fewer transactions overall. Indeed, a Bloomberg index that measures the ease of trading Treasuries recently worsened to levels last seen at the pandemic's start. That echoes uncomfortably with the past round of QT, which culminated in a liquidity crunch in the overnight-borrowing market. But the Fed is better prepared this time. There is

much more cash in the market to begin with. And the Fed has set up an overnight-lending facility, which should let banks get funds if needed. "The risk of a spike in rates like we had in September 2019 is much, much lower," says Bill Dudley, former president of the New York Fed.

Yet new concerns will emerge. The Fed's mortgage bonds have long tenors, so passive roll-offs would take decades. The central bank may have to make active sales, which it wants to avoid. Another concern is the Fed's \$326bn in short-term Treasury bills. Some observers think it will roll them off, supercharging QT; others fear that would stoke volatility. But the biggest worry is whether QT will work as intended, taking heat out of the economy without causing undue harm. ■

Housing in America

FOMO froth

WASHINGTON, DC

The property market is once again looking bubbly

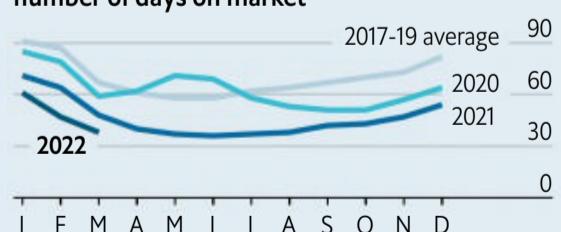
IVY ZELMAN knows a thing or two about the American housing market. She was rare among mainstream analysts in warning of trouble in 2005, a year before the bubble started to burst. In 2012, when many investors were reluctant to get back into property, she declared the sector had hit rock-bottom; prices have more than doubled since then. So it is worth paying attention to her latest pronouncements. "It's euphoric right now," she says. "There are definite signs of excess."

But Ms Zelman, who has gone from in-►

Limited stocks only

United States

Property listings, median number of days on market



Average 30-year fixed mortgage rate, %



Sources: Freddie Mac; Federal Reserve Bank of St. Louis; Realtor.com

vestment banks to running an analysis firm, also knows the current rally is different from past ones, which suggests the downside may be less severe. Start with the evidence of potential danger. Prices have surged in America since early in the pandemic, much as they have throughout the rich world. In recent months they have risen by nearly 20% year on year, eclipsing their heady pace before the global financial crisis of 2007-09.

Far from deterring buyers, the rally has only fuelled FOMO—a fear of missing out. The typical home sold in March was on the

market for just 38 days, down from a pre-pandemic norm of 67 for that time of year, according to Realtor.com, a listings website (see chart on previous page). And supply seems constrained. At the end of 2021 America had 726,000 vacant homes for sale; in the two decades before the pandemic that had never fallen below 1m.

One critical variable is now changing, and rapidly at that, owing to the monetary-policy decisions of the Federal Reserve. Although the Fed has raised short-term interest rates by only a quarter of a percentage point so far this year, mortgage rates have

soared by more than 1.5 points as investors price in more tightening to come. Normally, such a steep increase would cool the housing market, making monthly payments increasingly unaffordable.

Yet thus far the red-hot market has remained resistant to rising mortgage rates. Partly that is because so many Americans took advantage of the extremely low rates available during the pandemic to take out new financing. About 70% of homeowners now have mortgages with rates of less than 4%, according to Ms Zelman. In 2018 just about 40% enjoyed such low borrowing ►

Buttonwood Double-glazed

Bonds signal recession. Stocks have been buoyant. What gives?

WAR! FAMINE! Death! AIDS! This is how Bill Hicks, a revered comedian who died in 1994, aged 32, riffed on the disorienting effect of watching cable news. Homelessness! Recession! Depression! The shocking headlines come at you relentlessly. But look out of the window and everything seems calm. The only sound is the chirping of crickets. You start to wonder, said Hicks: where is all this bad stuff happening?

A lot of bad stuff is happening just now, most notably a war in Europe. There is also inflation and growing fears of recession. Government bonds have just had their worst quarter for returns in ages. The Treasury yield-curve has inverted: the gap between yields on ten- and two-year bonds recently turned negative, an early warning of a downturn. The Federal Reserve is growing more hawkish. Yet stocks are surprisingly buoyant. Even after a few days fairly deep in red ink this week, the S&P 500 index of stocks is only 7% below its all-time high. This might look like a foolish stockmarket failing to take its cue from a more realistic bond market. But the truth is more complicated.

There are lots of plausible explanations for the resilience of stocks. An evergreen one is that there is no good alternative to owning them. Investors need to put money to work and American stocks are the least-worst option. Bonds are a snare. As long as inflation is expected to exceed interest rates, they are a sure-fire way to lose purchasing power. The yield on ten-year inflation-protected bonds is still negative even after the big repricing in bond markets. The earnings yield on equities is comfortably higher than this real bond yield. And stocks offer some protection against inflation in as much as corporate revenues are

indexed to rising consumer prices.

In any event, the risk of recession in America is not immediate. The Fed has barely started to tighten monetary policy. Even a rapid series of interest-rate increases will take time to slow the economy. The negative spread between ten- and two-year yields is an early-warning signal, not a blaring alarm. On average, recession hits more than a year after this part of the yield curve inverts. In the meantime, the equity market typically goes up. Looked at in this light, the message to take is to hold stocks for now.

Underlying all these rationalisations is a sense that equity investors do not quite believe the Fed will follow through on all the interest-rate increases the bond market is pricing in. (Perhaps that is why the Fed's rate-setters are sounding more and more hawkish in public.) One strain of this belief gives the Fed too much credit: it says it can easily conquer inflation without crashing the economy. Another strain gives it too little credit: this school doubts the Fed's stomach to engineer a recession for the sake of price stability. If the result

of such qualms is that inflation lingers above the Fed's 2% target for longer, then so be it. That would be a bigger problem for bond returns than for equities.

It is possible to pick holes in all these arguments. But it is not quite right to conclude that the stockmarket has failed to adjust to new and harsher realities. The best-performing industries in the S&P 500 in the first quarter were those likely to be resilient to stagflation: energy, utilities and consumer staples. Meanwhile, technology stocks—flag-bearers of the “secular stagnation” era of low inflation and low interest rates—have had a brutal few months. The violence of this sector rotation away from tech has caused remarkably few ripples in the overall stockmarket. Nevertheless, equity investors were mindful of the world outside their window. The Bank of America's global fund-manager survey suggests that investors reduced the weighting of technology stocks in their portfolios as far back as November, notes Kevin Russell of UBS O'Connor, the hedge-fund unit of the Swiss asset manager. The stockmarket has been ahead of the bond market on the risks of inflation, not behind it, he argues.

A big question is how far all financial markets are running behind the reality of inflation. The phase during which asset prices adjust to the prospects of tighter Fed policy does not seem to have quite run its course. And the pattern of the past two years is for one market phase to give way quickly to another. Everything is moving faster these days. But the relentlessness of scary financial headlines is not a confection of the 24-hour news cycle. Instead it is a reflection of a supercharged business cycle, which looks set—much like Bill Hicks—to burn brightly and die young.



► costs. Another explanation is the wealth, at least on paper, that Americans have accumulated thanks to rising asset prices over the past two years. About a quarter of existing-home sales are all-cash transactions now, compared with a fifth before the pandemic, according to the National Association of Realtors.

Resistant to rising rates, though, does not mean impervious. At some point high borrowing costs will crimp demand. Moreover, the fundamentals underpinning the property rally—the limited supply of new homes—may prove to be, in part, an artefact of the pandemic. Nearly 1.6m homes are under construction nationwide, the most since the early 1970s. The problem is that the housing sector is, like other parts of the economy, suffering from labour shortages and gummed-up supply chains. It is taking longer than normal to complete construction. A resolution of these constraints could move America from a property shortage to a glut.

Ms Zelman is far from alone this time in her warnings. On March 29th a group of researchers with the Dallas Fed noted that their “exuberance indicator”, a gauge to detect housing bubbles, was flashing red. “Our evidence points to abnormal US housing-market behaviour for the first time since the boom of the early 2000s,” they wrote. Few expect a repeat of the collapse that followed that boom. Homeowners have healthier balance-sheets than they did 15 years ago, and borrowing standards are stricter. Nevertheless, the housing market today provides just another illustration of the rocky path that the Fed must navigate, with rampant inflation on one side and a bust on the other. ■

China's economy

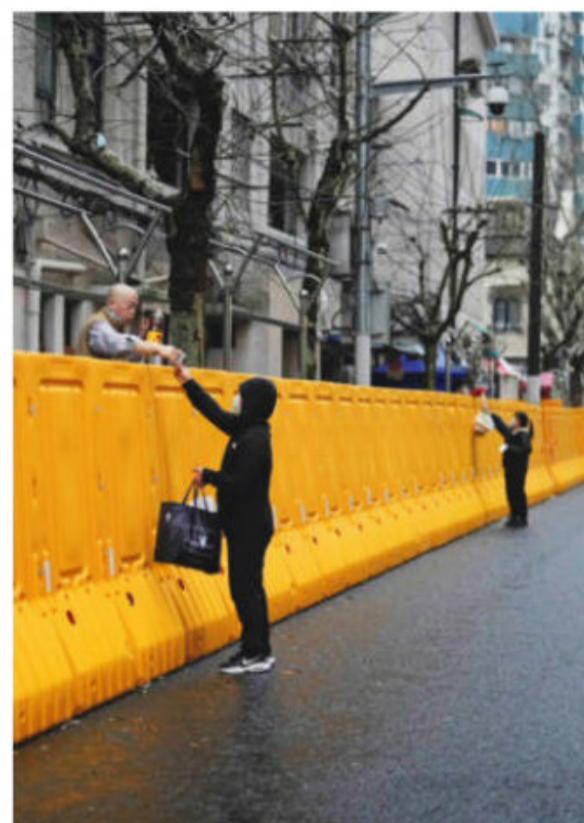
Looking in the side-mirror

HONG KONG

The search for less dated data on China's quickly deteriorating economy

OMICRON MOVES fast. That makes it difficult to contain—even for China, which tries to stomp promptly on any outbreak. A cluster of infections in Shanghai, for example, has forced the government to impose a hurried lockdown for which it seems woefully unprepared.

The variant's speed also makes China's economic prospects unusually hard to track. A lot can happen in the time between a data point's release and its reference period. The most recent hard numbers on China's economy refer to January and February. Those (surprisingly good) figures look dated, even quaint. For most of that time,



Couriers in a time of covid

there was no war in Europe. And new covid-19 cases in mainland China averaged fewer than 200 per day, compared with the 23,107 reported on April 7th. Relying on official economic figures is like using a rear-view mirror to steer through a chicane.

For a more timely take on China's economy, some analysts are turning to less conventional indicators. Baidu, a search engine and mapping tool, provides a daily mobility index, for instance. Over the week to April 3rd, this was more than 48% below its level a year ago. The index is best suited to tracking movement between cities, says Ting Lu of Nomura, a bank. To gauge the hustle and bustle within cities, he uses other indicators, such as subway trips. Over the week ending April 2nd, the number of metro journeys in eight big cities was nearly 34% lower than a year ago. In Shanghai, where many subway lines are now closed, the number of trips was down by 93%, a worse drop than in early 2020.

The two numbers that worry Mr Lu most track distribution services. In the week ending April 1st, an index of express deliveries by courier companies was nearly 27% below its level at a similar point last year. Over the same period, an index of road freight fell by 12.8%. The decline looks especially stark because the measure was rising briskly at the end of last year.

Unconventional measures are all the more valuable in China because of doubts about the official data. The strong figures for January and February, for example, are not only old but odd. They suggest that investment in “fixed” assets, like infrastructure, manufacturing facilities and property, grew by 12.2% in nominal terms, compared with a year earlier. But that is hard to square with double-digit declines in the output of steel and cement. The recovery in

property investment also looks peculiar alongside the fall in housing sales, starts and land purchases. When some local governments said that they were double-checking their figures at the behest of the National Bureau of Statistics (NBS) it became clear that the official statistics look odd even to the official statisticians.

China's high-frequency indicators proved their worth in spring 2020. Economists were timid at first in cutting their growth forecasts. No one knew exactly how the economy would react or what the NBS would be prepared to report. Armed with evidence from high-frequency data, forecasters were eventually brave enough to predict a GDP decline in the first quarter of 2020. Indeed, it shrank by 6.8%, according to even the official figures.

The timeliness of unconventional indicators makes them valuable in periods of flux. Still, “there are many traps,” says Mr Lu. Any short period can be distorted, say by bad weather, or holidays. And annual growth rates can be skewed by past idiosyncrasies. Moreover, what does a dramatic weekly decline in road freight mean for quarterly GDP growth? It is impossible to say with any precision. Many indicators also have only a short history. As a PhD student, Mr Lu was trained in econometrics. “But with only one or two years of data, if I used the kind of techniques I learned at school, people would laugh at me.”

To help avoid some of the traps, Mr Lu and his team watch “a bunch of numbers”. “If seven or eight out of ten indicators are worsening, then we can be confident that GDP growth is getting worse,” he says. Right now, he thinks, “something must be going very wrong.” ■

Banking in India

A house united

MUMBAI

A huge merger marks a milestone for Indian finance

OUTSIDE INDIA, the union of two entities that share a banal acronym in their name might seem an exercise in bureaucracy. But in the case of the acquisition of Housing Development Finance Corporation (HDFC) by HDFC Bank, announced on April 4th, that appearance would be deceptive. The size of the deal, at \$60bn, is by far the biggest in India—triple the value of the next largest acquisition (Walmart's purchase of Flipkart for \$17bn in 2018). It is also the fourth-biggest banking transaction in the world ever, according to Refinitiv, a data provider. The resulting entity is estimated to have a market capitalisation of as

► much as \$185bn, which would make it one of the world's largest banks, after JPMorgan Chase, Bank of America and three Chinese lenders—and well above Citigroup, HSBC and Standard Chartered, the three global banks that once stood at the pinnacle of Indian private-sector finance.

As important as the scale of the deal is what it says about the evolution of finance in India. Both institutions are among the most successful private-sector financial firms in a country where state-owned banks still loom large (local lenders were nationalised by Indira Gandhi, then India's prime minister, in 1969). HDFC was founded in 1977 to provide basic housing finance. In the ensuing 45 years it has financed the purchase of 9m homes.

As restrictions on private-sector enterprise were gradually eased, HDFC's chairman, Deepak Parekh, adeptly launched other financial institutions. Insurance came in 2000, and asset management in 1999. But none was as important as HDFC Bank, which was created in 1994 when private banking licences began to be granted. HDFC kept a 26% stake in the new entity and required the bank to work through it when providing mortgages.

For years there were advantages in maintaining separate institutions. Banks had access to cheap funding through deposits, but paid for the privilege through onerous capital requirements and rules that made them devote 40% of credit to "priority" areas, such as farming. Non-bank finance firms were easier to create—thousands sprang up—and faced less stringent lending or capital requirements, but lacked cheap overnight deposits.

It proved a messy, even dangerous development, as many went on a lending and borrowing binge. In 2018-19 several prominent non-banks, including IL&FS and two housing-finance firms, collapsed. There were fears of more failures to come, and funding dried up for many finance companies. That in turn led to a credit crunch.

Since then, regulatory changes have been quietly instituted, making life harder for the non-banks. The complex capital requirements imposed on them have been raised, for instance, to bring them largely in line with banks. That has made the operating restraints on finance companies somewhat bank-like, but without the benefits of cheap deposits. Jefferies, an investment bank, estimates HDFC pays 6% for its funding, compared with 3.7% for HDFC Bank. The spread for other finance companies is probably wider.

With the merger, that distinction will disappear, providing a meaningful cost saving and competitive advantage. Meanwhile, HDFC Bank, which has a sprawling network of 6,500 branches, ten times as many as its housing-finance cousin, will be able to offer mortgages to its customers

directly—something that might have doubled its size had it been able to do so all along, said Sashidhar Jagdishan, the bank's chief executive, on April 4th. Investors were unsurprisingly giddy at the prospect, with the share prices of both firms rising sharply. The mood in Mumbai's stately Taj Hotel, where the merger was announced, was equally ebullient, as the city's leading dealmakers speculated about what other changes might, once again, follow in HDFC's wake. ■

Currencies

Not so sterling

Has the pound become emerging-market money?

STERLING WAS once the world's dominant currency. As the American dollar took its crown, it became second-tier but remained elite, and for decades was content with its lot. Yet lately the pound's shine seems to have dulled again—so much so, says Kamal Sharma of Bank of America, that it has been "acting [like] emerging-market (EM) currencies".

It is not that the pound has suddenly turned into the Turkish lira or the Argentine peso. It remains part of the G5 group of heavily traded currencies, alongside the dollar, the euro, the Japanese yen and the Swiss franc. Yet it has proved more vulnerable to crises than the others.

A "flash crash" in October 2016 took its value from \$1.26 to \$1.14 in less than a minute. As covid-induced panic gripped markets in March 2020, it dropped by 12% against the dollar in the space of a fortnight (the euro fell by just 6%). When British pet-

rol pumps ran dry last September, it plunged again and traders' expectations of its future volatility soared. The Bank of England's decision to raise interest rates earlier than most has since held it steadier, but some commentators remain adamant that the pound has not just decoupled from the currencies of other developed economies, but also joined the ranks of EM ones.

Such claims are usually made with the speaker's tongue planted firmly in their cheek. EM currencies' delightful attributes include capital controls (the Chinese yuan), hyperinflation (the Argentine peso) and "unorthodox" monetary policies (the Turkish lira). Liquidity crunches during market routs can subject sterling to harsh devaluations, explaining why it is not a haven like the dollar or the Swiss franc. But in normal times, call up a bank's foreign-exchange (FX) trading desk asking to sell half a billion pounds and they won't struggle to do so. That they might for an EM currency is the category's distinguishing feature.

In fact, sterling is notable for the opposite: it plays an oddly outsize role in FX markets. Britain accounts for 3% of the world's GDP. Yet over the past 20 years its currency has consistently been involved in over a tenth of FX trades.

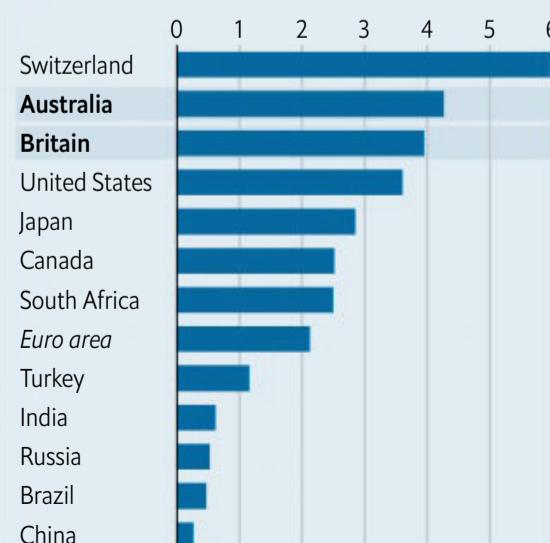
So why do traders like sterling, if it is so brittle? You might trade a foreign currency if you want to buy goods or services from the country that issues it. Or you might sell something in exchange for it and want to convert the proceeds back to your currency. Neither explains sterling's popularity: in 2019 Britain accounted for 3.8% of global goods imports and 2.6% of exports. Nor is it prominent in central-bank holdings (it makes up less than 5% of global reserves). The dollar dominates global payments, many governments borrow in it and some markets—commodities—are priced in it. The pound does none of these jobs.

In fact it is a means to less grand aims: speculation and cross-border investment. People trade sterling to take a punt on its value, or because they are buying or selling British assets. In this it has more in common with another rich-world currency. Like sterling, the Australian dollar is issued by an open, developed economy that relies heavily on trade. Punters use both to bet on trends that are bigger than their issuers' economic footprint: sterling is a proxy for risk appetite; the Aussie dollar for commodity prices. And they loom larger in FX markets than either their economies' heft or trade volumes warrant. Australia makes up less than 2% of world GDP, yet its dollar is present in 6.8% of FX trades.

Five years after the Brexit vote, there is little sign of the Global Britain that voters were promised, and declaring sterling an EM currency suits the country's fondness for declinism. But to understand the role of the pound today, look Down Under. ■

Quid pro quo

Currency's share of FX trading as a multiple of country's share of global GDP, 2019



Sources: BIS; World Bank

Free exchange | Red swan over China

Policy experiments have improved China. Now it needs to improve its experiments



IN MAY 1919 John Dewey, an American philosopher, embarked on a lecture tour of China. “We are going to see more of the dangerous daring side of life here,” he predicted. His celebration of learning by doing and social experimentation was enthusiastically received by the country’s daring reformers and dangerous revolutionaries. At least one of his lectures was attended by a young schoolteacher called Mao Zedong. “Everything through experimentation,” Dewey declared on his tour. Chairman Mao would later repeat the line as China’s ruler.

In the scattered bases occupied by China’s communists before 1949, experimentation was unavoidable, points out Sebastian Heilmann in his book, “Red Swan: How Unorthodox Policymaking Facilitated China’s Rise”. The communists lacked the manpower or administrative reach to impose uniform policies. Instead they introduced new measures, such as land reform, in model villages or “experimental points”, before spreading them across the “surface” of their territory. The aim was to learn by doing, without doing anything uncontrollably calamitous. These “model experiences”, Mao wrote, were “much closer to reality and richer than the decisions and directives issued by our leadership organs”.

A similar “point-to-surface” approach was embraced by China’s leaders after Mao. Indeed, the central government has initiated over 630 such experiments since 1980, according to a recent paper by Shaoda Wang of the University of Chicago and David Yang of Harvard University. It has experimented with carbon trading, fisheries insurance, business licensing and fiscal devolution. A report last month by China’s planning agency referred to pilot schemes covering everything from cross-border e-commerce and housing provident funds to green electricity and recyclable packaging.

These trials are not mere formalities. The results can go either way. About 46% of experimental policies are never rolled out nationwide, according to Messrs Wang and Yang. An unsuccessful trial can nonetheless yield useful lessons for future reforms. Failure, as Mao once put it, is the mother of success: “a fall into the pit” can yield “a gain in your wit”.

China has indeed gained a lot from using this method. It is a “huge improvement” on a “counterfactual world” in which all central policies are implemented without any experimentation, Mr

Wang argues. The point-to-surface technique is one reason why communist China has survived and advanced even as other socialist regimes have stagnated or collapsed, according to Mr Heilmann. Such unexpected outcomes are sometimes described as “black swans”. In China’s case, he argues, red seems the more appropriate colour.

This long and celebrated history notwithstanding, China is surprisingly bad at policy experiments. Its trials are not as clean as they could be, skewing the conclusions its leaders draw. One problem is their location. According to China’s planning agency, “sites should be fairly representative.” But contrary to this sound advice, 80% of experiments since the 1980s have taken place in localities that are richer than average, according to Messrs Wang and Yang. Another bias is fiscal. When local authorities experiment with an area of policy, such as education or agriculture, they tend to spend 5% more money on that area than otherwise similar counties that are not taking part in the experiment.

Experiments can also be skewed by less measurable factors. Some local officials, for example, simply put more effort into these pilot exercises than others. This is particularly true of ambitious young cadres who have more scope for promotion, because they are still far from retirement age. To measure this extra effort, Messrs Wang and Yang devise an ingenious proxy. They compare the language employed by local governments in describing the experiment. Leaders with more room for promotion differentiate their language from the boilerplate used by their upwardly immobile counterparts elsewhere.

Extra effort, more spending and atypical prosperity can all skew the results of a policy experiment. Some of these biases may be well known to seasoned policymakers in Beijing. But if so, national leaders do not act as if they are aware of them. They tend to favour successful trials regardless of the true source of that success. The more prosperous an experimental site, the better the chance the policy will be adopted nationwide. Such backing is also more likely if the host county just happens to enjoy a fiscal windfall during the trial period, say because a fortuitous cut in interest rates raises land values. The central government does not seem to disentangle the merits of an innovative policy from the idiosyncrasies of the places that pilot it.

A duck dressed up as a swan

This has national consequences. When new policies are spread across the surface of the country, the localities that most closely resemble the experimental “points” benefit the most, judged by their subsequent economic growth. Since experimental sites tend to be richer than average, the policies that emerge from experimentation may “systematically favour” the richer parts of China, Messrs Wang and Yang argue. That is not an outcome that Mao or Dewey would have welcomed: inequity through experimentation.

How can China reform this engine of reform, moving its experiments closer to reality? Another striking calculation by the researchers suggests one useful place to start. They point out that local officials are 22% more likely to be promoted if they take part in a successful experiment. To improve this technique, therefore, China’s leaders will have to fix the politics that attend it. In recent years, under Xi Jinping, experimentation has become “forced and feigned”, according to Mr Heilmann. Local administrators enjoy little “leeway and they are fearful of making policy and ideological mistakes along the way”. There will be no gain in wit if local policymakers fear a fall into the pit. ■



Climate change

Tick, tick, tick

Emissions must peak by 2025 for the world to meet its Paris agreement goals, says the latest IPCC report

THE WINDOW to prevent global temperatures from rising by more than 1.5°C above pre-industrial averages is rapidly closing. Decisions made this year could determine whether that target is met or whether the world overshoots it by the middle of this century and has to deal with severe climate extremes before attempting to turn the thermostat back down in the second half of the century.

These are the warnings delivered by the Intergovernmental Panel on Climate Change (IPCC) in the third volume of its latest assessment report, published on April 4th. It follows earlier tomes, published in recent months, that first laid out the current state of knowledge on the physical science of climate change and then examined the impacts of warming on the human and natural worlds.

The third report offers a comprehensive menu of possibilities for how humans could stabilise the climate and avoid catastrophic global warming while fulfilling the commitments made in the 2015 Paris agreement. The aim of that pact was to keep average global warming to between

1.5°C and 2°C above pre-industrial levels.

The IPCC's menu includes options for power generation and energy efficiency, transport, buildings, urbanisation, agriculture and food security, forestry, consumer choices and much more besides. Its 278 authors have gone to great pains to offer a smorgasbord of opportunities to reduce emissions and stabilise the climate, and to point out that not all are eye-wateringly expensive.

There is just one catch. In order to meet the Paris goals, humanity must order just about everything on the menu, and fast.

"We need to get on with this now or [the goal of] 1.5°C will slip beyond reach," declared the report's co-chair, Jim Skea of Imperial College London, when it was published. "If there is no advance in the kind of

pledges that countries are making before we get to COP27 in Egypt," he added, referring to the next UN climate summit, scheduled for November, "we may well have to conclude that 1.5°C has indeed gone."

Climate scientists are typically reluctant to admit defeat when it comes to this target, in part because research collated in another IPCC report in 2018 showed that the consequences of 2°C of global warming were considerably worse than 1.5°C, particularly for the poorest parts of the world and low-lying regions that are vulnerable to rising seas and destructive storm surges. But the measures they show to be necessary in order to meet the target are so stringent that overshooting 1.5°C of warming now seems all but certain.

Now or never

The physics of the global climate system, however, leaves little room for prevarication, and Dr Skea's stark warning comes directly as a result of the numbers in the latest report. The "carbon budget" represents the total amount of carbon dioxide that can still be pumped into the atmosphere before a certain amount of warming is likely. For example, the IPCC says that for a 50% chance of limiting warming to 1.5°C by 2100, no more than 500bn tonnes of CO₂ can be emitted beyond 2020, equivalent to little more than a decade of emissions at current rates.

The report says that to avoid more than 2°C of warming, global emissions must peak before 2025 and then fall by 43% ►

→ Also in this section

64 How brains age

64 Universal smells

65 The colourfulness of birds

► before 2030, compared with 2019 levels. Yet human societies emit more greenhouse gases with every passing decade, and the last one saw the largest rise in emissions in human history. While the report's socioeconomic simulations of the coming decades show that it is theoretically possible to cut emissions by the amounts needed, the political realities and inherent inertia of economies that are largely structured around fossil fuels make the transition challenging, particularly at the speed that is now required.

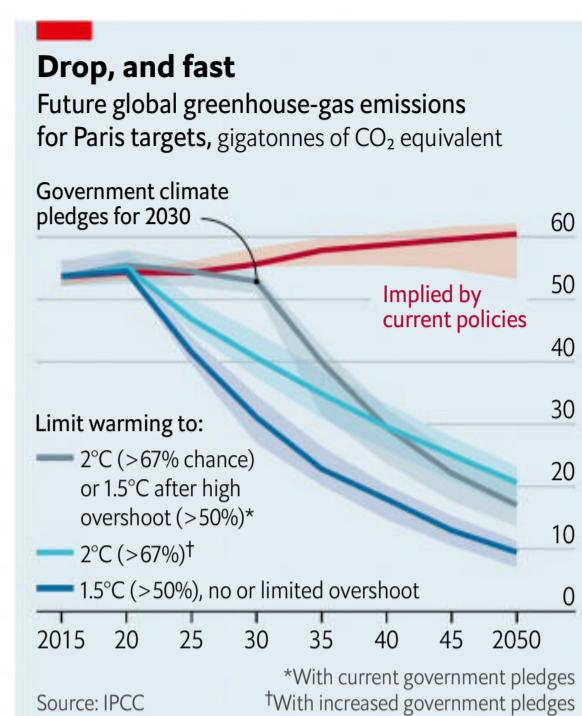
Achieving the 1.5°C Paris goal means that global use of coal must decline by 95% by 2050, relative to 2019. Oil use must drop by 60% and gas by 45% in that period. The decreases needed to limit warming to below 2°C are not much lower. Under all scenarios, there is no room for new unabated fossil-fuel projects (such as power plants), and most existing ones will have to be wound down faster than they would have otherwise. "Estimated emissions from the current [fossil-fuel] infrastructure over planned lifetimes are roughly what we can emit for a 2°C scenario," said Michael Grubb of University College London, one of the IPCC report's authors.

Keeping warming to less than 2°C would therefore mean shortening the lifespans of existing fossil-fuel power stations and refineries. These could be retrofitted with installations that capture warming gases before they escape into the atmosphere in order to store them underground or beneath the oceans. But, as the report's authors note, governments and business have promised to develop such an industry (dubbed "carbon capture and storage") for decades, but failed to do so.

Among the darker warnings, there are some shafts of light. The cost of solar energy dropped by 85% during the 2010s, and wind power by 55%. During the same period, the market for electric vehicles grew a hundredfold. The IPCC report notes that at least 24 countries have consistently cut emissions for at least a decade. Despite worrying trends in the Brazilian Amazon, there is more forest cover and less deforestation today than in 2010. In 2020 more than 20% of global emissions were covered by carbon taxes or trading schemes. And also in 2020, more than 50 countries, accounting for more than half of global emissions, had enacted climate laws intended to reduce emissions.

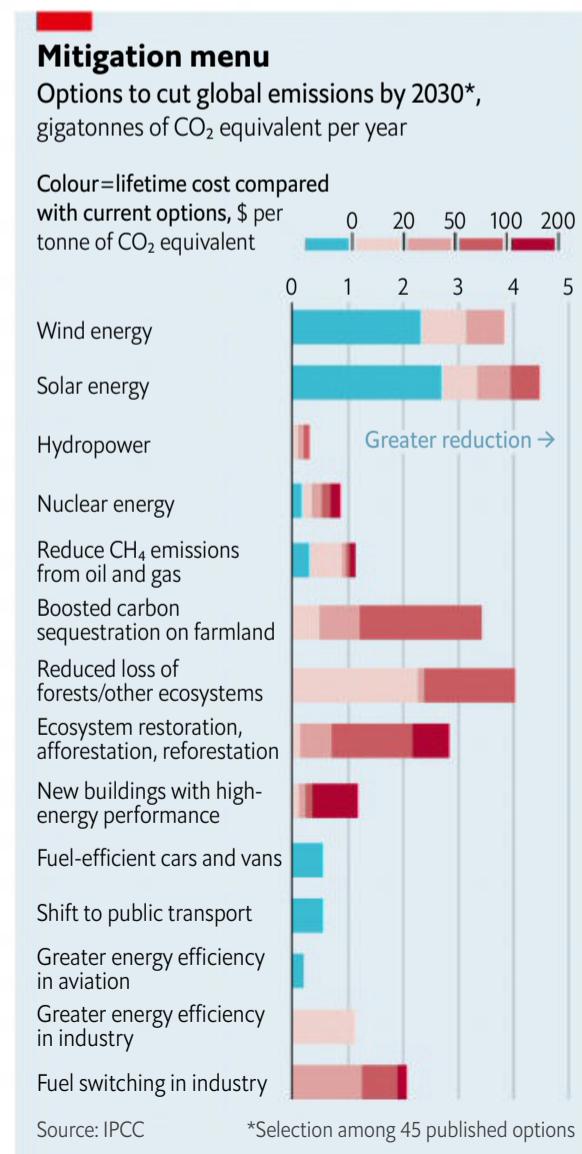
The energy intensity of the global economy (a measure of the amount of energy expended to generate one unit of GDP) decreased by 2% per year between 2010 and 2019. At the same time, the amount of carbon dioxide emitted for each unit of energy produced (known as "carbon intensity") decreased—an indication that, globally, energy is becoming greener.

But these gains are nowhere near what



models say will be needed to stabilise the climate before it is too late. Carbon intensity, for instance, declined by 0.3% per year in the 2010s, a fraction of the 3.5% per year that the models say is needed to give a good chance of limiting warming to 2°C. For a 1.5°C goal, the annual improvement would have to be 7.7%.

One common thread running through the Paris-compliant scenarios presented by the IPCC is the inclusion of options for removing greenhouse gases from the atmosphere. That is because all scenarios assume that there will be residual emissions



from some economic sectors come mid-century, even under the most optimistic assumptions. Viable options for eliminating fossil fuels from aviation and heavy industry are currently lacking, and few envisage a sufficient change in this over the coming decades.

Options for removing these residual emissions broadly come in two types: the ecological (reforestation, ecosystem restoration, schemes to increase the amount of carbon sequestered in agricultural soils) and the chemical (using minerals or reagents that selectively bind to atmospheric CO₂ and allow it to be stored underground, underwater or in solid form).

The former appears easy and cheap but is potentially unreliable. Forests burn and release greenhouse gases as they do; in a warmer, drier world, they will burn more. To be long-term stores of carbon, trees must be managed and protected, something that humans in general do not always do well. Ecological solutions can also compete for land with agriculture, particularly at the kinds of scales required by the climate models.

Suck it up

On the other hand, technological solutions for removing carbon dioxide from the atmosphere are in their infancy and extremely expensive. The two companies that have commercial operations offer to remove one tonne of carbon dioxide for between \$300 and \$1,000. For comparison, a single economy seat on a return flight from London to San Francisco is responsible for just under one tonne of emissions.

These carbon-removal technologies may see a rapid drop in costs. Proponents point to the recent successes of solar- and wind-energy projects—all three technologies involve small modular components, making them relatively easy to scale up, and fans of the "direct air capture" industry have used the similarities to suggest that their technology will also take off quickly. Still, it is worth noting that even solar energy, a modern-day darling of the green-energy world, took several decades to get where it is today.

To some, the calls to end the age of fossil fuels or face the consequences of letting the world burn may seem divorced from immediate reality, particularly as European countries desperately seek gas to replace Russian supplies and stave off fuel shortages and crippling prices during the next winter.

But there are some synergies between the two crises. In the long list of options for reducing emissions, improving energy efficiency in transport, buildings and industry is low-hanging fruit, as are behavioural changes such as switching from private vehicles to public transport. Encouraging consumers to decrease energy demand ►

► this way would also increase energy security. And every fraction of a degree shaved off future warming reduces climate risks, even if the 1.5°C target is missed.

The covid-19 pandemic presented an opportunity to use the resulting economic turmoil to stimulate green growth. The response of governments was patchy at best. Today, as the West comes to grips with a deepening energy crisis, it faces a similar challenge, but with added urgency in light of the latest climate warnings from the IPCC's scientists. ■

Neuroscience

Frames of mind

Reference charts for brain development could be used to spot problems early

IF A DOCTOR wants to know how well a child is growing, she can turn to clinically validated charts that lay out precisely how that child compares to the norm for their age and sex. Not only can the doctor look up, say, how many centimetres shorter or taller the child is than the average for their age, but exactly what height percentile they fall into. Medical diagnoses can then be made based on an absolute comparison with the statistical norm.

Reference charts are an important tool in modern primary medicine, covering many aspects of a person's healthy development. There is, however, a big gap in their coverage: the human brain. Richard Bethlehem and Simon White from the University of Cambridge and Jakob Seidlitz from the University of Pennsylvania want to fix that. Writing in *Nature*, the neurosci-

entists describe the most comprehensive effort yet to create a standard against which someone's brain development can be measured through their lifetime.

Their brain charts were compiled from more than 120,000 three-dimensional brain scans belonging to more than 100,000 patients who took part in more than 100 different research studies. The data set included people of all ages, ranging from babies still developing in the womb, just over 100 days after conception, to adults more than 100 years old.

With that data, the scientists catalogued how the average human brain evolved from cradle to grave, focusing on three types of brain tissue: grey matter (made up of neuron cell bodies), white matter (the filaments connecting neurons) and tissue conveying cerebrospinal fluid (the brain's plumbing system). The scientists paid particular attention to the cerebral cortex, the outermost layer of the brain, responsible for higher-order brain functions. They observed grey matter in the cortex peaking in volume at 5.9 years, 2 to 3 years later than previously thought.

Having characterised the development and ageing of the average human brain, the scientists modelled the distribution around it, charting the percentile-by-percentile variation in the structure of human brain tissue. This allowed them to investigate how the brains of patients with various developmental or degenerative disorders compare to more typical brains. "Our investigation confirmed that Alzheimer's disease, mild cognitive impairment and schizophrenia show marked restructuring of brain tissue relative to a more typical brain of the same age and sex," says Dr Seidlitz.

The catalogue turned up some surprises too. Autism, for example, is generally thought to present differently in male and female patients, but there is little sign of that difference in their brain tissue. In contrast, attention deficit hyperactivity disorder (ADHD)—which presents similarly by sex—displays the largest average difference in brain structure between male and female patients of any diagnosis they analysed. Over the course of a lifetime, the brains of male ADHD patients appear to be skewed towards below-average volumes of grey matter, white matter and cerebrospinal fluid. The brains of female ADHD patients, on the other hand, were ever-so-slightly skewed towards higher volumes of the same tissues.

What these differences in brain size mean is not yet clear. And the authors caution that their brain charts are not yet ready for clinical use, not least because the dataset they used has several limitations. "Unfortunately, the data we compiled reflect the demographic biases of neuroscience research in general, ie, most studies

are from Europe or North America, and over-represent patients of European ancestry," says Dr Bethlehem.

To reflect the full diversity of normative human brain development, a more representative dataset will be required. Once that is accomplished, the utility of brain charts can begin to be tested in a clinical setting. One day, hopefully, these charts could become a useful tool in tracking a person's brain health or spotting the earliest physical signs of brain disorders such as Alzheimer's disease. ■

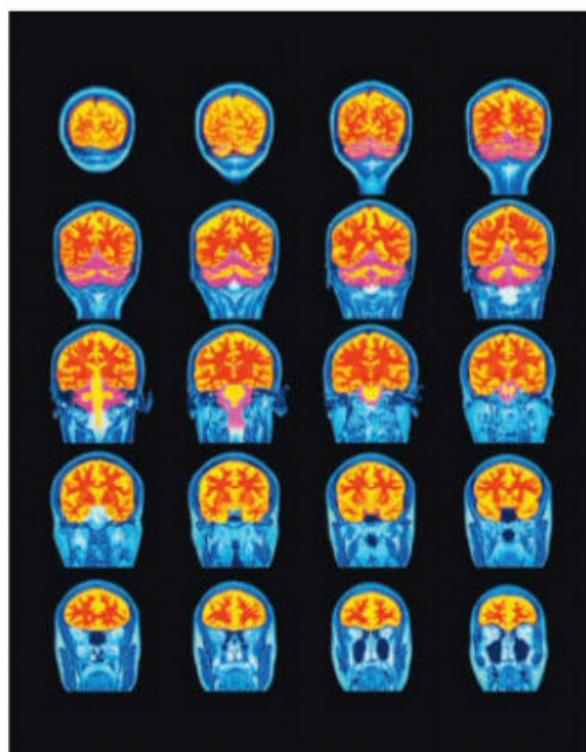
Perception

A rose by any other name

People from different cultures like (and dislike) the same scents

TO THE SWEDES, there are few odours more delectable than the scent of *surströmming*, a type of fermented herring. To most non-Swedes there are probably few odours more repulsive—the fish has been described variously as smelling like rancid cat litter, vaguely faecal or even corpse-like. In determining which scents people find pleasant and which they do not, *surströmming* suggests culture must play a sizeable part.

New research, however, suggests that might not be the case. Artin Arshamian, a neuroscientist at the Karolinska Institute in Sweden, and Asifa Majid, a psychologist at the University of Oxford, began with the expectation that culture would play an important role in determining pleasant smells. This was not just because of examples like that of fermented herring. They ►



The shape of brains to come



Mmm...cheesy

had noticed from their own previous work that people from different cultures described odours differently. They also knew from past experiments by other researchers that culture was important in determining which sorts of faces people found beautiful. Thus, they expected to see a similar phenomenon with smells.

To study how scent and culture relate, Dr Arshamian and Dr Majid presented nine different groups of people with ten odours. These varied from pleasant-smelling vanilla extract to isovaleric acid, the chemical responsible for the revolting scent of stinky socks. More intermediate odours, which the team thought might split opinions, included octanoic acid with its moderately rancid smell; the sweet-smelling eugenol, which comes from cloves; and octenol, a musty and earthy scent found in many mushrooms.

The cultures doing the smelling varied widely too. They included hunter-gatherer communities along the coast of Mexico, subsistence farmers living in the highlands of Ecuador, shoreline foragers, swidden horticulturalists living in the tropical rainforests of Malaysia, and city folk from Thailand and Mexico City. All 235 participants were asked to rank odours according to pleasantness. The team compared their results to earlier work on New Yorkers who had been exposed to the same scents.

Writing in *Current Biology* this week, the researchers noted that pleasantness rankings of the odours were remarkably consistent regardless of where people came from. The smell of isovaleric acid was reviled by the vast majority of the participants, only eight giving it a score of 1 to 3 on the pleasantness scale (where 1 was very pleasant and 10 was very unpleasant). On the other hand, more than 190 people gave vanilla extract a score of 1 to 3 and a tiny minority, only 12 people, found it revolting enough to rate 8 to 10. Overall, the chemical composition of the odourants that the researchers presented explained 41% of the reactions that participants had. In contrast, cultural upbringing accounted for just 6% of the results. Dr Arshamian and Dr Majid point out that this is very different from how visual perception of faces works—in that case a person's culture accounts for up to 50% of the explanation for which faces they find beautiful.

Even so, while culture did not shape perceptions of odours in the way that it is known to shape perceptions of faces, the researchers did find an “eye of the beholder” effect. Randomness, which Dr Arshamian and Dr Majid suggest has to be coming from personal preferences learned from outside individual culture, accounted for 54% of the variance in which smells people liked. “Olfactory bulb of the beholder” does not slip off the tongue so easily but it too appears to be a real phenomenon. ■

Evolution

Bird-swatching

Songbirds get more colourful the closer they live to the equator

WHEN THE Prussian naturalist Alexander von Humboldt arrived in South America in 1799, the colours astonished him. “Look at the blossoms, the birds,” he wrote. “Even the crayfish are blue and yellow.”

In the intervening centuries, Humboldt’s musings have morphed into an informal, if controversial, hypothesis about the world’s living things: that organisms in equatorial climes are more colourful than those nearer the poles.

In a new paper in *Nature Ecology & Evolution*, Chris Cooney, an evolutionary biologist at the University of Sheffield, and colleagues at Britain’s Natural History Museum collection in Tring, offer what they call the most comprehensive examination of this hypothesis to date, demonstrating that it does indeed apply for an order of birds known as passerines, a family of songbirds which includes the blue tit and the robin.

Over several years, Dr Cooney’s team photographed 4,527 birds from the museum’s archives—representing roughly half the total bird diversity on Earth. As passerine birds are sensitive to ultraviolet (uv) light as well as visible, they see more colours than humans. The researchers therefore took pictures under uv light, to get true bird’s-eye views.

A machine-learning algorithm was then let loose on the images, to identify the colours of the plumage (in values of red, green, blue and ultraviolet) at hundreds of points on each specimen. The total number of colours found on each bird was then subsequently mapped onto the geographic distribution of their parent species.

The researchers used this data to derive a measure for how colourful different regions of the world were. The key factor here was the diversity of colours on individual birds. The paradise tanager (*Tangara chilensis*—pictured above), for example, which struts through the Amazon rainforest in a green domino mask, an azure bib fading into a sky-blue apron and a black cape splashed with all the colours of a sunset, is a sign of a colourful region. The monochromatic dunnock (*Prunella modularis*), meanwhile, which flies across Europe with its brown wings streaked with darker brown, modulated by brown dots scattered across a dark grey face, was surefire evidence of a less colourful region.

Equatorial birds, the researchers



Who's a pretty bird then?

concluded, were indeed more colourful than their cousins in temperate regions, with colourfulness declining with latitude. The birds sampled at the equator had, on average, between 90 and 100 different colours, while birds at 60 degrees latitude had closer to 70 colours. Such trends related to latitude are not uncommon in ecology, with species diversity also having been shown to peak at the equator.

Over the decades, numerous explanations have been tendered for tropical colourfulness. Some have speculated that warmer climates make more resources available to their inhabitants, allowing them to spend energy on developing adornments. Others have suggested that the bright colours may arise from chemical compounds in their diet, or else allow for breeding pairs to spot one another in the darker environment of a tropical forest floor.

The authors of the latest study do not make any definitive conclusions on the matter, but their analysis shows that colourfulness is strongly associated with the resources available to birds in an environment, as well as its diversity. Whether such results can be extrapolated to other families of birds—or, indeed, other classes of animal—remains to be seen. After years spent photographing avian specimens from a variety of angles, Dr Cooney has high hopes that a similar study can be performed on butterflies. Crucially, they can be made to lie flat.



Science and philosophy

Time v the machine

Albert Einstein and Henri Bergson disagreed about the nature of time. One hundred years later, their dispute still resonates

A CENTURY AGO, on April 6th 1922, the world's most famous philosopher debated against the most famous physicist and lost. Henri Bergson, a French thinker who caused Broadway's first traffic jam when he gave a lecture in New York, had challenged the notion of time advanced by Albert Einstein, the discoverer of relativity. Bergson was putting his thoughts into book form when Einstein came to Paris.

At a gathering hosted by the Société française de philosophie, which followed a talk by Einstein on relativity, they finally locked horns. Bergson summarised part of his forthcoming book, "Duration and Simultaneity". Einstein's rebuttal was withering. There is "no such thing as a philosopher's time", he asserted. Bergson's version of it was merely "psychological time". Their stilted "non-conversation" was a "major anticlimax", says Elie During, a (living) French philosopher. Bergson's reputation waned; *Time* magazine named Einstein its "person of the century".

Lopsided though the contest was, philosophers and scientists still ponder it. At stake is not just the momentous question of what time is. The debate was a key event

in the separation of sciences and humanities into what C.P. Snow, a British novelist, later called "two cultures". Einstein saw science as "the ultimate arbiter of truth", says Jimena Canales, author of "The Physicist and the Philosopher", a book about the episode. Bergson insisted that science did not have the last word. Their clash, Ms Canales says, raised the question, "What is the relation between the subjective and the objective, and can we have a form of knowledge that includes both?"

The philosopher was in the time business long before the physicist. Bergson published his first book, "Time and Free Will", in 1889, when Einstein was ten years old. Initially an adherent of the idea that the world works like a machine, in the course of investigating evolution he encountered what he came to regard as science's mistaken notion of time.

This views time in terms of space: an hour measures one-twenty-fourth of the Earth's rotation. While useful, clock time misses what is most important about time, Bergson decided, namely "duration". Rather than being disconnected from the past, the way one point on a ruler is separated

→ Also in this section

- 67 Californian fiction
- 68 Rule by strongmen
- 69 Home Entertainment: A radio pioneer
- 69 War reporting for children
- 70 Johnson: Beyond the giga-zone

from another, the present is suffused with it. Music is an example: each instant consists not only of itself but of what came before it. "Pure duration is the form that the succession of our states of consciousness adopts when the self lets itself live, when it stops establishing a separation between its present and former states," Bergson wrote.

The passage of time—the present billeted with the past—provides escape from a clockwork universe. This approach does not deny the importance of matter, but places life partially outside it. It is duration that permits novelty, both in the life forms that emerge from evolution and in the acts that proceed from the exercise of free will. Bergson applied his most famous epithet to life's struggle with the material world, with which it is also bound up: *élan vital*. People's very identities are the "temporal synthesis that is duration", as Mark Sinclair puts it in a recent book on Bergson.

His ideas were hugely influential. The literature of his day teems with Bergsonian characters, living between durational and clockwork worlds. T.S. Eliot (who heard him speak) seems to lament the splaying of time in space in "The Love Song of J. Alfred Prufrock", writing of the evening "spread out against the sky/Like a patient etherised upon a table". For the narrator of "In Search of Lost Time", the memories awakened by a madeleine's taste are enough to abolish clock time. Bergson married a cousin of Marcel Proust, the novel's author, who was best man at his wedding. A spellbinding writer himself, Bergson won the Nobel prize in literature in 1927.

Even before his showdown with Einstein, though, Bergson was mocked for purveying metaphysical mumbo-jumbo. His exaltation of intuition, the faculty through which duration is apprehended, over intellect provided a fat target for Bertrand Russell, a British logician. According to Russell, writing in 1912, Bergson thought that the universe was "a vast funicular railway, in which life is the train that goes up, and matter the train that goes down." Like advertising men Bergson relied upon "picturesque and varied statement". In his "History of Western Philosophy" (1945), Russell added that the irrationalism of Bergson's philosophy "harmonised easily with the movement which culminated in Vichy"—a brutal comment about a Jew who refused special treatment from the Nazi-backed regime.

Time present, past and future

Einstein and Bergson were a study in contrasts. The German-born physicist was a pacifist and, until just before his death, a meat-eater; Bergson found philosophical grounds for France's role in the first world war—and was a vegetarian. Their clash in Paris was principally over Einstein's special theory of relativity, which had supplanted the unvarying time of Isaac Newton's physics.

Relativity states that time flows at different rates—faster or slower—for observers moving with respect to each other, as most do. Space compresses too, with the result that simultaneity is not absolute. This means that, in general, distinct observers witness events separated in space in different orders. Time and space blur together in a way implying that the past and future may be as real as the present, just as the Moon is as real as the Earth, a view sometimes called "eternalism". The "distinction between past, present and future is only a stubbornly persistent illusion", Einstein famously wrote.

This was a frontal challenge to Bergson's central idea. "If time", he wrote, "is thus spread out in space...it takes account neither of what is essential to succession nor of duration in so far as it flows." Bergson did not deny Einstein's discoveries; philosophy must be "constantly verified by contact with the positive sciences", he averred. But he maintained that relativity's profusion of times are not all equally real. It could not overthrow the "common-sense" belief in "a single time, the same for all beings and all things". In fact, properly understood, relativity confirms that.

In defending this position, Bergson denied the consequence of the special theory illustrated by the "twin paradox": if Peter remains on Earth while Paul rides a rocket into space and then returns, Peter will have aged more than Paul. Special relativity says that the faster something moves relative to

you, the slower its clock will tick, from your point of view. Bergson insisted that the reunited twins will have aged by the same amount. This proved to be his "Achilles heel", writes Ms Canales.

Most physicists continue to disdain Bergson, not mainly because of his twin gaffe but because of his attempted prison-break from the material world. Carlo Rovelli, an Italian theoretical physicist, makes one dismissive reference to the philosopher in his recent book "The Order of Time". Bergson "correctly pointed out that experiential time has more features than the time the physicists were talking about", Mr Rovelli says. But he "incorrectly deduced from that there must be something that escapes physics in the real world." Now, when science is under attack from anti-vaxxers and others, Bergson's spiritualism seems to some not just wrong-headed but dangerous. Ms Canales says a physicist warned her "that my career would be finished" if she published a book that took Bergson seriously.

Yet he still matters, in two ways. He continues to influence thinkers who deem a materialistic account of the world to be inadequate, such as Rupert Sheldrake, author of "The Science Delusion". And some who do not agree that science is deluded still find inspiration in Bergson's ideas, and seek to reconcile them with Einstein's.

Louis de Broglie, a pioneer of quantum physics, recognised Bergson as a seer. Had he studied quantum theory "he would doubtless have observed with joy that in the image of the evolution of the physical world which it offers us, at each instant nature is described as if hesitating between a multiplicity of possibilities", de Broglie wrote. Jenann Ismael, a philosopher of science, argues that any being, man or machine, that gathers and uses information would perceive time as passing and the future as open. That time is no less real than Einstein's static four-dimensional "space-time", she says. There is a "sense of conflict being replaced by a bridge".

The debate in Paris found both thinkers at their most dogmatic. Afterwards Bergson seems to have had second thoughts about some aspects of "Duration and Simultaneity"—though he never abandoned his basic position. In subsequent decades Einstein seemed to budge more. He acknowledged that metaphysics plays a role in science, and became more troubled by the failure of physics to give a complete description of time.

The "problem of Now worried him seriously", wrote the philosopher Rudolf Carnap. It means "something essentially different from the past and the future", yet "this important difference does not and cannot occur within physics". Perhaps the ageing physicist came close to admitting that a philosopher's time exists after all. ■

New American fiction

The empire strikes back

Mecca. By Susan Straight. *Farrar, Straus and Giroux*; 384 pages; \$28

AS WELL AS the holy city of Islam, Mecca is the name of a speck on the map in the Coachella Valley of southern California. It lies in the Inland Empire, the irrigated desert region where Mexican farmworkers harvest cantaloupes and grapes. Writing about its denizens, Joan Didion wistfully riffed about "girls for whom all life's promise comes down to a waltz-length white wedding dress and the birth of a Kimberly or a Sherry or a Debbi."

These "dreamers of the golden dream" were curiosities to Didion, unimaginably distant from her enclave in Malibu. Susan Straight, a novelist born and brought up in Riverside, not far from Mecca, was shocked by these disparagements. Ms Straight "knew a version of us, of the girls and women here, that was not in [Didion's] essay", she wrote in a memoir. "Girls descended from Mexican and black families arrived in the 1920s, and white families arrived from Arkansas after the Korean war."

In "Mecca", her triumphant, polyphonic new novel, the working people behind the glamour of the Golden State are revealed in all their multiplicity, with Ms Straight's trademark tenderness and humour. Through the braided, often heart-breaking stories of half a dozen people of African-American, Mexican, Mixtec and Spanish descent—cop and cleaner, florist, ►



An American tale

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►butcher and basketball star—she draws readers into a rich but overlooked world.

She begins from the viewpoint of a motorway patrolman, as if to show that behind every badge or label everyone is human. Johnny Frías has his own sorrows and secrets. He is also part of a tight-knit group of friends whose lives and families the novel charts. Each is lovingly drawn, despite—or because of—their difficulties.

Matelasse is abandoned by a husband dreaming of a flashier life. Dante, a young boy terrified of losing his parents to covid-19, takes solace in the stars. Ximena toils in daily terror of an immigration raid. Terrible events abound, including a police shooting, thefts and rape. What saves these characters, and uplifts the reader, is their web of mutual support.

Like those of Louise Erdrich and William Faulkner, Ms Straight's novels (nine in all) have created a fictional universe rooted in one community and place. The author herself moved away from Riverside just once, to study creative writing under James Baldwin. The deep history of southern California is her subject: the stories of those whose families have inhabited it for centuries, whether they were indigenous or first brought as slaves by Mormons or Spanish explorers. Hers are true American tales, at once intimate and epic.

By the closing pages of the book, the reader sees why Ximena thinks Mecca, California, is a “holy place”, too. Set on tribal land in an ancient lake bed, it is, like its namesake, a place people strive to reach, and a place of refuge. ■

ute Mr Bolsonaro and Andrés Manuel López Obrador, the president of Mexico. The roster includes royals, elected politicians and fully fledged autocrats. And they are doing huge damage.

The harm is not just to the people they oppress or the national political systems that they corrode. Strongmen also chip away at global institutions, international norms and multilateral co-operation. Many are suspicious of free trade. Few are inclined to endure much inconvenience to curb climate change. They are prone to adventurism and aggression in foreign policy—witness Mr Putin’s murderous invasion of Ukraine.

But the ongoing war there, which began after the book was written, also suggests the limits of Mr Rachman’s analysis. His strongmen show little solidarity or diplomatic allegiance to one another. Some have sided with Mr Putin, others have opposed him and still others are sitting on the fence. Identifying someone as a strongman is only a partial guide to how he (the book does not mention any strongwomen) is likely to behave.

Mr Rachman’s most powerful point concerns not the strongmen themselves, but Western politicians’ and commentators’ wishful thinking about them (including, on occasion, *The Economist*). When Mr Putin succeeded Boris Yeltsin, he was hailed as a man who could stabilise Russia’s listing democracy. Mr Erdogan, too, was greeted with optimism, as someone who could reconcile Islam and democracy. Abiy was going to put an end to Ethiopia’s ethnic divisions; MBS was going to drag the Saudi monarchy into the 21st century; and so on. The world’s genuine democracies may not be to blame for the rise of the strongmen, but they have not been very shrewd about warding them off, either. ■

Authoritarian leaders

Men of the people

A perceptive foreign-affairs commentator charts the rise of strongman rule

The Age of the Strongman. By Gideon Rachman. Other Press; 288 pages; \$27.99. Bodley Head, £20

WHAT DO XI JINPING, Boris Johnson and Prince Muhammad bin Salman have in common? More than you might think, and more than is good for the rest of humanity, writes Gideon Rachman, a columnist for the *Financial Times* who previously worked for *The Economist*. He sees all three men as proof of the advent of “The Age of the Strongman”, as his wide-ranging and astute new book is titled. They present a threat not only to the well-being of their own countries, but also to a world order in which liberal, cosmopolitan ideas are increasingly embattled.

It is hard to dispute the view that those three, along with the likes of Recep Tayyip Erdogan, the president of Turkey, Viktor Orban, the newly re-elected prime minister of Hungary, and Jair Bolsonaro, the president of Brazil, share certain traits. To varying degrees, they all claim to speak for the common man, while undermining institutions, stoking nationalism and cultivating a personal style of politics, if not an outright personality cult. True, Mr Johnson has not been accused of ordering the murder of any critics, as Prince Muhammad, better known as MBS, has been in the case of Jamal Khashoggi (he denies it). But Mr Rachman argues convincingly that the strongman style is a continuum, in which its exponents’ affinities are amplified or muffled by the particular political system in which each operates.

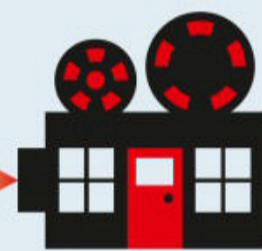
It is striking to see how many contemporary leaders fit the strongman mould. What with Donald Trump and Narendra Modi, the prime minister of India, all three of the world’s most populous countries were led by would-be or actual strongmen until last year, by Mr Rachman’s reckoning. They are present in Europe (Mr Johnson, Mr Orban and Vladimir Putin), in Africa (Abiy Ahmed, Ethiopia’s prime minister) and Asia (Messrs Modi and Xi, plus Rodrigo Duterte, the president of the Philippines). The Middle East furnishes Mr Erdogan, MBS and Binyamin Netanyahu, Israel’s former prime minister; the Americas contrib-



Birds of a feather



HOME
ENTERTAINMENT



Pioneering radio

Tapestries of sound

Decades after they were made, Glenn Gould's documentaries still mesmerise

IN HIS EARLY 30S and at the height of his powers, Glenn Gould announced in 1964 that he was retiring from public performance. Classical-music enthusiasts were stunned. Less than a decade before, the maverick pianist had delighted fans with his authoritative recording of J.S. Bach's "Goldberg Variations". Now, he declared, "the concert is dead". In 1965 he accepted a job with the Canadian Broadcasting Corporation (CBC) and rode the Muskeg Express as far as it would go, from Winnipeg to Churchill, Manitoba.

On the train, Gould struck up a conversation with Wally Maclean, a retired surveyor who combined a homespun folksiness with the soul of a philosopher. Over breakfast Maclean taught Gould how to read the signs of the icy land, to find "in the most minute measurement a suggestion of the infinite". The cordial chat turned into a days-long, probing conversation.

Gould adapted this material into "The Idea of North", a radio documentary exploring Canada's ambivalent relationship with its northern frontier, which the CBC aired in 1967. It was the first of three experimental audio documentaries he produced about choosing to live apart: "The Late-

comers", about Newfoundland, was broadcast in 1969 and "The Quiet in the Land", which chronicles a Mennonite community, was released in 1977. Gould would later call the shows his "Solitude Trilogy".

The theme of isolation resonates again in the wake of the pandemic. What is more surprising is how fresh and experimental the programmes themselves sound, even in the high-tech, peak-podcast era. (They are available to stream via Spotify, Amazon and the CBC's own website.) Take "The Idea of North", in which Gould arranged the voices of four main characters into a single fugue. A technician recalled being handed a diagram by Gould, outlining which clips should be heard when; he was "orchestrating the voices" on the page.

Gould thought that, in broadcasting, fidelity to a single human voice was "nonsense", maintaining that "the average person can take in and respond to far more information than we allot him on most occasions." He championed a layered form—thinking of it in musical terms, as "contrapuntal"—and experimented with it further in "The Latecomers" and "The Quiet in the Land". By the late 1960s the CBC had switched from monaural to stereo sound, and editors were able to weave voices into a delicate sonic tapestry.

The formal daring did not just make use of technical advances: it created a sublime listening experience. At the end of "The Idea of North", Gould sets Maclean's musings to the final movement of the Fifth Symphony by Jean Sibelius, a Finnish composer who also withdrew from public life. Reflecting on "The Moral Equivalent of War", an essay by William James, Maclean suggests that, in its arduous extremity, going north is, for Canadians, the modern equivalent of conflict.

The trilogy is a masterwork of sonic innovation. It redefined the radio documentary and influenced generations of audio storytellers. Listen to it on a train—or in any moment of blissful solitude. ■

Children's news

Bullets and bulletins

Journalists grapple with how to cover war for youngsters

HOW MUCH of the battlefield should be broadcast into the living room? News editors everywhere face a balancing act in determining what to include in their war reporting. The dilemma is especially acute for those composing reports for television's most impressionable yet most curious audience: children.

"Newsround", the BBC's programme for six- to 12-year-olds, has more experience than most. On April 4th it completed half a century of daily bulletins, which in 1986 included the first report in Britain of the *Challenger* space disaster. Its eight-minute shows have provided a template for public-service broadcasters elsewhere in Europe, such as "Ultra Nyt" on Denmark's DR.

War footage is carefully edited. "Newsround" shows the aftermath of attacks but not the moment of impact; wide shots of destruction are used instead of harrowing close-ups. People are not portrayed in severe distress. Reports often focus on children, as in recent packages showing Ukrainian refugees starting school in Poland, or celebrating Purim in Israel. Reporting aims to provide "honest reassurance", says the programme's editor, Lewis James. A recent Q&A with the BBC's man in Kyiv emphasised that no British troops had been deployed.

Everything must be explained: viewers may not know who Vladimir Putin is or even, at the younger end of the age range, ►



► what Russia is. Producers and presenters visit schools to try out bulletins and see what is misunderstood. Ahead of big events like elections, researchers do field-work to find out what children already know (Donald Trump needed little introduction, they discovered).

It is tempting to protect youngsters from bad news. Yet "children are most disturbed when there's an information vacuum", Mr James argues. Amber Williams, who edits the *New York Times*'s monthly supplement for children, adds that they anyway "experience all the things we as

adults try to shield them from". When the *Times for Kids* ran an interview with a survivor of the Parkland school shooting, the story carried a warning. But, notes Ms Williams, most American children have done active-shooter drills since kindergarten.

On-demand television means children no longer need to sit through the news to get to the cartoons, and ever-fewer households have a newspaper lying on the kitchen table (Ms Williams says some of her readers get their copy passed on from grandparents). Only about 100,000 children tune in to watch "Newsround" live.

But 2m watch each week in schools. Three-quarters of primary-school teachers use its bulletins in their lessons, the BBC says.

And new forms of media may be making children more politically engaged and active. Ms Williams cites recent walk-outs in Florida schools, organised on social networks, in protest at a proposal to limit lessons on sexuality and gender. Wading into sensitive subjects like this for a readership of eight- to 14-year-olds isn't easy. But the *Times* article that has provoked the most complaints from parents, Ms Williams says, was on "how to pick a lock". ■

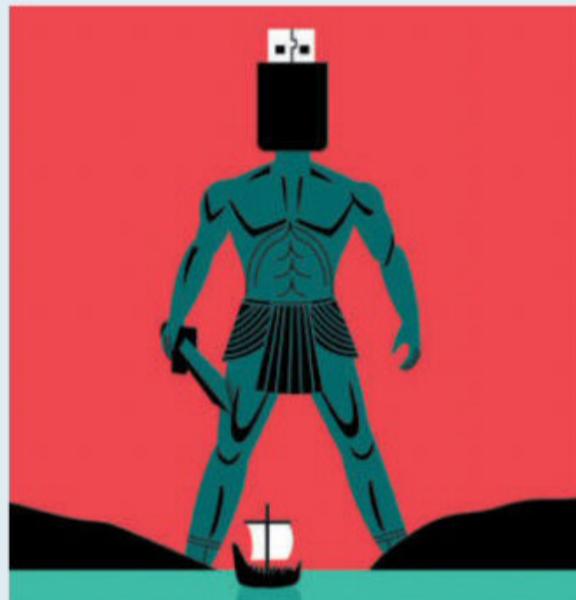
Johnson Beyond the giga-zone

As the scale of science expands, so does the language of prefixes

NOWADAYS EVERY factory seems to be a "gigafactory". Elon Musk, the boss of Tesla, recently cut the ribbon on a fourth facility by that name, in Berlin. Tesla's Shanghai Gigafactory has been in the news for a covid-related halt in production. The Taiwan Semiconductor Manufacturing Company (TSMC), one of the world's most important chipmakers, has begun touting its "gigafabs". Nissan has announced a gigafactory in Sunderland, in the north-east of England.

Giga- is a prefix meaning "a billion" of something. The Oxford English Dictionary drily describes it as an "arbitrary derivative" of the Greek *gigas*, "giant". (The ancient Greeks apparently had no need for a specific word for "billions".) But the various gigafactories don't always produce billions of anything: each month the TSMC gigafab can start about 100,000 silicon wafers used for making microchips, making it more of a hectokilofactory. (*Hekaton* and *khilioi* really are Greek for 100 and 1,000.) Tesla, at least, can claim that its original Gigafactory in Nevada supplies billions of watt-hours of battery-cell output per year.

As science has expanded to the huge and the tiny, the need for new metric-system prefixes has grown accordingly. These have made their way into common parlance mostly through computing. In the 1980s a good computer might have had 256 kilobytes of memory. The first hard drives with a million bytes' worth of storage introduced the world to the megabyte, a jaw-dropping notion at the time. (*Megas*, too, was generic in Greek, meaning "great". A megalomaniac has delusions of greatness, not millionaire status.) But at least many people had heard of the mega- prefix before. When the billion-byte mark was crossed, many began encountering "giga-" for the first



time, strange new linguistic territory opened up by Moore's Law.

It can be only a matter of time before giga- feels ho-hum; after all, a memory card with 128 gigabytes of storage is today the size of a thumbnail and costs around \$20. Affordable hard drives now have terabyte—that is, trillion-byte—storage. Having run out of terms for "big", the borrowers from Greek got creative: *teras* means "monster". As billions become workaday, tera- will become the new giga-.

For a while, anyway. Whether or not computing power continues to grow at the rate it has in the past—a matter of some debate—it is inevitable that peta- and exa-will make their debut in the popular consciousness. Already selected by the International Committee for Weights and Measures (ICWM), peta- and exa- come from Greek *penta* (five) and *hexa* (six), representing $1,000^5$ and $1,000^6$. After that, the ICWM's prefix-mongers have decided to go for Latin rather than Greek. They considered septa- and octo- for $1,000^7$ and $1,000^8$. But the proposed s-shortening of septa- could have been confused with an

abbreviation for a second, and the o- for a zero. So septa- and octo- were deformed to zetta- ($1,000^7$) and yotta- ($1,000^8$).

As the system of prefixes can now encompass a 1 followed by 24 zeroes, most scientists will be happy to use 10^{25} and the like for anything bigger. But not college students: a group at the University of California, Davis, started a petition proposing a new prefix, *hella-*, for 10^{27} . Northern Californians will know *hella* as an adverb, derived from *hell of*, as in "he's hella ugly." And as a prefix, it has gained a bit of currency in the technology press, if only jokingly. It would be the first of the prefixes for huge numbers not to come from the classical languages. "Hell" is a Germanic word.

Small is cool too. The fractional equivalent of giga- is nano-, the prefix denoting a billionth. Nanotechnology is big, so to speak: nanoparticles making up nanobeads are hot topics in science and technology. The hip feel conveyed by the prefix was borrowed by Apple, which named its tiny music player the Nano. (Again, the etymology is classical: *nanos* is the Greek word for "dwarf".) If nano-, too, eventually becomes humdrum, look out for pico- (a trillionth, from Spanish *pico* for "a little bit"), femto- and atto-, from the Danish for 15 and 18, referring to 10^{-15} and 10^{-18} .

Classicists once scoffed at words, such as "television" and "monolingual", which mix up Greek and Latin roots. Now they are obliged to behold gigafactories and decacorns (private companies that are worth over \$10bn), nanoseconds and terawatts, to say nothing of hellabytes. These may seem ungainly, but the Hellenophiles can console themselves that the chimera—an unlikely combination of lion, goat and snake—was, after all, a Greek beast.



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	Gross domestic product			Consumer prices		Unemployment rate		Current-account balance		Budget balance		Interest rates		Currency units	
	% change on year ago latest	quarter*	2022†	% change on year ago latest	2022†	%		% of GDP, 2022†		% of GDP, 2022†		10-yr gov't bonds latest,%	change on year ago, bp	per \$ Apr 6th	% change on year ago
United States	5.5	Q4	6.9	3.0	7.9	Feb	6.6	3.6	Mar	-3.4	-7.5	2.6	94.0	-	-
China	4.0	Q4	6.6	5.5	0.9	Feb	2.0	5.5	Feb‡§	1.8	-5.4	2.5	§§	-54.0	6.36
Japan	0.4	Q4	4.6	2.8	0.9	Feb	1.7	2.7	Feb	1.1	-5.9	nil	-8.0	124	-11.3
Britain	6.6	Q4	5.2	4.1	6.2	Feb	5.4	3.9	Dec††	-3.3	-5.4	1.6	75.0	0.76	-5.3
Canada	3.3	Q4	6.7	3.8	5.7	Feb	4.5	5.5	Feb	0.3	-4.8	2.5	103	1.25	nil
Euro area	4.6	Q4	1.0	3.3	7.5	Mar	4.6	6.8	Feb	2.4	-4.3	0.7	97.0	0.92	-8.7
Austria	5.5	Q4	-2.0	3.2	6.8	Mar	4.0	4.8	Feb	1.0	-3.8	1.2	125	0.92	-8.7
Belgium	5.6	Q4	2.1	3.9	8.3	Mar	4.6	5.6	Feb	1.3	-4.7	1.2	124	0.92	-8.7
France	5.4	Q4	2.9	3.4	4.5	Mar	3.7	7.4	Feb	-1.3	-5.8	1.0	109	0.92	-8.7
Germany	1.8	Q4	-1.4	2.5	7.3	Mar	5.3	3.1	Feb	5.5	-2.4	0.7	97.0	0.92	-8.7
Greece	7.4	Q4	1.7	3.7	7.2	Feb	4.7	11.9	Feb	-4.6	-4.7	2.8	189	0.92	-8.7
Italy	6.2	Q4	2.5	3.4	6.7	Mar	4.2	8.5	Feb	2.5	-5.7	2.3	161	0.92	-8.7
Netherlands	6.5	Q4	4.1	3.1	6.2	Feb	6.4	3.4	Feb	5.9	-4.9	-0.2	36.0	0.92	-8.7
Spain	5.5	Q4	9.2	5.4	9.8	Mar	4.5	12.6	Feb	1.4	-5.7	1.4	113	0.92	-8.7
Czech Republic	3.7	Q4	3.2	2.7	11.1	Feb	9.3	2.5	Feb‡	-2.8	-4.6	4.0	207	22.4	-2.0
Denmark	6.8	Q4	12.5	2.7	4.8	Feb	2.0	2.5	Feb	8.6	nil	0.9	92.0	6.81	-7.8
Norway	5.4	Q4	0.3	3.3	3.7	Feb	3.6	3.2	Jan‡‡	9.2	2.6	1.4	76.0	8.76	-2.9
Poland	7.6	Q4	7.0	4.2	10.9	Mar	7.9	5.4	Mar§	-1.0	-4.0	5.6	403	4.26	-8.9
Russia	4.3	Q3	na	-10.1	9.2	Feb	15.0	4.1	Feb§	8.5	-6.7	11.9	454	83.2	-7.2
Sweden	5.2	Q4	4.6	3.3	4.3	Feb	3.0	7.9	Feb§	4.3	0.1	1.2	84.0	9.44	-8.4
Switzerland	3.7	Q4	1.1	2.9	2.4	Mar	1.2	2.2	Feb	5.6	0.5	0.7	95.0	0.93	nil
Turkey	9.1	Q4	6.2	3.0	61.1	Mar	50.5	12.1	Jan§	-2.8	-3.9	24.6	723	14.7	-44.7
Australia	4.2	Q4	14.4	3.3	3.5	Q4	3.8	4.0	Feb	1.3	-3.2	2.9	125	1.33	-1.5
Hong Kong	4.8	Q4	0.8	0.8	1.7	Feb	4.5	4.5	Feb‡‡	-1.6	-6.9	2.5	108	7.84	-0.8
India	5.4	Q4	26.6	7.2	6.1	Feb	4.9	7.6	Mar	-1.1	-6.4	6.9	80.0	75.8	-3.1
Indonesia	5.0	Q4	na	5.1	2.6	Mar	3.6	6.5	Q3§	0.2	-4.9	6.8	25.0	14,357	1.0
Malaysia	3.6	Q4	na	4.0	2.2	Feb	2.9	4.2	Jan§	2.9	-6.1	3.9	76.0	4.22	-2.1
Pakistan	6.0	2021**	na	3.0	12.7	Mar	8.0	6.3	2021	-5.1	-6.3	12.2	†††	198	186
Philippines	7.7	Q4	13.0	6.0	4.0	Mar	4.1	6.4	Q1§	-1.7	-7.4	6.1	189	51.4	-5.6
Singapore	6.1	Q4	9.5	3.8	4.3	Feb	2.9	2.4	Q4	17.5	-0.9	2.5	82.0	1.36	-1.5
South Korea	4.1	Q4	5.0	2.7	4.1	Mar	3.2	3.4	Feb§	2.2	-3.0	3.1	106	1,218	-8.1
Taiwan	4.9	Q4	7.6	4.5	2.4	Feb	2.4	3.7	Feb	14.7	-1.2	1.0	52.0	28.8	-1.0
Thailand	1.9	Q4	7.5	3.2	5.7	Mar	2.8	1.5	Dec§	0.5	-4.6	2.3	53.0	33.4	-6.0
Argentina	8.6	Q4	6.3	3.2	52.3	Feb	54.5	7.0	Q4§	1.2	-4.3	na	na	112	-17.5
Brazil	1.6	Q4	2.2	0.3	10.5	Feb	9.5	11.2	Feb‡‡	-0.9	-7.7	11.1	171	4.69	19.6
Chile	12.0	Q4	7.5	3.2	7.8	Feb	7.9	7.5	Feb‡‡	-2.7	-4.5	6.2	281	794	-9.4
Colombia	10.7	Q4	18.2	4.2	8.5	Mar	7.9	12.9	Feb§	-4.0	-5.3	9.2	302	3,734	-2.3
Mexico	1.1	Q4	0.1	1.9	7.3	Feb	7.4	3.8	Feb	-0.9	-3.5	8.5	214	20.0	0.7
Peru	3.2	Q4	-12.9	3.1	6.8	Mar	6.5	9.4	Feb§	-3.1	-2.6	6.9	195	3.70	-1.4
Egypt	9.8	Q3	na	5.3	8.8	Feb	7.0	7.4	Q4§	-4.1	-6.9	na	na	18.3	-14.2
Israel	11.0	Q4	17.6	4.1	3.5	Feb	3.8	3.9	Feb	3.4	-2.7	2.2	116	3.24	1.9
Saudi Arabia	3.2	2021	na	6.7	1.6	Feb	2.1	6.9	Q4	17.8	12.1	na	na	3.75	nil
South Africa	1.7	Q4	4.7	2.1	5.7	Feb	4.8	35.3	Q4§	-0.9	-6.0	9.6	12.0	14.7	-0.7

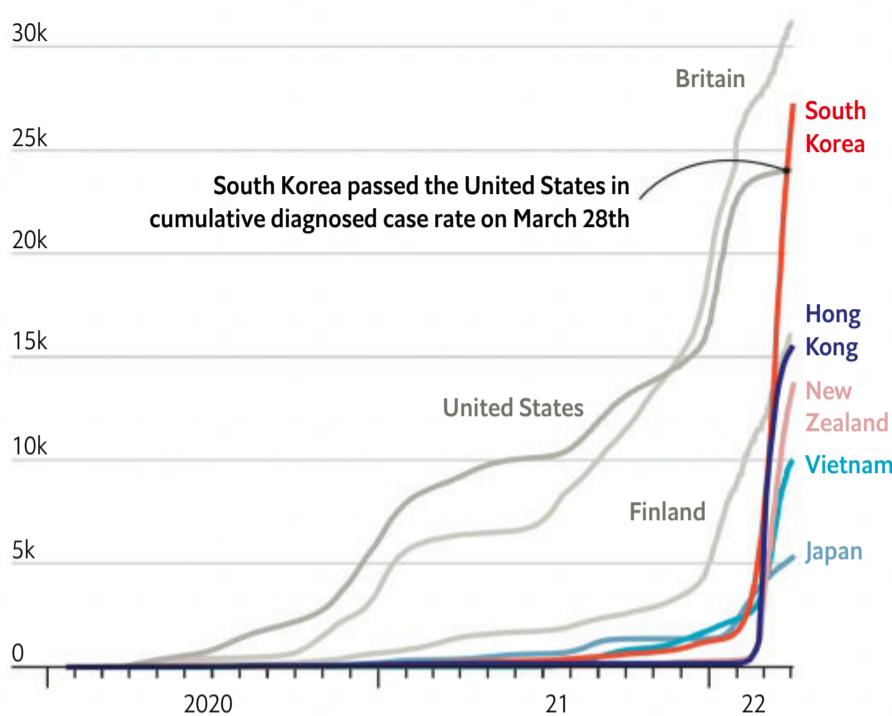
Source: Haver Analytics. *% change on previous quarter, annual rate. †The Economist Intelligence Unit estimate/forecast. §Not seasonally adjusted. ‡New series. **Year ending June. ††Latest 3 months. #3-month moving average. §§5-year yield. †††Dollar-denominated bonds.

Markets

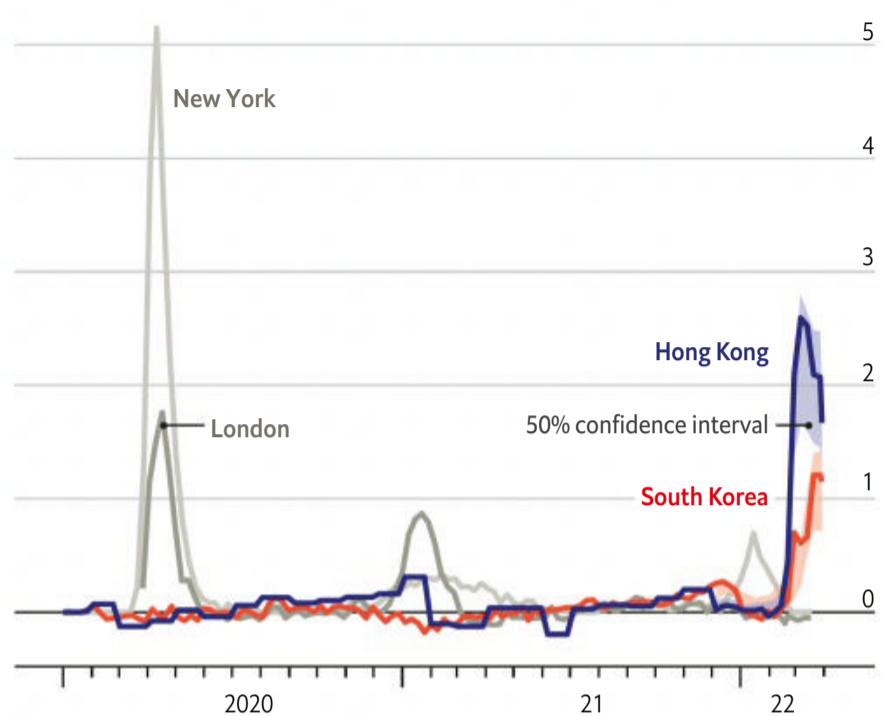
In local currency	Index	% change on:			index	% change on:			Dec 31st 2021
		Apr 6th	one week	Dec 31st 2021		Apr 6th	one week	Dec 31st 2021	
United States S&P 500	4,481.2	-2.6	-6.0		44,111.1	-0.5	-1.1		
United States NAScomp	13,888.8	-3.8	-11.2		3,423.0	-0.6	9.6		
China Shanghai Comp	3,283.4	0.5	-9.8		2,735.0	-0.4	-8.1		
China Shenzhen Comp	2,128.0	-0.5	-15.9		17,522.5	-1.2	-3.8		
Japan Nikkei 225	27,350.3	-2.4	-5.0		1,701.2	0.2	2.6		
Japan Topix	1,922.9	-2.3	-3.5		90,973.0	0.1	8.9		
Britain FTSE 100	7,587.7	0.1	2.8		118,227.8	-1.7	12.8		
Canada S&P TSX	21,788.6	-1.3	2.7		55,438.7	-0.7	4.1		
Euro area EURO STOXX 50	3,824.7	-3.4	-11.0		11,348.0	1.0	-4.7		
France CAC 40	6,498.8	-3.6	-9.1		2,117.2	nil	2.1		
Germany DAX*	14,151.7	-3.1	-10.9		13,256.0	1.7	17.0		
Italy FTSE/MIB	24,447.4	-3.4	-10.6		74,359.0	-1.4	0.9		
Netherlands AEX	719.7	-1.9	-9.8		3,012.2	-2.7	-6.8		
Spain IBEX 35	8,482.1	-0.8	-2.7		1,142.5	-0.6	-7.3		
Poland WIG	64,264.5	-2.5	-7.3						

→ Parts of Asia have amassed a full pandemic's worth of cases in weeks. Death rates have depended on vaccination levels

Cumulative confirmed covid-19 cases per 100,000 people



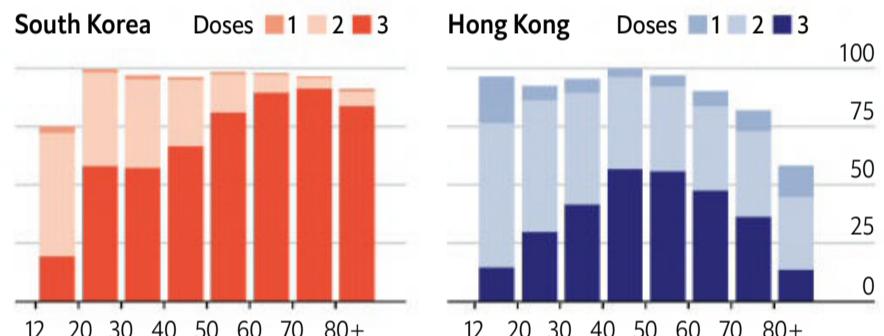
Estimated daily excess deaths per 100,000 people



Share of vaccines administered by manufacturer, January 19th 2022, %



Share of population vaccinated by age group, April 4th 2022, %



*Does not add up to 100% due to rounding Sources: Our World in Data; Public Health England; CDC; Korea Disease Control and Prevention Agency; Hong Kong Department of Health; The Economist

A tale of two surges

Raging outbreaks show that Omicron is deadly in unvaccinated people

DURING THE first two years of the covid-19 pandemic, rich Asian countries had lower case rates than almost anywhere else. But like a dam holding back a flood, the longer a region's defences hold up, the worse the resulting disaster once they fail.

The Omicron variant has swept remarkably fast through places with little past exposure to covid. As a share of population, South Korea has logged more cases in 2022 than America has during the entire pandemic. Hong Kong's surge has been even more abrupt. Until this February, it barely had any positive tests. Its cumulative case-load per person now matches Finland's.

In Europe Omicron has caused greater increases in cases than in hospitalisations or deaths. Two factors have combined to yield such mild disease: strong immunity levels and Omicron's low severity when

compared with Delta. Until recently, it was unclear which mattered more. But the Asian data show that immunity is crucial, and that Omicron is still deadly for unvaccinated people who have not yet had covid.

Hong Kong and South Korea provide a natural experiment. Both were mostly covid-free before 2022, and had little infection-induced immunity. But South Korea has had a strong vaccine roll-out, whereas Hong Kong has had one of the rich world's worst. Its messaging was decidedly mixed, giving equal weight to arguments for and against vaccination, and telling people with chronic diseases to consult doctors before getting jabs. Its nurses worried about personal liability for mishaps.

Hong Kong also made heavy use of Sinovac, a Chinese vaccine that is less effective than Western shots. According to *Ming Pao*, a newspaper, of Hong Kongers who died in the recent wave, 71% were unvaccinated and another 25% had received Sinovac. Just 4% got Western vaccines.

Unfortunately, Hong Kong's elderly were unusually hesitant. In South Korea take-up of booster shots, which are needed to protect against Omicron, is greatest among the old. In Hong Kong, in contrast,

those most likely to get boosted are middle-aged. Just 37% of its septuagenarians and 14% of those 80 or older, the most vulnerable groups, are boosted—similar to the shares among people aged 20-39 and teenagers, respectively. When Omicron first struck, these rates were even lower.

This discrepancy has had a big impact. During the Omicron wave, Hong Kong's official covid mortality rate has been five times higher than South Korea's. These figures can be biased by differences in testing rates and judgments on causes of death. But fair comparisons can be made with excess mortality—the gap between the number of deaths from all causes and the number expected under normal conditions.

Although recent total-mortality numbers have not been published, our best estimate suggests that since February 1st 2.4 times as many people have died because of the pandemic in Hong Kong as in South Korea. At the peak of Hong Kong's surge in early March, its daily excess-death rate was between those registered in London (1.8 per 100,000 people) and New York (5.1) when covid first struck—a period with no vaccines, little testing and an incorrect understanding of how the virus spreads. ■



Man and myth

Mario Terán Salazar, the Bolivian soldier who killed Che Guevara, died on March 10th, aged 80

THEY HAD SPENT the night celebrating the arrest of their extraordinary prisoner, but in the bleary morning of October 9th 1967 a wake-up order came for A and B Company of the Bolivian Manchego Regiment. The words were "Saluden a Papá", sent by President René Barrientos himself. They meant "Say hello to Dad", and kill him. The original idea, backed by the United States, had been to send Che Guevara for court-martial; but Barrientos wanted this poisonous influence stamped out right away. Someone had to kill both Che and Willy, a guerrilla arrested with him; and when seven men were asked, and all volunteered, Colonel Zenteno's finger had pointed at Mario Terán. "Usted al Che," he said; you do Che.

For 40 minutes he had hung about, hoping the order would be annulled. This only infuriated his superiors. So from their camp at La Higuera, a village of no more than 20 dwellings in the dry broken hills of southern Bolivia, he was now climbing up to the schoolhouse. It was a humble place, built of mud and thatch, and silent now the children were away. But inside it was a legend, the most famous guerrilla leader anywhere, whose revolutionary socialist ideas had spread from Cuba all over Latin America and then beyond. He had been absent for years, fomenting trouble on Fidel Castro's orders in Congo, Tanzania, Vietnam and even Europe. Now he had turned up in Bolivia with a ragtag band of guerrillas, and the day before A and B Company had run into them.

The fight had been fierce. Terán, a 26-year-old non-commissioned officer in Company A, saw two good friends killed in front of him. But Che had lost more, and was wounded and his carbine-barrel shattered, so he surrendered. He looked almost ordinary then, like some tramp, unkempt and rasping with asthma in a filthy uniform. But when he was given some tobacco for his pipe, and cheekily asked whether anyone had any Astoria, the old charm came out again.

To the man who now had to kill him, the task was dreadful. He

needed a stiff drink, but could find only beer, so he shouldered his M2 automatic and struggled on with a slopping bottle in each hand. He had tried to find a better rifle, too, but had no luck. No luck with anything that day.

Why he had been picked remained a mystery. He was a good soldier, his superiors said, efficient and calm, did his duties well. His father was in commerce, but he had chosen the army in his teens, gone to the Sergeants' School in his home town of Cochabamba, and had made enough progress to become an instructor there. He was nothing special, though, and no more eager than anyone else to volunteer. Or perhaps a bit more, with his friends just killed and his wife Julia about to give birth back at home. Whatever had drawn him to the colonel's notice, it led him now to the schoolhouse door.

If he had known then how his life was about to change, he would never have raised his hand. Almost all the rest of his existence was spent in hiding and denial. In December that year he let Michelle Rey from *Paris Match* take his picture and label him as Che's killer. It remained the only clear photo of him until his pensioner's ID decades later. In between, in effect, he disappeared. He gave no hint of his story either publicly or even privately, to his six children or their children. There was said to be a "curse of Che", by which people involved in his death met sudden or violent ends. He did not need to believe in that to feel he was a marked man.

Until he retired from the army in 1997 with the rank of senior warrant officer, both the army and the government protected him. He also stayed in Santa Cruz de la Sierra, Bolivia's biggest city, but moved about in its labyrinth of streets, giving out no address except to claim his old-age benefit. Sometimes he went by the name "Pedro Salazar". When two reporters from Spain's *El Mundo* newspaper tracked him down in 2014, they found him in a middle-class street in a house behind high green railings, with a frisky Rottweiler patrolling but no door-knocker or bell.

To those reporters he gave the story he had told himself for decades. He was not the killer of Che, not for sure. Yes, he was the man in the *Paris Match* photograph, who bore a strong resemblance to the officer at Che's laying-out (above) who stood behind his dead head, seeming to explain. He also had the same name as the man who had written a long-secret report on the killing to his superiors, and had been given Che's handmade pipe by an embedded CIA agent. But there were two other Mario Teráns in the Bolivian army, distinguished only by their maternal surnames: Mario Terán Ortúñoz and Mario Terán Reque. As he told the reporters without blinking, it could well have been one of them.

It was therefore not him for certain who, according to the secret report, entered the schoolhouse in La Higuera to find Che sitting on a bench. He said, "You've come to kill me." To this his killer could only bow his head and make no answer. He was unable to fire. The figure of Che seemed suddenly gigantic. Those eyes shone so intensely that he felt dizzy, overwhelmed. He thought his M2 might be wrenched away by one movement of Che's hand. (The guards said later that he rushed from the building, soaked in sweat, and that he did so more than once.) At last Che said: "Calm down and aim well! You are going to kill a man."

The man who was not him for certain aimed his carbine at Che's legs, recalling the order that he should do so to spread the official story that he had died of battle wounds. With the first burst he made him topple writhing to the ground, his legs destroyed and blood streaming across the floor. His killer regained his spirits then, and unleashed a second burst that found Che's arm, his shoulder and his heart. Then the giant was dead, and he left.

Death in such a fashion, and especially the laying-out afterwards, mightily magnified the myth of Che. La Higuera became a shrine and a tourist-trap, with the *guerrillero heroico* its patron saint. As for the soldier who was not his killer, not for certain, he went back down the hill believing he would never forget, and proceeded to work on his forgetting for 55 years. ■

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