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## Power and paranoia

The Chinese Communist  
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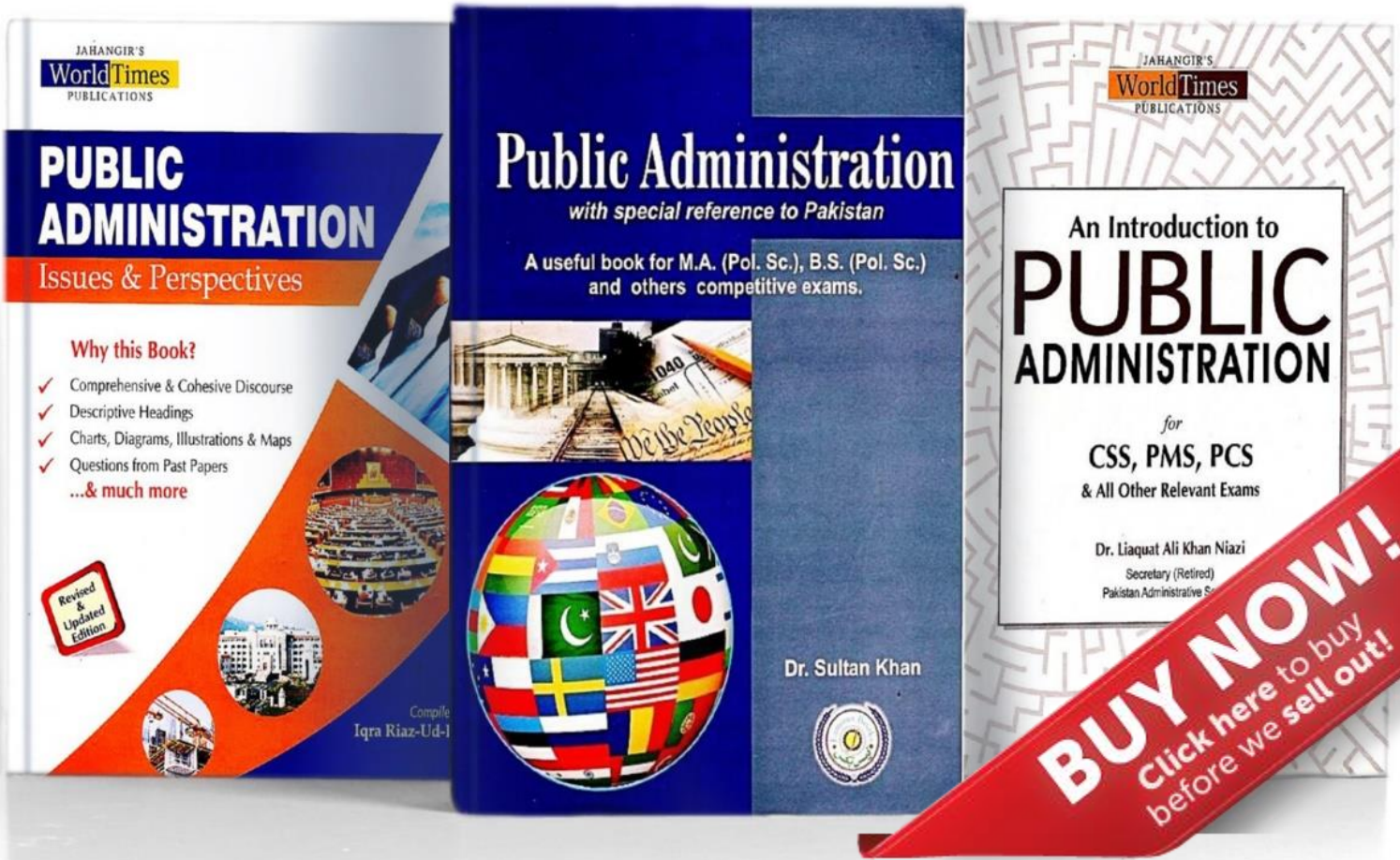
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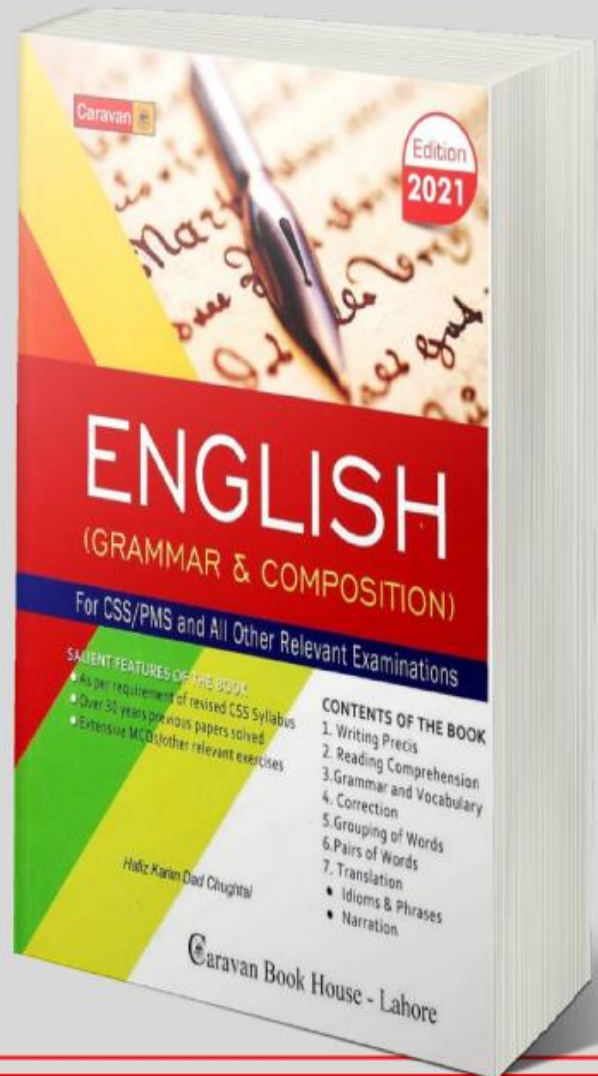
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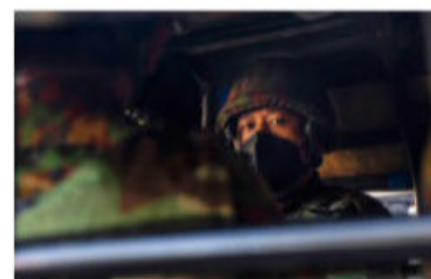
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Ebrahim Raisi, a conservative cleric and former chief of the judiciary, won **Iran's** presidential election with 62% of the vote. His main rivals had all been barred from running. Turnout was less than 49%, a record low, as many liberal and moderate Iranians stayed at home. Mr Raisi promised to continue working with America and other world powers to resuscitate the nuclear deal signed in 2015, but said he would not meet Joe Biden. And he insisted that Iran's ballistic missile programme and its support for foreign militias were not negotiable.

**Kenneth Kaunda**, the founding president of Zambia, died at the age of 97. He is remembered as a giant of Africa's liberation from colonial rule and for stepping down when he lost an election in 1991. He also locked up opponents and crashed the economy.

Leaders of the 16 countries in the Southern African Development Community, a regional bloc, agreed to send an armed force to **Mozambique** to battle jihadists, who have caused nearly 1m people to flee their homes.

**Ethiopians** voted in a parliamentary election marred by the arrest of opposition leaders and the disenfranchisement of a fifth of voters. The election was not held in four of the country's ten regions because of conflict or mishaps, such as misprinted ballot papers.

**Apple Daily**, a pro-democracy newspaper in Hong Kong, published its last issue following the arrest of its editor and other staff for running articles calling for sanctions against

the city's and China's governments. The persecution of the paper has sent a chill over Hong Kong's traditionally free media, under pressure more than ever from China's Communist Party to toe its line.

The first trial began in **Hong Kong** of a person charged with violating the city's national-security law. Tong Ying-kit is accused of inciting secession and terrorism, allegedly by riding a motorbike into police while showing a flag calling for Hong Kong's "liberation".

A row erupted between Australia and UNESCO, after the UN body said the **Great Barrier Reef** would be added to its list of heritage sites that are in danger. Australia says it is being singled out. Some suspect China, which currently heads the heritage committee and has fallen out with Australia, of pushing for the change.

The Supreme Court of **Japan** ruled that laws requiring married couples to use the same surname are constitutional, rejecting a challenge by petitioners seeking to keep their original surnames.

**Brazil's** environment minister, Ricardo Salles, resigned amid a police investigation into an illegal wood-smuggling ring. Under Mr Salles's watch the rate of deforestation in the Amazon soared by over 40%. His replacement has ties to Brazil's farming lobby.

Republicans in the American Senate deployed a filibuster to obstruct a wide-ranging bill that seeks to shore up **voting rights**, known as the For the People Act. The Democrats may now turn to a compromise bill put forward by Joe Manchin, a Democratic senator from West Virginia.

Eric Adams led the count in **New York City's** Democratic primary for mayor. Mr Adams, who vowed during his campaign to fight crime, fell short of 50% of the vote, so the election will be decided by a new ranked-choice system.

**Carl Nassib** became the first-ever regular player in America's National Football League to declare that he is gay. Mr Nassib, 28, plays for the Las Vegas Raiders.

Joe Biden signed a law making **Juneteenth**, which commemorates the end of slavery, a new federal holiday in America.

A **British** naval vessel entered what Russia claims as its waters off Crimea. (Britain, like most countries, regards Russia's seizure of Crimea from Ukraine in 2014 as illegal.) Russia said it had fired warning shots and dropped bombs to scare off the British ship. The British government said in fact Russia had carried out a routine gunnery exercise.

**French** voters delivered a rebuke to President Emmanuel Macron in the first round of regional elections. His party, La République en Marche, came a humiliating fifth. The result was also bad for his probable presidential rival next year, Marine Le Pen, an anti-immigrant populist.

Nine Catalan politicians, jailed for their part in organising an illegal independence referendum in 2017, walked free after the **Spanish** prime minister gave them conditional pardons in the hope of improving relations with Catalonia and moving towards a solution to a decade-long dispute.

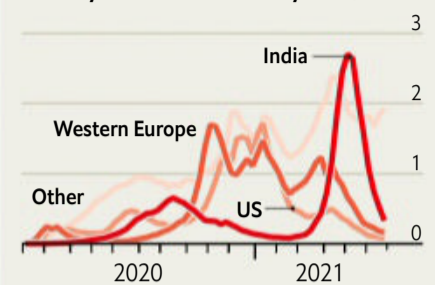
**Sweden's** prime minister, Stefan Lofven, lost a vote of confidence. He is allowed a week to cobble together a fresh coalition.

In **Britain** the Conservative Party co-chairman said that policies such as a north-to-south high-speed rail link, which cuts through the countryside, were a "warning shot" not to take southern seats for granted. This came after the party's stunning defeat in a by-election in Chesham and Amersham, a pleasant and leafy constituency it had won by nearly 30 percentage points in 2019.

## Coronavirus briefs

To 6am GMT Jun 24th 2021

### Weekly confirmed cases by area, m



### Vaccination doses

	Total '000	% of over-11s with	
		1st dose	2nd
Malta	631	90	71
Kuwait	3,100	84	4
Iceland	357	83	40
Israel	10,659	82	77
Mongolia	3,633	79	70
Bhutan	484	78	0
Canada	33,067	77	24
Chile	21,447	75	58
Uruguay	3,618	75	50
Britain	74,638	74	54

Sources: Johns Hopkins University CSSE; Our World in Data; United Nations

**Indonesia** recorded its highest number of daily cases—over 14,500—as infections surged following a religious holiday and the spread of the Delta variant. Hospital beds in Jakarta are 80% full. Nationally, less than 10% of people over the age of 12 have received a single vaccine dose.

Japan said it would limit the number of spectators at **Olympic** events to 10,000, but insisted the games would start on July 23rd.

A court in Brussels chastised **AstraZeneca** for breaching its contract with the EU on vaccines, but did not support the EU's demand that the drug company deliver 120m doses by the end of June.

Calls were made for the British government to publish its risk assessment of the recent **G7 summit** it hosted in Cornwall, after a surge of infections were recorded around the area where the events were held.

→ For our latest coverage of the virus please visit [economist.com/coronavirus](https://www.economist.com/coronavirus) or download the *Economist* app.



In testimony to Congress, Jerome Powell, the chairman of the Federal Reserve, admitted that prices are increasing at a faster pace than central bankers have forecast, but reiterated his view that pressures will eventually ease, avoiding any return to 1970s levels of **inflation**. Fed officials now think consumer prices in America will be 3.4% higher in the fourth quarter than a year before, up from 2.4% in an earlier projection (in May a different measure of inflation hit 5%). Mr Powell pointed out that price rises are sharpest in sectors linked to the reopening of the economy, and will recede.

**An exclusive club**

**Microsoft's** market capitalisation reached \$2trn, making it only the second American company, after Apple, to do so. It hit a valuation of \$1trn in April 2019. Microsoft's share price is up by 20% since the start of the year, outperforming Amazon and Apple, but not Alphabet, which has seen its stock rise by around 40%.

The **median price of a home** in America (excluding new builds) was \$350,300 in May, a record according to the National Association of Realtors and up by 24% year on year. The NAR has also reported that sales are rocketing of vacation homes, "a hot commodity" as people seek peace and quiet to work remotely.

**China's** central bank stepped up its clampdown on **bitcoin** and other digital currencies, hauling in officials from the country's biggest banks to discuss the problem of "cryptocurrency speculation". China

eventually wants its citizens to use a government-backed cryptocurrency that is being tested in pilot projects. The price of bitcoin, meanwhile, recovered somewhat after falling below \$30,000 for the first time since January.

The market for **iron ore** is also attracting the ire of Chinese regulators. The National Development and Reform Commission, an agency of the State Council, has said it will investigate "malicious speculation" in trading for iron ore and "severely punish" any wrongdoing. China is eager to dampen soaring commodity prices, which are pumping up inflationary pressures.

The share prices of **Fannie Mae** and **Freddie Mac**, which guarantee American mortgages, plunged by more than 30% after the Supreme Court rejected most claims brought by a group of hedge funds, including Bill Ackman's Pershing Square. They claimed the government, attempting to recoup bail-out funds, illegally seized \$100bn of profits earned by Fannie and Freddie since 2012. The justices disagreed.

America's Federal Trade Commission is to evaluate **Amazon's** proposed takeover

of **MGM** film studio. The commission's new chairwoman, Lina Khan, is an outspoken critic of Amazon and other big tech. Amazon also faces a broadside over its working practices. The Teamsters union is looking to escalate its fight to organise workers at Amazon warehouses.

The European Commission opened a formal antitrust investigation into **Google**, to establish whether it favours its own online display advertising technology across its platform. The review will probe the heart of Google's monetising model, including ad buys on YouTube.

**This week's special offer**

**Morrisons**, Britain's fourth-biggest supermarket chain, rejected a takeover approach from a private-equity firm. Its share price leapt amid speculation that other buyers may be about to join the queue with their own bids.

**John McAfee**, the eponymous founder of the computer-security company, died in a suspected suicide in a Spanish prison, where he was awaiting extradition to America for tax evasion. Mr McAfee sold his firm in 1994, and had since led an unsettled life, fleeing Belize

after the death of a neighbour and running for president in America as a Libertarian. He had recently been promoting cryptocurrencies.

The Brazilian congress approved a bill to float the shares of **Eletrobras**, Brazil's state-owned electricity provider and the biggest utility in South America, on the stock market. The government hopes to reap \$20bn from the sale, which would be the first major privatisation under President Jair Bolsonaro.

America's big banks took further steps to prepare workers for a **return to the office**. Press reports suggest that Morgan Stanley will not allow staff or clients to enter its offices in New York unless they have been fully vaccinated and that JPMorgan Chase wants its employees to register their vaccine status on an internal website.

**Peloton**, meanwhile, rolled out a corporate-wellness programme for businesses that offer subsidies for its digitally connected fitness bikes, exercise programmes and other workouts for those aspiring to be svelte. That is one incentive that could entice workers back to the office. Or maybe not.



# Still going strong

**China's ruling party is about to turn 100. How long can the world's most successful autocracy last?**

ON JULY 1ST China's Communist Party will celebrate its 100th birthday. It has always called itself "great, glorious and correct". And as it starts its second century, the party has good cause to brag. Not only has it survived far longer than its many critics predicted; it also appears to be on the up. When the Soviet Union imploded in 1991, many pundits thought that the other great communist power would be next. To see how wrong they were, consider that President Joe Biden, at a summit on June 13th, felt the need to declare not only that America was at odds with China, but also that much of the world doubted "whether or not democracies can compete".

One party has ruled China for 72 years, without a mandate from voters. That is not a world record. Lenin and his dismal heirs held power in Moscow for slightly longer, as has the Workers' Party in North Korea. But no other dictatorship has been able to transform itself from a famine-racked disaster, as China was under Mao Zedong, into the world's second-largest economy, whose cutting-edge technology and infrastructure put America's creaking roads and railways to shame. China's Communists are the world's most successful authoritarians.

The Chinese Communist Party has been able to maintain its grip on power for three reasons. First, it is ruthless. Yes, it dithered before crushing the protests in Tiananmen Square in 1989. But eventually it answered bullhorns with bullets, terrorising the country into submission.

China's present leaders show no signs at all of having any misgivings about the massacre. On the contrary, President Xi Jinping laments that the Soviet Union collapsed because its leaders were not "man enough to stand up and resist" at the critical moment. For which read: unlike us, they did not have the guts to slaughter unarmed protesters with machineguns (see Special report).

A second reason for the party's longevity is its ideological agility. Within a couple of years of Mao's death in 1976, a new leader, Deng Xiaoping, began scrapping the late chairman's productivity-destroying "people's communes" and setting market forces to work in the countryside. Maoists winced, but output soared. In the wake of Tiananmen and the Soviet Union's downfall, Deng fought off Maoist diehards and embraced capitalism with even greater fervour. This led to the closure of many state-owned firms and the privatisation of housing. Millions were laid off, but China boomed.

Under Mr Xi the party has shifted again, to focus on ideological orthodoxy. His recent predecessors allowed a measure of mild dissent; he has stamped on it. Mao is lauded once more. Party cadres imbibe "Xi Jinping thought". The bureaucracy, army and police have undergone purges of deviant and corrupt officials. Big business is being brought into line. Mr Xi has rebuilt the party at the grassroots, creating a network of neighbourhood spies and injecting cadres into private firms to watch over them. Not since Mao's day has society been so tightly controlled.

The third cause of the party's success is that China did not turn into a straightforward kleptocracy in which wealth is sucked up exclusively by the well-connected. Corruption did be-

come rampant, and the most powerful families are indeed super-rich. But many people felt their lives were improving too, and the party was astute enough to acknowledge their demands. It abolished rural taxes and created a welfare system that provides everyone with pensions and subsidised health care. The benefits were not bountiful, but they were appreciated.

Over the years Western observers have found plenty of reasons to predict the collapse of Chinese communism. Surely the control required by a one-party state was incompatible with the freedom required by a modern economy? One day China's economic growth must run out of steam, leading to disillusion and protests. And, if it did not, the vast middle class that such growth created would inevitably demand greater freedoms—especially because so many of their children had encountered democracy first-hand, when they got their education in the West.

These predictions have been confounded by the Communist Party's continuing popularity. Many Chinese credit it for the improvement in their livelihoods. True, China's workforce is ageing, shrinking and accustomed to ridiculously early retirement (see China section), but those are the sorts of difficulties every government faces, authoritarian or not. Vigorous economic growth looks as if it will continue for some time yet.

Many Chinese also admire the party's strong hand. Look, they say, at how quickly China crushed covid-19 and revved up its economy, even as Western countries stumbled. They relish the idea of China's restored pride and weight in the world. It plays to a nationalism that the party stokes. State media conflate the party with the nation and its culture, while caricaturing America as a land of race riots and gun massacres. The alternative to one-party rule, they suggest, is chaos.

When dissent emerges, Mr Xi uses technology to deal with it before it grows. Chinese streets are bristling with cameras, enhanced by facial-recognition software. Social media are snooped on and censored. Officials can solve problems early or persecute citizens who raise them. Those who share the wrong thought can lose their jobs and freedom. The price of the party's success, in brutal repression, has been horrendous.

## No party lasts for ever

The most dangerous threat to Mr Xi comes not from the masses, but from within the party itself. Despite all his efforts, it suffers from factionalism, disloyalty and ideological lassitude. Rivals accused of plotting to seize power have been jailed. Chinese politics is more opaque than it has been for decades, but Mr Xi's endless purges suggest that he sees yet more hidden enemies.

The moment of greatest instability is likely to be the succession. No one knows who will come after Mr Xi, or even what rules will govern the transition. When he scrapped presidential term limits in 2018, he signalled that he wants to cling to power indefinitely. But that may make the eventual transfer only more unstable. Although peril for the party will not necessarily lead to the enlightened rule that freedom-lovers desire, at some point even this Chinese dynasty will end. ■



## The Fed and markets

## New horizons

## Investors can no longer take low interest rates for granted

**D**URING MOST of the pandemic, exceptional uncertainty about the future of America's economy has been met with exceptional certainty that monetary policy would stay very loose. No longer. At the Federal Reserve's meeting in June policymakers signalled that they may raise interest rates in 2023, sooner than they previously thought, and upgraded their inflation forecasts for this year. Investors have spent a week struggling to digest the news. Long-term bond yields, which move inversely to prices, first rose and then fell beneath their initial level. Shares fell steeply and then recovered. Emerging-market currencies, which suffer when American monetary policy tightens, have fallen against the dollar.

The Fed's future interest-rate decisions can suddenly be counted among the many unknowns hanging over the economy as it recovers from the pandemic. Already on the list were the impact of new variants of the virus, the fate of President Joe Biden's infrastructure plan, the pace at which consumers will spend the savings they have accumulated during the crisis, and the persistence of the bottlenecks that are disrupting supply chains and labour markets. When Fed policy seemed to be set in stone, investors' evolving views on these puzzles were straightforwardly reflected in their expectations for growth and inflation. Now they must also weigh the possibility that the Fed may step in to forestall overheating by raising rates sooner (see Buttonwood).

The Fed's shift appears to have been prompted by the realisation that inflation next year will be higher than it had expected. In the three months to May core consumer prices, which exclude food and energy, rose at an annualised rate of 8.3%, the highest since Paul Volcker was waging war on inflation in the early 1980s. The central bank expects price pressures to subside rapidly. They will leave a mark on future monetary policy even so.

The Fed targets inflation that averages 2% over the whole eco-

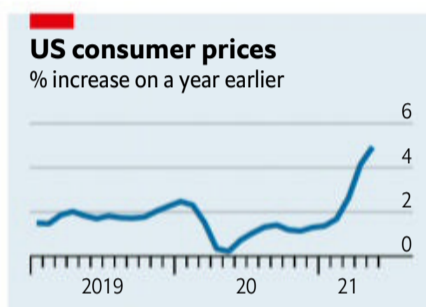
nomical cycle, and higher inflation today is already offsetting the slump in prices in the depths of the crisis. The central bank expects its preferred measure of prices to be 3.4% higher at the end of 2021 than a year earlier—or 0.6% higher than it would have been had inflation been on target since the end of 2019. Count from August 2020, when average-inflation targeting was introduced, and the price overshoot will be 1.2%.

The Fed's change of tune is therefore welcome. Because inflation expectations can be self-fulfilling, a public reminder that the Fed does not want the price surge to get out of hand reduces the chance that it will. A gradual adjustment today also reduces the probability of a panicky spike in bond yields tomorrow, helping avoid a "taper tantrum" like the one in 2013 after the Fed said it would buy fewer bonds.

Jerome Powell, the Fed's chairman, is striking the right balance between avoiding such a mistake and recognising that the central bank's job is to hit its economic targets, not to guarantee the tranquillity of financial markets. He could do better still by making the Fed's frustratingly vague average-inflation target clearer.

More disturbing is the poor quality of the central bank's forecasts. The Fed has dropped clangers for two straight years, underestimating the jobs rebound in 2020 and being caught out by inflation now. Further surprises are likely. The risk of higher inflation looms particularly large. True, the prices of some commodities, such as copper, have fallen from the peaks seen in May—and they have fallen further since the Fed meeting. But uncertainty in bond markets has risen, oil prices are still going up and many forecasters, including Fed officials, worry that higher inflation may persist into 2022.

It has become clearer that monetary policy will respond to higher inflation, as it should. But that means interest rates—and therefore asset prices—will reflect more of the uncertainty that bedevils the economic outlook. ■



## Schools and covid-19

## Must try harder

## School closures have caused children great harm. Governments are doing shockingly little to help them catch up

**C**OVID-19 RARELY makes children very ill. In the year to April the chance of an American aged 5-14 catching and dying from the virus was about one in 500,000—roughly a tenth of a child's chance of dying in a traffic accident in normal times. Yet schools around the world have been wholly or partly closed for about two-thirds of an academic year because of the pandemic.

The immense harm this has done to children's prospects might be justified if closing classrooms were one of the best ways of preventing lethal infections among adults. But few governments have weighed the costs and risks carefully. Many have kept schools shut even as bars and restaurants open, either to

appease teachers' unions, whose members get paid whether they teach in person or not, or to placate nervous parents.

As a result, young brains are being starved of stimulation. Primary-school pupils in England are around three months behind where they normally would be; children in Ethiopia learned 60-70% less than usual during 2020. Even before the pandemic things were bad. More than half of ten-year-olds in low- and middle-income countries could not read a simple paragraph. The World Bank warns this could rise to almost two-thirds. In all countries school closures will widen the gap between better-off pupils (who have iPads and quiet bedrooms for ▶▶

▶ remote learning) and worse-off ones (who often don't).

However, the disruption caused by covid-19 also creates a chance to make schools better than they were before (see Briefing). So many pupils have so much ground to make up that educators are pondering the most effective ways to help them do so. Some rich countries are offering more tutoring for struggling students, individually or in small groups. Some poor countries are simplifying overstuffed curriculums, allowing teachers to deviate from government textbooks and spend more time teaching basic reading and maths. Such reforms seem to work.

The experience of remote schooling has given teachers a crash course in educational technology. In-person lessons could improve if teachers were properly trained and allowed to experiment. Software can help make classrooms more personalised, so children receive instruction that closely matches their abilities. And if teachers were free from humdrum tasks, including much of their marking, they would have extra time for the pupils who need the most help.

The pandemic has underlined how family background affects academic success. A full stomach, encouraging parents and a house with lots of books have always been an advantage. Conditions at home matter even more when that is where lessons take place. The past year has shown the need for social workers to help deprived pupils: making sure they get glasses so they can read what's on the screen, for example, or helping their parents with paperwork so that they are not evicted. Schools can offer mental-health counselling, too, and put pupils in touch with charities or agencies that help solve distracting domestic problems.

Alas, too few governments are doing even a bare minimum to make up for time lost. Only 2% of the money ploughed into co-



vid-19 relief packages last year went to education. The UN has found that by last autumn only a quarter of children had access to some kind of remedial programme. Children who failed to grasp important lessons during lockdowns may continue to fall behind. By one estimate, a child in a poor country who misses a year of school and does not receive the right help to catch up can eventually trail by almost three years.

Next year England plans to spend only a bit more to help pupils catch up than it did in a single month last summer subsidising families to eat out in restaurants. Lawmakers in America, where children have missed more in-person schooling than almost anywhere else in the rich world, have been more generous.

But only 20% of the extra money they are giving to schools must be spent on catch-up learning. Much will be devoted to pointless “sanitation theatre”—including plastic dividers between desks, which may make it harder to see the blackboard or hear the teacher.

Two-thirds of poor countries have cut education spending. Money is not everything, but even in good times the poorest spend only \$48 a year for each schoolchild, which is not enough. (Rich countries spend \$8,500.) The UN predicts that foreign aid for education will fall by 12% between 2018 and 2022.

Governments are often tempted to neglect education. Improving schools costs money, and may require confronting powerful interest groups, such as teachers' unions. The benefits may not come until after today's politicians have left office.

However, almost nothing matters more for a good life tomorrow than a good education today. At a minimum, governments should step up their efforts to repair the damage caused by school closures during the pandemic. It would be better still if they seized the opportunity to rewrite the rules for schools. ■

### Election reform

## Radically reasonable

### Joe Manchin's proposed changes to America's voting laws deserve wide support

**J**OE MANCHIN, the Democratic senator from West Virginia, is a paradoxical figure. He has torpedoed many of his party's most cherished plans, from climate-change legislation to scrapping the Senate filibuster. Yet without that willingness to confound his fellow Democrats, Mr Manchin could not win in a state where Donald Trump took nearly 70% of the vote in November. Democrats owe him their one-vote majority in the Senate, something they are quite fond of.

As a result, Mr Manchin's proposal for reforming voting laws is worth taking seriously—all the more so now, given that this week the blockbuster elections bill favoured by most of his party, known as HR1, was sidelined thanks to the filibuster Mr Manchin wants to preserve. His compromise has three main parts: ending gerrymandering, making the registration of voters automatic and requiring some form of identification for people who vote in person.

The package is not the wholesale reform of elections that many Democrats favour as an antidote to the chaos unleashed by the losing candidate in last year's presidential election. But it avoids HR1's unwise focus on public funding for election cam-

paigns. In the past it would have been hailed as a model of bipartisan wisdom.

Take the gerrymandering first. Most American states hand the power to draw the boundaries of congressional districts to elected politicians. That is an invitation to cheat that the politicians usually find hard to resist. The result is bizarrely misshapen districts which make elections less competitive.

Mr Manchin wants to end the practice, handing the drawing of boundaries to non-partisan commissions, as already happens in seven states. This is hard to disagree with, but Mitch McConnell, the Senate minority leader, has done so—claiming that the plan “takes redistricting away from state legislatures and hands it over to computers”. As if legislatures don't use computers, too.

Mr Manchin has a similarly reasonable proposal for voter registration. Political parties and elected officials play too great a part in overseeing how lists of eligible voters in American states are maintained. The ideal system would make it easy for voters to register, ensure the lists of who can vote in each state are accurate and put this important administrative work beyond the influence of politicians standing for election. ▶

# WHY SHOULD TECHNOLOGY ENRICH ONLY A FEW?

By Edward DeLeon, CEO & Founder, Anatha

## Cryptocurrency can deliver a self-sustaining universal basic income

We live in an information economy. The largest companies in the world no longer produce steel, oil and machinery. Instead, they sell information, eyeballs and activity to the highest bidder. Every time you scroll through Instagram or watch something on YouTube, you are creating the very product being bought and sold.

And the owners of these platforms are monopolistic in their power. Consider Google and Facebook. Together they attract 70% of the US market for digital ads. They are such important sources of traffic that if they raise their prices advertisers essentially have to grin and pay it.

But what about the end user? They get a slick product, but no more. They produce the content, provide the attention and surrender their data—and see no financial value returned to them. But what if we could change that? What if the end user got a cut of the value generated by their activity?

That is the promise of Anatha. We envision a world where we can deliver a universal basic income to everyone in our network that can elevate all participants above the global poverty line. As the amount of activity in the system grows, so does the value it generates. So the rent-seeking

middlemen in banking and social media no longer siphon off the value; instead, it's returned to the end user.

The typical response I get to this idea is that it's a "Ponzi scheme". So let me explain how it works. The technology that makes it possible is a variant of the technology that powers all cryptocurrency. Like Bitcoin, our Anatha network rewards "miners" around the world for verifying transactions on our blockchain. The miners are rewarded with our Anatha token, which currently has a combined value of around US\$1bn.

However, unlike Bitcoin, Anatha miners don't keep the entire reward for each block they verify. Half the value is returned to the users in the network. In addition, 50% of all value generated on the network—@name subscriptions and transaction fees—is returned to participants daily. Over time, there will be new sources of value plugged into the network (from social media to DeFi), so more and more value will be generated and shared. That value is the foundation of our regenerative, bottom-up universal basic income.

Consider buying property. Rather than using a third party, the transaction could be coded into a smart contract on our blockchain. The fees that would have gone to a lawyer's office in the past can now be returned to our users. Of course, all these applications need to be built, but we can open-source this development work to our users, again benefiting from network effects.

It's ambitious, of course. But we have huge ambition. Our ultimate goal is nothing less than ending global poverty... forever. Using the same concept as that used to monetize our attention, we can deliver smartphones to developing countries and get the world's poorest people into our network and above the poverty line.

**"It's ambitious, of course. But we have huge ambition. Our ultimate goal is nothing less than ending global poverty... forever."**

That's what crypto can deliver. Web 2.0 enabled huge wealth to be created through attention and information. Now, Web 3.0 will see that wealth decentralized away from the elite and directed to those who need it most.



▶ Mr Manchin proposes a system whereby eligible voters would be automatically registered unless they decide to opt out. Such a system ought to boost participation in elections, something both parties should want and which does not obviously favour one lot over the other.

The final part of Mr Manchin's offer is the one designed to appeal to the right. For at least two decades, Republicans in state legislatures have said it is vital that voters show some form of identification at polling stations. This requirement has often been gamed for political advantage, too: gun permits are fine, student IDs are not. Since November, when the stolen-election conspiracy theory took hold, this impulse has only increased.

Mr Manchin proposes to give Republican lawmakers most of what they have long been asking for, allowing utility bills to serve as proof of identity. Most Americans of both parties support voter-ID laws. Even so, hardliners on both sides reject Mr

Manchin's idea. On the left some say it is unnecessary to show identification at the polls, because for one person to impersonate another person when voting is very rare. Yet America has a public interest in elections not only being secure but also being seen to be so. Others on the right say that only photo identification should count. This makes sense in a country like France where there is a national ID card. But Republicans, like the Conservative Party in Britain, are opposed to ID cards on ideological grounds—even though they think that a document that stands for one must be shown in polling booths.

On this point, as on others, Mr Manchin's proposal is the very definition of reasonableness. Given America's fractured politics, however, that hardly guarantees success. Congressional Republicans have dubbed the plan the "Stacey Abrams" bill, after the politician from Georgia who has backed it. Although they seem likely to reject Mr Manchin's reform, it deserves their support. ■

### The African genome project

## Know thyself

**To understand human genetic diversity, study the place where humans first evolved**

RACISM MAY often run deep, but one of the most depressing things about it is how superficial it really is. In most parts of the world it is literally a matter of black and white. A person's skin colour, however, has little biological significance. It is merely a balance between defending the lower layers of the dermis from cancer-causing ultraviolet light (which favours dark skin) and promoting the beneficial role of ultraviolet in the synthesis of vitamin D (which favours light skin). The farther someone's ancestors lived from the equator, the paler their skin evolved to be.

Go back far enough, though, and everyone's ancestors lived in Africa, the continent where *Homo sapiens* originated. Most non-Africans alive today trace the bulk of their ancestry to Africans who burst forth on an unprepared world about 60,000 years ago. Indeed, the oldest representative of the species yet found in Britain retained the dark skin of his African forebears. Africa is where humanity grew up—and where the bulk of human genetic diversity is found to this day.

Only now is a serious effort beginning to explore Africa's genetic richness. Better late than never. The Three Million African Genomes (3MAG) project, a continent-wide endeavour (see Middle East & Africa section), proposes to do for the place what has already been done for Europe, North America and parts of Asia—namely to catalogue and analyse the genetic diversity of those who live there. That will be scientifically fascinating, for it will help elucidate how *H. sapiens* evolved. But it will be medically important, too. It may even help erode that black-and-white excuse for racism.

Genetic diversity brings with it diversity of genetic disease. Cystic fibrosis—in any case rarer in Africa than in Europe—is often caused there by a different mutation from the one involved in the European version, and is thus missed by tests developed in the West. A mutation responsible in Ghana for 40% of inherited deafness is unknown in South Africa. And so on. It also brings a diversity of genetic response to disease. Some of the

molecular details of the immune system, for example, vary with geography. Understanding that variation in Africa will improve understanding of immunity to infection, helping Africans and non-Africans alike.

More genetic information will also cast light on evolution. Early *H. sapiens* migrants from Africa encountered other species of human being on their travels. These were descendants of previous migrations out of Africa of archaic members of the genus. At least two of these other types of human, the Neanderthals and the Denisovans, interbred with the newcomers, and some of their genes are still found in modern Asians and Europeans, doing various jobs including protecting them from disease. Preliminary analysis suggests that those who remained behind in Africa similarly interbred with yet another species of human—but one of which no fossil record remains.

There is an irony in all this. Xenophobia has probably existed for as long as people have. But racist attitudes were reinforced in the 19th century by an enthusiasm for physical anthropology and eugenics. The former attempted to classify human beings on the basis of visible characteristics, such as skin colour, head shape and facial features, that are genetically inherited.

If this had been a neutral analysis, it would have been unexceptional. But often it was not neutral. It not only classified, but ranked. White-skinned Europeans put themselves at the top—and black-skinned Africans at the bottom. Add eugenics to that mix and the result was toxic.

The 3MAG project will not, alone, overthrow the legacy of these misadventures and the prejudices they reinforced. The thinking that gave rise to them is still too deeply ingrained in too many minds for it to do that by itself—even, probably, for it to come close. But to those whose minds are open, a group of 21st-century African scientists revealing that the true, glorious genetic diversity of human beings lies in their own continent more abundantly than in any other will be a superb rebuttal to the doctrines of those misguided Victorian European gentlemen. ■



### Medical externalities

America's approval of aducanumab, a drug to treat Alzheimer's disease, will have a negative impact beyond the United States, especially in middle-income countries ("False positive", June 12th). Regulators in these countries normally rely on decisions made by stringent regulatory authorities, including the Food and Drug Administration. The World Health Organisation considers such "reliance" to be good practice and a cornerstone of effective regulation. Unfortunately, the FDA undermines this concept by authorising medicines such as aducanumab without any evidence of the clinical benefit. Some argue that post-marketing studies will shed light on these benefits. However, conditional approvals are rare in middle-income countries and low enforcement makes withdrawing a drug unrealistic.

These countries also spend less on health care and their health systems are more vulnerable to financial pressures coming from expensive biologic drugs, including monoclonal antibodies such as aducanumab. The real costs to them of paying for these unproven medicines are huge.

JAVIER GUZMAN  
Director of global health policy  
Centre for Global Development  
Washington, DC

### Rough microplaces

You correctly suggest that violence in America is geographically concentrated in certain neighbourhoods ("Reality bites", June 5th). In fact, violence is concentrated in just a few microplaces, each about two blocks square. In Denver 38 microplaces, equivalent to 1.5% of our landmass, accounted for about 25% of all violence in 2020. More important, violent places today were violent five and ten years ago. Meanwhile, most microplaces in "violent" neighbourhoods have little or no violence.

This nuance suggests that, actually, there is no dichotomy

between criminal-justice reform and increased public safety. Violence is concentrated in specific places year after year, which strongly suggests that the use of land, built environment and place management all jointly support violence in those areas. Strategies to reduce violence must focus on changing those attributes, rather than on arresting individuals. Such strategies respect calls from the community, especially strong in Denver, to reimagine how police reduce violence. They are also data-driven and represent the cutting edge of criminology and social science.

ZACH MCDADE  
BLAKE CHRISTENSON  
Senior statistical researchers  
Department of Public Safety  
City and County of Denver

### Explain art, don't hide it

I have been exhausted by the incandescent rage of art-world worthies who are framing the British government's "retain and explain" policy as some kind of Third Reich power grab for control of the arts sector ("The long march", June 5th). The government has said that taxpayer-funded institutions which remove artworks from display because of pressure from political groups such as Black Lives Matter may have their funding withdrawn. Such groups want to destroy art depicting historical persons; anyone who lived over 100 years ago is denigrated.

By the standards of 2021, every person before 1900 will realistically have uttered a sexist, racist, homophobic or xenophobic statement at some point in their life. The retain-and-explain policy seeks to keep historically and culturally important items on show, and even grants leeway to have some contemporary interpretation to appease the fashions of the day, hence the "explain".

The ideology of the curators of these museums has never before diverged so far from the populace at large. People enjoy 18th-century masterworks of sculpture, for instance, as their cultural patrimony and admire

the artistry and technical proficiency of a piece. To hide them away because of, say, a tenuous link to slavery is anathema to the public. This is the crux of the issue.

Surely the real chilling effect on museums' independence comes from groups pressing them to conceal a significant part of their collections. Isn't the onus on a museum to conserve a collection for posterity rather than hide works that are unfashionable at any given time?

JOSHUA SWERLING  
London

### Loony logic

The late great Screaming Lord Sutch of the Monster Raving Loony Party would have been pleased to learn that "competition authorities are increasingly competing among themselves" ("New rules of the road", June 12th). After all, it was he who proactively asked, "Why is there only one Monopolies Commission?" Why should the responsibility of fostering competition be given to one monopoly institution that has no competitor? Especially when the tech giants who compete for convenience don't play by the same rules as the textbooks would prescribe. Rather than reduce output and increase costs they are increasing output and reducing costs.

WILL PAGE  
London

### A misinformation campaign

Indonesia's attempts to exert greater influence over social media extend beyond its borders ("Prohibited material", June 5th). Here in Vanuatu, Facebook users have long-endured inaccurate sponsored "news" items critical of those campaigning for human rights in Papua, an Indonesian province, and of the Vanuatuan government, which supports them. These posts, paid for and authored in Indonesia, are accompanied by thousands of comments from people who appear to know or care little about Vanuatu but nevertheless take the time to write

lengthy opinions on such enlightened topics as the resemblances between Melanesians and monkeys. Who farms these trolls is officially unknown, but significant time and money clearly goes into their work. Facebook happily accepts the money.

ANDREW GRAY  
Pentecost Island, Vanuatu

### Independent judges

Israel's Supreme Court has "great power and little accountability", you say ("A chance of renewal", June 5th). In countries without codified constitutions, such as Israel and Britain, the courts have a vital role in checking the otherwise unconstrained powers of the legislature and executive. This is not activism, but the rule of law in action. When faced with the Conservative Party's plans in Britain to rein in the powers of supposedly activist judges, *The Economist* rightly decried it as contrary to the essence of British democracy ("Boris v the judges", February 22nd 2020). Israel's Supreme Court is one of the country's essential institutions of liberal democracy.

ELIJAH GRANET  
San Diego


### Buttergate, eh?

I don't see how lockdowns are to blame for the deception by dairy farmers in Canada of adding palm oil to cows' diet ("Udder absurdity", May 29th). Canadians should have the right to know the ingredients of the foods they eat. Palm oil hidden in butter is an unnatural and, frankly, undesirable additive. Supply management, lockdowns and tariffs should not interfere with consumers' informed consent. This loyal customer has moo'ed on.

DENISE HARTFORD  
Toronto

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## Catching up is hard to do

**The pandemic has been a catastrophe for schoolchildren. But it could inspire reforms to make schools more efficient, flexible and fair**

**I**N THE FIRST three months of the pandemic Shawnie Bennett, a single mother from Oakland in California, lost her job and her brother, who died of covid-19. Grief made the trials of lockdown more difficult—including that of helping her eight-year-old daughter, Xa'viar, continue her schooling online. In November Ms Bennett signed her daughter up for online classes provided by a local parents' group, which arranged for her to see a tutor every Saturday morning. A test this month showed that her reading skills are improving fast.

The weekend lessons are among several online services created over the past year by The Oakland Reach, an advocacy group. Less than a third of black and brown children in Oakland read at their grade level, says Lakisha Young, its co-founder. For five years her group has lobbied for improvements to their schooling. But when learning shifted online it began hiring teachers to work with children directly. Ms Young thinks families who have benefited from this will demand more from their schools in future; the local district has already

found cash to adopt and expand some of her group's work. She says the pandemic brought a moment "to create the things we have been fighting our asses off for".

Big shocks have sometimes changed schooling for the better. The second world war midwived the Butler Act in Britain, which increased years of compulsory schooling and abolished the fees still charged by many state schools. After Hurricane Katrina inundated New Orleans, officials there embarked on sweeping school reforms. Nine years later graduation rates had increased by 9-13 percentage points.

Covid-19 disrupted education on a scale never seen before. By mid-April 2020 more than 90% of the world's learners had been locked out of classrooms. Closures have lasted months, harming children's learning (see chart 1 on next page), safety and well-being. Yet as youngsters in rich countries—the focus of this briefing—return to their classrooms, reformers hope the shock will lead to changes that will make schools more efficient, flexible and fair.

Critics of modern schools like to argue

that they have barely changed since the 19th century, when teachers began abandoning one-room schoolhouses for large institutions that divided pupils into cohorts by age. That is an exaggeration. But traditional models of school have proved remarkably enduring, says Larry Cuban, a historian of education at Stanford University. He says parents value the efficiency and orderliness of the old-fashioned age-graded school. "People want that and like it, even though they complain about it."

Yet even before the pandemic there were reasons to wonder if the rich world's schools were running out of puff. In tests carried out across rich countries by the OECD, an inter-governmental group, children are, on the whole, scoring no better than they did two decades ago even though spending per pupil has been rising (its analysts also find that those with the lowest scores have kept schools closed for longest, as chart 2 shows). Many are bored. In 2017 pollsters at Gallup concluded that only one-third of older high-schoolers in America felt "engaged" by their classes.

Covid-19 and the closing of school buildings forced teachers to shift to remote learning in a matter of days, cobbling together online teaching platforms out of business tools. Curriculums were stripped back. Britain, France and Ireland, among others, cancelled big exams. For part of 2020 many American schools eschewed grades entirely, reverting to pass or fail.

For the vast majority of families in ►►

▶ America online teaching has been “something between disappointing and disastrous”, says Justin Reich of the Teaching Systems Lab at the Massachusetts Institute of Technology (MIT). Data from around the world suggest that, on average, children have learned much less than they would usually have done. By March 2021 primary-school pupils in England had fallen nearly three months behind. Last summer tests of children in Belgium found similar lags. A study of pupils in the Netherlands found that during an eight-week period of remote learning in the first half of 2020 the average pupil learned nothing new at all.

Children who were already disadvantaged have suffered most. The Dutch study found that learning loss was more than 50% greater for children with poorly educated parents. By autumn 2020, eight- and nine-year-olds in Ohio were behind in English by about a third of a year’s worth of learning, compared with children in earlier years. The test scores of black students declined by nearly 50% more than those of white pupils.

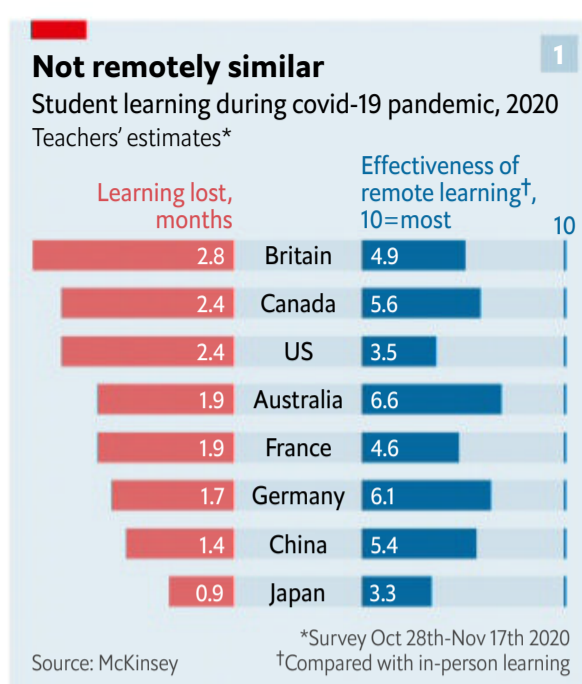
### School’s been blown to pieces

School closures have underlined the importance of in-person schooling to children’s mental and physical health. Youngsters in Italy ate less healthily when their school buildings were shut. Reports of child abuse have fallen largely because teachers—often the first to spot it—have not been seeing their pupils in the flesh.

Yoshinaga Sakura, a teacher at a junior high school in Numazu in central Japan, says that when schools were closed some children were left at home alone because their parents still had to go out to work. She thinks cases of self-harm increased. Euan Morton, a secondary-school teacher in Melbourne in Australia, says that some children who have coped with online learning seem less mature in their behaviour and attitudes than might be expected: “Their social development hasn’t matched their academic development.”

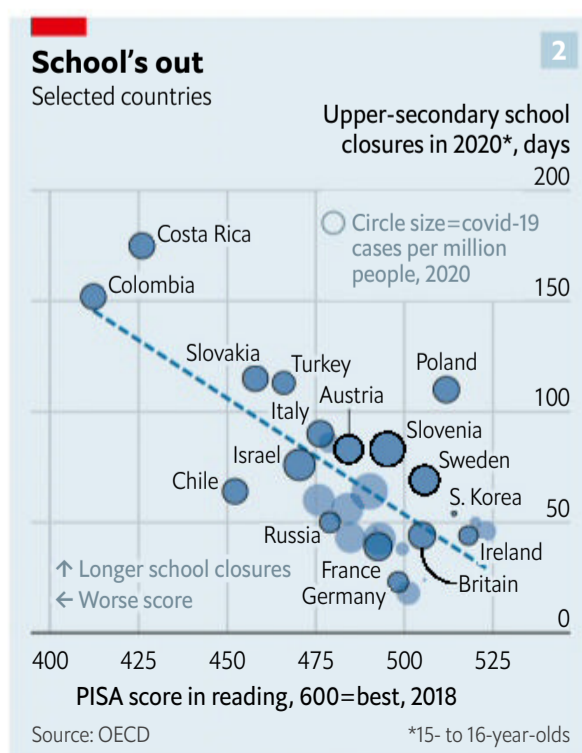
Still, there have been some bright spots. The crisis has tightened links between teachers and parents, which studies have shown increase attendance rates and ultimately push up results. Over half of American school leaders recently polled by Johns Hopkins University said they were in closer contact with parents than they had been before school buildings closed. “I have never spoken to parents more than I have in the last year,” says Katerine Dionne, a public-school teacher in Connecticut.

The crisis has thrust technology on a profession that had been slow to adopt it. There was “no alternative” but to invest in computers, says Victoria Richmond, the head of a primary school in south-east England. Now that her children are back in classrooms, the tablets her school issued



to all pupils are proving useful in providing live-translation of lessons for children whose first language is not English, for example. Stephanie Downey Toledo of Central Falls district in Rhode Island says the crisis has accelerated her schools’ investment in tech by a decade. One of the district’s schools now has a transmitter on its roof which beams broadband into homes that lack good connections. Meanwhile venture-capital investment in educational-technology firms more than doubled from \$7bn in 2019 to around \$16bn in 2020, according to Holon IQ, a research group.

Some children, at least, appear to have performed better while studying remotely, including those who suffer from anxiety or are the victims of bullying. Some pupils who are shy about speaking up in class have found video calls and chat-boxes less intimidating. Jal Mehta of Harvard University thinks online learning has probably helped some bright children who are self-motivated and enjoy learning but “find the social aspects of schooling exhausting”. Neema Avashia, a teacher in Boston, says



that some students’ attendance improved when all they had to do was switch on a computer. Remote learning made it easy to attend school even when feeling a little under the weather, says Lila Conte, a hard-working 12-year-old from the Bronx.

School closures have heightened awareness of inequality. Even before the pandemic 16-year-olds from England’s poorest families lagged about 18 months behind their richer peers academically. The maths skills of the strongest- and weakest-performing American students were drifting further apart. Watching teachers struggle to deliver laptops, WiFi dongles and meals to poor students has given outsiders a more graphic understanding of how disadvantage outside the school gates affects a child’s ability to benefit from what goes on within them.

It is not too soon to ask how this can be used to improve schools in the future. The experiences of covid-19 will probably embolden reformers who argue that schools need to do more to develop resilience in children to help them cope with shocks. Pupils who were spoon-fed by their teachers before the pandemic have found remote learning hardest, thinks Andreas Schleicher of the OECD. He says this shows that schools should be helping children learn independently, in preparation for a future in which technological disruption forces professionals to retrain frequently.

### What did you learn in school today?

Mr Schleicher argues that tailoring schooling to the specific needs of each child is essential to closing achievement gaps. “We impose exactly the same kind of education on every student...so why are we surprised when learning outcomes are a function of social background?” He maintains that in too many places schools are “effectively gigantic sorting systems that are not designed to facilitate individual growth”. Paul Reville of Harvard University is among those who argue that schools must move away from a “factory model” that provides every learner with similar lessons for a similar length of time and move towards a “medical model”—where it is assumed from the outset that learners will need varying kinds of assistance, for different durations. That might include solving problems outside school that stop them from arriving ready to learn.

Before the pandemic a small but growing group of American schools were rejecting traditional structures in favour of “multigrade bands” that combine children from two or three year groups. Under a traditional model, children move up each year, even if their progress in some subjects has been slow. A rare few may have to repeat the year. More flexible systems aim to make it easier to give pupils who are stuck on specific topics the time and help ▶▶

▶ they need, as well as the freedom to move ahead quickly once they have overcome whatever was slowing them down. The pandemic might drive more such experimentation if it makes the status quo less tenable. Even before closures, some American classrooms included pupils whose attainment levels spanned seven grades, according to NWEA, a test-provider. The disparities are now almost certainly wider, making it even harder for teachers to teach an entire class the same material.

Efforts to help children claw back lost learning present the first big opportunity to lay foundations for a better system. Officials in many countries are betting that more one-on-one or small-group tutoring will help struggling students. The evidence to support it is strong. A recent study in Britain found that 12 hours of tutoring could advance a young child's maths skills as much as three months of conventional schooling would. Much of the £3bn which the government has put into recovering learning in England is earmarked for tutoring (this is only a fraction of what many say is needed; on June 2nd the government's "education-recovery commissioner" resigned after it refused to cough up more).

### You'll join the high flyers

Struggling learners would benefit enormously if expanded tutoring schemes become core parts of education systems. A long-running tutoring programme at Match Charter Public School in Boston provides one model. Before the pandemic it offered all children in four grades daily tutoring in maths. It operates a longer school day than is common in its neighbourhood, so Match manages to slot these sessions into students' timetables without them having to give up anything else.

But no amount of extra help will benefit children if problems outside school sap their attention, or prevent them from attending altogether. City Connects, an organisation that works in Ireland and America, provides a useful example of how schools with enough money can overcome this. It encourages schools to create support plans for every pupil that go beyond their educational difficulties, dealing with emotional and health problems or chaos at home. Trained "co-ordinators"—about one for every 400 students—implement them. They maintain a database that helps them speedily connect pupils with services such as food and clothes banks, affordable mental-health care and subsidised eye tests. Mary Walsh, City Connects' boss, says local governments and charities often offer useful services but families do not know about them or struggle with the paperwork.

Reach Academy, a school in Feltham in west London, has spun out a "Children's Hub" that helps pupils' families solve problems such as those related to housing or

employment. Incremental improvements to school curriculums will not "address the barriers that prevent young people from being successful in school," says Ed Vainker, its co-founder. He reckons schools are uniquely placed to co-ordinate the efforts of existing local organisations and to help attract resources from farther away.

What of technology? Mr Reich of MIT thinks the ordeal of the pandemic will lay to rest "crazy stories" that exaggerate how quickly and completely edtech can transform education. But he hopes it will encourage teachers to use it more effectively.

Thomas Arnett of the Christensen Institute, an American think-tank, says that, well before covid-19, teachers were realising that material delivered to a whole class at the start of lessons might be taught through videos provided in advance. This kind of shift would minimise the amount of classroom-time teachers spend lecturing and maximise the time they could spend helping pupils apply knowledge they have already acquired. That might be particularly beneficial to those falling behind. It might also allow for the continuation of novel divisions of labour that some schools put in place during the pandemic, where some especially captivating teachers were put to work producing video lessons that could be shared with all students and others ploughed their efforts into helping individual pupils.

Lots of children could benefit if the pandemic raises awareness that not all pupils are well-served by a one-size-fits-all approach to schooling, and if it directs attention and funding to improving alternative models. Even before covid-19 more than 30 American states allowed children who felt they were not getting what they needed from conventional schools to enroll in virtual ones funded by the government. But Gary Miron of Western Michigan University says these children were being let down by the big companies that had

been largely left alone to run them. He thinks public-school districts would do a better job. A survey carried out last year by RAND, a think-tank, found that one-fifth of American school districts were considering making a virtual schooling option available even after the pandemic.

### Go your own way

And if the pandemic ends up granting more working parents flexibility about where and when they do their jobs, appetite for new models of schooling may grow. Middle- and high-school pupils at Springs Studio for Academic Excellence, a state-funded school in Colorado, have only ever been required to attend school in person two or sometimes three days a week (allowing those who need to work part-time, say, or do extra sports training, to do so). They learn online the rest of the time. David Knoche, the head teacher, thinks his pupils get more out of the time they have with teachers than they would do if they were forced to sit in front of them all week. The time they spend learning independently frees up teachers to provide extra help to children who need it.

In theory such models would not always require children to have the luxury of a parent at home; schools could set aside supervised spaces for independent study. Noam Gerstein, the Israeli founder of Bina, a new online primary school with its headquarters in Berlin, thinks some big firms will be persuaded to pay for employees' children to access online schooling, as a staff perk. She envisages companies creating places in their buildings for children to learn online. She thinks parents might enjoy seeing their offspring during working hours, over lunch, for example.

There are plenty of reasons to be pessimistic about how quickly and completely schools can recover from the pandemic. Teachers are exhausted. Relations between unions and authorities have frayed. Governments are tightening their belts. Parents who have had to juggle full-time work and full-time child supervision and education are desperate to hand their children over to others for more time, not less. But the swift shift to remote learning has demonstrated that schools are capable of dramatic transformations. Reforms that might once have looked frightening now seem easy, compared with that.

In Oakland Ms Bennett chose not to send her daughter back to school when the district opened its buildings for children who wished to attend in-person. She still worries about outbreaks. But she is determined Xa'viar will return in August, when the new school year begins. Her daughter deserves to be back among her friends and teachers, says Ms Bennett: to be "in a place that she feels is safe for her, and where she also feels loved". ■



# HOW MALAYSIA'S MANUFACTURERS ROSE TO THE COVID CHALLENGE

As the pandemic continues to wreak havoc with the global economy, evaluations are taking place within the investment community. Destinations free of legacy trade skirmishes and a business-friendly approach to access and visas are in demand—and investors are looking to Malaysia

In early months of 2020, the covid-19 pandemic hit the global electrical and electronics (E&E) sector hard. Extended periods of lockdown in major electronics manufacturing hubs and disruptions to global supply chains saw both the production and consumption of electronics fall.

As the industry bounces back, investors are looking for a reliable location to base their manufacturing and logistical operations. And Malaysia might just be the partner they are looking for.

## THE MALAYSIAN ADVANTAGE

Malaysia has built a reputation of being the manufacturing hub of South-East Asia. The country, hosting Asia-Pacific's largest manufacturing sector in terms of E&E exports, is one of the largest producers and exporters of medical devices—exports topped US\$7.1 billion in 2020, and was an early adopter of Industry 4.0 technologies, logistics sophistication and modern warehousing.

**The medical devices industry in Malaysia currently comprises over 200 manufacturers. Much of the industry is serviced by MNCs and more than 30 of these, who focus on higher value-added processes, have made Malaysia their offshore location for manufacturing operations—including companies such as Abbott, B. Braun and Ciba Vision.**

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## COVID-19: ADAPT, INNOVATE AND OVERCOME

In 2020, covid-induced disruptions to both the manufacturing sector and supply chains meant that it became increasingly difficult to import the materials Malaysia needed to make surgical tools, syringes and needles, orthopaedic products and optical lenses. To cope, the country's public and private sectors worked in tandem to ensure the country had sufficient face masks, personal protective equipment (PPE), ventilators and sanitisers; and could fulfil its export orders. For instance, Top Glove, the world's leading manufacturer of latex gloves, pivoted their business to meet rising consumer demand for face masks, building a new facility with a production capacity of 110 million face masks annually.

Successes like these were a demonstration of how Malaysia's well-developed technological infrastructure, paired with an enterprising spirit of adaptation and innovation, enabled Malaysia-based businesses to react, adapt and meet global demand.

## ADDRESSING THE INDUSTRY'S CHALLENGES

While the advent of covid-19 strengthened the nation's domestic capabilities, it also raised Malaysia's exporting capacity. This has attracted the industry's big players. In 2020, the British medical equipment maker, Smith+Nephew, began construction of its first plant in South-East Asia—a high-tech manufacturing facility in Penang. DexCom, an American medical device manufacturer, was similarly attracted by Malaysia's investor-friendly business policies, network of related industries and strong supporting facilities. By 2020, eight out of the top 30 global medical devices companies were operating or planning to operate in Penang.

One of Malaysia's most successful medical device sub-sectors is high-technology rubber products. In the space of a few decades, the country has gone from being mainly an exporter of natural rubber, to a leading international supplier of high-technology rubber products. As it stands, Malaysia is the world's largest source of medical gloves, with a market share of about 65%.

## SECURING THE FUTURE

As Malaysia's E&E sector continues to grow, overseas investors can assess Malaysia—its manufacturing sector's advanced Industry 4.0 capabilities, and the country's excellent shipping and production facilities, world-class infrastructure and skilled multilingual workforce—and be confident of a support system that will enable them to take advantage of all the business opportunities Malaysia offers.

## MALAYSIA'S THRIVING MEDICAL DEVICE INDUSTRY

**US\$1.5 billion**

The total value of approved investments in 2020 was RM6.1 billion (US\$1.5 billion)

**US\$5.6 billion**

Exports topped US\$7.1 billion in 2020

**> 200 manufacturers**

Home to more than 200 medical device manufacturers in 2020





## The Supreme Court

# The 3-3-3 court

NEW YORK

**The Supreme Court's bolstered conservative majority is beginning to transform American law—but only tentatively**

**I**N THE AUTUMN America's Supreme Court seemed destined for a momentous shift when Republicans rushed to confirm Amy Coney Barrett, a conservative judge, to succeed Ruth Bader Ginsburg, a liberal jurist who had died in September. In place of a wavering 5-4 conservative tilt that had held for decades, by the end of October the high court had a 6-3 majority of Republican appointees—the most unbalanced array in a century. Yet as the final rulings of Justice Barrett's first term arrive (including, on June 23rd, a win for students' speech rights and a loss for union organisers), the dynamics of the newly constituted Supreme Court seem more complex, and less extreme in their results, than many expected.

Justices have life tenure and evolve on the job; a few dozen cases constitute a limited introduction to the kind of judge Justice Barrett will turn out to be or how her presence will reshape the court. But in her first eight months in robes, it seems her votes have changed the result from the one if Ginsburg had ruled only three times: on

June 21st, in a case involving the status of administrative patent judges, and in November and April, when Justice Barrett voted in favour of churches challenging covid-19 public-health regulations. The latter votes reflected the newest justice's tendency to defer to those who object to rules that burden their religious lives.

But when she had a chance to extend this principle—as strongly demanded by religious conservatives—she demurred. In *Fulton v Philadelphia*, decided on June 17th, the Supreme Court unanimously sided

with a Catholic social-service agency that had cried foul when Philadelphia's city government sidelined it because the organisation would not approve same-sex couples as foster parents. According to a 1990 precedent, *Employment Division v Smith*, neutral laws that apply generally do not offend the First Amendment even if they indirectly hamper religious practice. But since Philadelphia allowed exceptions in its anti-discrimination rule (even though the city had not granted any), Chief Justice John Roberts wrote for the court, its ordinance was not "general" and therefore, given the impact on the foster-care agency, violated the constitution.

Despite the 9-0 result, *Fulton* was far from a full win for the Catholic plaintiffs. The foster-care agency had asked the justices to overrule *Smith* and clarify that all burdens on the exercise of religion potentially violate the constitution. Yet only three justices—led by Samuel Alito, who wrote an irate 77-page concurring opinion—were keen to abandon *Smith*. Chief Justice Roberts, Justice Barrett and Justice Brett Kavanaugh joined the three liberal justices to leave the three-decade-old precedent intact and resolve *Fulton* on narrow grounds. In fact, the majority opinion seemed to concede implicitly that anti-discrimination laws denting religious conscience do pass constitutional muster as long as they apply across the board.

A similar rift was on display in another ▶▶

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▶ significant case released on the same day: *California v Texas*, the third serious attack on the Affordable Care Act (ACA) to reach the court since 2012. Each time the justices have taken up such a challenge, they have resolved it in favour of Barack Obama's health-care law. And the margin has steadily widened, even as the court has grown more conservative—from 5-4 in 2012 to 6-3 in 2015 and 7-2 this month. During her Senate confirmation hearing last autumn, Democrats pointed to Justice Barrett's criticism of the earlier decisions and warned that she may be crucial to dismantling the ACA at last. This doomsday did not come to pass: with the exceptions of Justices Alito and Neil Gorsuch, the court again refused to strike down the ACA and strip 31m Americans of health coverage.

In their counterintuitive challenge, Texas and 17 other Republican states claimed that the law had become unconstitutional when, in 2017, Congress eliminated the financial penalty attached to the "individual mandate"—the requirement that most Americans buy health insurance. In the end, the court did not touch that matter. Instead, the majority ruled that the plaintiffs had not been harmed and thus did not even have standing—ie, the legal right to bring the case.

Technical solutions helped the justices flick away other charged controversies. Late last year, when Donald Trump and his allies were litigating his electoral loss, the Supreme Court shot down two last-ditch lawsuits with deep procedural flaws. On December 8th a one-sentence order put a halt to a Pennsylvania state representative's bid to stop his state from certifying Joe Biden's win. And three days later, another terse order snuffed out Texas's attempt to suspend Mr Biden's victories in Georgia, Michigan, Pennsylvania and Wisconsin. For Stephen Vladeck, a law professor at the University of Texas and Supreme Court litigator, some of the court's most important decisions of the term "may have been its decisions not to get involved".

Yet in the run-up to the election, as emergency requests from Republicans to limit pandemic-inspired voting accommodations rolled in, the justices were active in policing election administration. The court blocked kerbside voting in Alabama, narrowed the window for absentee voting in the Wisconsin primary and reimposed witness requirements for mail-in ballots in South Carolina. These and other orders make up the so-called "shadow docket"—requests for quick relief, dealt with without oral argument or full briefing and often resolved without written opinions or even recorded votes. Mr Vladeck observes that two dozen significant cases have been handled this way since the autumn, compared with 58 cases on the regular docket.

Of the 50 cases the justices had settled

by June 23rd, there had been just four 6-3 decisions along ideological lines and 24 unanimous rulings. Over the past three years, the court's unanimity rate has hovered just below 40%, making this term, no matter what happens with the eight judgments that have yet to arrive, the most consensual since 2016.

But unanimity, as *Fulton* shows, does not always mean speaking with one voice. The three liberal justices (Stephen Breyer, Elena Kagan and Sonia Sotomayor) seem to have held their fire; in return Chief Justice Roberts crafted a narrow decision that gave the Catholic fostering agency a win without setting a precedent that would undermine gay equality. Justices Alito, Gorsuch and Thomas are itching to hasten a conservative revolution but, for now, the liberals, the chief and Justices Barrett and Kavanaugh are on a more cautious path paved with narrow rulings. Instead of split 6-3, the court is more like 3-3-3. Will these coalitions hold next year when the justices craft potentially landmark decisions on guns, abortion and maybe affirmative action? "We'll know quite a lot more about the new conservative majority", Mr Vladeck says, "this time next year." ■

## Business formation

# Down and up

NEW YORK

## New business formation in America goes bezonkers

AS THE PANDEMIC unfolded, the usual economic statistics produced the expected dire results. During the stretch in 2020 from February to May, 20m jobs were lost. Businesses were wiped out at a faster rate than during the financial crisis a decade earlier. Grim news was everywhere.

Buried in the deluge, however, was a bit of light, detailed at length in a working paper from the National Bureau of Economic Research published in June by John Haltiwanger, of the University of Maryland, using a Census Bureau data series that he had helped develop. It was distilled from the first step typically taken by an entrepreneur in the creation of a business, an application for an employer-identification number required by America's tax authorities, the Internal Revenue Service. The applications provide an unusually rapid read on what was unfolding in the economy.

In contrast to the financial crisis, when new-business formation sputtered and then remained depressed, the number of applications began to rise vertiginously after May 2020. "We speculated it was opportunistic necessity," says Mr Hatliwan-

ger. A possible explanation was that people stuck at home were suddenly creating cottage industries, like mask-production. But that was never entirely satisfactory. The surge peaked in July and August 2020 but remained robust enough to produce the largest number of new businesses for the year since at least 2004, the earliest date for which the data have been compiled. New-business formation was strong in April this year; May trailed only July 2020.

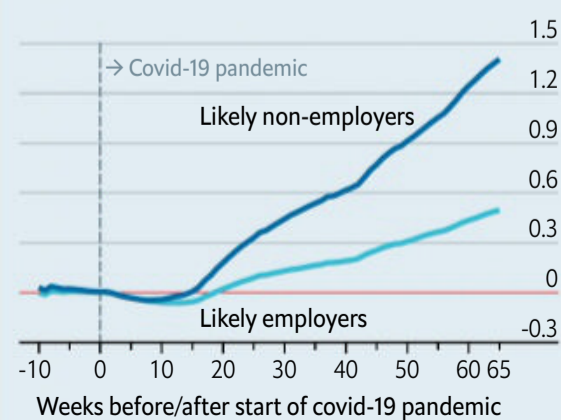
Among the many perplexing elements of the boom was how it unfolded during a period that was particularly brutal for small businesses, whose failures were captured in an alternative data series running up to the third quarter of 2020. The death and birth of firms may, however, tell a story of how America's economy is evolving. Examination of the application forms indicated that ten sorts of business accounted for 75% of the total. By far the largest area, accounting for almost one-third, was retail and in particular e-commerce. The Biden administration may be gearing up anti-trust agencies for an assault on technology giants that dominate this area. But new entrants apparently see opportunities.

Other popular sectors include food preparation and accommodation, both of which were badly hit during the past year; trucking (all those packages to deliver); health care; and scientific and technical services—an amorphous category that may be a refuge for skilled individuals cutting loose from large corporations. Geographically, new-business formation was particularly robust in Texas and Florida; in percentage terms, the southern arc of Georgia, South Carolina and North Carolina did better still. New York, New Jersey and California all lagged behind. As America has begun to reopen this difference between states has diminished, but it still remains greater than before the pandemic began.

Perhaps the most striking change is that four times as many single-person companies have been founded since the pandemic began as during a similar time-period in the financial crisis. Obvious explanations, ▶▶

## One's a company

United States, new business applications\*, m



Source: John C. Haltiwanger, University of Maryland \*Cumulative difference relative to the same period two years earlier

▶ such as more people driving for Uber, do not count in these business-formation statistics. Alternative explanations include the possibility that many of these jobs may be a by-product of families moving, or perhaps evidence of the emergence of new kinds of remote work.

The strong numbers may also underscore how, notwithstanding the devastation of the past year, the country's banking system remained sound. Neither house prices nor household incomes declined, providing a foundation, of sorts, for building a new business. Inevitably, however, the novelty of the growth in enterprises has raised questions about whether the trend will persist and how much it means. An employer-identification number is, after all, merely a piece of paper.

Impediments exist, including rising wages and high demand for labour, along with government subsidies for staying at home. Tax and regulatory policy may become increasingly intrusive, costly and hostile. But assuming these can be circumvented, the historical pattern has been for business formation to be followed by high levels of job creation, innovation and productivity growth in one to two years. ■

## Catholicism

# Biden and the bishops

NEW YORK

**Bishops want to deny the country's most prominent Catholic communion**

WHILE CAMPAIGNING in South Carolina in October 2019, Joe Biden went to mass, as he does every Sunday. But he was not allowed to receive holy communion at St Anthony's Catholic church. Father Robert Morey later explained that he had to refuse Mr Biden: "Any public figure who advocates for abortion places himself or herself outside of church teaching."

Many American bishops want to formalise this sort of action. The United States Conference of Catholic Bishops voted to draft a statement examining the "meaning of the eucharist in the life of the church", a decision made public on June 18th. It could allow bishops to deny communion to Catholic politicians who support abortion. According to the reports of the contentious debate preceding the vote, Mr Biden was referred to or alluded to several times during the debate. Despite assertions by Bishop Kevin Rhoades of Indiana that it was not a single issue or driven by a single person, it rather clearly was.

Mr Biden is only the second Catholic president, after John Kennedy. Like some other recent presidents, such as George W.



Wafer waiver

Bush and Jimmy Carter, he is deeply religious. He attends mass regularly and even considered the priesthood. Having such a devout Catholic in the White House raises the stakes for the American church's conservative wing. Michael Pfeifer, a retired bishop from Texas, said Mr Biden's policies are akin to "infanticide".

Another Texan bishop, Robert Coerver, said: "I can't help but wonder if the [election] years 2022 and 2024 might be part of the rush and I think we need to be careful not to get embroiled in the political situation." Too late. The bishops have "become totally identified with Republican political culture, which has made abortion the symbol of the culture war," says Massimo Faggioli, author of the book, "Joe Biden and Catholicism in the United States".

Two-thirds of American Catholics think Mr Biden should be allowed to receive communion, according to a poll from the Pew Research Centre. The vote shows the gap between church hierarchy and its flock. Yet for some conservative bishops this is no great concern. As Charles Chaput, Philadelphia's former archbishop, said in 2016, "We should never be afraid of a smaller, lighter church if her members are more faithful, more zealous."

Denying someone the eucharist is rare. When John Kerry ran for president in 2004, some bishops wanted to deny him communion, but never did. The latest dispute has sharpened the rift between the American church and Rome. The Vatican issued a letter telling the American bishops to back off. They ignored it. Meanwhile, politicians who favour the death penalty (which Pope Francis wants abolished) face no such sanction from the church.

Stephen Schneck of the Franciscan Action Network, an advocacy group, who does not approve of abortion, cannot see the point of this measure. The Vatican will not approve it. It is unlikely to shame Mr Biden into reversing his stance. Wilton

Gregory, archbishop of Washington, DC, has said he will not deny Mr Biden communion. John Carr, a former spokesman for the Conference now at Georgetown University, a Catholic institution, believes that "we would all be better off if the bishops walked away from using the eucharist as a punishment." ■

## Census data

# Background noise

LOS ANGELES

**An important survey may soon incorporate synthetic data**

THE AMERICAN COMMUNITY SURVEY (ACS), which is sent to around 1% of America's population every year, is one of the most widely consulted scientific resources in the world. Researchers use its data, cited in more than 12,000 research papers annually, to explore relationships between education, health, income, demographics and geography. Yet the Census Bureau, which administers the ACS, may soon swap actual data for synthetic responses generated by a statistical model, which critics say will be useless for research.

The potential use of synthetic microdata is part of an effort already under way by the Census Bureau to protect privacy. The full 2020 decennial census data and data products related to them will incorporate "differential privacy" protections designed to shield respondents' identities.

The concern is that malicious actors might be able to combine census data with other available information in order to identify individuals. If, for instance, a census block containing 100 people is known to be 1% Hispanic, a miscreant would be able quickly to identify its sole Hispanic ▶



resident from that piece of data alone. To try to prevent this, a predetermined amount of “noise”—small, intentional errors that prevent individuals from being identified—will be added to the data.

Critics argue that privacy concerns are overblown. They say that recent experiments by the Census Bureau seem to indicate that only a small portion of respondents can be successfully identified. But there are practical as well as ethical concerns: if, for instance, undocumented immigrants are afraid to take part in the census for fear they may be identified, the final numbers will be inaccurate.

The law imposes strict confidentiality requirements on the Census Bureau, with penalties for non-compliance that include fines and jail time. As technological advances make it easier to remove anonymity from data, in order to avoid falling foul of the law, the bureau may need either to alter or restrict access to the data to protect privacy. Joseph Hotz, an economist at Duke University, says the law should be changed to adjust to the increased risk, ideally shifting the burden of preventing misuse away from the Census Bureau.

Users of the ACS and decennial census data say that the bureau has been largely responsive to their concerns. The amount of noise injected into the decennial data has been reduced to make sure the data are accurate enough for use in the next round of congressional redistricting, and the bureau has been regularly soliciting feedback from data users.

Some concerns remain. Small amounts of noise will even out when the data are used to create large-scale estimates. But planners also use census data to allocate limited resources within small geographical areas. This makes Mike Mohrman, Washington state’s demographer, uneasy. “My experience has been that when you change the numbers,” he explains, “you get different results.” ■



Make America enumerate again



Ocean farming

## Kelp wanted

BLOCK ISLAND

Kelp helps farmers’ wallets and the world

THE PINK AND green buoys bobbed gently over the surface of the water as Catherine Puckett steered her boat towards them. Underneath the area demarcated by the buoys, Ms Puckett plants kelp—a type of seaweed—on long ropes that resemble washing lines. In a good year she harvests about five tonnes of the stuff, which is ferried from Block Island to be sold on the mainland.

Seaweed has long been a mainstay of Japanese cuisine, but it is now catching on in America. Dieticians extol kelp’s high nutritional value and its many uses in the kitchen. Online retailers sell burgers, jerky and pasta made of kelp, which has a satisfying chew and a clean, bracing marine salinity. Restaurants offer kelp salads and kelp martinis. And manufacturers use seaweed to make products as varied as toothpaste, pharmaceuticals and compostable straws.

Seaweed also owes its rising popularity to something else. Research has shown that it restores underwater habitats, filters contaminants and, by sequestering carbon dioxide, helps to counteract ocean acidification, making it an appealing way to help mitigate the effects of climate change. Among the projects to be supported by a \$100m grant awarded to the World Wildlife Fund by the Bezos Earth Fund, endowed by Jeff Bezos of Amazon, was to study seaweed’s environmental benefits and encourage its production. Sea Grant, a federally funded programme that works with American research universities, launched a Seaweed Hub to serve as a clearing-house for the industry.

Seaweed farming is attracting newcomers, especially women, to the com-

mercial seafood industry. GreenWave, a Connecticut-based non-profit, has a waiting list of about 8,000 people for its ocean-farming programme. Some alumni, such as Ms Puckett, added seaweed as a winter crop to their shellfish farms (islanders affectionately call her “The Oyster Wench”, a name inspired by Shakespeare’s *Richard II*).

Others, such as Suzie Flores, are switching careers. Before opening her kelp farm in Stonington, Connecticut, in 2017, she was an executive at a higher-education software company. Bren Smith, founder of GreenWave, says one reason ocean farming attracts newcomers is that starting a seaweed farm is easier than becoming a commercial fisherman, which requires permits that come in limited numbers and can cost hundreds of thousands of dollars.

Kelp farmers, however, face several obstacles. Getting the required permits can be a bureaucratic process involving numerous state agencies. Ms Flores says that outside of Maine, infrastructure to process the seaweed crop is limited. Because raw kelp has a short shelf-life, Ms Puckett has to harvest her crop within a five-hour window to get it on a ferry before noon (she hopes to build her own processing plant on the island). And farmers sometimes have to deal with people who complain that the farming gear, though mostly underwater, spoils the view from their seafront villas.

The kelp industry is still young and farming seaweed is not always profitable. But, says Ms Flores, “I find it to be very fulfilling. You are growing food that is healthy for the environment and healthy for people.”

## Cocktails and peace treaties

## The Foreign Not-in-Service

NEW YORK

**America says it's back. But where are its ambassadors?**

CERTAIN SIGNIFICANT people were nowhere to be seen as Joe Biden touched down last week in the three countries he visited on his first trip abroad as president: American ambassadors. Mr Biden has yet to nominate envoys to Britain, Belgium or Switzerland, much less to guide them through the bog of Senate confirmation.

In fact Mr Biden has not nominated an ambassador to any of the countries—from Japan to Germany to Canada—that with America comprise the G7, the alliance of prosperous democracies he this month tried to rally to a global contest with the autocratic model of Russia and China. He has not picked an ambassador to the European Union, whose leaders he also met.

He has nominated a representative to NATO, another alliance he called upon. She is Julianne Smith, a deputy national security adviser to Mr Biden when he was vice-president. But she has not been confirmed, and, since the president nominated her only on June 15th, she is unlikely to be for quite some time. America may be back, as Mr Biden likes to say, but its ambassadors are still a long way off.

The impact of an absent ambassador is hard to measure. A *chargé d'affaires*, generally an experienced foreign-service officer, stands in, and, during the pandemic, virtual diplomacy showed its merit as a work-around for diplomats on site. Some ambassadors have done more harm than good. But as Mr Biden put it in Geneva last week, foreign policy “is a logical extension of personal relationships”. The sooner am-

bassadors are in place the sooner they learn who matters and begin building trust. And as choices of the president, ambassadors speak with particular authority, both to their host government and their own government.

Take Tom Nides, also nominated on June 15th, to be ambassador to Israel. The vice-chairman of Morgan Stanley, Mr Nides was a deputy to Hillary Clinton when she was secretary of state and spent years on Capitol Hill. Had he been in place as tensions mounted last month, he might have had the clout to focus the administration's attention, and to intervene himself, before Israel and Hamas came to blows. As it was, the administration scrambled to dispatch an envoy after the fact. The most senior official it could spare was a deputy assistant secretary, Hady Amr.

After a relatively quick start to staffing his administration, Mr Biden has lost steam. As with the trip, during which the allies were tickled just to be meeting with a president who didn't insult or shove them, Mr Biden's pace of appointments does not look so bad compared with the record of Donald Trump. But that is a low bar.

By June 23rd, over five months in, Mr Biden had had 70 executive-branch appointees confirmed, compared with just 44 for Mr Trump at the same point. Barack Obama had 165 such officials confirmed by now, according to data kept by the Partnership for Public Service, a non-profit group. These tallies are particularly dismal considering that, in all, a president has to fill

some 1,200 vacancies that require Senate confirmation, along with another 3,000 that do not. Only this week did the Senate confirm Mr Biden's director of the Office of Personnel Management. He has yet to fill two other senior posts focused on making the government run effectively: the leaders of the General Services Administration and of the Office of Management and Budget.

The Senate plays its own role in undermining governance. For example, Mr Biden has nominated most of his candidates for the critical position of assistant secretary of state, some as long ago as mid-April. But the Senate has yet to confirm any. On average it took Mr Obama 510 days, and Mr Trump 525 days, to get each assistant secretary confirmed.

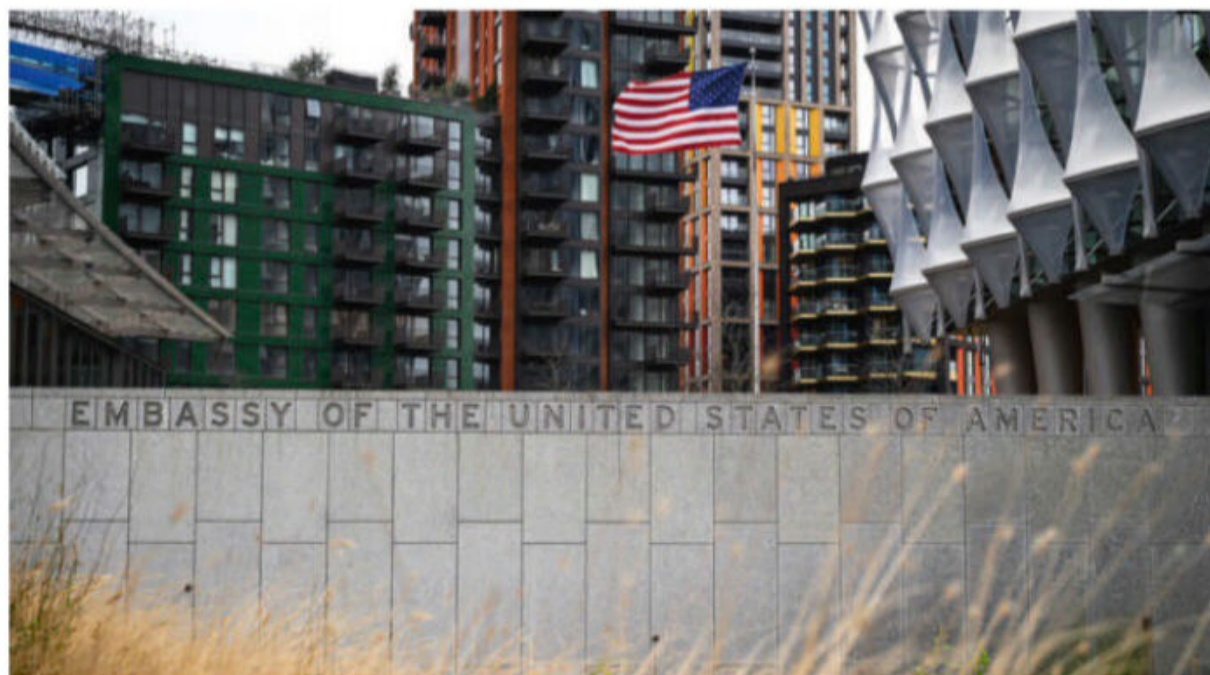
Mr Biden and his aides wisely had more than 1,000 appointees who did not require Senate confirmation ready to start on day one. But confirmations were slow to get under way. The attack on the Capitol, followed by the second impeachment of Mr Trump, distracted the Senate. The administration then fell into a familiar pattern. Those officials who were in place became preoccupied with crises or making new policy. Being both sensitive and dull, questions of personnel are easy to put off. And, of course, the fewer people in place, the more duties they have. In order to hire people, you need to hire people.

Picking ambassadors is particularly tricky. Presidents have tended to use comfortable posts to reward big campaign donors or other political allies. Mr Trump particularly liked to do this, and he raised the proportion of politically appointed ambassadors to 43%, with the other 57% drawn from the professional foreign service. From 1974 on, the share of professionals was closer to 67%.

Antony Blinken, the secretary of state, wants to promote more foreign-service officers into ambassadorships. He also wants to diversify the ranks. In January the Partnership for Public Service found that of 189 ambassadors, just five were black. All these considerations make for complex decision-making, even before members of Congress lobby for their own favourites.

After naming nine ambassadors in April, Mr Biden followed up two months later by nominating nine more, including Ms Smith and Mr Nides. But, although the administration has floated various names, Mr Biden has still not nominated diplomats to fill the posts in Beijing, Seoul, Manila, Kabul, Islamabad, Riyadh, Warsaw, Kyiv or Delhi—and the list goes on. There is an ambassador to Moscow, but only because Mr Biden held over Mr Trump's choice, John Sullivan.

Mr Biden has proposed an activist foreign policy and an audacious domestic agenda, but he lacks many of the leaders he needs to pursue either effectively. ■



But where is our excellency?



## Haiti

## Banana Man loses his appeal

PORT-AU-PRINCE

**A referendum is postponed; bad news for President Jovenel Moïse**

**B**LUE, RED and white signs emblazoned with “Nap vote!” (“We Vote!” in Creole) hang from posts and trees in Port-au-Prince, Haiti’s capital. But a referendum on the constitution, planned for June 27th, has been postponed amid rising covid-19 cases and international criticism of the process, particularly from the United States. It will possibly be held at the same time as elections planned for September. Many reckon that those polls, for a new president and lawmakers, could also be scrapped. It is yet another indicator that Haiti’s crisis is getting worse.

Jovenel Moïse, the president and a former plantation manager who calls himself “Banana Man”, has little legitimacy. His opponents say his term ended on February 7th this year, which marked five years since his predecessor stepped down. He says his term started a year later, when he took office. For the past 18 months he has ruled by decree. Today there are only 11 nationally-elected officials, including him. He has overseen six prime ministers in four years. Protests against his rule continue. Mr Moïse, who wanted the referendum to go

ahead, partly in order to make a parliamentary system more presidential, looks increasingly embattled and authoritarian.

Unlike most politicians in Haiti, Mr Moïse comes from the countryside. His outsider status has made it hard for him to govern, as he has few allies in the political classes. Moreover, his incompetence means that since coming to power little has changed and the country is in a mess. Covid-19 is rampant, whatever the official numbers say. For the past two years the economy has shrunk, mostly because of increasing lawlessness.

Last year Mr Moïse, who also refers to himself as “Après Dieu” (i.e. second only to God), has widened the definition of “terrorism” to include acts of dissent. His response to the protests, which first broke

out in 2017, has been heavy-handed. At first protesters were complaining about the cost of living, but a year later they started grousing about corruption. Many accuse Mr Moïse of being involved in a scandal in which millions of dollars were pilfered from PetroCaribe, an aid fund from Venezuela, a charge he denies. Some 71 protesters were massacred in one neighbourhood. The opposition and many ordinary Haitians blame the government, which denies involvement.

Many of Haiti’s problems predate Mr Moïse. Since the fall in 1986 of the dictatorship of “Baby Doc” Duvalier, political bigwigs have relied on armed groups to do their bidding. Today there is “a wholesale criminalisation of the political apparatus”, argues James Boyard, a researcher who is also a police officer. Gangs are affiliated not just with the government but with opposition groups and big business families. Partly as a result, they are far stronger than the police. In the run-up to elections violence rises, as gangs know they can charge politicians for access to neighbourhoods to hold meetings. Indeed in recent weeks there has been an uptick in fighting.

Because of this urban warfare at least 8,500 women and children were displaced from their homes in the first two weeks of June, according to UNICEF, the UN’s children’s agency. Haitians used to know the danger zones; now they rely on WhatsApp to update them on the ever-shifting areas to avoid. Carlo Pierre, a 35-year-old soda-seller, had to leave his neighbourhood of ▶▶

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► Bel Air in April after gangs burned down his house. Despite its proximity to the National Palace, no police turned up, he says. Today the area in downtown Port-au-Prince around the palace bustles with street stalls, old yellow US school buses and motorcycle taxis. The nearby roads to Bel Air are barricaded off by stacks of tree branches put there by gangs.

Haiti is one of the most unequal countries in the world. “There is apartheid-like exclusion, that will remain even if you solve the political crisis,” says Monique Clesca, a former UN official who is now part of a commission of civil-society groups trying to devise solutions to the country’s woes. Some 60% of the population live on less than \$1.90 a day. Fejuthia Deville, a mother of two, says she has pleaded with relatives abroad to send her cash after her husband lost his job. But they are unwilling to help; they suspect that the situation will not improve and she will keep asking for more.

Change will be difficult. The opposition is divided between the protest movement—young professionals, for the most part—and traditional parties, almost all of which are tarnished in the eyes of the public. This adds to political instability. The country has seen dozens of presidents and transitional governments come and go. Some want another temporary government to oversee the end of Mr Moïse’s rule, arguing that this is the way to reduce polarisation. But the opposition is divided over who should be interim president.

Historically, the most common way for Haitians to prosper has been to move to the United States. There are now 1m of them there, forming a small but persistent lobby. President Joe Biden’s administration is urging Haiti to hold elections as soon as possible. It backs the idea that Mr Moïse’s term ends in 2022, but this month it came out against the constitutional referendum, thus weakening him. Few Haitians think their elections are fair. Turnout in 2016 was 21%; just 600,000 people, in a population of 11m, voted for Mr Moïse. A council set up by the government to organise September’s ballot is widely seen as partisan. It was appointed by decree, contrary to the law; the Supreme Court refused to swear in its members. This is why the constitutional referendum, which was set up through the same process, was postponed, too.

The United States could perhaps broker an accord between the government, the opposition and civil society. A consensus prime minister could be appointed to organise the elections, instead of the discredited election body. But whatever happens, many of the same problems will remain. “We need security and justice before we can go to elections,” says Pascale Solages, a member of We Will Not Sleep, a social movement. Both are in short supply. ■

## Cannabis in Jamaica

# Puffalo soldiers

## Bob Marley’s heirs boost Jamaica’s ganja industry

HE WAS HARDLY a capitalist icon. When Bob Marley died in 1981, at the tragically young age of 36, his final words were, apparently, “Money can’t buy life.” But on June 7th his estate, managed by several of his children, announced that money can buy some of the Rastafarian lifestyle—and that this year the Bob Marley museum in Kingston would become one of several “herb houses” in the capital where people can buy its brand of ganja for therapeutic use. The estate’s cannabis brand, Marley Natural, offers various herbs and vapes, including the reggae singer’s favourite strains of pot, “famously blessed with transcendent positivity”. The venture is backed by American investors.

For years Jamaicans have been getting up and standing up for their right to smoke ganja. But it was only six years ago that the island decriminalised the possession of small amounts of cannabis for recreational use and made growing five plants at home perfectly legal. Since 2015 it has also allowed medical, therapeutic, sacramental and scientific use. The law stipulates that any cannabis-related business must be half-owned by Jamaicans.

Large-scale cultivation for recreational use remains illegal, partly because the government is wary of stirring it up with the heart of America. “We didn’t want to be a pariah, so we had to tread carefully,” says Norman Dunn, a minister who chairs the Cannabis Industry Development Taskforce. The law is widely disregarded, however. Jamaica is the largest source of illegal marijuana in the Caribbean; some of that will go to the United States, too.

So the country finds itself in the odd situation of waging war on drugs while simultaneously trying to capitalise on tokes. In the first nine months of 2020 it seemed as if everywhere was war: Jamaican police burned 253 hectares of cannabis plants and seized 26 tonnes of cured marijuana. By contrast Nevada, where recreational use is legal, collected \$188m in taxes from cannabis last year.

Red tape is another come-down. Until recently not a single commercial export licence had been granted to ship medical marijuana to European countries where it is legal. Some companies went to Colombia rather than jumping through endless hoops in Jamaica, claims Rory Liu, who got the country’s first processing licence.

The biggest blunder has been the fail-



Let’s get together and feel all right

ure to establish a way for local farmers to move away from the illegal industry. Licence fees can be up to \$10,000. Then there is the extra cost of security guards and video cameras, says Triston Thompson, a cannabis consultant. Wealthy Jamaicans and foreigners can afford the start-up costs. But Jamaica’s edge comes from a reputation for the quality of plants lovingly reared by Rasta and Maroon growers. If they could more easily cultivate and process ganja legally, then a thriving Jamaican cannabis industry might become more than just a pipe-dream. ■

## Quebec

# Let them only speak French

MONTREAL

## No English please, we’re Québécois

FOR OLIVER MAYERS, a native of Montreal, living in a bilingual city is special. “It’s ‘bonjour-hi,’” he says, referring to the local hybrid greeting. Around two-thirds of people in Montreal regularly use English at work. “You can do both.”

Others say you should not. On May 13th Coalition Avenir Québec, the conservative party in charge of the Quebec national assembly, put forward a bill to bolster French as the province’s sole official language. It is likely to come into force later this year.

The bill mandates that businesses must have their signs mostly in French. Companies with 25 or more employees, moreover, will have to form “francisation committees” to monitor the use of written and spoken French. Staff who misuse the subjunctive will not be referred to human resources. At least, not yet. ►►

▶ New immigrants will have six months to learn the language; after that, all the government's letters to them will be in French. The bill also seeks to add clauses to the parts of the Canadian constitution that refer to Quebec, declaring it a "nation" within a unified Canada.

It is not the only attempt to boost French. On June 15th the federal government proposed a bill to safeguard the language nationwide. On June 20th Nathalie Roy, Quebec's minister of culture, announced that most music heard when calling a government agency, or when in a gov-

ernment building, should henceforth be made in Quebec and be in French. (When unveiling the policy, according to the *Montreal Gazette*, Ms Roy spoke of a terrible injustice: "I was on hold with the culture ministry's phone line and I was taken aback to hear an American singing a little song in English to me.")

Few Quebecers are pushing for independence. After two referendums, most Canadians consider the matter closed. But if the Supreme Court rejects the attempt to declare Quebec a nation, it could rekindle a desire for autonomy, thinks John McGarry

of Queen's University in Ontario. Like Quebec, the Spanish region of Catalonia tried to define itself as a "nation" in regional statutes, but the constitutional court argued that the term had no legal force.

Meanwhile the bill has been criticised by indigenous peoples and Anglophones. Marie-Claire Lafrenière, an English-speaking mother in Terrebonne, complains that recently at a drive-thru she was told to speak French. "I feel as though I'm living under a dictatorship," she says, showing the sense of proportion for which Quebec is increasingly renowned. ■

## Bello The monster of Managua



*Daniel Ortega tears up all pretence of democracy in Nicaragua*

ON DECEMBER 27TH 1974 Hugo Torres was among a dozen Sandinista guerrillas who burst into a Christmas party attended by close cronies of Anastasio Somoza, Nicaragua's brutal dictator. They swapped their hostages for a plane to take 14 of their imprisoned comrades to Cuba. Those freed included Daniel Ortega, who had spent seven years in jail and suffered torture. After the Sandinista revolution triumphed Mr Ortega would become Nicaragua's president, at the head of a collective leadership, until defeated in an election in 1990. Returning in 2007, he has ruled ever since as an elected autocrat. This month his police arrested Mr Torres, now a retired brigadier and potential opposition candidate in an election due in November. "I risked my life to get Daniel Ortega out of jail," he said. "Those who once embraced principles have betrayed them."

Mr Torres is one of a score of prominent opponents of Mr Ortega who have been arrested since late May. They include five presidential aspirants. One of them, Cristiana Chamorro, whose mother defeated Mr Ortega in 1990, is the country's most popular political figure, according to a leaked poll. She was the best bet to unite the opposition. Others include the head of Nicaragua's largest bank and Dora María Téllez, a heroine of the revolution who was punched in the stomach and dragged from her house by 60 police. All are accused of conspiring with foreign interests against the sovereignty of Nicaragua.

Not since the 1970s has there been such a brazen crackdown in Latin America. In its seemingly indiscriminate nature and suddenness it goes beyond even the repression of opponents by Venezuela's dictatorial regime. Why has Mr Ortega torn up all pretence of democ-

ocracy in Nicaragua? And will he get away with it?

The obvious answer to the first question is that he and his wife and vice-president, Rosario Murillo, fear defeat in November. Although he still leads the Sandinista party, rather than adhere to its socialist past Mr Ortega has, since 2007, echoed the Somozas, complete with their nepotism and dynastic pretensions. While taking control of the legislature, the judiciary and the electoral authority and muzzling the media, he forged an implicit alliance with private business and with the churches. He kept support among the poor with social programmes paid for with \$500m a year in aid from Venezuela. When this dried up, austerity prompted a national uprising in 2018 which involved Sandinista supporters as well as their opponents. More than 300 people were murdered by Mr Ortega's paramilitary goons. That pushed the private sector, and the United States, into opposition.

Since then Mr Ortega has rallied the Sandinista base while the opposition has fragmented, notes Mateo Jarquín, a Nic-

araguan political scientist. Mr Ortega is still seen favourably by 39%, according to the poll. The first couple sell *sandinismo* as synonymous with the nation, the state and its social programmes. "The vast majority of Nicaraguans are focused on finding work and putting food on the table," says Mr Jarquín. And fear is doing its job, too.

Ms Murillo is the public face of the government and is younger than her husband. Many had assumed that the regime's plan was for her to be the candidate this year. But she is widely disliked within *sandinismo*. One reason for the crackdown may be to clear the way to foist her on the country. But it may simply be that, having once lost power, Mr Ortega has no intention of doing so again. The Sandinistas were originally a mixture of romantics and hard men. The romantics are now in the opposition.

Will the Ortegas get away with this? The United States has imposed sanctions against 31 individuals, including Ms Murillo. It orchestrated a condemnatory vote at the Organisation of American States this month. If the election in November is indeed a farce, the administration of Joe Biden is likely to do more. But would pressure work? Cynthia Arnson of the Wilson Centre, a think-tank in Washington, points out that Mr Ortega survived a civil war against US-backed *contra* rebels in the 1980s. "He probably thinks he can take whatever the United States can dish out," she says.

With his pre-emptive round-up Mr Ortega has equipped himself with human bargaining chips to use after November. He is staking out new rules for the exercise of absolute, dynastic power in Latin America. It is not much consolation to recall that in the end this did not work for the Somozas.





### Myanmar's civil war

## The downward spiral

SINGAPORE

**The resistance is gathering allies, but they are disorganised and divided**

**M**OUNTED ON A bicycle, wearing a T-shirt emblazoned with a corporate logo, Kyaw Tin Tun could pass for one of the many food-delivery couriers zipping through Yangon, Myanmar's biggest city. But his bag contains no food and his phone no instructions. His getup is there to provide cover for the slow speed at which he rides, for the constant stopping and starting, for eyes darting this way and that—looking not for an obscure address but for nooks in which to plant explosives.

Mr Kyaw Tin Tun (not his real name) belongs to a covert group aiming to destabilise Myanmar's military junta. Before the army launched its coup five months ago, ending a ten-year experiment with democracy and returning the country to military rule, Mr Kyaw Tin Tun “had never dared to pick up a gun”. In February and March he, like hundreds of thousands of Burmese, took to the streets to engage in peaceful protest against the putsch. But the army's brutal crackdown, in which more than 850 people have died and more than 6,000 others have been arrested, has pushed many Burmese who oppose the coup to change

both their objective and their tactics.

The new aim is more ambitious. The resistance will no longer be content merely to reverse the coup. It now wants to tame the army, which has ruled the country for most of the past 60 years, and bring it under civilian control. The tactics have in turn become more ruthless. In cities, people associated with the military government are being assassinated. In the countryside, new militias are being formed and ambushing security forces. Even before the birth of this “revolutionary movement”, as Thant Myint-U, a Burmese historian, calls it, Myanmar was beset by ethnically based insurgencies (see map on next

page). Since the coup, many of these ethnic militias, some of which had agreed a ceasefire, have launched big offensives against the Tatmadaw, as the army is known. The army is more embattled than it has been in a generation.

The most battle-hardened of the forces arrayed against the Tatmadaw are the ethnic militias. Two of the oldest and biggest rebel groups, the Kachin Independence Army (KIA) and the Karen National Liberation Army (KNLA), started their attacks in March, seizing army bases and police posts. Fighting between the Kachin group and the army near the Chinese border has raged for months. Almost an entire army battalion was reportedly wiped out over two days in April. Anthony Davis, a security analyst, calls it a “meat-grinder” battle.

The Tatmadaw is even losing skirmishes against less experienced rebels armed with home-made rifles. On May 31st the Karen Nationalities Defence Force (KNDF), a merger of established insurgent groups and new militias from Kayah state, ambushed 150 soldiers. In retaliation, the army deployed helicopters, fighter jets and heavy artillery. The scale of the response suggests it suffered humiliating losses, says Mr Davis, who suspects that experienced troops have probably been deployed to fend off the older militias, leaving less capable ones to tackle new outfits like the KNDF, who know the terrain better. They are also more motivated: “We are defending our land,” says Thomas, the KNDF's spokesman, who goes by one name. “The ▶▶

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▶ regime's forces were just following orders."

Unusually, the Tatmadaw must also contend with fury among Barmars, the majority ethnic group, who are clustered in the centre of the country. Thousands of urban activists have received basic military training from ethnic militias in the jungle. Like Mr Kyaw Tin Tun, some have returned to the cities to put their new skills into practice. More than 300 bombs have exploded in police stations, state-owned banks and government offices in Myanmar's cities since February, according to Radio Free Asia, an American-government-funded news website.

There are signs of co-ordination between ethnic rebels and Bamar fighters. In late April Chinese-made rockets were launched at two air-force bases in central Myanmar. These weapons were almost certainly obtained from the KIA or KNLA, but neither group could have deployed and fired the projectiles in central Myanmar without help from local Barmars. It is the first time that military targets in the centre of the country have been attacked with heavy weaponry.

The creation in May of an auxiliary militia to patrol big cities and towns shows how stretched the Tatmadaw finds itself. As Min Aung Hlaing, the commander-in-chief and effectively the country's leader, put it in an interview with a broadcaster from Hong Kong last month, "I can't say [things] are now 100% under control."

Deposed lawmakers have formed a shadow administration, known as the National Unity Government (NUG), which is trying to knit the disparate anti-regime

forces into a standing army. But different ethnic rebels are wary of one another and of the NUG, which was formed by a Bamar political party criticised before the coup for ignoring the grievances of ethnic minorities. Some rebel groups have no interest in taking on the Tatmadaw. Others, such as the Arakan Army, see an opportunity to extract concessions from the army while it is under pressure.

Even were its opponents to band together, the army's 350,000-odd soldiers would still dwarf the rebels' combined forces of around 80,000. Though defections from the army have grown since the coup, they number in the mere hundreds. A resolution of the UN General Assembly on June 18th, calling for an embargo on arms sales to Myanmar, as well as an end to violence and the release of detainees, will

make little difference. The Tatmadaw's two biggest suppliers, China and Russia, abstained. In any case, it has built up an arsenal of sophisticated weaponry over the past decade.

The result is a bloody stalemate. Even as the shadow government struggles to bring Myanmar's multifarious militias together, their fragmented nature also makes it more difficult for the Tatmadaw to root them out. And the Tatmadaw's brutality has turned the entire country against it, says Salai Lian Hmung Sakhong, the NUG's minister of federal affairs. This is the first time that Barmars have joined ethnic rebels in fighting the army since some students took up arms after the brutal suppression of an uprising in 1988. The junta, says Mr Lian Hmung Sakhong, "cannot kill the whole people, the entire country." ■

## Invasive species

# No more Mr Mice Guy

SYDNEY

## Australia mulls biowarfare against unwanted critters

FOR SIX months a plague of rodents has infested Australia's south-eastern farmlands. Mice are still "running around like they're training for Tokyo", says Xavier Martin, a grain farmer in New South Wales, the worst-hit state. The vermin devour crops, burrow into hay bales, climb into beds and pollute drinking water. That has set off a debate about how to end the scourge.

The first solution is baiting. The poisoned grain that farmers scatter over their fields is costly, and some towns have run out of the stuff. Worse, mice do not always consume a fatal dose, says Steve Henry of the Commonwealth Scientific and Industrial Research Organisation (CSIRO), though a new double-strength formula might help.

Another idea is to prevent future plagues by waging biological warfare against the creatures. Under a A\$50m (\$38m) "mouse-control package", the government of New South Wales is investing in research into tweaking the rodents' genes, to slow their breeding. One approach might be to eliminate sperm which carry the X chromosome, thereby ensuring that future pups are mostly male. Another is to pass a gene through the population that would eventually make female mice infertile.

No country has yet genetically engineered mammals in that manner, says Paul Thomas of the University of Adelaide, who is leading the research. But Australia has fought biological battles against invasive species—of which it has many—for decades.

Consider the humble bunny. A couple of dozen rabbits were first imported for sport by a bored British transplant. They bred like their proverbial selves and went on to nibble huge tracts of Australia bare. Only the introduction of two lethal viruses—myxomatosis and calicivirus, which causes them to bleed to death—has seriously dented their numbers.

Troublesome plants are kept in check by similar means. Prickly pears, a family of cacti introduced from the Americas, overwhelmed farmland in eastern Australia before a leaf-munching moth was shipped over in the 1920s. Since then, scientists have unleashed insects and fungi on weeds such as ragwort.

Next in the federal government's sights is the carp, a bottom-feeding European fish which has overrun Australian rivers. It hopes to knock it out with a herpes virus. Such plans divide scientists, some of whom worry about the virus affecting other creatures.

They have reasons to be wary. Though Australia has some of the world's toughest biosecurity controls, it is still paying the price for past botch-ups. Enormous, toxic cane toads, imported from Hawaii in the 1930s to consume a crop-eating beetle, poison anything that tries to bite them. Their long march across northern Australia continues. Perhaps another biological weapon could be harnessed against them? Scientists have searched high and low for a virus that would infect them without hurting other species, says Andy Sheppard, a research director at CSIRO. None has ever been found.



## The Philippines' war on drugs

## Silenced witness

MANILA

## Authorities open a rare investigation into a police killing

THE RASHOMON stories recounting the death of Jhondie Maglinte Helis are typical of the Philippines' war on drugs under President Rodrigo Duterte. The police claim that officers found Jhondie (pictured), 16 years old, in the company of an adult drug suspect, Antonio Dalit, when they went to arrest Mr Dalit on June 16th in Laguna, a province on the southern edge of Manila. The officers say they shot and killed the pair after both of them drew guns in an attempt to resist arrest.

Civilian witnesses tell a different, if depressingly familiar, story: that the officers captured and summarily executed Mr Dalit. Jhondie happened to be nearby, and witnessed the killing. The officers are then alleged to have caught and handcuffed him, shoved him face-down into the mud and, as he pleaded for mercy, shot him dead, too.

What happened next, however, was far from typical. The official tally of killings in the drug war stands at 6,117 by the most recent count. Most such stories end when the authorities close the case without even attempting to uncover the truth. But in the case of Jhondie the police restricted the movements of the ten officers involved. They also started an internal investigation, which will run independently of inquiries by the Commission on Human Rights, an all-bark-and-no-bite public institution. The national chief of police, General Guillermo Eleazar, voiced his determination to rid the force of what he called "rogues who are unfit to wear the uniform".

Even the presidential spokesman, Harry Roque, promised that police officers who broke the law would be investigated, prosecuted and punished. Mr Duterte has repeatedly urged law enforcers to kill drug suspects, usually adding as an afterthought that such killings are lawful only if the suspects try to use deadly force to resist arrest. His spokesman notes, however, that the president had also repeatedly said that police officers would be "on their own" if they broke the law.

The official protestations of determination to prosecute killer cops followed the announcement by prosecutors from the International Criminal Court (ICC) that they had asked for permission to investigate Mr Duterte and his subordinates on suspicion of committing crimes against humanity in the war on drugs. Monitors of human rights think the campaign has



## Innocent victim or hardened criminal?

killed thousands more people than the official tally suggests.

During a televised address, Mr Duterte reacted to the prospect of being hauled before the ICC with the subtlety that has characterised his presidency. "Bullshit!" he said. "Why would I defend or face an accusation before white people? You must be crazy. [They used to be] colonisers, they have not atoned for their sins against the countries that they invaded, including the Philippines."

Mr Duterte's dismissal of the court is based on three arguments. The flimsiest is that the ICC never had any jurisdiction because the treaty by which the Philippines joined it was never published locally in print, as required by law. A stronger argument is that the court has anyway had no jurisdiction since the Philippines' withdrawal from the treaty took effect in March 2019. The third is that the ICC can intervene in a sovereign country only if the system of justice in that country fails to function, and that the Philippine justice system is still working well enough.

If the authorities' professed determination to establish what happened to Jhondie is meant to prove that the justice system is in fine fettle, it is unconvincing. The justice minister, Menardo Guevarra, attempting to explain why his ministry has prosecuted so few killer cops, bemoaned the lack of witnesses for the prosecution. "Unless they come forward and testify, it would be extremely difficult for our investigating agencies to build up cases against erring law enforcers," he said. Mr Guevarra was speaking, apparently without any irony intended, just six days after Jhondie was killed. If the prosecutors of the ICC do end up investigating the blood-letting Mr Duterte has instigated, they are unlikely to be so easily discouraged. ■

## Underage marriage in Indonesia

## Unlawfully wed

SINGAPORE

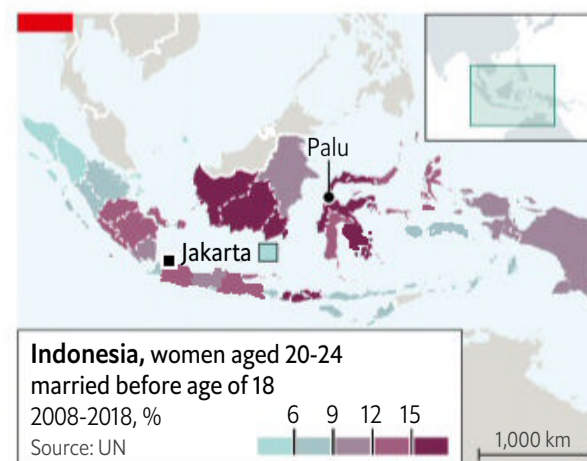
## Religious courts continue to allow grown men to marry girls

WHEN RASMINAH was 13 her parents forced her to abandon her education and get married to a man who was then 27. "I was heartbroken," she says. "I would watch my friends leave for school every morning wishing that was my life." When the marriage failed she was married again, aged 15, to a 40-year-old man.

One in nine Indonesian women is married before turning 18. The country's lawmakers want that to change. Two years ago they raised the legal age of marriage for women from 16 to 19, to match that for men. At the start of 2020 the government restated its ambition to cut the rate of child marriage by 40% within a decade.

Raising the age at which women can marry has sent an important signal. But the new rules contain big holes. Religious courts have retained the right to wave through underage marriages for families who ask nicely. Parents make use of this procedure to arrange hasty weddings for girls who have got pregnant, among other reasons. Almost all requests are granted, often without the knowledge or approval of the child involved. Applications for these dispensations rocketed after the marriage-age was raised.

Meanwhile only about 5% of all marriages involving children go through legal channels, according to a government estimate. In lots of cases authorities are deliberately kept in the dark by families who know that the nuptials are unlawful. But marriages also go unregulated because registering them involves cost and hassle, says Nina Nurmila of the National Commission on Violence Against Women. Asking an official to travel to witness a rural marriage can cost around \$40—about one-and-a-half times the monthly wage of an Indonesian living on the national poverty line. Many families conclude that it is suf- ▶▶





► ficient to get the blessing of religious leaders, says Nani Zulminarni of PEKKA, a women's group.

Changing people's attitudes to child marriage is the hardest task. In February a matchmaking agency made the news after vowing to help women "perform their duties" by "marrying between the ages of 12 and 21 (and no later!) to please Allah". The government's strategy emphasises the need to educate families about the downsides of marrying before adulthood.

Experience from past disasters suggests that the pandemic will make things much

worse. In 2018 an earthquake and tsunami struck Palu, a city on the island of Sulawesi; the next year cases of child marriage rose from 14 to 48 in just one village, according to LIBU Perempuan (LP), a women's-rights group. Dewi Rana of LP says some children there were herded into marriage after being orphaned, because locals thought that was a good way to make sure they received support. Some girls who had been sexually abused by men in the aftermath of the disaster were forced to marry their attackers.

Lia Anggie of the Indonesian Women's

Coalition, which represents several charities, says that school closures during the pandemic have made it more likely that girls will have sexual relationships that lead to them being pushed into marriage. Closed classrooms have also interrupted the delivery of new curriculums which, it was hoped, would help youngsters resist pressure to marry. The government estimates that an additional 2.8m Indonesians fell into poverty last year; financial distress makes families more keen to seek husbands for their daughters. It will be hard for officials to untangle this knot. ■

## Banyan The book of Cho



*A political memoir has South Koreans asking whom politicians serve*

“IT IS LIKE dipping my pen in my family's blood,” writes Cho Kuk in the opening lines of “Cho Kuk's Time”. Mr Cho was forced to resign as South Korea's justice minister in the autumn of 2019 after just 35 days in office, felled by a scandal that shook the government. In the time-honoured tradition of politicians writing memoirs, he uses his blood-soaked pen to explain how he was wronged, so wronged: Mr Cho and his family were just innocent victims, persecuted by entrenched forces that would stop at nothing to retain their power.

Over 366 pages, Mr Cho compares himself to kindling (for the cleansing fire of reform), a monkey in a zoo (to be treated as a spectacle) and Santiago (the old man in Ernest Hemingway's novel about an ageing bloke and a body of water). The book is a gigantic hit, selling some 200,000 copies in two weeks.

That is not because South Koreans agree with Mr Cho's characterisation of his travails. By the time he resigned, many had come to regard him as a symbol of entrenched privilege and political hypocrisy. Mr Cho had been charged by President Moon Jae-in, of the left-wing Minjoo Party, with curbing the powers of the prosecution service, one of the last institutions of the state to remain almost unchanged since the days of dictatorship. But in the eyes of the public, Mr Cho appeared to be taking advantage of the very privileges the government had vowed to dismantle. His memoir has reignited a debate sparked by his downfall two years ago: do politicians promising to make South Korea fairer hold themselves to their own standards?

The reforms that Mr Cho was asked to implement—limiting the investigative powers of prosecutors and creating a specialist agency for crimes involving

senior officials and big-cheese business-people—were broadly popular. South Koreans have long believed that the prosecution wields too much power and has a tendency to abuse it. But attention quickly shifted from the reforms to the personal conduct of Mr Cho and his family. His daughter, a medical student, had allegedly won prestigious scholarships despite twice failing her university exams. His wife was alleged to have forged certificates for her daughter and to have used her hairstylist's bank account to conceal wealth that transparency rules required her to disclose.

The charges caused particular anger because of the paramount importance South Koreans place on educational attainment. Young people, in particular, are concerned about shrinking opportunity and slowing social mobility. Pressure from investigations by the very prosecutors whose powers he was supposed to curb forced Mr Cho to resign. His wife has since been sentenced to prison for insider trading and for forging internship certificates and academic awards. Mr Cho's own trial

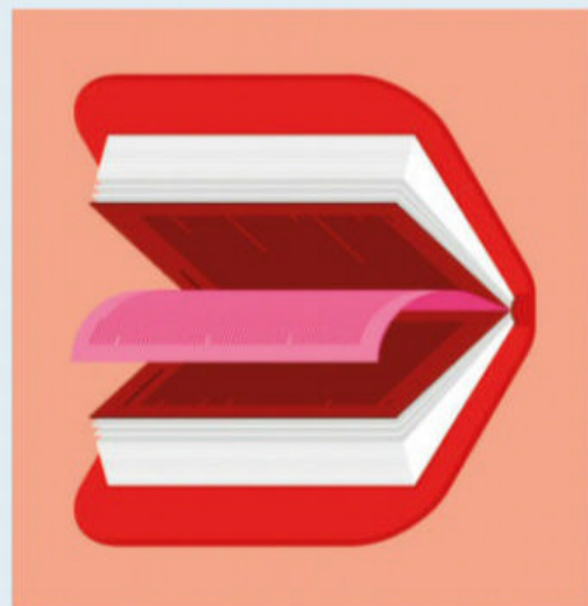
on related charges is in progress. He claims to be innocent.

The memoir appears to have caused some soul-searching among his former colleagues. Song Young-gil, Minjoo's chairman, apologised for nepotism within the party and vowed to do better. “We have shouted fairness and justice more loudly than anybody else, but we need to reflect if we have applied this rule to ourselves and our children,” he said. Yet in the same breath, Mr Song stressed that Mr Cho's behaviour had not necessarily been illegal. Moreover, he pointed out, those who had gone after him had committed irregularities, too.

Unsurprisingly, the apology has not been wholly convincing. A spokeswoman for the opposition conservative party called it “nothing more than self-defence and sophistry”. Several senior lawmakers from the ruling party promptly apologised for the apology, wishing they had done more to protect Mr Cho.

The opposition, meanwhile, has hardly covered itself in glory. It resisted an investigation of illicit land deals within its ranks, mirroring one that recently ended with the expulsion of two members from the ruling party. It has made little effort to look into accusations of nepotism and abuse of privilege among its own. If it wins the presidency and a legislative majority next year, there is a chance that it may try to roll back the reforms which Mr Moon's government, despite the scandal, did manage to pass.

Such actions harden the impression that, for government and opposition alike, partisan allegiance trumps personal integrity. Mr Cho writes, “A man can be destroyed but not defeated.” South Koreans must hope that, when it comes to their politicians' self-dealing, defeat and destruction go together.



## The Ainu

## The stories we tell

SHIRAOI

**Hokkaido's indigenous people have a new museum. Many feel it omits a lot**

FROM A DISTANCE, the National Ainu Museum glistens. When the sleek concrete-and-glass structure opened in 2020, it became the first national museum dedicated to the oft-forgotten indigenous people of Hokkaido, Japan's northernmost big island. "Visitors come knowing next to nothing about the Ainu," says Tamura Masato, a curator. The museum promotes a message of "ethnic harmony" and takes its name from an Ainu word, *upopoy*, meaning "singing together in a large group".

Yet for many Ainu, *Upopoy* epitomises the problems with Japan's approach to indigenous people. The government is happy to talk about preserving Ainu culture, but prefers not to discuss why Ainu culture was threatened at all. Japanese officials refuse to apologise for past misdeeds.

The Ainu have lived for centuries on modern-day Hokkaido, as well as the nearby Sakhalin and the Kurile Islands (which are both controlled by Russia). Japanese settlers arrived en masse after the Meiji restoration in the late 19th century, when the Japanese government claimed Hokkaido as its own and handed out land free of charge, much as America did to settlers in its vast interior. The Japanese spread diseases and enslaved the local population, forcing the Ainu to adopt Japanese names and the Japanese language. The first law about the Ainu, passed in 1899, made assimilation official policy.

Over the decades, the Ainu population shrank and their culture withered. Only a handful of native speakers of Ainu remain.

A survey conducted in 2017 found just over 13,000 Ainu in Hokkaido, though the number of people with Ainu roots is probably much higher. Many fear discrimination or have moved and mixed with the Japanese population. Those who do identify as Ainu are less likely to go to college and earn less than their Japanese neighbours. They can have trouble getting jobs because employers sometimes see them as lazier and less intelligent, an extension of colonial-era stereotypes. They also report romantic difficulties because partners' families see them as belonging to a lower class.

Japanese are taught little about the Ainu. "I had heard the word 'Ainu' in history class, but just the name," says Kobayashi Maki, a Tokyoite visiting *Upopoy*. That is in part because the Ainu complicate stories that Japanese tell about themselves. Japanese conservatives treasure the idea of Japan as an ethnically homogeneous nation; the existence of an ethnically distinct minority undermines that. They prefer to portray the growth of the Japanese empire, both in its neighbouring islands and further abroad in Asia, as a process of expansion and modernisation; the Ainu see it as colonialism. "People don't realise this is part of the colonial history, they think Hokkaido has always been Hokkaido," says Kitahara Jirota of Hokkaido University.

Some progress has been made. Kayano Shigeru became the first Ainu elected to the Japanese Diet, in 1994; his campaigning led to the repeal of the century-old assimilationist law. In 2007 Japan signed the Un-

ited Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), which enshrines a host of rights. The following year, the government recognised the Ainu as an indigenous group for the first time. Ainu have become more visible recently, thanks in part to "Golden Kamuy", a hit manga and anime series featuring Ainu heroes. A law passed in 2019 bans discrimination on the basis of ethnicity and expands measures to promote Ainu culture, chief among them the creation of *Upopoy*.

Yet although the old assimilationist policy has been replaced, the new one "does not guarantee any collective rights", as envisioned by UNDRIP, argues Maruyama Hiroshi of the Centre for Environmental and Minority Policy Studies in Sapporo. Activists lament that the law is toothless to stop discrimination and lacks any apologies for past policies. But for the Japanese government, apologising to the Ainu would open a Pandora's box of other uncomfortable historical issues, such as Japan's treatment of its Korean subjects.

**Another draft of history**

The Ainu leaders' demands are modest. They would like, for example, to fish freely for salmon in Hokkaido's rivers, which they are allowed to do only in special cases and with prior permission from the local government. They would like to see the return of remains that Japanese researchers took from Ainu graves in the early 20th century and have since held in university archives. A few were returned to descendants, but the vast majority—belonging to some 1,300 people—have instead been consolidated in a facility at *Upopoy*.

While some Ainu embrace the opportunities *Upopoy* offers—from jobs for young people to a customer base for crafts—others wonder whether the \$180m it cost to build could have been better spent elsewhere. The opening date, timed to the originally scheduled start of the Tokyo Olympics last year, underlined its function as a tourist attraction. The core of the exhibition covers hunting, fishing, farming, crafts and language; a brief section on history is relegated to the periphery. The displays make no mention of modern-day discrimination—in order to prevent children from copying the bad behaviour, Mr Tamura insists. Without the necessary context, "people just see something culturally interesting," laments Mr Kitahara.

Nor does the main exhibition mention the subject of the remains. The austere facility holding them stands on a hillside away from the main grounds of the park, where few visitors venture. The decision to gather them there is based on "the logic of the thieves", says Kimura Fumio, an Ainu activist. "What was taken should be returned and an apology should be issued—it's very simple." ■



What's the Ainu for "posing together in a large group"?



## Retirement

# Vanguard of the non-working class

HONG KONG

The government wants to lift the retirement age, but fears a backlash

AT ABOUT 54, the average age of retirement in China is among the lowest in the world. This is a problem. Since standards were set, life expectancy has soared while the number of working adults—those whose labour, in effect, supports retirees—has begun to shrink. But persuading people that they should work longer is proving hard. In 2008 the government said it was mulling the idea of raising retirement ages, but backed away amid a public outcry. Now it feels it can wait no longer.

The pressure to act is evident. Current retirement ages were set in the 1950s, when the average person was expected to die before reaching that stage. For most men in China the age is 60, much lower than the average of 64.2 in the OECD, a club mostly of rich countries. For female civil servants the age is 55; for blue-collar women it is 50.

Yet life expectancy in China is now just two years short of the OECD average of 79, so a Chinese retiree on a state pension usually needs several more years of support from government funds than his or her

rich-world equivalent. In 2019 the public-pension system covered almost 1bn adults, more than any other such scheme in the world. The country's main pension fund may run out of money by 2035, the Chinese Academy of Social Sciences, an official think-tank, has warned.

The government appears not yet to have decided how to reform the system. The current five-year economic plan, a 142-page document that was approved in March, contains merely a sentence on the topic, calling for adjustment in “small steps” and “flexible implementation”. But its inclusion means that changes are all but certain to begin before the plan expires in 2025: the government rarely announces a

goal that may not be attainable.

Officials say retirement ages will be lifted in stages, a few months at a time. China's main state-run news agency, Xinhua, said two possible approaches were being considered. One would raise the retirement age for both men and women to 65, with the age for women being raised faster so that both reach the end point simultaneously. The other method would involve first raising the retirement age for women to 60, and then both sexes advancing to 65 at the same pace.

Since the government revealed that the five-year plan would call for older Chinese to work longer, social media have reverberated with debate about the idea. On Weibo, a Twitter-like platform, posts tagged with “postpone the retirement age” have received 620m views and launched more than 100,000 discussions. Many comments have been critical, with some blaming the country's draconian one-child-per-couple policy for exacerbating the population's ageing. (The limit was increased to two children in 2016, and will soon be raised again, to three.) In 2020 a survey of 96,000 people by a newspaper in Wuhan found that more than 80% opposed later retirement. They wondered whether they would have the stamina to keep working into their 60s, and also whether—if not in a secure job already—they would still be employable. Firms often discriminate against older people when recruiting.

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Concerns about the possible impact on social stability may explain why the government's plans have kept slipping. In 2008 it hinted that reforms would begin in 2010. They didn't. In 2015 a senior official said a detailed plan would be revealed in 2017. Again, no show. The government does not always pay much heed to public opinion when shaping policy: the one-child restriction was never popular. But in this case it may worry about angering a large number of people in urban areas where it is especially keen to prevent unrest (the one-child policy was most resented in the countryside). Most farmers carry on working until they are forced to stop by poor health: a rural pension scheme was introduced in 2009, but it provides far less support than urban residents enjoy.

Lifting the retirement age is a bit more popular among government employees. Of almost 170,000 respondents to a survey conducted in 2016 by *China Youth Daily*, an official newspaper, more than 80% said delaying retirement was more favourable to government employees (presumably because such people are considered less likely to be fired for becoming older and therefore, as is commonly imagined, less energetic). One civil servant told Xinhua his boss had doctored his own records to make his age appear younger. "This way, he holds onto power longer," the bureaucrat said.

But young workers grumble about raising the age. They suspect they will have to wait longer for promotions as older workers occupy jobs for longer. Online, they use a common idiom to describe such seniors, accusing them of "squatting on the toilet without taking a shit". In reality, lifting the retirement age will be harder on older workers who may struggle to retain their jobs when so many of their younger peers are far better educated. And concerns about job insecurity, especially as they get older, are pushing more young people to apply for jobs in the civil service.

Raising retirement ages may create another problem. China's fertility rate (the average number of children a woman can expect to have in her lifetime) is among the world's lowest. On May 31st the Communist Party said married couples would be allowed to have three children to help the country "cope" with its ageing. (In 2018 the share of people over 60 was almost one-fifth; by 2050 it will be more than one-third.) But many families rely on grandparents for child care. When parents retire, the probability that their child gives birth increases by between 44% and 61%, says a study by Fudan University. If grandparents have to work longer, the government will have to spend more on kindergartens and introduce rules to force employers to make better provisions for working parents. Grappling with China's demographic woes will involve many tough reforms. ■

## Education

# Brought to book

BEIJING

## A clampdown on cramming schools spooks exam-focused parents

UNTIL CHILDREN reach the age of about 15 in China, education is free. So why is it that more than half of a typical family's spending goes on it? The answer is cramming classes: a financial burden so great that it is often said to discourage couples from having children at all. Now officials are trying to rein in the industry, in part, it appears, to relieve the pressure on people's wallets. Parents are not sure it will work.

As many of them see it, cramming is not optional. Exams for entry to senior high schools are fiercely competitive. Then comes the dreaded *gaokao*: the university-entrance exam on which a child's future hinges. But as the *People's Daily*, an official newspaper, reported this month, the market for such services is plagued by "endless chaos". It listed problems ranging from misleading advertising to high prices and the use of unqualified teachers.

Officials began warning months ago that they were preparing to issue regulations to impose order. This sent shivers through the industry. According to Bloomberg, several education firms suspended plans to list their shares. New Oriental, one of China's biggest cramming companies, saw its share price on the New York Stock Exchange drop below \$8, from a high of

more than \$19 in February. On June 9th the education ministry said a new government department would be set up to oversee such businesses, encompassing both on-line tuition and lessons in the classroom.

The industry's growth has been rapid. One firm, Zuoyebang ("help with homework") says it offers live-streaming classes to more than 170m active users each month. But officials fret about the social impact. They want couples to have more children—the birth rate is the lowest in decades and China is ageing fast. They also say that schoolchildren are overstressed. Urban pupils attend cramming classes for more than 10 hours a week, according to Deloitte, an accountancy firm. There is widespread speculation, including in state media, that the new rules will impose limits on when firms can offer tuition. They may, for example, prohibit classes after a certain time in the evening, during the summer holidays or at weekends.

Some analysts think the government may have another motive. Many of the companies are offshoots of China's tech giants, including Alibaba and Tencent, which have come under regulatory scrutiny this year for dominating markets and expanding into finance and other areas. Targeting the cramming business could be another way of clipping their wings.

Parents wonder whether they will benefit. Some fret that the new rules will leave them with no choice but to use private tutors, which could prove even more costly. The resentful parent of a secondary-school pupil in Beijing blames the Communist Party: "It's very simple. They just have to control everything, always." ■



## Farewell, Apple Daily

Hong Kong's largest pro-democracy newspaper, Apple Daily, ceased publishing on June 24th. Under the city's security law, police in recent days had frozen its bank accounts, raided its newsroom and arrested six people, including its editor and chief executive, who have been charged with colluding with foreign powers. Apple Daily printed 1m copies of the final edition, nearly 13 times more than usual. Newsstands swiftly sold out. Staff are pictured greeting supporters outside the paper's office.

## Chaguan | Hiding in plain sight

*A trip to Xinjiang reveals the racial targeting of population-control measures*



WHEN CONFRONTED with uncomfortable facts, China's usual response comes in two parts. First it tries denial and obfuscation. Should that not work, officials attack the motives of foreign critics. Arguments over Xinjiang, a far-western region that China runs with an iron fist, have reached this dangerous stage.

In recent months America, Britain, Canada and European Union countries, among others, have voiced concerns about Xinjiang. They point to evidence that China has detained perhaps a million Muslims in re-education camps, notably from the 11.6m-strong Uyghur population, imposed sterilisations on ethnic minority women and forced villagers into factory labour. Chinese diplomats call such Western charges a shameless plot to slander China and frustrate its rise. State media hurl *ad hominem* slurs at foreign researchers who scour government documents, satellite images and open-source materials to expose abuses in Xinjiang, describing them as anti-China zealots or CIA agents. Chinese officials claim that Uyghur exiles who speak to foreign parliaments and news outlets are terrorists, or actors paid to tell lies.

Such smears, though wild, have an impact. Behind closed doors in Beijing, it is not hard to hear Western diplomats and business types grumbling that rows over Uyghurs are disrupting trade deals and climate co-operation with China. Some mutter that reports from Xinjiang are surely exaggerated. It is increasingly easy to meet Chinese who treat foreign concern for the Uyghurs as a cynical attack on their country. On a recent reporting trip to Xinjiang, it was no surprise to be registered by police several times a day, and to be followed by plain-clothes agents in cars, on foot and on bicycles. For foreign journalists, such scrutiny there is routine. It was more startling, and revealing, to be asked "Do you like China?" by an official who had just escorted Chaguan off a packed train, ostensibly for covid-19 checks.

Your columnist is not ready to abandon the notion that China and the West can agree on shared facts, even if they disagree on important principles. This Xinjiang trip was an experiment. The aim was to test the claim that Uyghurs are the targets of racist social engineering, using only government documents and interviews with officials and settlers from the country's Han Chinese majority, who cannot easily be accused of anti-China sentiment.

Three places were visited. Bachu, a county of cotton fields and fruit farms, is almost wholly Uyghur. Like many majority-Muslim areas in southern Xinjiang, it saw high birth rates not long ago. The county government reported a natural population growth rate in 2014 of almost 13 per thousand people. Using mortality rates for the surrounding prefecture, Kashgar, that figure equates to a birth rate of nearly 19 per thousand people. That is compatible with the average woman having perhaps three or four children during her reproductive years. Rural Uyghurs were allowed three children back then, and officials tolerated extra births to buy social peace.

At a weekday lunchtime, the results of that fertility boom could be seen in Bachu's main town. Watched by armed police—for the county saw deadly ethnic violence as recently as 2014—a sea of Uyghur children spilled out of primary and middle schools in uniform tracksuits and the red scarves of Young Pioneers. Passing stalls grilling meat and flatbread over charcoal, they greeted a foreign reporter in heavily accented Mandarin.

Those same cheerful crowds alarm Chinese scholars. They write of young Uyghur populations exhausting southern Xinjiang's water supplies, straining job markets and threatening stability in a border region. In 2017 Communist Party leaders ordered a campaign against illegal births, including cash rewards for locals who reported over-quota children. But legal births were also targeted. In January 2018 Bachu's government boasted of controlling the population's "excessive growth". By 2017 the county's birth rate had fallen from 19 to 13 per thousand, a highly unusual drop in just three years. Astonishingly, in 2019 Bachu reported a birth rate of 4.15 per thousand people. That is one of the lowest birth rates anywhere in the world, and a decline rarely seen even in wartime.

Li Xiaoxia, a government sociologist in Xinjiang, has called reports of forced sterilisations "slander". In an essay for state media in January she conceded that between 2017 and 2018, after the strict enforcement of rules, Xinjiang-wide births had fallen by 120,000 in a year. But Ms Li insisted that rural women from ethnic groups had "spontaneously" agreed to be sterilised. Some had taken rewards of 3,000 yuan (\$460) or more for women willing to undergo tubal ligation before using their legal quota of children, she wrote. Others' minds had been freed by officials "from the shackles of religious extremism". She said Uyghurs and Han Chinese now followed the same rules, promoting "fewer and better" births.

### Not all pregnancies are equal

Official documents tell a different story. Tiemenguan is a small town founded by the Xinjiang Production and Construction Corps. The *bingtuan*, as this paramilitary enterprise is better known, was founded in 1954 to farm the region's barren plains and bring in Han Chinese settlers. Last year the town advertised for auxiliary police officers, seeking young candidates of Han nationality, and promising to cover 10,000 yuan of medical costs if they were to have a second child. Wang Jian, a statistician from the *bingtuan*'s 6th division, is one of several scholars to recommend, in print, that the corps should encourage Han recruits to have more children, while limiting ethnic minority births. In a park in Shihezi, the largest *bingtuan*-run city, a father playing with two sons by a tree-shaded pond recalls how officials contacted him with a bonus for his youngest. A Han Chinese mother carrying her second child in her arms explains that his birth landed her a subsidy, extra leave and free milk powder. "They encourage you to have a second," she says. The double standard should be glaring to admirers and critics of China alike. Facts are stubborn things. ■



## Science

## The African genome project

CAPE TOWN

**A Cameroonian professor plans to fill a gaping hole in humanity's understanding of its own genetics**

WHEN THE Mutambaras' first son was a little about 18 months old they began to worry about his hearing. The toddler did not respond when asked to "come to Mama". He was soon diagnosed as deaf, though no doctor could tell the Zimbabwean couple the cause. Several years later their second son was also born deaf.

This time a doctor referred them to Hearing Impairment Genetics Studies in Africa (HI-GENES), set up in 2018 by Ambroise Wonkam, a Cameroonian professor of genetics now at the University of Cape Town. The project is sequencing the genomes of Africans with hearing loss in seven countries to learn why six babies in every 1,000 are born deaf in Africa, a rate six times that in America. In Cape Town, where Mr and Mrs Mutambara (not their real names) live, a counsellor explained that the boys' deafness is caused by genetic variants rarely found outside Africa.

What is true of deafness is true of other conditions. The 3bn pairs of nucleotide bases that make up human DNA were first fully mapped in 2003 by the Human Genome Project. Since then scientists have made publicly available the sequencing of

around 1m genomes as part of an effort to refine the "reference genome", a blueprint used by researchers. But less than 2% of all sequenced genomes are African, though Africans are 17% of the world's population (see chart on next page). "We must fill the gap," argues Dr Wonkam, who has proposed an initiative to do just that—Three Million African Genomes (3MAG).

The evolutionary line leading to *Homo sapiens* diverged 5m-6m years ago from that leading to chimpanzees, and for almost all that time the ancestors of modern humans lived in Africa.

Only about 60,000 years ago did *Homo sapiens* venture widely beyond the continent, in small bands of adventurers. Most of humanity's genetic diversity, under-sampled though it is, is therefore found in

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Africa. Unfortunately, that diversity is also reflected in the greater variety of genetic illnesses found there.

The bias in sequencing leads to under-diagnosis of diseases in people of (relatively recent) African descent. Genetic causes of heart failure, such as the one that caused the ultimately fatal collapse of Marc-Vivien Foé, a Cameroonian football player, during a game in 2003, are poorly understood. The variation present in most non-Africans with cystic fibrosis is responsible for only about 30% of cases in people of African origin. This is one reason, along with its relative rarity, that the illness is often missed in black children. Standard genetic tests for hearing loss would not have picked up the Mutambara boys' variations. And such is the diversity within the continent that tests in some countries would be irrelevant in others. In Ghana HI-GENES found one mutation responsible for 40% of inherited deafness. The same variation has not been found in South Africa.

Bias also means that little is known about how variations elsewhere in the genome modify conditions. With sickle-cell disease, red blood cells look like bananas rather than, as is normal, round cushions. About 75% of the 300,000 babies born every year with sickle-cell disease are African. The high share reflects a bittersweet twist in the evolutionary tale; sickle-cell genes can confer a degree of protection against malaria. Other mutations are known to lessen sickle-cell's impact, but most knowledge of genetic modifiers is particular to Europeans.

Quicker and more accurate diagnosis would mean better treatment. The sooner parents know their children are deaf, the sooner they can begin sign language. Algorithms that incorporate genetic information, such as one for measuring doses of warfarin, a blood-thinner, are often inappropriately calibrated for Africans.

Knowing more about Africans' genomes will benefit the whole world. The continent's genetic diversity makes it easier to find rare causes of common diseases. Last year researchers investigating schizophrenia sequenced the genomes of about 900 Xhosas (a South African ethnic group) with the psychiatric disorder. They found some of the same mutations that a team had discovered in Swedes four years earlier. But those researchers had to analyse four times as many of the homogeneous Scandinavians to find it. Research by Olufunmilayo Olopade, a Nigerian-born oncologist, into why breast cancer is relatively common in Nigerian women, has revealed broad insights into tumour growth.

Dr Wonkam's vision for 3MAG, as outlined in *Nature*, a scientific journal, is for 300,000 African genomes to be sequenced per year over a decade. That is the minimum needed to capture the continent's diversity. He notes that the UK biobank is sequencing 500,000 genomes, though Britain's population is a twentieth the size of Africa's. The plummeting cost of technology makes 3MAG possible. Sequencing the first genome cost \$300m; today the cost of sequencing is around \$1,000. If data from people of African descent in similar projects, like the UK biobank, were shared with 3MAG, that would help. So too would collaboration with genetics firms, such as 54Gene, a Nigerian start-up.

The 3MAG project is building on firm foundations. Over the past decade the Human Heredity and Health in Africa consortium, sponsored by America's National Institutes of Health and the Wellcome Trust, a British charity, has supported research institutes in 30 African countries. It has

funded local laboratories for world-class scientists such as Dr Wonkam and Christian Happi, a Nigerian geneticist.

There are practical issues to iron out. One is figuring out how to store the vast amounts of data. Another is rules around consent and data use, especially if 3MAG will involve firms understandably keen to commercialise the findings. Dr Wonkam wants to see an ethics committee set up to review this and other matters.

At times he has wondered whether his plan is "too big, too crazy and too expensive". But similar things were said about the Human Genome Project. Its researchers used the Rosetta Stone as a metaphor for the initiative and its ambition. In a subtle nod, Dr Wonkam has a miniature of the obelisk on a shelf in his office. It is also a reminder of how understanding African languages, whether spoken or genetic, can enlighten all of humanity. ■

### Political trends

## Islands of democracy

### Why Africa's island states are freer

CAPE VERDE may be best known for white sand beaches. But the archipelago, about 500km off the coast of Africa, has something else going for it. It is one of the region's few fully fledged democracies.

Africa has more than its share of despots. But archipelagoes like Cape Verde seem to have avoided this curse. Four of Africa's five island-states with less than 1.5m inhabitants are rated "free" by Freedom House, an American think-tank. This means they are largely liberal and democratic. For the continent as a whole, fewer than one in five countries is "free".

A study published this month in the *Journal of International Relations and Development* argues that the size and insularity of these countries—Cape Verde, the Comoros, Mauritius, São Tomé and Príncipe and the Seychelles—hold the key to their freedom. It is part of a growing body of academic research that suggests that being small and being an island are associated with democracy. In Africa, the authors of the study argue, smallness leads to a more personal politics, where constituents can pester officials to keep their promises. Being islands, the authors add, spares these countries from land borders which their neighbours may contest or over which conflicts can spill.

Take Cape Verde. After independence it was led by a single party. Though far from democratic, it still held regular elections

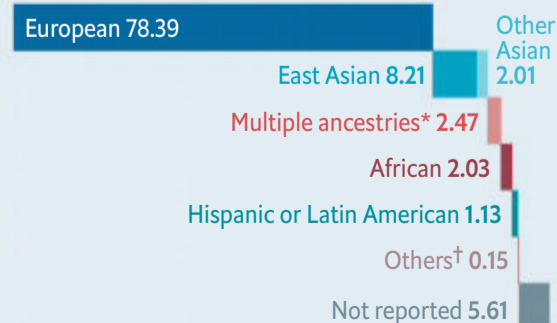
and allowed some opposition politicians to compete. The authors attribute that relative liberalism to the island's personal politics. It is a lot harder, they say, for a single party to crack down on dissidents when they are neighbours and friends. In the 1990s it fully democratised, thanks in large part to the relative liberalism of the previous decades. Today Cape Verde sits just below Britain on Freedom House's democracy ranking.

Identifying the underpinnings of democracy is tricky, especially with such a tiny sample and given that small countries are more likely to be statistical outliers. These islands have a handful of other attributes that could explain their politics. They lack natural riches, such as diamonds and oil, which prop up despots in other places. Instead, many of the islands rely on tourism, which tends to provide jobs and income to a wide swathe of society, and so can foster stability and development. But the five are varied in other respects, having been colonised by different countries, bequeathed different political systems and attained different levels of development. The Seychelles has more than four times the GDP per person of Cape Verde or the Comoros. Mauritius has a parliamentary system inherited from Britain. The Seychelles and the Comoros are presidential. Cape Verde and São Tomé and Príncipe have semi-presidential systems.

The success of small islands is not instructive for the rest of Africa. Mainland countries cannot break up into tiny states and drift into the Atlantic. Even if they could, small island democracies have flaws. Cape Verdeans complain about graft, which, ironically, may stem from the same personal politics that allowed democracy to flourish. The Comoros struggles with political instability. The Seychelles had its first peaceful transition of power in decades only last year. What the study does illuminate, though, is the potential of African countries to be democratic and well-run, even if for now, most are not. ■

### Lost in transcription

Ancestry distribution of individuals in genome-wide association studies catalogue (GWAS)  
January 2019, % of total

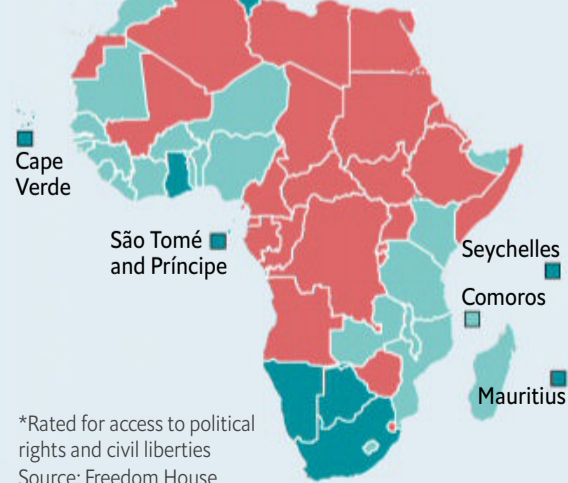


Source: "The Missing Diversity in Human Genetic Studies", by Sirugo et al., 2019

\*Incl. European/non-European  
†Greater Middle Eastern/Native American/Oceanian/others

### Free float

Freedom status\*  
2020



## Nigeria

## A bonfire of satire

ABUJA

**Fresh attempts to gag the press echo the old dictatorship**

IF NIGERIAN JOURNALISTS have misgivings about the government's plan to grab more power to fine them and close media houses, it is with good reason. Many remember how in President Muhammadu Buhari's first days in office as a military dictator in 1984, he passed Decree 4, which allowed him to close down newspaper houses and jail journalists who criticised his junta, ridiculed its officials or published information the state deemed false.

Now, more than two decades after democracy was restored, many Nigerians see history being repeated. Lawmakers are trying to push through parliament a bill that would allow the government to jail journalists, fine newspapers up to 10m naira (\$20,000) or close them for up to a year if they publish "fake" news.

To be fair, the bill predates Mr Buhari's administration. Press unions have fought earlier versions of it since 1999, when they dragged the government before a court in Lagos. A judge struck down the legislation in 2010, ruling that 17 out of its 39 clauses were unconstitutional. But after the government appealed, a higher court ruled in its favour. Still, the tussle continues. The body representing Nigeria's newspapers has lodged an appeal of its own against the new ruling. That case has yet to make its way through the country's scandalously slow courts.

The lack of a final judgment has not stopped parliamentarians from pressing ahead. This month they gave the bill another reading. They insist that it is not an attempt to gag the press, which has been increasingly critical of the government, but is simply aimed at stopping fake news and hate speech.

Journalists are not buying it. Mustapha Isah, the head of the Guild of Editors, described the government's action as "an onslaught on press freedom". Moreover, the latest efforts to push through the law come just weeks after Nigeria's government banned people from using Twitter, and amid increasingly heavy-handed restrictions on broadcast media. Last year Nigeria fell five places (to 120th out of 180) in a ranking of press freedom compiled by Reporters Without Borders, a watchdog.

Mr Buhari seems not to have learned what should have been the key lesson of Decree 4: nothing makes a government look sillier than when it makes it a crime to ridicule the state. ■



## Iran

## A hardliner wins, democracy loses

## What the election of Ebrahim Raisi means for Iran and the nuclear deal

EBRAHIM RAISI will not meet Joe Biden. Nor will he negotiate over Iran's missile programme. And he's certainly not going to stop supporting the militias that project Iranian influence in the region. Soon Mr Raisi will be president of Iran. At his first press conference since winning office the hardline cleric and former head of the judiciary offered a preview of his administration. He seems keener to confront the world than engage with it.

That is no surprise. Mr Raisi is a protégé of the supreme leader, Ayatollah Ali Khamenei, who is consolidating power in the hands of hardliners. The election on June 18th was anything but fair. Of the nearly 600 candidates who registered to run, all but seven were disqualified by the Guardian Council, including a former president, a current vice-president and Iran's longest-serving speaker of parliament. (Three of the seven dropped out later.)

The council, a group of clerics and lawyers who vet candidates, essentially cleared the field for Mr Raisi. And he duly won with 62% of the vote. Turnout, though, was less than 49%, a record low, as many liberal and moderate Iranians boycotted the poll.

Mr Raisi appealed to conservative voters and those who believe his promises to stamp out corruption, which is rife. Like Mr Khamenei, he is opposed to deeper engagement with the West and thinks perso-

nal freedoms should extend only as far as Islamic law allows (not very far, in his mind). America placed sanctions on him two years ago for his involvement in the regime's repression of the pro-democracy Green Movement in 2009, after another rigged election. America also cited Mr Raisi's participation in a "death commission" that ordered the extrajudicial executions of thousands of political prisoners in 1988. When asked about that, Mr Raisi described himself as a "defender of human rights".

How Mr Raisi is viewed in America matters. Iran has been hit hard by covid-19. Its economy has suffered as a result of the virus, but also because of graft, mismanagement and, most of all, sanctions reimposed by Donald Trump after he yanked America out of the Joint Comprehensive Plan of Action (JCPOA). That is the unwieldy name given to the multinational deal under which Iran agreed to curb its nuclear programme in return for sanctions relief. In response to Mr Trump's actions, Iran has breached the agreement in several ways, not least by enriching uranium to levels far beyond those needed for civilian use.

President Biden has made clear that he wants to re-enter the JCPOA. Mr Raisi does too, as long as Iran's interests are met. Talks in Vienna, aimed at bringing America and Iran back to the deal, are said to be making progress. Iranian negotiators, acting under the current (and pragmatic) ▶▶



▶ president, Hassan Rouhani, may hope to wrap things up before Mr Raisi takes office in early August. That might also suit Mr Raisi, who could then reap the economic benefits of a renewed deal, while blaming Mr Rouhani for its flaws.

American officials also hoped to negotiate, at some point in the future, new agreements dealing with Iran's missiles and its meddling in the region. (The omission of these issues from the JCPOA led Republicans in America to oppose it; ditto Israel, Saudi Arabia and its Gulf allies.) America would retain leverage even if the JCPOA is renewed, as many of its sanctions on Iran would remain in place. Some feel a more coherent Iranian regime will be a less frustrating negotiating partner. But Mr Raisi's views suggest that such add-on agreements will be hard to reach.

In Iran the election of Mr Raisi may be a harbinger of illiberal changes to the country's hybrid political system. The clerics have been in charge since 1979, but the government has long pointed to elections and high turnout to bolster its claim to legitimacy. The democratic façade had already been crumbling. Reformists and moderates led by Mr Rouhani made little progress during his two terms (the maximum allowed under the constitution), as the clergy and allied security forces tightened their grip. Before last year's parliamentary election reform-minded candidates were disqualified en masse. In a recording leaked earlier this year, Muhammad Javad Zarif, the foreign minister, described how he was often sidelined by the powerful Islamic Revolutionary Guard Corps.

Holding such a blatantly rigged presidential election, all but acknowledging that the system's republican features are a sham, is the boldest step yet by the hardliners. There is much speculation about what comes next. Some expect a further purge of liberals from state institutions. Others foresee structural changes, as Mr Khamenei, who is 82, seeks to cement his legacy and prepare the country for his eventual successor. He might, for example, do away with the presidency.

The machinations of Mr Khamenei's narrow group of clerical advisers are murky and unpredictable. Some believe he is grooming Mr Raisi as his successor, but there are plenty of other candidates (including Mr Khamenei's son, Mojtaba). What is clear is that Iran's unelected theocrats and revolutionary guards are tired of being challenged by the reformists, moderates and pragmatists whom voters often choose to represent them. And the regime will remain hostile to Western influence, even if the nuclear deal is renewed. Mr Raisi's victory bodes ill for any hope of liberalisation in Iran. The Islamic republic looks ever more like an Islamic autocracy, ruled by God's law and men with guns. ■

## Algeria and France

# Lingering fallout

## The long legacy of France's nuclear tests in Algeria

**A**BDELKRIM TOUHAMI was still a teenager when, on May 1st 1962, French officials in Algeria told him and his neighbours to leave their homes in the southern city of Tamanrasset. It was just a precaution. France was about to detonate an atom bomb, known as Beryl, in the desert some 150km away. The blast would be contained underground. Two French ministers were there to witness the test.

But things did not go as planned. The underground shaft at the blast site was not properly sealed. The mountain above the site cracked and black smoke spread everywhere, says Mr Touhami. The ministers (and everyone else nearby) ran as radioactive particles leaked into the air. Nevertheless, in the months and years after, locals would go to the area to recover scrap metal from the blast for use in their homes.

France carried out 17 nuclear tests in Algeria between 1960 and 1966. Many took place after Algeria's independence from France in 1962, under an agreement between the two countries. There are no good data on the effects of the explosions on public health and the environment, but locals note that some people living near the test sites have suffered cancers and birth defects typically caused by radiation. The sites, say activists, are still contaminated.

They also say the French have not been sharing information. In 2011 Mr Touhami founded Taourirt, a group dedicated to identifying the location of nuclear waste left by France. All that exists in the public

domain is an inventory of the contaminated materials buried somewhere in the desert. (The known test sites are poorly secured by the Algerian government.) Others are pressing France to clean up the sites and compensate victims. There has been some progress in this direction, but not enough, say activists.

In 2010 the French parliament passed the Morin law, which is meant to compensate those with health problems resulting from exposure to the nuclear tests. (France carried out nearly 200 tests in French Polynesia, too.) But the law only pertains to certain illnesses and requires claimants to show they were living near the tests when they took place. This is difficult enough for Algerians who worked for the French armed forces: few had formal contracts. It is almost impossible for anyone else. Only a small fraction of the claims filed have come from Algeria.

In May officials from France and Algeria, part of a working group created in 2008, met in Paris to discuss the cleaning of test sites. Little has come of the talks. But earlier this year Emmanuel Macron, France's president, decided to launch a "Memories and Truth" commission on his country's role in Algeria. Benjamin Stora, the historian who will run it, wants to look into the nuclear testing and its aftermath.

In Algeria the nuclear issue has been overshadowed in recent years by worries about hydraulic fracturing, or "fracking", to extract gas trapped in impervious rocks in the Sahara. Some locals fear this may affect their health (though evidence from America, where it is widespread, suggests it is reasonably safe). Others fear it will damage the environment, or object to the involvement of foreigners, or to the lack of transparency from their own government. Big protests have been held. Many residents of the Sahara feel they are still being treated like guinea pigs, says Mr Touhami. ■



A test, but for whom?

The  
Economist

**SPECIAL  
REPORT:**

*The Chinese Communist Party*

→ June 26th 2021

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5 Internal rifts

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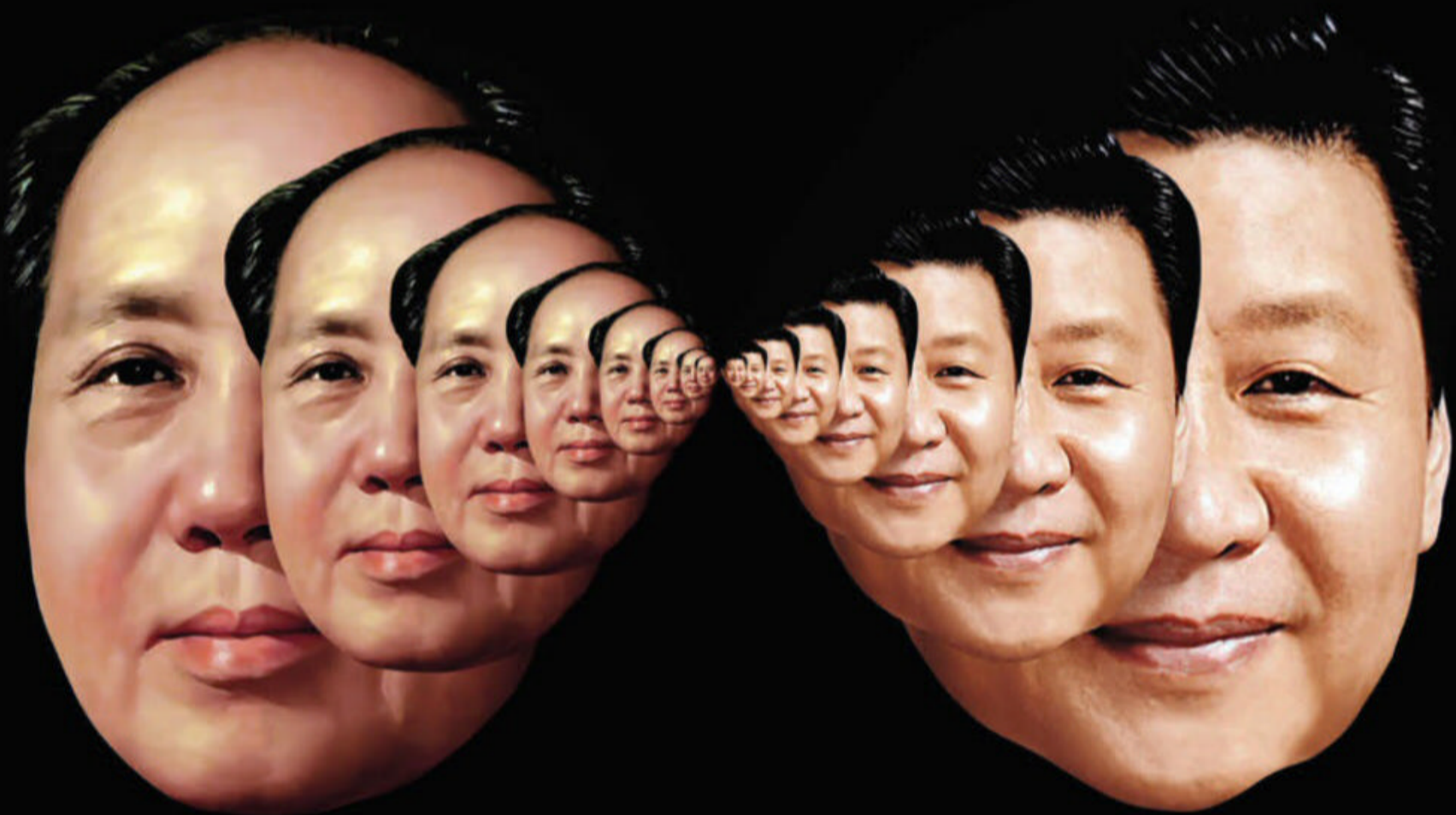
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# A hundred years of evolution



**The  
Economist**

*Subscriber-only live digital event*

# Editor's conversations: Ngozi Okonjo-Iweala

**Tuesday June 29th**  
**5pm BST / 12am EDT / 9am PDT**

Join Zanny Minton Beddoes, our editor-in-chief, for an exclusive interview with Ngozi Okonjo-Iweala, director-general of the World Trade Organisation. They will discuss the challenge of distributing covid-19 vaccines fairly, the evolving role of the WTO and the future of globalisation in an increasingly polarised world. There will be an opportunity to submit questions during the session.



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## In the beginning

**The world's most powerful political party is about to celebrate its 100th birthday. James Miles says it is projecting ever greater confidence, while fortifying itself against collapse**

CHINA IN JULY 1921 was a poor country, racked by civil war. Most of its 400m people lived in the countryside. A famine had swept the north, killing hundreds of thousands. But foreigners in Shanghai led a charmed existence, living in self-governing enclaves of about 30 square kilometres. Their troops and police—turbaned Sikhs for the British and pith-helmeted Vietnamese for the French—kept order. The real China was far away.

That month the British staff of the *North China Daily News* had much to distract them. “The Old Lady of the Bund”, as expatriates called the newspaper, had just left the river-front strip from which it took its nickname. Its building was to be knocked down and reborn as the city’s tallest—nine American-designed storeys in a baroque and neoclassical style. Until then, Shanghai’s establishment newspaper would be in temporary quarters.

Those newsmen were missing one of the biggest stories of the century: a secret meeting that July of a communist political party in the French concession at 106 Rue Wantz, in one of Shanghai’s brick-walled houses known as *shikumen*. There were a dozen participants, including the home’s occupant and a tall activist from inland called Mao Zedong. Two foreign agents from the Comintern, a Soviet-controlled body dedicated to global communism, were present. The group had met for a few days when a suspicious-looking man walked in. Fearing he was a spy, they fled, though most reconvened in a tourist boat on a nearby lake. Their discussions marked the formal launch of the Chinese Communist Party. A century later not only would it be in control of every nook and cranny of this seemingly unmanageable country, but it, not Russia, would be the world’s pre-eminent flagbearer for communism.

The newspaper had in fact been paying much attention to the murky doings of Russian Bolsheviks in China. Foreign capital had turned Shanghai into a cotton-making powerhouse. Its mills were grim places; labour unrest was common. Strike leaders were suspected of communist sympathies. “It can no longer be ignored that here in Shanghai, efforts are being made to Bolshevise the industrial classes,” a sister paper warned three months before that first meeting. The communists in Moscow, fresh from winning their civil war, were stirring up trouble in China.

But “all manner of organisations and people” called themselves communist in China in 1920-21, writes Ishikawa Yoshihiro, a Japanese historian. The new party had only about 50 members. They had no weapons. Nobody could have predicted that a communist insurgency would later engulf the country, let alone that it would gather strength in the countryside, led by armies of peasants. It would have beggared belief that the same forces would, in 1949, topple a regime that had begun the war with an army of more than 4m troops, equipped by the Americans.

Mao had not studied much Marxism, as he later admitted. He cut his teeth as an activist in the May Fourth Movement of 1919, a wave of unrest triggered by the Western powers’ decision to hand Germany’s Chinese colonial territory to Japan after the first world war. That movement inspired both anti-Western nationalism and a search for the source of Western strength. Some saw it as liberal democracy. Others, inspired by Russia, turned to communism. In China, nationalism and quasi-Marxism became intertwined.

As China grows stronger, that mix causes anxiety in the West. But at home, many feel pride. Any Chinese will tell you that their ▶▶

country was scorned as “the sick man of the east” (in 1896 an article in the *North China Daily News* helped turn this into a household term in China). Today China bestrides the world. Surely there is a lesson in China’s rise, many Chinese argue. Sinified Marxism works, as does one-party rule. In 2018 China’s leader, Xi Jinping, said his country had produced a “new political-party system”—a combination of one-party rule with mechanisms for consulting the public. State media said the rest of the world should learn from it.

### History weighs heavily on Mr Xi, who keeps mentioning the Soviet collapse

Richard McGregor, an Australian journalist now at the Lowy Institute, a think-tank, wrote that communism had been “airbrushed out of the rise of the world’s greatest communist state”. He described how the party made strenuous efforts “to keep the sinews of its enduring power off the front stage of public life in China and out of the sight of the rest of the world”. But that was before Mr Xi became party leader in 2012. He flexes those sinews openly, at home and abroad.

On July 1st the party will officially celebrate its 100th birthday. (The founding date was chosen in 1941 when the party was holed up in caves in Yan’an, and retained even after investigations found that the actual date was July 23rd.) It has much to crow about. The party controls the world’s second-largest economy and largest armed forces. A quarter of a century ago America showed little concern about China’s power. Now it is openly worried. Not only is China an authoritarian state, but it is also a communist one wedded to an anti-Western ideology.

His predecessor, Hu Jintao, had already begun this process. As party leaders saw it, the global financial crisis of 2007-09 had laid bare the weakness of Western-style capitalism. China’s turn had come. Mr Xi sees it as his mission to make the West accept this. China is “moving to the global centre-stage”, he said in 2017. The West worries that China will bring with it the party and its political values, too.

### Party games

And the party’s grip at home is getting stronger. Digital technology helps. Ask residents of Xinjiang, where data scooped up by police using artificial intelligence, scans of mobile phones, surveillance cameras and an army of internet monitors are being used to round up hundreds of thousands of ethnic Uyghurs and put them in camps for “deradicalisation”. Technology, says Kerry Brown of King’s College, London, has been a “game-changer” for the party.

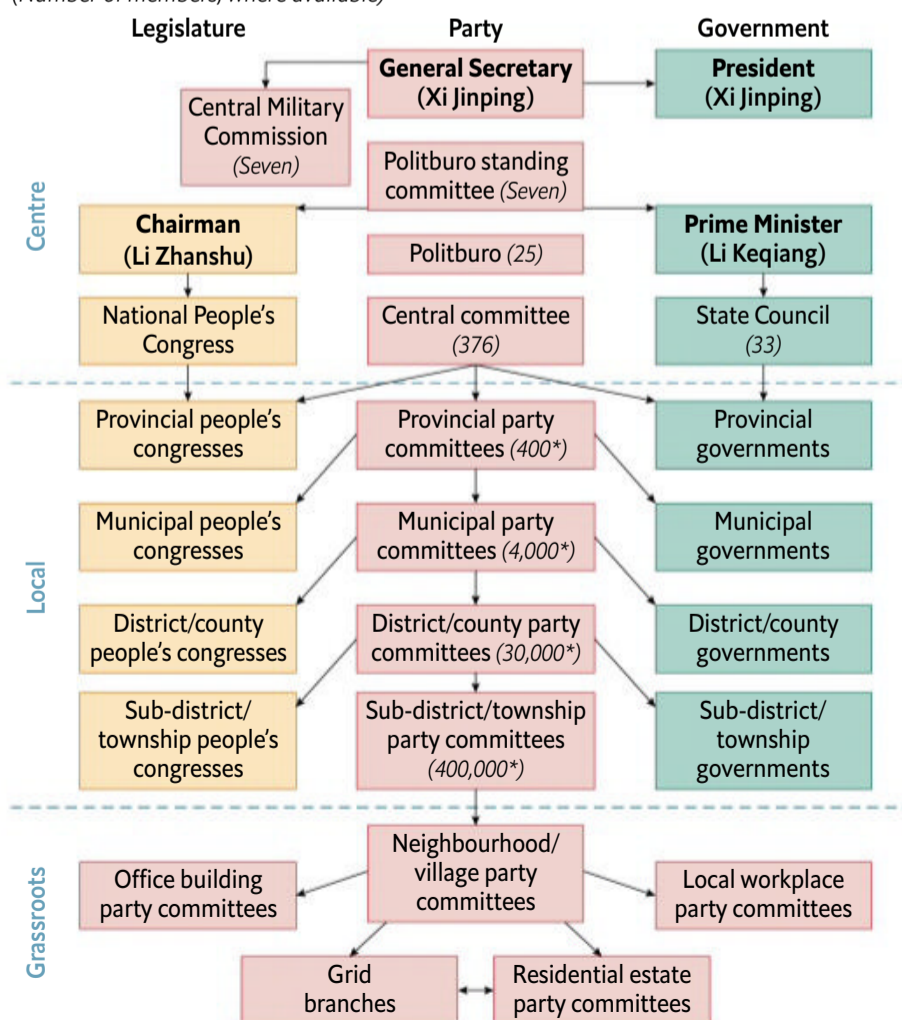
As Mr McGregor put it: “Peek under the hood of the Chinese model...and China looks much more communist than it does on the open road.” This special report will describe how Mr Xi is soup-ing up the old model. It will argue that this is a cause for concern, for people in both China and the West. Mr Xi is not trying to revive Maoist Utopianism. Like his post-Mao predecessors, he is a pragmatist whose policies bear little relation to Maoist or Marxist ideals. But he stresses the importance of ideology, hoping that ritual incantation of communist classics will keep party members in lockstep. Mr Xi’s revamped party has trappings that communism’s most brutal dictators, including Mao, would recognise.

What is this organisation and how does it operate? In his 2010 book, “The Party: The Secret World of China’s Communist Rulers”,

Yet he also betrays anxiety. His warnings about threats to the party are more open than those of any Chinese leader since the crushing of the Tiananmen protests in 1989. In 2023 China’s party will have ruled for the same length of time as the Soviet one did before it fell in 1991: 74 years. Mr Xi frets that the engine has flaws: corrosion by Western political ideas, corruption, factionalism and disloyalty. Nearly a decade into his rule he is still conducting purges to keep the party in line, as if he does not fully trust it.

### Anatomy of a dragon

China, Communist Party and government structure, 2021  
(Number of members, where available)



Sources: “The Party and the People”, by Bruce Dickson; press reports; *The Economist*

\*Estimate

History weighs heavily on Mr Xi, who keeps mentioning the Soviet collapse. He is waging a campaign against what he calls “historical nihilism”—that is, any grumbling about communism’s past. One Soviet leader, Nikita Khrushchev, is held up as the archetypal nihilist for denouncing Stalin’s brutality in 1956. That event haunts Mr Xi. Party literature says it led to the Soviet Union’s demise. Much of Mr Xi’s energy is focused on making sure the party learns the Soviet lesson. Mao must remain a saint.

The party has 92m members, or about 8% of the adult population. It is not an easy group to join, and admission is getting harder. Mr Xi wants to fashion it into a super-loyal elite, capable of taking on any task at the drop of a hat. Deng Xiaoping, who launched China’s “reform and opening” in 1978, spoke of separating the roles of party and government. Mr Xi has fused them, putting the party more firmly in charge. Ordinary members are now first responders to disasters such as covid-19, as well as eyes and ears in workplaces, neighbourhoods and campuses, alerting officials to potential trouble.

In Xinjiang Mr Xi has used party committees to build gulags where more than 1m Muslims from ethnic minorities have been detained. It is party secretaries, not courts or legal panels, that have the final say over who is imprisoned and when they are released. Police and prison officials run the facilities, but they are the party’s camps, beyond the purview of the law.

Often the word “party” is used as shorthand for China’s government. But the party also has its own, separate identity. As Mr Xi boasts: “The party-government, the armed forces, society and academia; east, west, south, north and centre; the party leads everything.” That is why understanding how Mr Xi is changing it is more important than ever. ■

## Internal rifts

## Healing the wounds

**The party Xi Jinping inherited had been torn by infighting. His remedy was harsh**

A FEW DAYS after he took power in November 2012, Xi Jinping convened a “collective study” session of the Politburo. Looking at the 22 men and two women round the table in an imperial-era building in Zhongnanhai, the party’s headquarters, he may have felt uncomfortable. Most owed their positions to his predecessors, not him. The party had been traumatised by a fierce power struggle. Who was reliable? Beyond the high-walled compound, Chinese society was changing at a dizzying pace, with the emergence of a large middle class. An internet-fuelled information revolution was under way. Could the public be trusted?

Against a backdrop of an ink-brush painting of China’s iconic scenery, Mr Xi aired his concerns. The party’s ability to fulfil its “historical mission” and cope with change was beset by “many shortcomings”. Some members had lost their sense of conviction, he said. Their bones were “losing calcium”. Mindful of the recent Arab spring, he warned that in other countries, public resentment had led to social turmoil and the collapse of governments. In China, he said, corruption could “destroy the party and the country”.

It was a phrase Mr Xi’s predecessors had also used. Yet he meant not just common graft, but a political malaise within the party, of which rampant corruption was a warning sign. Mr Xi’s accession came after the biggest rift in the party’s top echelons since the 1980s. The most prominent targets of the campaign that Mr Xi was about to wage were high-profile party grandees whom he accused of being “extravagant and dissipated” and plotting to “usurp the party and seize power”—in effect, to stage a coup.

To see why Mr Xi is changing the party, purging it of corruption and expanding its powers, it is important to understand the challenges facing him in 2012. Their scale was suggested by the coup-plotting charge, which had not been laid against party members of such rank since the arrest of Mao’s widow, Jiang Qing, and her “Gang of Four” in 1976. Those implicated were among the most powerful in China. They included Bo Xilai, a former party chief in Chongqing; Zhou Yongkang, who had overseen China’s domestic security services and legal institutions, including the police and the courts; and Guo Boxiong and Xu Caihou, two generals who had been the highest-ranking officers in the armed forces. All are now in prison or, in the case of General Xu, dead (taken by cancer).

Even now, a decade on from that intrigue, little is known about exactly what these men did that so alarmed Mr Xi. But officials still refer, cryptically, to their machinations, suggesting the trauma they inflicted was deep. The only detail released has been about their corruption. *Phoenix Weekly*, a magazine in Hong Kong with strong party backing, claimed investigators had found more than a tonne of dollar, euro and yuan banknotes in Xu’s basement.

But what is clear is that Mr Bo, backed by Mr Zhou, posed a serious political threat. Like Mr Xi, Mr Bo is a “princeling”—a son of one of China’s revolutionary founders. In the build-up to Mr Xi’s appointment as general secretary, Mr Bo had upstaged him in Chongqing by fighting mafia-like gangs, splurging on home-building for the poor and encouraging Mao nostalgia, especially singing “red songs”. It showed how politics was changing. In the age of Weibo and WeChat, a provincial politician could become a national celebrity without the help of state media. Mr Bo’s arrest in 2012 followed his wife’s murder of a British businessman and the



Spreading the dream in Nepal

flight of his police chief to the American consulate. It was the biggest political scandal of the post-Mao era.

As Tony Saich of Harvard University observes in a forthcoming book, the political sparring in which Mr Bo and his allies engaged “represented different visions for China’s future and different approaches to politics” from those of China’s then leader, Hu Jintao. Mr Bo tapped into public resentment of corruption and inequality. The red songs harked back to a time when life seemed fairer, albeit more austere. Mr Xi must have pondered Mr Bo’s popularity. His own approach to politics is now strikingly similar.

There was little sign in 2012 that the public was on the brink of revolt. But the internet, even if censored, had become a powerful weapon, helping people to organise protests over local issues. Anxiety about where this would lead must have focused Mr Xi’s mind on the Soviet Union and the dangers of its pre-internet form of information revolution: Mikhail Gorbachev’s *glasnost*.

### Xi has a dream

Soon after that Politburo meeting Mr Xi lamented that nobody had been “man enough to stand up and resist” as the Soviet party crumbled. A few weeks later he recalled how it had fallen “suddenly with a loud crash” after more than 90 years in existence and more than 70 in power. “Why?” he asked. “Because everyone could say and do what they wanted. What kind of political party was that? It was just a rabble.” In 2018 he talked again about the Soviet party’s collapse, noting that, with just 2m members, it had defeated Hitler, but with 20m it had lost power. “Why? Because its ideals and beliefs had evaporated.” Under the slogan of “so-called *glasnost*” it had let members criticise the party line.

Mr Xi talks of a “Chinese dream” of a “great rejuvenation” by the next big centennial celebration: the 100th anniversary of Communist rule in 2049. Protecting the party from the fate of its Soviet counterpart and a repeat of Tiananmen is vital to that dream. As ▶▶

## On the naughty step

China

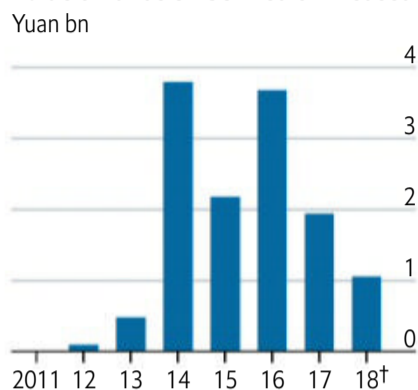
### Officials sentenced\*



Source: ChinaFile

\*Named by the media †January 1st-July 31st, latest available data

### Value of funds embezzled or misused



► Mr Xi describes it, only the party can make China richer and stronger. Without it, he says, China will descend into chaos.

It may be thought that Mr Xi could relax. His mimicry of Mr Bo's political style appears to be working. Another Tiananmen is unlikely. Airport-style security in the square helps, but support for the regime seems genuine. In a new book, "The Party and the People", Bruce Dickson of George Washington University says few Chinese are willing to call for democracy "because they believe it is already happening". Improved governance, a growing economy and a better quality of life are seen as evidence, he says. Democracy means ruling in the public interest, many believe.

But Mr Xi remains vigilant. Last year he launched another purge of the police, secret police, judiciary and prison system of which Mr Zhou (who was jailed for life in 2015) was once the overlord. Again, the aim is to eliminate corruption, but this time also "deeply and thoroughly eradicate the pernicious influence" of Mr Zhou. Thus the war on graft remains a political campaign, with the struggles of a decade ago in mind.

The extent of Mr Xi's fretting is not so evident in remarks translated into English. His three-volume tome, "The Governance of China", touted as a distillation of "Xi Jinping thought", contains only anodyne speeches, with grittier parts removed. Pore through those available only in Chinese and a different picture emerges. In 2016 he talked of party members who "openly curse the party". In 2018 he said: "Political problems within the party had not been fundamentally resolved." He accused some members of "paying only lip-service" to the party's leadership, and of remaining corrupt. Speaking in January at the Central Party School, a training academy for senior officials, Mr Xi said the country faced an "unprecedented increase" in domestic and external risks.

One of Mr Xi's preoccupations is cementing the party's grip on the army (of which he is commander-in-chief). In 2017, soon after the party's Central Committee called him the "core" of the party leadership, Mr Xi gave a speech to military commanders. He again recalled the collapse of communism in the Soviet Union, the Arab spring and various colour revolutions. A big cause of these upheavals, he said, was that "At critical junctures armies stood by and watched, or even changed sides." And in a rare mention of Tiananmen, he said a key reason why it had been possible to end the protests "quickly" in 1989 was because the army stayed loyal.

Mr Xi's war on graft is in part about protecting the party from threats within. It has been the most sustained since the reform era began. More than 200 serving and retired officials with the rank of deputy provincial governor or above, including a dozen senior generals, have been investigated by the party's internal-discipline agency. About three-quarters have been sentenced to prison or are

facing trial. In Mr Xi's first five years in office the agency handed to prosecutors an average of nearly 12,000 officials annually, more than twice as many as in the previous five years. A far greater number were punished in other ways, such as by dismissal. New regulations in 2017 supposedly offered more protection for those seized, such as a requirement that families be notified within 24 hours and that interrogations be videotaped. But the party's agents have sweeping powers to work in secret should they reckon that informing people might impede their investigations. Torture is believed to be rampant. The public applauds Mr Xi's resolve.

At the top, Mr Xi has taken a different approach. Far from giving more power to its highest institutions—the Central Committee, the Politburo and its standing committee—he has sucked it away. This has involved creating new mechanisms to ensure that power is concentrated in his own hands. He has set up commissions to supervise such areas as the economy, foreign affairs and national security. He heads them all. A constitutional revision in 2018 makes it easier for him to remain supreme leader for life (he is almost certain to win five more years at a party congress next year).

The party had lost its moorings when Mr Xi took over. Well into the 1980s almost every workplace had a party boss. Since then private business had created a middle class whose members had little direct contact with the party. Under Mr Xi, it has "reinserted itself into every organ of society," says David Shambaugh of George Washington University. Once again, it is becoming a powerful force in people's everyday lives. ■

## Surveillance

# The anaconda effect

### How party members help to keep a close eye on citizens

**I**N 2018 XI JINPING visited one of Shanghai's grandiose new structures, a ponderous, low, glass-clad building that had been used mainly as an exhibition centre. A space inside had been taken over by the district government for an entirely different purpose. On one wall a vast screen showed live feeds from street cameras. With the help of artificial intelligence, it could alert officials to problems as subtle as a builder not wearing a safety-helmet or a flat being rented by too many people. They nicknamed the system that supplied this information the "big brain".

Mr Xi says city management must be "as fine as embroidery". As officials put it, there must be no "blind spots": every corner must be watched and any problem dealt with immediately—whether an illegally parked car, a missing manhole cover or a "sudden incident" (as the party calls everything from the truly dramatic to a gaggle of protesters complaining about unpaid wages). The big brain in Pudong district is pioneering a technological answer, collating data from sources ranging from the ubiquitous cameras to police patrols. Informants selected by the party supply information, too. One reason why Mr Xi is rebuilding the party at the grassroots is to use its members to keep watch.

Throughout the Mao era and into that of Deng Xiaoping, the party was everywhere. In the countryside, where most Chinese then lived, village party chiefs were all-powerful. In cities most people worked for state-owned companies or for government institutions, where party bosses were just as mighty. Get on the wrong side of one and it could ruin not just your career, but your entire life. The workplace was responsible for allocating housing ►►

▶ (there were no privately owned homes). Its permission was needed to marry, travel or get a passport. When they graduated, all students had to accept whatever jobs were allocated to them by the state. A black mark from a party apparatchik could mean a dreary post in a dismal, faraway town.

In 2002 Perry Link, an American academic, likened the party's ability to keep people in line to that of "a giant anaconda coiled in an overhead chandelier". Normally the snake does not move. "More often than not, everyone in its shadow makes his or her large and small adjustments—all quite 'naturally'." As social change accelerated in the 2000s, the metaphor became less apposite. Working-age villagers moved en masse into cities where their transient lifestyles made it much harder for the party to monitor them. Housing had been privatised and far fewer people worked for the state. Students could find their own jobs and people could travel where and when they liked. The snake had become less visible and less threatening. Growing numbers of NGO activists, rights lawyers, citizens aggrieved by local injustices and internet users were even daring to give it a poke.

### The party cleans up

Mr Xi wants to restore its visibility. Busybody party members are making a comeback. Even before he took power, experiments had begun in some cities with a new system of control called "grid management". This involved dividing communities into groups of households, or grids, and assigning people (often retirees and usually party members) to keep watch on other grid residents. Mr Xi has extended this system nationwide. The big-brain screen in Pudong shows the locations of grid monitors. When something worrisome happens, it can help officials to decide who should take a closer look.

An official newspaper gives an example. Its journalist saw one camera home in on a piece of wastepaper on a street. That information was relayed to a grid monitor, who disposed of it. A trivial example, seemingly, but some readers may have taken note. Had the scrap been an anti-party flyer scattered by a dissident, the perpetrator could have been whisked away as quickly as the paper.

At the top of the grid hierarchy sit neighbourhood party committees. These have been beefed up by putting local police chiefs in senior positions and giving them more authority over other party committees, such as those in businesses. The committees relay the intelligence they gather from grid managers to the police. Universities cause particular anxiety. Every big anti-govern-

### Busybody party members are making a comeback

ment upheaval for more than a century has seen students at the forefront, including the May Fourth Movement of 1919, in which Mao participated. There is no sign of rebelliousness on campuses today. But Mr Xi is watchful. For universities to be run well, he said in 2016, they must be "firm strongholds" of support for the party. Some, he lamented, were not strong enough. Two years later he called for "resolute" measures to prevent the spread of "incorrect political trends of thought" among students.

Once again, party members are used as his footsoldiers. Since the unrest of 1989 student party members, or applicants to join the party, have been deployed as *xinxiyuan*, or informants. Their job is to submit regular reports to the party on topics being discussed by students and to snitch on anyone, including their own tutors, deemed to be erring ideologically. Under Mr Xi, their role has become more institutionalised, with campuses divided into grids. Each deploys *xinxiyuan* to monitor fellow students in their dormitories. Their intelligence is fed into campus computer systems.

Mr Xi has also put more effort than his post-Mao predecessors into ensuring the party operates inside private enterprises and NGOs. Employees who are party members have formed cells (*xiaozu*) or branches (*zhibu*), one function of which is to keep an eye on workers and report potential trouble. Their chiefs often take part in neighbourhood party meetings that discuss threats to social stability. Under Mr Xi, the party is getting back into business. ■

### Corporate sector

## It's our business, too

### In private workplaces, the party—once almost non-existent—is taking root

IF IT EVER was Shanghai's tallest building, the 40-metre-high headquarters of the *North China Daily News* did not remain so for long. Skyscrapers became fashionable before the Communists took over in 1949 and turned China into a world leader for them. In 2015 the tallest building in China (and second-highest in the world) opened in Lujiazui, Shanghai's Wall Street, on the far side of the Huangpu river. Chinese officials call the 632-metre edifice Shanghai Tower, a symbol of the financial capital's might.

The sinuous, 128-storey structure, designed by an American firm, purports to evoke a dragon's twisting form. It is home to Chinese and foreign financial firms betting on China's rise. JPMorgan, an American bank, occupies four floors. But the Communist Party is there as well. It has taken a large, airy space high up to run a political operation about which it is open and proud. Its focus is on companies in Shanghai Tower and other skyscrapers. For private firms in China, there is an echo of 1921, when industrialists wondered what the Bolsheviks were up to. Once again, Communists are eager to establish themselves in the workplace. There are worrisome implications.

Before his inspection of the big brain in 2018, Xi Jinping visited Shanghai Tower. On his way up in the world's fastest lift to its observation deck, he stopped at the party-building service centre on the 22nd floor (a separate lift goes directly to it). One room displayed his slogan calling on party members to cleave to the ideals that inspired activists a century ago: "Don't forget the original intent, keep the mission firmly in mind, struggle forever."

Those words appear on billboards across China. The "original ▶▶



Surveillance state



▶ intent” phrase is from a Tang-dynasty poem. Mr Xi says it means working for people’s well-being and China’s rejuvenation. The aim is not to whip up a Maoist frenzy or encourage workers to rise up. The strike-fomenting Bolshevik menace which worried industrialists in Shanghai in the 1920s is of no concern now, since the party abhors labour unrest. “Stability is paramount” is its mantra. Today the worry is different: that a more assertive party will muscle into boardrooms and keep them on a tighter leash.

It has always been the case that, in a workplace with three or more party members, they should, with approval from a higher level, form a branch or, with 100 or more members, a committee. But some businesses were cool to the idea and the party did not always insist on it. Mr Xi wants complete coverage, with no excuses for non-compliance. “Party organisations must extend wherever party members work and live,” he said on the 22nd floor. They should be “strongholds for combat”. There are now 40 party-building centres covering the 280-plus towers in the financial district. Work began last year to set up yet another layer of control, with a party-led building-affairs committee in each multi-occupant commercial property. These committees include party chiefs of tenant firms, as well as police. State media call this injecting a “red gene” into property management.

Within private firms, efforts to install a party presence have been ramped up. Since Mr Xi took over, the proportion that have embedded party organisations has risen from just over 50% to more than 70%. As an academic at the Central Party School, Cai Xia conducted research into party-building efforts in private firms. In those pre-Xi days, she says, the aim was mainly to give scattered party members a greater sense of belonging and encourage them to be model workers. Now, says Ms Cai (who has lived in America since 2019), the purpose is to help the party maintain social stability and “supervise and control” their firms.

Some foreign firms are anxious. Those operating in sectors that China considers vital to its economy, including financial services, must often form joint ventures with state-owned companies. In 2017 party bosses in some state enterprises began pressing their foreign partners to agree to wording in the charters of their businesses that guaranteed a management role for the party. Companies are required to have officially approved charters. Failure to abide by them could be deemed a crime.

### A rare retreat

Remarkably, amid an outcry from foreign investors, party officials backed down. No longer are they arm-twisting foreign firms to specify a role for the party in the running of joint ventures, says Joerg Wuttke, president of the European Chamber of Commerce in China. As for wholly foreign-owned businesses, the chamber says it has not heard of the party having a business-management function in any of them. Indeed, among nearly 585 European firms it recently polled, nearly 65% said they were unaware of any party presence in their firms. Of those with branches, only just over 1% said the party could veto business plans.

Foreign companies have always had to be mindful of the party’s wishes. But it may be that the party does not see strengthening its presence in foreign firms as a political priority. Mr Wuttke says that in foreign businesses party branches often operate “like Rotary Clubs”. But even if most of them keep out of business decision-making, there may be an anaconda effect among staff. Chinese often say they like to work in foreign firms because of their freer atmosphere. Lester Ross, the Beijing representative of WilmerHale, an international law firm, says expatriate bosses, who seldom have a strong command of Chinese, may not easily spot changes in the mood of local employees.

**Foreign companies have always had to be mindful of the party’s wishes**



*The early days of comradeship*

It is a different story with private Chinese businesses, which provide 80% of urban jobs. They are the titans of online and high-tech industries. To ensure control over Chinese society, the party wants to boost its influence among such firms both at board level and among ordinary employees. It wants to ensure that China’s influential tycoons, and their staff, toe the party line. A directive in 2017 called for measures to “strengthen the sense of loyalty” among entrepreneurs and party leadership over them.

A widely touted model is Hodo Group, a family-run manufacturer of garments and textiles with 30,000 employees in Jiangsu province. Mr Xi has praised its party-building efforts. Zhou Hai-jiang, the chief executive, is also the party secretary. Other senior managers hold corresponding roles within the group’s party committee (which oversees Hodo’s more than 100 party branches and their membership of around 1,000). The head of the human-resources department is in charge of the party’s organisational affairs, the person responsible for brand development is the party’s propaganda chief, and the chairman of the firm’s board of supervisors is the party’s head of discipline.

In 2018 foreign business grandees attending the China Development Forum, an annual get-together with Chinese counterparts and government leaders, were surprised by their hosts’ decision to flaunt the party’s role in economic matters. Hodo’s Mr Zhou was among those wheeled out to make the point. He regaled the audience with his party-building exploits and sang the praises of what officials now call a “modern enterprise system with Chinese characteristics”—meaning one with the party very much involved.

It is easy to see why the party likes the Hodo model. ▶▶



► In about 50% of private firms with party branches, the boss is already a party member. For such a person, taking on the additional role of party secretary is not difficult. The bosses may even accept the idea as the least bad option: better to manage the company's party affairs oneself than allow someone else to take the job. And there may be benefits. Being a party secretary can open doors with officialdom. Businessmen prize such access. Privately, some Chinese entrepreneurs describe their party-building efforts as a box-ticking exercise. Party members in their companies know to whom they must be loyal in order to keep their jobs: the firm.

In the Shanghai Tower, state media say Mr Xi's visit has been a boon (as has support from the state-owned company that owns the building). Every month, on average, one company pays a visit to ask for help setting up a branch. It has also boosted demand for party membership. The service centre offers enticements: a place to relax and enjoy the view. There is a gym on the same floor.

But party-building in Lujiazui is also about controlling members. The 22nd floor is pioneering a new way of making them stay on their toes. It involves an app that shows members how many points they have scored for volunteer work, for taking part in political study sessions or for submitting "thought reports" (a device much-loved by the party for ensuring discipline, as it forces members to expose their own weaknesses). Score less than 60 points in a year and you could be summoned for a chat with a party official, or sent for retraining at a party school.

That may sound scary, but well-educated Chinese still flock to join the party. Even on campuses, where curbs on free speech have become tighter under Mr Xi than at any time since Tiananmen, many students are keen to sign up. That is because membership can confer lifelong benefits. ■

### Joining the party

## The vanguard of the elite

**To well-educated people, party membership is something worth fighting for**

THE FIGHT against covid-19 has been a propaganda boon for the Communist Party. China swiftly crushed the disease and allowed its economy to return to near normal, even as much of the rest of the world struggled to cope. State media have crowed. "The advantages of the leadership system of the Chinese Communist Party and the shortcomings of the capitalist party system have been shown up in clear contrast," said an article by the party's discipline-enforcement agency. Many Chinese, though initially critical of officials' cover-up of the outbreak, seem to agree that the party has triumphed.

In the West, many wonder if China was partly responsible for the pandemic, by failing to respond sooner to early signs of a new coronavirus and by keeping news of it secret—or even by allowing the virus to escape from a laboratory in Wuhan. China's censors tolerate no such speculation. State media report only on the party's resolute response, the results of which are clear. The country has had few cases for months and most of these were attributable to imported infections.

China's efforts have involved not just mobilising the obvious people like medical staff, community health workers, scientists and police. It has also made extensive use of the party's network of branches to provide manpower and management expertise for a party-led operation on a scale rarely seen in the post-Mao era. In the early months village perimeters were guarded by temperature-checking volunteers in red armbands. They took their orders from members of village party committees who bustled about sporting party lapel-pins. In cities the party's myriad grids proved crucial in controlling people's movements.

Front-line responders who were not already party members have rushed to join: some 440,000 by late June last year. Yet less than 6% of these applicants had actually been admitted. For the party is highly selective when it comes to recruitment.

Indeed, it is one of the world's hardest ruling parties to join. And to keep out closet liberals and other undesirables, Xi Jinping is making it even more so. In other countries few mainstream parties would turn away anyone willing to pay their membership ►►

### Middle class rising

China, Communist Party membership\* by occupation, m



Source: Organisation Department of the Communist Party

\*Breakdown not available 1997-2007 & 2010

► dues. In the Chinese Communist Party these can amount to as much as 2% of income for the wealthiest members. But party officials were wary of last year's flood of applications. They detected opportunism—a chance to get an application fast-tracked by helping the party at a time of need. “Fishing in troubled waters”, they called it. They warned party branches not to lower their guard. To qualify, officials insisted, applicants had to prove themselves in the toughest of covid-fighting roles, not to mention stand up to political scrutiny.

Mr Xi began putting the brakes on recruitment soon after he took over in 2012. In the following year the numbers of new members fell to 2.4m, the lowest in a decade. In 2019, the most recent year for which data are available, it was closer to 2.3m. Chinese officials are fearful of the party gradually becoming a “party for everyone”, as Nikita Khrushchev declared the Soviet Communist Party to be in 1961. Such deviancy, they say, was one reason why Soviet communism collapsed: it had lost its “class character”. A scholar quoted by *Beijing Youth News*, the organ of the capital's Communist Youth League, has said that China's party would be better with about 40m fewer members than today's 92m.

### Not too many workers, please

Yet the professed importance of class background may be misleading. The party is still keenest of all to recruit the educated elite. In 2000 only about one-fifth of members had degrees—about the same proportion as those who had not advanced beyond primary school. Now about half are graduates, helped by a big increase in university enrolment. Students make up about 30% of new entrants to the party. But many join largely for self-interested reasons. Membership is needed for good jobs in the civil service and state-owned industries, which offer greater security than private employment. So the party is raising the bar even for students. In 2019, 1.96m were party members, around 300,000 fewer than a decade earlier. They made up perhaps 5% of the total student body, down from nearly 8% in 2009.

Given the hoops that have to be jumped through, it is striking how many still bother to apply: about 844,000 students managed to join the party in 2019. As well as the practical benefits, there is also the cachet. “It's like an Oxford dining club,” says Peter Mattis of the Australian Strategic Policy Institute (ASPI). “You're in on the secret, if you're in. That is good for recruitment—and for creating fear.” It is also a badge of academic success: the party prefers students with the highest grades. In today's party good degrees count for a lot. While working as a provincial governor, Mr Xi managed to squeeze in a PhD in Marxism (though doubts abound about the quality of this credential). Kjeld Erik Brodsgaard, an expert on the party at Copenhagen Business School, says that the Central Committee is “better educated than the Danish parliament”.

Induction begins with an application letter that needs the endorsement of two party members. Next comes an interview with an official from the party branch. Then the branch considers whether to proceed. If it does, the applicant becomes a “party-entry activist”. This phase can last a couple of years, during which the applicant must submit thought reports every three months, join political study sessions, do volunteer work and meet mentors from the branch who write evaluations. Then there are the background checks—a process that involves investigating the political reliability of family and friends and examining school records. An applicant in the West for a government job involving official secrets would require less rigorous vetting.

If all goes well, the applicant then has to swear an oath in front of the party flag, promising to guard party secrets, remain loyal and be “ready at all times to sacrifice my all for the party and the people”. This means being willing to do as Mr Xi orders, without question. The party is his machine. ■



### The party abroad

## Flying the flag

### As China's global footprint expands, so does the party's

“PARTY-BUILDING has no borders.” So intones the Communist Party to encourage Chinese firms to set up party branches abroad. “No matter where the project, that country will have a party organisation,” is another slogan. China's rise has expanded the party's influence abroad. As Chinese citizens head overseas for work and study, its branches are spreading too.

Browbeating the West to show more respect is the task of party organs in Beijing. The foreign ministry does the grunt work, but the party's Foreign Affairs Commission, headed by Mr Xi, sets policy. The Publicity Department spreads propaganda through state media such as CGTN, a television network, and Xinhua, a news agency. The United Front Work Department (UFD) controls organisations seeking to boost the party's influence abroad, especially among ethnic Chinese. The ASPI Australian think-tank says the UFD oversees Confucius Institutes, the government-supported cultural centres on university campuses abroad.

Officials know the party is not an attractive brand in the West. So these organs keep the party's name out when operating abroad. At home, Mr Xi says China's state media “must be surnamed ‘Party’”, to serve the party's interests. But CGTN broadcasts do not advertise the connection. The station sometimes employs anchors who are not Chinese, with backgrounds in Western media such as the BBC or CNN. (America has designated CGTN and Xinhua as “foreign agents”; Britain has banned CGTN's broadcasts.) ►

Chinese ambassadors are also party secretaries, though they rarely advertise this. This gives them authority over party bosses in Chinese state-owned firms in their countries. They may meet locals as ambassadors, but put on the party hat for talks with Chinese expatriates. Chinese firms often hold party meetings in China's diplomatic missions, says Chen Yonglin, a diplomat who defected in 2005. And the party wants to develop more structures overseas. The aim seems to be to keep members engaged and ensure they are not seduced by Western political thinking. The party guards against ideological deviance, so its re-embrace of members when they return home is conditional on proof of loyalty.

Before the pandemic, 1.6m Chinese were studying abroad and 1.5m people worked overseas for Chinese multinationals. The share of students in the party was low: many would have gone abroad from school, at an age when few are members. But many graduate and exchange students join before leaving China. And membership is high in state-owned firms: more than 40% of the staff of centrally owned ones belong to the party. So there could be tens of thousands of members abroad.

The party is still coy. In 2017 a newspaper revealed that Chinese firms overseas were guided by a principle called the “five not-opens”: they keep quiet about the existence of their company's party organisation as well as its activities, do not reveal their employees' roles in the party or even their links with it, and do not make public any party documents. But under Mr Xi, state-owned firms abroad have to set up party branches. They appear to be complying. “Along the belt and road, the party flag is flying,” state media proclaim, referring to China's global infrastructure-building.

The All-China Federation of Industry and Commerce has also called for the establishment of party organisations in the overseas operations of private firms. Huawei, a tech giant that has alarmed Western countries because of fears that China may exploit its network equipment for spying, employs thousands of party members. The firm's policy is to set up party structures in its overseas businesses “according to local conditions”.

On foreign campuses, in deference to Western sensitivities, the party does not appear to be trying to create explicit branches among Chinese students and academics. But Chinese students are often eager to maintain party connections when abroad so as to restore ties when they return. One way to show political commitment is to organise meetings to study Mr Xi's speeches. Some students abroad have formed cells for this purpose. University websites and social media in China have reported this at Nottingham University in Britain, South Korea's Kyung Hee University and Missouri State University in America. In 2017 Chinese scholars formed a branch at the University of California, Davis, but soon dissolved it since American law requires those acting for a foreign political party to register with the government.

If party members form explicit organisations on campuses, they may find their freedoms constrained by the need to report on each other. But China can monitor the behaviour abroad of members and non-members alike even without a party presence. The Chinese Students and Scholars Associations that have been set up with government backing on most campuses with lots of Chinese students have no explicit links with the party, but their leaders report to Chinese diplomatic missions.

The party's most intimidating global arm is the Chinese security apparatus. Unlike the army, police and civilian intelligence agencies do not belong to the formal party structure. But they are at its beck and call. China's spies travel abroad to monitor troublesome dissidents. Wherever they are, they read citizens' messages on social media. Chinese abroad who speak against the party take a risk: family members in China may suffer. There is little need for a party presence to instil fear. The tried and tested methods used by authoritarians the world over serve the party well. ■

### The next century

## A future, with Chinese characteristics

**Party leaders have dreams other than remaining in power. Achieving communism is not really one of them**

AS COLUMNS OF smoke rose from Tiananmen Square and tanks took up positions along Beijing's central thoroughfare, it was hard to imagine the Communist Party celebrating its 100th birthday still firmly in charge. It was the day after the army had slaughtered hundreds, if not thousands, of people on June 3rd-4th 1989. The massacre had crushed a nationwide pro-democracy movement. But the city seethed with anger. How could that fury remain bottled up for ever?

Few people had heard of Xi Jinping, then party chief in Ningde, in Fujian province. Now he is Uncle Xi—the “people's leader”, as the Politburo called him in December 2019, just as covid-19 was brewing in Wuhan. That tested the party again. Rage boiled up over the death of a doctor reprimanded by police for daring to discuss the new virus online. Some observers hoped the cover-up would be China's Chernobyl: an episode that helped force political change. Once more they were proved wrong.

In the West the party's resilience causes surprise and disappointment. Its ability to adapt to the demands of a fast-growing middle class, tweak its message to suit the public mood and even act on public suggestions is underappreciated. The leadership blamed the cover-up in Wuhan on local officials and honoured the late doctor (a party member) as a “martyr”. The party emerged seemingly unscathed. But it is also a mistake to dismiss party leaders' fears. A book published by the party last September was entitled “Extracts from Discourses by Xi Jinping on Countering Risks and Challenges and Responding to Sudden Incidents”. The 251-page volume ranges from soaring debt and property bubbles to plots by the West to foment “colour revolutions” in China.

The unrest in Hong Kong in 2019 is often derided as one such foreign-orchestrated attempt to undermine the party. This explains the viciousness of the response, which has made it clearer than ever that China's government is calling the shots in the territory (the party still does not operate openly there, but the central government's representative is chief of the “Hong Kong Work Committee”). Taiwan looks anxiously on. The island has been in the party's sights since 1949, when the government of Chiang Kai-  
▶▶

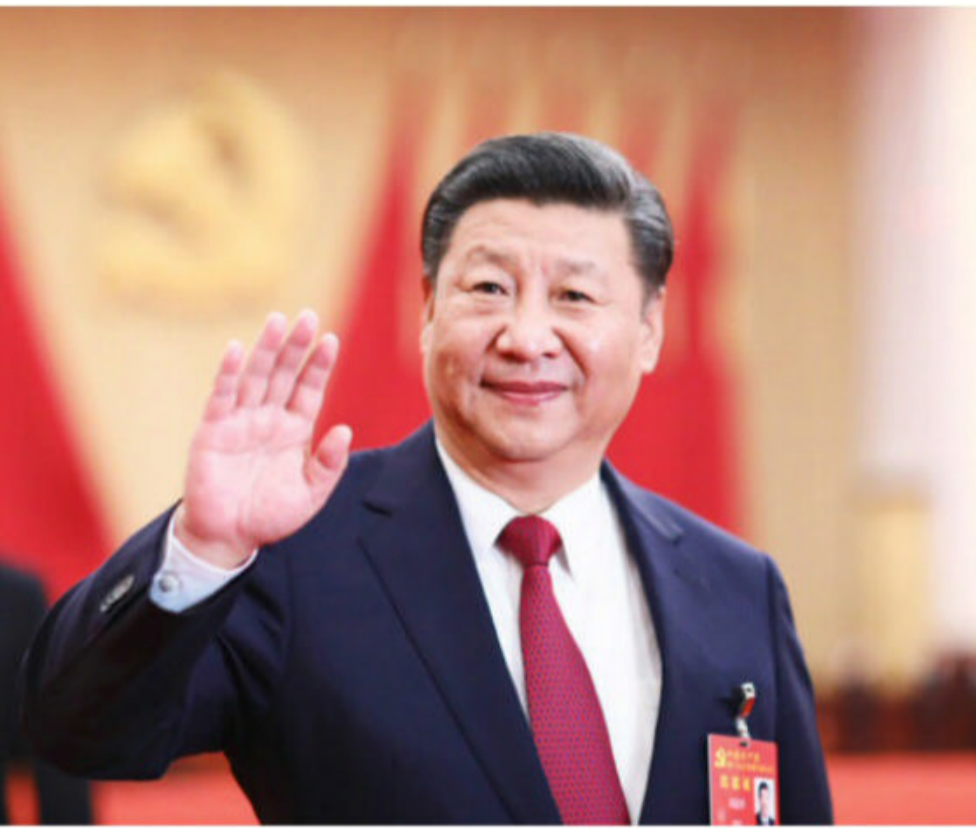
### Rich legislators

China, wealthiest ten entrepreneurs among National People's Congress members  
Hurun Rich List of China's wealthiest, 2021

Name, age	Wealth, \$bn*	Company	Industry
Ma Huateng, 50	75	Tencent	Internet services
Qin Yinglin, 56	41	Muyuan	Agriculture
Lei Jun, 52	32	Xiaomi	Consumer electronics
Li Shufu, 58	26	Geely	Automobiles
Sun Piaoyang, 63	20	Hengrui, Hansoh	Pharmaceuticals
Liu Hanyuan, 57	19	Tongwei	Solar
Liang Wengen, 65	16	Sany	Machinery
Zhang Jindong, 58	14	Suning	E-commerce
Leng Youbin, 52	12	Feihe	Dairy
Ding Shizhong, 51	10	Anta	Sportswear

Source: Hurun Rich List

\*At January 15th 2021



**Xi, firmly in charge**

shek, defeated by Mao's forces, fled there. Its rulers say Taiwan is an independent country. The party says it is ready to use force to "reunify" it with the mainland if other means fail. That appeals to China's nationalists, who often bray for a showdown.

But Mr Xi is cautious. That is evident in his remarks about Taiwan. He talks of China's great rejuvenation by 2049, and links that idea with reunification. But he makes no promise about achieving this on his watch. He wants to appeal to nationalists, not tie himself down. His threatening military manoeuvres in the Taiwan Strait and his talk of inevitable reunification play well at home. Nationalists buy his promise that China will be "prosperous, strong, democratic, culturally advanced, harmonious and beautiful" by mid-century—even though they know that "democratic" is party-speak for an efficient dictatorship.

So it is with Mr Xi's professed belief in Marxism. By vaunting it, he ensures support from party conservatives. But he does not let it hamstring policies, which display the same ideological pragmatism that all leaders of the post-Mao era have shown. They give priority to the needs of urban residents: migrants from the countryside are second-class citizens. The super-rich are showered with honorary titles. Of about 5,100 people who are members of China's parliament and its advisory body, more than 140 have fortunes of at least 2bn yuan (\$320m), reckons Hurun Report, a Shanghai-based group (see chart, previous page). Between 2013 and 2018 the combined wealth of the 100 richest delegates (about 3.9trn yuan) had doubled.

In the build-up to the party's birthday, Mr Xi has tried to show support for underdogs. On his watch, the final 100m people have been declared free of extreme poverty, helped by public spending of more than 1.6trn yuan. But income inequality is high and the welfare net is thin. Mr Xi is wary of those who take Marxism literally. Several members of a Marxist club at Peking University were arrested in 2018 for supporting strikers in Shenzhen. Censors often delete articles on WeChat groups run by neo-Maoists, who denounce the "bureaucrat-capitalists" running China.

Mr Xi occasionally puts the squeeze on tycoons, not because they are rich but because he wants to ensure they do not challenge the party. Several wealthy businessmen have been arrested or otherwise reined in. One recent target is Jack Ma, founder of the e-

commerce giant, Alibaba (and a party member). Mr Ma's business empire seems one the party should like. Alibaba and its financial-services company, Ant Group, have more than 200 party branches with 7,000 members, said Alibaba's party chief in 2018. Yet Mr Ma stepped out of line by attacking regulators in a speech. That led to the halting of what would have been the world's biggest initial public offering: listing Ant Group on exchanges in Hong Kong and Shanghai. Mr Ma dropped out of public sight for three months. Regulators forced Ant Group to restructure and fined Alibaba more than 18bn yuan for violating antitrust law.

The plight of such businesspeople suggests a difficulty with Mr Xi's mission to keep the party in power while turning China into a technological and financial colossus. Most industries at the forefront of innovation in China are private. But with his relentless emphasis on ideology and occasional blows against uppity entrepreneurs, Mr Xi spreads fear among those whose support he most needs if China is to challenge American economic supremacy. In 2018 a social-media account owned by *Qiushi*, a party journal, published an article entitled "The theory of the communists may be summed up in the single sentence: abolition of private property." The revival of that sentence from the Communist Manifesto sowed alarm. Mr Xi went on to reassure private businessmen that their property was safe, but many still wonder.

By demanding unquestioning obedience, Mr Xi is also creating another problem. One secret of the party's longevity has been its willingness to give low-level officials freedom to be creative and even bend the rules. They have usually been judged more on their ability to boost economic growth than on their ideological correctness. A big drawback to this laissez-faire approach has been collusion between party officials and mafia-like gangs in industries such as property and transport. Mr Xi's war against "black society", as such criminality is called, has been popular. But he has also terrorised the bureaucracy, sucking the initiative out of local government. Jessica Teets of Middlebury College in Vermont says there are "really high resignation rates" among local officials.

None of these problems suggests a party that is near collapse. But Mr Xi may test it over his own succession. Since 1949 the party has managed only one smooth transfer of power, from Jiang Zemin to Hu Jintao in 2002, and that was hardly a full transfer as Mr Jiang (now 94) remained military chief for another two years. Before Mr Xi, leaders tried to avoid traumatic successions by picking a replacement before stepping down. Mr Xi shows no sign of doing this. His sudden death or incapacity could throw Chinese politics into turmoil that could also destabilise society.

But after Mr Xi may come another like him. For all the misgivings about Mr Xi that are doubtless shared by victims of his purges, as well as their associates, many senior officials share his view of the party's vulnerabilities. It would take much daring for a new leader to loosen the reins. The party may not remain a political force in 100 years' time. But the world should be prepared for it (and Xi-style rule) to last long into the future. ■

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### French regional elections

## Another slap in the face

PARIS

**Voters punish the favourites for the presidency, opening up the race**

A MID-TERM election is seldom a moment for voters to applaud their rulers. But the snub that they handed to President Emmanuel Macron's party in the first round of voting in French regional elections on June 20th was quite something. Nobody expected La République en Marche (LREM) to come first in any of the country's 13 regions. But in three of them, its candidates did not get even the 10% needed to go through to the second round on June 27th. Countrywide, his party got just 11%, putting it in fifth place. The day after the vote, as if to try to discount the damage, Mr Macron inaugurated a refurbished Parisian department store, welcomed Justin Bieber to his office, and hosted an electro concert at the Elysée palace.

To be fair, this is a rather odd election. The date was postponed twice because of covid-19. The first round took place just as the French had emerged from a third national lockdown, and on the day that an

eight-month-long nightly curfew was finally lifted. Sure enough, the pull of polling stations proved no match for that of bars and beaches. Turnout was shockingly low, at 33%, down from 50% at regional elections in 2015. Only 16% of those aged 18-24 voted, according to Ifop, a pollster.

Nonetheless, the first round carried several lessons, some of which could shape the presidential election in 2022. First, for LREM, which invested too little too late in the campaign, this election was

not so much a test of its regional strength as confirmation that it scarcely exists as a meaningful structure outside Paris. Launched by Mr Macron in 2016 as a vehicle for his election in 2017, it has been in a sort of deep freeze ever since. The party is neither a source of ideological debate nor a machine building up local support across the country. Shahin Vallée, a former economic adviser to Mr Macron who is now at the German Council on Foreign Relations, says: "It serves merely as an extraordinary PR agency for the president."

Nowhere was this more evident than in Hauts-de-France, in the north. Mr Macron, who grew up in the town of Amiens in the region, visited just days before the vote. His trip was part of his aestival "Tour de France": an attempt to reconnect with people round the country after the end of the latest lockdown (it was during one such recent foray that a member of the public slapped the president in the face).

Critics, though, saw it as an undisguised bid to campaign on the home turf of Xavier Bertrand, the centre-right sitting regional president, who is a former government minister and a rival for the presidency next year. In a last-minute push, Mr Macron put no fewer than five government ministers on LREM's party list for the region. The result? Mr Bertrand came top, with a handsome 41%. LREM, meanwhile, ►►

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► scored a pitiful 9%, meaning that it has been knocked out of the contest.

Mr Bertrand's strong showing leads to a second point. Perhaps because voters were hankering for stability after months of living with the pandemic, first-round voting rewarded incumbents, from the right as well as the left. No fewer than 12 of the 13 sitting regional presidents came out on top. They include all five Socialist presidents, in regions such as Nouvelle-Aquitaine, in the south-west. Six centre-right regional heads also scored the most votes, including Mr Bertrand in the north, Valérie Pécresse in the Paris region (Ile-de-France), and Laurent Wauquiez in Auvergne-Rhône-Alpes.

Back in 2017, when Mr Macron won power, LREM, which was billed as being "neither on the left nor the right" and stole politicians from both sides, looked as if it had crushed the established parties flat. Now there are some hopes of a revival. Nationally, the centre-right Republicans and their allies scored 29%. Together, the Greens and Socialists scored nearly 30%.

Third, the only party that looked more glum than Mr Macron's after the first round was Marine Le Pen's populist, anti-immigrant National Rally, formerly known as the National Front. Polls had suggested that it would come top in six regions, and win in Provence-Alpes-Côte d'Azur (PACA). In the end, it came first only in PACA, where its candidate, Thierry Mariani (an ex-Republican) leads by a thin margin.

The National Rally does not get the older vote, and draws heavily on the working class, so it suffered particularly from poor turnout. When the results came out, a grumpy Ms Le Pen appeared on television and scolded voters for their apathy. It may also be that Ms Le Pen's attempt to soften the party's image, in order to make it more electable, has undermined her ability to harness raw anger and indignation, an exercise at which she usually excels.

What does all this mean for 2022? Ms Le Pen's party could still win PACA in the second round on June 27th. That would ease its malaise, and enable Ms Le Pen to claim that her party's first regional victory is a step to the Elysée. Even if not, there is still a big difference between a regional election

and a presidential race, which is not so much about a party as a person. Less than two-fifths of voters said that they used this poll to judge either the president or the government, while a majority made their choice according to party affiliation. The opposite is true for a presidential vote. Despite poor showings by both their parties at municipal elections last year, for instance, Ms Le Pen and Mr Macron continue to be the pollsters' favourites to make it to the second-round run-off, as they did in 2017.

That said, the race does now look a little more open. Three centre-right presidential hopefuls—Mr Bertrand, Ms Pécresse and Mr Wauquiez—are set to be buoyed by re-election as regional heads. Each will try to appear in coming months as a better prospect than Mr Macron to beat Ms Le Pen in 2022. The difficulty, notes Michel Barnier, the European Commission's former Brexit negotiator and yet another centre-right presidential hopeful, is that unlike in the days of Nicolas Sarkozy or Jacques Chirac, this time "no single person dominates." Both Mr Bertrand and Ms Pécresse have quit the Republicans. Even within the party, nobody agrees on how to pick a single candidate. The same goes for the Socialists and Greens on the left.

As for the president, he will resume his Tour de France in the hope that a lighter summer mood eclipses this defeat. New daily covid-19 cases are back to the low levels last seen last summer. Businesses are creating new jobs again. Even though his party's score was "very poor", says Bruno Jeanbart, of OpinionWay, a polling group, "this wasn't a popularity test of Emmanuel Macron." One poll puts his approval rating in June at 50%, up seven points on May. Another gives him 40%, far better than that achieved at the same point by his two most recent predecessors, Mr Sarkozy (30%) and François Hollande (14%).

Mr Macron will be hoping that, despite their regional triumphs, the left and the right continue to squabble, thus undermining either camp's ability to take him on. He will also know better than most, however, that a lot can change in ten months before a vote—and that the last incumbent president to be re-elected was Mr Chirac in 2002. ■

## Swedish politics

# The nine lives of Lofven

## A fallen PM gets a last chance

HOUSING IS A sensitive political issue everywhere, but in Sweden it is especially touchy. Over two-thirds of the country's municipalities say they have housing shortages. Authorities estimated the total shortfall at 160,000 units in 2018, in a country with 5m dwellings. The price of a villa in Stockholm has risen 19% in the past year. All the country's rental units, whether public or private, are subject to rent control, making everyone's rent a matter of government policy.

So it is not surprising that when Stefan Lofven became the first Swedish prime minister to lose a no-confidence vote this week, it was over housing policy. Mr Lofven, a Social Democrat, is a canny survivor who stayed in power after an indecisive election in 2018 by forging a minority coalition with Sweden's small Green Party. To do so he reached a confidence-and-supply deal with a smorgasbord of other outfits: the right-leaning and mostly rural Centre Party, the laissez-faire Liberals and the socialist Left Party. On June 21st the Left Party defected, joining three parties on the right to vote Mr Lofven's cabinet out.

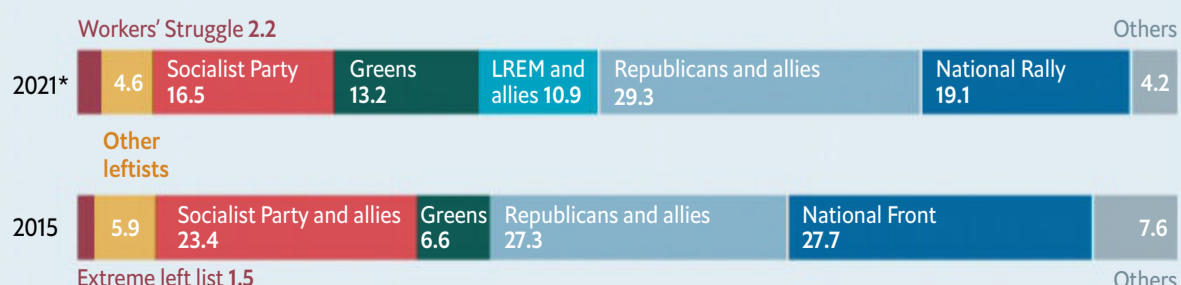
The trigger was a government-appointed commission's proposal for housing reforms, which included free-market rents on new private developments. The Left's leader, Nooshi Dadgostar, saw this as a dangerous step towards deregulating the entire market. But liberalising rent on new construction had been part of Mr Lofven's deal with the Liberals and the Centre Party. He offered to send the issue back for negotiations between the tenants' union and Sweden's two landlord groups.

That satisfied neither Ms Dadgostar, who wants the reforms to be binned, nor the Liberals, who said in the future they would prefer a government led by the right. The final blow to Mr Lofven was a matter of strange bedfellows. Ms Dadgostar, a rising star of the left who is the child of Iranian refugees, voted for a no-confidence motion filed by the Sweden Democrats, a populist anti-immigrant party.

The Sweden Democrats pose a problem for the "bourgeois" parties, as the mainstream right is known in Sweden. Because of their roots in the neo-Nazi movement and their penchant for racism and sexual-harassment scandals, other parties shun them. But over the past decade they have become the third-biggest political force, drawing about 20% support in recent polls. ►►

## Not what he hoped for

French regional elections, first-round results, % of votes



Sources: Elabe; French interior ministry

\*Forecast based on exit poll, June 20th

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▶ Jimmie Akesson, their leader, has professionalised the party, confident that eventually it will be included in government.

The Moderates, Sweden's main centre-right party, have 70 of the 349 seats in the Riksdag. Their natural partners, the Christian Democrats, have 22. Even if they win back the Liberals and Centre Party, they would lack the seats to form a government without the Sweden Democrats' backing. Ulf Kristersson, the Moderates' leader, has hinted at a confidence-and-supply deal with the Sweden Democrats, though he draws the line at including them in a coalition. After the vote, Mr Kristersson said pointedly that he was speaking with "all party leaders".

Mr Lofven has until June 28th to cobble together a new government. The Left wants him to stay on, but with a new deal that scraps the housing reforms. The Centre Party have become kingmakers: if they remain on board, along with one of the two independent MPs, Mr Lofven will have the bare minimum of 175 seats. If not, Mr Kristersson will get his chance. Should he fail too, there will be an early election in the autumn. Either way, it will be complicated. Sweden's politics have fragmented, like those of many European countries. Coalition-building has grown ever trickier. But Mr Lofven may manage it yet. ■

## Spain

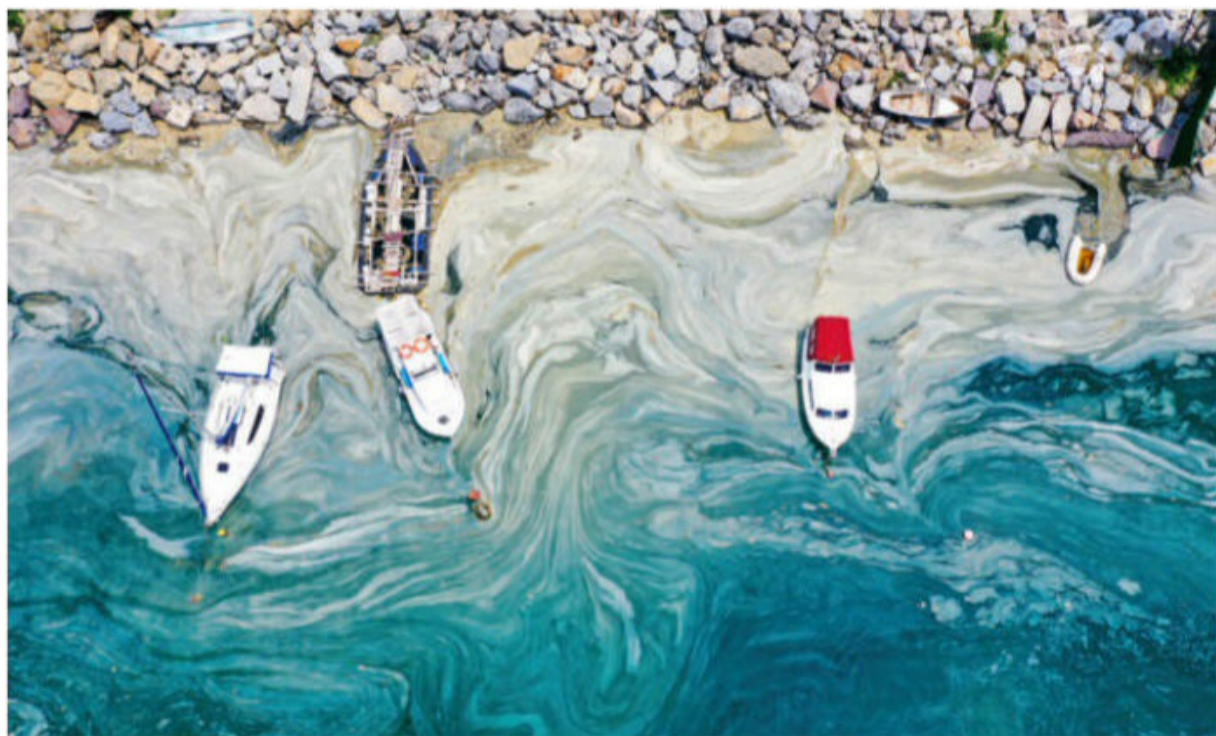
# Pardoning the separatists

MADRID

## The government tries détente

WHEN NINE Catalan separatist leaders walked out of jail on June 23rd after three-and-a-half years inside it was a moment of jubilation for their supporters and of dismay for many others, but perhaps also of modest hope. The previous day the government of Pedro Sánchez, the Socialist prime minister, had granted them pardons, commuting sentences of up to 13 years imposed by the Supreme Court for sedition and maladministration. Their crime had been to organise a referendum in 2017 as regional officials, despite orders not to from the courts, and then to declare Catalonia's independence. The pardons are intended to ease tensions and open the way to talks to end a conflict that has dogged Spain for over a decade.

The pardons are "in the public interest", the government argues. They are conditional on not breaking the law again, and do not revoke a ban on holding public office that runs for the same period as the original sentences. For now, at least, the



Turkey

## Muck in Marmara

ISTANBUL

### "Sea snot" clogs up the Marmara Sea

IT LOOKS AS bad as it sounds. Over the past couple of months, a thick, foamy layer of marine mucilage, popularly known as "sea snot", has spread over swathes of Turkey's Marmara Sea near Istanbul, disrupting fishing and tourism and killing marine life. A cleanup effort, the biggest in Turkey's history, is underway. Ships are corralling the muck, which is secreted by phytoplankton (marine algae), using floating barriers. Workers are hoovering it up from the surface. The government has pledged to save the Marmara by improving wastewater treatment.

The Marmara has seen regular mucilage outbreaks since 2007. This is the biggest one yet. Vast sheets of brown and grey slime float on the water, clogging boat engines and washing up on beaches. Some of the muck has already reached the Aegean Sea through the Dardanelles and the Black Sea through the Bosphorus. The view below the surface is no better. The gunk has begun settling on the seabed, where it clings to and kills coral and shellfish. By blocking sunlight, and so

stopping other algae from photosynthesising, the sludge is depleting the sea of vital oxygen.

Scientists say a combination of pollution, climate change (phytoplankton thrive in warm waters), and Istanbul's uncontrolled growth are to blame. Discharge from rivers packed with agricultural and industrial runoff seems to have caused the phytoplankton to spread and discharge more mucilage than usual. Covid-19 has played a role too. Successive lockdowns have caused more wastewater and detergents to be released from Turkey's homes. Chemicals from these, says Neslihan Ozdelice, a marine biologist at Istanbul University, may have aggravated the phytoplankton as well.

The sea snot would normally be expected to decompose naturally. But so much of it has now accumulated in the Marmara that it is stubbornly refusing to do so. Unless Turkey cleans up its act, and as long as water temperatures continue to rise, the gunk will be there to stay. Not quite what you want on your holiday by the sea.

government is not dropping charges against Carles Puigdemont, the former Catalan president who instigated the referendum, and four fellow fugitives who face arrest if they return to Spain.

Nevertheless, Mr Sánchez is taking the biggest gamble of his three years in office. Many Spaniards, including Catalans, were outraged by the attempt to bounce the region out of Spain in 2017. Polls show a majority oppose the pardons; the issue divides Socialist voters. But some 70% of Cat-

alans are in favour, including many who oppose independence, as well as local businesses and the region's bishops.

The conservative opposition accuses the prime minister of betraying the rule of law. "You are electorally dead," Pablo Casado, its leader, told Mr Sánchez, calling for a national election on the issue. Critics focus on the lack of repentance from many of the prisoners. Only Oriol Junqueras, Mr Puigdemont's former deputy and the leader of Esquerra, the most pragmatic of the sepa-▶▶

► ratist parties, has admitted that the referendum was not seen as “fully legitimate” by part of Catalan society and that a unilateral road to independence is “neither viable nor desirable”.

Mr Sánchez has powerful arguments. Outside Spain the charges and sentences were widely seen as disproportionate. That is why courts in Germany and Belgium refused to send the fugitives back. Above all, freeing the prisoners drains much of the poisonous emotion from Catalan politics. For these reasons the pardons were opposed by the more radical separatists.

The government plans to open negotiations with its Catalan counterpart, which will focus on how to improve the region’s status within Spain, and possibly on constitutional reform. “We can’t start from scratch, but we can start over...Catalonia, Catalans, we love you,” Mr Sánchez de-

clared in Barcelona this week. In fact, the talks will be hard-headed and strewn with obstacles. Pere Aragonès, the Esquerra president of Catalonia, continues to insist on a full amnesty and a proper referendum on independence, which Mr Sánchez is constitutionally unable to grant. Trials of second-tier officials are pending. The public-accounts tribunal, an administrative body, is poised to impose swingeing fines on 39 former Catalan officials for alleged mis-spending, on the ground that they promoted independence abroad.

The more realistic Catalan separatists know that they are further away from a majority for independence than they were in 2017 and that no European government is keen to see the break-up of Spain. But the government knows that the conflict within Catalonia disables the country. That is why talks may have a chance. ■

Russia stemming from the annexation for an eighth successive year. But neither America nor any other member of NATO is thought to have gone as far as sailing a warship with a journalist aboard through Crimea’s waters to flout Russia’s claims (though Russia accused *HMS Dragon*, another British destroyer, of doing so last October; there were fewer public fireworks on that occasion).

Britain’s move was bold, but risky. Russia has built up a large military presence in Crimea, including advanced missile, air-defence and jamming systems. *HMS Defender* was a considerable distance from *HMS Queen Elizabeth*, the aircraft-carrier that she escorts, currently on the other side of the Bosphorus in the Mediterranean. It helps that an American intelligence-gathering plane was watching from above. But Britain’s willingness to run the risk reflects, in part, its torrid relationship with Russia, which has not recovered from Russia’s attempted assassination of Sergei Skripal, a former Russian intelligence officer, in England three years ago.

Britain’s support for Ukraine, which has also lost territory in its east to Russian-backed separatist militias and continues to skirmish with them, is a good example of this. Britain’s armed forces are already training Ukrainian troops and providing military assistance. In September, 250 British paratroopers conducted one of their largest air drops in decades in the country. Then on June 22nd, just a day before *Defender*’s Crimean foray, British and Ukrainian government ministers met on the ship’s deck and agreed to build patrol boats and naval bases for Ukraine.

Anglo-Russian antagonism is not the only source of tension in the Black Sea. In the spring Russia massed troops close to eastern Ukraine and in Crimea itself, provoking fears of an invasion. Though the build-up was halted in late April, some troops have stayed behind. Now Ukraine is preparing to host “Sea Breeze”, an annual NATO-led naval exercise which will run from June 28th to July 10th, involving 32 navies, including America’s. Russia has complained that the exercise will “increase risks of unintended incidents”.

After a summit between Joe Biden, America’s president, and Vladimir Putin, his Russian counterpart, on June 16th Mr Biden said that he sought “stable and predictable” relations with Russia. But he also drew some red lines, vowing a robust response if Russia were to conduct more cyber-attacks on America or stoke tensions in Ukraine. Britain seems to have focused on the second half of the message. Other European countries seem to be concentrating on smoothing relations. On June 23rd, even as *Defender* sailed past Crimea, France and Germany called for the EU to invite Mr Putin to a summit of the bloc’s leaders. ■

## Russia

# Crimea and punishment

## Russian and British forces square off in the Black Sea

THE LAST time that Russia fired on a British warship was in 1919, when a Bolshevik submarine torpedoed a destroyer in the Gulf of Finland. The last time it happened in the Black Sea was during the Crimean war over 165 years ago. So it was a surprise when Russia declared that it had not only fired warning shots at *HMS Defender*, a British destroyer passing through Crimean waters on June 23rd, but had also dropped bombs in its path.

The sequence of events is contested. Russia says that the British warship crossed 3km (two miles) into its territorial waters off Crimea, near Cape Fiolent (see map). When the Soviet Union broke up, Crimea became part of Ukraine. Russia occupied and annexed it in 2014. It thus claims the patch of sea in question, even though most countries, including Britain, regard the annexation as illegal. Russia said it “halted the violation” with warning fire and, 11 minutes later, with bombs dropped from Su-24 bombers.

Jonathan Beale, a BBC reporter aboard *Defender*, says that the ship did indeed transit Crimean waters, and deliberately so—presumably to show that it still considers the area in question part of Ukraine. Britain’s defence ministry said that *Defender* carried out a “routine transit” from Odessa to Georgia through Ukrainian waters. There were no shots fired at the ship, it says, nor bombs dropped in its path—just a previously announced Russian gun-

nery exercise nearby. Mr Beale says shots were audible, though presumed to be “out of range” of the ship, and that more than 20 Russian planes flew overhead.

Russian state television played up the incident. It portrayed it as part of an American plot to encircle and undermine Russia. (The Kremlin initially cited NATO aggression as justification for the annexation and subsequent fortification of Crimea.) Had *Defender* not fled, Russian commentators crowed, all that would have been left of her would have been the lifebuoys.

Whatever happened, it was out of the ordinary. Western countries routinely decry Russia’s occupation and annexation of Crimea—most recently at a NATO summit on June 14th. On June 23rd the European Union extended economic sanctions on



# Charlemagne | Belgitude: the art of Belgian zen

*A rogue soldier explains life in Europe's strangest country*



ALLOWING A SOLDIER to go AWOL is a misfortune. Allowing a soldier to go AWOL armed with stolen machineguns, four rocket-launchers and a pledge to “join the resistance” and kill Belgium’s top virologist looks like carelessness. The tale of Jurgen Conings, a 46-year-old army sharpshooter, who disappeared in May, has diverted Belgium. A month-long manhunt featuring special forces from five countries, drones and sniffer dogs turned up nothing. Instead, Mr Conings’ body was found on June 20th by a local mayor. He was mountain-biking nearby and noticed a smell.

Stuff happens in Belgium. From the outside, it is a grey country famous for fries, Magritte, chocolate and as the home of the EU—a project whose entire ethos is making European history one of dull process rather than bloody war. From the inside, it is chaos, to the point that a tooled-up anti-lockdown terrorist nicknamed “Belgian Rambo” roaming the woods seems par for the course.

This is, after all, a country where someone sabotaged a nuclear-power station in 2014, without causing too much of a stir. A reputation for slack policing and arms-smuggling made it a perfect hub for Islamist terrorists, who killed scores between 2015 and 2016 in Belgium and France. This traumatised French society, but left much less of a mark on Belgium. Sometimes the disorder is merely amusing—trains being delayed because of a fire at a waffle factory, for example. Or when officials blamed the destruction of blueprints for Brussels’s tunnel system on hungry (and undiscerning) mice. Surviving Belgium requires a certain state of mind. Call it Belgian zen: an ability to cope with a way of life that is sometimes disturbing, sometimes wonderful, but always weird.

Belgian zen starts with being comfortable in absurd situations. Across social media, groups supporting Conings sprang up, hailing the terrorist as an anti-lockdown hero. Marc Van Ranst, the virologist Conings had threatened to kill, joined one to wind up folk supporting the idea of his murder. (“I thought I’d come...to see what creativity bubbles up here,” wrote Mr Van Ranst.) This is a noble Belgian tradition. Paul Vanden Boeynants, a butcher who became Belgium’s prime minister and was later convicted for fraud, was kidnapped by a gang of self-styled socialist revolutionaries in 1989. After a month missing, he appeared in a bizarre joke-strewn press conference that cleared up little. Clips from it were then

turned into a hit single by the Brussels Sound Revolution.

Ironic detachment is a form of self-defence. Belgium has been attacked for as long as it has existed. Expats arrive, write rude things about their hosts, and then leave. During a brief stay, Karl Marx dismissed Belgium as “the snug, well-hedged, little paradise of the landlord, the capitalist and the priest”. Charles Baudelaire, a French writer, spent the final few years of his life in Brussels and planned a book on how he hated the city (“Capital of apes”), the country (“snivelling little ragamuffin”) and its people (“extraordinarily scatter-brained, amazingly thick-headed”). Writers in exile have been replaced by EU-wallahs who moan about life in a country with 200 days of rain a year. Those outside Belgium’s tax-light bubble of international organisations rail against a government that takes more than half of its citizens’ earnings. The constant Belgium-bashing is met by a defensive crouch.

Belgian zen is necessary for domestic reasons, too. Disorder can dominate daily life. Whereas other countries suffer from a “computer says no” attitude, Belgium has artisan bureaucrats, who can make obstacles appear or disappear at a whim. No two interactions with a Belgian official are the same. In this way, a surplus of bureaucracy leads to anarchy rather than conformity, points out David Helbich, the artist behind *Belgian Solutions*, a bestselling book on the haphazard fixes that dot the country. The book, in its sixth edition, takes the readers through the strange compromises of Belgian design, which has led to bollards in the middle of bike paths and has left Brussels as possibly the only European capital with a urinal on the side of a church.

Understanding Belgian policymaking requires a metaphysical outlook. Belgium is an experiment in quantum governance, with the state simultaneously everywhere and nowhere. This country of 11m people has a nest of parliaments: a federal one, one each for its three regions, along with ones for the French, Dutch and German-speaking communities. Government is duplicated rather than deepened by levels of public spending that are among the highest in the EU. In Belgium responsibility is shared between so many layers that ultimately no one is in charge.

## What is dead may never die

The country is remarkably durable as a result. It has survived happily without a federal government for up to two years at a time. In Flanders secessionist parties such as Vlaams Belang, the far-right outfit supported by Conings, scoop up almost half the votes. In some ways, secession has already happened. From cradle to grave, the lives of Belgium’s divided communities barely overlap, with different schools, media, language and lifestyle. Its international borders are almost invisible, yet its internal ones are unignorable, as Tony Judt, a historian, pointed out. Secession would be simple, but pointless. Belgium offers a lesson in stability through chaos. Even its demise would be serene. It is the world’s most successful failed state.

Belgian zen is possible because of this strange success. Belgians are almost as rich as Germans and better off than Britons or the French. Their health care is excellent. Property is cheap; wages are high. A Belgian life is, on average, long and prosperous. In such circumstances, a heavily armed soldier roaming the woods can be brushed off with dark jokes. Partly this is luck. Belgian authorities worried enough to put Conings on a watchlist, yet he was still able to disappear with enough weapons for a massacre. In the end, it was just another strange chapter in a rather odd book. As long as Belgium avoids true tragedy, nothing will disturb Belgian zen. ■



## Procurement

# How to spend it

### Procurement reforms offer a glimpse of Britain after Brexit

“NO PROCUREMENT, NO lawyers, no meetings, no delay please—just send immediately,” wrote Dominic Cummings, Boris Johnson’s then-chief aide, as he dispatched a grant of £530,000 (\$740,000) to researchers at the start of the pandemic. Those who feared Brexit would spell protectionism, government bloat and vanity projects have found much to dislike in Mr Johnson’s approach to procurement. While campaigning for election in 2019, he promised a “Buy British” policy for state contracts once Britain was freed from European Union rules. On June 9th a judge declared that a contract for focus groups had been tainted by “apparent bias” and ruled it unlawful. Jolyon Maugham, the campaigning barrister who brought the case, has more under way over what he terms “institutionalised cronyism”.

The government’s plans for dramatic post-Brexit regulatory divergence are still blurry. But proposed legislation on public procurement brings the vision into sharper focus: a mixture of administrative reforms that could have been delivered within the EU, and legal tweaks that could not.

They are neither a wholesale rending of red tape, nor trivial tinkering. The EU’s overarching principles of value for money, transparency and fair competition remain, but procedures will be simplified. Central government will become more powerful, with its buying power directed to meet Mr Johnson’s priorities. At the same time, checks on the executive will be weakened, at a time when a reputation for waste poses a growing political risk.

The modern procurement regime is the legacy of Margaret Thatcher, who brought

compulsory competitive tendering to Britain’s councils and hospitals. Arthur Cockfield, Britain’s European Commissioner of the day, embedded it across the continent. Procurement now accounts for 32% of Britain’s public spending, a little above the average for the OECD, a club of rich countries.

Thatcher’s revolution rested on the idea that the market provides a degree of efficiency that governments cannot achieve alone. But that requires competition, which is often lacking, with some departments reliant on a few giant IT and construction firms. The result is market concentration, less innovation and more risk. Carillion, the government’s second-largest supplier when it collapsed in January 2018, had around 420 contracts, including for serving school dinners, building railways and cleaning prisons.

Lord Agnew, the minister behind the latest reforms, says that simplified procedures will make bidding less daunting. That should attract smaller suppliers, increase competition and improve resilience. Firms will need to submit the common information needed for procurement just once on a single platform. Authorities will be obliged to publicise upcoming contracts, and make data on their purchasing much more accessible.

Mr Johnson’s plans to “Buy British” are more modest than his liberal colleagues feared. Britain is a party to the Agreement on Government Procurement at the World Trade Organisation, and to additional competition measures in its deal with the EU. ▶▶

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▶ That means not discriminating against foreign bidders for most contracts. But more of the government's £290bn procurement budget will be nudged towards smaller British firms, as part of Mr Johnson's "levelling up" agenda, which has seen spending rules tweaked to direct state funding to less-productive areas. Officials will be able to reserve low-value contracts for local firms. Such explicit carve-outs would probably have violated European law.

Buyers will be told to place much more weight on "social value" when comparing bids, and to take account of the government's goals of cutting greenhouse-gas emissions and improving skills. They will not, ministers stress, have to pick the cheapest bid. The Competition and Markets Authority, Britain's antitrust regulator, has made approving noises: it says overemphasising cheapness can encourage big contractors to put in below-cost bids, thus locking out smaller competitors and becoming entrenched. A new enforcement unit will monitor compliance and create a blacklist of failing contractors.

Britain had already started to move in this more *dirigiste* direction. As prime minister between 2010 and 2016, David Cameron championed small traders and elevated social value. But writing new laws is much easier than changing the behaviour of the health authorities and local governments that control the bulk of spending, particularly when budgets are tight, says Tom Sasse of the Institute for Government. "In the last ten years the broad signals from government have been: 'We want you to focus on social value, but actually we're going to cut your budget by a third.'"

Shifting from objective measures such as cost to more subjective ones also increases the risk of cronyism. Moreover, the planned legislation loosens restraints on ministers and officials. A "crisis" clause will give them more freedom in an emergency than is offered by EU law. (In his newsletter Mr Cummings, now out of government and raging against it, says he was right to send the "no-procurement" email, and that "due process" during the pandemic was "killing people".) The government thinks that frivolous legal cases brought by losing incumbents clog up procurement and deter small firms. It proposes new fast-track procedures, and a cap on the damages available to wronged parties.

The view in government is that the strict EU regime reflects fears about corruption that are unjustified in Britain. Mr Maugham says the upshot of capping damages will be fewer legal challenges, and more cronyism. One lawyer likens the British state to an old house, propped up for decades by a scaffolding of European law. Only when that is removed will it become clear whether the timbers are still sound, or rotten through. ■

## Politics in Northern Ireland

# A Unionist Pootsch

BELFAST

**Edwin Poots's hasty exit reveals the parlous state of devolution**

WHEN EDWIN POOTS was chosen as leader of Northern Ireland's largest political party on May 14th, he described politics as "a rough-and-tumble game". Defending his role in ousting his predecessor, Arlene Foster, as party leader and Northern Ireland's first minister—that is, joint leader of its devolved assembly in Stormont—he said: "I would assume that at some stage it may well happen to me." After he had spent just 21 days in the post, it did.

The proximate reason was a row over the status of the Irish language. Mr Poots needed support from Sinn Fein, the main Irish-nationalist party, to ratify his choice of first minister. An Irish-language bill disliked by his Democratic Unionist Party (DUP) was the price. On June 17th the government in Westminster said it would legislate on the issue if Stormont refused to do so—a promise accepted by Sinn Fein, and by Mr Poots, who feared an election drubbing for the DUP if the devolved government collapsed. But not by his party: hours later just 15% of DUP legislators voted for the deal. His position untenable, Mr Poots stepped down that night.

But the deeper reason for Mr Poots's resignation is the hard Brexit that the DUP made possible. After Theresa May failed to get her Brexit deal through in 2019, the party backed Boris Johnson to replace her, at-

tracted by his vision of a United Kingdom set adrift from the European Union. That miscalculation is now tearing it, and Unionism, apart.

The deal signed by Mr Johnson took Great Britain out of both the single market and the customs union, but avoided a hard border on the island of Ireland by, in effect, leaving Northern Ireland in both. That meant a new customs border in the Irish sea. Before Brexit, Mr Johnson had vowed never to accept such an arrangement. The broken promises have left Unionists feeling betrayed. They had seen in Mr Poots, a creationist from the DUP's hardline wing, someone who would stop the compromises and concessions, says David Campbell, the chairman of the Loyalist Communities Council (LCC), a (legal) umbrella group for illegal paramilitary organisations.

The row comes at the point in the year when it is most likely to inflame tensions. July 12th is Unionism's biggest festival, celebrating the victory in 1690 of William of Orange, a Dutch Protestant, over his rival for the English throne, the Catholic King James. The Reverend Mervyn Gibson, Grand Secretary of the Orange Order, which promotes loyalty to the United Kingdom, says the Order will "look at what action we'll take after the 12th". Options include protests, breaking off relations with the Irish government and seeking to bring down the devolved executive.

This year, the centenary of Ireland's partition, should have been a gala one for Unionists, who have managed to stave off all calls for reunification. The most recent results of a long-running survey, Northern Ireland Life and Times, published on June 10th, found that just 30% of people said they would vote for Irish unity tomorrow. But it also found that Protestant support for the power-sharing that re-established the parliament in Stormont in 2007 had fallen from 72% that year to 58% now.

Sir Jeffrey Donaldson, the relatively moderate Westminster MP expected to become both the DUP's leader and the first minister, will struggle to reimpose party discipline. A snap election for the devolved assembly is a distinct possibility, and would probably see Sinn Fein emerge as the largest party. Doug Beattie, the leader of the less hardline Ulster Unionist Party, has said that if Stormont cannot be restored after an election, devolution will be over for good. But power-sharing is probably the only way that Northern Ireland can survive within the United Kingdom in the long term.

Even staunch Unionists are struggling to keep the faith. "We are the unwanted children of the Union," says Wallace Thompson, one of the founders of the DUP in 1971. "Unionism is in a dark place, and the old shibboleths and 'No Surrender' slogans simply don't cut it any more." ■



Poots walks

# Bagehot | Growing pains

*The government says it wants an economic boom. Its core voters are less keen*



**T**HE MODERN Conservative Party has an emotional range of just two notes: hubris and panic. Before the Chesham and Amerham by-election on June 17th, it was boasting that the entire country, apart from decadent cities, would soon be painted Tory blue. After the vote, which saw a Conservative majority of more than 16,000 flip to a Liberal Democratic one of more than 8,000, it is contemplating ruin as long-time Tory voters in the shires flee horrors such as new high-speed rail links and houses, and northerners briefly attracted by Brexit return to the Labour fold.

Both hubris and panic are overdone. An opinion poll published on June 21st put the Conservatives 11 points ahead of Labour—making well over 100 poll leads in a row. Under the lacklustre Sir Keir Starmer, Labour is treading water. As their coalition with the Conservatives from 2010 to 2015 fades into distant memory, the Lib Dems have returned to type as a protest party. A rising Green Party is further splintering the anti-Tory vote. But that by-election did demonstrate something: the Conservative Party has a serious problem with the politics of growth.

Governments love growth for the obvious reason that the more of it there is, the healthier the public finances and the easier it is to do delightful things like cut taxes and increase public spending. But they also fear it because it annoys people. High immigration, both a cause and consequence of growth, bothered many Britons enough that they voted for Brexit. And there is nothing like a new housing development or railway line to get normally mild-mannered types angry and organising.

This universal problem is particularly acute for the Tories. Boris Johnson came to power by promising voters that his version of Brexit would allow much more spending on the things they cared most about—largesse for the National Health Service and a battalion of new bobbies on the beat—while keeping taxes low and pensions high. He is a have-your-cake-and-eat-it type of politician who sprays around promises for flash projects: a bridge from Scotland to Northern Ireland! A new royal yacht! Add to all that the vast, unplanned spending on tackling covid-19 and you get a fiscal nightmare. Without faster growth, only higher taxes and lower spending can bring that nightmare to an end.

But Mr Johnson's voters are ambivalent about growth: theoret-

ically in favour, perhaps, but opposed if it impinges upon their lives. The party faithful are like J.R.R. Tolkien's hobbits, who desire nothing more than to live in a well-maintained hobbit hole overlooking river and meadows, and for nothing to change. More than half of Tory voters in the 2019 election were over 55, and a third were retired. A disproportionate share owned their homes and were in defined-benefit pension schemes. For them, growth is all downside. If the economy stagnates they are still snug and cosy, but if it booms they may find their trains overcrowded or their views destroyed.

Squaring the need for growth with voters suspicious of it would be hard enough if growth were easy to come by. But many economists think that the ageing West is entering a long period of Japanese-style stagnation. After a brief post-pandemic boom, they expect growth to settle at around 1.5% a year, much lower than the 2.7% of the early 2000s, let alone above 3%, as in the 1960s. They doubt that policymakers have found a new formula to replace the free-market orthodoxy of recent decades, now out of fashion. And once again these problems are particularly acute in Britain. It long ago consumed the low-hanging fruits of privatisation and deregulation. What remains is shrivelled and hard to reach.

The government is deeply divided on these issues. Mr Johnson is instinctively on the side of big government. He has compared himself to Michael Heseltine, Margaret Thatcher's leading critic in the 1980s, who promised to "intervene before lunch, tea and dinner". Rishi Sunak, his chancellor, is more market-oriented, worrying that the prime minister's commitment to "levelling up"—that is, using policy and spending to encourage growth in left-behind places—could easily lead to 1970s-style waste and bail-outs for failing business.

The government has a few decent growth-promoting ideas. It is right to plan to spend more on infrastructure in the north, which has long been short-changed. Improving Britain's dismal vocational education and capitalising on its excellence in the life sciences would be worthwhile, too. But these will require what Max Weber, a German sociologist, called the "slow boring of hard boards", not just slogans and speeches. They will also require taking on the hobbits and, far from levelling up, probably increasing regional disparities. Turning Britain into a scientific superpower, for example, would be best done by focusing development on the already crowded and wealthy golden triangle of London, Oxford and Cambridge.

## Digging in

But confusion at the top of government combined with resistance from the Tory electorate may make the slow boring of hard boards impossible. Policies will be torn apart between prime minister and chancellor: insiders complain that Mr Johnson's big promises are subverted by Mr Sunak failing to find the funds. Hobbits in the shires will argue that houses are certainly needed—but should be built in the north or in cities, not in their own backyards, though that is where prices are highest and demand is strongest. Last year a backbench revolt forced the government to abandon a house-building algorithm intended to take politics out of planning.

That may leave only symbolic policies that do little for growth, such as the free ports that Mr Johnson recently highlighted as one of Brexit's main dividends. The party faithful may be happy, and the Tories may even keep winning. But the children of Brexit voters in left-behind places will still be left behind, and those of the shire hobbits will be unable to afford holes of their own. ■



### Data collection

## Flying blind

**Covid-19 has stymied governments' efforts to collect data. But it may also spur innovation**

**I**N EARLY JUNE Britain's long-suffering Europhiles got a rare taste of *Schadenfreude*. Tim Martin, a forthright Brexiteer who is the boss of J.D. Wetherspoon, a chain of pubs, announced that Britain ought to create a more liberal immigration policy to allow more Europeans to move there to work. Over the past 18 months hundreds of thousands of European immigrants, many of whom worked in pubs and restaurants and lost their jobs when everything closed during covid-19 lockdowns, have gone home. Brexit means that many cannot return. He denies it, but Mr Martin's establishments are almost certainly suffering from the staff shortages afflicting the rest of the British hospitality industry.

Unhelpfully, no one knows how many Europeans have departed. Britain imposes no exit checks at its borders. Foreigners do not have to register their residency as they do in Belgium and France. The British government's main source of information on migration is the International Passenger Survey (IPS), conducted by the Office for National Statistics (ONS). In normal times, researchers with clipboards at airports ask

around 700,000 people each year why they are entering or leaving the country. On the basis of this they estimate migration to and from Britain. Between March 2020 and January 2021 covid-19 restrictions meant that the survey was suspended, so no one knows how many people left.

The IPS is one of many surveys to be wrecked by the pandemic in Britain. The best crime statistics are also based on a survey, which is also now conducted by phone. Victims of crime tend to be poorer and may be less likely to answer the phone, so the survey is probably less accurate.

Wonks elsewhere are worried, too. Fully 150 countries were scheduled to hold censuses during 2020 or 2021. Those that went ahead, such as America, may find the results less accurate than usual because lockdowns made it hard to reach some people. Those that delayed censuses, such as Brazil, will have to wait for the crucial information a census normally provides.

All of this has profound consequences for policymaking. "Officials of the modern state are, of necessity, at least one step—and often several steps—removed from the

society they are charged with governing," notes James C. Scott, author of "Seeing Like A State", a critique of government schemes planned with incomplete knowledge. Civil servants and politicians rely on large amounts of data to make decisions affecting millions. Never has that been more true than during the pandemic. Enormous blind spots have developed. And yet, eventually, the pandemic may accelerate a shift already under way, towards smarter, more resilient models of data collection.

Like businesses and other government agencies, national statistics offices had to adapt fast to the pandemic. According to a survey of such bodies by the UN and World Bank last year, 90% of their employees were told to work from home. A surprising amount of important data is still collected in fairly old-fashioned ways—by asking people questions in person. Some 96% of face-to-face data collection was stopped in May last year. By July, only a quarter had resumed. Agencies adapted. Some found other ways to gather information. But not all. The damage was particularly acute in poorer countries, where a lack of money meant that staff often did not have the IT equipment or space to work from home.

In rich countries, assessing the economy has been tricky. Measuring inflation has been especially hard, notes Paul Schreyer, chief statistician of the OECD, a club of mostly rich countries. Normally officials visit shops, restaurants and even vending machines to check the price of a "basket" of goods. But with restaurants, ▶▶

shops and offices closed, people's spending habits changed radically, and inflation counters had to change as well. This year Britain added the prices of "men's lounge-wear bottoms" and deleted the price of "staff restaurant sandwiches". Alberto Cavallo of Harvard University created "covid consumption baskets" which suggested that America's consumer price index underestimated the inflation rate, especially early in the pandemic, as consumers spent more on food and categories with higher inflation. Headline measures of inflation are now probably mostly right, reckons Mr Schreyer, but, though some big price swings, such as a recent spike in the price of used cars, may be picked up, others could be missed.

Unemployment data are also a problem. In Britain they are based on the Labour Force Survey (LFS), which typically samples 33,000 households using face-to-face interviews. During the pandemic it has had to rely on phone calls, which are less likely to pick up itinerant or younger workers—a disproportionate number of whom have lost their jobs. Employment estimates from the LFS now show different figures from real-time data from payrolls and the Workforce Jobs Survey, which asks businesses if they have fired people (see chart). Using such figures to make economic policy, "the Bank of England and the Treasury must just be a little nervous," says Guy Goodwin, head of the National Centre for Social Research (NatCen). In other rich countries, furlough schemes and changing eligibility rules for unemployment benefits have muddied the picture.

In poorer countries data-gathering was often already patchy. That has made responding to the pandemic even harder. South Africa has recorded 58,000 deaths due to the coronavirus, but a total of 170,000 excess deaths. Many other countries in Africa do not have good data on deaths at all, so no one knows how many people have died of covid-19 or when. Poor data have also made it hard to judge the economic impact. In Brazil concerns about official statistics led the country's biggest bank, Itaú, to create its own unemployment indicator to use instead of the government's labour-force survey.

The United Nations refugee agency, UNHCR, says it has struggled to count refugees, even as wars have accelerated in places such as Ethiopia, Congo and Yemen. Normally, humanitarian staff would physically find displaced people, count and interview them. But the pandemic has meant contacting people by mobile phone.

Some of the problems of poor data will be rectified as surveys restart. But the impact of some will last years. America's and Britain's censuses are conducted once a decade, but their data are used for many other surveys. Since both were carried out dur-



ing lockdowns, the picture they paint will be an unusual one. In Britain the census asks people how they get to work. Answers inform decisions on housing and transport. The census asks only where they were working that day. Most people were, by law, sitting at home.

In America much of the in-person counting that would have normally happened was cancelled. Census workers still visited homes, but they could not go to sports matches or churches as they normally would to persuade people to fill in forms. That means higher proportions of some groups, such as ethnic minorities and the poor, may have been missed. "The jury is still out on whether there is disproportionate undercounting," says Terri Ann Lowenthal, an expert on federal statistics. But she thinks there probably is. Since the distribution of congressional seats and electoral-college votes is based on census data, that is troubling politically. It also creates problems for cities that rely on federal funding linked to population.

The pandemic has, however, also accelerated innovation. Even before it began, the decline of landlines and the rise of

spam-calling on mobiles meant that fewer people would answer calls from researchers. The growing complexity of the digital economy meant that measures of inflation relying on visits to shops and cafés did not reflect how money was actually spent.

America's Bureau of Labour Statistics has been "grappling with the challenge of a transition to other approaches", says Alex Engler of the Brookings Institution, a think-tank. To check inflation data, it has experimented using "big data", recording prices and sales of goods automatically scraped from websites and administrative records. In Britain the ONS has used credit-card data to try to judge economic activity more quickly, and survey data from an app, Teacher Tapp, to judge how much education children were losing, in order to adjust productivity figures.

In future, suggests Tom Forth of The Data City, a consultancy, missing data could be reverse-engineered by using instantly available commercial transport data. At the start of the pandemic, data from Citymapper and Google, gathered from people searching for directions, showed how much transport use had fallen. But with economies reopening, those data could also be used to work out how people are getting to work, in a timelier and cheaper way than running a census.

Since 1968 Denmark has kept a central register of every person in the country, so it is able to estimate population changes quite reliably without a census or a survey. Britain and America, which do not have identity cards or registration, cannot.

But the Danish model only works if the state counts people accurately—which Denmark's might, but America's surely does not. And using private sources raises concerns about whether firms will keep providing data. Mr Goodwin of NatCen notes that, though many surveys have suffered, "the big core data" have been collected through surveys. For example, in just a few weeks in April 2020, Britain's ONS created from scratch an infection survey to estimate the spread of the virus. A representative sample of people have their throats swabbed each week and tested for the virus; the results show how the infection spreads without being skewed by, for example, changes in testing rates. By contrast, measures of infectiousness that relied on things like people googling their symptoms proved less useful.

In future, governments will probably rely on a mix. To be able to make good policy, they need as much accurate information as fast as possible. Many countries have skimmed on data-collection budgets, thinking it old-fashioned. Britain has considered cancelling its census. Donald Trump's administration starved the census bureau of funds. The pandemic has shown how short-sighted such cuts are. ■







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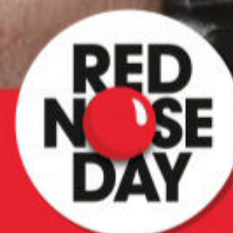
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### The future of mining

## Rocks and hard places

**Big miners are showing uncharacteristic discipline amid soaring metals prices. That could be bad news for the climate**

**H**IGH IN THE mountains of southern Peru lies Quellaveco, a vast open-pit copper mine. It is one of the world's largest untapped deposits of the red metal. Anglo American, a mining giant and its majority owner, has, along with another investor, spent over \$5bn getting it up and running. It is expected to come online in 2022. Once operational it will add more than 10% to the copper output of Peru, the world's second-biggest producer of the stuff.

In the past when commodity prices were surging, as they have been of late (see chart 1 on next page), the world's miners would be piling into projects like Quellaveco. This time the notable thing about it is its uniqueness. Few of the diversified mining behemoths—Anglo American, BHP, Glencore, Rio Tinto and Vale—have big new mines in the works. That is partly because of the industry's long lead times; Anglo bought Quellaveco in 1992. But other forces, too, lie beneath the subdued investment. They will have consequences for the mineral-intensive energy transition towards a climate-friendlier world.

The big five miners consolidated their market power with a spate of huge mergers in the 2000s, just in time for China's emergence as a voracious consumer of metals.

The result was a 15-year supercycle of high prices. Miners splurged around \$1trn chasing higher volumes and mega-projects. Many proved disastrous—perhaps a fifth of that investment was returned to shareholders, according to one estimate. After a round of firings, a new generation of mining bosses promised to do better. In the past few years value, not volume, became the industry's watchword. “We will never lose our capital discipline,” vows Eduardo Bartolomeo, boss of Vale.

So far the miners have kept their promise. Although capital spending in the industry has grown since 2015, it is still 50% below its peak in 2012. Most of that has

gone on sustaining current output, not adding new capacity. Even as rising metals prices have padded profit margins, spending on exploration has stayed low, notes Danielle Chigumira of Bernstein, a broker (see chart 2). That is a break from the past.

Whether the sobriety lasts will depend on a fresh crop of CEOs. In the past 18 months three of the big five got new bosses. In January 2020 Mike Henry took the reins at BHP. A year later Jakob Stausholm became boss of Rio Tinto, after his predecessor was fired in the wake of the destruction of a 46,000-year-old Aboriginal site in Australia. On July 1st Gary Nagle will take the top job at Glencore, ending Ivan Glasenberg's 19-year reign at the Swiss-based trader-turned-miner. Mark Cutifani, Anglo American's boss, may retire next year.

Their biggest challenge is responding to the energy transition. The companies have taken some defensive steps, getting out of the most carbon-intensive operations. Rio Tinto left the thermal-coal business in 2018. On June 6th Anglo spun off its coal operation. BHP and Vale have promised to do the same. Mines across the world are emitting less carbon dioxide, as operators invest in renewable power and try to electrify mining vehicles.

On paper, the energy transition could be a mining bonanza. If the world is to meet the Paris climate agreement's target of limiting global warming to 1.5°C above pre-industrial levels, the demand for metals such as cobalt, copper, lithium and nickel will explode. The International Energy Agency, a forecaster, calculates that an electric car needs six times the mineral content of one with an internal combus-

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► tion engine. The average onshore wind farm is nine times more resource-intensive than a gas-fired power plant.

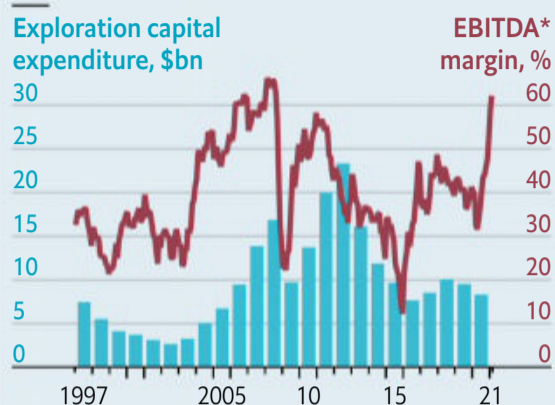
Shifting towards green metals is, however, proving harder than moving away from dirty minerals. The big-five miners' portfolios are weighed down with commodities from the past supercycle. Iron ore and fossil fuels still account for over half their mining revenues and three-quarters of their gross operating profits. High metal prices make potential targets look dear.

The other option, developing their own projects, also presents problems. One is investors. Since torching shareholder value the last time around, miners have been on a tight leash. Bosses "know the way to be sacked is to have one of these mega-projects", says one big investor. Much of the cash flowing in thanks to surging commodity prices is going back to shareholders in record dividends and buybacks. One mining executive fears that the fat returns have changed the make-up of his shareholders, attracting yield-hungry investors averse to growth projects.

Second, many energy-transition metals are simply too small a market for the big miners to bother with. Take lithium, which is used in batteries. In 2004 Rio Tinto discovered a large deposit in Jadar in Serbia. When the project comes online in a few years it may add 2-3% to Rio's revenue, reckons Liam Fitzpatrick of Deutsche Bank. That is not enough to move the nee-

## Treading softly

Worldwide mining firms



Sources: Bernstein; Wood Mackenzie

## Capital expenditure by type



\*Earnings before interest, tax, depreciation and amortisation

dle at a firm with a market value of \$140bn. The market for cobalt is even smaller.

The exception is copper. Its ubiquitous use in electrical wiring makes it one of the biggest metals markets by value even today. If the world is to meet its climate goals, demand for it could almost triple. However, finding a big new copper project is hard. Prospected deposits are getting smaller and ore grades worse. That makes mining them more expensive. Possibly except for swashbuckling Glencore, big miners increasingly steer clear of less-explored copper-rich regions like the Democratic Republic of Congo (DRC), which tend to be politically unstable. Even when miners find a seam, increasing output is a slog—and becoming more of one as public pressure mounts on miners to mitigate risks to the local environment and residents. The average mine takes over 15 years to move from discovery to production.

Then there is resource nationalism. The covid-19 pandemic has emptied government coffers. Miners worry that they will be asked to make up the shortfall. Chile, the world's largest copper producer, is rewriting its constitution. A new bill making its way through parliament could slap an 80% tax on mining profits. Peru's left-wing president-elect, Pedro Castillo, wants to tax mining profits at 70%. Zambia and Panama, two other copper-rich countries, are also considering higher taxes.

One thing that could loosen the mining supermajors' purse-strings is competition. Small firms, such as Lithium Americas and Global Cobalt, hope to strike it big. So do some non-Western giants. Norilsk Nickel, a large Russian miner, plans to invest \$15bn-17.5bn over five years (last year it spent \$1.7bn). Zijin Mining, a Chinese rival, also has big expansion plans. If prices stay high—which some mining bosses doubt given their rapid rise, as well as copper's slide since its peak in May—certain big projects in tricky places like the DRC may begin to look attractive again.

Price support could come courtesy of governments in the West. On June 8th the

White House published an inter-agency review of supply chains, arguing for more action in securing critical minerals, including lithium and nickel. The EU wants to do the same with its green industrial strategy. Mr Bartolomeo of Vale expects miners to forge more strategic partnerships with national authorities in the future.

If supply does not increase, however, shortages of some metals such as copper may prove unavoidable. Some of the shortfall could perhaps be met by substituting other metals or more recycling of previously used ones. But not all of it. Investors applaud the mining bosses' newfound restraint. The planet may prefer a return to past exuberance. ■

## American utilities

# Grid luck

NEW YORK

Electricity providers are scrambling to prevent summer blackouts

"THIS IS THE highest-risk cautionary warning." That is how John Moura, an official at the North American Electric Reliability Corporation (NERC) recently described the dangers facing America's power grid this summer. In May the expert group predicted an unusually scorching one in the west and south-west, with a worsening drought and wildfires. This witch's brew of forces, it warned, threatens a power grid that is already "vulnerable".

The boffins were quickly proven right. A dramatic heatwave has struck large parts of the American west. The prospect of power cuts is unpleasant for everyone. For electric utilities in the hot zone, it is a nightmare. The meteorological uncertainties wrought by climate change are compounded by the human factor, as people preparing for the scorches buy air-conditioning units that, if switched on, will hugely ►►

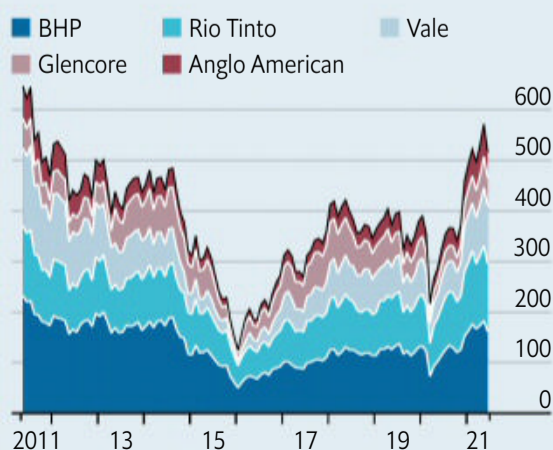
## Hard currency

World metals price index  
2016 average=100, \$ terms



## Selected mining firms

Market capitalisation, \$bn



Sources: IMF; Refinitiv Datastream

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▶ increase demand for power.

If that were not complicated enough, electricity providers face retroactive penalties if regulators decide they did not do enough to keep the lights on. Pacific Gas & Electric (PG&E), whose customers suffered blackouts as wildfires raged in northern California in the past two years, may need to pony up fines and legal-settlement fees of nearly \$150m for alleged mishandling of those outages. Utilities in New York are threatened with \$140m in penalties for alleged failures in responding to storms and demand spikes.

The utilities claim such punishments are unfair, pointing to their investments in the grid. In some respects, they have a point. Across the west, new clean-power capacity generation is helping to offset that lost as dirtier fossil-fuel plants are retired. American solar capacity has more than doubled in the past four years, exceeding 100 gigawatts (GW) for the first time. In the first quarter utilities installed 2.5GW of new wind capacity, chiefly in California, Oklahoma and Texas.

American electricity providers have historically put up big new power plants rather than experiment with distributed energy and demand management. As evidence emerges that these can help stabilise the grid and avoid rolling blackouts, their attitudes are changing, notes Rebecca Miller of Wood Mackenzie, a consultancy.

Southern California Edison, a giant utility serving the Los Angeles area, last year added 1.4GW of battery capacity. S&P Global, a research firm, calculates that California could have more than 2.8GW of battery storage on its grid before September, nearly five times more than in 2020. Texas could have about 1.4GW, an eight-fold increase. In March Bloomberg, a news outlet, reported that Tesla, an electric-car maker, has been secretly developing a 100-megawatt grid battery project outside

### Energy-deficient

Power and storage RD&D\* spending as % of GDP



Houston (code-named Gambit).

OhmConnect, a Californian startup backed by Alphabet, Google's parent company, is now giving away 1m smart thermostats to people who enrol in its automated demand-management service. The firm aggregates the energy saved by remotely turning down thermostats and otherwise cutting demand when the grid nears overload, sells it at peak prices to utilities and shares the gains with consumers. Leap, another startup, creates a "virtual power plant" by aggregating output from distributed power (ranging from electric vehicles to residential batteries). It plans to put 288 megawatts of flexible power onto the grid during the summer peak.

All this should help make America's grids more robust—eventually. Whether it is enough to avert power cuts in the next couple of months is another matter. For all the protestations about investing in their networks, American electric utilities have lagged behind European ones in spending on research and development of transmission and distribution (see chart). Until that changes, their customers had better get used to the heat. ■

### Chinese e-grocers

## Selling like hot cakes

HONG KONG

Investors cannot get enough of online produce-peddlers

WET MARKETS in China have suffered more than most businesses in the pandemic. After one in Wuhan was blamed as the source of covid-19, officials ordered others to shut. Shoppers have been reluctant to frequent bustling outdoor stalls selling fresh meat and vegetables. Many may never reopen—not least because they are being rapidly displaced by online rivals. The value of online sales of fresh produce in China, which amounted to 293bn yuan (\$45bn) in 2019, before the pandemic, may rise to 570bn yuan by the end of 2021 (see chart on next page). That would put e-grocers' share of fresh-food spending at 11%, double what it was before covid-19. It could hit 18% by the middle of the decade.

Until recently e-grocery was a small add-on to other e-commerce offerings of giants such as Alibaba or JD.com, rather than a big business in its own right. No longer. JD.com is busily adapting its logistics network, China's most sophisticated, to handle fresh produce. Last year Alibaba spent \$3.6bn on a grocery-store chain, and it has been building a network of supermarkets that can be used to get groceries to online shoppers. Pinduoduo, another big e-merchant, raised \$6bn in 2020 to boost its grocery operations. It ferries produce to neighbourhood shops where buyers can pick up orders, overcoming the problem of the costly last mile, says David Liu, the company's vice-president of strategy.

At the same time, challengers are taking a bite out of the market. Missfresh claims to control 28% of Chinese e-grocery deliveries that rely of distributed mini-warehouses: small, refrigerated neighbourhood storage centres, which the company is credited with inventing. By keeping the products closer to customers, Missfresh says it was able to fulfil orders in an average of 39 minutes in 16 cities during the first three months of the year. Dingdong Maicai, which has 10% of the domestic market and is the dominant e-grocer in the greater Shanghai region, has built a similar set of units. WM Tech, with a market share of around 17% in northern China, can count on the retail chops of its boss, Zhang Wenzhong, who founded Wumart as China's answer to Walmart in 1994. Like Alibaba, it can use its hundreds of retail outlets as warehouses.

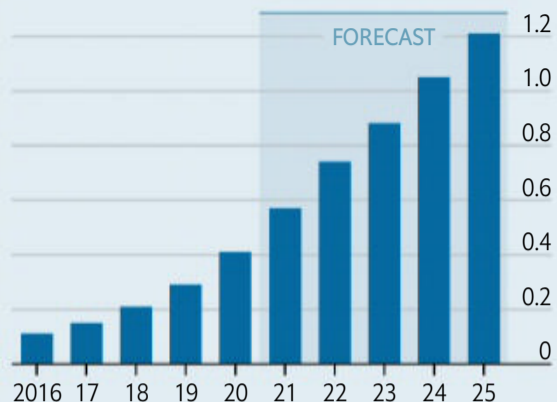
China's fragmented agricultural sector, a relative absence of industrial farming, poor transport links to rural areas and ▶▶



A sturdier grid? He's a fan

### A taste of the future

China, fresh-grocery e-commerce  
Gross merchandise value, yuan trn



Source: Dingdong prospectus

▶ patchy cold-supply chains beyond cities all add to the costs in what is already a business with wafer-thin margins. Missfresh, Dingdong and dozens of smaller rivals are burning cash as they scramble for market share in the hope of adding millions of new customers. The pair alone notched up a combined 9.7bn yuan in net losses during 2019 and 2020. WM Tech makes a profit, but that is thanks in large part to its conventional retail operation.

All this leads Arun George of Smartkarma, a research firm, to fear a repeat of China's e-bike boom and bust, which left cities littered with clapped-out bicycles and investors with holes in their pockets. Adding to the uncertainty, Chinese authorities are paying closer attention to dominant technology firms, as well as to the plight of overworked scooter-borne delivery drivers. A government official recently went undercover to reveal their arduous 12-hour days for little pay. In January one desperate delivery worker set himself on fire over unpaid wages.

Pessimists like Mr George are, though, in the minority. Rural infrastructure is improving and the government may, despite the sting operation, prefer millions of drivers with tough jobs to millions of restive jobless. And the e-grocers have deep-pocketed patrons. Tencent, China's most valuable internet company, has backed both WM Tech and Missfresh. Dingdong has secured an investment from SoftBank, a free-spending Japanese technology group. Tiger Global, an aggressive American hedge fund, which bets on promising markets rather than single startups (see Schumpeter), is also bullish. It holds a 12% stake in Missfresh and a smaller one in Dingdong.

As for broader appetite for Chinese e-grocers, it is about to be tested. In June both Missfresh and Dingdong unveiled plans for initial public offerings in New York. WM Tech is eyeing a flotation in Hong Kong. The three companies could raise a total of \$2bn. That would be enough to keep them fresh for a while—but also to leave investors with indigestion. ■

## Universal Music Group

# Going solo

### The world's biggest record label heads for an IPO

MUSIC FANS have had to get used to seeing stars perform via video-link, and the same was true of the big performance held on June 22nd to decide the future of Universal Music Group. Shareholders in Vivendi, the record label's parent company, tuned in to the annual general meeting to chorus their near-unanimous approval of a plan to spin off Universal as an independent firm. The label will launch as a solo act on the Amsterdam stock exchange in September.

The vote marked the end of a noisy battle for control of Universal, which accounts for 30% or so of global recorded-music sales. In January Tencent, a Chinese media and e-commerce giant, increased its stake in the label to 20%. Earlier this month it emerged that Daniel Loeb, a New York hedge-fund billionaire, had built up a stake in Vivendi. Then on June 20th Bill Ackman, a rival hedgeie, announced that his special-purpose acquisition company was to purchase 10% of Universal for €3.5bn (\$4.2bn), the biggest SPAC deal so far (and a particularly complex one). Vivendi will itself hang on to 10% of the label; the remaining 60% of shares will be distributed among Vivendi's shareholders.

The enthusiasm of Universal's fan club is explained by the recent strength of the recorded-music industry, powered by streaming. Between its lowest point in 2014 and last year, worldwide revenues rose by 54%, to \$21.6bn. Some two-thirds

of these revenues accrue to the three "major" record labels: Universal, Sony and Warner. Only Warner is publicly listed; its share price has risen by 16% since its own initial public offering a year ago.

Universal may strike investors as more appealing still. Its back catalogue of 3m songs, by everyone from the Beatles to Lady Gaga, is twice the size of Warner's. Its slug of the recorded-music market is creeping up. That scale gives it more bargaining clout with streamers like Spotify. And at 17%, its operating-profit margin is five points higher than Warner's and rising, according to Bernstein, a broker, which expects the spun-off company's value to surpass the €35bn implied by the Ackman deal.

What of the remains of Vivendi? "Black-box governance, an uneven track record of value creation and a motley crew of assets," sums up Matti Littunen of Bernstein. He warns of share-price volatility in September when growth investors dump Vivendi stock. Some shareholders worry that Vincent Bolloré, who controls the group via a 27% stake, may try to tighten his grip with a round of share buy-backs that would increase the relative size of his holding.

For Universal, the question is whether it can keep the hits coming. Growth will slow as the streaming market matures. Rich countries are already nearing saturation point. In April Spotify raised its subscription prices for the first time, but it is unclear how much higher they can go (Mr Littunen points out that the price of CDs never rose after their launch in the 1980s). Music faces competition from new audio formats, notably podcasts, whose share of total listening has grown during the pandemic. And a rising share of streaming revenues goes to self-published artists, who—like Universal—have decided that they can make a better go of it alone. ■



Lonely planet



## Pandemic labour markets

# Making short work of it

BERLIN

## Companies have mixed feelings about Germany's furlough scheme

FOR THE first time in its august history of more than 100 years, the Adlon, a glitzy hotel within sight of Berlin's Brandenburg Gate, used *Kurzarbeit*, a scheme in which the German government pays the bulk of wages of people who temporarily stop working or work reduced hours. "Our business was almost completely gone," explains Daniela Welter, the hotel's head of personnel, referring to the hard lockdown imposed last November that banned hotel stays for leisure travellers. Thanks to *Kurzarbeit*, the Adlon was able to save the jobs of all its 347 staff. Today it is hiring again.

*Kurzarbeit* dates back over a century and has been mimicked round the world during the covid-19 crisis. In Germany it has been stretched to unprecedented lengths. Whereas some 1.5m German workers at 56,000 firms were furloughed at the peak of the global financial crisis in May 2009, around 6m employees of 610,000 businesses took advantage of the scheme in April 2020, when lockdowns were at their strictest. Last month 2.3m people, or 7% of the German workforce, were still partially or fully furloughed, according to the IFO Institute, a think-tank. The cost to the federal employment agency is €35bn (\$42bn) and counting. In June Germany's labour minister announced an extension of the scheme until the end of September.

Workers and their representatives applaud the extension. A recent study by the IMK, the research institute of the Hans-Böckler-Stiftung, a foundation close to trade unions, found that *Kurzarbeit* saved 2.2m jobs at the height of the pandemic, compared with 330,000 jobs at the peak of the global financial crisis of 2007-09. As for the government, without the scheme it may have spent even more on its relatively generous unemployment benefits.

Employers are more circumspect. Most agree that *Kurzarbeit* has its uses. Sebastian Dullien, director of the IMK, says that it enables businesses to hold on to workers and restart seamlessly as the economy reopens, even as their American counterparts struggle to find staff. The BDA, one of Germany's two main employers' associations, welcomes the extension.

The lobby group nevertheless warns against funding the furloughs with higher unemployment-insurance contributions, which would add to firms' already high labour costs. More surprising, the BDA opposes the full payment of fur-

loughed workers' social-security contributions by the government until the end of the year, as demanded by the trade-union federation. This would reduce companies' labour costs but create "wrong incentives" to enrol in the scheme, the BDA cautions.

That in turn could have potentially undesirable consequences for the firms' competitiveness. Although companies pay more than 30% of the labour cost of furloughed staff, and so have no reason to keep entirely zombie employees on the books, the scheme can discourage businesses from adapting to the post-pandemic reality.

Research by Oliver Stettes of the Cologne Institute for Economic Research, another think-tank, found that firms which tapped *Kurzarbeit* were 15 percentage points more likely to cut jobs than those which did not. It is not as if the scheme encourages firing. The likelier explanation is that only the worst-affected companies, such as the Adlon or Lufthansa, Germany's flag-carrier, whose fleet was more or less grounded for months, chose to take part. That in turn suggests that if they can help it, German firms prefer not to. ■

## Corporate governance in Japan

# Machines and machinations

TOKYO

## What Toshiba's travails say about Japanese capitalism

"I THINK THIS will be theatrical, and we are concerned that it will be sensational," a senior official at Japan's Ministry of Economy, Trade and Industry (METI) warned an activist fund last year. The investors were pushing to put more outside directors on the board of Toshiba, a titan of Japanese industry. In the event, it was Toshiba's management that caused a sensation. An independent investigation published this month alleges that the company worked with government officials to squeeze shareholders ahead of its annual meeting in 2020. The fallout from the pressure campaign has already helped fell the chief executive, Kurumatani Nobuaki, and several board members. As the 145-year-old conglomerate prepares for this year's shareholder meeting on June 25th, its fate hangs in the balance.

Once a world-famous brand that manufactured Japan's first incandescent light bulbs and invented flash-memory data storage, Toshiba is now notorious mostly for scandals. Following a big accounting fraud and a ruinous investment in an American nuclear-energy company, it almost went bankrupt in 2017. It had to sell

the prized memory-chip business and issue new shares, putting the majority of the firm in the hands of foreign investors. Effissimo Capital Management, a secretive fund based in Singapore and run by two long-time Japanese activist investors, became its biggest shareholder.

A subsequent accounting imbroglio at a subsidiary precipitated Effissimo's calls for changes to management and the board at last year's shareholder meeting. The management won a close vote, but counting irregularities clouded the results. After the company claimed an internal probe had found nothing awry, Effissimo called an extraordinary shareholder meeting earlier this year and won backing for the independent inquiry.

The affair holds broader lessons about Japanese corporate governance, and the protracted efforts to improve it. On the one hand, the report's contents offer plenty of grist for pessimists who believe that, for all the rhetoric about concern for shareholders, Japan Inc remains largely unreformed. Drawing on interviews and email and phone records, the report claims that Toshiba executives and some government officials worked "in unison" to prevent shareholders from fairly exercising their rights. Management discusses vocal funds as troublesome enemies to be neutralised; one executive writes of Effissimo, "We will ask METI to beat them up for a while."

Government officials invoked new regulations on foreign investments that give the authorities the power to intervene on national-security grounds, but which investors worried might be applied to thwart uppity shareholders. The report suggests that is in fact how the law was used, observes Ezawa Kota of Citigroup, a bank. "It's more like fighting gear against activists."

The case has had a poisonous effect on market perceptions more broadly. "Japan ▶▶



Pining for the glory days

is about to exhaust all of the little remaining goodwill it has with the foreign investment community,” says Alicia Ogawa, a scholar of Japanese corporate governance at Columbia University in New York, who also advises an American fund in Japan.

At the same time, the fact that the activists have been able to produce and release an account of a national champion’s back-room machinations is itself a sign of shareholders’ growing clout. And it may be a mistake to extrapolate too far from Toshiba. The firm’s involvement in nuclear energy, chipmaking and defence makes it es-

pecially sensitive. METI sees ensuring the stable operation of such firms as within its remit under the new regulations; Kajiyama Hiroshi, who heads METI, insists it “did the right thing” to maintain the steady development of Toshiba’s strategically important businesses and technologies. “A handful of companies will never be fair game,” says Ms Ogawa.

For Toshiba, the coming weeks will be decisive. On June 25th its shareholders will vote on a new slate of directors; more dismissals seem imminent. After backing the management last year, Glass Lewis and ISS,

a duopoly of firms that advise investors on such matters, have recommended voting against several directors and the board’s well-respected chairman, Nagayama Osamu (who joined after the alleged misdeeds took place but was in place when the internal investigation was carried out). Given Toshiba’s mediocre financial performance in recent years, private-equity firms are circling. Some investors spy an opportunity: Toshiba’s share price has risen to levels not seen since 2015. They must be hoping that the company’s next act will bring better fortune to shareholders. ■

## Bartleby Workers on the march

*Labour may be gaining ground on capital*

THE CHANCE to take a summer holiday after the long lockdown is very appealing. So Bartleby was excited to book rooms in a pub-cum-hotel in the beautiful Yorkshire Dales in July. Not long after the booking, however, the manager called to warn that the restaurant and bar would be closed on the Wednesday night. “As you probably know”, she said, “it is impossible to find staff at the moment.”

The British hospitality sector has relied on overseas employees and is affected by Brexit as well as covid-19. The same is true of construction. Since 2017 the industry has seen a 4% decline in British-born workers and a 42% fall in those from the EU. Many foreigners returned home for the pandemic, which may mean 750,000 fewer total workers are available than in 2019, according to Michael O’Connor and Jonathan Portes of the Economic Statistics Centre of Excellence, a research outfit.

The shortfalls have prompted employers in the worst-affected sectors to raise wages, often by a lot. According to Reed Global, a recruitment firm, salaries at British hospitality and catering firms are up by 18% compared with April-June 2020. Pay in retailing has risen by 10% over the same period.

And Britain is not the only country beset by labour shortages. In America job vacancies are at their highest level for almost two decades. Manufacturers in eastern Europe are struggling to attract workers, with Hungarian wages up by 9.2% in March, year on year. Australian miners, Tasmanian fruit farmers and Canadian restaurateurs all report trouble with hiring. This has left workers with something they have long lacked: bargaining power.

It may all turn out to be transitory, as may the recent surge in inflation. But,

just maybe, the world has reached a turning point. For the past 40 years or so, the tide has strongly favoured owners of capital over labour. The decline of heavy manufacturing and the weakening of trade unions were part of this trend. So was the globalisation of capital and investment flows, which allowed businesses to shift production to countries with lower wage costs, such as post-communist eastern Europe and, critically, China.

It has been widely assumed that capital would continue to dominate, especially with the potential for technology and artificial intelligence to replace workers in the service sector, just as automation took its toll on manufacturing employment. Throw in the power of multinational corporations and the future for workers was caricatured as something out of George Orwell’s “1984”—“a boot stamping on a human face, forever”.

The political reaction to the pandemic suggests sentiment may have changed. Governments were quick to try to safeguard workers’ incomes, either by offering furlough schemes to subsidise wages or by

increasing and extending unemployment benefits. They are now pursuing higher taxes on companies. Politicians on both the right and the left are happy to bash business in the belief that this will appeal to voters.

Workers’ psychology may have shifted, too. Before the pandemic, employees who asked for flexible work schedules risked being seen as shirkers. Now they are in a stronger position.

Gerwyn Davies of the Chartered Institute of Personnel and Development, an association of HR executives, says Britain still has a pool of available labour; half a million fewer young people have jobs than before the pandemic. But if those workers are going to enter sectors like hospitality, they want more training and more flexible schedules. Janine Berg of the International Labour Organisation says her sense is that the vacancies are in low-wage sectors where earnings do not compensate for the perceived risks. The “reservation wage” of potential workers may have risen, forcing companies to be more generous to entice workers back.

Finally, demography is changing. In the 1980s and 1990s employers had lots of baby-boomers to choose from. Now, thanks to falling fertility rates, workers are set to become relatively more scarce. Over the next 30 years the working-age population will fall, as a proportion of the total: by three percentage points in America, five points in Britain, seven in the EU and in Japan, and 11 in China.

Maybe all those missing workers will be replaced by robots. But humans often want to interact with other people; many desperately press buttons when calling a company in the hope of hearing another voice. If companies have to chase scarce workers, labour may gain the upper hand over capital, at least for a little while.



# Schumpeter | A new Tiger in town

*How a hyperactive technology fund is changing Silicon Valley*



A FEW YEARS ago SoftBank rewrote the rules of venture capital (vc). The Japanese tech conglomerate was handing out cash left and right to startup founders. Leading venture capitalists held conferences to discuss how their industry could survive the SoftBank onslaught. As some of SoftBank's biggest investments unravelled, culminating in the collapse in September 2019 of the initial public offering (IPO) of WeWork, an office-sharing firm, Valley veterans gloated. It seemed to be just another "tourist investor", as one vc luminary dubs those who occasionally traipse through Silicon Valley looking to pick up sexy startups.

Now SoftBank is being upstaged by another brash outsider. Between January and May Tiger Global Management, a New York hedge fund that also invests in private tech firms, ploughed money into 118 startups, ten times more than it backed in the same period in 2020, according to Crunchbase, a data provider. Its portfolio now counts more than 400 firms, including several behind some of the past year's most eye-catching IPOs, for example Coinbase, a cryptocurrency exchange, and Roblox, a video-game maker. And, as it told investors in February, it is "searching for ways to make our investment flywheel spin faster". Its new vehicle aims to raise an additional \$10bn. That may be less than SoftBank's gargantuan \$100bn Vision Fund, but it is still an awful lot by vc standards—and the New Yorker may leave a more enduring mark on Silicon Valley than its deep-pocketed Japanese rival has.

Similarities between Tiger and SoftBank are easy to see. Both were backers of Alibaba, before the Chinese e-merchant went public and turned into a global giant. vc types commonly describe both firms as "aggressive", even "crazy". Once each identifies a target, it pounces; investment contracts are issued in days, skipping lengthy due diligence, often at valuations well above those suggested by conventional vcs. Just as SoftBank would occasionally sign ten-figure cheques when founders asked for eight or nine, Tiger Global sometimes talks entrepreneurs into taking cash when they do not need it. "Even after they have already invested they send text message after text message, asking whether they can put in more money," says one founder recently backed by the firm.

Tiger Global abhors such comparisons. And it is indeed distinct from the Japanese group in important ways. SoftBank only

got into tech investing in earnest a few years ago, having started out selling software, before moving into online services and telecoms. By contrast, Tiger Global has investing pedigree in spades. It is descended from Tiger Management, a hugely successful hedge fund founded by Julian Robertson, a Wall Street giant. It has been backing tech winners for nearly 20 years, both in China and, later, in America (with investments in, among others, Facebook). Over that period its funds have generated an average internal rate of return of 26% a year, twice that of comparable vc funds. Whereas Son Masayoshi, SoftBank's messianic boss, calls all the shots at his firm, Tiger Global is no one-man show. And its partners eschew Mr Son's embrace of individual founders based on a gut feeling in favour of a disciplined strategy centred on collecting a basket of firms in promising markets.

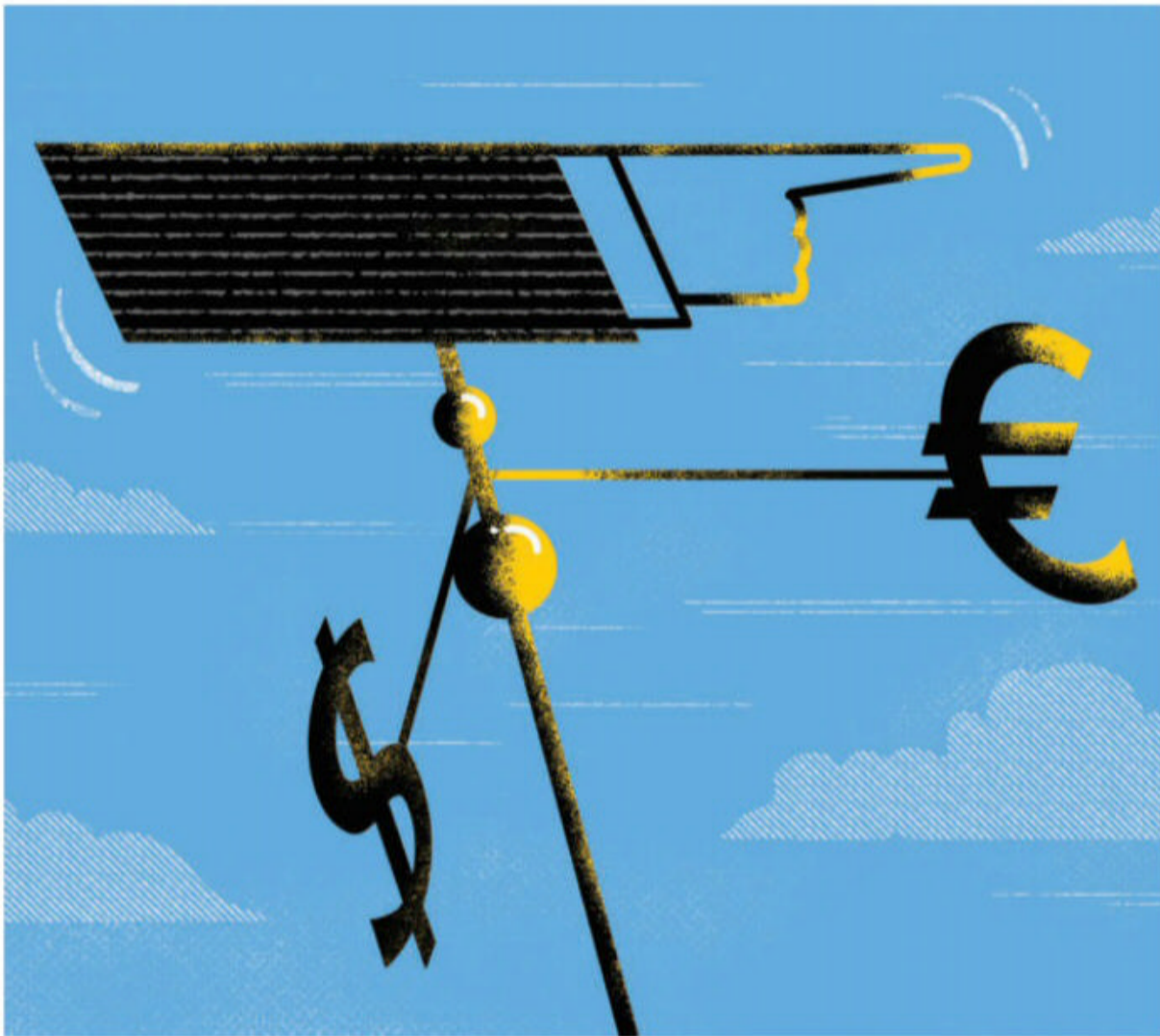
There is another difference. Whereas the arrival of Mr Son left denizens of Sand Hill Road in Palo Alto, where Silicon Valley vcs cluster, quaking in their Allbirds, they appear remarkably unfazed by Tiger's presence. Despite competing with Tiger Global for early-stage investments, many vcs consider it a force for good: a source of capital that helps their portfolio companies grow faster or start projects they may otherwise have forgone. Yet even if the New York firm follows SoftBank's trajectory and pulls back, which could happen if interest rates rise, capital grows scarcer and the tech rally fizzles, three factors that have contributed to its success are here to stay.

The first is the acceleration of dealmaking. Before the covid-19 pandemic, negotiations happened mostly in person, limiting the number of encounters. Meeting on Zoom and other video-conferencing platforms takes only a few clicks, allowing both founders and investors to talk to many more potential partners. In Silicon Valley, hardly a place known for foot-dragging, the common refrain these days is that "things have never moved faster." Keeping up with Tiger Global and its fellow New Yorkers such as Coatue Management and Insight Partners is an important reason.

Second, Tiger Global has tried to be more systematic in evaluating startups. Although the firm never asks for board seats, considering it a waste of time, it knows plenty about its investments, thanks to a growing array of ever better metrics with which to judge companies' performance. It has also created its own early-warning network to identify promising targets. If a new online service takes off in one region, for instance, it may be time to put money in a similar firm in another location. Many vc firms could learn a thing or two from this approach. "We are a bunch of horrible investors," grimaces another veteran venture capitalist. "More than half of us don't even return capital." This recognition is music to the ears of their put-upon limited partners.

## What the hand, dare seize the fire?

Tiger Global's final impact may be the most profound. It reflects a shift in the balance of power between investors and entrepreneurs. Traditionally, investors had the upper hand. Startup founders pilgrimaged to Sand Hill Road, seeking not just money but valuable advice that the best vcs would provide. Competition from Tiger Global and other tourists has forced Californian vcs to offer more generous terms, monetary and otherwise. That in turn has made entrepreneurs themselves more confident. "It's no fun to be an investor these days," sums up the boss of a startup preparing to go public. The question for moneymen in Silicon Valley (which remains overwhelmingly male) is less what startup to back and more whether a startup lets you invest. Quite the paw print. ■



The international role of the euro

## Euro visions

PARIS

Europe's currency aspirations are given a fillip by covid-19

WHEN THE European Union launched the euro two decades ago, economists wondered if the new currency might pull off a feat no other had managed in the post-war period: to challenge the mighty American dollar. However, reserve managers at the world's central banks, as well as businesses around the world, largely stuck with the greenback. Now Europe is having another go at establishing the bona fides of the euro beyond its borders. A significant step was taken on June 15th when €20bn-worth (\$24.3bn) of bonds was issued as part of the Next Generation EU (NGEU) scheme to boost European economies. Those bonds could yet rival American Treasury bonds as a safe asset of choice.

Currencies exist mainly to facilitate the transactions of people and businesses within the borders of the places that issue them. But having an international presence helps in many ways. For firms, having imports and exports denominated in their local currency rather than, say, the dollar, means less disruption when exchange rates inevitably see-saw. Issuing a curren-

cy that foreigners want to hold can make it easier for governments to raise money from them at cheap rates. That in turn drives down the cost of borrowing for firms and banks.

The euro is widely available outside the 19 countries that formally use it. About two dozen countries link their own currencies to it in some way, albeit mainly former European colonies and close neighbours. Between a third and half of all euro banknotes by value are held outside the euro area, according to the European Central Bank (ECB). Nevertheless, by the normal measures used to gauge international usage, it is a distant runner-up to the dollar.

Around a fifth of all foreign-exchange reserves owned by central banks, and a similar percentage of cross-border loans and bonds, are denominated in euros—the share for the dollar is about 60%. The euro's share of payments for transactions is much closer to that of the dollar (see chart on next page), unsurprisingly given that the EU is the world's biggest trader of goods and services. Still, commodities like oil

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and cotton are mostly priced in dollars.

In its first few years the single currency looked as if it might rival the post-war champion. By 2007 the euro even became the most popular currency in which to issue foreign-currency-denominated debt (for example by multinationals). It was not to last. The financial crisis that started that year prompted skittish investors to fall back on the dollar as their currency of choice. The euro-zone miasma that ensued, during which the very survival of the single currency came into question, seemed to vindicate their decision. Depending on the measure used, the euro has since flatlined or lost importance.

Europe now wants to have another crack, if not at overtaking the dollar, then at least at reducing the latter's dominance. Two changes in circumstances mean there is a chance the euro could gain ground.

The first is America's changing attitude to international economic policymaking—at least under the presidency of Donald Trump. His brand of jingoistic protectionism jarred with the obligations incumbent on the issuer of the world's reserve currency. Even under the more conciliatory Biden regime, Europe frets that its interests will not always be aligned with America's. Relying on the dollar is perceived as an even greater potential vulnerability than before.

In March euro-zone leaders said that boosting the currency's international use would help them achieve "strategic autonomy". The EU has been particularly irked to ▶▶

discover that businesses in the region were in effect forced to abide by American sanctions that Europe opposed, for example on Iran. America has used the need of big banks to have access to dollars to police their behaviour far beyond its shores. Those that have fallen foul of American edicts have incurred large fines.

Critics see this extra-territorial prerogative as an undue weaponisation of the dollar. That has encouraged a change of mind among those who have traditionally been resistant to boosting the euro's international role. In times of crisis, global reserve currencies tend to spike as investors seek a haven. Such unpredictable capital flows worried German monetary policymakers in the age of the Deutschmark; their scepticism carried over to the ECB. It has historically sought to "neither hinder nor foster" an international euro, but is now seen as more amenable to the idea.

The second change came, unexpectedly, as a result of the pandemic. Whereas the last global recession brought the euro to the precipice, on this occasion the swift actions of the ECB and national governments to support their economies were well received. Such battle-hardening has boosted the credibility of the euro in a crisis—a key attribute of a global currency.

Better yet, the bloc has responded to the crisis by tweaking the architecture of the single currency in ways that should bolster its international attractiveness. A big step was the creation of the NGEU scheme and the subsequent bond issuance. The bonds are backed, in effect, by the balance-sheet of all EU member states, thus making them roughly similar to America's Treasury bonds. This is a relative novelty in Europe, where borrowing has mostly been done by national governments, whose creditworthiness varies. The new pan-EU bond creates a way for investors to save in euros without taking credit risk (as they might were they lending to Italy, say).

The absence of such a "safe asset" had been one element hampering the use of the euro internationally. All manner of cross-border operations, from central-bank reserve management to companies borrowing money in a foreign currency, are underpinned by a liquid risk-free benchmark. The bonds of Germany have served as an imperfect proxy until now, but the NGEU issuance "contributes to making the euro a better substitute for the dollar", says Reza Moghadam of Morgan Stanley, a bank.

Not all barriers to more international usage of the euro have disappeared. For one, the "safe asset" may prove temporary: in theory, the last NGEU bond will be issued in 2026, though many think the scheme will be extended in some way. The sums of money are also small by global financial standards. Total EU debt outstanding will peak at around \$1trn, while America has

over \$20trn of debt outstanding that investors can trade.

And some of the single currency's idiosyncrasies remain. The euro area lacks some of the important elements of a coherent financial union, for example risk-sharing if banks totter. Lack of fiscal redistribution—the NGEU notwithstanding—means a rerun of the euro-zone crisis is still possible. Capital markets are still thin and balkanised, unlike those of America. The lack of a single financial hub after Brexit does not help.

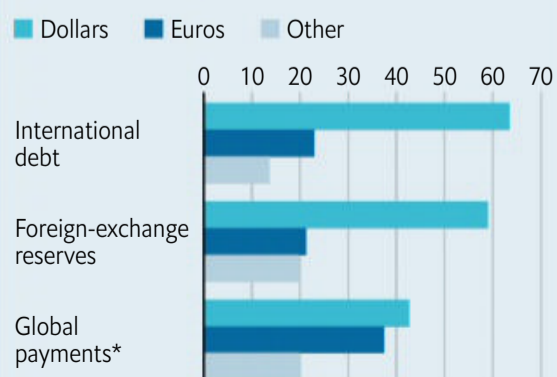
Whether gaining share from the dollar helps insulate Europe from America's reach is questionable: banks will always need dollars, and thus a foothold in New York, even if the euro thrives. (A European plan to circumvent sanctions on Iran largely floundered.) Few think the single currency can displace the greenback, but it could perhaps rebalance the international monetary system. That may help reduce the disruptions caused by American central bankers, for example when a slight tightening of monetary policy in 2013 caused a "taper tantrum" that reverberated globally. The euro is the obvious currency to provide diversification.

In 2019 Mark Carney, then governor of the Bank of England, mused that technology might disrupt the kinds of network effects that anchor the dollar at the heart of international finance. The rise of digital currencies issued by central banks, which the ECB is considering, might result in a new equilibrium where many currencies share global reserve-currency status. That could provide space for China's yuan, which has its own global aspirations but is hampered now by its lack of convertibility.

Such an outcome still feels some years away. But it would mark a return to the norm before the second world war in which several currencies, including the dollar, held joint dominance. Europe has long bristled at the "exorbitant privilege" America enjoys thanks to the dollar's special status. It may find it less intolerable if it can seize a share of it. ■

### Battling the buck

Currencies used in the international monetary system, Q4 2020, %



Sources: ECB; SWIFT

\*Excludes payments within euro area. December 2020

## Markets

# The Fed prompts a change of heart

NEW YORK

**Bets on reflation and commodities turn sour**

FOR SEVEN months most investors have been singing the same uplifting song. Since Pfizer and BioNTech published the successful results of trials of their covid-19 vaccine last November, the way to make money in markets has been to bet on a roaring rebound in the global economy, as pent-up demand for all the things the pandemic denied people—holidays, dining out, shopping—was unleashed. This "reflation" trade lifted the prices of commodities used in construction, such as copper and lumber, to record heights. It lifted global stocks, especially the share prices of firms hardest hit by the pandemic, such as cruise operators and retailers. The currencies of emerging economies, which tend to benefit more than most from global economic strength, rallied against the dollar and the euro. Bond yields climbed, along with expectations of speedy growth and higher inflation.

That appeared to change on June 16th, after the Federal Reserve—hitherto apparently sanguine about rising American inflation—suggested that it may eventually think about raising its policy rate, long anchored at zero. Shorter-dated bonds and shares tumbled, as did those building-boom commodities. These jitters were soothed somewhat on June 22nd when Jerome Powell, the Fed's chairman, stressed the central bank would remain patient and enable the economy to make a full recovery from the pandemic. But investors have been left wondering whether the great reflation trade is over.

The enthusiasm of the past few months was underpinned partly by the assumption that the Fed would maintain the same, super-loose monetary policy. Hence the anxiety when Mr Powell suggested that the central bank might have to consider tightening "somewhat sooner than previously anticipated". The Fed raised its inflation forecasts and lifted its median estimate for the future of policy rates to include two increases in 2023. Mr Powell also said the Fed would begin discussing when to slow its asset purchases from the current \$120bn per month. This change in tone was reinforced two days later when James Bullard, head of the St Louis Fed, told CNBC that the first rate rise could arrive in late 2022.

The Fed had seemed nonchalant even as signs of overheating in the American economy became harder to ignore. A measure of inflation the central bank watches

▶ closely, “core PCE”, jumped to 3%, year on year, at the end of April. Headline inflation, gauged by the consumer-price index, climbed from less than 2% in February to 5% in May. Anecdotal evidence of overheating abounds, from the piping-hot housing market to spiking grocery bills, gas prices and Uber fares. Yet Fed officials said the acceleration in inflation was “transitory” and that they would look through its effects. Investors believed them.

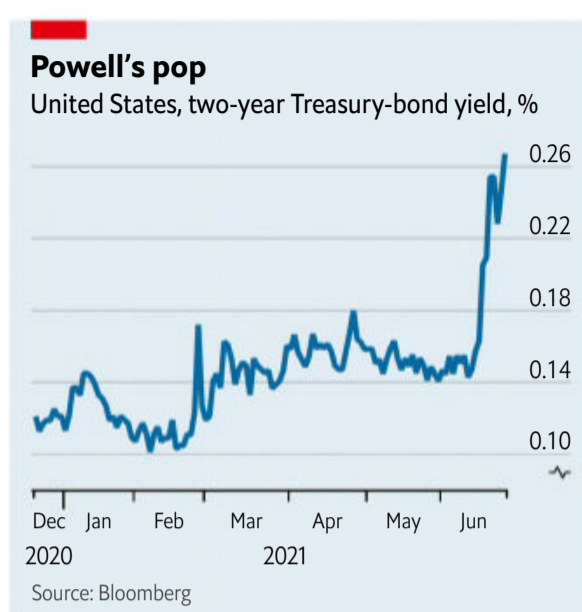
So they were surprised by the change of tone. Many of the trends that have dominated markets since November unwound. Reflecting the prospective rate increases, the yield on two-year Treasury bonds jumped to 0.27%, from 0.16% on June 14th (see chart). The 30-year yield, which tends to follow long-term growth or inflation expectations, tumbled to 2.02% on June 18th, from 2.21% before the Fed’s meeting.

The prospect of the Fed putting a brake on inflation and growth hit share and commodity prices. “Value” stocks, which had performed particularly well since November, were hit hard. Copper lost its spark, shedding 8% over the week. Lumber was felled, dropping 15%. The S&P 500 slipped from near a record high, ending the week about 2% lower, though it has since recovered those losses, partly thanks to Mr Powell’s soothing words on June 22nd.

The Fed also wrong-footed monetary policymakers elsewhere. When it last unwound a post-crisis stimulus, in 2013, the Fed set off a notorious “taper tantrum” in which many emerging-market currencies fell sharply against the dollar. On June 16th the Brazilian central bank raised its interest rates from 3.5% to 4.25%, the third increase since February, despite the damage covid-19 has done to Brazil’s economy (and to Brazilians’ health). In Hungary the central bank raised interest rates by 0.3 percentage points on June 22nd, a little more than expected. It was followed a day later by the Czech National Bank. Central bankers in the developing world worry that a more hawkish Fed will cause their currencies to weaken, exacerbating their inflation problems.

The question investors face now is how much the Fed’s stance has really shifted. It now appears that the initial reaction to the Fed meeting was overdone. When many investors hold the same portfolio of positions, they can be forced to bail out in a hurry if markets move violently against them. This liquidation of positions can exacerbate volatility. In fact, there are reasons to think the great reflation trade has further to run: the reopening of the American economy is still in its early stages, the end of 2022 is a long way off and Mr Powell still seems apprehensive about tightening policy too quickly.

But those turning their backs on emerging-market currencies, value stocks and



copper will find plenty to convince themselves that the economy is about to slow once more. Lumber prices were already slipping before the Fed meeting, as a frenzy for home improvements cooled. Credit-card spending, an early indicator of economic activity, had been running 20% higher than it was two years ago, but this month the pace has slowed to 16.5%, according to Bank of America. Soon, investors will learn which bet pays off next. ■

## Chinese finance

### Brace, brace

SHANGHAI

#### The troubles of three corporate giants pose a stiff test for banks

NOT LONG ago the conventional wisdom was that China would do whatever it took to save its biggest companies from failing. Times have changed. Three corporate giants—Evergrande, the country’s biggest property developer; Huarong, its biggest investor in bad bank assets; and Suning, a retail giant—are all suffering from financial distress.

The three firms’ long rush to expand has collided with slower growth, tighter credit and stricter regulatory scrutiny. Their bonds are trading at discounts of roughly 25% to face value, showing that investors have priced in a significant chance that they will default.

People in the financial industry are debating whether the government really will let them fail. An analyst with a large asset manager that holds Huarong bonds says his firm believes the state will eventually rescue the “bad bank”, given how integral it is to cleaning up non-performing loans in the financial system. A former adviser to the central bank says that Evergrande and Suning may be more expendable, posing fewer systemic dangers.

In the first instance, the troubles of these firms are a reflection of their own mismanagement. Evergrande has more debt than any other listed Chinese company. Huarong had a chairman who was executed for bribery. Suning sprayed cash around with abandon, buying trophy assets such as Inter Milan, the football club.

But the government’s willingness to let them go to the brink also points to something else: its confidence that the banking sector is now solid enough to cope with a big bout of turbulence. That was not always the case. In 2015 Chinese banks were struck by a near-crisis when more than \$1trn in cash rushed out of the country and corporate defaults rose. Several banks eventually needed bail-outs.

Many investors still see them as being in a weakened position. With few exceptions, Chinese banks listed on the Hong Kong stock exchange trade far below their reported asset values, implying a high degree of pessimism about their prospects. The root problem is their ultra-rapid credit issuance of the past 15 years, when their loan books grew ninefold, nearly twice as fast as the overall economy.

Yet any fair assessment of China’s banks must grapple with changes that have made them safer. Regulators have unwound some of their off-balance-sheet chicanery, exemplified by a curtailment of their loans to other financial firms. Such loans, which make it hard to know where risk resides, had soared to 78% of GDP by the end of 2016. Today they are down to about 54%.

Banks are also better prepared for bumps ahead. They had capital buffers equivalent to 14.7% of their assets at the end of 2020, a record high. Even as bad loans climbed to nearly 2% last year, the highest in more than a decade, banks made enough cash provisions to cover a near-doubling. The government also now requires the biggest banks to prepare resolution plans in case of trouble.

These changes bring China more in line with global regulatory standards, albeit with a twist. In most countries the overriding goal is to avoid having to get the state to save reckless banks. In China, however, the state already owns majority stakes in most large banks.

“The question is, do you wipe out equity which is already public money and then put in fresh taxpayer money? Or do you avoid wiping out equity to begin with?” says Nicholas Zhu of Moody’s, a credit-rating agency. Regulators are, he says, taking a mixed approach, likely to support lower-yielding senior debt but not junior debt such as perpetual bonds.

The weakest banks in China are almost entirely its smallest ones. They generally have dodgier assets, less-professional management and thinner capital cush-▶▶

ions. Rather than dealing with them one by one, regulators are working to bind them together. Mergers are under way in the provinces of Liaoning, Shanxi and Sichuan. “Consolidation is something we expect. It allows for higher requirements for corporate governance and risk control,” says Vivian Xue of Fitch, another credit-rating agency.

Perhaps the biggest concern about China’s banks today is not their recklessness but whether regulators are themselves creating new risks with a new set of lending rules. Worried about the property sector,

they have told banks to cap their mortgages and other property lending to no more than 35% of their loan books. Meanwhile, regulators ordered banks last year to increase loans to smaller firms by between 30% and 40%.

“In the past regulators complained that banks all looked alike, and wanted them to serve different client bases,” says May Yan, an analyst with UBS, a bank. “Some of the recent regulations are making banks look the same.” Their income trends are already more similar. Take, for instance, the ten biggest banks in China. Virtually all posted

profit growth of about 2% last year, with the least differentiation among their results on record.

This trend suggests that the main risk for Chinese banks is a lack of diversification. Along with having similar lending profiles, their assets are overwhelmingly concentrated within China. Overseas loans now account for just 2% of their lending portfolios. All the loan-loss provisions, capital buffers and improved governance may make them safer. But ultimately the only measure that really matters is the health of the Chinese economy. ■

## Buttonwood Holding back the yields

*The flattening of the Treasury curve marks a new phase in the financial cycle*

**G**ROWING UP IS hard to do but growing old is harder. As the business cycle matures and ages, it goes through phases, just as people do. These are mirrored in financial markets. Strategists like to talk in terms of early-, mid- or late-cycle investing. It is tricky to say when one stage ends and another begins, just as it is hard to delineate adulthood from adolescence. The markets drop some hints, though. The slope of the Treasury yield curve is one.

In the first quarter, the message from the yield curve seemed clear. A steepening in its slope—a rise in long-term yields relative to short-term yields—said the economy was accelerating and inflation was coming. A lot of that steepening has since been reversed, to the surprise of many. Of the many interpretations of this change, one stands out. It says the early-cycle phase is over. The markets have entered a new and more difficult stage.

Start with the shift in the yield curve. A standard measure of its slope is the gap between two- and ten-year interest rates. The wider the gap is, the steeper the slope. At the start of the year the gap was 0.82 percentage points. Three months later it had widened to 1.58 percentage points, almost all because of a rise in long-term yields (see chart). A marked shift in fiscal policy in America was a big influence. By March a bumper \$1.9trn spending bill had been signed into law. An even bigger package to finance infrastructure was in the works.

Yet in early April the curve began to flatten. The yields on two-, three- and five-year Treasury bonds perked up as money markets began to price in the prospect that the Federal Reserve would raise interest rates in 2023. There were bigger moves at the long end of the curve.

By this week the ten-year yield had fallen to 1.5%, more than 0.2 percentage points lower than at the end of March. The 30-year yield fell by even more.

Whatever lies behind this, it cannot really be laid at the Fed’s door. The decline in long-term yields started long before last week’s Fed meeting, which sounded a more hawkish tone on inflation. Some put it down to “technical factors”—bond trades made for reasons of risk management, to rebalance portfolios or follow price momentum. Global influences surely played a role. Ultra-low interest rates in Japan and Europe act as a check on yields in America. They can only go up so far before the weight of buying by yield-starved foreigners pushes them down.

However, there is a deeper message. The bond market is hinting that the early-cycle phase in which risk assets are embraced almost without discrimination has come to a close. The peak in economic growth may have passed. Output and orders readings in the manufacturing purchasing managers’ index (PMI), a closely watched marker of activity, prob-

ably peaked in May. Other cyclical indicators have rolled over. The prospect of further fiscal stimulus is also more uncertain. America’s infrastructure bill is stuck; whatever now emerges from Congress will have a far smaller price tag than the \$2trn-3trn figure widely touted just weeks ago.

Markets are forward-looking. They now have less to look forward to. If peak GDP growth lies in the past, the scope for further upward revisions to forecasts for stockmarket earnings is limited. The S&P 500 index already trades at a high multiple of prospective earnings. A lot of good news is already priced into risky assets. If you are an active trader, you now need something to go wrong to create a buying opportunity, says Eric Lonergan of M&G, a fund manager. Lacking fresh influences to drive prices up, risky assets are vulnerable to declines.

There are echoes here of early 2004, says Andrew Sheets of Morgan Stanley, a bank. When America’s unemployment rate peaked in 2003, it was a cue for economic recovery and a strong early-cycle rally in risky assets. Stocks, commodities and corporate bonds performed very well, just as they have over the past year. As 2003 turned into 2004, the economy kept going. But markets slipped into something of a funk.

The outlook is similar, reckons Mr Sheets: a period of consolidation in the stockmarket; a slight widening in credit spreads; an episode of modest dollar strength. Not everyone will agree. It is hard to accept that the early-cycle phase might be over. It is barely a year since the trough in global GDP. But if you live as fast and burn as brightly as this business cycle, then mid-life arrives early. You then start to wonder how you got here and what on earth will now drive you on.

### Slippery slope

United States, government-bond yields, %  
By maturity



Source: US Department of the Treasury

Corn Laws scythed, 175 years on

## The appeal of Peel and repeal

What the end of Britain's Corn Laws in 1846 says about free trade today

ABOUT HALF of most British people's income in the 1830s and 1840s was spent on food. Hunger was commonplace, occasionally sparking riots. Contributing to the high cost were tariffs on imported grain, called the Corn Laws, which soared as high as 80%. The system enriched aristocratic landowners when most Britons were not allowed to serve in Parliament or vote.

Facing public anger, a famine in Ireland and fears of starvation in Britain, the prime minister, Robert Peel, introduced legislation to end the tariffs. On June 25th 1846 the House of Lords repealed the Corn Laws, following a House of Commons vote a month earlier. It marked a major moment in the history of open economies. How it was achieved offers lessons to those defending the global trading system today.

The first lesson is to organise a broad coalition and creatively use the media. It was not simply the poor who had an interest in lower grain prices. A new generation of prosperous manufacturers and moral-minded aristocrats joined forces. They established what might be one of the first lobbying groups, the Anti-Corn Law League, which hosted rallies, financed research and supported political candidates. Books and pamphlets sprang up to make the case. *The Economist* itself was founded in 1843 to campaign for the abolition of the Corn Laws and for free trade.

The second lesson is the need for small victories to generate momentum, rather than going for big wins immediately—Peel's policy of "gradualism". His plan did not fully remove sliding-scale tariffs until 1849, giving time for landowners to adapt. Meanwhile, Britain's free-trade moves helped usher in a wave of trade agreements across Europe and with America.

The third lesson is the need for tangible benefits for the public. By 1850, people were paying around a quarter less for bread than if repeal had not occurred, according to Kevin O'Rourke of NYU Abu Dhabi. The real incomes of society's top 10% fell, while those of the bottom 90% grew slightly, notes Douglas Irwin of Dartmouth College.

Much can be learned from Peel's approach. Today, free trade is promoted by stale policy wonks and rapacious executives, nothing like the broad, energetic coalition of the past. Opponents of globalisation use social media far more effectively than its supporters. Politicians vie for grand gestures rather than quiet incremen-

talism. And the benefits of free trade are largely hidden from consumers. Those who take to the ramparts to protest against globalisation fail to notice why their smartphones are so cheap.

Yet the most important lesson is about leadership. Peel had opposed repealing the Corn Laws but, faced with a crisis, he was willing to split his party and lose his job to do the right thing. The divided Conservatives rarely held power during the following 30 years. It was "the whole community" that mattered, Peel wrote in his memoirs, and whether "cheapness and plenty are not [better] ensured for the future" by free trade than by protectionism. What leader would be willing to do that today? ■



Revolut

## Just dough it

Europe's biggest neobank wants to take over the world

THE PANDEMIC could have been terminal for Revolut, a firm set up in 2015 to help travellers avoid hefty foreign-exchange fees. Instead its latest annual results, released on June 21st, suggest the London-based digital bank is thriving. Despite slashing its marketing budget, it gained 4.5m customers in 2020, bringing the total to 14.5m. Its revenues grew by 57% to £261m (\$362m); it was profitable in the last two months of 2020. A \$580m fundraising round, completed in July, made it one of Europe's most valuable private fintechs, worth \$5.5bn.

It helps that the firm has diversified away from colourful debit cards and multi-currency e-wallets to include services such as stock and cryptocurrency trading, business accounts and payments, and even credit. Today interchange fees from debit

cards and the like represent just 36% of its revenues, little more than what it earns from selling subscriptions to perks like cheap phone insurance.

Eventually Revolut, known for its iconoclastic style and self-confidence, would like to become "the first truly global financial superapp". As fintechs have offered services provided by banks, people's finances have fragmented over many apps, says Nik Storonsky, Revolut's boss (pictured). The firm aims to be a great "rebundler", offering every financial product one might need in a single account accessible across the world. It has applied for banking licences in Britain, America and Australia to offer loans (it already does in Europe) and is planning launches in Asia and Latin America. It now operates in 35 countries.

Giants with vastly more resources, such as Square in America or Grab in Asia, also want to become financial-services platforms. But Revolut fans argue it has rare assets. One is its ability to offer international payments and currencies to everyone at a rate once reserved for big companies, which helps lure city dwellers and small exporters. Another is a reputation for being quick to build new products.

Yet even if that suffices to turbocharge its growth, Revolut's ability to make durable profits remains unproven. Its monthly performance since late 2020 owes partly to a surge in crypto trading (Revolut charges 1.5% per transaction) and prices (which has lifted the value of its crypto holdings). Over the year it actually lost £168m, up from £107m in 2019.

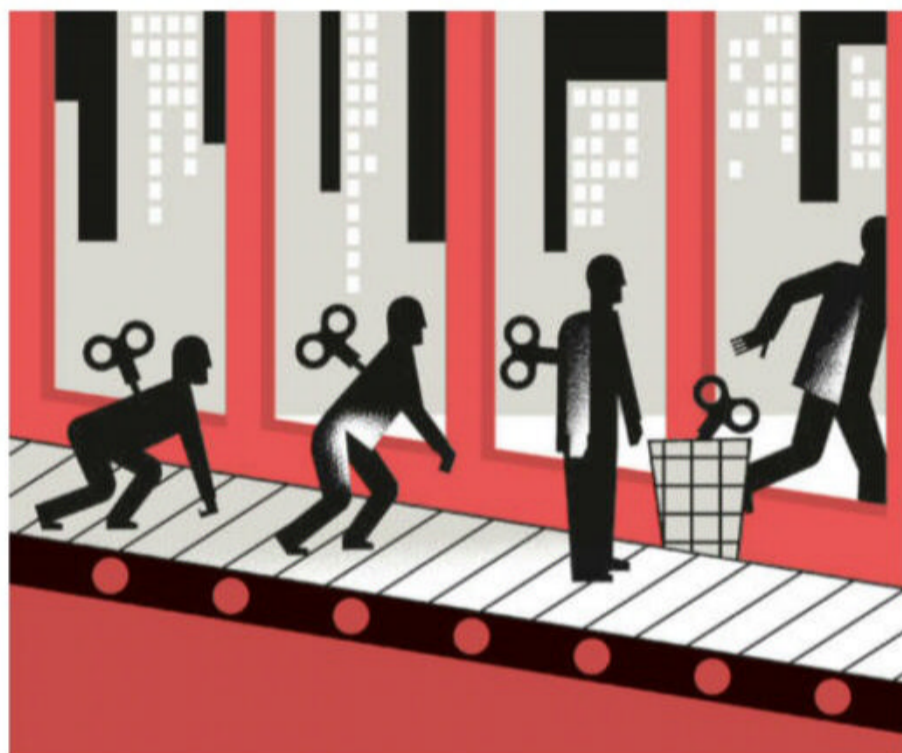
To get properly in the black Revolut must lower its customer-acquisition costs. Fully fledged superapps, like MercadoLibre in Latin America or WeChat in China, have achieved this by selling financial products to members of their non-financial networks (the former is an e-commerce platform, the latter a messaging app). But Revolut lacks such a network. It could also try to increase its revenue per customer by selling them more stuff. That, however, would require it to develop more sophisticated products, says Ronit Ghose of Citigroup, a bank. Few of its richer customers, for example, would ditch their broker unless Revolut could provide access to more stocks than the 800-odd it offers today.

But perhaps the firm's lofty goal should not be taken entirely at face value. A British banker notes that the superapp story may be designed to attract investors and would-be corporate acquirers. Both have shown an appetite for British-based fintech. On June 17th Wise, a cross-border payments startup, announced plans to go public in London and JPMorgan Chase, an investment-banking titan, agreed to buy Nutmeg, a digital asset manager. The great financial rebundling may well end up involving some familiar institutions. ■



## Free exchange | All change

*Why economics should be a more evolutionary science*



**N**OT FOR the first time this century, the global economy is rebounding from crisis. The new normal will differ from the old one. The pandemic shifted resources around, destroyed firms, and subtly adjusted habits. The economy has evolved, in other words. Strangely, most economic models do not treat the economy as an evolving thing, undergoing constant change. They instead describe it in terms of its equilibrium: a stable state in which prices balance supply and demand, or the path the economy follows back to stability when a shock disturbs its rest. Though such strategies have sometimes proved useful, economics is the poorer for its neglect of the economy's evolutionary nature.

Evolutionary economics seeks to explain real-world phenomena as the outcome of a process of continuous change. Its concepts often have analogues in the field of biological evolution, but evolutionary economists do not attempt a rigid mapping of biological theories to economic ones. An evolutionary approach acknowledges that the past informs the present: economic choices are made within and informed by historical, cultural and institutional contexts. Fittingly, the habits of the economics profession today can be understood only by examining the field's own history. In the 19th century the discipline that would become economics was an evolutionary science in several senses. Thinkers of diverse backgrounds vied to offer theories which best explained economic activity while, at the same time, its practitioners saw the object of their study as an extension of the biological sciences.

Indeed, social-science thinking informed the views of naturalists such as Charles Darwin. The Reverend Thomas Malthus, who explained how population growth must lead to a life-and-death competition for resources, influenced Darwin as he sketched out how natural selection might lead to the emergence of new species. And while Alfred Marshall—among the figures most responsible for setting economics on its modern, mathematised course—analysed economic behaviour using systems of equations which could be solved for an “equilibrium”, he did so as a necessary expedient. “Mechanical analogies” were useful, he reckoned, but, “[t]he Mecca of the economist lies in economic biology.”

As the 20th century began, an intellectual tug-of-war took place between more evolutionarily minded figures and their equi-

librium-focused peers. Thorstein Veblen complained that economists wished to treat the individual like a mindless particle. He thought instead that people's choices were informed by complex emotions, and the history and traditions of the communities around them. “An evolutionary economics must be the theory of a process of cultural growth,” he ventured. Joseph Schumpeter was perhaps the most famous exponent of an evolutionary worldview: an outlook shaped by his observations of entrepreneurial activity. He described creative destruction as a “process of industrial mutation—if I may use that biological term—that incessantly revolutionises the economic structure from within.”

In the post-war West, the neoclassical approach built around equilibrium models won out. Such models shared a mathematical rigour and elegance with high-prestige fields like physics, and lent themselves more readily to making the forecasts governments required. Milton Friedman argued that it did not matter if the models made unrealistic assumptions about the behaviour of people and institutions. So long as the economy looked, in aggregate, “as if” individuals made rational decisions, and models thus yielded accurate predictions, that was good enough.

Because they very often did not do so, an evolutionary approach crept back into the profession. One important contribution came in 1982, when Richard Nelson, now of Columbia University, and Sidney Winter, now of the University of Pennsylvania, published “An Evolutionary Theory of Economic Change”. Neoclassical models of economic growth failed to capture the forces—like Schumpeterian creative destruction—which played an essential role in generating technological change, they thought. Theories often supposed, for instance, that executives knew and would immediately adopt profit-maximising strategies. In reality, practices might differ widely across an industry, reflecting distinct beliefs and the persistence of firms' unique cultures and habits. As these approaches competed, some ways of doing things became more widespread across an economy—until some other “industrial mutation” changed the competitive dynamic again.

Messrs Nelson and Winter inspired an entire literature on corporate structures and competition across industries. Empirical work across other parts of economics seems increasingly to reflect an evolutionary influence. Recent, influential studies of innovation, for example, focus on things like exposure to inventors in childhood or the beliefs imparted by academic mentors, as contributors to individuals' creative output (in addition to factors which have previously received more attention, such as educational attainment and the financial incentive to innovate).

### Modification with dissent

Perhaps most intriguing is recent work on culture's role in shaping economic outcomes. To accept that culture influences behaviour is to allow that people are not foresighted utility calculators, but rather social creatures who rely on norms and traditions when taking decisions. But culture—which changes slowly and is often transmitted across generations—cannot be understood outside an evolutionary framework. Evolutionary economics, having got a foot in the door, may prove difficult to push back out.

This is all to the good. Theory built on unrealistic assumptions has proved less illuminating than economists a century ago might have hoped. Trying to understand the world as it is could yield insights and perhaps, eventually, better predictions. Economists still working with equilibrium models out of habit should consider the disruptive potential of a new, yet old, approach. ■



### Fusion power

## Seven-tenths of a yellow sun

### The race to build a commercial fusion reactor heats up

**A**N OLD JOKE about nuclear fusion—that it is 30 years away and always will be—is so well-known that *The Economist's* science editor forbids correspondents from repeating it. No one doubts sustained fusion is possible in principle. It powers every star in the universe. Making it work on Earth, though, has proved harder. Engineers have tried since the 1950s, so far without success. The latest and largest attempt—ITER, a multinational test reactor in southern France—has been under construction for 11 years and is tens of billions of dollars over its initial, \$6bn budget.

But that record does not dismay a growing group of “alternative fusion” enthusiasts. Through a combination of new technology and entrepreneurial derring-do they hope to beat ITER to the punch. On June 17th one of their number, a Canadian firm called General Fusion, put its investors' money where its mouth is. It said it would build a demonstration reactor, 70%

the size of a full-blown commercial one, at Culham, the site of the Culham Centre for Fusion Energy, Britain's national fusion-research laboratory. Like ITER, it hopes its reactor will be up and running by 2025.

#### Power play

On paper at least, fusion is attractive. Existing nuclear plants rely on fission—the splitting of heavy atoms, usually of uranium, into lighter ones. The energy thus liberated is used to boil water into steam, which then turns turbines that make electricity. Fusion plants attempt to do the opposite, generating heat by combining light

atoms to make heavier ones.

Unlike coal or natural gas, fusion would produce no planet-heating carbon dioxide. Unlike solar panels and wind turbines, fusion plants could operate in any weather. Unlike fission plants, they pose no risk of spreading nuclear-weapons technology, and should generate much less radioactive waste. They offer safety, too. “I like to say that fission is easy to start and hard to stop,” says Christofer Mowry, General Fusion's boss. “Fusion is the opposite.”

Fusion is hard to start because it requires extreme conditions. Most Earthly fusion reactors aim to combine deuterium with tritium. (Both are isotopes of hydrogen, in which the single proton in that element's nucleus is joined by either one or two neutrons.) Protons have a positive electrical charge, and like charges repel. Persuading two atoms to join forces therefore means overcoming this repulsion. And that requires a great deal of energy.

General Fusion's idea is to forge a middle path between two existing approaches, magnetic-confinement fusion (MCF) and inertial-confinement fusion (ICF), with less need for heroic engineering than either. ITER is a doughnut-shaped type of MCF reactor called a tokamak. It is intended to use carefully controlled, high-intensity magnetic fields to heat a hydrogen plasma to hundreds of millions of degrees ▶▶

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► Celsius, and then hold that plasma stable while its atoms combine. The trick is to control the fields precisely enough to keep the super-hot plasma together for long enough to allow a significant amount of fusion to happen. The present record, held by an experimental reactor in France, is six-and-a-half minutes. ITER's goal is a reaction that lasts up to ten minutes.

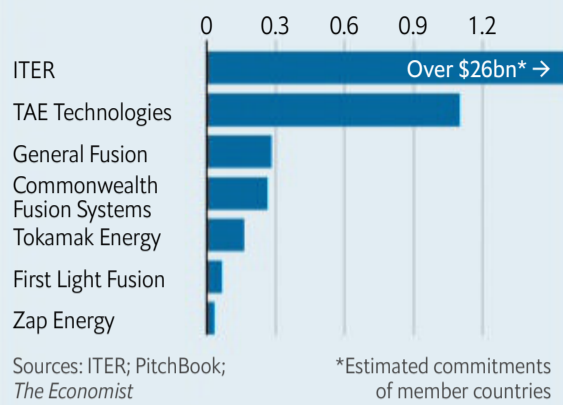
ICF forgoes finicky magnetic fields in favour of super-powerful lasers. Experiments like the National Ignition Facility, in California, use carefully timed pulses to smash fuel pellets from all sides, heating them to temperatures similar to those in MCF plants, but also compressing them by the application of billions of atmospheres of pressure. Thanks to this crushing pressure, fusion happens much more quickly. The hope is that, one day, a useful amount of energy can be produced and harvested in the tiny fraction of a second before the zapped pellet blows itself apart. Once again, though, properly controlling the lasers and ensuring that the pellet is evenly compressed has proved tricky.

General Fusion calls its own approach “magnetised target fusion”. The basic concept dates back to the 1960s. The firm's reactor, says Mr Mowry, does away with magnetic confinement by using powerful electric pulses to create self-stabilising blobs of plasma that are injected into the reactor's core. He compares this to blowing a smoke ring, in which the air currents within the ring allow it to maintain its shape for a few seconds before it dissipates.

The puffs of plasma actually last around 20 milliseconds. That would not be long enough to extract much energy were they to be injected into an MCF reactor. But it is long enough for them to be compressed, as in an ICF machine—and by something far less exotic than banks of advanced lasers. The core of General Fusion's British reactor will be lined with molten lithium and lead. Once a puff of plasma has been injected, ranks of gas-driven pistons will compress

### Cash in fusion

Fusion-energy companies, investment, \$bn  
2021 or latest available



the core, changing it from a cylinder to a sphere and drastically boosting the fusion rate (see diagram).

But while laser compression happens in mere billionths of a second, General Fusion's takes thousandths—comparable with the timescales on which internal-combustion engines operate, and well within the capabilities of digital electronics to fine-tune. The upshot, the firm hopes, is a reactor which should be cheaper and simpler to build and operate than either an MCF or ICF machine.

### Critical mass

Besides compressing the plasma, the liquid-metal jacket serves to capture the energy from the reaction. Heated metal will be piped to a heat exchanger and used to raise steam. Neutrons from the fusion reaction, meanwhile, will transform some of the lithium into more tritium fuel, which would otherwise be rare and expensive. Or at least, it will one day. General Fusion's demonstration reactor will only fuse deuterium with deuterium, to keep things simple.

Still, the firm hopes that a full-fledged commercial reactor—which might be built in the early 2030s—could compete with other forms of electricity. It is aiming at a cost of \$50 per megawatt-hour, which Mr

Mowry says ought to make it competitive with coal. Renewable energy may prove cheaper, he concedes, but it is hampered by intermittency. And the plant will have one more advantage over existing, fission plants, the electricity production of which cannot quickly be raised or lowered. General Fusion's reactor can increase or decrease power output ten-fold by changing the speed at which the core cycles. That should allow it to “load-follow”, ramping up production when electricity prices are high and cutting back when they are low.

And General Fusion is not the only firm pursuing commercial fusion. On April 8th TAE Technologies, a rival based in California, which was founded in 1998, said it had raised \$280m for a demonstration reactor of its own, bringing the total invested in the firm to \$1.1bn (see chart). Like General Fusion, TAE relies on puffs of self-stabilising plasma. Unlike General Fusion, it aims to produce electricity by combining hydrogen with boron, a process that needs temperatures of billions of degrees, but which should require less radiation shielding.

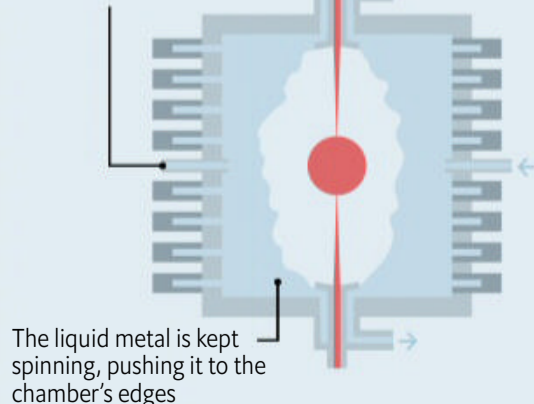
General Fusion's other rivals include two British firms, First Light Fusion and Tokamak Energy, both based near Culham, and a pair of American ones, Commonwealth Fusion Systems and Zap Energy. Nor are governments putting all their eggs in the ITER basket. The Max Planck Institute for Plasma Physics, a German government agency, is trying to build a power station based on a device called a “stellator”—a twist on the MCF approach. Its Wendelstein-7X device began working in 2015. And the Culham Centre for Fusion Energy's STEP reactor, scheduled to open in 2040, is intended to demonstrate the commercial practicality of fusion. One reason General Fusion chose Culham, says Stephen Dean, who runs Fusion Power Associates, a research and education foundation which covers the field, is that this lab has a focus on getting to market quickly.

For his part, Dr Dean sees no fundamental reason why one or more of the current crop of contenders should not succeed in building a reactor that generates useful quantities of energy. But it is economics, not physics, that will have the final word. High-tech fusion reactors, assuming they are ever built, will have to compete in a world in which the price of solar and wind power is falling steadily. Fossil-fuel companies, meanwhile, are trying to work out how to capture and bury the carbon dioxide emitted from their power stations. Advanced fission reactors are attracting private interest of their own—on June 2nd TerraPower, a firm backed by Bill Gates, a founder of Microsoft, announced plans for a high-tech nuclear plant in Wyoming. All that competition is good news in a warming world. But it promises a white-knuckle ride for investors. ■

### Cross-section of a magnetised target fusion system

#### Loading stage

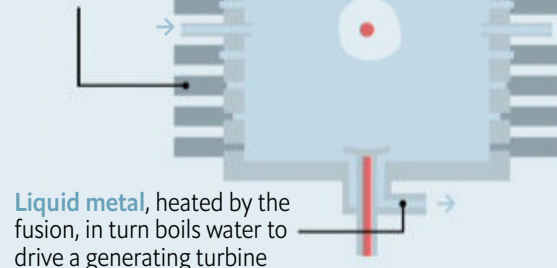
Liquid metal is injected into the reaction chamber



Sources: General Fusion; The Economist

#### Fusion stage

Pistons push the liquid metal into the chamber, compressing and heating the plasma until it fuses



## Underground warfare

## Tunnel vision

## A new system of sensors can detect troglodytic enemy activity

FROM THE collapsing of city walls during medieval sieges, to the laying of giant mines filled with explosives under enemy trenches during the first world war, to the supply networks of the Ho Chi Minh trail during the war in Vietnam, to the Tora Bora cave complex, used first by the Mujahideen to oppose the Soviet invasion of Afghanistan and then by the Taliban to oppose the American invasion, tunnel-digging in times of conflict has a long history. These days, secret tunnels are used to move weapons and people between Gaza and Egypt, and by Kurdish militia operating on the frontier between Syria and Turkey. But the same principle applies. What happens underground is hard for the enemy to observe. Digging for victory is therefore often a good idea.

That, though, may be about to change. Real-time Subsurface Event Assessment and Detection (RESEAD), a project being undertaken at Sandia National Laboratories in New Mexico, uses novel sensors to make accurate maps of what is happening underground. This will, no doubt, have many civilian applications. But Sandia is principally a weapons lab, and it is military matters that are uppermost in the mind of the project's leader, Chet Weiss.

RESEAD grew out of work that was looking at ways of monitoring earth tremors by means of sensor networks. The researchers involved found that the analytical techniques they had developed to handle data so collected were fast enough to process those data more or less in real time. This would mean they could detect movement underground in a way that would be militarily useful.

The versions of these networked sensors used in RESEAD are embedded in the collars connecting sections of borehole casings, and communicate with the surface via wires. This makes them easy to deploy and use. The sensors themselves are a mixture of accelerometers, which pick up vibrations, current detectors, which measure the electrical-resistance of rocks and soil, and subsurface radar.

RESEAD's real secret, though, is in the way it handles the incoming data. First, these are pre-crunched by powerful hardware built into the sensors themselves. This step, a form of parallel processing, greatly reduces the time required by the central receiving computer to finish the job. Second, the mathematical technique

MOST ARTISTIC impressions of dinosaurs picture them in lush forests or on vast temperate savannahs. That is fair enough. Such landscapes were common during the beasts' heydays, the Jurassic and Cretaceous periods. These pictures do, though, ignore the fact that dinosaur fossils have, for decades, been dug up in places which were at that time polar. Whether these are the remains of migrants which came for the summer, or of permanent residents, is debated. But a discovery of bone fragments and teeth from dinosaur hatchlings (see picture), just published in *Current Biology* by Patrick Druckenmiller of University of Alaska, Fairbanks, and his colleagues, suggests some dinosaurs did indeed make their full-time homes in the Arctic.

Modern animals that migrate to polar climates, notably birds, do often breed there. But their eggs hatch quickly and their young develop fast enough to fledge and fly to warmer places before winter



Fragments of the past

employed, a species of finite-element analysis, divides the volume represented by the incoming data not merely into blocks, as is normal in this approach, but into blocks the faces and edges of which can have different properties. This means a block can straddle, say, the interface between a metal pipe and the rock surrounding it. That considerably reduces the number of blocks needed, and further simplifies the calculation.

To test their system Dr Weiss's team decided to look at an oilfield. Most oilfields have only one or two wells per square kilometre, which is hardly challenging. The team, however, chose in Bakersfield, California, which has a dense network of oil-

related infrastructure. The square kilometre they picked contains more than a hundred wells, many underground storage tanks and tens of kilometres of steel pipeline. RESEAD made short work of this challenge. It produced an accurate map of the area in just ten minutes.

Exactly how RESEAD sensors would be put in place in a zone of active conflict remains to be seen. But the system could certainly be useful for other sorts of security. In particular, America has a problem with tunnels under its border with Mexico being used to smuggle drugs and migrants into the country. RESEAD would be able to detect existing tunnels and nip new ones in the bud. ■

## Palaeontology

## Arctic dinosaurs

## Dinosaurs once flourished near the North Pole

arrives. Growth lines in fossilised dinosaur embryos found elsewhere suggest they needed as much as six or seven months of incubation before they were ready to hatch. Palaeontologists therefore reckon any discovery of fossilised eggs or hatchlings near the palaeo-poles would mean the species concerned must have been year-round residents rather than migrants.

Until now, no such hatchlings had been found, and the only known polar dinosaur eggs were from the Kakanaut formation of north-eastern Russia, which was only just within the Arctic Circle when its rocks were laid down. Dr Druckenmiller's discoveries are from the Prince Creek Formation of northern Alaska, which may have been as close as 5° of latitude from the North Pole when its rocks formed 70m years ago.

The fossils themselves come from a range of dinosaur groups, including ceratopsians (related to the likes of *Triceratops*), duck-billed hadrosaurs, large carnivores related to *Tyrannosaurus* and smaller velociraptor-like predators. This suggests a diverse and flourishing ecosystem, despite the fact that Prince Creek was continuously dark for 120 days a year and had an average annual temperature of 6°C—meaning snow would have been common in winter.

How all these creatures survived those conditions was, Dr Druckenmiller suggests, a consequence of dinosaurs' warmbloodedness and the downy feathers many of them are now known to have sported. No direct evidence of feathers has yet been found among the Alaskan fossils, but their ubiquity elsewhere makes it likely they had them.

## Anterior cruciate ligament injuries

## Wounded knees

NEW YORK

ACL injuries are a growing problem—and one that particularly afflicts women

AS THE COVID-19 pandemic abates and athletes everywhere prepare to return to the arena, new light is being shed on a serious risk they face. The anterior cruciate ligament (ACL) is one of four that hold the knee together. Tearing it, as at least 2m people do every year, is among the most immobilising injuries someone can sustain. ACL tears are usually a consequence of an awkward movement in a fast-paced game such as football. The surgery and rehabilitation needed cost billions of dollars a year. It is becoming increasingly clear just how devastating—and possibly preventable—this injury really is.

Doctors have always recognised ACL tears as serious, but used to think that returning to the fray was possible six months after surgery. Elizabeth Gardner, head orthopaedic surgeon at Yale University Athletics, reckons, however, that nine months to a year is more realistic. That is a significant chunk of an athlete's career. Even then, surgery alone is no guarantee of recovery. Re-tear rates are as high as 20%, “a lot higher than you would expect for a surgery that we think we do really well and is so ridiculously well studied”, Dr Gardner says. On top of this, recent investigations suggest that as many as three-quarters of those who suffer an ACL tear go on to develop arthritis of the knee 15-20 years later.

ACL tears are increasingly frequent. In 2018 researchers at Boston Children's Hospital found that, over the course of a decade, the number of them relative to other orthopaedic problems had tripled among Americans aged under 18. This may be a consequence of moves towards single-sport specialisation in American schools. The reduced variety of body-movements thus engendered tends to focus strain repeatedly on particular parts of the body.

Recent studies in countries around the world, including Australia, Finland and Norway, support the idea that more young people than ever before are sustaining ACL injuries. Australia's sports authorities, in particular, are trying to discourage over-specialisation by schools. Another reason for the increase may be artificial turf, which has become much more widespread in schools in the past couple of decades. There is evidence that in some sports, notably American football, this surface is linked with a higher rate of ACL injuries.

One of the most curious features of ACL tears, though, is that they afflict women far

more often than men—as much as eight times more, some investigations suggest. Why, is the subject of intensive research. But a clue may lie in an apparent connection with the menstrual cycle.

A study published in 2013, of a group of women skiers in the Alps, found, for example, that those in the pre-ovulatory stage of their cycles were more than twice as likely to suffer an ACL tear than were those in the post-ovulatory stage. A four-year survey of 113 female England footballers, published in March, also found a clear correlation. Muscle and tendon injuries were far more common in the late follicular phase of the cycle, just prior to ovulation, than in the other phases.

## Ex-cruciating

The reason for this menstrual-cycle link is unclear. The body's oestrogen levels spike just before ovulation—the point when tear-frequency rises—and the ACL has oestrogen receptors, so this might help explain what is happening. But the ACL is not alone among ligaments in sporting such receptors, and uncertainty remains about the true connection.

Other contributory factors to women's higher ACL-tear rates may be female body shapes and movement patterns. Compared with men, women have wider hips, more-

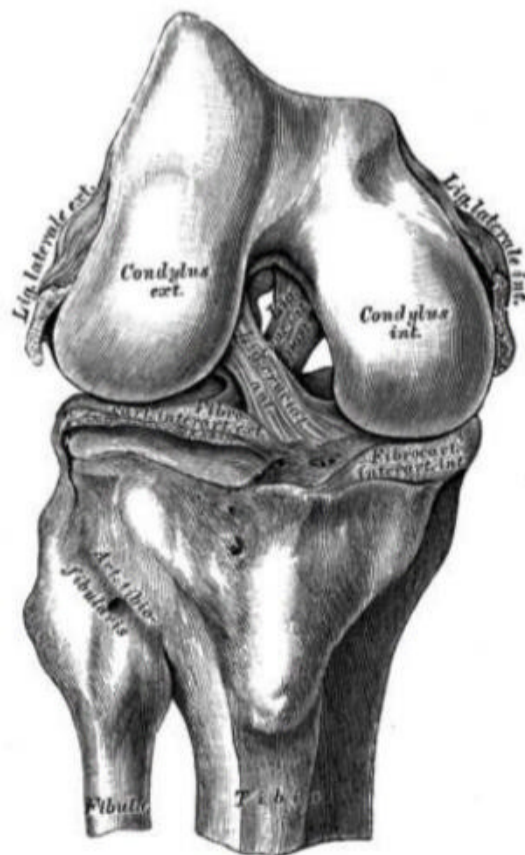
inverted knees and “over-dominant” quad muscles (meaning that the quadriceps femoris muscle group in front of the thigh bone is relatively stronger than the hamstring group behind it). All these things put pressure on the elaborate workings of the knee joint. Women also tend to land in a more flat-footed manner than men do, and to pivot more awkwardly.

Anatomy is what it is, so not much can be done about sex differences in hip shape and knee orientation. All athletes, however, can be trained how to move more safely, and this is particularly relevant for women. Straightforward exercise classes in balance and agility have been found to reduce ACL tears by 50%. Strengthening the muscles around the knee—especially the hamstring—with focused exercises is another way to reduce the chances of a tear.

Dealing with the menstrual cycle has, in the past, been trickier, since it entails individual athletes keeping detailed track of their cycles. Modern gadgetry makes this easier. For example, the American women's football team (proper football, not the gridiron sort), who are the current world champions, use *FitrWoman*, an app that monitors a user's cycle and tells her on which days it may be risky to train intensely. This is something that the team's quondam high-performance coach, Dawn Scott, reckons contributed to their retention of the World Cup in 2019. And back in football's home country, England, *FitrWoman* is also making a mark. The women's team at Chelsea football club, who won this year's Super League, have adopted the app as well.

This is the sort of thing that could be encouraged more widely, by introducing it into school and college sports. That does, though, require an awareness of the problem—and this is still lacking. In 2019, for example, St Mary's University, Twickenham, in England, conducted a survey of more than 14,000 female athletes. It revealed that 81% of those with coaches never discussed with them the impact of their menstrual cycles on training. Nearly three-quarters said they had received no education regarding the cycle's effect on their exercise regimes and fitness, and vice versa.

The topic of menses can be taboo even at the highest level of sport. In 2015 Heather Watson, a British tennis player, withdrew from the Australian Open citing “girl things”. She was applauded for publicly linking her performance to her period, even in the vaguest of terms, which is still a rarity among professional athletes. From the top to the bottom of women's sport, then, a bit more openness and physiological realism might work wonders for knee preservation and the avoidance of problems in later life. Considering the rigour of modern athletes' training regimes, it is surprising this is not already happening. ■



Thigh bone's connected to the knee bone



## Culture and crime

## Raider of the lost art

## Stolen artworks vanish into a criminal netherworld. Arthur Brand recovers them

**E**VEN AS A child, Arthur Brand was fascinated by art and antiquities. His grandfather went to school with Han van Meegeren, a Dutch painter who forged a picture by Johannes Vermeer and sold it to Hermann Göring. His father had a passion for history and named his son after King Arthur, the mythical British ruler. In boyhood Mr Brand delighted in stories of knights and Vikings, of mummies and hidden troves of gold, silver and jewels. “The only book I read was ‘Treasure Island,’” he says.

As a young adult, the object of Mr Brand’s obsession was “The Good, the Bad and the Ugly”. While studying in Spain he learned that the Spaghetti Western was shot in a nearby village. When he visited the place, people were digging for coins (much as they do in the film, the plot of which revolves around a cache of Confederate gold). He soon became an amateur collector, beginning with ancient currencies before moving on to artworks. He shelled out for a piece he thought was by Paul Madeline, a French post-Impression-

ist painter, but technical analysis revealed it was a fake, produced decades after the artist’s death. “These motherfuckers,” he recalls thinking. “They are stealing from this poor student.”

The incident set him on a new path. Incensed at being ripped off, he set out to understand the extent of fraud and deception in the art world. “If you go to a museum, an auction house, an art dealer,” he says, “the chances are big that you are being fooled.” He reckons 30% of all items on the market are fake. Reading up on the subject, Mr Brand came across an article about Michel van Rijn, a former art smuggler turned police informant, who ran a website exposing the dark underside of the industry. In-

trigued, Mr Brand got in touch with Mr van Rijn and soon became his apprentice.

The pair worked together as private detectives, not only exposing forgeries but also publishing information on dodgy dealers and illicit exchanges. (When artworks are purloined they go “underground”, and are often used as collateral in drug or arms deals, rarely remaining in the possession of the thief.) They were able to track down the Gospel of Judas, a manuscript from 280AD that chronicles conversations between Jesus Christ and Judas Iscariot, as well as stolen mosaics and pre-Columbian art. Mr van Rijn introduced Mr Brand to both his criminal contacts and his associates in the Metropolitan Police in London and other forces. “I saw it all,” Mr Brand remembers. “Spies, looters, forgers, the mafia, guns.” He smiles. “Ah, what a time.”

In 2011 he struck out on his own, founding Artiaz, a research firm and consultancy specialising in art and antiquities. The company’s main lines of business are establishing the authenticity and provenance of pieces on behalf of clients, and repatriating works looted by the Nazis to Jewish families. But it is a third strand—finding lost or pilfered artefacts—that has earned Mr Brand the nickname “the Indiana Jones of the art world”.

Pursuing a tip from Mr van Rijn, in 2015 he recovered two equine sculptures by Josef Thorak, long presumed destroyed, which once stood outside Adolf Hitler’s ▶▶

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office in the Reich Chancellery. In February Mr Brand published “Hitler’s Horses”, a book about the investigation; the tale involves Russian soldiers, Stasi agents and modern neo-Nazis. In recent years he has helped retrieve a ring that belonged to Oscar Wilde and Pablo Picasso’s “Buste de Femme”, a painting stolen from a yacht in 1999 (pictured with Mr Brand on previous page). He estimates the total value of the items he has found at more than \$300m.

“They say Indiana Jones, but it’s really Inspector Clouseau,” Mr Brand jokes, referring to the hapless detective in the “Pink Panther” stories. No special skill is required to be an art investigator, he insists, just patience, tenacity and a willingness to follow every lead. The epigraph to “Hitler’s Horses”, by Dick Ellis, a former head of the art and antiques squad at Scotland Yard, reads: “Arthur is an idiot, but a clever one.” Mr van Rijn suggests that Mr Brand deliberately depicts himself as an affable halfwit: “he makes a very innocent impression” so that “people underestimate him”.

#### Fortune and glory, kid

Whatever his tactics, Mr Brand’s work draws attention to a widespread problem—the illicit trafficking of cultural artefacts. In his book he suggests that this is the world’s fourth-most-lucrative criminal enterprise, after drugs, money-laundering and arms, with a turnover of roughly \$8.3bn a year. Many objects are stolen from museums or private homes and sold on the black market; some are put up for auction. Islamic State used the profits from its plundering of Syria to fund its terrorism.

For all that, it is an illegal enterprise that is not taken particularly seriously, says Corrado Catesi, head of Interpol’s programme on cultural-heritage crimes. He oversees the Stolen Works Of Art Database, a public record that contains details of 52,000 missing items from 134 countries. Many places do not have police units specialising in art crimes and do not maintain national databases of stolen art (on which Interpol’s system relies). Customs officers often lack the right training. In May Interpol launched ID-Art, a mobile app that allows users to search its index using photographs or keywords. Mr Catesi hopes it will encourage buyers to conduct due diligence before concluding deals.

Private-sector operators like Mr Brand play an important role—free as they are to look into thefts that local police may not have the resources to pursue (though he emphasises that he always liaises with the relevant authorities). Mr Ellis, who retired from the police in 1999 and set up his own investigations business, collaborated with Mr Brand on the “Buste de Femme” case, among others. “If it wasn’t for people like Arthur, that picture would not have been recovered,” Mr Ellis says. “When I contact-

ed the French police, their file was closed”; the robbery “was long past its statute of limitations”. Sleuths like them can offer guarantees to sources that the police can’t match: they have no powers of arrest and seek only to recover the artwork from whichever kingpin has it. Mr Brand took delivery of “Buste de Femme”, wrapped in bin bags, at his flat in Amsterdam. It hung on his wall for a night before being collected by an insurance company.

It is risky work that Mr Brand says is

often unremunerated. The pay-off, he maintains, is emotional. The people behind forgeries or the illicit trafficking of art are “messing up history”. He says he often worries that “a nurse or a doctor or a teacher, they do real jobs, you know, they really help other people”. By contrast, “what is the thing that I give to the world?” His comfort, he says, is to tell himself: “You give [people] great stories, you give them—sometimes—art back, which would not have been back without you.” ■



#### Cold-war espionage

## Sinned against and sinning

**Julius Rosenberg was a Soviet spy. The case of his wife, Ethel, is murkier**

**Ethel Rosenberg.** By Anne Sebba.  
*St Martin’s Press; 320 pages; \$28.99.*  
*Weidenfeld & Nicolson; £20*

ON JUNE 19TH 1953, just minutes after the execution of her husband, Julius, for espionage, 37-year-old Ethel Rosenberg was strapped into the electric chair in Sing Sing prison in New York. The first three charges of electricity failed to kill her, but after two more she was dead, smoke rising from her head, the only woman executed in America in the 20th century for a crime other than murder. Thousands of people filled the streets around the chapel in Brooklyn where the couple’s funeral was held. There were demonstrations across Europe, especially in France.

For many on the left, the execution of the Rosenbergs on charges of spying for the Soviet Union—and passing on atomic secrets—was analogous to the Dreyfus affair in France half a century earlier. In the grip of McCarthyite anti-communist hysteria, this interpretation ran, America had

sent an idealistic Jewish couple with two young children to their deaths on trumped-up evidence. The doomed pair protested their innocence until the end.

In the case of Julius, this was never a convincing narrative. He had recruited his brother-in-law, David Greenglass, who was employed on the top-secret Manhattan project at Los Alamos, to the Soviet cause; Greenglass in turn was linked to Harry Gold, the courier for Klaus Fuchs (a much more significant source of intelligence for the Kremlin). Those latter three all confessed to spying.

But the evidence against Ethel was far weaker, and at the trial was based primarily on perjured testimony from Greenglass, who had secured a plea deal, and his wife, Ruth. Greenglass later admitted his crucial testimony—that Ethel had typed up notes on American nuclear-weapons technology in the Rosenbergs’ flat in September 1945—had been false. Ruth, who escaped even a prison sentence, was probably the typist.

There have been many books about the Rosenberg affair. J. Edgar Hoover, the FBI’s

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▶ director, called theirs the trial of the century. But Anne Sebba's biography of Ethel is the first for 30 years. She places great weight on the release in 2015, after Greenglass's death, of grand jury testimony including his original statement that Ethel had no involvement in the conspiracy. With access to an extensive archive of Ethel's letters, many movingly written from prison—and drawing together interviews with surviving witnesses, including the Rosenbergs' two sons, Michael and Robert—Ms Sebba tells a compelling story of love, betrayal, misplaced idealism and brutal legal and political manoeuvring.

The picture of Ethel that emerges is of a tough, clever autodidact and would-be opera singer growing up in genteel poverty with an indifferent mother. She becomes a union activist, a committed communist and then a passionate wife and over-anxious parent. The victim of serial betrayals herself, she puts the principle of loyalty to her husband and the communist cause above all else, even though co-operating with her accusers would have saved her life and stopped her children becoming orphans. It is impossible not to sympathise with her terrible plight, but she is by no means a wholly attractive figure. There is something of the fanatic about her.

Was she innocent, at least morally, as the author maintains? The answer is probably not. In 1995 the American government released a cache of documents decrypted by the Venona project, a second-world-war counter-intelligence operation that intercepted messages from Soviet intelligence sources, which continued into the cold war. The material provides powerful evidence that Julius was indeed the linchpin of a prolific spy ring that gave Joseph Stalin's Soviet Union a valuable trove of military secrets. It seems inconceivable that Ethel was not fully aware of his activities; she probably helped him, including in recruiting her brother and Ruth.

But that does not legitimate her trial and execution. Crucial evidence was withheld from the defence. One of the prosecutors was the young Roy Cohn, who went on to work for Joe McCarthy and Donald Trump; his role in securing perjured witness testimony, and in secretly pushing the judge into handing down the death penalty, was disgraceful. The Venona evidence was never submitted and was anyway ambiguous about Ethel's involvement. Government lawyers knew their case was flimsy but thought that, if they threatened Ethel with execution, she would put pressure on Julius to reveal his network. They did not want to kill a young mother. As William Rogers, the deputy attorney-general, admitted, "She called our bluff."

Ms Sebba rightly sees this as a great miscarriage of justice. But in exculpating Ethel almost entirely, she goes too far. ■

## Women and medicine

# Body politics

**Unwell Women.** By Elinor Cleghorn. Dutton; 400 pages; \$28. Weidenfeld & Nicolson; £16.99

WHEN SERENA WILLIAMS struggled to breathe after giving birth in 2017, she knew something was wrong. She also suspected what it was. Six years earlier the tennis champion had endured a pulmonary embolism, or blood clot. But a nurse thought she was delirious from pain medication. Instead of the CT scan Ms Williams wanted, a doctor did a fruitless ultrasound. Eventually the scan was ordered—and revealed clots in the arteries of her lungs.

In "Unwell Women", Elinor Cleghorn shows that Ms Williams's problem—not being listened to—is as old as medicine. The author began stitching together the history of women's health after being diagnosed with lupus in 2010; her pain had been dismissed for seven years. The result combines her own story with a feminist history of illness and a plea for better listening. It shows how centuries of ignorance and condescension led to failings that endure today.

Sexism has underpinned medical practice since the time of Hippocrates, Ms Cleghorn writes. Ranging from classical civilisations to the present, with nods to feminist luminaries and ancient philosophy, her book describes how "hysteria"—from *hystera*, the Greek word for uterus—was long used as a blanket diagnosis for women. In the 1870s the concept became a reason to remove their ovaries. She recounts how 17th-century witch trials relied

on doctors' diagnoses, and how modern birth control was originally promoted by eugenicists in the 1920s.

Within this panorama, the focus is on women's health in Britain and America. In the early 20th century some travelled to Germany to try a new treatment called "Dämmerschlaf", or "twilight sleep", which promised "painless" births. Given two anaesthetics, morphine and scopolamine (a drug with amnesic effects), women lay awake in darkened rooms as their children were born, but would not remember the pain. The technique was controversial: labour was expected to be laborious, even though Queen Victoria had publicly endorsed the use of chloroform in 1853. She inhaled the gas for 53 minutes, pronouncing it "delightful beyond measure" after her eighth child was born. Women's choices over where and how to give birth are interrogated and judged even now.

Childbirth was the focus of women's health care for much of history, but medicine's shortcomings, and Ms Cleghorn's book, go wider. The immune system is another concern. Women are more prone to autoimmune diseases; they suffer disproportionately from illnesses such as lupus, multiple sclerosis and chronic fatigue syndrome. New research suggests this susceptibility could be down to the X chromosome—almost all biological females have two—which influences the production of auto-antibodies. Conversely, the chromosome may explain why women are less likely to suffer badly from viral infections such as covid-19, which kills more men.

As Ms Williams's example shows, birth can still be botched and hazardous. "Unwell Women" calls for improvements in women's care in reproduction and beyond. The pandemic has demonstrated what medicine can achieve with the right resources and incentives; it is an apt time to shine a light on the stubborn gaps in understanding of women's bodies. ■



The listening cure



Adalbert Stifter

## The idyll and the abyss

**A startling bard of environmental disaster is almost unknown in the English-speaking world**

**Motley Stones.** By Adalbert Stifter. Translated by Isabel Fargo Cole. *New York Review Books*; 288 pages; \$17.95 and £14.99

THE AUTHOR of these stories was an Austrian bureaucrat, known locally as a modest chronicler of bucolic idylls. Yet his characters include children who see Christ in a snowstorm; a macrocephalic girl who hides underground with a pet jackdaw; a pair of youngsters who survive a plague that kills everyone around them; and a sexually repressed priest who, by an act of self-sacrifice, saves his blithely uncomprehending parishioners. Misunderstood in his lifetime, largely forgotten since, this enigmatic writer also anticipated the modern preoccupation with environmental disaster. His name is Adalbert Stifter.

Stifter—you can be forgiven for never having heard of him—was the son of a linen-weaver from a rural backwater in what today is the Czech Republic. A contemporary of Charles Dickens, Gustave Flaubert and Nikolai Gogol, he spent most of his life as a schools inspector, cut off from the wider currents of European literature. His first published story, which won him local acclaim, appeared in 1840, the last in 1869, a year after his suicide. His output included two huge novels and 30 “novelles” (short novels or long short stories). He is still read in Austria and Germany but is almost unknown in the English-speaking world. Half his stories have not been translated. “Motley Stones”, one of his best collections, is only now appearing in English.

Many of his tales are set in Bohemian forests and focus on children. In a preface

to “Motley Stones”, Stifter described the book as “an assortment of fancies for young hearts” and himself as an imaginer of “only small things”. In his lifetime he was seen as a narrator of domestic harmony, family life and landscapes (which, as in the picture, he also painted): “The Sound of Music” minus the Nazis. A contemporary dismissed him as a writer of “beetles and buttercups”. Politics influenced this view. Austria had one of the most conservative and repressive regimes in Europe and Stifter, who tutored the son of the chancellor, Prince von Metternich, was associated with the state. Order, forbearance and self-denial are key ideas in his work.

### The I of the storm

Yet this perception of his stories is utterly at odds with what they actually contain. Stifter claimed he was teaching readers to value family ties, but in “Motley Stones” and elsewhere his families mainly produce misery and heartache. One child is so starved of affection that he dresses a boot-jack as a teddy bear and cuddles it. A mother finds her baby daughter repulsive: “When she cried, no one saw to her needs. If she did not cry, she was left to lie there.” A son is pampered and petted for years until abruptly driven into the desert and told to earn his living. Stifter may have wanted to preach pious domesticity but hardship, solitude and horror kept breaking through.

His death was more in keeping with his work than his life had been. Suffering from cirrhosis of the liver, Stifter took to his bed, slashed his throat with a razor and died three days later. As Isabel Fargo Cole, the translator of “Motley Stones”, remarks in

her introduction, he is less a writer of idylls than of “the abyss in the idyll”. The tension between what he claimed he was writing and what he actually wrote generates a singular and unsettling suspense.

Over time, German-speaking readers and writers reappraised Stifter’s work. Franz Kafka, that master of the uncanny, identified him as an artistic brother. Thomas Mann called him “one of the most extraordinary, the most enigmatic, the most secretly daring and most strangely gripping narrators in world literature”. Today, Stifter can be seen as one of the first authors to engage seriously with the theme of environmental catastrophe.

Characteristically, he disavowed any such intention, claiming in the preface to “Motley Stones” that he was less interested in “the surging of the sea” or “the fire-spewing mountain” than in “the force that makes the milk in the poor woman’s pot swell and boil over”. Yet of the six stories, four are about hailstorms, blizzards, plagues and floods. Storms are common in literature, often as projections of a hero’s inner turmoil. But in Stifter’s narratives, storms do not represent anyone’s interior drama. They are the drama. He eschews the type of hero who comes into conflict with others and changes the world; in the story “Tourmaline”, in which a character’s flat is decorated with pictures of the Viennese aristocracy, the great men of history are literally reduced to wallpaper. Rather, Stifter’s protagonists are trapped by the forces of nature or the minutiae of social life.

In his world, the normal balance between background setting and foreground drama is upended. Among German readers he has been celebrated for his long lyrical descriptions of nature, with each path, tree or boulder depicted in almost obsessive detail. Hannah Arendt called him the greatest landscape painter in literature. His characters, though, seem overshadowed and overcome by their surroundings. W.G. Sebald, another of Stifter’s admirers, thought that he took the Romantic era’s evocation of nature as an indifferent, destructive force as far as it could go. In “Rock Crystal”, for example, the story in which the siblings see Christ, an icy blizzard dominates the narrative, and the miracle happens almost in passing.

According to Amitav Ghosh, an Indian novelist, one reason climate change rarely features in Western literature is that it is too fundamental a challenge to the Western belief in a rational, predictable world. In the case of Stifter, at least, that is not true. As Ms Cole points out, even in its human aspects his world is neither predictable nor rational. Confused and overwhelmed, his characters struggle to cope with environmental disasters that they do not understand—in stories written before global warming had even begun. ■

# The Business Mind of Clever Mpoha

## The Group MD who built Savenda Group of Companies into an African Conglomerate

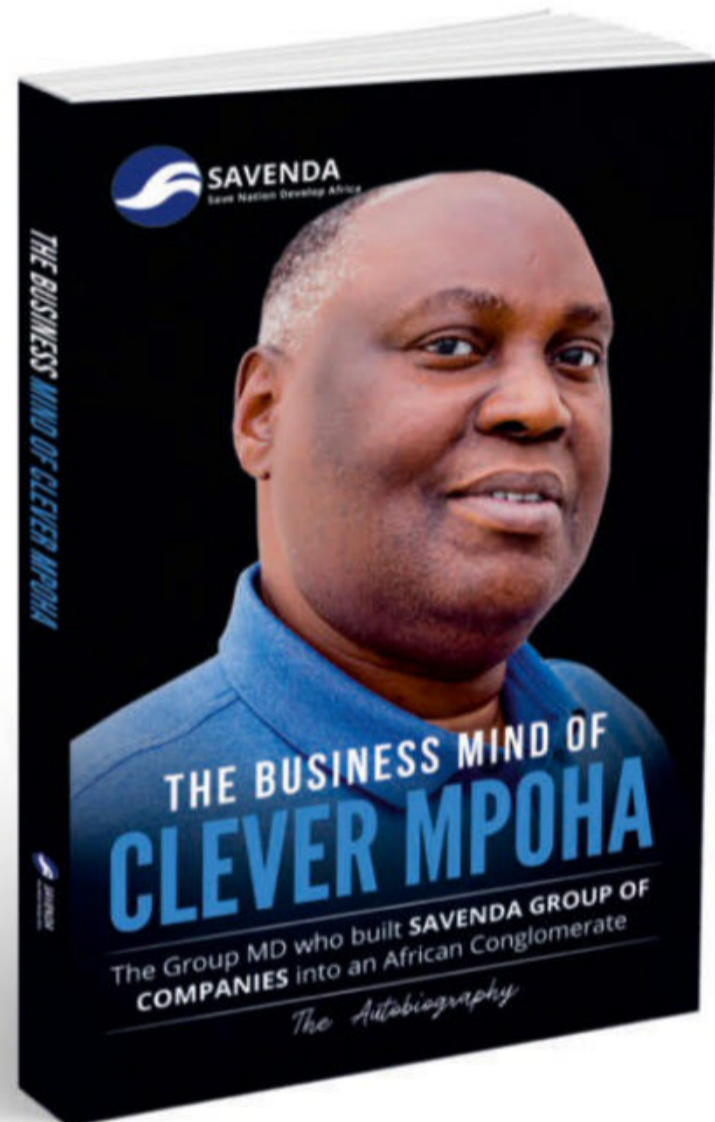
Clever Mpoha's rise to the corporate world has been described as "meteoric". It is surely one of the most inspiring stories for any young Zambian. From hunting to watching over the cows and helping his family run their small shop, he was born in a small village and in this autobiography he explains how the village setup gave him the survival skills he needed to run the business empire he runs today as managing director of the Savenda group of companies.

He started with buying and selling South Korean phones to the local market, focusing on anti-magnetic wave products. From the profits made he increased our volume and started diversifying. The book follows the rationale of every business crossroad and gives useful pointers with the personal stories involved, a valuable insight since Mpoha rarely appears in public. For example for farmers he explains how by aggregating their products and ensuring the right quality controls they can sell their products in a healthier market environment with real price discovery and transparency while also giving consumers better locally grown food.

The business intelligence of the author is practical and down to earth but also inspiring. Clearly he was always gifted in sales and understands how to "spin" products, how to package ideas and how to present them best. What becomes apparent as the book progresses is that he is also generous and able to communicate these gems of wisdom in a down to earth way that is both inspiring and motivating. As the Savenda Group ventures into new territories in the book or with the recent launch of ZAMBIA Fresh Lusaka Market, Africa's first commission-agent and formal fresh produce market, Mr Mpoha shows fearless determination for new tasks of any size. His corporate social responsibility is as vibrant as the man himself and he has helped build lives in Africa with investments in medical supplies, mining services, manufacturing, insurance, construction, express printing, logistics and risk assessment for ISO certification. With donations to the Red Cross, k200,000 to the Covid 19 emergency fund, 20 ventilators and many more donations to institutions, individuals and churches. He also was awarded the award of excellence to the University of LUSAKA by Professor Chifwanakeni recently where he donated k60,000 to all deserving high performing graduates at under graduate and post graduate levels.

Mpoha's rise to the top of the business world is illustrated with many examples of his acumen as he explains the business models that would eventually lead to his multi-industrial conglomerate savenda. From working for a packaging company for ten years in a caterpillar plant he got familiar with how to run a successful business and the running of several industrials such as manufacturing, insurance construction, express printing, logistics solutions, medical supplies, mining services and risk assessment for ISO certification.

The Savenda group has continued to grow from strength to strength and is now a global supply chain management company with a network of partnerships in the united state of



America, Europe the Middle East and the Asia-pacific region. It is not by accident that from the initial transaction of US\$1,000 in 1997, the Savenda group has grown to an estimated US\$300 million.

As a child he developed a passion for creating a positive difference in people's lives. Mpoha has been involved in many corporate social responsibility activities including a donation of K200,000 to the central province Investment and Trade Expo last year, hosting of the farmers golf tournament in Mkushi and the sponsorship of the Savenda Awards of Excellence at St Mary's secondary school in Lusaka. The Savenda Awards of Excellence recognize academic excellence from grade eight to twelve and are aimed at helping raise the level of competition among pupils at the Catholic run schools which have had a positive impact on the performance of pupils at the school. The Savenda awards began seven years ago and since then the pass rate for our pupils at both grade nine and twelve final exams has been excellent. The school is among the best in this country in terms of pass rate and Mpoha's spirit of giving back to the community is surely something that other corporate entities should learn from.

A touching book which could be taught in every school, find it at [www.amazon.com](http://www.amazon.com).

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## Tenders



### FEDERAL MINISTRY OF ENVIRONMENT HYDROCARBON POLLUTION REMEDIATION PROJECT (HYPREP)

350 Port Harcourt - Aba Expressway, Port Harcourt, Rivers State - [info@hyprep.gov.ng](mailto:info@hyprep.gov.ng)

PRE-QUALIFICATION OF CONTRACTORS FOR REMEDIATION OF SIMPLE AND COMPLEX HYDROCARBON IMPACTED SITES IN OGOILAND, NIGERIA, AND EXPRESSION OF INTEREST FOR DESIGN OF CENTRE OF EXCELLENCE FOR ENVIRONMENTAL RESTORATION ALONG WITH AN INTEGRATED CONTAMINATED SOIL MANAGEMENT CENTRE.

#### 1. BACKGROUND

As part of its commitment to implement the recommendations of the United Nations Environment Programme (UNEP) Report, on Environmental Assessment of Ogoniland (2011), the Federal Government of Nigeria, through the Hydrocarbon Pollution Remediation Project (HYPREP) Federal Ministry of Environment, wishes to procure the services of suitably qualified and experienced Contractors to undertake the remediation of hydrocarbon impacted soil and groundwater at designated oil-spill sites in Ogoniland. In addition, HYPREP intends to procure the services of suitably qualified and experience consultants for the design of the Centre of Excellence for Environmental Restoration (COEER) along with an Integrated Contaminated Soils Management Centre (ICSMC).

#### 2. SCOPE OF WORKS/SERVICES

The scope for the remediation works and the consultancy services are as categorized below:

**CAT. A: Pre-qualification for Remediation of Complex Hydrocarbon Impacted Sites.**

**CAT. B: Pre-qualification for Remediation of Simple Hydrocarbon impacted Sites.**

**CAT. C: Expression of Interest for Consultancy Services for the Design of a COEER and ICSMC.**

#### 3. PRE-QUALIFICATION/ EXPRESSION OF INTEREST REQUIREMENTS

Interested Companies/Firms are required to submit the following information/documents to demonstrate their adequate possession of qualified personnel, experience, equipment and financial capacity necessary for the satisfactory completion of the assignment:

##### 1. Company Data:

- Company name • Business address (not P.O. Box) • Email address
- Name and phone number (must be capable of receiving text messages) of primary contact person
- 2. Evidence of company registration in country of domicile, ownership/share allotment details and names/nationalities of directors (for Nigerian companies this should be Certificate of Incorporation issued by the Corporate Affairs Commission (CAC), Form CO2 and Form CO7).
- 3. Evidence of Income Tax Clearance Certificate.
- 4. Evidence of current National Pension Commission of Nigeria (Nigeria companies only)
- 5. Evidence of current Industrial Training Fund (ITF) (Nigeria companies only)
- 6. Evidence of current Nigerian Social Insurance Trust Fund (NSITF) (Nigeria companies only)
- 7. Evidence valid Interim Registration Report (IRR) or Registration certificate issued by BPP; (Nigeria companies only)
- 8. Evidence of company's registration with Council for the Regulation of Engineering in Nigeria (COREN) or equivalent regulatory agency in country of domicile for Non-Nigerian companies (For category COEER & ICSMC).
- 9. Company's audited accounts for the last three years with minimum average turnover of **NGN 1 billion** for category A, **NGN 100 Million** for category B and **NGN 50 Million** for category C (or USD Equivalent).
- 10. Evidence of experience in similar works/Services:
- 11. Evidence of ownership of relevant equipment or lease agreement (For category A & B only).
- 12. Evidence of financial capability to execute the project including reference letter from a licensed reputable commercial bank.
- 13. Company profile with complete curriculum vitae of key professional staff to be deployed on the project including copies of academic qualifications, professional registration certificates and current practice licenses.
- 14. Interested Nigerian companies/Firms that may not, on their own, meet the above requirements are strongly encouraged to associate and partner with suitably qualified international companies in order to enhance their qualifications.
- 15. Non-Nigerian companies/ Firms applying for prequalification or Expression of Interest should note that they have to enter into Joint Venture agreement with a Nigerian company as local technical partner in

compliance with Nigerian local content development laws & regulations. Evidence to be provided should be in the form of a signed/notarized Memorandum of Understanding or Agreement defining the roles of each party.

16. In the case of joint ventures, or consortia, comprising only Nigerian companies, each company must provide all of the above requested information/documents. Non-Nigerian companies should, in lieu of **Items 4 to 7** above, provide evidence of compliance with statutory requirements to participate in public procurements in their primary country of domicile.

17. Sworn affidavit disclosing whether or not any officer of HYPREP or the Bureau of Public Procurement (BPP) is a former or present Director, Shareholder or has any pecuniary interest in the company/Firm and attesting that all information presented in its bids are true and correct.

18. Current Registration with Nigeria's National Oil Spill Detection and Response Agency (NOSDRA) or it's equivalent in the Country of domicile.

#### 4. PREPARATION OF PRE-QUALIFICATION/ EXPRESSION OF INTEREST DOCUMENTS

Bidders are required to prepare two (2) hard copies and One (1) soft copy of the Pre-qualification/ Expression of Interest Documents, with the required information/documents arranged in the order in which they appear in Section 3 above, with dividers to separate each section, and with each sheet duly signed by an authorized representative of the Bidder, and paginated.

Completed Documents are to be enclosed and sealed in a plain brown envelope marked with appropriate Title as categorized (A, B & C) with the name of the company/Firm, joint venture or consortium written on the reverse side, and addressed to: The Project Coordinator, HYPREP, Port Harcourt, Rivers State, Nigeria. All submissions must be in the English language and signed by an official authorized by the company/Firms. Supporting document, such as official certificates, may be in another language provided each is accompanied by an accurate English language translation;

#### 5. SUBMISSION OF BID DOCUMENTS

Completed documents are to be delivered by hand or registered post, and deposited at the designated tender box(es) at the Annex Conference Room, Hydrocarbon Pollution Remediation Project, Louis House, No.350 Port Harcourt-Aba Expressway, Port Harcourt, Rivers State, Nigeria not later than 12:00 hours (Nigerian Time) of Tuesday 10th August 2021.

#### 6. CLARIFICATION & ADDITIONAL INFORMATION

Bidders requiring clarification and/or additional information on anything contained in this advertisement or on any matter regarding the preparation and submission of Bid documents, may direct such enquiries to the Project Coordinator (Attention: Head of Procurement), HYPREP, Port Harcourt-Aba Expressway, Port Harcourt, Rivers State, Nigeria; Phone Number: +2348050879408, Email: [procurement@hyprep.org](mailto:procurement@hyprep.org), [hyprep.procurement@hyprep.gov.ng](mailto:hyprep.procurement@hyprep.gov.ng). Every request should however be in writing, and delivered by hand, registered post or email no later than 7 days before the close of bids on 10th August 2021.

#### 7. OPENING OF BIDS

All bids will be opened immediately after the submission deadline (i.e. 12:00 hours Nigerian Time) on Tuesday 10th August 2021 at the Annex Conference Room, Hydrocarbon Pollution Remediation Project, Louis House, No.350 Port Harcourt-Aba Expressway Port Harcourt, Rivers State, Nigeria in the presence of Bidders or their representatives and independent observers.

#### 8. NOTE

All other details on the advertisement, the Scope of works and Services, and clarifications/additional information sought by bidders will be posted, in real time, on HYPREP website [www.hyprep.gov.ng](http://www.hyprep.gov.ng) along with the responses.

Signed: Project Coordinator, Hydrocarbon Pollution Remediation Project (HYPREP),  
Port Harcourt, Nigeria

## Economic data

	Gross domestic product				Consumer prices			Unemployment rate		Current-account balance		Budget balance		Interest rates		Currency units	
	% change on year ago latest		quarter* 2021†		% change on year ago latest		2021†	%		% of GDP, 2021†		% of GDP, 2021†		10-yr gov't bonds latest,%	change on year ago, bp	per \$ Jun 23rd	% change on year ago
United States	0.4	Q1	6.4	6.0	5.0	May	3.1	5.8	May	-3.0		-13.5	1.5	78.0	-		
China	18.3	Q1	2.4	8.5	1.3	May	1.6	5.0	May <sup>§</sup>	2.8		-4.7	2.9	24.0	6.48	9.1	
Japan	-1.6	Q1	-3.9	2.2	-0.1	May	-0.2	2.8	Apr	3.5		-8.9	nil	-8.0	111	-4.1	
Britain	-6.1	Q1	-5.9	5.8	2.1	May	3.0	4.7	Mar <sup>††</sup>	-4.5		-11.5	0.8	58.0	0.72	11.1	
Canada	0.3	Q1	5.6	5.4	3.6	May	2.2	8.2	May	-2.0		-9.0	1.4	87.0	1.23	9.8	
Euro area	-1.3	Q1	-1.3	4.3	2.0	May	1.7	8.0	Apr	3.2		-6.8	-0.2	23.0	0.84	4.8	
Austria	-5.5	Q1	-12.6	3.0	2.8	May	2.2	5.6	Apr	3.2		-7.4	nil	20.0	0.84	4.8	
Belgium	-0.6	Q1	4.2	3.9	1.5	May	1.5	5.3	Apr	-0.8		-7.5	0.1	18.0	0.84	4.8	
France	1.2	Q1	-0.4	5.5	1.4	May	1.4	7.3	Apr	-1.7		-8.7	0.2	26.0	0.84	4.8	
Germany	-3.1	Q1	-7.0	3.5	2.5	May	2.5	4.4	Apr	6.8		-3.6	-0.2	23.0	0.84	4.8	
Greece	-1.4	Q1	18.9	5.4	0.1	May	nil	15.8	Dec	-5.8		-5.8	0.8	-46.0	0.84	4.8	
Italy	-0.8	Q1	0.6	4.1	1.3	May	1.0	10.7	Apr	3.0		-11.9	0.9	-43.0	0.84	4.8	
Netherlands	-2.8	Q1	-1.8	3.4	2.1	May	2.2	3.3	May	11.0		-1.9	-0.2	11.0	0.84	4.8	
Spain	-4.3	Q1	-2.1	5.9	2.7	May	1.5	15.4	Apr	1.3		-8.7	0.5	-2.0	0.84	4.8	
Czech Republic	-2.4	Q1	-1.0	3.6	2.9	May	2.6	3.4	Apr <sup>‡</sup>	2.6		-5.6	1.8	103	21.2	10.4	
Denmark	-1.3	Q1	-5.1	3.0	1.7	May	0.7	4.6	Apr	7.4		-1.3	0.1	38.0	6.22	5.8	
Norway	-1.4	Q1	-2.5	2.6	2.7	May	2.9	4.6	Feb <sup>†††</sup>	2.5		-1.0	1.5	87.0	8.51	11.3	
Poland	-1.3	Q1	4.5	4.6	4.7	May	4.1	6.3	Apr <sup>§</sup>	2.2		-6.9	1.8	40.0	3.79	3.7	
Russia	-0.7	Q1	na	3.2	6.0	May	5.5	5.2	Apr <sup>§</sup>	3.7		-1.7	7.2	138	72.6	-5.4	
Sweden	-0.1	Q1	3.4	3.6	1.8	May	1.8	9.8	May <sup>§</sup>	4.3		-2.3	0.4	41.0	8.48	9.3	
Switzerland	-0.5	Q1	-2.0	3.0	0.6	May	0.3	3.0	May	7.4		-4.0	-0.2	20.0	0.92	2.2	
Turkey	7.0	Q1	na	3.9	16.6	May	14.5	12.9	Apr <sup>§</sup>	-2.2		-2.8	16.8	532	8.64	-20.7	
Australia	1.1	Q1	7.3	4.4	1.1	Q1	2.1	5.1	May	1.6		-5.9	1.5	62.0	1.32	9.1	
Hong Kong	7.9	Q1	23.5	4.9	0.9	May	1.6	6.0	May <sup>††</sup>	3.6		-4.1	1.2	50.0	7.76	-0.1	
India	1.6	Q1	6.0	10.4	6.3	May	5.2	11.9	May	-1.0		-7.2	6.0	12.0	74.3	1.8	
Indonesia	-0.7	Q1	na	3.9	1.7	May	2.5	6.3	Q1 <sup>§</sup>	-0.3		-6.4	6.6	-55.0	14,432	-1.9	
Malaysia	-0.5	Q1	na	4.4	4.7	Apr	2.4	4.6	Apr <sup>§</sup>	4.7		-5.9	3.3	22.0	4.16	2.6	
Pakistan	4.7	2021 <sup>**</sup>	na	3.8	10.9	May	9.0	5.8	2018	-2.0		-7.1	9.8	117	158	5.2	
Philippines	-4.2	Q1	1.2	5.1	4.5	May	4.2	8.7	Q2 <sup>§</sup>	-1.1		-7.6	3.9	45.0	48.8	2.9	
Singapore	1.3	Q1	13.1	4.5	2.4	May	1.8	2.9	Q1	17.5		-4.3	1.5	59.0	1.34	3.7	
South Korea	1.9	Q1	7.1	3.6	2.6	May	1.9	4.0	May <sup>§</sup>	4.6		-4.7	2.0	65.0	1,138	6.2	
Taiwan	8.9	Q1	12.8	6.0	2.5	May	1.6	3.7	Apr	15.5		-0.6	0.4	-4.0	28.0	5.6	
Thailand	-2.6	Q1	0.7	2.9	2.4	May	2.1	1.5	Dec <sup>§</sup>	3.7		-6.5	1.5	41.0	31.9	-2.9	
Argentina	2.5	Q1	11.0	6.2	48.8	May	47.3	11.0	Q4 <sup>§</sup>	1.9		-6.0	na	na	95.5	-26.7	
Brazil	1.0	Q1	4.9	4.8	8.1	May	6.8	14.7	Mar <sup>§††</sup>	-0.2		-7.3	9.3	237	4.97	4.0	
Chile	0.3	Q1	13.4	6.2	3.6	May	3.6	10.2	Apr <sup>§††</sup>	-0.2		-7.2	4.3	208	735	11.5	
Colombia	2.0	Q1	11.9	6.0	3.3	May	3.0	15.1	Apr <sup>§</sup>	-3.4		-8.9	7.0	126	3,777	-2.0	
Mexico	-3.6	Q1	3.1	5.9	5.9	May	4.5	4.7	Apr	1.4		-2.8	6.9	104	20.3	10.2	
Peru	3.8	Q1	8.3	10.5	2.5	May	2.6	9.7	May <sup>§</sup>	-0.3		-5.6	5.5	166	3.98	-11.8	
Egypt	2.9	Q1	na	3.3	4.8	May	5.2	7.4	Q1 <sup>§</sup>	-3.1		-8.1	na	na	15.7	3.3	
Israel	-1.1	Q1	-6.2	4.2	1.5	May	1.5	5.5	May	3.8		-7.7	1.1	50.0	3.25	5.5	
Saudi Arabia	-4.1	2020	na	2.9	5.7	May	2.4	7.4	Q4	2.8		-2.6	na	na	3.75	nil	
South Africa	-3.2	Q1	4.6	3.0	5.2	May	4.0	32.6	Q1 <sup>§</sup>	1.5		-9.4	8.9	-39.0	14.2	21.4	

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

## Markets

In local currency	Index Jun 23rd	% change on:	
		one week	Dec 31st 2020
United States S&P 500	4,241.8	0.4	12.9
United States NAScomp	14,271.7	1.7	10.7
China Shanghai Comp	3,566.2	1.4	2.7
China Shenzhen Comp	2,427.4	4.1	4.2
Japan Nikkei 225	28,874.9	-1.4	5.2
Japan Topix	1,949.1	-1.4	8.0
Britain FTSE 100	7,074.1	-1.5	9.5
Canada S&P TSX	20,164.4	-0.3	15.7
Euro area EURO STOXX 50	4,075.9	-1.8	14.7
France CAC 40	6,551.1	-1.5	18.0
Germany DAX*	15,456.4	-1.6	12.7
Italy FTSE/MIB	25,077.1	-2.7	12.8
Netherlands AEX	725.1	-1.2	16.1
Spain IBEX 35	8,954.1	-2.7	10.9
Poland WIG	66,733.8	0.8	17.0
Russia RTS, \$ terms	1,666.2	-0.8	20.1
Switzerland SMI	11,898.6	-0.7	11.2
Turkey BIST	1,402.4	-2.0	-5.0
Australia All Ord.	7,552.1	-1.1	10.2
Hong Kong Hang Seng	28,817.1	1.3	5.8
India BSE	52,306.1	-0.4	9.5
Indonesia IDX	6,034.5	-0.7	0.9
Malaysia KLSE	1,564.8	-0.9	-3.8

	index Jun 23rd	% change on:	
		one week	Dec 31st 2020
Pakistan KSE	47,900.7	-1.2	9.5
Singapore STI	3,118.6	-0.7	9.7
South Korea KOSPI	3,276.2	-0.1	14.0
Taiwan TWI	17,336.7	0.2	17.7
Thailand SET	1,592.1	-2.0	9.8
Argentina MERV	66,089.9	-2.2	29.0
Brazil BVSP	128,428.0	-0.6	7.9
Mexico IPC	50,170.8	-0.8	13.9
Egypt EGX 30	10,272.7	4.0	-5.3
Israel TA-125	1,768.4	-0.3	12.8
Saudi Arabia Tadawul	10,894.2	0.4	25.4
South Africa JSE AS	65,819.6	-2.2	10.8
World, dev'd MSCI	2,998.0	-0.3	11.4
Emerging markets MSCI	1,360.5	-0.7	5.4

## US corporate bonds, spread over Treasuries

Basis points	Dec 31st 2020	
	latest	
Investment grade	114	136
High-yield	346	429

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

## Commodities

The Economist commodity-price index 2015=100	% change on			
	Jun 15th	Jun 22nd*	month	year
<b>Dollar Index</b>				
All Items	188.7	181.8	nil	66.4
Food	132.7	129.0	-4.1	42.7
<b>Industrials</b>				
All	241.0	231.0	2.3	82.1
Non-food agriculturals	156.5	150.9	-12.2	63.4
Metals	266.0	254.8	5.4	85.9
<b>Sterling Index</b>				
All items	204.5	199.4	1.6	49.7
<b>Euro Index</b>				
All items	172.6	169.4	3.0	58.4
<b>Gold</b>				
\$ per oz	1,860.7	1,780.8	-5.9	0.8
<b>Brent</b>				
\$ per barrel	74.0	74.9	9.0	75.2

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

For more countries and additional data, visit [Economist.com/indicators](https://www.economist.com/indicators)

# 'Tis but a scratch

## Zombie papers taint academic journals long after they have been retracted

IN 2003 AN investigation into Eric Poehlman, an expert on ageing and obesity, found that he had faked data. He was imprisoned for using made-up results to win grants. Journals duly withdrew his work.

This should have ended his impact on academia. It didn't. One of his articles, on the composition of women's bodies, has been cited 400 times since it was retracted.

Such wrongdoing is rare: around one in 2,500 studies is retracted. Yet papers that do get retracted often have long afterlives.

Scholarship works like building blocks, with each paper citing myriad studies. This makes expunging the taint of a junk article impossible. Even though retracting a paper weakens all existing work that has referred to it, those studies remain on the books.

A zombie article like Mr Poehlman's, which keeps getting cited even after it is withdrawn, sounds much worse. In fact it is the norm. To track such mishaps, we fed a list of 20,000 withdrawn papers in an archive amassed by Retraction Watch, a non-profit group, into Semantic Scholar, a database of academic references. Of the 13,000 retracted papers that were cited at least once, 84% had a post-retraction citation.

It takes only one reference for a junk study to burrow in. Together, the 20,000 papers in the archive were cited in 95,000 articles after their retractions. In turn, these were cited in 1.65m further papers.

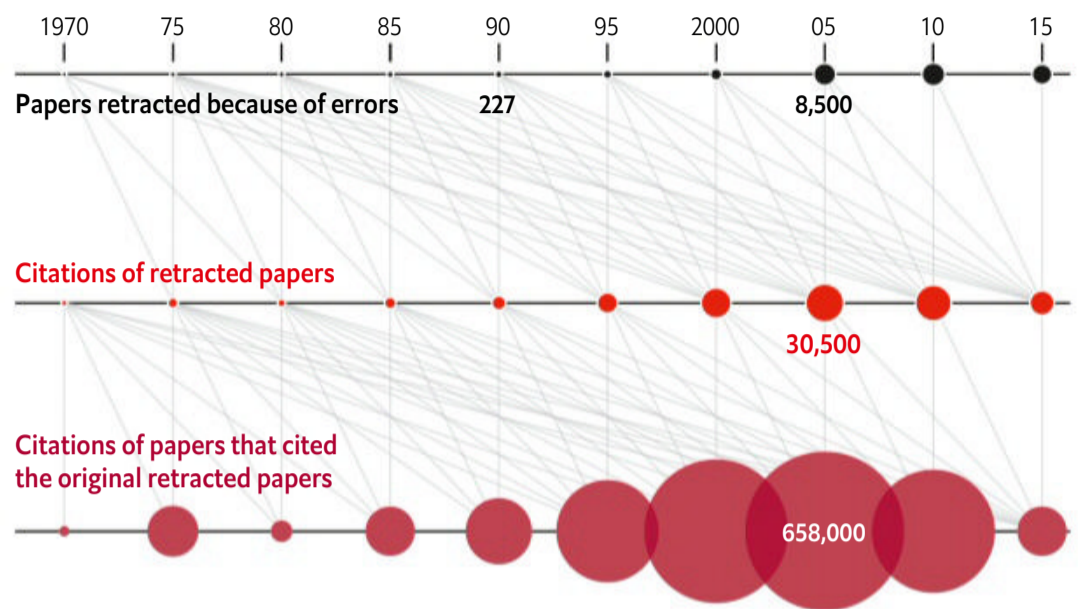
Retractions did at least put a dent in citations. In the year after a withdrawal, references to a typical retracted article fell by around 30%, and continued declining after that. In contrast, citations of similar articles that were not retracted fell by only 7%.

However, the size of this effect varied by field. Authors in political science and biology were unusually likely to cite retracted work. Those in education and law avoided such papers most scrupulously. And the covid-19 pandemic caused an increase in references to undead studies. Papers mentioning the disease, often produced with unusual haste, were three times likelier than others were to cite retracted research.

What reforms might keep the zombies in their graves? No one wants to cite withdrawn work, but checking papers' retraction status is unnecessarily tedious. When journals withdraw articles, they could replace online versions with notices stating the reason for the retraction, and notify administrators of research databases. They could also use tools like Semantic Scholar to ensure that references remain valid. ■

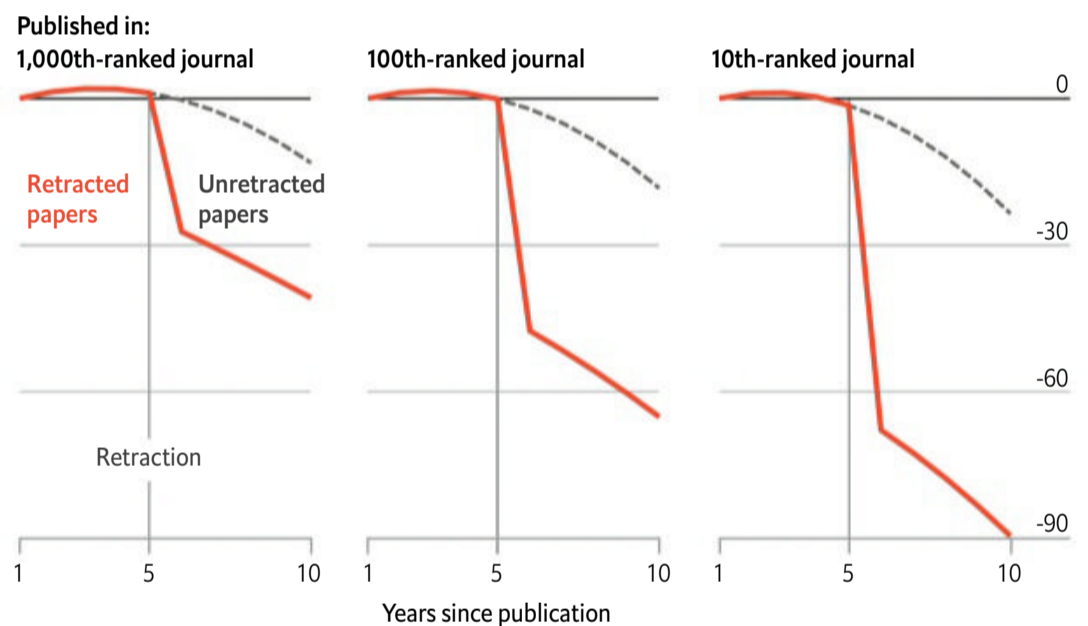
### → Hundreds of papers can rely indirectly on a single retracted study

Total papers retracted and subsequently cited, by five-year periods



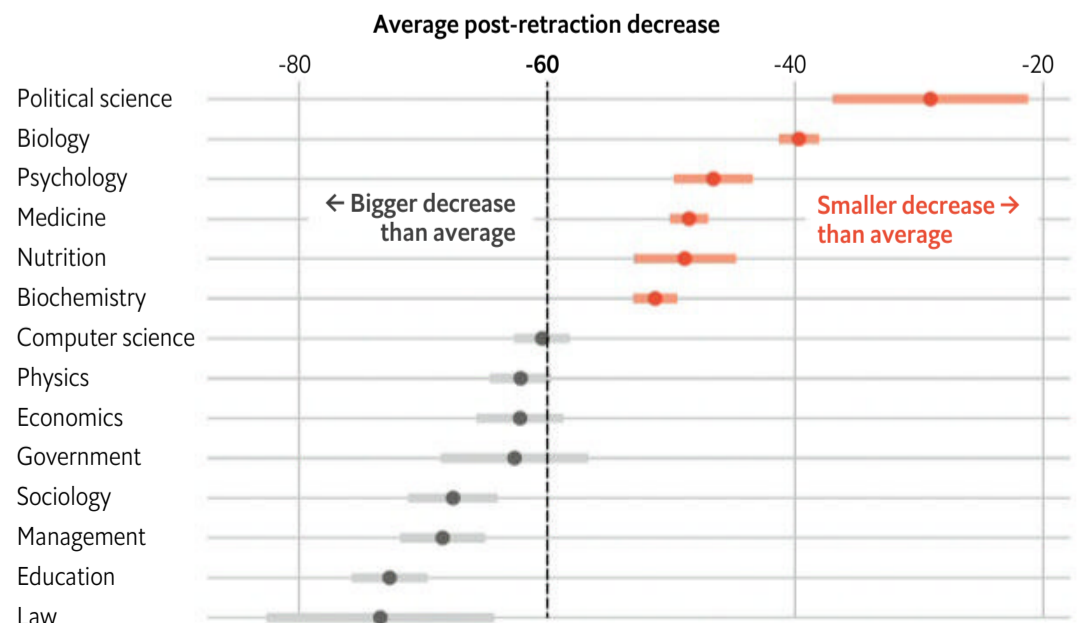
### → After studies are retracted, citations of them dwindle but do not vanish

Modelled change in citations per year for a paper retracted after five years, %



### → Some fields are unusually likely to keep citing retracted works

Change in average annual citations following a retraction, by discipline, %



Sources: Retraction Watch; Semantic Scholar; CrossRef; Kaggle; Scimago



## Man and superman

**Kenneth David Kaunda, founding president of Zambia, died on June 17th, aged 97**

WHEREVER HE TRAVELLED, Kenneth Kaunda took with him a very large white handkerchief. He gripped it in his left hand as he gave speeches in conference halls or at village meetings, and draped it over his left knee at sit-down interviews. Sometimes he used it to wipe away the sweat of exhorting his people but, more often, it dabbed away tears.

He was not, by nature, a melancholy man. Dazzling smiles came easily too, as well as ballroom dancing, joking and singing, with his guitar in tow and his hair teased up to give him extra height. He grew emotional, though, whenever he spoke of the plight of his country under British colonial rule. The sight of his father, for example, a reverend at a mission in Lubwa near the border with Congo, sitting on a hard wooden bench in church, while the white ministers sat on cushions; or the poor African women he had seen manhandled at a white butcher's shop for protesting at the high prices and the rotten meat he sold them. As he told these stories the tears would inevitably flow, and he let them, without embarrassment.

Deep emotion did not, however, lead him into violence. His parents had given him two commandments that stuck with him, Jesus's words: Love God, and love your neighbour. Do unto others as you wish them to do unto you. To pick up a gun, as most fighters for independence did, made you no better than the killers you faced. When his early political organising took him in and out of British-run jails he read Gandhi, whose writings went straight to his heart. He resolved to live simply, give up drink and smoking, and take back his country without bloodshed. The new Zambia, no longer Northern Rhodesia, was to be a land of respect for people of all races, colours and religions. Facing down his more vengeful colleagues, he called his liberation push in the early 1960s the "cha-cha-cha" campaign, for a nation where everyone—Africans and Europeans, children and the unborn, even domestic beasts,

even the queen—would dance together.

Behind the whimsy lay an iron resolve to keep Zambia united. "If I say 'Let's sing,' just sing," he told his followers. From 1964 he was president-strongman of a free country, his white handkerchief now a totem of his power, leading crowd-choruses of "Ti-yende Pamodzi", "Let's walk together". In Africa, he believed, opposition to the ruler spelled destruction. In Zambia, a land of many tribes and languages, multi-party democracy would let its enemies, the white-minority regimes to the south, undermine it and break it apart. For 26 of his 27 years in power he suppressed even the thought of it. Hundreds of political opponents were jailed and beaten, while he ceaselessly reshuffled the posts in his own party to keep all ethnic groups on his side.

His Zambia had a uniting moral philosophy to live by, his own invention, a mixture of Christianity, socialism and African traditions that he called "Zambian humanism". Its main principle was the importance of man: no fellow should be richer than another, no man should exploit another, each person had value and dignity. He set the pace, living as his party's leader in a house that had no power or running water, and as president steadily building schools, clinics and new roads, to give all Zambians a better chance. The people loved him for this, chanting "God in heaven—on earth, Kaunda!", and calling him "KK" for short. Since he was a proud football fan, sometimes turning the whole cabinet out for a public kickabout, the national football team became the "KK1". When they won international matches he would invite them to dinner at State House, humbly serving them himself on plates decorated with Zambia's coat of arms.

The economy, though, foxed and frustrated him. The country was fundamentally rich, with huge reserves and exports of copper that paid for his social improvements. But if he was truly to eliminate all classes and close the gaps between rich and poor, miners and farmers, he had to bend the economy to his will, like everything else. He therefore nationalised the copper mines, froze miners' wages and also froze prices, only to find that his policies discouraged farmers from planting and mining firms from investing. Then in 1974 the copper price fell off a cliff, trade to and from his landlocked country was disrupted by regional wars, and Zambia rapidly became one of the world's most indebted nations. Hating to be told what to do, he resisted going to the IMF, but in 1989 at last accepted its terms. An austerity programme forced him to end food subsidies; the riots that followed led to the multi-party elections he dreaded, and in 1991 he was voted out of power.

He went graciously. That was the best way to keep Zambia together, and also the best example for Africa as a whole. He was only the second African president to step down after an election, but it fitted with his long-term efforts to bring conciliation to the continent. His Zambia became a refuge for anti-colonial strugglers from all over southern Africa, but he also did not hesitate to talk to John Vorster and P.W. Botha, South Africa's racist leaders, man to man, to try to build bridges. Though he had no luck, it was more than other black leaders cared to do, and made him the natural chairman of pan-African organisations. In 1987, after he had lost his son Masuzyo to AIDS, he not only admitted it publicly but began a campaign to combat HIV/AIDS across the continent. With KK as its spokesman, carefully non-aligned Zambia punched well above its weight in both African and world affairs.

He did not, however, leave it in good shape. As he stepped down, a country that had been one of the region's richest was \$7bn in debt. More than 70% of Zambians lived below the poverty line. Country folk and town folk were still far from equal. So although he had given the people multi-party elections in the end, they had decided against him in a landslide. And although his reputation recovered with the years, until he was once again the beloved father of his country and an icon of the liberation struggle, in public he still clutched the large white handkerchief in his left hand, power and regret together. ■

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