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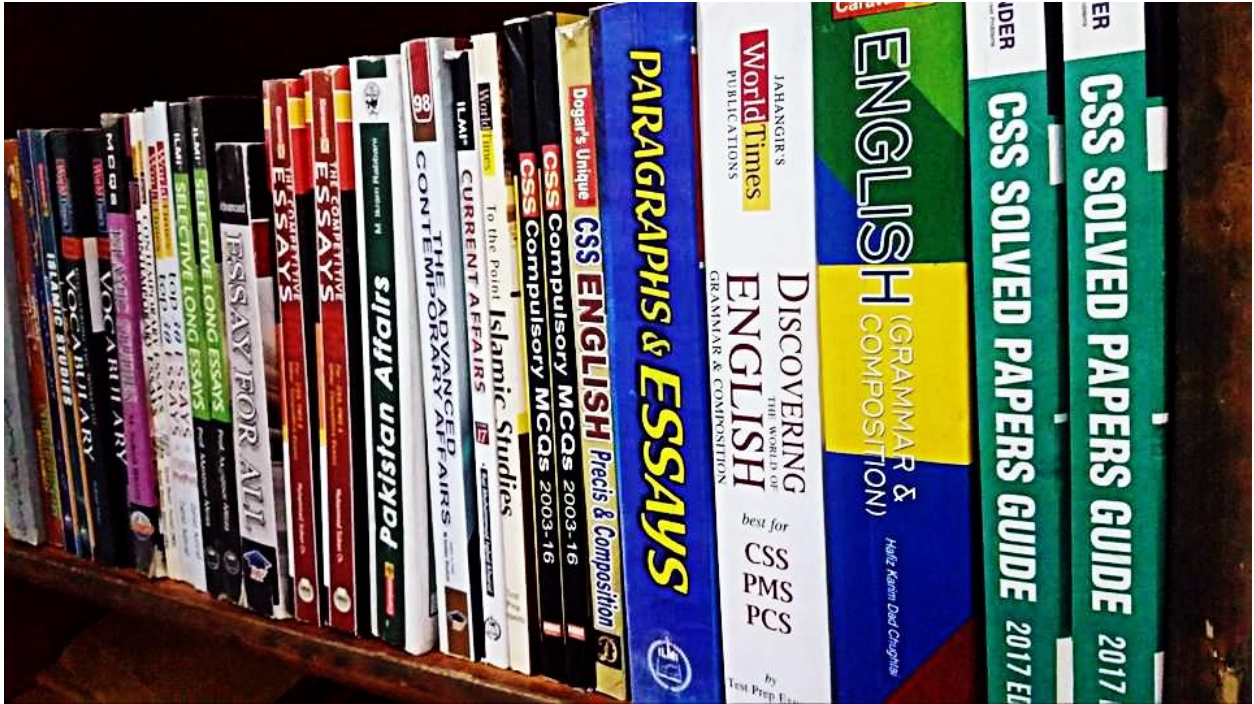


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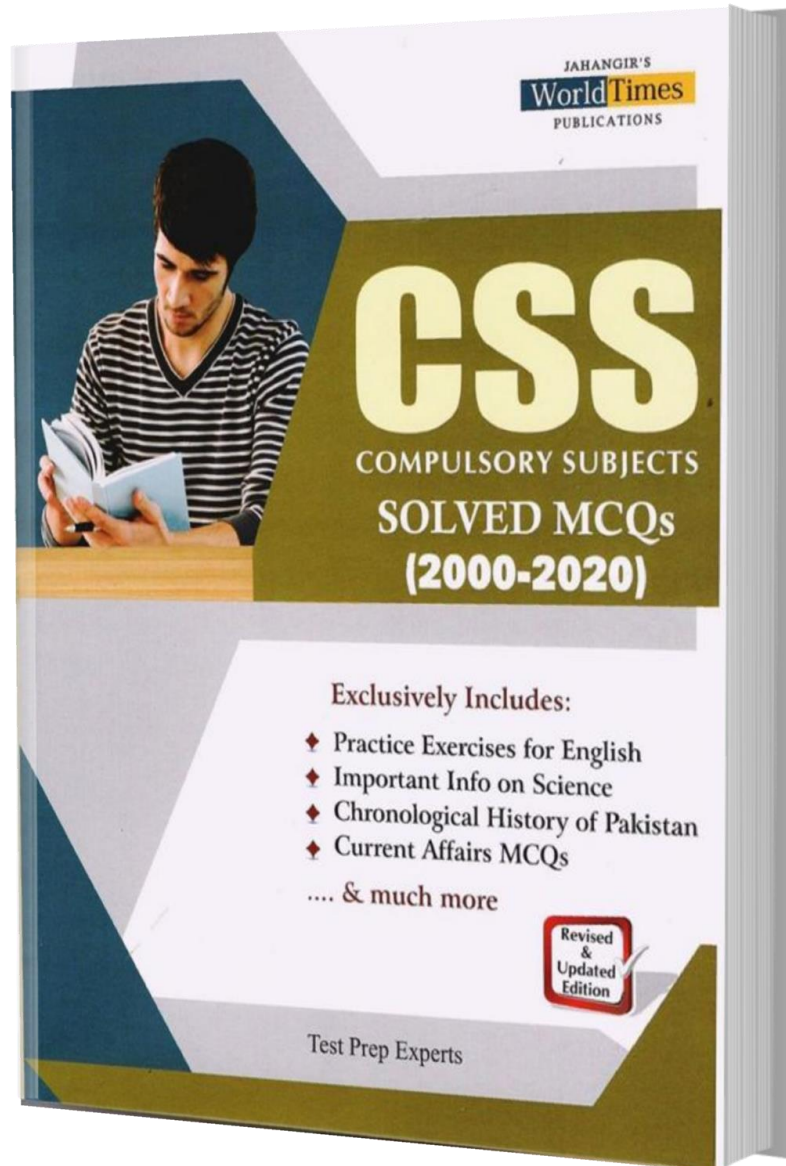
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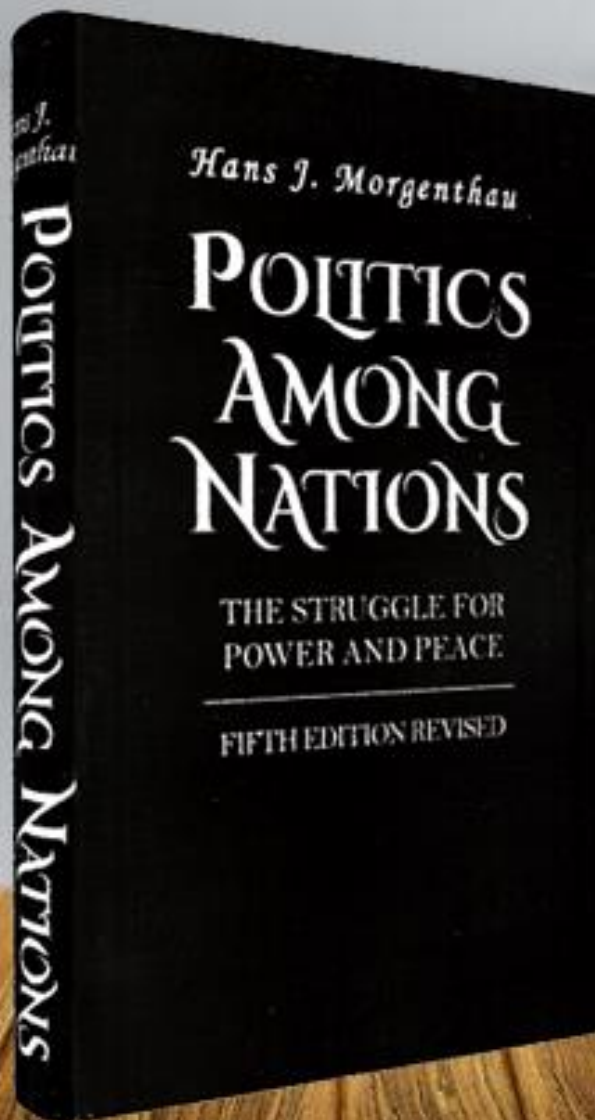
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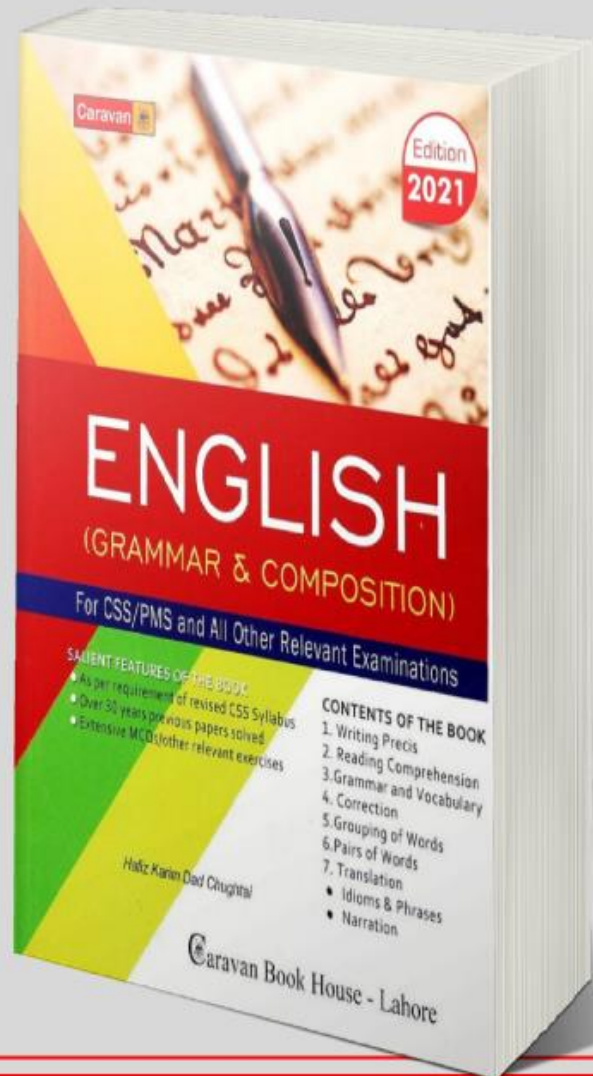
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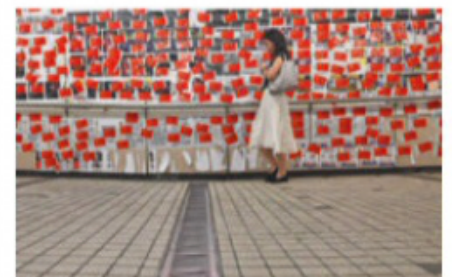
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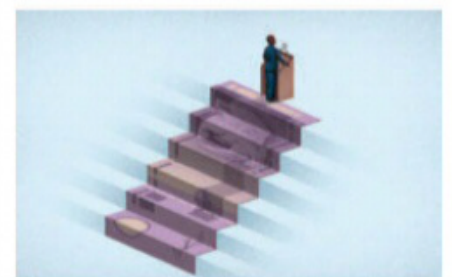
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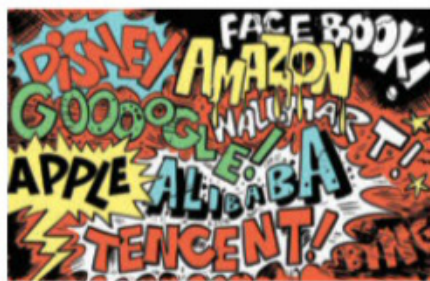
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Ghana became the first country to receive vaccine for covid-19 through the **COVAX programme**, a global coalition which distributes free doses to poor countries and is backed by the World Health Organisation. Ghana's shots were provided by India. Amid calls to speed up the delivery of jabs outside the rich world, the leaders of the G7 pledged more funding for COVAX. America is providing \$4bn, but it is resisting calls to share its stock of vaccine, until it finishes its inoculation drive.

Italy's ambassador to the **Democratic Republic of Congo** was shot dead near Goma after a UN food convoy he was travelling in was ambushed.

Mohamed Bazoum, a former foreign minister, was declared the winner of a presidential election in **Niger**.

The UN's nuclear watchdog reached a deal with **Iran** that will allow it to continue monitoring the country's nuclear activities for up to three months. Iran, however, said it would no longer allow snap inspections by monitors and would restrict their access to data at nuclear sites, violations of the deal it signed with world powers in 2015.

A German court sentenced a former **Syrian** intelligence officer to four-and-a-half years in jail for helping to arrest protesters who were then tortured and murdered by the regime of Bashar al-Assad. It was the first of what could be a series of trials of Syrian officials under the principle of "universal jurisdiction", which allows serious atrocities to be tried anywhere.

Israel said it would begin easing lockdown restrictions. Over half its population has received at least one shot of vaccine. An inoculation drive began in the Gaza Strip, following the delivery of doses donated by Russia and the United Arab Emirates.

Boris Johnson, **Britain's** prime minister, presented his "one-way" road map out of England's lockdown, listing five dates on which rules may ease if the pandemic recedes. A poll found just half of English people thought it likely that all lockdown restrictions would be lifted by June 21st, the government's target date.

Police in **Georgia** arrested the country's main opposition leader, Nika Melia, in a raid on his party's headquarters. Earlier, the country's prime minister resigned over the order to arrest Mr Melia, which was issued by a court. He warned that it would destabilise the country.

A leaked email showed that Amnesty International, a watchdog, had decided that **Alexei Navalny** was not, after all, a "prisoner of conscience". The Russian opposition leader has just been locked up on bogus charges. However, several years ago he made some xenophobic comments. Amnesty's much-derided move followed a lavishly funded Kremlin campaign to discredit Mr Navalny.

Armenia's army told the government to resign. The prime minister, Nikol Pashinyan, called it an "attempted coup" and urged his supporters to take to the streets. Armenia was humiliated in a recent war with Azerbaijan.

Hong Kong's government said it planned to require candidates for election to the territory's political bodies to swear an oath of loyalty to the government in Beijing. A senior official, Erick Tsang, said the aim was to ensure that "patriots govern Hong Kong". Patriotism, he said, involves

acceptance of Communist Party rule over China.

China revealed that four of its soldiers were killed during a border clash with **Indian** soldiers last June. An Indian army officer said more than 60 Chinese were killed or injured in the incident. India has acknowledged that 20 of its soldiers died.

Protests against the recent military coup gathered pace in **Myanmar**. A general strike was widely observed. Many civil servants have stopped work, disrupting government services. The army has arrested at least 720 politicians and activists and is threatening protesters with long prison sentences.

Nepal's Supreme Court ruled that parliament, which the government dissolved in December, must reconvene. The prime minister, K.P. Sharma Oli, had ordered the dissolution to paper over divisions within his coalition. He will now probably face a no-confidence vote.

Brazil's president, Jair Bolsonaro, sacked the head of Petrobras, the state oil company, and replaced him with a general. His apparent intention was to placate lorry drivers, who are threatening to strike over rising fuel prices. Brazil's stockmarket fell, reflecting fears that Mr Bolsonaro will adopt more populist economic policies.

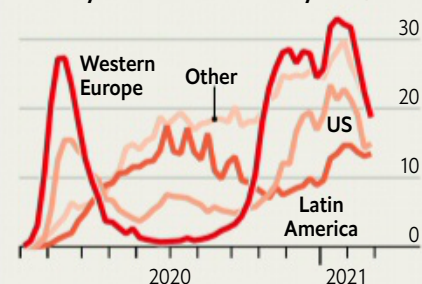
Colombia's "special jurisdiction for peace", founded after the end of a 52-year war between the state and the FARC guerrilla group, said that the army murdered at least 6,402 people from 2002 to 2008 whom it had falsely claimed were combatants. The killings, known as the "false-positives scandal", were supposed to show that the army was succeeding in the war.

Nicaragua created a ministry for outer space. It will be run by the army, which does not have a space programme.

Coronavirus briefs

To 6am GMT February 25th 2021

Weekly confirmed deaths by area, '000



Vaccination doses

	This week, '000	Total '000	Per 100 people
Israel	884	7,684	88.8
Seychelles	11	66	66.7
UAE	533	5,668	57.3
Britain	2,730	18,559	27.3
United States	10,689	65,032	19.4
Bahrain	32	281	16.5
Chile	964	3,093	16.2
Malta	13	66	15.0
Denmark	86	511	8.8
Turkey	2,760	7,289	8.6

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

America passed the tally of 500,000 deaths. Life expectancy at birth in the United States fell by a whole year in the first six months of 2020, to 77.8 years.

Johnson & Johnson's one-shot vaccine is very effective in combating severe infections, including in South Africa, according to America's drug administration.

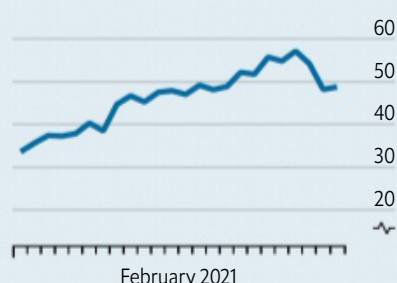
Studies in England, Israel and Scotland found that **mass-vaccination** programmes are reducing deaths, transmissions and hospitalisations.

A survey by **Nigeria's** disease-control centre suggested that cumulative cases in the country are in the millions, and not the 150,000-odd that have been officially recorded.

The World Bank threatened to suspend financing for **Lebanon's** vaccination drive, after it was reported that politicians got jabs while priority groups were still waiting.

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

Bitcoin price
\$'000



February 2021

Source: CoinDesk

Bitcoin speculators had a jittery week, pushing the cryptocurrency down from a record high. Janet Yellen, America's treasury secretary, added to the febrile atmosphere when she described bitcoin as an "extremely inefficient way of conducting transactions". Meanwhile, New York state's attorney-general branded **Tether** "fraudulent" and barred the stablecoin—commonly used to buy bitcoin on crypto-exchanges—from trading in New York. Tether long claimed its coin was backed one-to-one by the dollar, but New York concluded that it overstated its reserves and is "a stablecoin without stability".

The knock to bitcoin was a factor behind a sharp fall in **Tesla's** share price. The electric-car maker made a controversial \$1.5bn investment in bitcoin recently. Shortly before the cryptocurrency plunged, Elon Musk mused that its price seemed "too high". The drop in Tesla's stock at one point wiped \$15bn off his fortune.

Oil prices extended their gains, with Brent crude closing above \$67 a barrel for the first time in 13 months. The covid-19 vaccine roll-out in rich countries has given rise to hope among traders that as restrictions are phased out, the demand for energy will increase.

The **Australian government** passed its new law requiring social-media companies to pay for news content, after reaching an agreement with **Facebook** in their dispute over the legislation. Facebook had blocked all Australian news publications from its platform, claiming the law punished it

for content shared by users. The government amended its bill, adding arbitration measures that would set the fees social-media firms have to pay for news if they cannot reach commercial deals with publishers. Facebook is to pay \$1bn to Australian media firms over the next three years, a similar amount to that pledged by Google.

Britain's **unemployment rate** hit 5.1%, the highest level in five years. The rate is expected to increase over the coming months, once the government starts withdrawing its support for workers on furlough.

Boeing 777 wide-bodied jets powered by Pratt & Whitney engines were grounded, after an engine failed on a United Airlines plane shortly after it took off from Denver airport. Boeing's 737 MAX fleet has only recently been allowed to fly again following a 20-month grounding.

Updating a contract

Britain's Supreme Court delivered a final blow to **Uber** in a long legal battle with its drivers about their employment status in the country, when it ruled that the drivers are "workers" and not "independ-

ent third-party contractors", and are therefore entitled to benefits and protections. Britain is a big market for Uber, but it has come up against many regulatory problems, especially in London. The implications of the court's decision could put the brakes on Britain's wider carefree gig economy, too.

Kevin Sneader was ousted as the head of **McKinsey** according to reports, following a rebellion against his effort to implement greater scrutiny of its work amid a number of missteps. It is the first time in decades that a global head of the management consultancy has not been given a second term by the firm's partners, who get to choose their leader.

Wells Fargo struck a deal to sell its asset-management arm to two private-equity firms for \$2.1bn. It is part of an ongoing overhaul of the bank under Charles Scharf, who took over as chief executive in 2019.

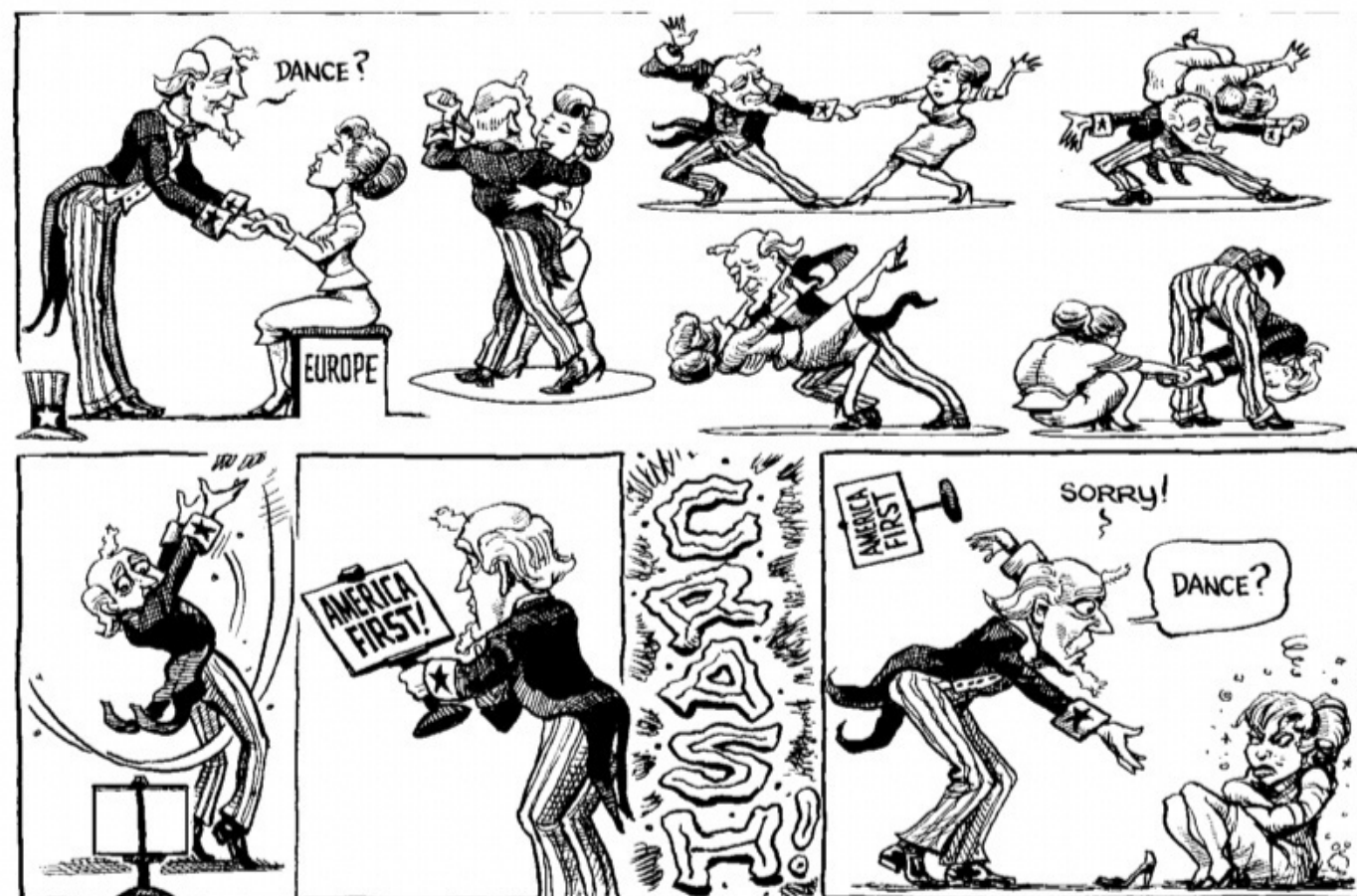
The pain the pandemic has caused the **hotel industry** was laid bare in annual earnings from Accor, Europe's largest chain and owner of the Ibis and Novotel brands, and InterContinental, which counts the Crowne Plaza and

Holiday Inn names among its assets. Both stressed that they expect bookings to pick up in the second half of the year. The chief executive of InterContinental described soothsayers' predictions about the end of business travel as "highly exaggerated", though he recognised it would take a while for it to bounce back.

Seeking some fun in the sun

The great British holidaymaker may give the **travel industry** reason to cheer. Britons flocked to hotel and airline websites after the government published its road map out of lockdown, which lifts all restrictions by midsummer. Tui reported that summer bookings were up by 500% overnight. EasyJet said flight bookings took off by 337% compared with a week earlier.

Travelling farther afield, the first pictures were beamed back from NASA's *Perseverance* rover on **Mars**, following a successful touchdown. The cold planet has become a hot destination of late for spacecraft. The United Arab Emirates' *Hope* orbiter has been circling since early February, as has China's *Tianwen-1*; its rover will attempt to touch down in the next few months.





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The dust-up

A new phase in the global tech contest is under way

THE IDEA of the technology industry being dominated by monopolies is so widely held that it has monopolised much thinking, from investors' strategies to antitrust watchdogs' legal briefs. Yet, as we explain, it is getting harder to sustain (see Business section). After a long period of ossification, the industry is entering a dynamic phase. In America digital markets are shifting towards oligopolies, in which second and third firms compete vigorously against the incumbent. The big tech firms are wrestling over customers and data: witness the confrontation between Apple and Facebook over who controls iPhone users' privacy. And all across Asia digital conglomerates are battling it out. The industry's emerging structure is a far cry from the open, diffuse capitalism this newspaper supports. But an oligopoly of rivals is much better than a monopoly.

The gale of creative destruction used to blow hard in Silicon Valley. The list of firms toppled from dominance runs from Fairchild Semiconductor to Hewlett-Packard. Yet recently the giants have clung on: Apple and Microsoft are over 40 years old and Alphabet and Amazon over 20; even Facebook is 17 this month. What happened? Network and scale effects mean that size begets size, while data can act as a barrier to entry. Search, social media, advertising, e-commerce, streaming, ride-hailing, delivery and payments all exhibit these alchemical properties to some degree. Having achieved supremacy in their chosen area, many tech firms, especially the big ones, have shown little appetite to compete directly with each other in the past decade. The three most common searches on Microsoft Bing are Facebook, YouTube and Google. Does anyone remember Amazon's Fire Phone?

At first glance nothing has changed. Tech firms enjoyed a lucrative 2020 and investors are betting more is to come. The \$7.6trn market value of America's five giants implies their sales will double in the next decade. Yet if you look more closely, a shift is under way. The incumbents are not getting smaller—their weighted-average market share is stable, at about 35% across each of 11 American tech subsectors. But the share of second and third firms has risen from 18% to 26% since 2015. This reflects two deeper trends.

First, big tech firms are diversifying as their core products mature, new technological opportunities emerge and regulatory threats mount in America, Europe and China. The firms have talked about this for years, but now it is happening. The share of the five American giants' revenues that overlaps with the others has risen from 22% to 38% since 2015. Microsoft and Alphabet are taking on Amazon in the cloud. Amazon is, in turn, the rising force in digital advertising.

The second trend, accounting for a third of the shift in market share, is that outsiders have momentum. From the ranks of the corporate establishment, Disney, aged 98, has acquired 116m new streaming customers in 18 months, while Walmart, aged 58, booked \$38bn in online sales last year. Independent tech firms such as Shopify in e-commerce and PayPal have broken through thanks to the digital surge caused by the pandemic, and are generating enough profits to be self-sustaining.

You might think that this competition is just a blip, but it has a precedent in Asia, where customers have leapfrogged ahead and the boundaries between products have blurred, leading to market-share shifts, lower margins and innovation. China has Alibaba and Tencent and five other contenders worth \$100bn or more. India has Jio and South-East Asia has Grab, Gojek and Sea. All these firms think in terms of subscribers who could be persuaded to buy a fluid range of services, rather than of protecting a static monopoly at all costs. They seek expansion through diversification, even if that means bumping up against rivals.

One danger is that this oligopolistic rivalry is a Potemkin contest. It has not yet disrupted the Apple-Alphabet duopoly over phone-operating systems or app stores. Although advertisers have more choice, between, say, Amazon and Facebook, those being advertised to still have no real alternative to the products of Mark Zuckerberg, Facebook's boss. And there are too many cosy links between firms. Alphabet pays Apple up to \$12bn a year to make Google the iPhone's default search engine. Alibaba and Tencent own stakes in some of China's new entrants.

This is where resurgent antitrust enforcers can make a difference. Those Google payments are now subject to a Department of Justice lawsuit, while Apple and Google face complaints over their app stores. Europe is planning rules to get different firms' products to work together and help users move their data around. China has a new list of "the nine do nots" for e-commerce firms, including not shutting out new contenders.

It helps that ambition is plentiful. In attracting business to its cloud platform, Alphabet is losing \$6bn a year—more than Amazon has lost in its lifetime. Disney plans to have 325m subscribers by 2024. PayPal intends to have 750m users of its financial super-app by 2025. Walmart has just bought an advertising firm. Facebook is entering e-commerce. Microsoft has considered buying two social-media firms, TikTok and Pinterest. Huawei in China is busy creating an alternative to the ios-Android operating-system duopoly.

Oligopolistic competition could benefit consumers in several ways. It could boost choice as more firms compete to offer an expanding range of services: 11 American firms have over 100m digital subscribers. It could raise standards as platforms differentiate themselves by trust. That is why Apple will soon ask iPhone users if they want to opt out of Facebook's data-tracking, upending the advertising market (see Schumpeter). And it could spur innovation as firms search for new tools, such as virtual reality, to control access to the customer.

Back in 2000 few predicted that tech was destined for monopoly, then it became accepted wisdom. Today no one knows if the emerging pattern of oligopolistic rivalry will last or benefit consumers. But the conditions are more promising than they have been for years. Regulators are trying to prise open closed markets, a financial boom means that capital is abundant and a global surge in online activity has boosted demand. A more contested digital economy would be consequential—for markets, consumers and businesses alike. It is looking more likely. ■



South-East Asia

The battle for China's backyard

The growing rivalry between America and China will hinge on South-East Asia

DURING THEIR 45-year feud, America and the Soviet Union fought proxy battles all across the world. But the cold war was at its most intense in Europe, where the Soviets constantly worried about their satellites breaking away, and America always fretted that its allies were going soft. The contest between China and America, happily, is different from that. For one thing, the two sides armed forces are not glowering at one another across any front lines—although in Taiwan and North Korea each has an ally in a tense, decades-long stand-off with the other. Even so, in the rivalry between the two powers, there will be a main zone of contention: South-East Asia. And although the region has drawn up no clear battle-lines, that only makes the competition more complex.

People across South-East Asia already see America and China as two poles, pulling their countries in opposite directions. Those protesting against the recent military coup in Myanmar, for example, hold up angry placards that attack China for backing the generals and pleading ones that beg America to intervene. Governments feel under pressure to pick sides. In 2016 Rodrigo Duterte, the president of the Philippines, loudly announced his country's "separation from America" and pledged allegiance to China instead. China's claim that almost all the South China Sea lies within its territorial waters and America's rejection of that assertion have sparked blazing rows in the main regional club, the Association of South-East Asian Nations (ASEAN), which China has attempted to win over.

This tug-of-war will only become more fierce, for two reasons. First, South-East Asia is of enormous strategic importance to China. It is on China's doorstep, astride the trade routes along which oil and other raw materials are transported to China and finished goods are shipped out. Whereas China is hemmed in to its east by Japan, South Korea and Taiwan, all firm American allies, South-East Asia is less hostile terrain, providing potential access to both the Indian and Pacific Oceans, for both commercial and military purposes. Only by becoming the pre-eminent power in South-East Asia can China relieve its sense of claustrophobia.

But South-East Asia is not just a way-station en route to other places. The second reason competition over it will intensify is that it is an ever more important part of the world in its own right. It is home to 700m people—more than the European Union, Latin America or the Middle East. Its economy, were it a single country, would be the fourth-biggest in the world after adjusting for the cost of living, behind only China itself, America and India. And it is growing fast. The economies of Indonesia and Malaysia have been expanding by 5-6% for a decade; those of the Philippines and Vietnam by 6-7%. Poorer countries in the region, such as Myanmar and Cambodia, are growing even faster. For investors hedging against China, South-East Asia has become the manufacturing hub of choice. Its consumers are now rich enough to comprise an alluring market. In commercial as well as geopolitical terms, South-East Asia is a prize.

Of the two competitors, China looks the more likely prize-

winner. It is the region's biggest trading partner, and pumps in more investment than America does. At least one South-East Asian country, Cambodia, is in effect already a Chinese client state. And none is willing to cross China by openly siding with America in the superpowers' many rows.

However, as close as South-East Asia's ties with China appear, they are also fraught (see Briefing). Chinese investment, although prodigious, has its drawbacks. Chinese firms are often accused of corruption or environmental depredation. Many prefer to employ imported Chinese workers rather than locals, reducing the benefits to the economy. Then there is the insecurity bred by China's alarming habit of using curbs on trade and investment to punish countries that displease it (see Asia section).

China also dismays its neighbours by throwing its weight around militarily. Its seizure and fortification of shoals and reefs in the South China Sea, and its harassment of South-East Asian vessels trying to fish or drill for oil in nearby waters, is a source of tension with almost all the countries of the region, from Vietnam to Indonesia. China also maintains ties with insurgents fighting against the democratic government of Myanmar, and has in the past backed guerrillas all over the region.

This sort of belligerence makes China unpopular in much of South-East Asia—building, alas, on dismaying traditions of prejudice. Anti-Chinese riots often erupt in Vietnam. Indonesia, the world's most populous Muslim country, has seen protests about everything from illegal Chinese immigration to China's treatment of its Muslim minority. Even in tiny Laos, a communist dictatorship where public dissent is almost unheard of, whispered gripes about Chinese domination are commonplace. South-East Asian leaders may not dare criticise China openly, for fear of the economic consequences, but they are also wary of being too accommodating, for fear of their own citizens.

China's bid for hegemony in South-East Asia is thus far from assured. South-East Asian governments have no wish to renounce trade with and investment from their prosperous neighbour. But they also want what America wants: peace and stability and a rules-based order in which China does not get its way by dint of sheer heft. Like all middling powers, the big countries of South-East Asia have an incentive to hedge their bets, and see what favours they can extract from the Goliaths of the day.

God's playground

To help South-East Asia avoid slipping into China's orbit, America should encourage it to keep its options open and build counterweights to Chinese influence. One mechanism is more regional integration. As it is, trade and investment among the countries of South-East Asia outweigh the business they do with China. Another mechanism is to strengthen ties with other Asian countries such as Japan and South Korea—one ASEAN has rightly embraced. Above all, America should not fall into the trap of trying to force its members to pick sides. That is the one thing South-East Asia is determined to resist. ■



Innovation

How to make sparks fly

Lessons from the pandemic on how to promote innovation

“WHAT IS IMPORTANT is seldom urgent,” declared Dwight Eisenhower. “And what is urgent is seldom important.” Eisenhower did not have to lead America through covid-19. The urgency and importance of the task over the past year have banished pretty much everything else from most leaders' minds. But now that the vaccine is kicking in, Britain's government is once again beginning to think about the things that will matter later. Next week, along with a budget designed to deal with the fiscal strains on the country, it is expected to publish a “plan for growth” to boost productivity, with innovation at its centre.

The government is right to try to pull the innovation lever. The world may be on the threshold of a technological boom with life sciences, at which Britain excels, at its heart. Innovation is crucial to productivity, and on this front Britain's performance has lagged behind its competitors' in recent years. Its low spending on R&D—less than three-quarters of the OECD average, as a share of GDP—argues for a boost.

Those who remember the 1970s may regard this as a dangerous road to take. Promoting innovation can quickly turn into an exercise in picking winners—or, as is more often the case, losers. The government's \$500m purchase last year of a stake in OneWeb, a bankrupt satellite firm, suggests that it has forgotten the humiliating lessons of that dismal decade. A second danger is that policy agendas get mixed up. The government has promised to “level up” poorer areas of the country, so deprived towns are lobbying for more money for their universities. But trying to boost innovation by sending money to weak institutions is likely to lead to average universities producing unremarkable ideas. Britain's research-funding system is ruthlessly elitist. It should stay that way.

The government's first move in boosting innovation was the announcement on February 19th of a plan for an Advanced Research and Invention Agency (ARIA), which is modelled on

America's Advanced Research Projects Agency. That is a promising start. ARIA's purpose is to fund high-risk, high-reward research, probably by directly funding exceptional scientists. But money is not all that matters. The successful translation of life-science research into treatments during the pandemic (see Britain section) suggests some inexpensive measures that can also make a difference.

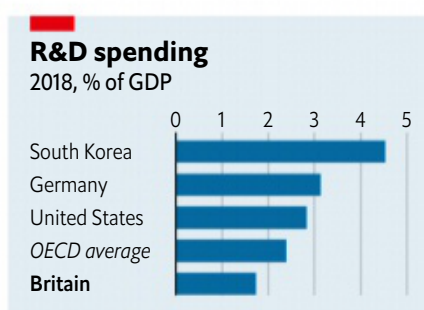
One is to speed up governmental processes. The rapidity with which Britain's medical regulator moved during the pandemic is one reason the vaccine roll-out is racing through the population and drugs identified in Britain are saving lives around the world. Urgency is not unique to pandemics. Getting things done quickly can make an investment worthwhile and determine where an entrepreneur chooses as a base.

Another useful measure that the government should use is its unique ability to overcome barriers. At the beginning of the pandemic covid-19 researchers were, for instance, unable to gain access to different strands of health-service data. The government eased restrictions on existing data and allowed researchers to ask people who had tested positive

for covid-19 to join trials. Both were crucial to the effort.

A last principle is the value of connections between the government and the private sector. Kate Bingham, a venture capitalist who led the vaccine-procurement effort, understood how to deal with drug companies. Many of the civil servants working with her had commercial experience. The government's closeness to business during the pandemic has been criticised, and perhaps some wasteful contracts were awarded to cronies. But without it, the vaccine effort would not have succeeded.

Innovation took human beings from caves to computers. It is elusive stuff. Good education, a welcoming immigration regime and a friendly business environment will do most to tend it. But a few sensible principles can help keep the flame burning. ■



Big men, big money

Fixing Africa's pricey politics

Tackling patronage requires understanding how it works

AYISHA OSORI, a Nigerian lawyer and author, has vividly described running for political office in her country. She twists the arms of party elders, flatters their wives and hands over wads of banknotes—the cleaner the better. “Without money”, she concludes, “most aspirations would evaporate like steam.”

Politics costs money everywhere, but the link between cash and power is especially corrosive in Nigeria and across much of Africa. In rich democracies parties choose candidates and subsidise their campaigns. In many African ones aspiring politicians pay vast sums to run on a party ticket and then shell out even more to cover their own costs. They give voters handouts, which

serve both as bribes and as hints of future generosity. Once in office, they keep spending: on constituents' school fees, medical bills, funeral costs and construction projects (see Middle East & Africa section). Individual politicians, in effect, act as mini welfare states. Some 40% of ambulances in Uganda are owned by MPs. Their spending often dwarfs their official salaries.

This is bad for Africa. When a life in politics costs so much, the impecunious and honest will be excluded. Many MPs will either be rich to begin with, or feel the need to abuse power to recoup their expenses, or both. Even if they are not corrupt, MPs are a poor substitute for a genuine welfare state. Their largesse ►►

► may go to those who ask loudest, or to a favoured ethnic group.

So long as states are weak, it makes sense for voters to ask their MPs for handouts, rather than for better laws or help to navigate the bureaucracy. It is also rational for MPs to neglect legislative work in favour of gifts and pork, if this is what voters say they want. But as Africa develops, this should change. As voters grow richer, they will be harder to buy. As governments grow more effective, MPs will have fewer gaps to fill. Alas, these shifts could take decades.

Africans need something better, sooner. Outsiders often suggest tougher campaign-finance laws, but these seldom work. They are often ignored. And laws copied from the West tend to miss the point, by regulating spending by parties before elections, rather than by sitting MPs.

Better would be to take a different approach. One aim would be to strengthen institutions that expose and punish corruption. Last year Malawians booted out the graft-ridden regime of Peter Mutharika thanks, in large part, to independent judges. Politicians who see graft punished are more likely to stay clean.

Another aim would be to encourage parties to run on poli-

cies, rather than ethnicity or patronage. African NGOs, trade unions and business groups should nudge them in this direction—or help set up alternatives. New parties, such as Bobi Wine's National Unity Platform in Uganda, are gaining popularity partly because they oppose the old rot. Philanthropists could give them money—and ask nothing in return.

The essential thing is to curb MPs' informal role as sources of welfare. The long-term fix would be to make local governments work properly. A stopgap is to improve Constituency Development Funds. These are pots of public money to be spent largely at the discretion of MPs. More than a dozen African countries have them. They are not as grubby as they sound. Research from Kenya finds that voters judge MPs on how they use these funds, so they offer some accountability. With greater transparency, they would offer more.

Africa has grown more democratic in the past 30 years. Multi-party elections are common, albeit often flawed. Opposition parties are gaining ground. Most leaders leave office peacefully, rather than in coups. Politics is becoming more competitive. The next step is to make it less costly. ■

The trouble with duty-free Call of duty

It is time to close the airport-shopping loophole

IN "L'ENFER", a recent novel by the French philosopher Gaspard Koenig, a university professor dies only to discover that hell is an eternity spent traipsing around airport duty-free shops. Others seem to enjoy the experience rather more. Travel retail has grown into a mastodon, with annual sales of \$86bn before the pandemic hit. It is busy adapting by expanding beyond the airport terminal, notably in China (see Business section). As it does, its tax privileges are becoming ever more indefensible.

The premise underpinning duty-free is that the mere act of crossing an international border should exempt travellers from some taxes that non-travellers are subject to. This was a questionable wheeze even when European airports lobbied for it in the 1950s. Now it is untenable. Modern tax codes typically seek to dampen inequality, but duty-free shopping hands most benefits to the well-heeled who frequently travel abroad. Taxes could usefully nudge people to be greener. Duty rebates overwhelmingly fall into the pockets of people who fly and pollute. One goal of excise tariffs is to curb the harmful use of tobacco and alcohol, but airport shopping is explicitly designed to circumvent them. As duty-free shopping has ballooned, what was once a wrinkle has swelled into a tax-avoidance scheme for jet-setters.

Duty-free's boosters argue that the income from shops is essential to sustain airports, which might otherwise need more taxpayer funding. Retail income, not all of which is exempt of duties, is indeed their biggest source of cash after fees paid by airlines. The figure is inflated by the astronomical rents that airports can charge retailers, skimming off up to 40% of their sales. But it is a textbook case of allowing an exorbitant privilege to generate unjustified profits which are then shared around opaquely. If airports need state help, especially after the pan-

demic, it should be paid transparently, not through tax dodges that distort economic incentives.

The pandemic will probably push the duty-free industry into even more dubious territory. Its business model is evolving as it seeks to cash in on its special status. You can increasingly buy duty-free goods online well ahead of a trip, then pick them up the next time you happen to be flying, with tax conveniently avoided. Once confined to airports, the principle that some people do not need to pay value-added taxes has spread in many places to tourist shops downtown. Shoppers often sidestep taxes on clothing, home electronics and smartphones, as well as bottles of oak-aged cognac and choice Cohiba cigars.

That is unfair to other retailers and to the non-travelling public. It is why Britain has eliminated most duty-free advantages and tax rebates for foreigners who shop there. Doom-ridden industry predictions about imploding business models and a collapse in retail revenues are reminiscent of the shrill warnings when EU countries ended duty-free shopping for those travelling within the single market in

1999. In fact, there was not a collapse in European cross-border travel—which has thrived.

Closing the duty-free loophole does not mean airports will stop behaving like shopping centres with departure gates tacked on. Weary flyers will still be condemned to pick their way through a maze of perfume spritzers as they emerge from security checks. Airports will continue to announce flight-departure gates ever later in order to encourage passengers to linger in the shops even longer. Bored travellers with hours to kill hardly need the incentive of a tax backhander to top up on chocolate or buy those noise-cancelling headphones. It is past time to call time on duty-free. ■



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The Central Bank of Nigeria (CBN), the Africa Finance Corporation (AFC) and the Nigeria Sovereign Investment Authority (NSIA) (the "Promoters") are requesting for expression of interest proposals from qualified asset managers active in the infrastructure sector to manage a newly-created world class institution - The Infrastructure Corporation of Nigeria Limited (InfraCorp), to catalyse and accelerate investment into Nigeria's infrastructure sector. InfraCorp is a dedicated privately-managed infrastructure and industrial vehicle that will harness opportunities for Nigeria's infrastructure development by originating, structuring, executing and managing end-to-end bankable projects in that space.

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- Establish procedures, processes and controls appropriate for InfraCorp;

Upon expression of interest, the Promoters shall share a detailed RfP document providing potential asset managers with the necessary information to prepare appropriate proposals in line with the Promoters' requirements.

All expressions of interest (EOIs) and/or any relevant questions must be submitted as soon as possible to InfraCorp@cbn.gov.ng. The deadline for receipt of final proposals in response to the detailed RfP is **12 noon Nigerian time on 16 March 2021**.

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The legal meaning of genocide

You claim that “genocide” is the wrong word to describe the horrors of China’s actions against the Uyghur population (“How to talk about Xinjiang”, February 13th). Genocide is not a word that should be used lightly. You recognise that, as defined by the UN convention (and indeed by international law and American law), genocide does not necessarily entail the immediate mass slaughter of a group. Destruction of the group (in whole or in part) must be the intended result, but this may be achieved in a number of ways.

In the case of the Uyghurs, in terms of the legal test, allegations include killings, causing serious bodily or mental harm, deliberately inflicting conditions of life calculated to destroy the group by way of concentration camps, forced labour and other atrocities, imposing measures intended to prevent births within the group and forcibly transferring Uyghur children to another group. These acts are supported by evidence of the specific intent to destroy this ethno-religious group, a specific intent that can be inferred from the pattern and systemic nature of the atrocities.

Each element of genocide has to be scrutinised in consideration of the available evidence. In the absence of an international court or tribunal, countries, as the duty holders under the Genocide Convention, must determine their responses. Indeed, the convention imposes certain duties upon states to prevent and punish. The American administration didn’t wake up one day and decide to call the atrocities against the Uyghurs genocide. The State Department had been working on the topic for months.

The duty to prevent genocide is extensive and critical. As the International Court of Justice in the case in *Bosnia and Herzegovina v Serbia and Montenegro* clarified, the duty to prevent arises “at the instant that the state learns of, or should normally have learned

of, the existence of a serious risk that genocide will be committed”. If this is the case, countries must conduct their monitoring, analysis and determination of at least the serious risk of genocide very early on. In order to punish genocide, states must introduce domestic laws to give effect to the UN convention, including criminalising genocide and conspiracy to commit genocide. This is where meeting the precise elements of the crime are crucial as otherwise the charges would not stand.

Your assertion that genocide in Xinjiang is an “exaggeration” or “rhetorical escalation” means that countries may well evade acting upon their duties. That has too often been the case as the world watches genocides take place.

BARONESS HELENA KENNEDY, QC
Director of the International Bar Association’s Human Rights Institute
London

A full list of signatories to this letter is available online, as are more letters on the topic.

A slow-motion genocide is still a genocide. The drafters of the UN convention added the clauses you mention, of preventing births and so on, in anticipation of subtler means of destroying a group without systematic killing. The Uyghurs’ case, and cases in the future, will undoubtedly adhere to this more subtle form of eradicating a people.

The world faces existential challenges, like climate change, that will require action from China, but the last thing we should do is downplay its abuses. Call it whatever you want—human-rights abuse, atrocities, crimes against humanity, or genocide—if history has taught us one thing, it is that the world is slow to react to horrors like this one in part because we allow the debate about labels to eclipse the debate about what must be done to stop it.

OMER KANAT
Executive director
Uyghur Human Rights Project
Washington, DC

Out of fashion

It may be more helpful to view Tesla’s recent “investment” in bitcoin in the context of a brand (Schumpeter, February 13th). It has all the hallmarks of the merger of fashion brands and cultural icons, often indicated by an “x”, such as Beyoncé x Balmain or McQueen x Hirst. *Vogue* described these collaborations as designed “to trick us into thinking that a sneaker or a hoodie is more desirable by the mere fact that it has an ‘x’ on its label”. No one doubts the punk credentials of both parties in “Tesla x bitcoin”, but I am not sure Tesla’s mission will sit well for long with the environmental harm from mining cryptocurrencies.

FAISAL SHEIKH
Managing director
Monmouth Capital
London

The covid world foretold

Reading Bartleby’s column on loneliness (January 30th) reminded me of E.M. Forster’s short story “The Machine Stops”, written in 1909. In this future dystopia people spend their lives in isolated underground cells. Everything is provided at the press of a button and not touching others is a sign of good breeding. People communicate through a system similar to our internet and have short interactions with others in a way not different from how people use today’s social media. It is a fabulous extrapolation of our current world of the cubicle, the digital economy and no-touch social norms.

MANUEL ASALI
London

Test flights

You implied that model aircraft are not real (“A worrying windfall”, January 30th). Beginning with the famous experiments of Sir George Cayley (the father of aviation) using unmanned gliders in the early 19th century through to the present day, aerodynamicists have routinely turned to

models to give them insights into what does or does not work and why. Models are just as “real” as full-size fighter jets or airliners. A model glider was recently recorded flying at 548mph (Mach 0.7).

JOHN TREBLE
Manager, Team GBR
FAI World Slope Racing
Championships 2021
Swansea

No mere mortals

I enjoyed your article on thrill-seekers and the contradiction between their death-defying stunts and their calm demeanour (“Last of the daredevils”, January 30th). But why turn to an evolutionary psychologist for an explanation. The profession is more obsessed with sex than Freud; even the most banal human behaviour is to them a remnant of some ancient mating ritual.

Better to quote Ernest Becker, who argued in “The Denial of Death” that people indulge in dangerous activities to maintain the deeply held delusion that they are immortal and do not have to worry about the great hereafter. In this sense, base jumping is no different from attending mass, or staking out a grand legacy, or indeed, writing letters to the editor.

BENJAMIN CARLANDER
Linköping, Sweden

Compose yourselves

If we are to hurl music into space may I suggest we send our best rather than the mish-mash described in “We are the world” (January 30th). Let’s just broadcast Bach, perhaps starting with the “Well-Tempered Clavier” and the Goldberg variations. This will avoid any embarrassment many years hence when or if we get a reply.

JON ORLOFF
Rockaway Beach, Oregon

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

HONG KONG AND SINGAPORE

In no region is China's influence felt more strongly than among the ten nations of South-East Asia

LAST YEAR a remarkable if informal confederacy formed online across Asia, in scarcely the time it takes to boil a kettle: the Milk Tea Alliance. Its members were young activists, mostly in South-East Asia. All had disparate agendas at home. But they united in pushing back at a perceived growing menace—authoritarian China's overweening presence in the region.

It began when a Thai heart-throb, Vachirawit Chivaaree, star of “2gether”, a drama popular across Asia, retweeted a collection of cityscapes that innocently described Hong Kong as a country. Thousands of jingoist Chinese internet trolls called for a boycott of Mr Vachirawit's show. He apologised. But the trolls found an old Instagram post from Mr Vachirawit's girlfriend that seemed to indicate her support for Taiwan as a country separate from China. It further nourished their rage.

Soon Thai netizens were fighting back with witty memes. Chinese patriots responded by insulting the Thai king and prime minister, who had come to power in a coup, as inept. The Thai gadflies were ju-

bilant: they could not agree more. Their deft turning back of Chinese criticisms brought applause from young people in Hong Kong and Taiwan, who are no strangers to China's heavy hand. Others in South-East Asia resentful of strongman rule, such as that of President Rodrigo Duterte in the Philippines, also cheered.

Thus the alliance was born, named because of popular variations of tea drunk across Asia. In mainland China tea is drunk without milk. But Taiwan's best-known beverage is milky *boba* tea with chewy tapioca balls; Hong Kongers drink tea with milk, a British holdover; and Thailand's tawny tea is sweetened with condensed milk. Others have since joined. After Chinese soldiers fought a deadly brawl with Indians guarding their two countries' disputed border, Indian netizens added *masala chai* to the brew. And after the army seized power in a coup in Myanmar on February 1st, photos of *laphet yay*, Burmese milk tea, flooded social media.

The Milk Tea Alliance is far from cohesive, or purely anti-China. Lambasting Chi-

na is part of a critique of domestic authoritarian rule, says Frank Netiwit, a young Thai activist at the forefront of protests calling for more democracy. In Myanmar the anger is overwhelmingly directed at Gen Min Aung Hlaing and the army.

China has long had the backs of the region's autocrats. It described the coup in Myanmar—in which Aung San Suu Kyi, the country's leader, and hundreds more were arrested—as a “major cabinet reshuffle”. It has growing investments in South-East Asia and seeks political influence to protect them. But South-East Asian rulers are prickly and nationalistic. Most chafe at any suggestion that they are in China's pocket.

The Milk Tea phenomenon underscores how, for all that South-East Asians often welcome China's economic engagement, it also comes with added complications to which China's leaders often appear oblivious. South-East Asia, Murray Hiebert argues in “Under Beijing's Shadow”, is a microcosm of China's global ambitions—signalling how its diplomats, corporations and even its armed forces might operate elsewhere in future.

More than anywhere, South-East Asia is bound to feel China's presence. South-East Asia begins where China leaves off—in the mountainous border regions of northern Vietnam, Laos and Myanmar. Many groups that make up modern South-East Asia's mosaic of ethnicities have their origins farther north. Imperial China claimed primacy over the rulers of South-East Asia. Viet-▶▶

nam, Thailand and Burma (now Myanmar) were important tributaries.

Tributary relations fostered trade, including in exotics such as jade that have come to define Chinese taste. Emigrants (mainly men) from southern China began to seek livelihoods in the European settlements of Batavia (now Jakarta) and Manila. In the 19th and early 20th centuries they flocked to British and French rubber plantations and tin mines, or sought fortunes in the entrepôts of Singapore and Rangoon (now Yangon). Sojourners at first, most stayed. Today, some 33m South-East Asians claim Chinese ethnicity. In Malaysia and Indonesia, they form significant minorities—and in Singapore the majority. In Cambodia, Thailand and elsewhere, distinctions are often absurd—the Thai royal family is of recent Chinese descent.

Crazy rich South-East Asians

South-East Asia's "overseas Chinese", Charlotte Setijadi of Singapore Management University points out, have played crucial roles in the story of modern China. They were key backers of those seeking the overthrow of the imperial Qing dynasty and the establishment of a modern republic. More recently, South-East Asian nationals of Chinese descent helped kick-start China's own industrial transformation.

The commercial success of many overseas Chinese families is notable—and in part a result of the political marginalisation of ethnic Chinese in colonial and successor independent states. China welcomed their capital and managerial nous following its opening after 1978. Today the ten-country Association of South-East Asian Nations (ASEAN) is a key link in the supply chains of a China-centred electronics sector. A third of China's integrated circuits come from South-East Asia, along with three-fifths of computer imports. Now capital is flowing the other way, from China to South-East Asia. Investment has grown almost 30-fold in the past decade, to nearly \$40bn. South-East Asia's ethnic-Chinese tycoons are still intermediaries in the region's economic relationship with China. But the Chinese state is also asserting itself, in ways that South-East Asians recognise carry benefits—but also risks.

China's economic interaction with South-East Asia has happened chiefly by sea. That is changing. China's industrial centre of gravity is shifting away from the coast towards the south-west and its borders with Myanmar, Laos and Vietnam. For this new heartland, nearby South-East Asia is an obvious market, a source of inputs, and a ready route to the sea.

The chief obstacles to a push south are geographical—the impassable borderlands. To overcome them, China has engaged South-East Asia in a frenzy of cross-border infrastructure (see map): new

roads, a gas pipeline through Myanmar to a deepwater port at Kyaukphyu on the Bay of Bengal, and a planned high-speed rail through Laos eventually connecting Kunming with Singapore. Most of these projects are presented as part of President Xi Jinping's Belt and Road Initiative. In South-East Asia China presents its plans as commensurate with ASEAN's own desire for regional integration. The Asian Development Bank calculates that if developing Asia is to keep up growth, eliminate poverty and deal with the effects of climate change, then it will need to invest \$1.7trn a year in infrastructure over 15 years.

Mr Xi and other Chinese leaders harp on about the "win-win" benefits of economic co-operation—as well as emphasising China's non-interference in others' affairs. That is balm to the region's authoritarians. South-East Asia's post-colonial states are young and insecure. Their leaders bridle at any perceived challenge to sovereignty—or to their right to rule.

Yet, for all the advantages, many South-East Asians find the Chinese presence sometimes overwhelming and the protestations of non-interference insincere. Chinese investment comes with strings attached. Lenders and construction firms insist on Chinese workers. Contracts are often opaque and grossly overpriced (some to include bribes needed to win them).

China-linked corruption was a factor in the electoral defeat in 2018 of Malaysia's prime minister, Najib Razak, and his party, which had ruled since independence. So, too, was the Chinese ambassador's appearing to campaign openly for the ethnic-Chinese party in the ruling coalition—so much for non-interference. Meanwhile, under-the-table donations to political parties in Malaysia and Indonesia, says a se-

nior diplomat from the region, are often an entry ticket for doing business. Chinese money is assumed to have been behind Mr Duterte's successful bid in the Philippines for the presidency in 2016.

Some Chinese-backed projects, above all the high-speed railway for tiny, impoverished Laos, have little economic rationale and the environmental costs can be high. An exceptional drought in 2019 in the lower Mekong was exacerbated by Chinese dam-building interrupting the river's seasonal flows, on which millions of Cambodian and Vietnamese fishermen depend. In Cambodia, Laos and Myanmar, Chinese land-grabs mean deforestation.

As for China coming in peace, how, policymakers ask in private, to square that with sweeping maritime and territorial claims in the South China Sea, bringing China into dispute with Brunei, Indonesia, Malaysia, the Philippines and Vietnam? In 2016 an arbitral court in The Hague dismissed China's claims, in a case brought by the Philippines. When Singapore called for China to abide by the tribunal's rulings, China's diplomats savaged the government. By contrast, tiny Cambodia, which has prioritised loyalty to China over ASEAN solidarity, has been rewarded with loans.

Yet appeasing China does not guarantee rewards. Mr Duterte set The Hague ruling aside in hopes of attracting Chinese investment. Mr Xi promptly promised him billions for infrastructure. But little investment has materialised. Meanwhile, on the South China Sea, Chinese aggression persists. As Bilahari Kausikan, formerly Singapore's top diplomat, puts it: "Only the irredeemably corrupt or the terminally naive take seriously Beijing's rhetoric about a community of common destiny."

Not long ago the border ranges of north- ➤



ern Laos were impenetrable. Today the boundary is being blurred and geography reshaped by Chinese infrastructure projects and wildcat Chinese enterprise. As Chinese development moves south, hundreds of thousands of Chinese move too.

These are China's *xin yimin*, the country's "new" migrants or sojourners. They are the shock troops of China's growing economic presence. Many have come to work in South-East Asia on belt-and-road projects. Others follow in their wake to chance their luck. Where China's strategy ends and individual initiative begins is rarely clear. Either way, Chinese power and presence is being extended.

The presence is starkest in Cambodia, Laos and Myanmar, small or weak states, two with porous borders with China. Several hundred thousand mainland Chinese operate in Myanmar, many carrying forged citizenship cards. In the "Golden Triangle Special Economic Zone", where Laos meets Myanmar and Thailand, a Chinese city of gambling, smuggling and sleaze is rising up. The centrepiece is a pink neoclassical confection of a casino that attracts Chinese high-rollers—gambling is banned in mainland China. The town's currency is the Chinese yuan. The security force was recruited in China. The signage is in the simplified Chinese of the mainland.

Much farther from China's borders, in Manila, the capital of the Philippines, Chinese online gambling operations known as POGOS occupy more office space than the country's international call centres. At their peak, before the coronavirus pandemic, perhaps 500,000 Chinese operated in Manila, many overstaying their visas. Chinese-run agencies arrange everything for new arrivals, from work visas to accommodation to massages and sex.

Across Asia the same chorus of complaints is heard: that the *xin yimin* keep to themselves, take local jobs, import their own supplies and push up the price of local housing. In Vientiane, Mandalay and Manila, the same dark joke is deployed: welcome to China's newest province.

To tar all *xin yimin* with the same brush is misleading. Thousands of middle-class Chinese have been a boon for Malaysia's private schools. Many migrants are well-trained professionals. In Singapore, young Chinese who study, work and apply for nationality are bright, energetic and willing to work hard in their new home.

Yet the presence of *xin yimin* often complicates the supposedly warm "people-to-people" relations that Mr Xi trumpets. Criticism of Chinese initiatives is proof of insincerity, malign intentions or Western meddling, Chinese officials suggest. Mr Kausikan attributes the attitude to "imperial hauteur"—a conviction that lesser states owe deference to China.

One striking dimension is China's in-

creasingly possessive language towards the Chinese diaspora. Any suggestion by officials, however ambiguous, that China has an extraterritorial claim over ethnic Chinese in South-East Asia, no matter how long ago their ancestors left the motherland, is dangerous ground.

In theory, the Chinese language distinguishes between *huaqiao*, Chinese nationals abroad, and *huaren*, anyone with Chinese ancestry regardless of their citizenship. Yet in a speech in 2014 Mr Xi conflated the two by referring to *haiwai qiaobao*—"overseas sojourner-siblings". The point of working with *haiwai qiaobao*, Mr Xi said, "is to promote the revival of the Chinese nation." He reiterated this in an address in February marking the Chinese New Year.

To emphasise its importance, in 2018 outreach to overseas Chinese was handed to the Communist Party's united front department. Dozens of operations around in the world aim to build support for the party and to neutralise political enemies. A key mission is to ensure that, as Bill Hayton puts it in "The Invention of China": "regardless of how long ago someone's ancestors left home, or for how many generations they have been citizens of another country, they...still have obligations to the ancestral nation."

It is an overtly racial understanding of Chineseness, about blood, not citizenship, that puts many Chinese South-East Asians in a bind. It is rarely hard to whip up anti-China feeling. China's backing for communist insurgencies was grounds in Malaysia and Indonesia to exclude ethnic Chinese from power—and worse. In May 1998 decades of cronyism under Indonesia's dictator, Suharto, triggered a paroxysm of violence against the regime and those seen to have profited from it—above all, the country's ethnic-Chinese minority. Hundreds

of ethnic Chinese were killed and dozens of women and girls raped. Glodok, Jakarta's Chinatown, was left a charred hulk.

With democratisation following Suharto's fall, the fate of Chinese Indonesians improved. But progress, as Evan Laksmana of the Centre for Strategic and International Studies in Jakarta, puts it, "came screeching to a halt" in 2017 with the arrest, trial and imprisonment on trumped-up blasphemy charges of Basuki Tjahaja Purnama, or Ahok, the gruff Chinese Indonesian governor of Jakarta (and a Christian in a majority-Muslim country). Some Islamic leaders decry the likes of Ahok as the beachhead of a new Chinese communist infiltration. The paranoia is no less strong for a lack of evidence. Playing the Chinese conspiracy card either in politics or as a businessman cut out of a lucrative deal rarely does the cardplayer any harm.

Too often, China's Communist Party is blind to the risks of using influence campaigns with Chinese South-East Asians as a tool of nation-building. As Reynard Hing, a Chinese-Filipino who runs an NGO in Manila, puts it: "Are you trying to co-opt overseas Chinese as part of the propaganda machinery? That would be very bad for Chinese-Filipinos. It would give credence to the notion of a fifth column."

A shot in the arm

It is against China's complex backdrop of engagement in South-East Asia that it now is gearing up for perhaps its biggest influence campaign ever: vaccine diplomacy. As the promised supplier of most of the region's vaccines, it intends not only to wipe from people's minds the memory of China as the origin of covid-19 but also to engender a wave of gratitude for ending the pandemic. Its diplomats are making clear to South-East Asian governments that part of the deal is lavish praise for China.

Yet none of China's vaccines has yet completed all trials, and results to date are patchy. Perhaps more troubling, South-East Asian suspicion of China has translated into vaccine hesitancy. President Joko Widodo, known as Jokowi, received Indonesia's first shot, of the Sinovac jab, in January. The same month Indonesia's top Islamic body declared the Chinese vaccine to be halal, and thus permissible for Muslims. That came as a relief to Jokowi, who has promised herd immunity in 15 months. Yet vaccine hesitancy in Indonesia is running high, especially around Chinese ones.

If the programme of Chinese vaccines falls short in South-East Asia, says Dr Setijadi of Singapore Management University, "that could massively backfire in terms of China's influence." It would do no favours for Chinese South-East Asians to be tarred with the same brush as China. Can China be expected to be sensitive to these dynamics? On past performance, perhaps not. ■





Biden's nuclear dilemma

Nukes of hazard

America's ICBMs are ageing. Does it still need them?

WHEN THE Minuteman III intercontinental ballistic missile (ICBM) entered development, Lyndon Johnson was president, the Vietnam war was in full swing and the first series of "Star Trek" was on television. When it entered service in 1970, it was the first missile capable of disgorging multiple warheads onto different targets. More than half a century later the Minuteman III is America's last ICBM standing. Four hundred of them are studied in the ground across silos in five mid-western states, ready to blast out and deliver atomic vengeance within minutes of a presidential order.

The Minuteman III is one leg of America's nuclear triad, the suite of silos, submarines and bombers that carry its 1,457 deployed nuclear weapons, within the limit of 1,550 set by the recently extended New START treaty with Russia (more bombs are in storage). All three legs are getting rusty. The oldest bomber, the B-52, at 66, is old enough to draw a pension; the youngest, the stealthy B-2, was designed in the late 1970s and will retire in a decade or so. The oldest Ohio-class submarine will celebrate

its 40th birthday in November. Replacements for these weapons are on the way. A new bomber, the B-21 "Raider", will conduct its first flight next year; a new Columbia-class submarine will start prowling the oceans in a decade. Yet the future of the ICBM force is more uncertain.

In theory, a successor to the Minuteman III is in the pipeline. In September America's air force granted Northrop Grumman, an arms company, \$13.3bn to begin work on a Ground Based Strategic Deterrent (GBSD). The new ICBM force, scheduled to take over in 2029 and remain in service until 2075, will boast "increased

accuracy, extended range and improved reliability", according to the air force. But not everyone thinks this is a good idea. In January 2019 the Congressional Budget Office estimated that the Trump administration's nuclear modernisation would cost \$494bn during 2019-28, with new ICBM accounting for \$61bn of that. Why lavish funds on sticking nukes in the ground, ask critics, when submarines and bombers can do the job as well if not better?

The answer, say ICBMs' proponents, is threefold. One argument is that the ICBM force is the most "responsive" leg of the triad. Bombers can be recalled once launched, but take longer to get into the air and reach their targets. Submarines are easy to hide and can get closer to targets, but it is harder to communicate with a submerged boat. By contrast, ICBMs can be launched within minutes.

That level of alertness horrifies critics, who see it as an invitation to nuclear calamity. But it means that ICBMs could be used to strike enemy missiles being readied for use, or launched before incoming enemy missiles landed. "Without American ICBMs," notes a report by the Hudson Institute, a think-tank, "an adversary would need to strike only five targets (three bomber and two submarine bases) to eliminate most of the US nuclear force."

A second argument is that ICBMs serve as a hedge against technological breakthroughs, such as new underwater-detection capabilities or air defences, which might put submarines or bombers at risk. ▶▶

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► And then a third argument lurches further into the macabre and surreal corners of nuclear strategy. If Russia wanted to disarm America with a surprise attack, it would have to use several warheads—capped under New START—to take out a single hardened silo. The silos thus serve as “sponges”—in the jovial argot of nuclear types—soaking up Russian missiles and leaving America with a superior number of surviving weapons aboard subs and bombers for any subsequent exchange.

For critics of ICBMs, these arguments are fantastical and specious. A sponge for warheads is useful only if you think a Russian first strike is a realistic prospect in the first place. Even without silos, America has ample subs and bombers to destroy Russia as a functioning society. And because Asia-bound ICBMs would have to fly over Russia, it would be risky to use them against China or North Korea without making Vladimir Putin undesirably twitchy. Pranay Vaddi of the Carnegie Endowment, a think-tank, also points to a tension between the defensive logic of the sponge, which simply requires basic missiles to absorb a Russian attack, and the air force’s demand that the new GBSD should have improved offensive capabilities—which would make the missiles better suited for an American first strike on an enemy.

This Strangelovian debate has played out alongside a political one. Last year Congress ponied up the money for modernising the triad, including GBSD, despite reservations from prominent Democrats, such as Adam Smith, the chair of the House Armed Services Committee. At his confirmation hearing in January, Lloyd Austin, President Joe Biden’s defence secretary, expressed his support for the triad. So too did Kathleen Hicks, his deputy. Yet, pressed by senators from silo-hosting midwestern states, where the ICBM force is a big economic factor, both acknowledged that Mr Biden would have the last call.

Such is the centrality of the triad to American nuclear policy—one expert quips that it is the Pentagon’s “Holy Trinity”—that the president is unlikely to quash it altogether. Mr Vaddi suggests that an alternative approach would be to pause GBSD and eke out the Minuteman III by reducing the number of deployed systems and cannibalising non-deployed ones for parts. The idea is that this would buy time to negotiate a mutual cut in ICBMs and warheads with Russia, which plans to deploy its own new ICBM next year.

Whether or not Mr Biden is open to this, the nuclear mood is undoubtedly changing. In its election platform last year, the Democratic Party lambasted America’s “overreliance and excessive expenditure on nuclear weapons”, including “wasteful” new weapons. Those include the W76-2, a low-yield warhead for submarine-

launched missiles introduced by Donald Trump, refurbishment of the B61-12, a low-yield bomb dropped from warplanes, and the Long-range Standoff Weapon, a delayed replacement for America’s current air-launched cruise missile.

Meanwhile, alongside that debate over what sort of nukes America should build, is a related one over how it should wield them. One question is whether America should declare that the “sole purpose” of its nuclear weapons is to deter nuclear attack. Such a commitment might seem innocuous, but—depending on its precise formulation—would probably require America to forswear a nuclear response to, say, a North Korean invasion of or biological attack on South Korea.

An even bigger shift—advocated by Mr Biden in his final days as vice-president—would be a No First Use, or NFU, policy, which would further preclude America from pre-empting another country’s imminent nuclear launch. America’s allies in Europe and Asia, huddled under America’s nuclear umbrella, would be uneasy about either option. Yet as long as American ICBMs remain cocked and ready under the prairie, America’s rivals may not care a great deal. ■

The toll of covid-19

It contains multitudes

America struggles to comprehend the scale of its loss

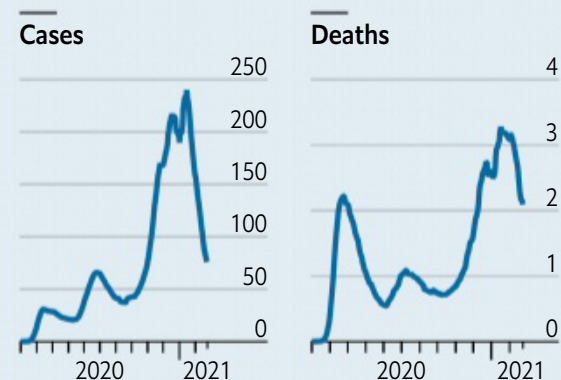
IN A SENSE 500,000 is just a very big number. It is not even accurate, given that perhaps 100,000 American deaths from covid-19 were never counted. And yet every one of them was someone: grandpas and great aunts, old friends and new, neighbours and workmates. Many of them died alone.

Grief was President Joe Biden’s theme at the White House on February 22nd, as he remembered 500,071 Americans lost to the pandemic. Warning his compatriots against seeing “each life as a statistic or a blur”, he said that there was “nothing ordinary about them”. At five o’clock the Stars and Stripes was lowered to half-mast for five days while 500 votive candles flickered on the steps of the South Portico.

In just over a year the pandemic has killed Americans on the scale of a world war or a decades-long catastrophe, like the opioid crisis (see chart). In absolute terms no country begins to compare—Brazil, which comes next, has yet to log its 250,000th death. In relative terms America has recorded 151 deaths per 100,000, fewer

Heading down, looking up

US, covid-19, confirmed daily cases and deaths
14-day moving average, '000



Source: Johns Hopkins University CSSE

than Belgium, Britain, Italy and Portugal, but among the most severe.

One question is what went wrong. America is home to many of the best medical scientists and, in the Centres for Disease Control and Prevention, the world’s most respected public-health institute.

Politics was partly to blame. Donald Trump helped turn science and public health into an arena for partisan combat. Successes, like the Warp Speed vaccine programme, were undermined by failures such as making face-masks a test of political affiliation. But politics alone cannot explain why fatalities in America are so much higher than in Japan, a country full of old people that has registered only six deaths per 100,000. A full accounting will also have to weigh other factors, including diabetes, obesity, care for the elderly, public health in an unequal country and genetics (see Science & technology section).

The other question is whether the worst is past. Recorded infections in America are 70% below their peak in January. Deaths, which lag behind by a few weeks, are down by about 40%. The rapid fall is hard to grasp because it is governed by the same exponential dynamics as the sudden climb in cases in November. Again, complex factors are at play, including immunity acquired through infection and vaccination, and the precautions people take as infections mount, both because they are required to and because they sense that it is not the best time to need a bed in hospital.

There are reasons for optimism. Vaccination of the most vulnerable is proceeding apace, which should further reduce deaths and hospital admissions. The emptying of intensive-care wards will lower fatalities among those who do succumb. Treatments are improving. But the virus is not done yet. Modelling for the San Diego area, reported recently in the journal *Science*, suggested that, owing to the spread of a more transmissible variant of the virus first found in Britain, immediately relaxing social distancing there would cause a vicious surge in cases. ■

Immigration reform returns

Go big or go home

CHICAGO

Why would the White House want to revive Donald Trump's signature issue?

MANY IMMIGRATION activists would have cheered President Joe Biden had he merely spent his first month in office signing nine executive actions that reverse some of Donald Trump's most hostile orders on migration. Mr Biden has told officials they may no longer take children from the arms of asylum-seeking parents. A task-force has been told to find the still-missing parents of 600 such detained children. Rules on deportation are to be milder than before. Refugee resettlement is to expand anew. And those seeking sanctuary at the southern border will be treated more humanely: a few vulnerable ones may again plead from inside America, rather than wait in unsafe camps in Mexico.

To the surprise of even some close observers of immigration policy, however, Mr Biden has signalled he wants to go further, quickly. Last month he proposed a comprehensive immigration bill: last week the US Citizenship Act was sent to Congress. If enacted (which is unlikely) it would amount to the biggest shake-up of the migration system in decades. It sets out how an estimated 11m undocumented migrants could win settled, legal status. It would put more resources into immigration courts, encourage inflows of skilled workers and try to tackle instability in Central America in the hope of reducing outflows from there.

Piecemeal legislation will also be revived. Campaigners say the Senate could take up two bills that were passed by the House in 2019 (they could easily be moved again in the House, perhaps in March). One is the American Dream and Promise Act, a version of a long-standing legislative effort to allow Dreamers—who were children when they migrated, without papers—to stay. The Migration Policy Institute, in Washington, estimates that this could affect up to 2.9m people. Another bill, to modernise farming, would give better protection to agricultural labourers, over 1m of whom are undocumented migrants. Both bills won at least some Republican support; polls suggest they are popular.

Another legislative push could come as part of a new covid-19 relief package. Proponents say that bill should offer help, including legal rights, for unauthorised immigrants who toil as “essential” workers in health care, food production, factories and shops. Such labourers have been especially exposed during the epidemic and could perhaps number 5.6m.

This boldness is surprising and politically risky. Mr Trump's appeal, at least during his rise to power in 2016, rested heavily on voters anxious about high levels of migration. The ex-president is already attacking his successor for being lax on the border, a theme he is likely to bring up in a big speech to conservatives on February 28th. Nor do decades of failed attempts to overhaul immigration, most recently in 2013, bode well for new efforts. Nobody talks seriously, for example, of the Citizenship Act actually getting the 60 votes in the Senate.

Why then push for broad reform? Mr Biden calculates—prodded by Esther Olavarria, his deputy director for immigration at the White House Domestic Policy Council—that he has no better option. He lacks time to take a cautious approach, since the 2022 mid-term elections will probably reduce his slender congressional advantage. And given the “upside-down world of the pandemic”, says Ali Noorani of the National Immigration Forum, an advocacy group, voters might like a bold push to help migrants quickly. Party management probably favours a doomed effort at comprehensive reform over no effort at all.

The requirement for 60 votes in the Senate remains a high hurdle, which is why some campaigners wonder whether immigration could be reframed as a policy with a fiscal impact. That might permit passing a migration bill through “reconciliation”, though the Senate parliamentarian (a kind of reconciliation referee) might disagree. Would voters approve of such a wheeze? Polls last year showed few people actually liked Mr Trump's fierce hostility to migrants. College-educated Republicans in the suburbs, especially, recoiled from it. And roughly half of voters, according to YouGov, a pollster, say they are open to immigration resuming after the pandemic. Yet as the border becomes more porous again, the old politics of immigration will likely return. ■



The time is ripe. Maybe

Quietly fixing health care

To smooth a cliff

Smuggled into the covid-relief bill is an overdue fix for Obamacare

WHEN DEMOCRATS enacted the Affordable Care Act (ACA) in 2010, they wanted to limit costs to keep moderates on board. Hence the ACA, which gives subsidies to people who do not get health insurance from their employer to buy it on government-run exchanges, restricts its benefits to people who earn less than four times the federal poverty line. For an individual, that currently comes to \$51,520 a year. But in the partisan donnybrook surrounding the bill's passage, little attention was paid to the fact that the benefits cut off at the margin rather than sloping down. Policy wonks consider such “subsidy cliffs” risky: they can incentivise people to earn less in order to safeguard their benefits.

Eleven years later, Democrats have a chance to fix the problem. A covid-19 relief bill which the House aims to vote on this week would increase the ACA's subsidies and extend them to anyone who would otherwise have to spend more than 8.5% of their income to buy a benchmark plan. Smoothing out the cliff this way, says the Kaiser Family Foundation (KFF), a health think-tank, could help about 8m people.

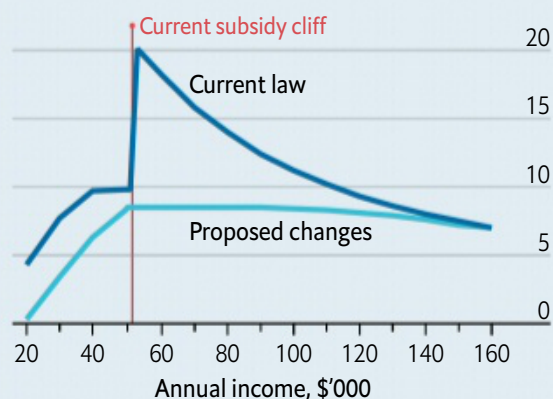
The cliff is tallest for people aged 55-64, who face high premiums but are too young for Medicare (the universal health-insurance programme that kicks in at 65). Under the ACA's rating system, a typical “silver plan” for a 60-year-old who earns \$51,000 a year costs \$417 a month with subsidies. If their income rises to \$52,000 they lose the subsidies, so the cost jumps to \$871 a month. Because many ACA beneficiaries are self-employed or part-timers, they have volatile incomes. Some accidentally exceed the eligibility limit and have to pay back thousands of dollars in credits.

All this undoubtedly leads some ACA beneficiaries to work less. Economists are unsure how many do so, but they agree that the cliff should be rubbed. “It's one thing for the government to say if you lose income we'll pay for it, but it's another to say we'll pay for you to destroy it,” says Casey Mulligan, a former chief economist of the Council of Economic Advisers under Donald Trump. Mr Mulligan's research finds that other aspects of the ACA discourage work too, but other studies show that effect is small or negligible.

The House bill covers two years at an estimated cost of \$34bn. In 2023 the subsidies cliff would return unless Congress ends it permanently. Besides fixing the

It's a doozy

US, health insurance on the ACA exchanges*
60-year-olds, 2021, % of income after subsidies



Source: Kaiser Family Foundation *Benchmark silver plan

cliff, the bill dramatically raises subsidies across the board. That would bring Obamacare closer to one of its original models: the Dutch system, where premiums are low (\$160 a month for a good plan) partly because taxes cover most of the cost.

Some progressives argue that the ACA has not become more popular because it does too little for the middle class. The subsidy cliff seems to bear that out: the group hit hardest, older people in rural areas earning somewhat more than the median income, voted sharply against Democrats in 2016 and 2020. But Ron Kind, a Democratic member of the House's health subcommittee whose Wisconsin district includes many such voters, calls that "a tenuous argument. It's more about the culture war." Democrats expect to pass the ACA reform along with the rest of their covid-19 relief, but they are not counting on Republican support. ■

Testing in schools

Stop writing

BOSTON

The virus suspends exams, delighting those who would scrap or reform them

TO THE DELIGHT of campaigners and some parents, covid-19 has put a wrench in school exams. With support from the Trump administration, all 50 states cancelled accountability testing last March, freeing 51m public-school pupils from the annual rigmarole. The SATs optional essay-writing section and separate subject tests were discontinued this year. The Programme for International Student Assessment, an exam measuring the academic performance of OECD member countries, and the National Assessment of Educational Progress (NAEP), a nationwide exam administered to a sample of American pupils, have been postponed too. With

opposition building for years against standardised testing in public schools, could this be the end?

On February 22nd the Biden administration said exams had to take place, but that the results would not be used to grade schools. Ordinarily the federal government obliges states to hold schools accountable for their pupils' test scores. Schools with poor results may see their budgets reduced, as part of that exchange of exam results for dollars. Some states and districts have used results to close schools and fire teachers. Teachers in tough places often think this is unfair. And covid-19 has strengthened the point that much of what goes into a test score is, frankly, well beyond the control of teachers.

Abandoning testing could be disastrous, warns the Fordham Institute, a think-tank, in a recent report. Cancelling tests again would make it hard to know how schools fared during the pandemic. "I would personally be in favour of more effort to get as many kids as possible tested, so that we know what is going on," explains Cory Koedel, who co-wrote the report. "I think some kids are actually probably doing OK. And some kids are doing really terrible. And I don't think we know exactly who's who." Others disagree. Derek Briggs of the University of Colorado Boulder's School of Education questions the benefit of testing students during these trying times. "Isn't it reasonable to assume that every student probably has had a sub-optimal learning experience?...All students are going to need some serious help over the next year to make up for what's been a pretty tough year and a half," he says.

That thought delights those parents and teachers who have been waging war against standardised exams for years. The Opt Out movement gained national attention in 2015 when New York State participation dropped by 20 percentage points because families refused the exams. Thirteen states received warning letters from the Obama administration for failing to test at least 95% of pupils that same year. The activists in the Opt Out movement want to see others held responsible for student learning, not just teachers. "The notion that we can ascertain...the extent to which [pupils are] doing poorly as a function of what's happening in schools, as opposed to everything else that's going on in their lives right now is absurd," says Daniel Koretz of Harvard's School of Education.

One compromise would be for a representative sample of children to sit the tests. One group could be selected to take maths and American history, while another group took English and science. Each group would take two exams, the burden of testing would be reduced, but schools and the government would gain reliable information on four subjects, at least. ■



The Texas model

Snow business

DALLAS

Why Snowmageddon won't change Texas much

"TEXAS IS A mirror in which Americans see themselves reflected, not life-sized but...bigger than life," wrote John Bainbridge in "The Super-Americans", a book published in 1961 about the Lone Star state. Recently, the picture of Texas has been one of super-size suffering. A snowstorm and freezing temperatures caused power-equipment failures, leading to rolling blackouts. Around 4.5m households had to go without power and half of all Texans lost access to safe drinking water. Dozens have died and hundreds were poisoned by carbon monoxide. Survivors have had to contend with burst pipes in their homes, flooding and eye-watering electricity bills.

With most of the state shut down for a week, the disaster will probably become the costliest in Texas's history, eclipsing the toll of even the worst hurricanes. President Joe Biden, who is planning to survey the devastation at first hand, has approved federal funds to help with disaster relief. In scenes reminiscent of a developing country, Texans lined up for food, blankets and bottled water.

The state's leading politicians were quick to distance themselves from the disaster, physically as well as philosophical. Ted Cruz, a senator, jetted off to Mexico with his family; Ken Paxton, the attorney-general, flitted off to Utah. Others, including Greg Abbott, Texas's governor, cast blame on renewable-energy sources for the blackouts. The Electricity Reliability Council of Texas (ERCOT), the oversight body that is meant to ensure the reliable functioning of the state's grid, deserves some blame for Texans' suffering, but the bigger failure lies in the state's light-touch

► regulation and favouring of business interests. Will politicians learn the right lessons from this disaster?

The design of Texas's grid reflects its wariness of government. Having a stand-alone grid—which is twice as large as any other state's and larger than most countries'—ensures that Texas is not subject to federal rules. It deregulated and privatised its electricity market in the early 2000s. Texas has enjoyed lower-than-average electricity prices, which is good for consumers and industry, but the system does not encourage energy companies to forgo short-term profits to ensure that their equipment withstands extreme weather.

ERCOT is run without proper governance or oversight and is “accountable to no one”, says Edward Hirs, a lecturer at the University of Houston. Its board is packed with executives from the energy business who have a financial interest in the market they oversee, which is much like Wall Street financiers moonlighting at the Securities and Exchange Commission. ERCOT is the only transmission-system operator in North America to lack a fully independent board. A decade-old report by the Texas Sunset Advisory Commission, which reviews the performance of state agencies, recommended restructuring the board to make it more independent and increasing oversight, but its suggestions were ignored. Inattention and inaction help explain how ERCOT's boss, Bill Magness, could receive \$883,000 in pay in 2018, nearly six times as much as Mr Abbott's salary.

Those who have called this February storm a once-in-a-century event have forgotten 2011. A decade ago a severe storm caused nearly a third of the state's power-generating units to fail, causing rolling blackouts and prompting hearings into ERCOT. Yet experts' suggestions—such as protecting equipment for winter conditions, increasing the grid's excess capacity and reforming ERCOT—were ignored. “We fell short, because we didn't demand the full implementation of those recommendations,” says Joe Straus, a former Republican speaker of the Texas House. “We knew what to do, we just didn't do it.”

Natural disasters that highlight states' vulnerabilities can be catalysts for change. In the 1990s, after Hurricane Andrew hit Florida and the Northridge earthquake struck California, both states updated their building requirements to withstand future disasters, says Mark Jones, a professor at Rice University in Houston. On February 24th, five of ERCOT's board members who live out-of-state resigned, but more dramatic change is required. “We need to make sure they don't just fire a bunch of people and find a way out of this short-term problem without addressing what we've known for a decade needed to be done,” says Mr Straus. “This has got to be

the inflection point. The public is going to have to demand action.”

The state's founders were so wary of government that they wrote into their constitution that the legislature should meet only every other year for up to 140 days. Yet limited government comes with limitations. Texas spends around \$4,000 per person, 40% less than the average American state. Because it fought the expansion of Medicaid, a health-care scheme for the poor, it has the highest uninsured rate in the country, which probably contributed to the state's higher-than-average death rate from covid-19.

Brrr-isket

Could this power crisis prompt a broader reckoning about the limits of Texas's anti-government, low-regulation philosophy? Despite the reasons to think it should, that is unlikely, for three reasons. First is the flow of people and businesses to Texas, which has no state income tax. Failing at something as essential as heating and electricity may tarnish its image in the short term, but it is not likely to be a permanent setback. Elon Musk, who has expanded his companies' operations in the state, has said that in 50 years Austin is going to be the “biggest boomtown” America has ever seen. Texan leaders will be disinclined to engage in deeper soul-searching when they have the validation of so many people moving to the state.

A second reason to doubt that bigger change will come is that there is no effective opposition to usher it in. After trumpeting the likelihood of making gains in the state legislature during last year's election, Democrats did not do as well as expected. Texas remains a de facto one-party (Republican) state. “In what was supposed to be the most hopeful cycle in 25 years for Democrats, they face-planted and got nothing,” is how Evan Smith, the boss of the *Texas Tribune*, a non-profit news

source, bluntly puts it. Not going out and campaigning door-to-door during the pandemic hurt Democratic candidates, as did perceptions that they wanted to defund the police. Republicans will now be in charge of redrawing electoral districts, setting back Democratic gains for at least the next decade, predicts Jason Sabo of Frontera Strategy, a political-strategy firm.

A third factor is the political ambition of Texas's current leaders and their desire to differentiate themselves from the Biden administration. Despite public scrutiny as a result of the grid crisis, Mr Abbott will stand for re-election in 2022 and is rumoured to be eyeing a run for the Republican nomination for president in 2024.

“Any time that Mr Biden gives in to the left wing of his party, those will be opportunities for Mr Abbott,” says Mr Jones. As state attorney-general, he sued Barack Obama's government 31 times over policies including health-care and environmental regulations, turning Texas into the de facto capital of the resistance. That opposition is likely to continue on subjects such as energy, the border and social issues. Ken Paxton, the state's current attorney-general, has his own reasons for keeping lawsuits against the federal government steady and frequent, since he will want to deflect attention from an ethics scandal and a reported criminal investigation by the FBI.

This resistance may seem hypocritical, given how much the state will benefit from having a Democrat in the White House. Under Mr Biden, Texas will receive more stimulus money, covid-19 relief and other federal funds than it would have done under a Republican administration. As Mr Abbott asks for help in navigating the aftermath of the storm, he is more muted in his criticism of Mr Biden than he might otherwise be. But he will not stay polite for ever. The largest red state may have gone dark for a week, but now that the lights are back on, Texas will show its true colours. ■



Freedom works most of the time

Lexington | Teach first

America's failure to get millions of its children back to school is a national fiasco



THIS WAS a big week for Montgomery County Public Schools (MCPS). The elected board that runs Maryland's biggest school district held its first in-person meeting since it closed its 208 schools more than 11 months ago. No one should accuse its eight members (a couple of whom attended remotely) of taking covid-19 lightly. Montgomery County, where your columnist's three offspring attend (loosely speaking) public school, is on track to be the last of America's 14,000 districts to return pupils to the classroom.

Provided the board does not put the brakes on its latest back-to-school plan, as it has three times previously, Lexington's two sons in elementary school will be back in school—for as little as four days a fortnight—by the beginning of April. His 12-year-old will go back on the same part-time basis three weeks later, by which time he will not have seen a teacher in the flesh for almost 14 months.

A comparison with their British cousins, who have missed half as much school despite enduring a second lockdown, shows how extreme this is. Most European countries fully reopened their schools in September. Only a handful of American states, including Florida and Texas, were even close behind them. And the laggard districts elsewhere are mostly still hanging back, especially in Democrat-run states such as California and Maryland, even as evidence of children's limited potential to transmit the virus has piled up. Nationwide, about 25m American schoolchildren, or half of the total, are either in school part-time or fully on Zoom.

This failure is likely to have dreadful consequences. Lexington's sons have two parents able to work from home and dedicated teachers (Miss W's upbeat karaoke routines and Miss T's coolly relentless maths drills are still going strong nearly a year into the great school shutdown). But the costs in lost teaching-time, social interactions, and the creative sparks that fly in a well-run classroom are obvious and mounting in his household. And they will be weighing even more heavily on less adaptable or fortunate ones. Test results point to rising rates of truancy and plummeting attainment rates in maths and English, especially among poor minorities, who tend to be least able to deal with remote learning and most afraid of returning to school.

Unprecedented as this failure may seem, its dynamics will be familiar to weary school reformers. An education policy that pri-

oritises learning would have made returning children to school its objective, and worked through the impediments to it. (Face masks and open windows, it turns out, do most of that.) But this is not how the fragmented public school system works. The elected worthies who sit on its powerful school boards do not pursue objectives so much as balance competing local interests. This is a recipe for risk aversion and inertia or, as MCPS's wry superintendent, Jack Smith, puts it "not decision-making but mush".

This week's MCPS meeting illustrated the pressures inherent in the mush-making. It opened with a litany of video messages from concerned school users. "Imagine yourselves in a Zoom class wading through a fog of mental illness," beseeched an exhausted-looking Zoom mom. "The teacher I am most concerned about getting sick is my Dad," said a schoolboy. "He might recover or he might not make it." "My husband saw schools operating safely in Somaliland! Why can't we do that here?" asked another mother. Outside the MCPS office, rival crowds of protesters, pro-and and anti-reopening, meanwhile stomped on the icy pavement and honked their car horns. "There is a lot of anxiety on the board," Mr Smith had earlier intimated. "Hundreds or thousands of people are going to have an opinion about you and post it everywhere."

Cutting through these local forces takes unusual leadership or leverage, or both. Maryland's Republican governor, Larry Hogan, has been trying to shame the state's school districts into reopening for weeks, to no effect. By contrast, Bill de Blasio, who as the mayor of New York has rare authority over America's biggest school district, pushed its schools to reopen despite fierce union complaints. With a Republican legislature at his back, Ron DeSantis, the governor of Florida, was similarly effective in threatening Florida's school boards with financial penalties if they failed to unshutter—a threat Mr Hogan cannot credibly make.

A growing tendency towards single-party rule in the states may make that sort of strong-arming more common. Yet the polarisation driving it generally does not make for good policy. The eagerness of Mr DeSantis and other Republican governors to reopen schools was plainly well-judged. Yet it was part of a broader effort to follow Donald Trump's lead and diminish the pandemic's dangers that was anything but. Hence, for example, Mr DeSantis's petulant sabotaging of local efforts to encourage mask-wearing.

By the same token, excessive caution among Democrats was fuelled by hostility towards Mr Trump. Science, which Democrats cite often but selectively, has been another victim of that stand-off. Its misuse has fostered the false dichotomy aired by many: that teacher health and student welfare are irreconcilable.

While America's decentralised system has in some ways helped it through the pandemic, the sprawling, underperforming, historical accident of an education system has been exposed by it. It is too localised to be efficiently managed, and at the same time increasingly riven by national politics. That is the worst of both worlds, a reality President Joe Biden appeared to accept when he recently rowed back on his former pledge to get the kids back to school. It is not in his power to do so. And much of the system, in Republican or jealous union hands, is opposed to his influence.

Break's over

Meanwhile, millions are left hoping the worthies and hobbyists on their school boards come through. The past year has not been all bad chez Lexington. It has been wonderful to see so much of his offspring as their childhood races away. It has been interesting to observe their lessons. But it is past time the school bell rang. ■



Haiti

Hoping against hope

The country needs a new leader. It is not clear when it will get one

NIXON BOUMBA used to take morning jogs through the prosperous Pacot neighbourhood in Port-au-Prince, Haiti's capital. The area has steep, tree-lined streets and "gingerbread" houses. (These wooden-lattice structures, built in the early 1900s, survived a devastating earthquake in 2010.) But Mr Boumba does not jog any more. A surge of kidnappings and murders has kept him indoors (see chart on next page). The gangs responsible for those crimes often have links to the police and politicians. The true number of attacks is probably far higher than the reported one. "We are living in a time of terror," says Mr Boumba, a human-rights activist.

Terror has not stopped him from joining protests against President Jovenel Moïse. These have been going on for more than two years, provoked initially by economic hardship and allegations of corruption. Since January this year crime, and the fear that Mr Moïse is setting himself up as a dictator, have sparked a new wave. The pro-

testers contend that his term ended on February 7th this year. They want his immediate departure.

Those making that demand are divided into two broad groups. They are as much at odds with each other as they are with the president. Pro-democracy idealists like Mr Boumba are mainly activists, professionals and young people. They have no political parties or elected officials. The established opposition is led by former office-holders. Some have been allies of Mr Moïse. They join the anti-Moïse agitation, but are regarded by the idealists as being just as corrupt as the regime. They seem interested only in taking power, says Rosy Auguste Ducena, a human-rights lawyer. Haiti's hope lies with the new generation.

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But the three-way fight makes it harder to predict who will steer the country's future.

Mr Moïse, a former plantation manager who calls himself "Banana Man", exemplifies the failings of recent Haitian presidents and has added to them. Popular anger flared in 2017 after reports, which he denies, that he had stolen millions of dollars from PetroCaribe, an aid programme paid for by Venezuela. These allegations, plus fuel shortages and high inflation, provoked demonstrations in the following year. In 2019 a *peyi lock* (internal blockade) closed schools and businesses for months. This deepened a recession that had already started. Today 35% of Haitians are suffering acute hunger, according to the UN. In the pandemic's first wave around 120,000 Haitians lost jobs in the neighbouring Dominican Republic, increasing the misery.

Mr Moïse's alleged use of violence against opponents and his flouting of democratic norms remind some people of "Baby Doc" Duvalier, Haiti's last despot, who was overthrown in 1986. His foes accuse him of overseeing Haiti's "gangsterisation". Politicians have long had links to criminals, but Mr Moïse's seem especially strong, his critics say. (He denies these claims.) In January Jimmy "Barbecue" Cherizier, a former police officer and leader of G9 and Family, an alliance of gangs, led a march in defence of Mr Moïse. Last year the United States imposed sanctions on Mr

Partners in crime

Haiti



Sources: US State Department; UN

► Cherizier and on two senior officials in Mr Moïse's administration for planning a massacre by police of at least 71 people in 2018 in La Saline, in Port-au-Prince. The motives are unclear. Many gangs are widely thought to have agreements with the government to silence opposition neighbourhoods in exchange for impunity. Mr Moïse disputes this, too.

Within the government, it is Mr Moïse himself who enforces compliance. In the absence of a functioning legislature, he has been ruling by decree since January 2020. Legislative elections were not held on schedule because parliament failed to pass an election law during the *peyi lock*. Just ten members of the 30-seat Senate still hold electoral mandates and none of the lower house's 119 seats is occupied. There are no serving mayors.

In November Mr Moïse created an intelligence agency, answerable only to him, and widened the definition of terrorism to include acts of dissent. In February this year he forced three Supreme Court judges into early retirement and ordered the arrest of a score of his most prominent detractors, accusing them of plotting a coup.

Mr Moïse disputes the opposition's claim that his term is already up. He took office in 2017, after a re-run of a flawed election held two years earlier. His five-year term thus expires next February, he reasons. His foes doubt he will leave office even then. In a referendum to be held in April, Mr Moïse plans to seek approval for amendments he wants to make to the constitution. These might include giving him the right to run for a second term. Under the constitution, a president cannot exercise powers that he introduces into it. Mr Moïse's foes doubt that he will comply.

Beyond a shared desire to remove him from power, the two currents of opposition have little in common. Established opposition politicians are as bad as the president, activists say. Youri Latortue, a former senator who is one of the old opposition's most prominent figures, was once described in an American diplomatic cable as

one of the most "brazenly corrupt of leading politicians". (He denies this characterisation.) Some opposition leaders are backed by anti-government gangs, which differ little from pro-government outfits.

The new opposition aspires to reinvent politics. "This is about starting something new, this is about respect of human rights, this is about organising fair and credible elections," says Emmanuela Douyon, a leader of Nou Pap Dòmi (We Will Not Sleep), a social movement. She and her allies know that will require ending the political instability that began with Duvalier's fall. Election results since then have nearly always been disputed by the loser. The opposition almost invariably demands the president's resignation, says Michael Deibert, author of two books on Haiti. In 2016 less than 20% of eligible voters turned out in the election that Mr Moïse won. The constitution, adopted in 1987, has never commanded broad respect. A Creole saying holds that "constitutions are paper, but bayonets are steel", says Robert Fatton of the University of Virginia. The opposition acknowledges the need for constitutional change, but does not want Mr Moïse leading it.

Civil-society groups are planning to hold a huge march on February 28th. After that, the route is uncertain. Most opposition forces want to install a transitional government as a prelude to holding free elections. But they disagree on how to do that. The old guard want a forcibly retired judge, Joseph Mécène Jean-Louis, to be interim president. Activist groups want someone outside the political elite in that job. That person may be in power for a while. The interim authority would need to take substantial time to prepare for credible elections, says Ms Douyon. Meanwhile, she hopes, new politicians will offer themselves as candidates, drawing new voters.

Unifying opposition groups behind a single proposal will be difficult. Obtaining Mr Moïse's co-operation will be impossible. The United States, which is home to 1m Haitians whose remittances sustain Haiti's economy, fears that his immediate removal would lead to chaos. On February 5th the State Department backed Mr Moïse's claim that his term ends in 2022, a decision that outraged protesters, who remember with bitterness the United States' repeated military interventions in Haiti. It is "putting their foot on the scales", argues Brian Concannon, a long-time Haiti-watcher. Many Haitians, including some in the diaspora, suspect that the United States doubts that Haiti can handle democracy.

The activists confronting Mr Moïse hope to prove that view wrong. Haiti's well-wishers are cautious. "Maybe we've reached the bottom, and the only way is up," speculates Mr Fatton, who was born in Haiti. But he has thought that before. ■

Cuba

Reggaeton rebellion

A music video rattles the regime

IN 2018 GENTE DE ZONA, a Cuban reggaeton band based in Miami, performed in Havana for 350,000 people. The duo's front man, Alexander Delgado, encouraged them to clap for Cuba's newly inaugurated president, Miguel Díaz-Canel, who was in the audience. Cuban-American musicians and politicians in Miami were furious.

Now it is Mr Díaz-Canel's turn to fume. In a video released on February 16th, Gente de Zona join other famous *reggaetoneros*, rappers and hip-hop artists to perform "Patria y Vida" ("Homeland and Life"), which excoriates Cuba's communist dictatorship and makes common cause with dissidents. Alongside Yotuel and Descemer Bueno, Grammy-winners who live outside Cuba but have strong links to it, Gente de Zona liken the 62 years since Cuba's revolution to a game of dominoes—a popular pastime on the island—that is blocked, so no player can take a turn. The track's title is a take-off of the revolutionary slogan "Patria o Muerte" ("Homeland or Death"), which appears on billboards and banknotes.

The performers, some shirtless and body-painted, sing about Cuba's food shortages, families unable to see their relatives abroad and Cuba's weak peso. Maykel Osorbo and El Funky, who belong to Movimiento San Isidro, a growing movement of dissident artists and intellectuals in Havana, make a daring appearance to rap about the government's repression of the group. In November security agents dressed as health-care workers arrested 15 of its members, who were on a hunger strike to pro-►



Life, but not of the party

► test against the arrest of a rapper accused of disrespecting authority. The video shows clips of demonstrations by supporters of the movement. It has been watched nearly 2m times on YouTube, mostly outside Cuba. On the island, where access to the internet is expensive, people are sharing it on USB sticks.

The regime is rattled. Two days after the song's release, Cuban state television interrupted normal prime-time programming to encourage citizens to clap and sing the national anthem, "La Bayamesa", which proclaims that "to die for one's

country is to live". State newspapers and websites published long articles claiming that anti-Cuban mafias in Miami were manipulating the musicians. "Patria y Vida" is musical propaganda that can never replace the revolutionary slogan, declared Abel Prieto Jiménez, president of Casa de las Américas, a cultural institution. The spirit of *Patria o Muerte* led to the development of Soberana 02, a Cuban covid-19 vaccine that is expected to enter phase-three trials in March, said Eduardo Martínez, president of BioCubaFarma, the jab's inventor. Perhaps the tagline *Patria y Vida* seemed

too obvious for a vaccine.

In this life-and-death struggle, death still has the upper hand. A member of the San Isidro movement painted *Patria y Vida* on his house in Havana. On February 22nd a pro-government mob covered the graffiti with officially approved slogans in electric blue. Although the government recently expanded the number of trades open to self-employed entrepreneurs, art, music and intellectual rumination are still subject to strict state control. The domino-players are becoming more animated, but the game remains frozen. ■

Bello Victory for the old politics

The winding up of Brazil's anti-corruption task-force marks the end of an era

FOR YEARS it made the powerful tremble. The revelations by the task-force of prosecutors in Curitiba who led the anti-corruption probe known as Lava Jato (Car Wash) brought millions of Brazilians onto the streets in outrage. Those protests contributed to the impeachment of a president, Dilma Rousseff, in 2016. The prosecutors secured jail sentences for her predecessor, Luiz Inácio Lula da Silva, and Marcelo Odebrecht, Brazil's ninth-richest man. On February 3rd the task-force was wound up, in near-silence. Its demise marks the symbolic end of an unprecedented push to reduce graft across Latin America. Sadly, there is little reason to think that it has made a lasting difference. The pandemic and the economic slump have displaced, probably temporarily, worries about crooks in suits.

Lava Jato started with a money-lauder who used a money-transfer service at a petrol station in Brasília (thus its name). Prosecutors uncovered a web of bribes for padded contracts issued by Petrobras, the state-controlled oil giant, over more than a decade in which Lula's Workers' Party was in power (see Finance section). The task-force used new tools, including plea-bargaining and the exchange of financial information with Swiss and other authorities. They found that Odebrecht, a construction firm, had set up a bribes unit that paid \$800m in a dozen countries. The malfeasance extended to other big Brazilian firms.

In all, 174 people, including 16 politicians, were found guilty, and 26bn reais (\$5bn) was recovered for public coffers. Three former Peruvian presidents were detained over the Odebrecht scandal; a fourth committed suicide. In a region where the powerful enjoyed impunity, this was unprecedented.



Yet in the end the anti-corruption drive was undone by the politicisation of justice, in two ways. Sergio Moro, the crusading judge in Curitiba, turned out not to be impartial. He sentenced Lula to 12 years for receiving a beachside apartment. Except that Lula neither owned nor used it. That sentence was upheld by an appeal court. There were other, more solid cases against Lula. But with him out of the presidential race in 2018, Mr Moro became justice minister in the government of Jair Bolsonaro, its hard-right winner. Leaked messages showed that Mr Moro coached Deltan Dallagnol, the lead prosecutor in Curitiba, in violation of procedure.

As minister, Mr Moro said he hoped to institutionalise the fight against corruption. Mr Bolsonaro had posed as an anti-corruption campaigner. In office, he scotched that agenda after prosecutors began investigating one of his sons and an aide. Mr Bolsonaro's hand-picked attorney-general weakened the task-force before winding it up. Four prosecutors will continue to work on corruption and Edson Fachin, the Supreme Court justice hand-

ling Lava Jato cases, insists it "has only just begun". That smacks of bravado.

Lava Jato promised to cleanse Brazilian politics. "It could have been as important for Brazil as democratisation in the 1980s and the [inflation-busting] Real Plan of the 1990s," says Eduardo Giannetti, a Brazilian philosopher. But there was no follow-up. In another sign of a return to the "old politics" that Mr Bolsonaro once denounced, he backed Arthur Lira, a defendant in Lava Jato, as the new speaker of the lower house of Congress.

Outside Brazil, Peru's prosecutors went furthest. But they have yet to prove any of their cases. In targeting some people for investigation, they appear to have political motives. In Mexico Emilio Lozoya, a former boss of Pemex, the state energy company, is accused of pocketing \$10.5m but walks free after incriminating political foes of President Andrés Manuel López Obrador. In Argentina, there is some hope. On February 24th Lázaro Báez, a close associate of Cristina Fernández de Kirchner, the vice-president and a former president, was sentenced to 12 years for money-laundering. Attempts by Ms Fernández's supporters to capture the judiciary have so far failed.

Lava Jato has shown that there are effective ways to take on grand corruption. "Some lessons have been learned," says Delia Ferreira, an Argentine lawyer who chairs Transparency International, a global watchdog. Some big firms have tightened controls. But this progress has not been consolidated into greater judicial independence. There is no sadder example of the problem's persistence than allegations in several countries of profiteering from the procurement of health-care supplies during the pandemic. In one of its biggest battles, Latin America is almost back to square one.

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China and Asia

Life in the doghouse

HONG KONG, SEOUL AND SYDNEY

Asian countries are learning to cope with Chinese bullying

IF YOU ARE Australian and love lobster, it is the time to indulge. Fishermen are almost giving lobsters away off the back of their boats. High-class restaurants and banqueting halls in China once provided by far the biggest market for lucrative live exports, until the Chinese authorities instituted a sudden and unofficial ban in November. Shipments of crustaceans to China have since collapsed by nine-tenths. Desperate lobstermen say they are hanging up their pots. And lobsters are just one of several Australian exports clobbered by unexpected Chinese restrictions, including wine, coal, barley, sugar, timber and copper ore.

China often sends countries that cross it to the doghouse in some form. Sweden is there at the moment, for criticising China's kidnapping and jailing of a Chinese-born Swedish citizen, Gui Minhai, a publisher of scurrilous books about China's leaders. So, too, is Canada, after it arrested Meng Wanzhou, a senior Huawei executive (and daughter of its founder), at the request of America, which seeks her extradition on

charges of evading sanctions against Iran. Norway was hit after the Dalai Lama, the spiritual (and once temporal) leader of Tibet, won the Nobel peace prize, which is awarded by a Norwegian jury.

But it is Asian countries with strong commercial ties to China that are most vulnerable to such punishment. In 2017 South Korea found itself in China's bad books after allowing America to deploy anti-missile batteries. These were intended as a defence against nuclear North Korea, but China objected on the grounds that their radar could peer deep into China. Suddenly, Chinese tour groups were forbidden to travel to South Korea. K-pop groups were barred from performing. Lotte, a South Korean conglomerate with department stores

across China, faced a consumer boycott (it had provided the land on which one of the anti-missile batteries was installed). In all, the boycotts are thought to have trimmed 0.5% off South Korea's GDP that year.

Australia, for its part, has been charged by China with 14 offences, enumerated to the local media by the Chinese embassy in November. These include the government's condemnation of China's human-rights abuses in Xinjiang and Hong Kong, its rejection of various Chinese firms' proposed investments and the supposedly anti-Chinese bias of Australia's media and think-tanks.

How times change. Barely five years ago, a landmark free-trade deal came into force between China and Australia. Xi Jinping, China's president, once boasted of having visited every Australian state—and praised the thriving seafood trade. Since then, trouble has been building. Australia angered China by excluding Huawei, a telecoms giant with close ties to the Chinese government and its security services, from its 5G network. China also fumed when Australia passed a law against foreign interference in politics, following an influence-buying scandal involving a senator. The switch seems finally to have flipped in April, when Scott Morrison, the prime minister, called for an independent inquiry into the origins of covid-19, about which China is sensitive.

Mr Morrison, argues Richard McGregor of the Lowy Institute, a think-tank in Syd-▶

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ney, made an “unforced error”. Although he was right to call for an inquiry, he was foolish to do so alone rather than as part of a wider grouping of countries. But you would think, to judge by the stridency of China’s response, that Australia had offended the cosmic order. In a way, says a former diplomat, it has. In the imperial past, countries were expected to acknowledge China’s paramountcy. Now its leaders once again want its paramount standing to be recognised, as they seek to recreate an expanding Sinosphere.

That is the neo-Confucian strand in China’s treatment of countries that offend it. There is also a realist strand, informed by China’s size. America standing up to it is one thing, but how dare smaller countries do the same? A South-East Asian policy-maker says China wants other countries not simply to take its interests into account but actively to defer to it. It bullies those that show insufficient deference until they “correct” their behaviour.

It is hard to say whether China’s efforts at re-education succeed, since it is not obvious how to measure success. South Korea did not remove the anti-missile batteries, although it did make clear it did not intend to install any more. Soon after, China relented, and the boycotts melted away.

A more clear-cut case of victory over doghouse diplomacy came with Japan. In 2012 China blocked exports to it of rare-earth minerals critical to many of its technology firms. Japan responded by lodging a complaint against China at the WTO. Crucially, it persuaded America and the European Union to join its challenge. China backed down.

Mr Morrison, for his part, has said that Australia will not compromise on its fundamental values. His government has taken China to the WTO over barley. Small beer, China probably thinks. The case could totter on for years. Meanwhile, far from showing solidarity, American farmers and wine-makers are happy to sell extra to China to make up for the banned Australian goods.

Peace overtures made by Mr Morrison and his new trade minister, Dan Tehan, have been rebuffed. Yet if China thinks Australia will easily buckle, it may be disappointed. The pain inflicted on exporters has in part been concealed by the upheaval of the pandemic. Just as in South Korea and Japan, the boycott has caused ordinary people’s opinions of China to plummet. Those running businesses hurt by the sanctions do not blame their government.

What is more, much of Australia is managing surprisingly well. Not least, Australian iron ore is far too crucial for China to boycott. Demand is rising, and prices with it. Meanwhile, Peter Varghese, the chancellor of the University of Queensland, says heartening numbers of new Chinese students are enrolling for online courses, de-

spite threats of a boycott in that area too. The government in Beijing may calculate that hurting Chinese lobster-lovers is one thing, but harming students and industry quite another. Mr Tehan says he is ready for “the long game”.

Have lessons emerged from being at the receiving end of China’s coercive diplomacy? Han Suk-hee, a former South Korean diplomat at Yonsei University, points out that businesses susceptible to economic pressure are diversifying away from China. By the same token, many Japanese firms have established alternative, non-Chinese suppliers of rare earths since that spat.

Meanwhile, China’s need for South Korea’s high-end chips suggests that pressure is “not a one-way street”.

Above all, says Mr McGregor, like-minded countries acting together provide both safety in numbers and leverage against Chinese bullying. But it is also impossible to imagine that the Australian and South Korean governments will not, at the very least, think carefully before embarking on any course likely to displease China. And smaller, poorer countries, with less sophisticated firms that might have more trouble adjusting to any Chinese blockade, may think more carefully still. ■



Minority rights in Indonesia

Breaking cover

SINGAPORE

The government tries to help non-Muslim girls who are forced to wear the hijab

MOST TEENAGERS starting at a new school want to fit in. But not Jeni Hia. On her first day at a public high school in Padang, the capital of West Sumatra province, the 16-year-old was the only girl whose hair was uncovered. Indonesia has the world’s largest population of Muslims: 235m, some 87% of its citizens. Among them is Fauzi Bahar, who in 2005, as Padang’s mayor, made jilbabs, the regional version of the hijab that covers the head, neck and chest, compulsory for all female Muslim students. The rule is widely applied to non-Muslim girls, too. But Ms Jeni, who is Christian, refused. In January the school’s vice-principal summoned her parents to a meeting, which her father live-streamed. “If I force my child to wear hijab, that will betray my child’s identity,” he said. “Where are my religious rights? This is a public school.” The video went viral.

Since 2001 local governments in Indonesia have passed at least 60 bylaws ruling that women should cover their heads. Female civil servants who refuse to do so have been demoted or sacked, according to Andreas Harsono of Human Rights Watch, a pressure group. He thinks that most of Indonesia’s 300,000 public schools require Muslim girls to wear jilbabs, and that non-Muslim girls are often “bullied” into veiling. The SETARA Institute, a think-tank in Jakarta, the capital, counts at least seven instances of Christian students forced to wear jilbabs between 2016 and 2018. Henny Supolo of Yayasan Cahaya Guru, a foundation that trains teachers, says many female teachers feel pressure to cover their heads.

On paper, Indonesia is a pluralist country. Its constitution enshrines the right to follow one of six religions. Yet over the past two decades many local governments have

passed laws inspired by Islamic teaching. Michael Buehler of the School of Oriental and African Studies at the University of London counts at least 1,000 such laws, but suspects there are many more. They emerged after Indonesia became a democracy in 1999, when politicians suddenly forced to court popularity sought to appeal to devout voters. Between 1999 and 2012 nearly a tenth of religiously inspired regulations in staunchly Muslim provinces concerned dress codes.

The central government, however, takes a more liberal approach. On February 3rd it gave local governments and school principals until March 5th to revoke all regulations requiring women to wear jilbabs—even those relating only to Muslim women. It also reiterated the right of all women to wear what they choose.

The government's willingness to wade into such a charged debate is striking. In 2016 mass protests led by a populist Islamist movement brought down the Christian governor of Jakarta after he was (falsely) accused of insulting the Koran. For some time after that Joko Widodo, the president, popularly known as Jokowi, was wary of angering conservative Muslims. But in 2019 Jokowi was re-elected for a second and final term, and proceeded to neutralise most of his opponents by welcoming them into his cabinet.

"Because now he has control over almost all the opposition forces, he feels more emboldened to counter Islamists head-on," says Alexander Arifianto of the S. Rajaratnam School of International Studies in Singapore. Jokowi has also outlawed the rabble-rousing Islamic Defenders Front and arrested its leader on flimsy pretexts. The government's stance on hijabs is best seen in this light, says Mr Arifianto: a blow against "political opponents who happen to be Islamists", rather than against Islamism.

Local politicians are talking tough. Mr Fauzi, who instituted the jilbab rule in Padang, has called on all district heads to "reject this decree at all costs". So far three have done so, among them the mayor of Pariaman, a West Sumatran city 50km from Padang, who argues that "local wisdom" trumps diktats from the central government. Even the Indonesian Ulama Council, the country's foremost Muslim clerical body, which is chaired by Jokowi's vice-president, has asked for the decree to apply only to non-Muslims.

If the dispute is unresolved, the government's options are limited. It can issue warnings against local district heads and cut off funding to schools in their areas, says Mr Arifianto. But he thinks local politicians will be less concerned about paying for children's education than about alienating Islamic groups that might campaign against them at election time. Moreover, it

is unclear whether the government's decree can in fact override local ordinances such as the regulation in Padang, says Kevin O'Rourke of Reformasi Information Services, a risk-analysis firm. The decree was issued jointly by the ministries of education, religion and home affairs, the last of which was stripped of its power to repeal bylaws in 2017 by the Constitutional Court.

For Ms Jeni, at least, it feels like a victory for liberalism, even if small and possibly temporary. Her school's principal has backed down and apologised. The 22 other non-Muslim girls in the school have discarded their jilbabs, too. ■

Housing in South Korea

Get me a flat—or else

SEOUL

The government is struggling to make housing more affordable

THE NEIGHBOURHOOD around Nowon Station, on the north-eastern edge of Seoul, looks much like any other suburb of South Korea's capital. Multi-storey buildings house cramming schools, coffee shops and fast-food stalls that sell *tteokbokki* (spicy rice cakes) to hungry students during their short study breaks. There is a multi-screen cinema and a cluster of banks. Hole-in-the-wall shops peddle vegetables and pickles. "It's a great place for bringing up children," says a contented local mother. "Good schools, low crime, few distractions."

Unassuming districts like Nowon have caught the full blast of a house-price boom that is reverberating around Seoul. In the second half of last year the price of an average family flat in the surrounding apartment complexes rose by around 30%,

sending them beyond the reach of many aspiring first-time buyers. Apartment prices in Seoul as a whole rose by 58% in the three years to December 2020, according to KB Kookmin, a bank. The price of the average flat in the city is about 16 times the median household income, compared with around 12 in London.

Several factors have fuelled the boom, which has spread beyond Seoul to satellite towns in the surrounding province of Gyeonggi. South Korean households tend to hold most of their wealth in property. Ultra-low interest rates intended to cushion the economic impact of the covid-19 pandemic have spurred demand. The supply of flats in the crowded capital region has failed to keep up. And the government's attempt to remedy things may have made matters worse.

The government's first instinct was to declare war on "speculators". Since taking office in 2017 it has taken more than 20 steps to curb demand, including restricting mortgage lending, raising taxes on homeowners and penalising the rapid "flipping" of recently purchased properties. It also improved protection for tenants. All this has yet to cool the market, however, partly because borrowing is so cheap and partly because the extra taxes may have induced potential sellers to take their properties off the market.

"The government has misunderstood how the property market works," says Kim Jun-hyung of Myongji University. "Politically, they are obsessed with the problem of speculation, but actually there just aren't enough high-quality apartments to match the demand." Meanwhile, the reforms have annoyed both homeowners and the aspiring first-time buyers whom they were supposed to help. "You cannot believe how much they are increasing taxes," says a woman who owns a flat in Apgujeong, a prosperous neighbourhood in southern Seoul. "I feel like I'm being puni- ▶▶



Out of reach

shed for owning a place. My two children both want to get married and buy a flat, but they can barely afford a place to rent.”

A government scheme to help provide affordable homes for newly-weds has not been met with unequivocal enthusiasm. “It’s like they don’t want people to buy homes,” says Choi Ho, a 36-year-old who wants to get married and buy a flat with his fiancée. “The places are all too small or in really bad neighbourhoods.” Even young renters with no intention of buying are frustrated. “There just isn’t anywhere to live,” says Jenna Kim, a 24-year-old who

managed to scrape together 15m won (\$13,500) as a deposit for a small rented studio on Seoul’s eastern outskirts.

Byeon Chang-heum, the land minister, has admitted that many people in Seoul “live in units in inferior conditions”. He is right to be contrite. Both Mr Choi and the flat-owner in Apgujeong say they voted for the ruling party, but would not do so again. Since last summer the property market has been the main grumble of those who told pollsters that they disapproved of the current government—and they have been a majority since July.

This has prompted the government to change tack. It will make sure that more than 600,000 flats are built in the capital area by 2025, Mr Byeon has announced, if necessary by building them itself. That is in addition to plans announced last year to expand public housing and to build more flats for single households. But homeowners already upset about the tax rises may be further riled by the prospect of a surge in supply. What is more, the new housing will inevitably take several years to materialise, but there are mayoral elections in April and presidential ones next year. ■

Banyan Toolmasters

The Indian government’s pursuit of its critics is not just unfair, but hypocritical

THE JUDGE who granted bail to Disha Ravi on February 23rd was doing Narendra Modi, India’s prime minister, a favour. The jailing of the 22-year-old environmentalist a week earlier had made his government look mean and, more damaging still, silly. For the supposed sin of sharing a Google document that listed ways for activists to support protests by Indian farmers, Ms Ravi was dragged from her home in Bengaluru and flown to Delhi. Police charged her with sedition, a crime that can carry a life sentence. Government mouthpieces portrayed her list as the dastardly “tool-kit” for a global conspiracy aimed at ripping India apart. Other conspirators include exiled Sikh separatists, Greta Thunberg, a teenage environmental activist, and Rihanna, a Barbados-born pop star who has been depicted as an inveterate foe of India since she expressed mild concern for the farmers’ well-being in a recent tweet.

The judge’s ruling, noting the absence of any evidence tying Ms Ravi or her “toolkit” to anything illegal, briefly warmed Indian liberals’ troubled hearts. In truth, his lordship could have gone further. He could, for instance, have pointed out the irony of this government, in particular, whining about someone else’s political “toolkit”. In election after election since taking power nationally in 2014, Mr Modi’s Bharatiya Janata party (BJP) has wielded its own box of tricks much dirtier than anything Ms Ravi has suggested. It has, for instance, diligently stoked tensions between the Hindu majority and minorities, especially Muslims. A particularly effective tactic is the use of WhatsApp groups and other social media, powered by thousands of Hindu nationalist trolls, to spray a ceaseless mist of innuendo

about the “anti-national” leanings of the BJP’s rivals.

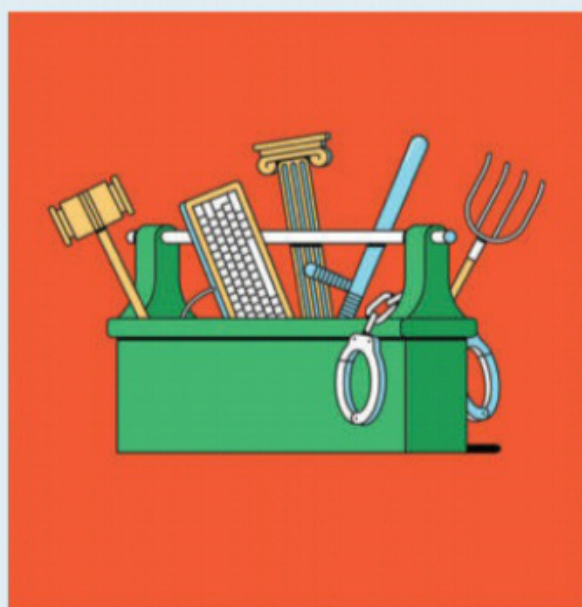
On February 22nd Mr Modi himself, on the campaign trail in West Bengal, a big state that is a teetering opposition stronghold, rang a familiar gong by vowing to end “appeasement” of minorities. On the same day the opposition-led government of Puducherry, a small territory far to the south, collapsed when a group of deputies abruptly defected amid claims of money changing hands. This was the ninth state government to fall in this way during Mr Modi’s tenure—another reliable component of the BJP’s “toolkit”.

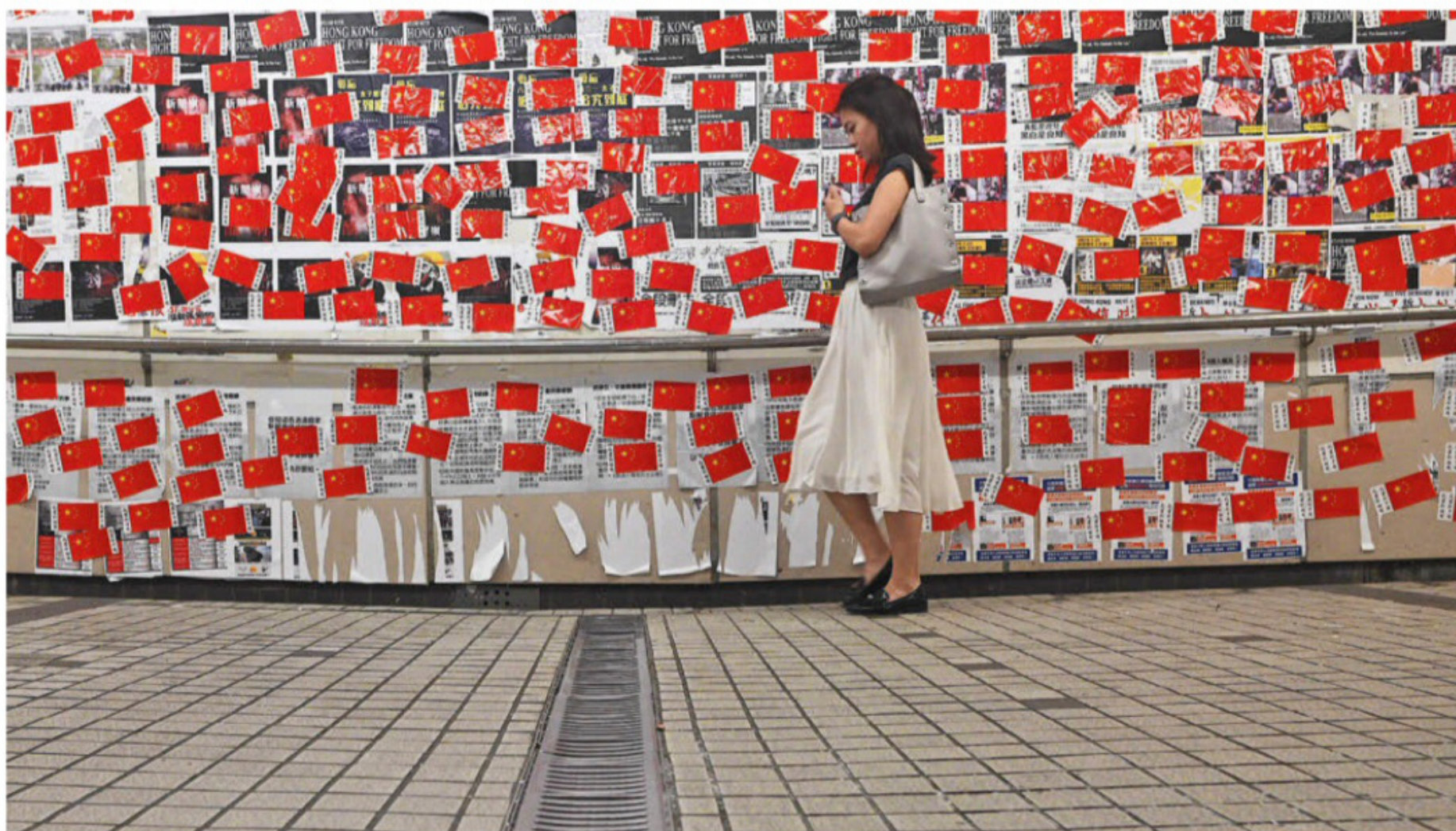
In making up conspiracies about people like Ms Ravi, the police, too, are resorting to a tried and tested tool from the kit. A few days before her release, three young working-class Muslim men in Delhi were also granted bail. They had spent not a few days, like the middle-class activist, but 11 months in jail, accused of shooting another Muslim youth during communal riots in the capital that left 53 people dead last year, more than two-thirds of them Muslims. The judge not only let them go, but

rebuked police for producing “no evidence whatsoever” against them.

The ruling went on to show that film footage, forensic reports and witnesses all made plain that the fatal bullet had been fired not by the victim’s friends, as police insist, but by someone amid the furious mob of Hindu youths gathered on a rooftop across the street. Video from a television channel reveals a rifle pointing down, at an angle that matches the victim’s wounds. This version, however, does not seem to match with the preferred “toolkit” of Delhi’s police. Their investigation of the riots has been single-mindedly focused on the premise that Muslims shot one another to embarrass Mr Modi’s government. As a result they have ignored footage that plainly shows politicians from the BJP inciting mobs, and police officers joining in.

It is a shame that India, as a republic, increasingly seems to set aside its own original and excellent toolkit, namely its constitution of 1950. The divergence has been a long and slow process, but there is little doubt it is speeding up. One hint as to why may have been revealed by the culture ministry, which on February 19th, for the first time ever, issued an official tribute to “The Profound Thinker” M.S. Golwalkar, an early leader of the Rashtriya Swayamsevak Sangh or RSS, the motherhood of the Hindu nationalist movement and progenitor of the BJP. Among other controversial views, Mr Golwalkar believed that Nazi Germany’s management of its Jewish problem “represented a good lesson for us in Hindustan to learn and profit by”. He was not happy with India’s constitution either, judging its makers “not firmly rooted in the conviction of our single homogeneous nationhood”. His call for a change of toolkit has found a powerful audience.





Politics in Hong Kong

Time for some holistic love

HONG KONG

China wants to make sure that only “patriots” can win elections in Hong Kong

IN 1984, AS the British and Chinese governments moved closer to signing a historic agreement on the future of Hong Kong, one word worried some residents of the British colony. China was suggesting that the territory could stay capitalist, but had to be run by “patriots”. What did that mean? China’s then leader, Deng Xiaoping, gave a reassuring response. “We don’t demand that they be in favour of China’s socialist system,” he said. “We only ask them to love the motherland and Hong Kong.” Now officials have made it clear that this is no longer the case. Supporting the Communist Party is a must.

In a speech in Beijing on February 22nd, China’s official responsible for Hong Kong affairs, Xia Baolong, set out China’s new definition of the patriotism requirement, and gave a clear indication that this would involve a different way of managing politics in Hong Kong. Patriots, he insisted, must support China’s political system. “In this country where we practise socialist democracy, we can allow different political opinions,” he said. “But there is a red line—we absolutely cannot allow any acts that

will harm this basic system, namely the socialist system led by the Chinese Communist Party.”

Such a definition of patriotism would be no surprise to people living on the Chinese mainland, where officials have always combined the notions of “loving the country and loving the party”. But Mr Xia’s comments caused a stir in Hong Kong, which China still claims it rules by the principle of “one country, two systems”. A day after Mr Xia’s speech Erick Tsang, Hong Kong’s official in charge of mainland and constitutional affairs, reinforced the message. “You cannot say that you are patriotic but you do not love the leadership of the Chinese Communist Party or you do not respect it, this does not make sense,” he said. “Patriotism is holistic love.”

This is not merely an issue of semantics. In June 2020 China imposed a sweep-

ing national-security law on Hong Kong in order to crush opposition to the local government that had engulfed the city in protests in the previous year. A person’s view of that law became a test of suitability for membership of the Legislative Council, commonly called Legco. In July, 12 politicians, including four members of Legco, were disqualified from taking part in upcoming Legco polls, in some cases because they objected to the law (the elections were later postponed—because of the pandemic, the government said). Since 2016 several pro-democracy politicians have also been barred from standing in elections or expelled from Legco for refusing to express support for the Basic Law—Hong Kong’s mini-constitution—or mangling oaths of loyalty to it. Mr Xia’s speech on patriotism strongly implied that new tests would be applied in order to weed out “anti-China elements who cause chaos in Hong Kong”. He said “refinements” were urgently needed in the territory’s electoral system in order to prevent such people “entering organs of political power”.

The mood has changed dramatically since early last year. Then, fresh from a dramatic victory in district-level elections in November 2019 and buoyed by popular support that was displayed in abundance during the anti-government unrest, democrats felt they had a fighting chance of gaining control, or at least hugely influential shares, of seats in all three of Hong Kong’s main elected bodies: the district councils which they had just swept, Legco ►

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► and the Election Committee that chooses the chief executive (it will next convene in 2022). Now the door is being slammed on them, although democrats had already vanished from Legco. After the barring of the four who had planned to stand for re-election, the rest of Legco's pro-democracy camp resigned in protest. When patriotism tests are introduced, elections will become perfunctory. More than ever, power will be exercised by mainland officials through proxies in Hong Kong.

One immediate change will be a new oath for holders of public office. Mr Tsang said a bill concerning this will be presented to Legco in March. It will require the swearing of allegiance to the central government, in addition to the previous need to swear loyalty to Hong Kong. According to local media, China's leaders may also change the way that seats are allocated on the 1,200-member Election Committee. At present, 117 of them are given to district councillors—a group long dominated by pro-establishment politicians but which will be controlled by the opposition camp as a result of their gains in 2019. These seats may be given instead to local Communist Party supporters, such as members of the Chinese People's Political Consultative Conference, an advisory body in Beijing. To help loyalists win more seats in Legco, changes will be made to constituencies and electoral procedures, say local press reports. Legco elections are already designed to give them a huge advantage, with only half of the legislature directly elected by citizens.

There are other ominous rumblings, too. Mr Xia said senior posts in the judiciary must also be held by patriots. Officials have said as much before, but Communist-controlled media suggest that China may establish a high-level committee that will determine whether holders of public office are genuinely loyal to the central government. There is speculation that some of these reforms may be discussed at the annual meeting in Beijing of China's rubber-stamp legislature, which begins on March 5th and lasts about ten days.

As well as tightening its grip on Hong Kong's politics, China is steadily strangling freedoms in other areas, too. On February 19th the local government ordered Radio Television Hong Kong (RTHK), the city's public broadcaster, to submit to tighter scrutiny by government-appointed advisers. RTHK has remained remarkably independent under Chinese rule. Earlier this month, however, it announced that it would stop rebroadcasting BBC World Service programmes because of alleged BBC bias in its coverage of atrocities in Xinjiang. As the Communist Party strengthens control, many democrats in the city feel they are having to choose between keeping quiet about their beliefs, or emigrating. ■

Wolves

Reviled to revered

BEIJING

A predator has risen in China's esteem

CONSERVATIONISTS HAD much to cheer about when, in early February, China published a long-awaited update to its list of protected animals. It is now twice as long, with almost 1,000 species. Snake-lovers celebrated the inclusion of the lime-green Mangshan pit viper. Fans of the Yangzi finless porpoise, also known as the "smiling angel", had reason to rejoice. Yet perhaps the most unexpected gift was handed to champions of the common wolf. Unloved in many places, wolves were until recently seen as a pest in China. When the country last drew up a protected-species list in 1988, a campaign to exterminate wolves for rewards, launched in the 1950s under Mao, was still popular. Killers now face steep fines and possible prison time.

In Chinese, as in other languages, wolves get a raw deal. They feature in proverbs about collusion and cruelty (to have "the heart of a wolf and the lungs of a dog"), infamy and greed (to harbour the "ambition of wild wolves"). Lechers are wolf-like. In "The Wolf of Zhongshan", a 16th-century fable known to all Chinese children, a scholar helps hide a wolf from a hunting party, but the ungrateful animal tries to eat him. To be "a Zhongshan wolf" is to repay good with evil.

A bestseller released in 2004 upended these ideas. "Wolf Totem" thundered that China was a nation of sheep in dire need of reclaiming its wolfish vigour. It is the semi-autobiographical story of a student who goes to live among ethnic-Mongolian

herders during the Cultural Revolution. He becomes fascinated by the wolves that prey on their livestock. The novel laments the destruction of Inner Mongolia's grasslands by farmers from China's ethnic-Han majority, and their failure to recognise the positive role played by wolves in preserving the region's ecology (the author, who published his work under a pen name, had been imprisoned for supporting the pro-democracy protests of 1989). The book appealed to officials, army types and entrepreneurs, who used it to motivate staff. The wolf—strong-willed, tribe-oriented—had become a role model.

Such lupine imagery remains in vogue. The special-forces unit that gives its name to "Wolf Warrior", a patriotic action movie released in 2015, embodies a China that is self-confident and respected. ("Wolf Warrior 2" is China's highest-grossing film.) "Wolf-warrior diplomacy" is used by admirers and critics to describe the tactics of combative Chinese ambassadors.

"Wolf Totem" gave rise to many new stories about friendly wolves. "Pleasant Goat and Big Big Wolf", an animated television cartoon, was a hit with children—and middle-class women. They fawned over Grey Wolf, an anti-hero and charming husband. "The Wolf that Fell for the Sheep" became a smash pop song. The novel also inspired some young people to work with actual wolves. Among their small but growing number is Li Xiaoyu of Peking University, who studies human-wolf conflict on the Tibetan plateau (it is less confrontational these days: to keep the wolves at bay, herders strap loudspeakers onto their yaks and blast out Buddhist chants at approaching predators). Ms Li thinks newfound acceptance of wolves was a big factor in earning them legal protection. So, too, were the conservation groups that fought for their inclusion. They were the real wolf warriors. ■



Wolves are a lot more sensitive than the fables suggest

Chaguan | Build it and they will go

China's high-speed trains enable long-distance commuting. Officials are not sure they approve



FEW CHILDREN grow up dreaming of being a commuter. But there is a logic to a life spent between a city job and a home in some quiet, affordable spot. The first modern suburbs sprang up to greet trains puffing out of Victorian London. As countries such as Japan, France and Spain invested in high-speed trains, travelling at 250kph or more, new pairs of cities found themselves an hour or so apart, allowing for previously unthinkable commutes.

Now it is China's turn. Planners did not have commuters in mind when they began building the world's largest high-speed rail system just over a decade ago. They started with national trunk lines and regional spurs, to bind together a vast country and boost growth. Now, with more than 35,000km of lines laid, planners are building more intercity routes, creating conditions for fast, short hops. One study in 2018, using mobile-phone data to track movements, found tens of thousands of people commuting from neighbouring cities into Shanghai, a megalopolis of 24m. Most of them came from Suzhou, a historic city half an hour away by fast train.

Last year the *Journal of Transport & Health*, an international outlet, published a survey of such pioneering riders. The typical respondent was a married man with one or two children, a mid-dling-to-high income and a university degree. Three-quarters became long-distance commuters only after the arrival of high-speed rail. More of them describe intercity travel as a route to a better job than to a higher quality of life. Indeed, many call commuting stressful, and something to do "when they are young", notes a co-author of the survey, Chia-Lin Chen of the University of Liverpool. China's high-speed railways do not sell season tickets to commuters, who must often scramble to secure daily tickets on trains meant for long-distance travellers. Moreover, to promote newly built districts, high-speed railway stations are often built far from existing city centres, obliging commuters to travel long distances from stations to workplaces. All this exacts a toll on marriages and families, says Ms Chen.

The Xiao Langfang housing complex is a cluster of apartment blocks in the small, nondescript city of Langfang, 60km from central Beijing. It is an excellent base for commuting—a seven-minute walk from a high-speed railway stop that is, in turn, a 21-minute ride from Beijing South station. The one-way fare is 28 yuan

(\$4.33). It is a friendly spot. On a mid-week afternoon, its landscaped grounds are thronged with children flying kites, yapping lapdogs and old women playing cards in the winter sun. Above all, here in the northern province of Hebei, just outside Beijing's city limits, property is cheap. Apartments in Xiao Langfang sell for 15,000 yuan a square metre. A comparable flat in Beijing could easily cost six times as much.

Shao Zeyu, a young father playing with his five-year-old son in the compound's gardens, met his wife in Beijing and rented a home with her there for years. They left the capital after their child was born. Mr Shao's legally registered hometown is Langfang, while his wife is from Tianjin, a nearby coastal city. Mr Shao's mother lives in Langfang, so she can offer both love and free child care. But the family faced constraints, too. It is very hard to obtain a new household-registration permit, or *hukou*, from Beijing, a city that Chinese leaders consider full. Without a Beijing *hukou*, the Shao family could not easily gain access to many public services in that city, including school places. So they left.

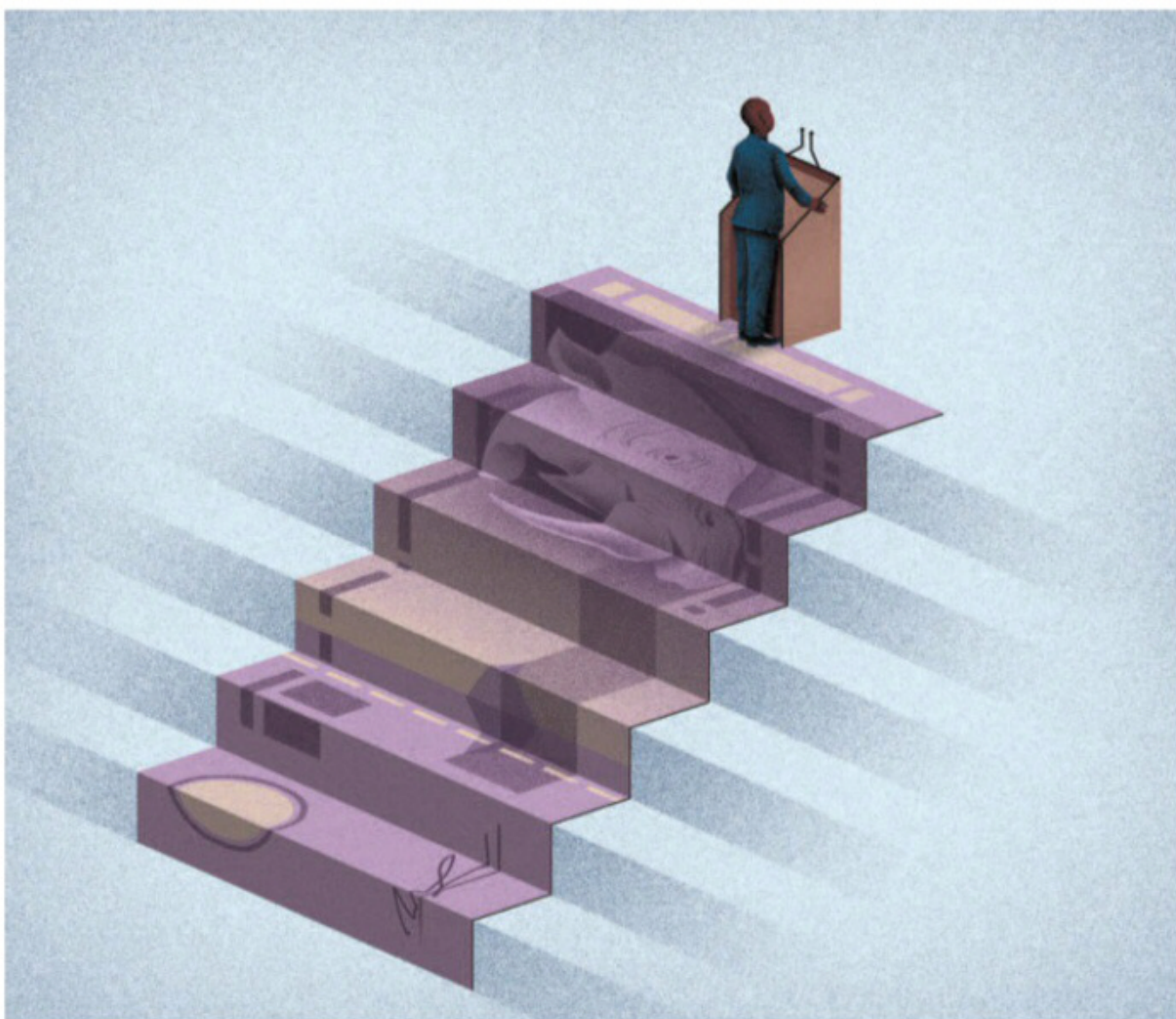
The train has been a boon. Initially, his wife carpooled from Langfang to her job in northern Beijing. She left at 5:30am and reached her desk before most colleagues, allowing her to return home early to see her son. In bad traffic the journey could take three hours each way, and left her exhausted. The fast train to Beijing enables her to leave home at seven. That makes the Shao family lucky. Many friends work such brutal hours, until nine or ten each evening, that they come home only at weekends. Mr Shao himself used to work similar hours for a computer-games firm in Beijing, and is now looking for a job he can do locally. Because Tianjin is affordable and offers better schools and an easier route to university, the family expects to move there when their son is older. Mr Shao's wife plans to commute by train from Tianjin.

In China working nine-to-five is a luxury

Such hyper-mobility is new in China. The government is promoting a new form of urban development that embraces multi-city clusters, including one uniting Beijing and Tianjin. But the aim is to make it more appealing to live in a wider range of secondary cities and new towns, not to create alternative routes to work in central Beijing. In 2016 the Communist Party boss of Hebei said that Langfang "absolutely cannot become a dormitory town for those who work in Beijing". Indeed, China's tax system currently punishes commuter towns. Someone who works in Beijing pays taxes and social-security contributions into the capital's coffers, even when sleeping each night in Langfang. Locals murmur that officials in Langfang blocked moves to call a housing development "Shouzhan", meaning "First Stop" on the line from Beijing.

The authorities in Langfang want new residents to live and work in their city. They recently eased restrictions on outsiders buying property there, allowing them to invest if they make six months' worth of social-security payments to Langfang's fund (on top of payments made elsewhere). But Langfang should be realistic, suggests a local property-salesman. He calls his home town a place where newlyweds and those starting families will choose to live until they can afford to move on.

In truth, Langfang's greatest asset is being a convenient stop on the way to bigger places. That is a puzzle for officials rewarded for developing the place under their charge, not for facilitating the restless ambitions of individuals. China's high-speed railways are a spectacular economic achievement. Their impact on society may prove as dramatic, if officials allow it. ■



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Pricey politics

The gilded path to power

COTONOU, KAMPALA AND MAIKUU

Why it is so expensive to be an African MP

ARINDA GORDON KAKUUMA had many reasons for running for office. It was his “passion”; he was keen to give back to his country, Uganda; and he wanted to help “my people”. It was also “to satisfy my ego”, the MP adds, with a laugh.

Self-esteem comes at a price. Mr Arinda, whose five-year stint in parliament ends in May, lists some of his expenses: 50,000 posters, 100 agents, radio spots, ten cars for every rally and, on occasion, 100 *boda-boda* (motorbike) drivers “if you want to do a bit of a convoy and scare your opponents”. Then there were the “donations”: “If you go to a village you have to leave something.” Mr Arinda estimates that to win a primary and an election costs at least \$200,000, more than 200 times Uganda’s GDP per head.

After the votes are counted, the costs keep mounting. Mr Arinda reckons he gives \$400 a day to his constituents for medical bills, school fees, funerals and so on. Every weekend a local organisation invites him to a fundraiser. “They bring a cow, you have to buy it; they bring goats, you have to buy them.” As an MP, “you lose

money,” he says. “It’s a hell of a job.”

African parliaments are often dismissed as rubber stamps. But what MPs do in the legislature is only part of the job. In their constituencies, they fill gaps left by weak states; and this informal role matters more to voters than passing laws. This helps explain why politics is so expensive.

The Westminster Foundation for Democracy and the Netherlands Institute for Multiparty Democracy, which are funded by rich countries, have tried to measure it. Anonymous surveys of MPs in 13 African countries found they often spend more on their constituents than they earn through their salaries. One in Kenya spent nearly \$5,000 a month just on funerals.

Such spending has historical roots. Post-colonial African states inherited strong executives. Most presidents wanted to sideline MPs and in systems with direct representation did so by giving them the role of serving constituents. Jomo Kenyatta, Kenya’s first president, fostered the system of *harambee* (“let’s pull together”), which charged MPs rather than central government with delivering projects.

These systems still shape expectations. More than 70% of voters in Ghana, Kenya and Uganda say that the most important thing their representative did to win election was “assist people and make donations” or create “development projects”, according to a new book, “The Moral Economy of Elections in Africa” (see chart on next page). Just 2-3% said the key role was “making laws and defending democracy”.

“Being an MP is like being a bank,” explains Guy Mitokpè, as he scrolls through his WhatsApp messages at a hotel in Benin. “People keep asking for money.” Even though he is no longer an MP, the requests keep pouring in. On his phone is a plea to pay for an appendectomy. MPs give more than handouts; they provide public goods, too. Of the 440 ambulances in Uganda, 180 are owned by MPs. In rich countries with strong bureaucracies lawmakers can show their worth by contributing to a tax cut or a new social programme. That is harder in poor countries with weak administrations.

Where do MPs get the money? Most use savings or lean on friends and family. Many borrow. In Sierra Leone MPs regularly appear on lists of bad debtors. Others get money from patrons who want favours in return. More than a third of Africans believe political corruption is endemic.

The trouble for MPs seeking to recoup costs, whether through salaries or graft, is that few stay in office for long. Incumbent presidents win about three in four elections. MPs lose most of theirs. This is because of a “yawning gap” between what

► voters expect and what they get, notes Ken Opalo of Georgetown University.

Unrealistic expectations are encouraged by presidents keen to avoid responsibility for their own failings. Yoweri Museveni, Uganda's authoritarian leader, often says that if an area is struggling, it is the fault of an MP who did not lobby him. During elections in 2016 he told crowds: "I have been told that there are many *embeba* [rats] that are stealing millet here," implying that MPs were pilfering state funds.

Rival candidates try to show that they will do a better job by giving generous handouts on the campaign trail. These gifts are not just bribes, but signals of future generosity. In the Ugandan election of 2016 the average amount spent by a candidate was 465m Ugandan shillings (\$136,000). Some 99% of respondents said the cost of running was rising every cycle. In Ghana the average cost of running in primary and general elections in 2016 totalled 390,000 cedi (\$68,000 at current exchange rates), almost twice an MP's salary. That was 59% more than in 2012. In Benin the typical handout in 2007 was \$1-2. In 2015 sums of \$10 were more common, rising in some cities to \$100.

When politics is pricey it becomes an exclusive club. Though proof is hard to come by, African MPs seem to have got richer over time. In 2017 Dominika Koter of Colgate University analysed the former jobs of Beninese lawmakers since 1991, when it ditched dictatorship for democracy. Since then the number of MPs who were business people or customs officials (who can grow rich from bribes) has increased threefold; the number of academics has fallen. Wealthy MPs seem to do less work, notes Ms Koter, when measured by how often they turn up for votes or committees.

Political parties tend to make things worse. In many rich democracies they pick

up candidates' tabs. In many African countries the politician pays the party. And parties actively court wealthy candidates.

Among the many malign consequences is that female candidates face huge barriers. One in four MPs in sub-Saharan Africa is female, roughly the same as the global average. Quotas and all-female races have helped increase this share, but have perverse effects. When some races are reserved for women, male party bigwigs often think women should stay out of all others. And since female-only races often span large areas, they can cost a lot to run.

Broadly speaking, African countries have taken two approaches to the rising cost of politics. The first has been to pass laws about election spending, which are frequently broken. The second, adopted by more than a dozen countries, is to create pots of money, or Constituency Development Funds (CDFs), that can be used in constituencies by MPs with varying degrees of discretion. In effect, these funds tend to formalise their informal role.

One of the most extensive is Kenya's. Every year 2.5% of government revenues are assigned to CDFs, which can be used for school bursaries or local infrastructure. For Patrick Musimba, the MP for Kibwezi West, three hours' drive south-east of Nairobi, CDFs have been a boon. He says he spends less of his own money on paying school fees. He also argues that CDFs provide a way for voters to hold him accountable. Some 12,000 bursaries are paid for out of his fund every year, as well as money for dozens of new classrooms.

When Mr Opalo asked Kenyans in a survey to pick what they would prioritise when evaluating their MP, the most popular answer was the use of money from the CDF. Yet CDFs are unlikely to close the gap between expectation and reality. NGOs say they are slush funds. Even those that are well run are a small share of public spending. At a local secondary school in Mr Musimba's constituency, pupils attending on bursaries sit in new classrooms. But the fund does not pay for teachers, so class sizes are still around 60.

Meanwhile the presence of CDFs does not seem to reduce MP turnover, suggesting that rival candidates are still able to outbid incumbents. Mr Musimba has not stopped giving money to constituents through his private office. Beneath a blown-up photo of Mr Musimba and Pope Francis, a field agent for the MP explains that he gets 1,000 letters a month. He pulls out one request from a family for more than 340,000 (\$3,100) in medical expenses.

African voters, like voters everywhere, want roads, water, clinics, schools and other public goods. MPs have often taken the lead in trying to deliver these. Yet, however hard they work, they will never be a substitute for an effective state. ■

The war in Tigray

Murder in the mountains

ADDIS ABABA

A massacre in Axum may be one of many atrocities

IN LATE NOVEMBER Hailay Haileselassie said goodbye to his children and drove towards Edaga Hamus, a town in the mountainous northern Ethiopian region of Tigray, where his ageing parents live and his father is a priest. As churchgoers gathered in his father's church on November 30th, the familiar murmur of prayer was replaced by the crackle of gunfire.

Witnesses say that Eritrean soldiers had entered the village that morning, looting homes and burning crops. Then they went from door to door, seizing young men and killing anyone who resisted. Scores died. Many families lost more than one member. Hailay was dragged from his parents' home and shot in front of them. The killers drove off in his pickup truck.

Ethiopia's government says it is conducting a policing operation against the ousted rulers of Tigray, the Tigrayan People's Liberation Front (TPLF). Yet as phone connections to the region are restored, having been cut off since the fighting started on November 4th, credible reports of atrocities and war crimes are emerging. Many involve troops from neighbouring Eritrea, who are fighting alongside Ethiopian forces.

Perhaps the worst incident took place in Axum, one of Ethiopia's holiest cities. According to Amnesty International, a rights group, Eritrean soldiers killed hundreds of civilians over two days in late November in retaliation for an attack on their ►►



Seeking sanctuary

Pork-barrel politics

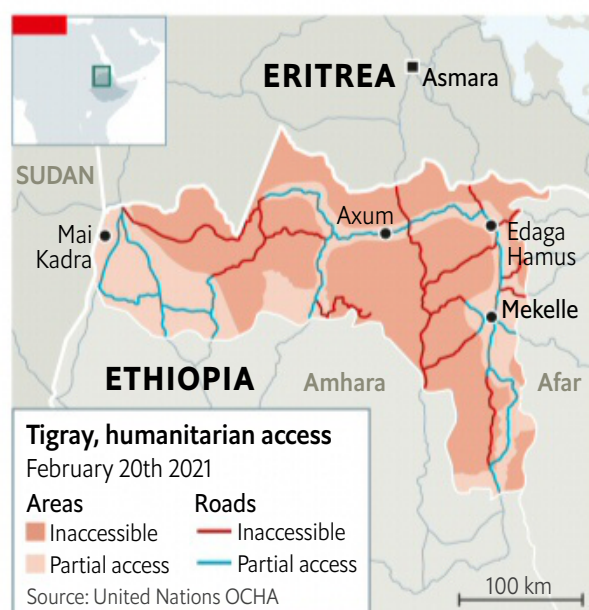
"What was the most important thing your MP did to win the election?"

2017 or latest available, % responding*



*Respondents asked to mention only one activity

Source: "The moral economy of elections in Africa: democracy, voting and virtue", by G. Lynch, J. Willis and N. Cheeseman



camp. The soldiers picked out unarmed young men and killed them on the spot. They then plundered the city. “All we could see on the streets were bodies and people crying,” one survivor told Amnesty.

This massacre may be part of a wider pattern. Several videos have surfaced that appear to show Ethiopian soldiers standing among the bodies of civilians they have murdered. An investigation by Human Rights Watch, another monitoring group, found the Ethiopian army had shelled towns, including Mekelle, the capital of Tigray, killing at least 80 civilians. In early November several hundred people were massacred in the town of Mai Kadra. Probably most were Amharas murdered by a TPLF militia. Tigrayans who have fled across the border to Sudan tell of attacks on civilians by Amhara militiamen and government soldiers in the same area.

Months of restrictions on journalists and NGOs make it hard to know exactly what has been happening. The federal government has dismissed calls for independent investigations, and seems unwilling to hold anyone besides members of the TPLF to account. Ethiopian officials including the president, Sahle-Work Zewde, have admitted that women in Tigray have been raped in large numbers. “We cannot pretend that we do not see or hear,” she said on February 19th. But she failed to identify the perpetrators, even though the victims said their rapists were soldiers in Eritrean and Ethiopian uniforms.

A high risk of famine persists. The government is blocking aid workers from parts of the region, perhaps because officials do not want them to expose further atrocities. According to the UN, most of Tigray is still out of reach for aid deliveries. “For month after month we were denied access to Tigray, while massacres were taking place and women and children were bleeding,” said the head of the Norwegian Refugee Council, an NGO. If either soldiers or officials have deliberately stopped food from reaching the hungry, then that may have been yet another war crime. ■

Israeli politics

Abu Yair wants your support

JERUSALEM

Binyamin Netanyahu is appealing to an unlikely group of voters

ARAB ISRAELIS are voting “in droves”, said Binyamin Netanyahu, as he tried to scare his religious and nationalist base into voting in 2015. Four years later Mr Netanyahu, Israel’s prime minister, tried to place cameras in polling stations. Critics saw this as a ruse to scare off Arab voters. Last year he tried to deter his rivals from working with Arab lawmakers by calling the Joint List, an alliance of Arab parties, “supporters of terrorists”.

But in the run-up to the election on March 23rd—Israel’s fourth in two years—Mr Netanyahu sounds different. He has been visiting Arab towns, where he takes credit for a highly successful roll-out of covid-19 vaccines. His party, Likud, has placed an Arab Muslim on its list of candidates. The prime minister says he enjoys it when Arabs call him “Abu Yair” (father of Yair), reflecting their practice of referring to someone as the parent of their eldest son. “It brings tears to my eyes,” he says.

Facing another close race, Mr Netanyahu is courting Arabs, who are 21% of Israel’s population (excluding the occupied territories). Only 2% of them backed Likud in last year’s election, says Yousef Makladeh, a pollster. But that number is growing.

Nearly 90% of Arab voters supported the Joint List in 2020. It won 15 seats, making it the third-biggest bloc in the 120-seat Knesset (Israel’s parliament). Nearly two-thirds of Arab voters turned out, motivated in part by their opposition to Mr Netanyahu, who alienated them with actions as well as words. He signed a law that seemed designed to offend minorities and supported Donald Trump’s peace plan, which would have allowed Israel to annex large parts of the West Bank.

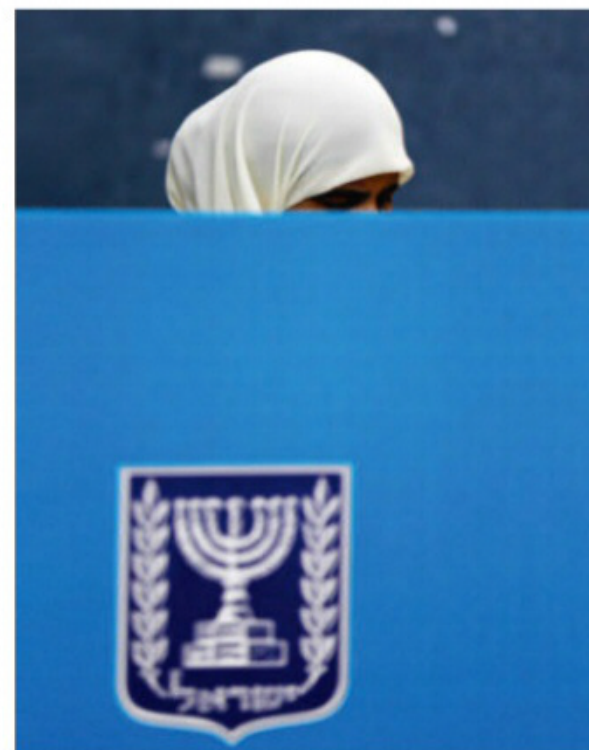
Arab voters have not forgotten these slights, but they want their politicians to deal with problems such as crime, poverty and discrimination. That is tough to do when Arab parties don’t sit in government. “People feel that if Arab parties can’t make a change, they may as well vote for whoever can,” says Mr Makladeh. Polls show the Joint List losing perhaps a third of its seats. A former member of the alliance, the Ra’am party, struck out on its own after talking with Mr Netanyahu, who promises more resources for Arab neighbourhoods.

The fracturing of the Joint List is not all that surprising. It includes communists, Islamists and secular nationalists. Ra’am, which is Islamist, hopes to win enough

seats on its own to become something of a kingmaker. But it risks not winning the 3.25% of votes needed to secure entry to the Knesset. Even then, it may not be needed to form a coalition—or wanted. Mr Netanyahu has said he would not lead a government that relied on Ra’am’s support. “He can wear a *galabiya* and call himself Abu Yair from now until the election,” says Ahmed Tibi, a leader of the Joint List. “Whoever believes him, deserves him.”

Support for Likud among Arab voters has risen enough that it could mean a couple of extra seats for the party, potentially swinging the election. “We’ve always had a few people voting Likud, or whatever party is in power,” says Farouk Ibrahim, a café owner in the Arab town of Abu Ghosh. “There are those who think it will bring more government funding.” Polls also show that fewer Arabs are planning to turn out than did last year. “I voted for the Joint List last time and I’m never going to vote for Netanyahu the racist,” says Khalil Abu Hamze, an out-of-work plumber who doesn’t plan on voting. Arab apathy means a greater share of votes will be cast by Jews. This tends to favour Likud and other parties that might join it in government.

Mr Netanyahu is not alone in courting Arab voters. Yair Lapid, whose centrist party is running second in the polls, has not ruled out forming a coalition with Arab parties. Left-wing politicians promise to work with them. Mr Netanyahu, ironically, has made such talk of collaboration more acceptable. But he may have an edge over his rivals. Though Israel has been criticised for not giving more vaccine to Palestinians in the West Bank and Gaza, it is available to all Arab Israelis (most of whom identify as Palestinian). Now that about half of Israel’s population is vaccinated, lockdown restrictions are being lifted. For Mr Netanyahu, the timing could not be better. ■



Is Netanyahu getting through to her?



Russia and Turkey

The odd couple

ISTANBUL AND MOSCOW

Vladimir Putin and Recep Tayyip Erdogan have formed a brotherhood of hard power. But the bond is brittle

THE KREMLIN has accused NATO of trying to overthrow Vladimir Putin. It has portrayed Alexei Navalny, Mr Putin's most prominent challenger, as America's agent. It has called the European Union, which condemned Mr Navalny's poisoning and subsequent imprisonment, an "unreliable partner". But there is one NATO country, and candidate EU member, that Mr Putin is happy with: Turkey. Recep Tayyip Erdogan, Turkey's president, has said nothing about the mistreatment of Mr Navalny or the arrests of thousands of Russians who protested against it.

His silence is testimony to a remarkable entente that has developed between the two authoritarian leaders. It is an improbable relationship. Deep historical rivalries divide Russia and Turkey, and their interests collide, sometimes violently, in many areas. Yet the two men share a bond in hard power that is reshaping regional politics and posing awkward problems for Turkey's Western allies.

Historically, Russia and Turkey have gone to war a dozen times, though not since both empires were transformed by revolution at the end of the first world war. The continent-spanning colossi had continually rubbed up against each other in areas where their interests overlapped, and in many ways they still do. They have, for instance, recently been sparring over the civil wars of Libya and Syria. In September they faced each other closer to home in the South Caucasus, which Russia sees as its backyard. With Turkey arming and instructing a Turkic-speaking Muslim Azerbaijan and Russia standing behind Christian Armenia, many worried that a conflict

over Nagorno-Karabakh, an ethnic Armenian enclave within Azerbaijan, would spread into an even bigger war.

Yet even as Turkey's drones pummelled the Russian tanks used by the Armenian side, Mr Putin praised Mr Erdogan as someone he could do business with. "Working with such a partner is not only pleasant but also safe," he told an audience of foreign experts at the Valdai Discussion Club in October. Mr Erdogan, in turn, saluted Mr Putin by testing the S-400 missile system that Turkey had bought from Russia. In November they ended the fighting by striking a bargain that gives Russia a military presence in Nagorno-Karabakh and Turkey an economic stronghold in the South Caucasus.

That deal represents one of the biggest geopolitical shake-ups since the end of the cold war, when Russia and Turkey were on opposite sides. It also carries a message about the use of hard power and the reality of a multipolar world. "They both understand that it is not the balance of forces that matters, but the readiness to use them," says Andrey Kortunov, head of the Russian International Affairs Council. America may have had a superior army, but its reluctance to become engaged in Syria left Russia and Turkey in charge of that war-battered region. And after nearly 30 years of fruitless talks over Nagorno-Karabakh, it was Turkey's military backing and ▶▶

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42 Germany's secret hairdressers

43 Charlemagne: Underground abortions

► Russia's acquiescence that helped Azerbaijan regain territory and shake up one of the least soluble conflicts in the Caucasus.

To Mr Putin, this was a demonstration of a new multipolar order, something he had been advocating since 2007, when, at the Munich Security Conference, he first took issue with the post-cold-war order with its "one centre of authority, one centre of force, one centre of decision-making". Russia's mission was to constrain America's new hegemony.

Nagorno-Karabakh was not the first time Russia had collaborated with Turkey to minimise the influence of Western powers. In the aftermath of the Bolshevik revolution and the collapse of the Ottoman empire, Kemal Ataturk briefly saw Lenin as an ally against the imperial West and the Bolsheviks saw Turkey as an accomplice in their quest for world dominance. They supplied Turkey with arms to fight the Greeks and the British, and the Turks allowed the Bolsheviks to take control of the oilfields of Azerbaijan and establish their rule in the South Caucasus. The deal between Ataturk and Lenin in 1921 that fixed Turkey's north-eastern border and limited its presence in the South Caucasus has held ever since.

Last year's war over Nagorno-Karabakh was a mirror image of that deal. It is now Mr Putin who is wooing Turkey in his confrontation with the West, hoping to use it as a wedge in NATO, while Mr Erdogan is projecting Turkey into its former spheres of influence. The warmth is all the more remarkable given that Turkey is the only NATO country to have collided with Russia militarily in recent years. In 2015 Turkey shot down a Russian warplane that had violated its airspace after flying over Syria.

Russia responded by imposing sanctions against Turkish products, ordering Russian tourists to stay away from Turkish beaches and bombing ethnic Turkmen

fighters in northern Syria. Turkey found it impossible to pursue Islamic State (IS) and the militants of the Kurdistan Workers' Party (PKK) on the Syrian side of the border. To rub it in, Russian officials and media outlets accused members of Mr Erdogan's family of buying oil from IS. As one Turkish official later said, "We played hard, and they played harder."

The thaw

What changed? The relationship began to improve in the summer of 2016, when Mr Putin commiserated with the Turkish president after an abortive coup in Turkey that killed some 270 people. "Putin called immediately," says a Turkish official. "Like the guy or not, he was smart enough to show solidarity." Most Western leaders were slower to do so. Mr Erdogan travelled to Russia, where he signed a gas-pipeline deal and agreed to resume work on a Russian nuclear plant in southern Turkey. The two pilots who had shot down the Russian plane in 2015 ended up in prison, charged with being involved in the coup.

"The fighter-jet crisis was a turning-point in how Turkey dealt with Russia," says Emre Ersen, a Russia expert at Marmara University in Istanbul. "After NATO didn't run to Turkey's help, Turkey understood that the only way to advance its interest in Syria was by agreement with Russia. That agreement still holds."

Since 2016 Mr Erdogan has held more face-to-face meetings with Mr Putin than with any other leader. Russia has turned from being Turkey's opponent in Syria's civil war into its most important partner there. Turkey has been able to carry out its military operations in northern Syria only with Russian consent. Meanwhile, Russian news outlets have made inroads among Turkish audiences. Mr Erdogan's inner circle now includes a group of "Eurasianists", who are open to co-operation with Russia

and China and hostile towards Europe and NATO. Turkey's government and its propaganda machine now play up tension with the West as much as they tend to play down tension with Russia.

The decision to buy the S-400 air-defence system is the most consequential element of the new relationship so far. Two years ago Mr Erdogan called the purchase "the most significant deal in our history". The system has not come cheap. The price Turkey paid included \$2.5bn for the hardware itself, expulsion from America's F-35 programme and the accompanying loss of \$9bn in contracts for the Turkish arms industry. In December America imposed additional sanctions against Turkey's defence-procurement agency.

Mr Erdogan may have been desperate for a weapons system that could counter the kind of threat that arose in the coup in 2016, when Turkey's own F-16s bombed his palace. Many of his supporters believe, improbably, that America had a hand in that coup. In February his interior minister accused it of orchestrating the violence. There were also rumours that Russian military intelligence tipped off Mr Erdogan about an imminent threat to his life.

Into the American vacuum

In Syria, the Turks say they had no choice but to do business with Russia, as America shied away from confrontation with the regime, drawing red lines but failing to take decisive action. Turkey also bristled at America's decision to outsource the ground war against IS to the Kurds. Turkish officials say America not only allowed Russia to emerge as the main power-broker in Syria but alienated Turkey by teaming up with the PKK's local offshoot.

Occasionally clashes between Turkey and Russia still occur, as when, a year ago, a Turkish convoy got hit by Russian jets in the service of the Syrian army. The strike killed at least 36 Turkish soldiers. Yet Turkey was careful not to confront Russia directly and blamed the attack on Syria's president, Bashar al-Assad.

For his part, Mr Putin was equally accommodating, and allowed Turkey to take revenge and pummel Syrian positions with combat drones while Russian jets stayed grounded. As far as Mr Putin is concerned, using Turkey to undermine NATO from within is even more important than helping Mr Assad in Syria. The same motive partly explains Russia's acquiescence in Azerbaijan's war over Nagorno-Karabakh, when Turkey helped the Azeris. Mr Putin has managed to convert Russia's role as a mediator there into getting military boots on the ground, in the shape of peacekeepers, to supervise the new deal. Turkey has won both prestige in the region and a promise of a transport corridor through Armenia to Baku, which could join up with ►



Stressed

GDP, % change on a year earlier



► China's Belt and Road Initiative. The West got nothing.

Trade and investment also play a part in binding Turkey to Russia. Because Russian energy exports make up the bulk of their trade, Turkey has a gaping \$13.4bn deficit with Russia. "But we shouldn't underestimate business ties," says Behlul Ozkan of Marmara University. "Turkish construction companies close to the AK [Mr Erdogan's party] are getting big tenders." Between 2010 and 2019, Russia was by far the biggest market for Turkish contractors, with over \$40bn in completed projects.

Mutual support

Those ties have come to matter especially because both leaders are presiding over struggling economies (see chart 1). In Turkey inflation and unemployment have remained in double digits since 2018. In less than four years, the Turkish lira has lost half its dollar value. Russia's stagnant economy and a six-year-long decline in real incomes have fuelled broad discontent with the Kremlin. Both Mr Putin and Mr Erdogan have fallen back on the idea that each of their countries is a "besieged fortress" surrounded by enemies, and resorted to aggression abroad to distract attention from troubles at home.

Broader trends are at work, too. Turkey and Russia share a sense of bitterness about being excluded from Europe. Turkey's attempts to join the EU have been rebuffed for nearly six decades. The belligerent and authoritarian Turkey of today clearly has no place in the club. But such is the mood in Europe, and such the fear of a Muslim nation of over 80m people, that Turkey would probably not be allowed in, even if it became a thriving democracy.

Both autocrats share a nostalgia for empire. Mr Putin portrays himself as a patriot who is rebuilding parts of the Soviet empire, and has waged wars against Georgia and Ukraine. He strives to keep what he sees as client states, most recently Belarus and Armenia, on a tight leash. Mr Erdogan has placed his country's Ottoman past in

the service of a more aggressive foreign policy, making noises about restoring Turkish rule over Greek islands close to its Aegean shores, and confronting Greece, Cyprus and France in the gas-rich eastern Mediterranean. He fancies himself the voice of the Muslim world.

"Erdogan has the kind of personal relationship with Putin that he doesn't have with many Western leaders," says Mr Ersen. "Both are strongmen who are not challenged at home, and each knows the other has the power to implement the decisions they reach." Mr Erdogan knows the deals he cuts with America risk being derailed by independent bureaucracies, public opinion and Congress. With Mr Putin, he does not need to worry about any of that.

Mr Erdogan has also been an attentive student of Mr Putin's embrace of foreign policy by *fait accompli*. Russia bloodied Turkey's nose in Syria and captured valuable turf to its north by annexing Crimea. "Erdogan recognised the value of hard power," says Suat Kiniklioglu of the German Institute for International and Security Affairs. After Crimea, Turkey's leader realised that aggression is not always punished. "Ankara sees weakness, disagreement, indecisiveness and confusion in the West, and sees this as an opportunity to intervene in its neighbourhood," says Mr Kiniklioglu. Mr Erdogan has started to take a few pages out of Mr Putin's handbook. Russia sent "little green men" and mercenaries to Crimea, the Donbas and Libya. Turkey deployed hundreds of Syrian mercenaries to join the fighting in Libya, and then in Azerbaijan, possibly through a private security company. Russia uses gas to exert pressure over European governments. Turkey uses migrants and refugees.

There are, of course, big differences between the two men and the countries they lead. Following a constitutional coup that scrapped the limit on his presidential terms, Mr Putin has moved much closer to

dictatorship, though anger at the imprisonment of Mr Navalny may yet loosen his grip. Mr Erdogan's power is less firmly entrenched. Turkey's biggest conglomerates are run by members of the secular class, who accommodate the president but do not love him. Mr Erdogan has locked up many of his opponents, defanged the media and taken control of the courts, but still has to deal with tightly contested elections. His party's support in the polls has been slipping. Two years ago in local elections it lost control of Istanbul, Turkey's economic motor, and Ankara, its capital.

Vive la différence

Russia and Turkey are still far from, and may never conclude, a true alliance. "We're not talking about a strategic partnership," says Onur Isci, head of the Centre for Russian Studies at Bilkent University. "I don't think Turkey has the luxury of risking the collapse of its whole institutional relationship with the West." Although the two have co-operated in Syria, they remain on opposite sides of the war. The same is true in Libya and the Nagorno-Karabakh conflict.

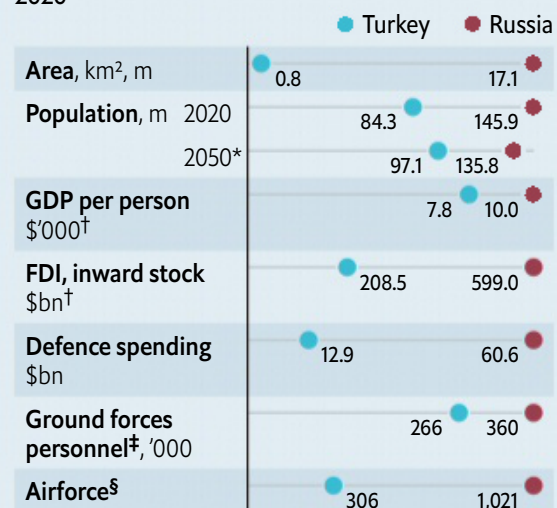
The two powers also have largely incompatible interests in Georgia and Ukraine, both of which Turkey would like to see as members of NATO. That is an absolute no-no for Russia, which waged wars to keep both countries apart from the West. As a result, Georgia and Ukraine now both look to Turkey as an important counterforce against Russia, a role that Mr Erdogan has been happy to exploit. Turkey has beefed up its economic and defence relationship with Ukraine. In 2019 it sold Ukraine half a dozen of its combat drones, the first such purchase by Ukraine's army. "Turkey is not the Turkey of 30 years ago," a Turkish official says. "Our defence and economic capacity has improved. We don't see ourselves as speaking with Russia from a position of weakness."

Russia and Turkey will look for common ground wherever they can, says Mr Ersen, but they will find it hard to reconcile their interests, especially in the Black Sea and the Caucasus, where Turkey's position continues to be closer to the West's than to Russia's. "Regional problems," says Mr Ersen, "are the soft underbelly of the Turkey-Russia relationship." Their longer-term prospects diverge, too. Turkey's demographic outlook and economic-growth prospects are much the brighter. Its population is growing; Russia's is shrinking.

At present, Turkey is a country unmoored. It is increasingly estranged from the Western alliance. But its partnership with Russia is recent, thinly based, and reversible. Among the many matters competing for President Joe Biden's attention, stopping Turkey's drift away from the West and into Mr Putin's arms deserves to be near the top of the list. ■

A tale of two ex-empires

2020



Sources: UN; IMF; EIU; IISS 'Military Balance+'
 †Forecast ‡Estimate §Army plus airborne and naval infantry/marines
 §Fighter and ground attack aircraft

France

Uphill struggle in the snow

SAINT-MARTIN-DE-BELLEVILLE
Skiing without lifts

THE MECHANICAL clatter of chairlifts and the bass beat of high-altitude bars are familiar soundtracks in an Alpine ski resort every winter. So the quiet of the mountains this season is startlingly strange. French ski resorts are instead alive to different sounds: children tobogganing, huskies pulling sledges, defiant enthusiasts trudging uphill on skis with skins. Late last year, when the French government decided to clamp down on covid-19 once more, it shut all uphill transport but kept resorts open. This means the French can still go skiing—but without lifts.

Some solutions are punishing. Ski touring, or uphill skiing, involves struggling up the slopes on foot, with grips attached to the bottom of the skis. The Alpine village of Saint-Martin-de-Belleville, part of the Trois Vallées ski domain north-east of Grenoble, has opened a couple of runs for those with the stamina to reach the top. But skiers have become a minority. Husky-sledding is fully booked. Kit for trekking on *raquettes* (snow shoes) has sold out. “Everything we had has been pre-booked and rented,” says the owner of a ski-hire shop in Saint-Martin. At an altitude of 2,000 metres, hardy tourists can even go ice-diving through a hole in a frozen lake.

The French ski for almost as many days in total every year as Americans, who are five times as numerous. With little prospect of lifts opening this season, and most neighbouring ski areas also shut, France’s 325 resorts have had to diversify. This may help them lure more non-skiers to the mountains in future. Meanwhile, those

who usually make beds, serve drinks, maintain the lifts or teach ski school in the Alps are either furloughed or out of work. Foreign tourists are stuck at home.

Saint-Martin-de-Belleville’s tourist office says it has only 30% occupancy, less than half its normal rate in February. In the high-altitude French resorts, purpose-built for skiing and often charmless, the rate has dropped to 25%, says the National Association of Mayors of Mountain Resorts (ANMSM).

The government has unveiled a “mountain plan” costing €4bn (\$4.8bn) to help keep people and businesses going. But the squeeze is being felt. Some small shops and firms usually earn two-fifths of their yearly income in February. Revenues across the ski industry may be half the €10bn expected in a normal year. Village town halls, which depend on their share of lift-pass or car-park income, fear for their budgets. “The mountain is an ecosystem,” says Joël Retailleau of the ANMSM. “It’s easy to just press a button and close the lifts, but it has knock-on effects, not only in the resorts, but down into the valleys. This affects hundreds of thousands of people.”

Local anger at the government’s decision may be vented in regional elections in June. Laurent Wauquiez, a Republican who is president of Auvergne-Rhône-Alpes, was the favourite even before the lifts were shut. Marine Le Pen’s nationalist party was lying second without even picking a candidate. The government is unlikely to reopen ski lifts before the season ends. If anything, as infection rates start to rise again, it may have to tighten up. Neighbouring Italy had planned to reopen ski resorts this month, but changed its mind.

Ski lifts transformed the poor mountain valleys of France into playgrounds for Europe’s rich, but also created glaring inequality. Locals now find themselves missing the tourists, even if the mountains are gloriously peaceful without them. ■

Germany

Secret snips

BERLIN

How underground hairdressers won a battle for human dignity

“HUMAN DIGNITY shall be inviolable.” The first article of Germany’s constitution turns out to have surprisingly broad application. For while much of Germany’s service sector remains in the deep freeze, on March 1st Germany’s 80,000 hair salons will be allowed to reopen. Some politicians frowned at the decision, taken in mid-February. But it has “something to do with dignity”, argued Markus Söder, Bavaria’s premier.

Germany required hairdressers to close before Christmas. During this long winter many mop-headed Germans immersed themselves in distinctly un-

dignified self-cutting Instagram tutorials, or made hair-raising dashes to salons in Luxembourg. Others went underground. Frauke (not her real name), a Berlin-based stylist, has been visiting clients for a secret snip “on the down low”, albeit with precautions. Lockdown fatigue has set in, she reckons. When hairdressers first closed last spring, almost all her regulars cancelled. This time a good 80% of them are willing to risk fines to maintain a decent trim.

“Our profession has social relevance,” argues Jörg Müller of the Central Association of the German Hairdressing Trade. Yet its special treatment has inspired snippy comments from owners of locked-down hotels, shops and restaurants. What explains it? A slick lobbying effort by Big Hair helped. Politicians cite “personal hygiene” and the needs of the elderly. Frauke says her clients think the “old, white men” who run the country have grown tired of looking scruffy.

Either way, Germany’s hairdressers have timed their return well. The decline in covid-19 numbers has stalled, and vaccination is proceeding at the pace of a leisurely perm. That means the (presumably well-coiffed) state and national leaders who will meet on March 3rd may not be able to offer German citizens and businesses the easing of restrictions they crave. When it comes to leaving lockdown, there can be no short cuts.



Are we having fun yet?

Charlemagne | Underground abortions

After a ban in Poland, Polish women buy train tickets



WANDER AROUND any Polish city and the same phone number pops up on an array of unlikely surfaces. It is scrawled on bus stops and billboards. It can be daubed on the side of a church. Head online and the same number (+48 222 922 597) appears in people's usernames. Those who dial it are put through to Kobiety w Sieci ("Women on the Net"), a group that offers women information on how to get abortions. In a country where providing terminations is now, in effect, illegal, it is a useful number to have.

In October Poland's constitutional court struck down a law allowing abortion in cases of fetal abnormality. Of the 1,000 or so legal abortions in Poland per year before the ban, nearly all were in this category. Now, abortion is limited to cases of rape or to save a mother's life. This fulfils a long-held dream of Poland's ruling Law and Justice party to clamp down on abortions. Activists responded by turning cities into a gonzo Yellow Pages. It also provided a burst of publicity for Abortion Without Borders, an alliance of organisations such as Kobiety w Sieci that help women who live in countries where abortion is restricted. After the Polish ban, traffic to the website shot up and calls poured in. Among the callers were angry priests, demanding to know who had plastered their church with the number of an abortion hotline.

Abortion laws within the EU are a patchwork. They range from relatively permissive in places such as the Netherlands to practically banned in Poland (and forbidden altogether in Malta). The bulk fall in between. There are no common rules. Normally, the EU steps in to harmonise law. On reproductive rights it has no competence. Given that the bloc ranges from the devout to the enthusiastically godless, EU officials would rather ignore the issue. Yet thanks to the free movement of people and goods—and the increasingly blurred distinction between European and domestic politics—the EU still makes it easier to obtain abortions within its territory, whether it tries to or not.

Consider how organisations such as Abortion Without Borders work. Activists in Poland offer only advice, which is perfectly legal. Groups based outside Poland will arrange the delivery of pills, book flights, arrange translators and pay for treatment. In one case, they even coughed up the deposit for a hire-car. In Poland these activities would leave them open to prosecution. In, say, the

Netherlands, no one can touch them. Posting abortion pills into Poland requires beating the authorities. Crackdowns have been mounted in the past. "We found other ways," says Dr Rebecca Gomperts, a campaigner for legal abortion. Thanks to the single market, sending a package from one part of the bloc to another requires no extra paperwork. It is easy for goods to slip through. If it is a game of whack-a-mole, the moles are winning.

Likewise, freedom of movement means that abortions available in one EU country are available to all EU citizens, provided they have the means to get there. Groups such as Abortion Without Borders make that possible by paying travel costs (and, during the pandemic, arranging covid-19 tests). Usually, the EU operates on the principle that a person or business should be treated roughly the same in any EU country. Without common rules, arbitrage comes into play: companies can move from states with tougher regulations to those with lighter ones. This is exactly what can happen, at least temporarily, when a Polish woman wants an abortion. She boards a train to where the rules won't stop her.

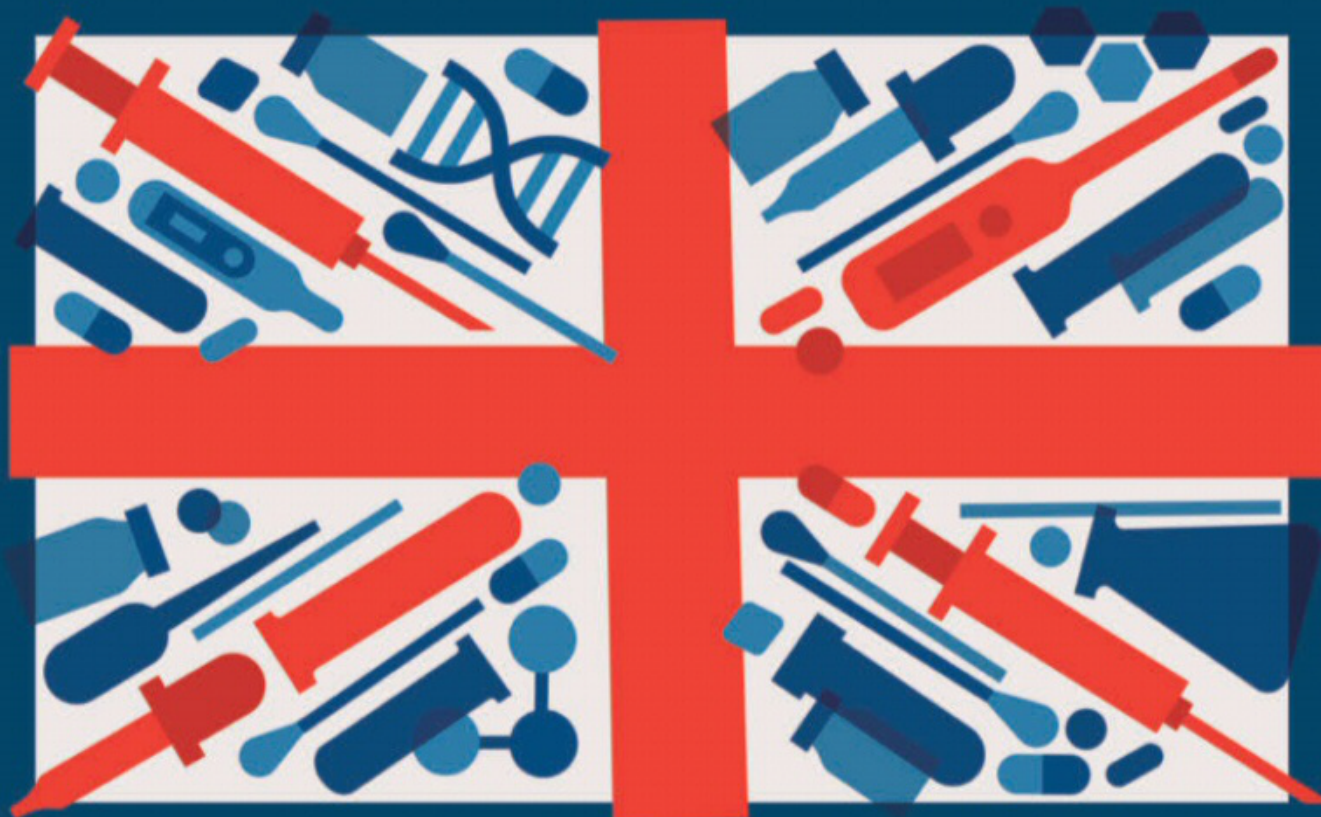
Abortion law in Europe is, on the whole, liberalising. Ireland allowed abortion in 2018, as religious opposition faded and the law was routinely flouted by women who went to Britain for terminations. Availability varies between different European countries, however. Terminations beyond 12 weeks are tightly limited, with only a handful of countries offering them in most circumstances. (When Britain, which allows abortions with little restriction up to 24 weeks, left the bloc, the options were further reduced.) The upshot is that women head to wherever they can get what they want. Enter the waiting room in a Dutch clinic offering late-stage abortions and one will find women from across Europe.

Free to choose

To its critics, the EU is at best a poor defence against illiberalism and at worst an enabler of it. Under its watch, governments such as Poland's have trampled on women's rights, judicial independence and media freedom. Only this month independent media in Poland staged a blackout in protest at a punitive tax. Yet when it comes to abortion, the EU's guarantees of free movement for goods and people serve unwittingly to spread a different kind of freedom of choice.

EU membership has liberalising effects in other, less obvious ways. When the EU was haggling last summer over €1.8trn (\$2.2trn) of funds to be distributed to countries over the next seven years, some governments demanded the right to claw back the money if countries such as Poland trampled on the rule of law. Polish ministers dismissed that as an ideological assault, a punishment for Poland doing things liberal EU members did not like, such as limiting abortion. Actually, the reason other EU countries wanted to punish countries that threaten the rule of law was that countries such as Poland have been threatening the rule of law.

Where Polish ministers are right to be wary is that, eventually, decisions such as banning abortion will move into the arena of European politics. Politics follows money. And now the EU controls more of it. Taxpayers in rich countries may wonder what the governments spending their cash are up to. Voters in one country may not approve of funding a government that tramples on women's rights, nobbles judges and hounds journalists. While restrictive abortion laws exist in places like Poland, the process will remain needlessly miserable. But safe, legal routes are still open—and there is little Poland's rulers can do about it. In the EU an abortion is only a phone call away, no matter what the law says. ■



Covid-19

How life sciences came to the rescue

A powerful research base combined with good decision-making to save lives

ON FEBRUARY 28TH last year Martin Landray, an Oxford University professor, sent an email to Sir Jeremy Farrar, the director of the Wellcome Trust, a medical-research charity. At the end, as an aside, he added a question: was anyone thinking about randomised trials for covid-19 treatment? “Because if we don’t, then lots of drugs will get thrown at lots of patients,” Dr Landray recalls writing, “and we will be none the wiser about whether any of them work or don’t, or are even causing harm.”

In less than a fortnight a protocol was ready. In less than three weeks patients had been recruited. In less than four months the trial had found the first successful treatment for covid-19: a cheap steroid called dexamethasone (which one estimate finds has so far saved 650,000 lives across the world). In less than a year it had found another, tocilizumab, and ruled out four more, including hydroxychloroquine, a drug promoted by Donald Trump.

Britain’s scientific response to the pandemic has been a mirror image of its political one. Although the government’s scientific advisers share blame for the original

sin—the delayed response in March—they have since run a world-leading campaign. Alongside vast clinical trials, the country has been home to most of the world’s genetic sequencing, the development of a successful jab and its fast roll-out. Elite institutions, streamlined regulation and big datasets are a potent combination—as, it turns out, are close links between business, academia and government.

It is not hard to find evidence for the importance of path dependency. Most sequencing is done at the Wellcome Sanger

Institute (named after Frederick Sanger, twice winner of the Nobel Prize in Chemistry); a vaccine was discovered at Oxford’s Jenner Institute (named after Edward Jenner, inventor of vaccination). As well as four excellent life-science universities, the country is home to deep-pocketed charities (the Wellcome Trust disburses more than £1bn, or \$1.6bn, a year) and two big pharmaceutical firms (GlaxoSmithKline and AstraZeneca, which was recruited to manufacture Oxford’s vaccine).

Compared with other rich countries, the British state spends little on research and development. But what it does spend is concentrated on health (see chart overleaf)—which is in turn concentrated in leading institutions. Over half of government and charity spending on biomedical research goes to just three places: Oxford, Cambridge and west London (home to Imperial College London). British science is less hierarchical than much of Europe and more cosmopolitan. Researchers are enthusiastic international collaborators, working across borders more often than peers in America.

Recent governments have been keen to turn this powerful research base into jobs. Britain struggles to produce the big biotech firms that flourish in America thanks to the mix of funding, agglomeration and venture capital found in Boston and Cambridge, Massachusetts. So in 2014 David Cameron set up the Office for Life Sciences, which sits between the business and health departments. “The thesis was that ▶▶

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► investment in life sciences is particularly effective,” says Nicole Mather, its first director, now at IBM, “because not only do you create jobs, but the NHS can also benefit from the products that are developed.” Three years later Theresa May’s industrial strategy put life sciences front and centre.

This focus on life sciences has delivered some concrete benefits. The Vaccine Manufacturing Innovation Centre (VMIC) in Harwell, Oxfordshire—a collaboration between three universities and two pharmaceutical firms—will soon churn out doses. But it also offers more subtle ones. As Stian Westlake, a former adviser to three science ministers, puts it: “If you tested every government on how well they understood life sciences, I bet the UK would score well.”

Sir John Bell, Oxford’s regius professor of medicine who led the life-sciences industrial strategy, is a regular in Downing Street. Sir Patrick Vallance, the government’s chief scientific adviser, was hired from GlaxoSmithKline. Kate Bingham, who led the vaccine taskforce, is a venture capitalist. Below them are civil servants with commercial experience. “Ten years ago people would have said, ‘The Americans are really good at people coming in and out of government from either science or industry,’” says a minister. “Well, we’ve now got that.”

The government has deferred to this expertise. Ms Bingham was given the freedom needed to strike deals. Sir Patrick was given a “fight fund”, which supported Dr Landray’s RECOVERY trial and COG-UK, a group of academics responsible for genetic sequencing. “Before we even met he was saying, ‘sequencing is important,’” says Sharon Peacock, who runs COG-UK. “And then by the time we met and got an application, they were ready to fund it very, very quickly.” Funding councils slashed approval times, working through the night, and created a single approval process to avoid duplication.

The ability to move quickly was particularly important to the RECOVERY trial. The World Health Organisation and the European Medicines Agency also stressed the need for big clinical trials. The difference, Dr Landray says, is that his team got in early: before the first wave had hit and treatment was set in stone. Britain’s chief medical officers wrote to every hospital urging them to take part, which they did.

“With vaccine development you can tell your classic great-man-of-history, out-there-creative-genius story,” says a funding-council director. RECOVERY, though, “was modern science, this was distributed, this was interdisciplinary, it was across lots of institutions and you had public engagement, you had volunteers.” The paper on dexamethasone in the *New England Journal of Medicine* was authored by the “RECOVERY Collaborative Group”; an ap-

pendix credits hundreds of researchers. COG-UK is another broad effort.

RECOVERY made use of something the NHS has long promised, but rarely delivered: patient data. The health service collects gallons of the stuff. But it is balkanised, leaving researchers hamstrung by data-sharing rules and interoperability problems. The government eased these rules, enabling both the RECOVERY trial and the OPENSsafely one, which studied covid-19’s demographic impact. When the PRINCIPLE trial, which looks at pre-hospital treatment, was struggling to recruit, researchers teamed up with the test-and-trace system to bring in patients. Health Data Research, an outfit set up along with the industrial strategy, helped smooth data transfer for RECOVERY and COG-UK.

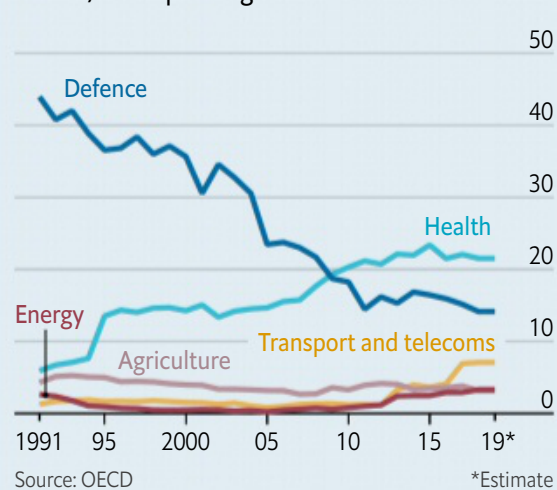
Ms Bingham has said that the pitch to pharmaceutical firms was that Britain could offer manufacturing, packaging and distribution, along with clinical trials. The country had little manufacturing capacity pre-pandemic—just two vaccine factories—but the UK BioIndustry Association, a trade group, was quick to find facilities that could be converted. Capacity has grown through the year, with firms lured by Ms Bingham’s offer, and will be further boosted by the VMIC in the autumn.

Much of this work has been aided by something less desirable: plenty of patients. As the funding-council director notes: “You can’t run a clinical trial in Taiwan or in New Zealand.” Similarly, the civil service’s early stumbling inspired the establishment of the vaccines and therapeutics taskforces.

Luck played a part, too. “If what happened at the start of 2020 was a coronal mass ejection that had knocked out the entire technology stack, we would probably be saying, ‘Goodness, if only we had more electrical engineers,’” says Mr Westlake. But the advantage of funding excellent research is that when a crisis hits, the government is more likely to have experts to hand. And as the example of covid-19 shows that is worth quite a lot. ■

Swords into syringes

Britain, R&D spending as % of total



Opening up

Pencil it in

The government learns to manage expectations

BORIS JOHNSON is rarely more than a couple of sentences away from a metaphor. So it was with his announcement on February 22nd of a timetable for easing the latest lockdown. “The crocus of hope is poking through the frost and spring is on the way,” he burred. Though the language was familiar, the content was not. In contrast to previous pledges to “send the virus packing” and ensure a speedy return to normality, Mr Johnson mooted only a gradual unwinding of restrictions in England (other parts of the UK set their own plans). If all goes to plan, schools will re-open on March 8th, followed by shops in April. Pubs without outdoor spaces will have to wait until May; the remaining rules will stay until June 21st. The crocus of hope must be a rare summer-flowering variety.

At first blush, this caution is surprising. Britain’s lockdown is one of the tightest in Europe, even though its vaccination programme is racing ahead. More than a quarter of Britons have already had a jab, compared with about 4% in France and Germany. By the middle of April, all over-50s and others particularly vulnerable to the virus should have been offered one. Surely that calls for a pint?

The trouble is, about 17,000 Britons are in hospital with the virus, thanks to a big spike in cases in January. Another jump in infections or the emergence of a new variant could overwhelm the health service. And a hefty minority who cannot or choose not to have the jab remain at risk. Even a relatively cautious approach could add 30,000 deaths to Britain’s current tally of 122,000, according to models pored over by the government’s scientific advisers.

The politics favour caution, too. Britons are keener on harsh public-health measures than their European neighbours: 70% support cancelling large events, for instance, compared with less than half of Italian and French voters. A plurality think Mr Johnson is going at about the right pace; more think his timetable too fast than too slow. Though a loud minority of Tory MPs fancy a speedier exit, the opposition Labour Party, which has repeatedly accused the prime minister of recklessness, will not grumble. And, though the government denies that it will do so, the plan gives it plenty of scope to bring forward a few freedoms to cheer voters just in time for the local elections on May 6th. That crocus may yet bloom sooner than billed. ■

Bagehot | An impossible job

The prime minister's lot is not a happy one



WHEN HE WAS prime minister of the world's most powerful country in 1902-05, Arthur Balfour spent as much time as he could on his 180,000-acre Scottish estate. The days were for golf on his private course. The evenings were for dinner, after-dinner games and his other great addiction, serious conversation (despite his Bertie Wooster persona, Balfour was a distinguished philosopher). The one thing that didn't get a look-in was politics, to which his "mind did not naturally turn", as he confessed to his sister. He did not read newspapers on the ground that "nothing matters very much and most things don't matter at all."

Autres temps, autres mœurs. These days prime ministers spend every waking hour trying to master events, only to be broken by them in the end. In "The Prime Ministers", Steve Richards, a journalist, uses the following phrases to describe his subjects' lot: "toiling fragility", "fearful paralysis" and "wretched powerlessness". The careers of the last six prime ministers have all ended in tears, visibly so in the case of Margaret Thatcher and Theresa May. "I don't know why anyone would want the job," the queen apparently remarked to Boris Johnson when appointing him.

Why has Balfour's easy chair become so uncomfortable? One possible explanation is that all top jobs are heading in the same direction thanks to hyper-fast change and hyperactive media. Yet Angela Merkel has weathered 15 years in office, and both Donald Trump and Barack Obama had plenty of time for golf. Another is that it's a matter of individual incompetence. Yet the same problems keep cropping up regardless of who is in Downing Street. In "The British Prime Minister in an Age of Upheaval", Mark Garnett of Lancaster University offers a more plausible argument: that the prime ministership is now "dysfunctional"—indeed, that it is the dysfunctional heart of an increasingly dysfunctional system.

British prime ministers have to perform a wider range of jobs than almost any other world leaders. They are heads of government, party bosses, fund-raisers, parliamentary performers, foreign envoys, grief counsellors, local MPs who can be ejected by their constituents and, now, plague-fighters. No prime minister can do all these jobs well, and all are bound to fail hopelessly at some—witness Mrs May's empathy-free visit to the smouldering ruins of Grenfell Tower and Mr Johnson's tardy initial response to

the pandemic. The weekly Prime Minister's Questions, although not the only regular grilling a nation's leader faces, is almost certainly the world's most testing. Tony Blair described the ordeal as "the most nerve-racking, discombobulating, nail-biting, bowel-moving, terror-inspiring, courage-draining experience in my prime ministerial life".

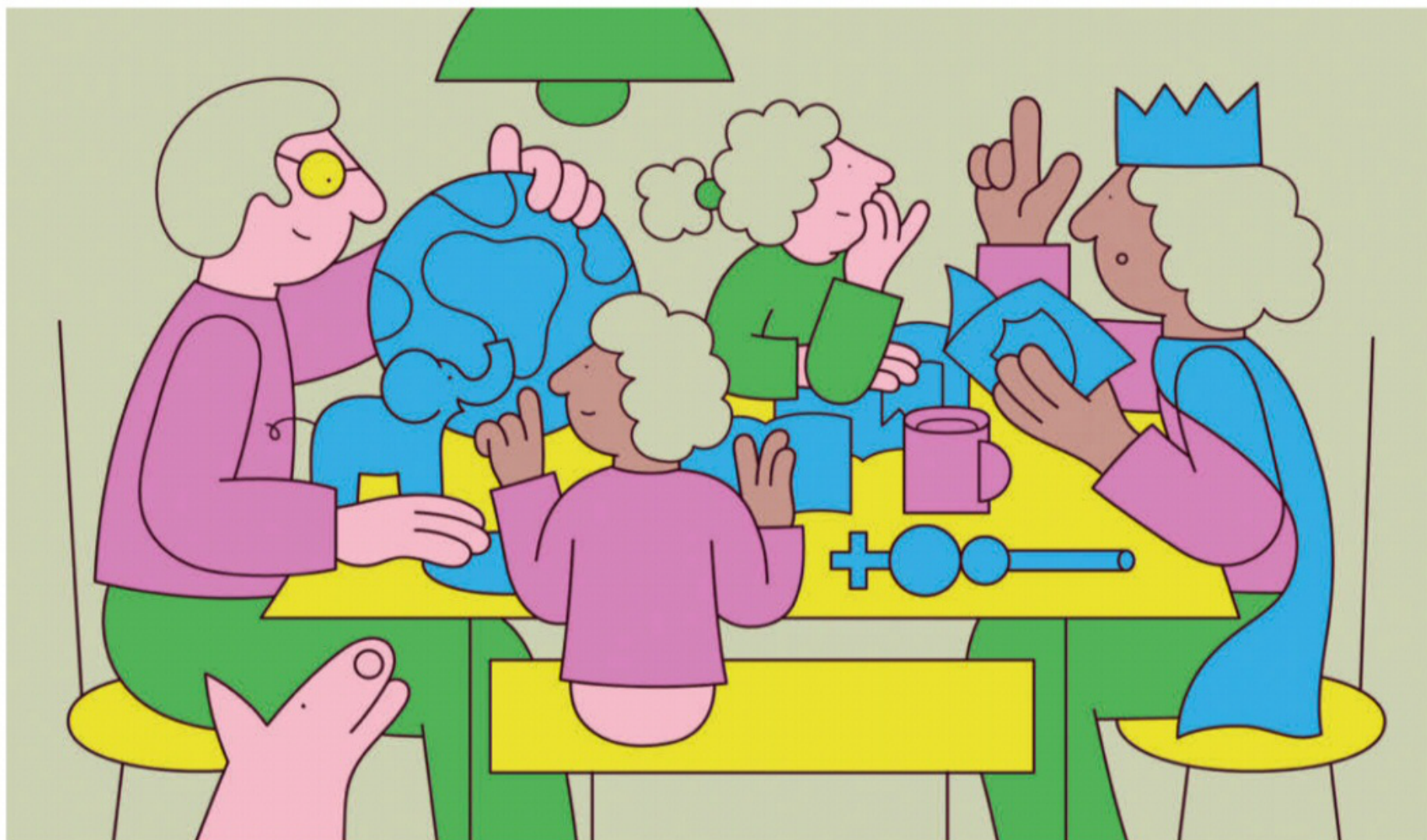
All these jobs are becoming harder. MPs are more rebellious. Mrs May was defeated 33 times during her miserable premiership and Boris Johnson is discovering that the habit of rebellion has survived the Brexit turmoil. The press is becoming more feral as the internet shortens response times and sharpens competition.

Mr Garnett points to two further contributors to overstretch. The first is successive prime ministers' tendency to concentrate power in Downing Street. Both Lady Thatcher and Mr Blair, for instance, took over foreign policy because they regarded the Foreign Office as too friendly to foreigners and education policy because they regarded the Department of Education as too friendly to teachers. This contrasts sharply with the 1960s, when much of the energy in government came from the departments. Roy Jenkins, for instance, as Home Secretary, liberalised the law on abortion and homosexuality without either inspiration or interference from Harold Wilson. Today all ideas come from Number 10.

The second problem to which Mr Garnett points is the unstable mixture of the presidential with the prime ministerial. Prime ministers have taken to behaving like presidents—they keep their cabinet ministers on a tight leash, talk to the media before they talk to their own MPs, control everything, including wars, from Downing Street and, in elections, run highly personal campaigns. But they are constrained, as presidents are not, by Parliament. This peculiar hybrid works when prime ministers have big majorities. But unlike an American president, a prime minister without a decent majority in the legislature—like Mrs May in her second term or Mr Johnson in his first—does not even have an executive branch to play with.

The British do not go in for big institutional reforms. They prefer to muddle through and fix things quietly behind the scenes. But muddling through has reached its limits at the heart of government; and incremental changes, such as giving party members more say in choosing their leaders, have created a job that tortures its holders as surely as it weakens the rest of the political system. Britain's initially dismal response to the pandemic led to a widespread call for inquiries into the workings of the government. The subsequent success of the vaccine roll-out should not lead to the abandonment of this idea. On behalf of the tens of thousands of people who have died unnecessarily because of government failure, some questions need to be asked. They should start at the office of the prime minister.

What is to be done with this impossible job? Mr Garnett favours restoring the old system of cabinet government in which the prime minister was "first among equals". In a personality-obsessed culture which holds the top man accountable for everything, that is unlikely to work. A more pragmatic alternative might be to recognise the forces of presidentialism and create a properly resourced prime minister's department. Mr Blair tried to do this by stealth with his IKEA-store worth of Downing Street Units. Dominic Cummings, Mr Johnson's former chief adviser, tried to do it, characteristically, by creating a NASA-style control unit in the Cabinet Office. However it is to be reformed, the job needs to be made doable. Whatever Balfour's views on the question might have been, it matters quite a lot. ■



Home-schooling

Kitchen-table classrooms

Covid-19 has persuaded some parents that home-schooling is better

EMILY CLARK'S boys did not return to class in September, when schools in England opened to all pupils for the first time since the spring. Her three school-aged sons had begun learning remotely a few weeks before everyone else did in Britain's first lockdown in March 2020. Doctors said that her five-year-old—who had a kidney transplant when he was a toddler—might be at increased risk from covid-19. But health worries were not the main reason why six months later Ms Clark chose formally to withdraw her children from school and start educating them herself. She says that they have been happier since they stopped having to spend their days in classrooms and that, with her as their teacher, they are learning more quickly.

Helping their children learn remotely during the pandemic has driven many parents to distraction. A few have found it easier and more rewarding to take complete control of their children's lessons. Research published in November by the Association of Directors of Children's Services, a group that represents local officials,

found the number of home-educated children in England had increased by 40% to about 75,000 in the year to October 2020. That represents a little under 1% of school-aged children but it is double the number who were home educated four years before. In America, where some schools have not opened their buildings since March, the numbers are higher. A survey published in October by the Pew Research Centre found that around 7% of American parents were formally home-schooling their children, up from around 3% in the spring.

The ranks of home educators were swelling long before the disruption of covid-19. For decades the greatest number in America have been conservative Christians who fear that schools may corrupt their offspring. But since 2007 the share of parents who say that providing religious or moral instruction is the "most important" reason for them to home-school has fallen, according to a survey by the Department of Education. More parents now cite concerns about drugs and other nasty influences in schools. Those who live near bad

schools and who cannot afford private ones sometimes decide home-schooling is a better option. Black families and those from other minorities have additional worries about racism in the public-school system, says Cheryl Fields-Smith of the University of Georgia.

Around the world "accidental" home-schoolers are now more common, argues Rebecca English, who studies home education at Queensland University of Technology in Australia. These parents say that they have withdrawn their children as a last resort because their local schools cannot accommodate disabilities or emotional problems. Today's parents have a lower tolerance for schools failing to deal with issues, such as bullying, that previous generations of children were sometimes expected to endure. In many places the expansion of special educational services has not kept pace with demand, leading to long waits for the evaluations that are required before children can benefit from them.

Supervising remote learning during the pandemic has helped some parents recognise that their children are trailing a long way behind their classmates, says Juliet English of Headhub, an organisation that lobbies for home educators in Britain. Others have discovered that the work schools are setting is much easier than they think their children can handle, reckons Paula Lago, an Argentine who runs a website offering advice to home educators in Latin America. Parents of the youngest school-

▶ children have not enjoyed seeing them forced to learn from screens.

Wendy Charles-Warner of Education Otherwise, which supports home-schoolers in Britain, thinks a small number of the parents who have recently started home educating there have done so because they are afraid of sending their children back to class during the pandemic (after the last lockdown, British schools, unlike those in America, stopped offering a virtual-learning option when their premises reopened). But she thinks the large majority have taken the decision after seeing their children thrive at home. Eric Wearne of Kennesaw State University thinks that a lot of America's new home-schoolers will send their children back to classrooms once the threat of infection subsides. But he thinks the experience of learning from home during the pandemic—whether parents followed a school-provided curriculum or ploughed their own furrow—will make them more willing to consider home-schooling if their children face problems at school in the future.

Other changes in the wake of covid-19 could encourage this. Job losses are creating more stay-at-home parents. Many employers will probably continue to allow their staff to work more flexibly. In America prolonged school closures have popularised strategies that home educators have long used to improve learning and spread the burden of teaching. Many home-schooling parents form co-operatives. They share the cost of, say, extra maths tuition, and their kids play together.

A lasting rise in the number of home educators will revive old worries. Reliable research into outcomes for home-schooled children is sparse. One of the better studies, based on surveys in America in 2011 and 2014, found that adults who had been home-schooled were less likely than public-school students to have completed a four-year degree. Some parents are seeking to shelter their children from concepts such as Darwinism. Regulators in Britain worry that parents are using home education as a cover to send their children to unlicensed schools with fiercely religious curriculums. Ofsted, the schools inspectorate, set up an “unregistered schools task force” in 2016. Since then it has opened investigations into 740 schools and concluded that about 100 of them were breaking the law in some way. In December its head said that the proliferation of these “unsafe and unsuitable” settings was one of her biggest concerns.

Another fear is that a wider acceptance of home-schooling will undermine efforts to improve schools. Head teachers in Britain have sometimes been accused of trying to persuade parents that they should home educate disruptive, disabled or underperforming children, whether or not

that is the best option for them. This seems particularly common for children approaching important exams taken at the age of 16, the results of which are used to hold school leaders to account.

The fiercest debates relate to abuse. The death in 2011 of Dylan Seabridge, an eight-year-old who succumbed to scurvy, caused outrage in Britain. His parents had never enrolled him in school. Grim cases in America include that of Adrian Jones, a “home-schooled” seven-year-old starved and murdered by his father and stepmother in 2015, whose body was fed to pigs. Such examples usually reflect multiple failures in the systems that are supposed to keep children safe. Frequent contact with teachers provides more opportunity to spot abuse or malnutrition. Parents sometimes take their children out of school soon after discovering that authorities are worried about their welfare. A study in 2018 of six school districts in Connecticut showed that more than one-third of families who had withdrawn children from school in the previous three years had been the subject of at least one prior report for suspected child-neglect or abuse.

Many countries regulate home education strictly. It is outlawed in Germany. Inspectors check up on home educators in France. Last year Emmanuel Macron, the French president, proposed tougher rules on home education as part of a broader set of measures to combat religious extremism. In Brazil, by contrast, President Jair Bolsonaro wants to make home education easier. Alexandre Moreira, a Brazilian lawyer and home-schooling parent, thinks long school closures there have made it more likely that Congress will pass a draft bill explicitly legalising the practice.

In Britain the rules are fairly relaxed. Parents are required to ensure their chil-

dren receive a full-time education “suitable” to their age, though what that should involve is undefined. In some circumstances the government can order a child back to school. But for the most part local officials who liaise with home educators have little power or time. In 2019 the government said it was thinking of requiring home educators to register with local authorities, for fear that some youngsters had become invisible to social services.

There's no place like home

Home education is legal in all American states. In New York home educators must spend time teaching a list of mandated subjects, and their children must sit standardised tests. In some other parts of the country home-schooling parents must have basic qualifications, such as a high-school diploma. But Elizabeth Bartholet, a professor at Harvard Law School, argues that even strict-sounding regulations are poorly enforced and rife with exemptions.

As well as reviving arguments about regulation, the pandemic may fuel new debates about how much support home-schoolers should get from governments. June McDonald runs PLACE, an organisation funded by Bedford borough council in England that helps local home-schooling parents prepare their children for big national exams. It operates a library and classroom out of an old dental surgery. It also grants home-schooled children after-hours access to the art studio and science laboratories of a local state school. But such projects are rare.

Michael McShane of EdChoice, a think-tank, notes that authorities in Arizona and Florida now offer “education savings accounts” that allow some home-schooling parents—particularly those whose children have special needs—to spend public money on services such as tutoring. Rachel Coleman of the Coalition for Responsible Home Education, a research and advocacy group, would like to see every American school district nominate an administrator to work with local home educators. She thinks all home-schooled children should be offered the option of attending school part-time (at present, laws in a few states forbid that). These ideas are welcomed by many home educators but resisted by a vocal portion of them, who worry that gifts from government will inevitably lead to more regulation.

Back in England Ms Clark says she and her husband plan to keep their children at home until they are old enough for secondary school. At that point, she thinks, they will be better off returning to classrooms. The job got a bit more complicated in January, when she had a new baby. But Ms Clark feels up to the task. Since nursing her child through a transplant, other challenges have seemed light. ■





Technology and competition

Collusion and collisions

The new rules of competition in the technology industry

TECHNOLOGY COMPANIES exhibit a curious lexical property. Google and Zoom are verbs. So, in Chinese, is Taobao, the name of Alibaba's vast e-mall. Uber and Didi, its Chinese ride-hailing rival, are synonyms for "cab". Facebook means, simply, the internet in Vietnam, where people mostly access the web through its social networks. Amazon, Apple, Microsoft and Netflix are not literally bywords for, respectively, online shopping, smartphones, office software and video-streaming—but they might as well be.

To tech's critics, these definitional regularities point to something insidious, encapsulating in a word the dominance that each firm wields over its digital fief—some of it possibly ill-gotten. In December American trustbusters sued Facebook for alleged anticompetitive behaviour, and Chinese ones launched an investigation into Alibaba. The central plank of one of three antitrust cases against Google is an agreement under which it pays Apple be-

tween \$8bn and \$12bn a year—about a fifth of Apple's global profits—for its search engine to appear as the default on Apple devices. Google also allegedly offered Facebook a sweetheart deal not to support a rival ad system backed by news publishers.

Efforts to sever the linguistic links are multiplying. Epic Games, a video-game company that claims Apple is fleecing developers of apps in its App Store, has lodged complaints against it in America and Europe. On February 22nd Britain's competition watchdog warned of looming antitrust actions against big tech. The European Union is working on regulations to

check the firms' power. Australia has just passed a law that would force them to pay publishers more for news displayed alongside search results or social-media feeds.

From the outside, then, the industry leaves an impression of a cosy club, whose members stay out of each other's way—or worse, help one another perpetuate their monopolies. And the giants are only becoming more powerful. Last year the world's ten biggest digital firms by market value raked in net profits of \$261bn, as people depended on them for socially distant work, play, shopping and socialising. Their combined market capitalisation swelled by \$3.9trn—more than the entire British stockmarket's worth—implying that investors expect them to gain further clout.

Big tech sees things differently. Alibaba, Apple, Google and Facebook say their various arrangements are perfectly legitimate. The American firms co-operate, it is true, but only in order to ensure interoperability between their products. In fact, all tech titans insist, their relationships are for the most part not chummy but fiercely combative. Brad Smith, president of Microsoft, puts the balance of competition versus co-operation at "80:20" in favour of rivalry. Mark Zuckerberg, Facebook's chief executive, recently called Apple "one of our biggest competitors". "We feel like every day we wake up, we are under incredible competitive pressure," says Phil Schiller, an ex-▶

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► executive close to Apple's boss, Tim Cook.

In recent weeks big tech has certainly seen more barbs than bonhomie. Facebook has run ads attacking Apple over new iPhone privacy settings that would ask users if they wanted to opt out of being tracked across other firms' apps and websites—which, in Facebook's telling, would hurt small businesses that need it to reach customers (see Schumpeter). Mr Cook, for his part, has been hinting that Facebook is playing fast and loose with users' data.

On February 22nd Microsoft teamed up with European news publishers to develop a system similar to the one Google and Facebook had objected to in Australia. When this month Microsoft first expressed support for the Australian scheme, Google shot back that “of course [Microsoft would] be eager to impose an unworkable levy on a rival and increase their market share,” referring to Microsoft's Bing search engine.

The fighting talk reflects a growing sense within the technology industry that incumbents are under assault. Though dominant firms remain powerful, and occasionally collegial, in one digital market after another challengers are gaining ground. Old-industry champions are at last getting their digital act together, as Walmart is doing in online retail and Disney in streaming. Less-big tech, such as Shopify in e-commerce or Salesforce in the cloud and business software, is also in encroachment mode. A flood of capital pouring into startups could easily translate into even more competition. Most significantly, tech's mightiest titans are increasingly stomping on each other's turf.

A defining moment

On this view, the era of winner-takes-all land grabs is fading, as tech enters a new, more competitive phase. If so, the industry's lexicon may be about to get considerably more complicated.

The shift is furthest along in China. Its two biggest digital groups, Alibaba and Tencent, already compete with each other—and with up-and-coming rivals—across a variety of markets. Alibaba's share of Chinese e-commerce peaked in 2013 at 62%, according to CLSA, a broker. Last year it was 51% (see chart 1). Once-fragmented competition is consolidating. The next two biggest firms, Pinduoduo and JD.com, an e-emporium backed by Tencent, have captured 24% of the market between them. They could reach 33% by 2026, reckons CLSA. Tencent's WeChat Pay and Alibaba's Alipay have long vied to be Chinese shoppers' digital wallets. Last year Tencent announced it will invest 500bn yuan (\$70bn) over five years, a slug of it to catch up with Alibaba in cloud computing.

America's tech landscape is beginning to change, too. *The Economist* has looked at 11 big technology markets in America

which last year generated combined gross revenue of \$1.6trn. According to our calculations, which inevitably involved some guesswork, over the past five years the top firm's share has plateaued in app stores, business software, cloud computing and online advertising. It has fallen by double digits in food delivery, ride-hailing and video-streaming since 2015.

In most markets, even where the incumbent's share edged up, as it has in e-commerce and smartphones, the aggregate share of the next two biggest challengers rose faster (see chart 2 on next page). In six of the 11 areas the two runners-up now account for a third or more of the market, up from two areas in 2016. Stragglers outside the top three are being left in the dust.

Some of the up-and-comers hail from beyond big tech's homes in Silicon Valley and Seattle. Disney's new streaming service has signed up 95m subscribers globally since its launch in late 2019, reaching that number nearly ten times faster than Netflix did. Walmart's years of investment in online fulfilment began to pay off in the pandemic. Other bricks-and-mortar retailers such as Best Buy, Home Depot and Target have also upped their digital game. Shopify, a 14-year-old Canadian firm, now controls a tenth of the American e-commerce market, up from one-70th in 2015. Its market capitalisation has risen sevenfold in the past two years, to \$150bn.

Perhaps the most salient feature of the new grammar of competition is the growing overlap between America's five tech behemoths. Alphabet (Google's parent company), Amazon, Apple, Facebook and Microsoft are beginning to echo, on an even grander scale, the rivalry between Alibaba and Tencent. James Anderson of Baillie Gifford, a large asset manager that invests in tech firms around the world, does not yet see the “fight-it-out-on-the-beaches spirit” of the Chinese titans. But as Mark Shmulik of Bernstein, a broker, puts it, in a nod to the Boolean algebra that underpins modern computing, big tech is moving from the disjunctive world of “or” to the

conjunctive world of “and”.

To be sure, the companies have an interest in ensuring their systems work seamlessly together. Demand for iPhones is encouraged by consumers' desire to access Google's search engine and Gmail, or Facebook's social networks. Cheap cloud computing provided by Amazon translates into more apps for Apple's App Store. Amazon is one of Google's biggest advertisers. Microsoft licenses Android for its Surface Duo smartphone.

The quintet's senior executives and cleverest clogs also know and, recent sniping notwithstanding, mostly respect each other. When Satya Nadella took over as Microsoft's chief executive in 2014, he binned a pro-privacy ad campaign alleging that Google scanned emails to serve targeted adverts. According to Microsoft insiders his friendships among Google engineers probably played a role in his decision. Mr Nadella also decided to stop trying to out-Google Google in search.

The etymology of competition

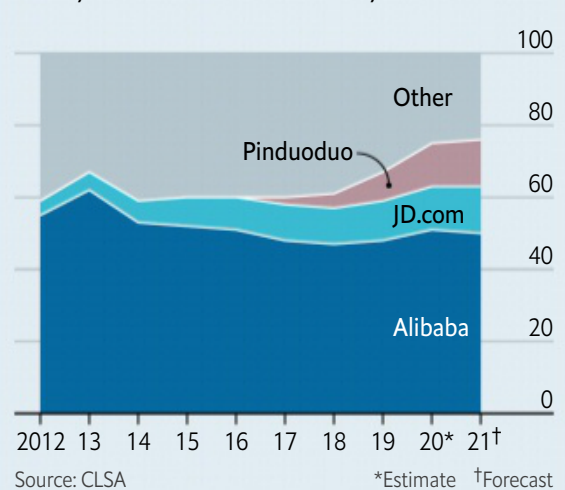
A lot of earlier incursions big tech firms made against each other ended in tears. In the early 2010s all the big companies tried getting into device-making; remember Amazon's Fire Phone? Microsoft's Zune music player was no iPod and Bing is no verb. Many iPhone users navigate with Google Maps, not Apple's unloved alternative. Facebook Gifts, the social network's early foray into e-commerce, proved about as welcome as yet another pair of socks.

Indeed, the five American giants continue to derive the bulk of their revenues and, for the most part, profits from the businesses which made them into trillion- or near-trillion-dollar companies. Last year online ads generated 80% of sales at Alphabet and 98% at Facebook. Fully 80% of Apple's revenues in 2020 came courtesy of its sleek devices (chiefly iPhones). Microsoft continues to rely on business software for a large chunk of revenues, and Amazon on its online emporium, though most of its (comparatively meagre) profits were generated by its cloud-computing arm, Amazon Web Services (AWS).

However, these figures used to be higher. With the number of first-time iPhone buyers declining, Apple has reduced its reliance on iPhones, iPads and Mac computers by moving into payments, finance and entertainment. The proportion of total revenue from services, at 20%, is double the share five years ago. Some of them, such as video- or music-streaming, compete with Amazon Prime Video and Prime Music, as well as with dedicated providers such as Netflix and Disney (for video) or Spotify (for audio). Amazon's revenue share from e-commerce has declined from 87% in 2015 to 72%; a tenth of sales now comes from the cloud and 6% from digital advertising. ►

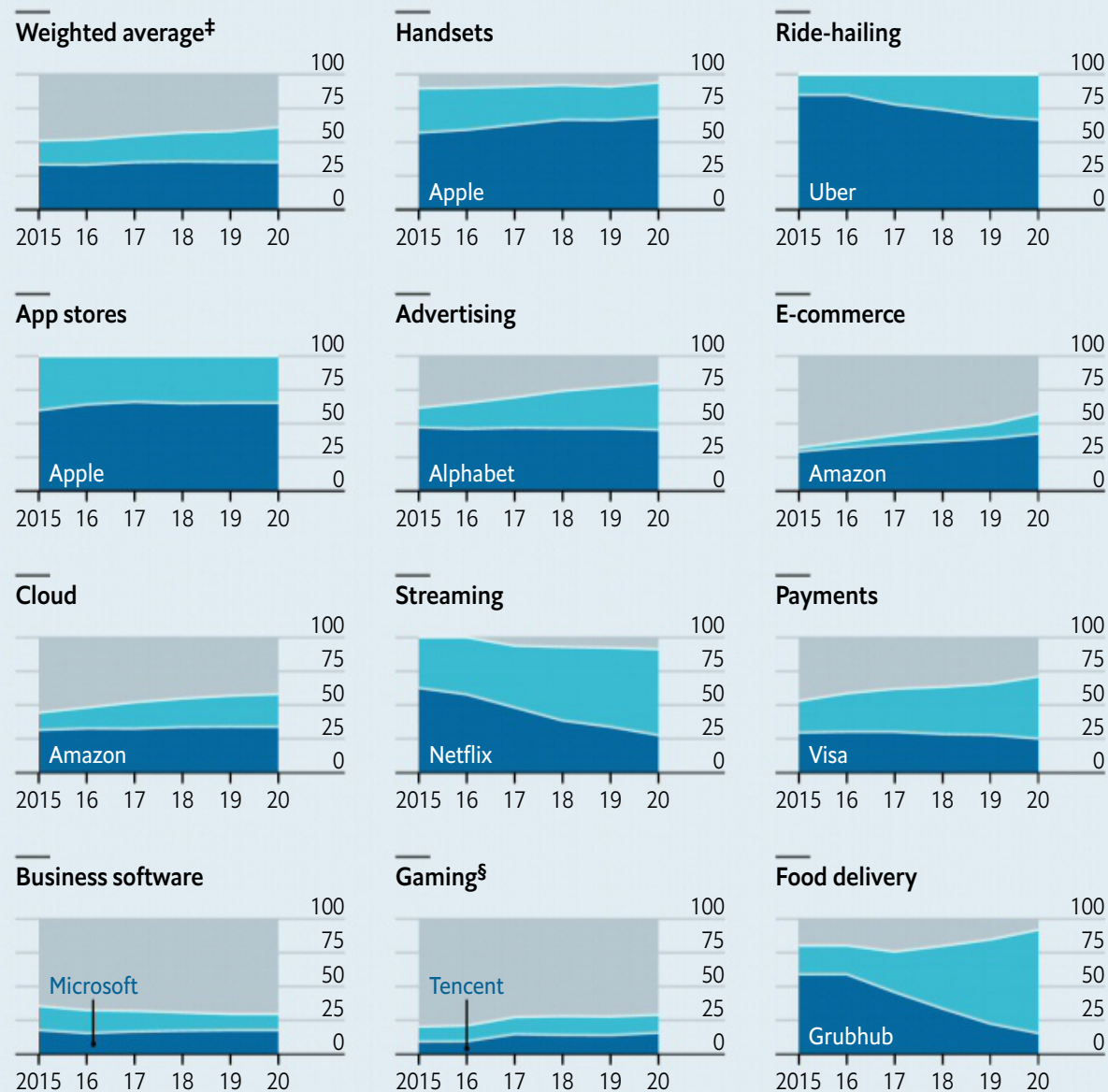
Chinese lessons

China, e-commerce market share, %



A new dictionary of technology

United States, estimated revenue market share, %
Technology sectors



*In 2015 †The next two biggest companies in 2020, after excluding the 2015 incumbent
‡Weighted by revenue multiplied by estimated long-term margins §Global market share
Sources: Bloomberg; Gartner; IDC; US Census Bureau; Magna; Newzoo; Sensor Tower; company reports

► The proportion that Alphabet got from advertising last year was ten percentage points lower than it was in 2015.

Those percentage points relinquished by the core are instead coming from an ever wider array of new ventures. Many involve the big five getting in each other's way. Nearly two-fifths of their revenues now come from areas where their businesses overlap, up from a fifth in 2015 (see chart 3 on next page). If you split tech into 20 or so business areas, from smartphones and smart speakers to messaging and videoconferencing, each giant is present in most of them, according to Bernstein.

Many of these endeavours have yet to make much money. But the giants' stratospheric stockmarket valuations—of between 25 and 82 times annual earnings—require ambitious growth plans. As their main businesses mature and slow, they must seek fresh sources of growth somewhere else. With trustbusters on high alert, snapping up startup rivals—or otherwise neutralising them—is getting harder, says a Silicon Valley venture capitalist. "Growth might depend on competing through

homegrown efforts in known big markets."

The mutual toe-treading that ensues takes several forms. First, the companies are increasingly selling the same products or services. Second, they are providing similar products and services on the back of different business models, for example giving away things that a rival charges for (or vice versa, charging for a service that a competitor offers in exchange for user data sold to advertisers). Third, they are eyeing the same nascent markets, such as artificial intelligence (AI) or self-driving cars.

Direct competition is fiercest in the cloud, a \$63bn business expanding at an annual rate of 40%, which Wall Street expects to become a \$1trn one within a decade or two. Jeff Bezos, Amazon's boss, once joked that Barnes & Noble understood within months it had to copy Amazon's Kindle e-reader but it took his genius techie rivals years to twig they should ape AWS. They got there in the end.

Microsoft's 11-year-old Azure cloud-computing division rakes in an estimated \$20bn a year in revenue. Bernstein expects cloud-computing to make up 12% of Goo-

gle's revenues by 2024, up from 7% in 2020. Acknowledging the unit's importance, in January Google broke out the operating results of its cloud business (which lost \$5.6bn in 2020).

E-commerce, which the pandemic has turbocharged, is another area being contested. Facebook has had a second-hand goods market called Marketplace for a while. In May it launched Facebook Shops to take Amazon on more directly, giving the 160m or so businesses which already use the social network or its sister app, Instagram, as a shop window a way to sell their products. Facebook and Google are also both working with Shopify, whose merchants flog theirs on their platforms. Even Microsoft is eyeing retail, albeit by a more circuitous route, with plans to sell automated checkout technology to Walmart.

Social media—Facebook's bread and butter—are likewise in rivals' sights. Last year Microsoft hoped to beef up its consumer business, which includes Surface tablets and the Xbox video-game console, by buying TikTok, a Chinese-owned short-video app. This year it considered acquiring Pinterest, a photo-sharing network. Neither deal came to pass, but it was a clear statement of Microsoft's intent.

Amazon, too, "would be crazy" not to look at social media, says an executive close to it. In 2013 it bought Goodreads, a platform where people rate books and find recommendations, which has been described as "Facebook with books". The millions who rate purchases on Amazon's online-shopping platform constitute a germ of a possible future social network. A former Amazon executive wagers that "it will be easier for Amazon to go into social than for Facebook to move into shopping," because the logistics of delivery, which Amazon has mastered, are trickier to bootstrap than a social network.

Then there is search. Microsoft, emboldened by its cloud success, could start investing more in the decent but marginal Bing. Amazon has concluded that if merchants on its e-commerce platform want to flaunt their wares to online shoppers, why let Google make all the money? Its search-ad business remains a fraction of Google's. But these days most product searches begin in Amazon's app or on its website.

Apple, too, harbours search ambitions. In 2018 it poached John Giannandrea, Google's head of search and AI. People have noticed that Applebot, a web crawler, has become more active of late, presumably gobbling up data on which to train. Siri, Apple's voice assistant, "is basically a search engine", says one tech insider. Apple could, he adds, "skim the cream" by answering the most valuable queries—those by well-heeled iPhone users.

Unlike Amazon, which competes with Google head-on for advertising dollars, Ap- ►



► ple seems unlikely to want to profit from search-advertising directly. Instead, its search project may be aimed at luring the privacy-conscious deeper into the safety of its “walled garden”—much to Mr Zuckerberg’s understandable chagrin.

This illustrates the second sort of competitive behaviour. Undermining Google’s or Facebook’s business model may not be the explicit aim of Mr Cook. It nevertheless forces his advertising-dependent opposite numbers, Mr Zuckerberg and Alphabet’s Sundar Pichai, to come up with services and product that would persuade users to respond “yes” to the tracking question.

Mr Pichai, for his part, is doing something similar by giving away all manner of products, from cloud-based word processors, spreadsheets and Hangouts video chat to TensorFlow, Alphabet’s machine-learning software, and Kubernetes, a cloud-computing project. Some observers see these giveaways, bankrolled by Google’s ad dollars, as an attempt to create a perfectly competitive profit desert that rivals have no incentive to enter—leaving Google with a Sahara’s worth of data.

Rather than electing to enter new technology niches, the companies are being dragged in, often by their users. As Amazon sees it, according to a former executive, the internet and copious amounts of data mean if you are in one business, you simply have to get into the one over the fence. E-commerce and social media offer a good example. “Social shopping”, where retailers organise mass virtual sprees for buyers on social media, are all the rage in China and may soon be in the West.

Thanks to customer bases in the hundreds of millions or billions, technology platforms can diversify easily and cheaply. Facebook’s Marketplace, for one, started after the company spotted large numbers of people buying and selling various things in

Facebook groups, notes Javier Olivan, who oversees the company’s core products.

This process looks likely to intensify as the firms shift from looking over the others’ shoulders to gazing ahead. Often they end up staring in the same direction: towards data and AI. Four of the giants already offer digital assistants, which they would love to become consumers’ primary gateway to the internet. Everyone is also hungrily eyeing payments, especially in light of the recent success of PayPal, which has been gaining clout at the expense of Visa and Mastercard.

Big tech is pouring billions into ambitious AI projects. Apple has been in talks with several carmakers to build a self-driving car, which within the tech quintet has hitherto been the preserve of Waymo, an Alphabet subsidiary. Nothing has materialised but the idea of an Apple car is almost certainly here to stay. Last year Amazon bought Zoox, a self-driving startup. Alibaba and Baidu, a Chinese search engine, are also both interested in cars.

Not everything has improved. There is still scant competition in handsets. The

two dominant mobile operating systems, Google’s Android and Apple’s iOS, remain a duopoly. So do their app stores. The online advertising market looks more competitive overall, but it is unclear if Amazon is really playing in the same sandbox as Google in search, or whether TikTok is a direct rival to Facebook in social media.

The tech giants have also become adept at playing the antitrust referees to keep potential competitors busy defending their core businesses from regulators, and thus less able to encroach on other markets. “Everyone is desperate to say it’s not me, it’s the guy over there,” says a tech executive. Microsoft got the antitrust ball rolling against Google in the late 2000s by building a coalition of companies against its dominance of search. Members of that coalition such as Yelp, a local search and reviewing site, are once again agitating against Google, leading insiders to chortle about how Microsoft “sleeper cells” have come to life.

Lina Khan of Columbia Law School, who was legal counsel for a congressional committee that investigated big tech, says that the giants are skirmishing in some areas, like the cloud and voice assistants. But still, she says, they are not battling over core territory, and, what is more, describing this as a fight risks overlooking the broader ways in which the firms mutually benefit from their collective dominance.

New coinage

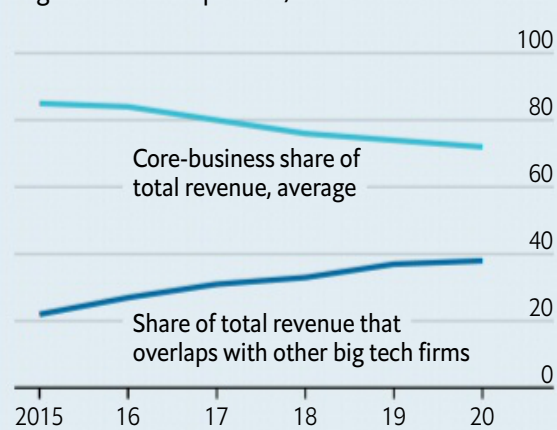
If the skirmishes intensify, that could lead to lower profitability for the tech companies. Margins in cloud computing, where competition is most pronounced, are already tightening. According to Mr Anderson of Baillie Gifford, Google’s tilt at the AWS/Azure quasi-duopoly has pushed down prices. Tencent’s cloud investments are likely to add pressure.

Alphabet’s operating margins have declined by 13 percentage points over the past ten years. Even Apple’s are ten percentage points below their peak in 2012. Those of Facebook have come down from a lofty 50% in 2017 to less than 40%. The companies mostly keep mum about how their individual businesses are doing. But one possible explanation for slimmer overall margins is greater competition. Another is that entry into new markets eats into profits from core businesses. This could eventually put pressure on rivals also present in those markets.

The presumption that the tech giants are either colluding to divvy up the planet’s digital pie or carefully steering clear of each other is no longer right. Many people would of course prefer to see more than a handful of firms slug it out for the modern economy’s critical digital markets. Still, so long as they truly are slugging it out, that is good news for everyone else. ■

Multilingual

Big-five tech companies*, %



Source: Company reports

*Alphabet, Amazon, Apple, Facebook and Microsoft

Duty-free retail

Continental drift

HONG KONG AND PARIS

The pandemic has landed travel shopping in limbo. The industry is finding new ways to grow

HAINAN, A TROPICAL island 450km (280 miles) south-west of Hong Kong, used to be a sleepy backwater populated by budget resorts catering to Chinese tourists unable to afford a trip to Hawaii. Today it draws travellers with considerably fatter wallets. Buying a Gucci gown or a Tiffany trinket in one of its giant, posh malls feels no different from shopping on Fifth Avenue in New York or Avenue Montaigne in Paris—until the tills are rung. Instead of walking out with their bling, visitors from mainland China pick up their items at the airport on their way home, or get them dispatched there directly. Under rules devised a decade ago, which mean that for duty purposes Hainan is treated as a separate zone from mainland China, they are exempt from certain taxes and duties. Savings can reach 30% as a result.

Duty-free shopping conjures up images of crowded airport terminals. As covid-19 has emptied these of passengers around the world, the shops inside have suffered commensurately. After reaching \$86bn in 2019, according to Generation Research, a consultancy, duty-free sales collapsed by two-thirds last year. Mauro Anastasi of Bain, another consultancy, forecasts that travel-retail sales will not reach those levels again in real terms before the second half of the decade. Intercontinental passengers and business travellers, the biggest spenders, are likely to take longest to return to the skies. Chinese tourists, by far the most prized by duty-free operators, are shunning countries with poor records of handling the pandemic.

Shoppers will one day return to airports. Yet when it emerges from the current crisis, duty-free shopping will have been transformed: unabashedly focused on luxury, less connected to travel and closer to Asian high-rollers. Hainan points the way.

Before covid-19, selling stuff to travellers had been one of the few bright spots in the brick-and-mortar retail world. The practice has been popular ever since cruise ships on the high seas plied their passengers with booze and cigarettes free of government levies. In 1950 Ireland applied the principle to aviation. As mass tourism took hold, airports the world over turned themselves into tax-free shopping malls with departure gates. Annual growth of around 8% in recent pre-pandemic years—twice the figure for other shops—was fuelled by

sales of cognac, sunglasses, handbags and other knick-knacks. Sales have grown eight-fold since the late 1980s. Excited marketers referred to duty-free shops as “the sixth continent”.

Covid-19 has deflated that enthusiasm. It has also, as in many other areas, accelerated pre-existing trends that were reshaping the duty-free business. The first has to do with the mix of stuff sold in duty-free. Alcohol and, particularly, cigarettes have dwindled over the years. Posh brands became mainstays of airport concourses as they realised that these were good places to pitch to wealthy people, particularly Asian passengers. Luxury goods, perfumes and cosmetics now dominate travel retail, accounting for two-thirds of sales.

Rebate tectonics

The second development is the shift away from airports. Although the terminal remains its natural habitat, duty-free shopping has in recent years expanded farther afield. Spending per passenger in airports was sagging even before the coronavirus swept the globe.

At the same time, specialised downtown shops in tourist hotspots have lured visitors eligible for tax discounts if they repatriate what they buy. These outlets, particularly popular in Asia, now represent

nearly 40% of all sales. Rules vary globally, but some allow shopping even by those with a tenuous link to travel, for example a ticket booked for several months hence.

Tax-exempt outlets are popping up across mainland China, catering to domestic travellers who have returned from overseas (and, soon, who plan to travel there in future). Chinese shoppers in Hainan, for example, now enjoy a duty-free allowance of 100,000 yuan (\$15,500), thanks to a recent tripling of the tax break.

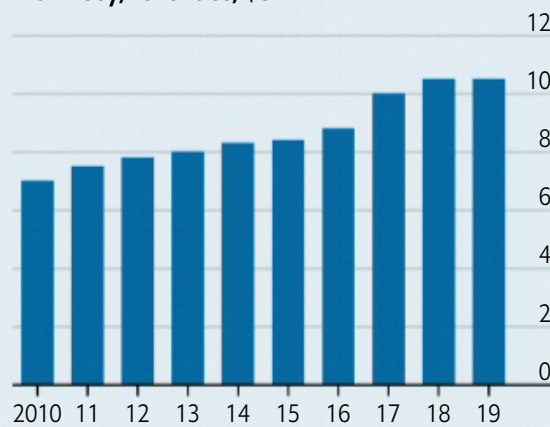
The final trend, also on display in Hainan, is duty-free’s eastward drift. In 2011 Asia-Pacific overtook Europe as the largest regional market. (America, where most flights are domestic, has always been a laggard.) Before the pandemic Seoul’s Incheon, a two-hour flight from Beijing, became the biggest airport shop in the world. Revenues for Prada and Hermès in Asia excluding Japan have jumped by over 40% in 2020, owing partly to splurges in Hainan. Industry sales there are reported to have reached \$5bn last year, more than doubling from 2019. Some predict they could grow five-fold within a decade.

Although the Chinese have been the world’s biggest luxury buyers for years, accounting for a third of global sales, brands were reluctant to consider places like Hainan as top-tier luxury venues. Two-thirds of Chinese spending on handbags, watches and other fripperies took place overseas.

The Communist Party wants to change that. The ever-more-generous tax breaks for the well-heeled are “the key tenet of a long-term government mission to maximise domestic consumption and repatriate travel-related shopping from abroad”, says Martin Moodie of the *Moodie Davitt Report*, a travel-retail newsletter. Da- ▶▶

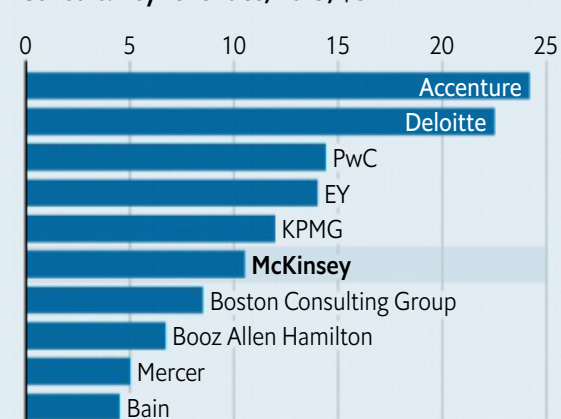
The PowerPoint premium

McKinsey, revenues, \$bn



Sources: Forbes; Consultancy.org

Consultancy revenues, 2019, \$bn



Loss of Sneadership

On February 24th the *Financial Times* reported that 650 senior partners at McKinsey voted Kevin Sneader, the consultancy’s managing partner since 2018, out of office. The Scotsman’s predecessors typically served two consecutive terms. The vote is seen as a rebuke of his handling of a series of crises, the bulk of which predated his tenure, most recently over McKinsey’s work for opioid producers in America.

► niel Zipser of McKinsey, a consultancy, expects the overseas share of luxury spending to decline. As a consequence of these developments, luxury groups' attitudes towards venues like Hainan "have changed dramatically", says Cherry Leung of Bernstein, a broker.

If the Chinese continue to buy their baubles at home, that will suck more business away from the duty-free operators that have historically dominated non-Chinese airports. These include Dufry of Switzerland and DFS, part of the LVMH luxury empire. Last year China Duty Free, a state-

controlled group, overtook Dufry as the world's largest purveyor of tariff-free luxury goods. The market capitalisation of China Duty Free's Shanghai-listed arm has more than tripled over the past year to \$112bn, making it one of the most valuable retailers in the world.

In an acknowledgment of the shifting balance of spending power, some travel retailers from Europe are trying to muscle in on Hainan. Dufry has sold a stake to Alibaba, hoping that China's e-commerce giant can improve its fortunes there. Last month Lagardère Travel Retail, part of a French

conglomerate, launched a second shop on the island.

Airports will remain good places to find well-off shoppers. Bored people waiting for their flights to be called are perfect marks for luxury brands. Most retailers spend fortunes attracting customers to their shops or websites, points out Julián Díaz González, boss of Dufry. "For us it is just moving them from the corridor to the shops." As the industry continues to evolve, Mr Díaz may increasingly find it is a matter of moving the duty-free shops to the customers. ■

Bartleby Foot-in-mouth disease

How to avoid corporate embarrassment

MANY PEOPLE, including this columnist, complain that chief executives make bland statements that are full of corporate jargon. It becomes easy to understand why managers are addicted to waffle when a boss foolishly decides to give his employees a piece of his mind.

The latest culprit was Bill Michael, the British chairman of KPMG, a big consultancy. In a virtual meeting Mr Michael dismissed staff concerns about the pandemic, saying that "you can't play the role of victim unless you're sick. I hope you're not sick and you're not ill and if you're not take control of your life. Don't sit there and moan about it, quite frankly." Then he waded into the issues of racism and sexism by adding, "There is no such thing as unconscious bias. I don't buy it. Because after every single unconscious-bias training that's ever been done, nothing's ever improved."

It is possible to put a charitable interpretation on Mr Michael's remarks. He was hospitalised with covid-19 himself and his definition of sickness may have included mental illness and depression. Those KPMG employees who have been spared illness are probably in a much better position than many other groups of workers. And he may have been arguing that examples of "unconscious bias" are really cases of very conscious prejudice. He followed up by saying: "Unless you care, you actually won't change."

But if he was going to make those points, he needed to do so in a more thoughtful and sophisticated manner. He resigned within days, as details of the call were leaked to the media.

Statements to outsiders can be as damaging as those to insiders. Perhaps the most calamitous in recent corporate history were Tony Hayward's. Then chief executive of BP, an oil giant, he spoke on

television in the wake of the Deepwater Horizon tragedy, when 11 workers died and much pollution spread in the Gulf of Mexico. "There is no one who wants this thing over more than I do. You know, I'd like my life back," he said. The insensitive tone worsened BP's deteriorating reputation and Mr Hayward was soon gone.

Executives who depart from blandness to express an opinion put their careers at risk. They enjoy little upside and risk plenty of downside. If the executive is the founder, or the business is well-run, they may be spared. It helps if you apologise quickly. John Mackey, chief executive of Whole Foods, an American grocer, dubbed Barack Obama's health-care reforms "fascist" in 2013 but quickly said he regretted his remarks. He is still in his job.

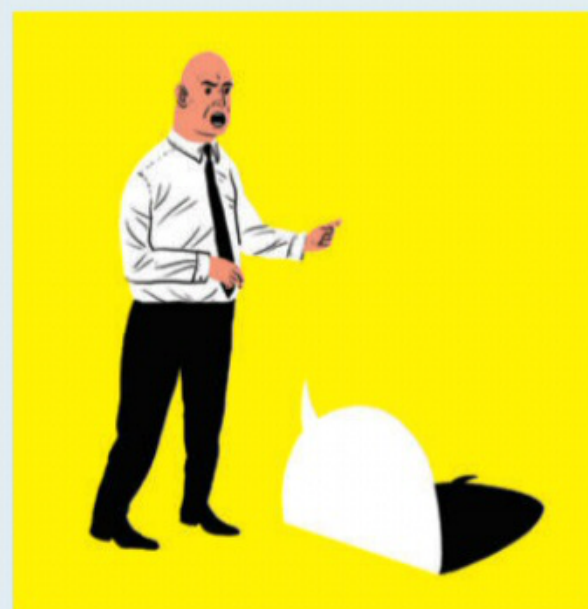
For Mr Michael, the real killer was the way that his views appeared to insult his staff. Given that KPMG is, above all, a people business, this was a fatal mistake. The modern CEO has to behave more like a cheerleader than a sergeant-major, bucking up their troops rather than berating them. Corporate culture is a slippery

concept but if the boss addresses the staff as if they are idiots, the firm is unlikely to prosper.

By the same token, executives should be careful about the stands they take on political issues. When they cause offence, the ramifications can be widespread. Employees want to be proud of the companies they work for, and do not want to struggle to defend their job to their spouses, children or people they meet at Zoom drinks. Some will dub this "political correctness". In reality it is common sense. Most modern businesses will have many female employees and staff from a variety of ethnic origins. The same is true of their customers. Upsetting the sensibilities of either group is not a sensible strategy.

One thing that the utterances of Messrs Michael and Hayward had in common was that they seemed to be off-the-cuff. Arguably, Mr Hayward had more excuse for misspeaking; he was dealing with wall-to-wall media coverage in the middle of a stressful crisis. Mr Michael appeared to be extemporising in the middle of a long speech. The reverse of Nike's slogan ought to apply here: just don't do it. The danger is that top executives are often treated with such reverence by colleagues that they get an inflated view of their own wisdom. Their opinion on non-business matters is worth no more than anyone else's.

That does not mean executives have to speak entirely in platitudes. There is nothing wrong with having strong opinions about things that are relevant to the business. Warren Buffett's annual letter to shareholders shows how to combine shrewd observations with humour. But managers should leave the philosophical and political musings to people who stand for election.



Schumpeter | Headsets at dawn

Apple's duel with Facebook exemplifies a new form of big-power rivalry



LAST WEEKEND Mark Murrell, the founder of Get Maine Lobster, bought an Oculus virtual-reality (VR) headset. It is a plaything, but he quickly thought of business. “I can’t wait until everybody has one,” he says. “If only I could have an ad in one of those.” His business is delivering lobsters, at an average \$190 a box, to homes across America. In his fantasy VR world, he would take customers via their headsets out on boats to see the catches, or give them cooking lessons—all while gently nudging them to place orders. Since his business started in 2009, its primary means of reaching new customers has been through ads on Facebook. It is not lost on him that Oculus is also owned by the social-media giant. “I was like ‘wow, watch out!’,” he says.

As one of the biggest online-advertising platforms, Facebook understands the hidden depths of the digital world like a lobster fisherman knows the topography of the sea floor. But Mark Zuckerberg does not set the rules in all the places where his company lurks. The most lucrative hunting grounds are those controlled by Apple, maker of the iPhone, whose users last year spent on average almost five times as much per person buying stuff on its iOS operating system as those on devices using Android, its (Google-owned) rival. Apple has said that this spring it will upgrade iOS to toughen restrictions on the way advertising platforms access data, including by requiring apps to ask users for permission to track them across apps and websites owned by other firms. Those that rely on Apple’s individual-device identifiers for data-tracking will be affected. Facebook, the tracker-in-chief, has most to lose.

Apple justifies its actions as part of a commitment to protect its users’ privacy. Facebook says it is resisting on behalf of millions of its small and medium-sized business clients that rely on its data-hunting algorithms to reach customers. On the surface it looks like a typical territorial dispute of privacy versus access. Mr Murrell’s Oculus fantasies provide a glimpse of why it goes much deeper than that.

The giants’ efforts to portray their positions as high-minded and altruistic are self-serving. But each has a point. Apple’s boss, Tim Cook, is right, in his thinly veiled attacks on Facebook, to lament the way polarisation and disinformation keep people glued to their screens to enable sites to exploit more data. Mr Zuckerberg

is right to deride Mr Cook’s assertion that advertising does not need personalised data because it survived for decades without them. That system was skewed in favour of big companies with pots of money to spend on adverts. Smaller firms’ ability to reach customers with cheap online ads is one of the great novelties of the digital age. Get Maine Lobster, which pays Facebook about \$45 for every crustacean-craver it lands, thrives because of it.

More privacy will hurt but not kill the personalised-ad model. Some Apple users, preferring targeted ads to random ones, will opt to allow data-tracking. Google, which has split loyalties because of its own online-ad juggernaut, may make its Android platform privacy-lite. That would create a bifurcated web: on the one side, a privacy-focused, gentrified iOS system; on the other, a freer-for-all Android one. Ad-supported social-media sites, from Facebook to Snapchat and TikTok, will compete to develop technologies, such as artificial intelligence, to combine personalisation with more privacy. Ultimately, they could even pay people to track their data (though Apple’s rules currently forbid this). Omdia, a media consultancy, says the iOS upgrade will cause iOS in-app advertising revenue to drop by almost a fifth this year. But it expects it to rebound by 2024.

Facebook’s insinuations about the dark motives behind Apple’s iOS upgrade are probably overstated. Even though services are a fast-growing source of Apple’s revenue, attempting to rig the market in favour of its App Store and mine it for better advertising data would make a mockery of its privacy campaign, which it sees as paramount for attracting customers. More likely, Apple is changing the rules in favour of more privacy because it can. It controls its integrated stack of hardware and software. Facebook does not. That gives Apple the freedom to assert its power.

But it is also a demonstration of paranoia. Facebook has growing ambitions to become a direct competitor to Apple. One way would be for Facebook to combine its namesake social network with its Instagram photo-sharing app and WhatsApp messenger into a “super-app” akin to Tencent’s WeChat in China, melding social media, messaging, e-commerce, gaming and payments. That would give it more freedom to offer personalised ads, since Apple cannot control data-tracking within the Facebook family of apps.

Subtracting ads

Another way would be to start a new hardware craze that overtakes the iPhone. Overshadowed by Mr Zuckerberg’s prickly attacks on Apple are revelations of what he calls his dream, “since I was a kid”, to build a new computing platform. Following a tradition that started with mainframes, then PCs, then browser-based computing, then mobile phones, he hopes to develop “immersive computing”, based on virtual and augmented reality. Oculus is a start, especially for gaming. Augmented-reality glasses are in the future. This year Facebook plans to launch “smart glasses” in partnership with Luxottica, which makes Ray-Bans. If they do not suffer the fate of ungainly Google Glass, they could start an arms race. Reportedly, Apple is working on a VR headset and glasses. Samsung, a South Korean smartphone-maker, may be working on augmented eyewear, too. And VR is not the only potential breakthrough. Smart speakers and cars are other contenders.

Whatever comes next, even Facebook acknowledges that privacy will need to be an important component. Many people, like lobsters, crave their nooks and crannies. The more so knowing that, thanks to firms like Facebook, merchants have become ever better at luring them into their pots. ■



Carbon trading (1)

Coming into its own

The price of carbon in the world's biggest, most liquid market is soaring. Investors are starting to pay attention

AS FINANCIAL MARKETS become cheerier about the pace of vaccinations and the chances of a speedy economic recovery, the prices of stocks, commodities and all sorts of assets are rising. So too are carbon prices in Europe, home to the world's largest emissions-trading system. Prices have surged by 60% since November; on February 12th they hit a record high of nearly €40 (\$49) per tonne of carbon-dioxide equivalent (see chart on next page).

Last year the value of global carbon markets hit a record €229bn, a five-fold increase from 2017. The EU's emissions-trading system (ETS) accounts for nearly nine-tenths of both that value and that growth (China's is just starting up; see next page). In 2020 around €1bn-worth of emissions allowances changed hands a day, as well as lots of options and futures contracts. There are now clear signs that the market is joining the financial mainstream, with hundreds of investment firms trading in it.

For a long time after it was launched in 2005, the ETS barely functioned; a glut of allowances (which give the holder the right to emit an amount of greenhouse gases)

kept prices close to zero. But after the European Commission sucked out excess permits in 2019, the market began to thrive.

It is an odd market. The commission auctions allowances nearly every day; it caps the overall supply of permits based on the EU's politically determined emissions targets. Demand, meanwhile, comes from three types of participant. Power and heating utilities, such as Germany's RWE and France's Engie, have the most appetite. They buy allowances to cover the emissions from current projects or to hedge

against future price increases. Next come industrial firms, such as ArcelorMittal, a steelmaker. Most of these receive free permits, so that the ETS does not encourage producers to move abroad.

The third, and growing, source of demand is financial firms, including banks, such as Goldman Sachs and Morgan Stanley, and hedge funds, such as Lansdowne Partners and Northlander Advisors. These are not required to hold allowances; instead they hope to profit, either by trading on behalf of utilities or by speculating in the futures or options markets.

The recent spike in prices reflects both supply and demand. A shift to a new platform delayed some auctions in January, meaning fewer allowances were sold. And on December 11th EU leaders agreed to speed up cuts to emissions, bringing them down by 55% by 2030 compared with 1990 levels, rather than by 40%. That signalled a lower emissions cap, meaning eventually fewer permits and a higher price.

The expectation of higher carbon prices may have prompted industrial firms to start hedging their emissions early this year. That added to demand for allowances—as did unusually cold weather, which boosted the demand for heating (the ETS does not cover boilers in homes, but it includes large ones, such as those that heat many buildings). Speculators may have accelerated the price rise, by buoying futures prices. Around 230 investment funds hold futures linked to allowances, up from 140 in 2019. They account for only about 5% of ▶▶

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the futures market, but it is a growing, bullish share. Long positions, or bets that the price will rise, have doubled since November. Aje Singh Rihel of Refinitiv, a research firm, notes that this measure closely correlates with recent price changes.

One reason for investors' enthusiasm is that carbon seems like a one-way bet. Many analysts expect that the EU's 55% target will require the number of allowances to fall and prices to rise, perhaps towards €80 per tonne. That could be good news for investors. When in 2018 it became clear the commission was going to intervene to limit supply, allowances became the best-performing commodity of the year.

Buy and hold is not the only strategy. Casey Dwyer of Andurand Capital notes that carbon prices are largely uncorrelated with those of other assets, so some investors hold them to diversify their portfolios. They could also be used to hedge against inflation: a higher carbon price is generally accompanied by higher consumer prices.

The presence of financial firms has changed how the market works. Federico Di Credico of ACT Financial Solutions, which specialises in green markets, says that the dynamics used to revolve mostly around the commission's meetings. Now economic indicators, such as new GDP figures, play a role too. Some analysts argue that speculation causes volatility; others say the result is more liquidity. Most, though, expect financial flows to grow.

"Once investors start to see it as an ESG trade [that takes into account environmen-

tal, social and governance factors], funds will allocate more money to the carbon markets," predicts Ulf Ek of Northlander Advisors. And unlike many forms of ESG investing, Europe's carbon price, where it is applied fully, seems to benefit the environment directly. Emissions from utilities have fallen by roughly half since the launch of the ETS. By contrast, the industrial sector, which is cushioned by free allowances, has seen little improvement.

What next for the ETS? Some elements, including the overall cap, will be reviewed in June. And the commission has expansion in its sights. One idea is to connect the ETS to other regions through a carbon border tax. In theory, that would protect European industry from carbon-intensive,

overseas competitors. And it may link the ETS to other markets, such as Britain's soon-to-be-launched ETS, and California's cap-and-trade scheme. Complications around design and geopolitics abound, though. Few think the commission's aim for a border tax by 2023 is realistic.

More likely is expansion within Europe. The scheme covers only 45% of the continent's emissions. Shipping is expected to join in the next few years. Road transport and buildings may get separate markets. If done well, that expansion should attract more capital and perhaps lead to higher prices. But as the market's early years show, much depends on implementation. For all its growing sophistication, the ETS is still a political project at heart. ■

Carbon trading (2)

Cleaning up

HONG KONG AND SHANGHAI

Can China's carbon market take off?

CHINA IS THE world's biggest polluter. Its cars and factories release almost twice as many lung-harming carbon particles each year as in those in America. The country's leadership has certainly been sending strong messages on cutting emissions. But its plan to reduce the carbon intensity of GDP by 65% by 2030 (compared to 2005 levels) and to hit net-zero emissions by 2060 has done little to comfort environmentalists. China is still building hundreds of coal-fired plants. The Climate Action Tracker, which is compiled by a consortium of experts, rates its efforts to lower emissions as "highly insufficient".

On February 1st China's carbon-trading market went live, a decade after it was first mooted, offering a glimpse of hope that the severe pollution the country generates might be curbed. The general principles of the emissions-trading system (ETS) reflect global standards, and slow implementation has been par for the course in other places. But there are two reasons to worry that Beijing may not get carbon trading right.

The first is the ETS's scope. The expectation was that the market would cover at least 70% of the country's carbon-emitting industries, including power generation, aviation and petrochemicals. It may eventually do that. But its first phase covers just 2,225 power generators, representing a small fraction of emissions (the generation sector as a whole produces about 30% of China's emissions). Instead of employing an absolute emissions cap, as Europe does, it will rate polluters by four benchmarks, including size, fuel type and carbon intensity, to

determine caps on emissions. Gas-powered plants, for example, will get a larger allowance than dirtier coal-burners. Companies need pay for only 20% of the emissions that exceed their cap. Maximum fines for breaches are a paltry 30,000 yuan (\$4,644), according to Fitch, a rating agency.

Benchmarks based on the type of fuel burned will influence efficiency within existing technologies, but it will not encourage a shift to greener ones. Such a system, says Mervyn Tang of Fitch, accommodates the energy needs of China's high rate of economic growth. But policymakers have yet to say when they will move to an absolute emissions cap—a step considered necessary to clear China's smoggiest cities. Nor have they indicated when the ETS will bring in the entire power sector and other polluting industries. Construction and transport may never be included.

Second, the programme faces legal ambiguity. The ETS has been set up by the ministry of ecology. But the framework for enforcing a carbon-trading market is untested. Many of the worst polluters will look for loopholes. To gain acceptance from companies and local enforcers, and to set out guidelines for participation from third-party investors, the State Council (the country's cabinet) itself must issue rules, says Chen Zhibin of Sinocarbon, a think-tank.

The council has already consulted the country's powerful manufacturing and energy lobby, but there is no word on when a final set of rules will be produced. Until then, full backing for the carbon market will remain elusive.

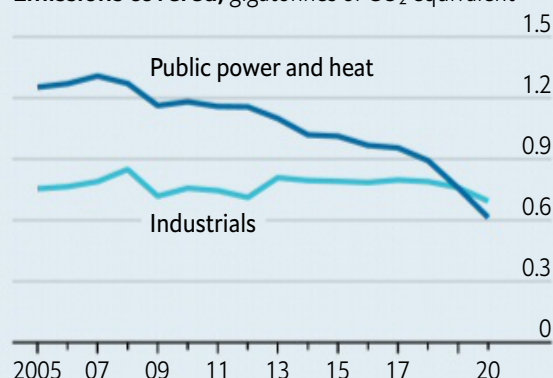
Carb loading

EU emissions-trading system

Carbon price, € per tonne of CO₂ equivalent



Emissions covered, gigatonnes of CO₂ equivalent



Sources: Bloomberg; Refinitiv

Brazil's economy

Petrol problems

SÃO PAULO

Why the sacking of the head of Petrobras spooked markets

THE PRESIDENT of Brazil, Jair Bolsonaro, likes to call his University of Chicago-educated economy minister, Paulo Guedes, his “*Posto Ipiranga*”, a chain of full-service petrol stations. The nickname charmed markets during the election campaign in 2018, but Mr Guedes’s reform agenda has lost ground to populist moves aimed at winning re-election. When on February 19th Mr Bolsonaro fired Roberto Castello Branco, the boss of Petrobras, to appease lorry drivers upset about rising fuel prices, markets saw it as a sign of more meddling to come. The state-run oil firm’s share price dropped by 21%, wiping 100bn reais (\$18bn) off its market value. Brazil’s benchmark stock index fell by 5% and the real lost 2.4% against the dollar (all have since recovered some of the losses).

What is unusual is not that Mr Bolsonaro intervened, but how he did so. With the oil price rising, the real falling and an election approaching in 2022, “no government could resist the populist temptation”, says a former executive of Petrobras, which has had 16 bosses in 30 years. But Mr Bolsonaro fired Mr Castello Branco, a friend of Mr Guedes, on Facebook, without consulting Petrobras’s board. To fans gathered outside the presidential palace, he mocked Mr Castello Branco for working from home during the pandemic and echoed a nationalist slogan: “Is petroleum ours, or does it belong to a small group of investors?”

Mr Bolsonaro has paid lip-service to the need for reforms to stabilise public debt, which is nearing 100% of GDP, but the former army captain and back-bench congressman never fully embraced a liberal agenda. Tax and public-sector reforms have stalled. Now, with inflation rising and the pandemic still crimping growth and employment, “the pendulum has swung in a more interventionist direction”, says Mário Mesquita of Itaú, a bank. The army general tapped to run Petrobras may stop short of price controls, in part because of new rules that protect minority shareholders, introduced after a corruption scandal and excessive intervention under Dilma Rousseff, a former president. But the firm’s plans to sell off unprofitable assets will suffer from greater uncertainty.

So will the Brazilian economy as a whole. Markets are getting less tolerant of Mr Bolsonaro’s heavy-handedness, says Ana Carla Abrão of Oliver Wyman, a consultancy. On February 25th Congress will

start voting on a constitutional amendment that would allow it both to bypass a spending ceiling (in order to finance a new round of emergency payments for poor workers) and to enact measures to curb the growth of spending (such as by freezing public-sector salaries). Both are necessary, but politicians may approve the spending without the savings, delaying reforms to an elusive future date. That would increase the chances, already high, that the central bank raises interest rates next month for the first time since 2015.

Mr Guedes’s silence amid the turmoil suggests that he is holding on to hope that Congress, which recently elected allies of Mr Bolsonaro as heads of its two chambers, will pass the fiscal measures and slimmed-down versions of tax and public-sector reforms. He may reckon that ambitious reforms can follow Mr Bolsonaro’s re-election. That thinking seems wishful. Still, says Chris Garman of Eurasia Group, another consultancy, just as Mr Bolsonaro underestimated the cost of firing Mr Castello Branco, those who think Mr Guedes will be next underestimate the strength of their relationship. “Our *Posto Ipiranga* is irreplaceable,” Mr Bolsonaro said in November. The problem is that the lights are out, service has been suspended and Brazil’s economy is sputtering. ■

Cryptocurrencies

UnTethered

A stablecoin is branded anything but, adding to jitters in crypto-markets

A HEALTHY CORRECTION, or the first signs of a crypto-crash? On February 21st bitcoin hit a new high of more than \$58,000, double its price at the start of the year, after several big firms and investors, led by Tesla, signalled that they were starting to take the cryptocurrency seriously. Within two days, though, the price had tumbled by over a fifth (before recovering slightly), jangling the nerves of HODLERS, as bitcoin diehards are known. A trigger for the fall was Elon Musk, Tesla’s boss and bitcoin’s cheerleader-in-chief, musing that its price “seems high”. The news that Tether, an integral component of crypto-markets, had fallen foul of American regulators hardly helped calm the faithful.

Tether is a so-called stablecoin. Its issuer, a company of the same name, has long claimed that Tethers—of which more than 34bn are in circulation—are backed one-to-one by dollars. One purported advantage of such pegging is lower volatility; bitcoin’s price, by contrast, is notoriously



erratic. Another is that stablecoins make it easier to move between cryptocurrencies and the ordinary sort.

Doubts have long swirled around Tether’s claim to be a sort of digital dollar. Critics say the one-to-one-backing claim looks flaky. They also suspect that Tether has been used—not least on Bitfinex, a cryptocurrency exchange owned by some of the same people—to manipulate bitcoin; one academic study found that purchases with Tether were “timed following market downturns and result in sizeable increases in bitcoin prices”. A related concern is the degree of control that Tether’s owners have over supply. Whereas only a fixed number of bitcoin are available to be “mined”, Tethers can be issued at will, giving those behind the stablecoin central-bank-like printing powers.

The growing queasiness spurred investigators on. New York’s attorney-general, Letitia James, has spent two years unpicking Tether’s opaque operations and its relationship with Bitfinex. On February 23rd she branded the firms “fraudulent”, fined them \$18.5m and ordered them to end trading activity with New Yorkers. Bitfinex and Tether said they “admit no wrongdoing”.

Ms James’s charge-sheet is damning. Tether, she says, lied about its dollar backing. Its “self-proclaimed verification”—after an external audit had been abandoned—was allegedly a sham: the cash ostensibly backing the Tethers had been put there that morning, the probe concluded, and some of it was moved elsewhere soon after. Moreover, Bitfinex was not upfront about hundreds of millions of dollars that went missing through a third-party payments processor reportedly based in Panama. The attorney-general says Bitfinex falsely claimed it knew where all the money was when questioned about it. As part of ▶▶

▶ the settlement, Bitfinex and Tether have agreed to submit to mandatory reporting.

This will ensure a light is shone on a dark but surprisingly large part of the cryptocurrency world. Though Tether is nowhere near as much of a household name as bitcoin, its influence has grown enormously. A recent analysis found that the majority of bitcoin purchases on several crypto-exchanges, including Binance, Bit-z and HitBTC, are made using Tether. (By contrast, on Coinbase, a smaller but more transparent exchange that is soon to list on the stockmarket, they are mostly

paid for with dollars, euros and sterling.)

According to the analysis, more than two-thirds of all bitcoin bought on all crypto-exchanges in one 24-hour period studied were purchased with Tether. In other words, Tether makes up far more than just a corner of the market. Indeed, its rampant minting—hundreds of millions were reportedly once pumped out in a single day—has led to jokes: in one popular meme, an armoured truck sporting the Tether logo hurtles by, money billowing out of its open rear door.

That is why the outcome of the New

York investigation—along with reports of other probes, growing talk of a regulatory crackdown on opaque trading, and the market's latest wobbles—is likely to make many punters in the \$1.4trn cryptocurrency market nervous. Strategists at JPMorgan Chase, a bank, summed up the risk in a recent note: “Were any issues to arise that could affect the willingness or ability of both domestic and foreign investors to use Tether, the most likely result would be a severe liquidity shock to the broader cryptocurrency market.” An unTethered market is a scary prospect for many. ■

Buttonwood Jumping the skew

A feted fund manager and the search for the big business winners of the future

CATHIE WOOD, founder of Ark Investment Management, provokes a variety of responses. The main one is envy. Her firm has been wildly successful. Ark manages a suite of exchange-traded funds (ETFs), portfolios of equities around the theme of “disruption”. Last year its flagship Ark Innovation ETF posted returns of 152%. It is now the largest actively managed equity ETF in the world. Ms Wood is the investment manager of the moment.

Fund flows follow performance. Ark's funds under management have ballooned to \$60bn. Much of the commentary around Ms Wood's firm is around the difficulty of putting so much capital to work in Ark's narrow categories, while sustaining bumper returns. When you charge 75 cents for every \$100 you manage, though, this is a nice problem to have. That Ms Wood has to wrestle with it is a mark of a singular success. She has found a way of selling an important concept—the extreme skewness of stock-market returns—to a mass market.

For those who slept through statistics class—which is most people—skewness is the lack of symmetry in a probability distribution. The apportionment of business success has an extreme right-tail skew—there are a few big winners and many losers. Skewness is present in the stockmarket, too. Much of the recent advance in America's market is built on quite a small group of technology stocks. This pattern, in which a few shares dominate returns, is evident in data going back almost a century. Research by Hendrik Bessembinder of Arizona State University finds that over half of the excess returns of equities over cash since 1926 came from fewer than 100 stocks. The bulk of the 26,000-plus stocks listed since then turned out to be duds.

Ms Wood does not talk much about “skewness”. But the idea is implicit in her pitch. The companies she likes are those with the potential for “explosive” or “exponential” growth. A lot of Ark's research contains optimistic ballpark estimates of “the opportunity” in, say, digital wallets or driverless taxis. Ark's signature investment is in Tesla, the electric-vehicle maker, which spans nearly all of Ark's five investment sub-themes. Her advocacy of Tesla, and of bitcoin, has endeared her to the WallStreetBets generation of investors. Social media in general has proved an invaluable marketing tool for Ark.

Rivals carp that Ms Wood is selling not skewness but momentum. She certainly puts a lot more emphasis on “the story” than on valuation. There seems to be no stock price that a would-be disrupter could not grow into in time. Any sell-off in tech, such as this week's swoon, is not a warning but an invitation to buy the dip. Disruption, reinvention and exponential growth are Ark's shibboleths. The message may not be to all tastes. But you may at the very least applaud the skilful marketing.



“The rest of us are stupidly fighting the tape, trying to build balanced portfolios,” says an admiring fund manager. Ms Wood is instead giving people what they want: a sex-and-violence portfolio undiluted by anything dull or tame.

Alert readers may by now sense that a biggish “but” is on the way. Skewness is a fact of life in tech businesses, where the best firms enjoy increasing returns to scale. But identifying the winners of the future is not easy. They may not even exist yet, much less be listed. And outside of a few strategies, such as index investing, asset management is subject to diminishing returns to scale.

Every successful asset manager finds there is a fund size beyond which the magic stops working or begins to do damage. Shovelling \$60bn into a strategy in which smallish, illiquid stocks are prime targets is going to distort the market. Already Ark holds a stake of 10% or so in two dozen biotech names. If a lot of money flows out from Ark's ETFs, then the prices of some illiquid holdings could fall hard. The latent boom-bust dynamic is made worse by Ms Wood's high profile, which only encourages copycat investors. These add to price momentum on the way up, but would also worsen a sell-off.

Should Ms Wood's funds fall from grace, as envious rivals predict, she is unlikely to fall hard herself. She is now associated with an investment thesis that chimes with a big feature of economic reality, the superstar firm, even if it is speculative and prone to bubbles. The Ark effect is both brand new and as old as the hills. Many star fund managers of the past found it hard to sustain performance once they grew bigger. The good news for Cathie Wood is that none of them ended up in the poorhouse.

America's labour market

Not having it all

WASHINGTON, DC

The pandemic has pushed mums out of the workforce

LAST SPRING, when covid-19 first began to spread in America, employment sank like a stone. The number of 25- to 54-year-olds in work shrank by 13% between January and April 2020. By January this year it was still 5% lower than a year ago, with larger falls among low-income and black households. The effect on women has been disproportionate, too. Millions have left the labour force altogether. And American women have fared worse than those in other rich countries. The drop in their participation rate, relative to the male rate, is one of the biggest among the members of the OECD, a club of mostly rich countries.

In January last year there were more 25- to 54-year-old (or “prime-age”) men than women in employment in America. Had job losses been spread evenly across those groups, around 300,000 more men than women would have lost work over the year. In fact, the number of women in employment fell by around 220,000 more than the number of men did. That is in contrast to the pattern in previous recessions.

There are two potential reasons why working women have fared especially badly during the pandemic. The first is because they are concentrated in the services industries most affected by pandemic-related restrictions. The second is because they are more likely to have to care for children. According to a survey of mothers who used formal child-care arrangements in January 2020 conducted by the Bipartisan Policy Centre, a think-tank, 42% of child-care centres used by respondents were closed in December 2020, 21% were open but were restricting hours and 23%

were limiting places.

A forthcoming study by Simeon Djankov, Penny Goldberg and Eva Zhang of the Peterson Institute for International Economics, another think-tank, and Marie Hyland of the World Bank examines 44 economies and finds that there is a correlation across countries between employment patterns and the gender gap in participation during the pandemic. Covid-19 seems to have had its most unequal effect in places where more women work in the services sector, and where part-time workers have fewer legal protections.

In America, though, it appears that the impact of gendered jobs has been surprisingly small. Analysis by *The Economist* of the Current Population Survey suggests that women's distribution across different industries may explain only a small part of the gender difference in job losses, about 50,000 jobs, compared with a scenario where men and women were divided up evenly across industries. Although women are (slightly) overrepresented in leisure and hospitality, where employment fell by 24%, their presence in the health sector, which went relatively unscathed, has offered some protection. So too has the fact that relatively few of them work in manufacturing, which has been hit harder.

More obvious are the burdens of child care, which have detached women from the workforce altogether. The share of women participating in the labour force (ie, either in work or looking for a job) fell by 2.2 percentage points in the year to January 2021, or 0.6 percentage points more than for men. But it fell by more than four percentage points among prime-age mothers whose youngest child was aged between two and six, about three percentage points more than fathers of similarly aged children (see chart). Analysis by Ernie Tedeschi of Evercore ISI, a consultancy, found that school closures in September were associated with 1.6m fewer mothers participating in the labour market.

Delve deeper into the figures, and it be-

comes clear that gender inequality is interacting with America's racial inequality. By January the gender gap in the employment rate of prime-age white people had closed, whereas it was a yawning two percentage points for black men and women. One survey by Catalyst, a charity that promotes gender equality in the workplace, found that even if in-person classroom instruction resumed, only 25% of black and 42% of Latino mothers would send their children to school, compared with 59% of white mothers. That could be because the schools are more likely to be in covid-19 hotspots, or because they are worried about receiving proper care if they fall ill.

As the economy recovers, many women will return to work. Figures from the Household Pulse Survey suggest that in January 9% of women aged between 25 and 54 were not working because covid-19 led their employer to shut up shop; almost 3% said they weren't working because they had covid-19 symptoms themselves. Once vaccines and jobs become more plentiful, they should be able to return. But the danger is that the women who have left the workforce, and have been out of it for some time, find it harder to return—further entrenching existing inequalities. ■

Carbon abatement

Giving up carbs

What are cheap ways to cut carbon? Bill Gates is the latest to ask the question

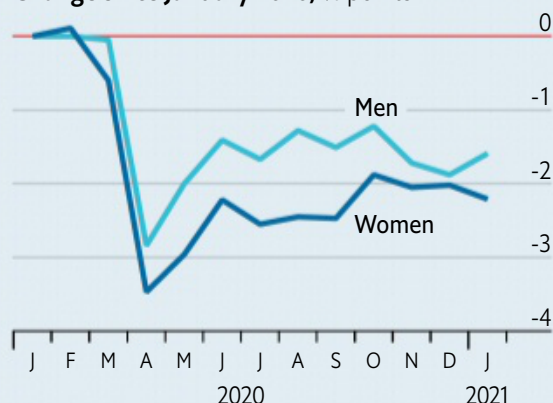
IN THE TRENDIER parts of Berlin, cargo bikes are the rage. Locals use the bicycles, which have a wheelbarrow-sized box at the front, to do the weekly shop or ferry children around. Because they cut carbon-dioxide emissions, local authorities are subsidising the craze. But the well-intentioned schemes look pricey when you consider how much carbon is abated. One such scheme costs the city €370,000 (\$450,000), but is expected to reduce emissions by only seven tonnes a year. That works out at over €50,000 per tonne abated. The equivalent figure for schemes that support the sale of low-carbon heating systems, by contrast, is €200 per tonne.

More than 100 countries and 400 cities (including Berlin) have promised to get to net-zero emissions by 2050 or before. Investors and regulators are encouraging companies to do the same. To meet these goals policymakers and bosses will have to pick from a menu of policies, from building wind farms to subsidising low-carbon jet fuel. That raises an important question: what is the cheapest way to cut carbon? ▶▶

Duties of care

United States, labour-force participation rate, 25- to 54-year-olds*

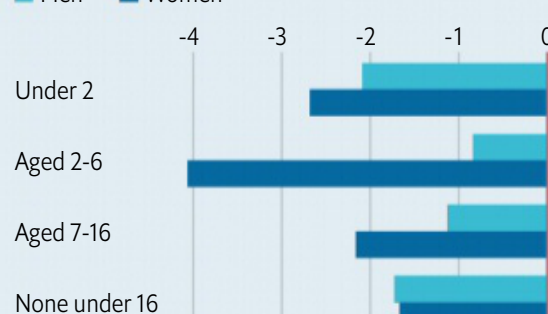
Change since January 2020, % points

Sources: IPUMS, Current Population Survey; *The Economist*

Decrease between Jan 2020 and Jan 2021

% points, by age of youngest child in household

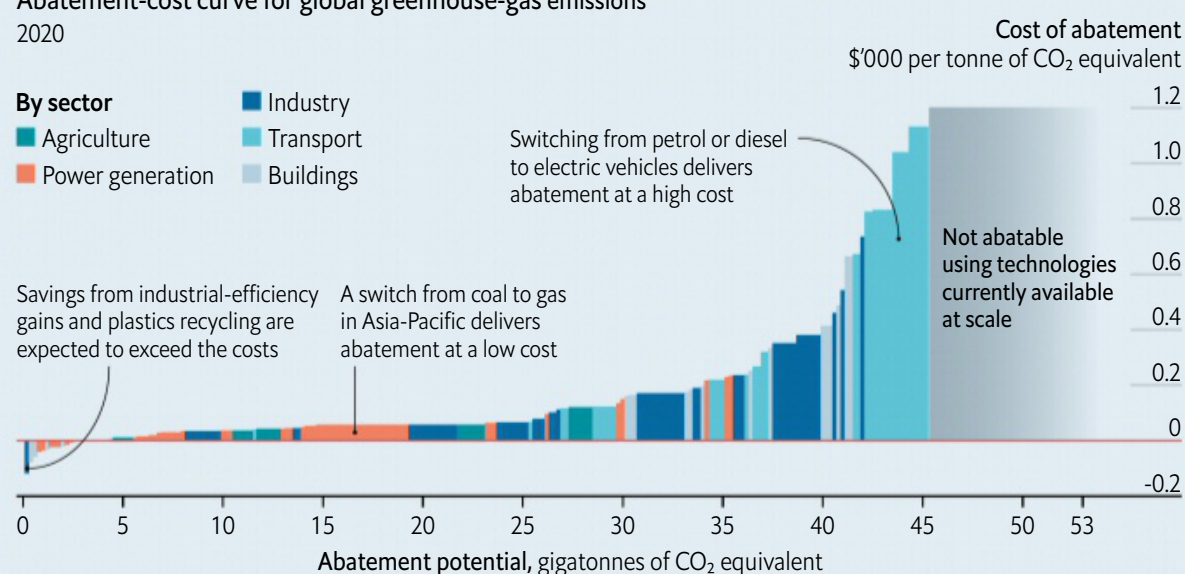
Men Women



*Excludes armed services

The great abatement debate

Abatement-cost curve for global greenhouse-gas emissions
2020



Source: Goldman Sachs

► One way to discern the answer is to impose a price on carbon, either as a tax or a cap-and-trade scheme. This would encourage firms and consumers to find the cheapest ways to abate. But setting a price is difficult politically. Only a fifth of the world's emissions are covered by an explicit price. Even in Europe, the world's biggest liquid carbon market, free credits still allow many industries to maintain emissions.

So other tools are needed, too. In his new book, "How to Avoid a Climate Disaster", Bill Gates suggests using a "green premium", or the gap between the price of clean activities and dirty ones, as a guide. Where the premium is low, zero-carbon alternatives exist, and consumers have no reason not to use them. Where the premium is high, more innovation is needed.

A similar approach, popular in climate circles for the past decade or so, is to consider the marginal costs of abatement. Like green premiums, these compute the costs of a climate intervention (including operating costs and upfront spending). But it compares them with the emissions that the policy is expected to abate. Plotting the costs and emissions abated on a curve shows the policies that provide the most bang for the buck (see chart 1).

Such curves have been computed by a number of forecasters over the years, including McKinsey and the Boston Consulting Group, two consultancies; Goldman Sachs, a bank; and Britain's Climate Change Commission, which advises Parliament. As a rule, most show that the biggest bang comes from making buildings more energy-efficient, say by installing insulation or smart cooling and heating systems. Often these have negative costs: analysts think they will eventually save consumers money through cheaper bills.

The next-best bang for the buck tends to be replacing power plants that burn natural gas or coal with renewable-powered ones. There is less agreement about what

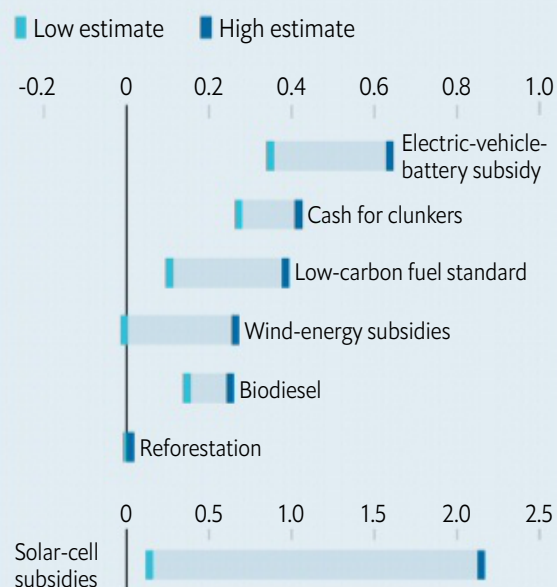
the next-best option is after that. But the most expensive areas of the economy to decarbonise tend to be transport (planes and ships), heavy industry (steel and cement) and agriculture (cows belching methane). In these cases clean, cheap, scalable alternatives do not yet exist.

Just as abatement-cost curves provide a rough guide for policymakers, they also show how difficult the maths is. Estimates of costs vary widely, for instance (see chart 2). A paper by Kenneth Gillingham of Yale University and James Stock of Harvard University compares the marginal costs of policies across 50-odd studies. The cost of wind-energy subsidies can range from more than \$260 per tonne of carbon dioxide avoided, to next to nothing.

This is partly because a technology's abatement potential can vary from place to place. Some countries, such as Britain, are blessed with high winds and shallow seas

Range-roving

Cost of reducing greenhouse-gas emissions*
Worldwide, 2017 \$'000 per tonne of CO₂ equivalent



*Range of estimates taken from over 50 studies
Source: "The cost of reducing greenhouse gas emissions", by K. Gillingham and J.H. Stock, 2018

that are ideal for offshore wind farms. In other places, wind energy will provide scant abatement.

Working out costs is tricky, too. The International Energy Agency (IEA), for instance, has routinely underestimated the pace of deployment of renewables. And because economies of scale drive down prices, that means it has overestimated the costs of switching, too. In 2010 the lowest the IEA expected solar prices to drop to over the next decade was about \$195 per megawatt hour. Today the price in America and Europe is \$30-60.

Nor do abatement-cost curves show how technologies interact. Hydrogen is rarely produced without emissions. But if it were, the Hydrogen Council reckons, it could be used in 35 different green applications, from storing energy to heating buildings. Ignoring this could lead to underinvestment in hydrogen power today.

Interactions also affect how much interventions reduce emissions. Consider two things needed to decarbonise the economy: converting the grid to low-carbon power, and electrifying transport. The order in which you do these matters. According to a model developed by the Massachusetts Institute of Technology and others, if transport were electrified, there would be less demand for oil to fill tanks with petrol. Yet, as the demand for dirty power for electricity would surge, overall emissions would drop by only 2% by 2050 (compared with a business-as-usual baseline). If the grid were cleaned up first, though, then emissions would fall by about 30%.

Faced with all these difficulties, forecasters are taking a more sophisticated approach, rather than simply working their way along the marginal-cost curve. Goldman Sachs is incorporating different scenarios and a wider range of costs into its analysis. Others are turning to "energy-systems" modelling, which estimates models over and over again with different assumptions. That lets technologies interact, and means that forecasts rely less on one set of assumptions for, say, prices.

This type of analysis lets you sort climate actions into three categories, says Jesse Jenkins of Princeton University, all of which require funding. The first are what he calls "robust" interventions, such as improving energy efficiency, which are valuable across lots of scenarios. Next come "shaping" interventions, such as investing in hydrogen and batteries, which improve the likelihood of arriving at a low-carbon future. Then come "hedging" strategies: long-shot options to develop, just in case, such as direct-air-capture, which sucks carbon dioxide from the atmosphere. The result is a more complex framework better suited to deal with the complex, ever more urgent task of decarbonisation. ■

Free exchange | Regression to the memes

Financial markets are social things, now more than ever



THE S&P 500 may be setting new highs, but to really take the measure of market exuberance look no further than Nyan Cat. The animated meme, encoded cryptographically into what is known as a “non-fungible token” (and which is unique and distinct from unencrypted versions of the animation that can be found with a quick internet search), was recently sold at auction for nearly \$600,000. Other odd collectibles are booming too. Some sports cards of relatively recent vintage now fetch millions of dollars; the prices of rare Pokémon cards have leapt. New trading platforms backed by celebrity investments are getting in on the action. The expanding mania may look like worrying evidence of a rise in the appetite for risk, and perhaps it is. Yet it also illustrates the increasingly social nature of investing—and poses new questions for financial economics.

Markets are not fine-tuned instruments of capital allocation. Rational traders are not always willing or able to bet against nonsensical market moves. Behavioural economists have identified a wide variety of cognitive biases that can lead investors to trade in irrational ways. People overestimate their abilities, are reluctant to realise losses even when prudence dictates that they should, and overreact to small movements in prices, to take just a few examples. Yet these sorts of biases do not seem fully to explain the strangeness of pricey digital videos of cats or an unprompted rollercoaster ride for the stock of an old-economy retailer like GameStop. As David Hirshleifer of the University of California, Irvine, noted in 2014, it may be time to move beyond behavioural finance to “social finance”.

What might that mean? A social finance could simply be one in which the social transmission of information has an important effect on markets’ toings and froings. In a paper written with Bing Han of the University of Toronto and Johan Walden of the University of California, Berkeley, Mr Hirshleifer suggests, for example, that shifts in norms regarding the open discussion of trading successes could affect which sorts of strategies spread and how. That, in turn, might influence the appetite for risk across the market as a whole. (Financial professionals would not be surprised to learn that social transmission of information is important; the need to be close to the buzz of informal market chatter is one reason why

financial-sector activity tends to be concentrated in hubs like London and New York.)

Yet social connections could serve as more than just conduits for shop talk. Indeed, one person’s decision to make a particular investment could cause those around him to become more likely to follow suit. Investors following others’ lead could do so because they have learned something from their peers about a particular asset. You might take the plunge into cryptocurrency, for example, after discovering that it exists and hearing about its mechanics from a friend. Peer effects may also reflect a desire to “keep up with the Joneses”: either to demonstrate that you are as financially savvy as other people in your social circle or to avoid the embarrassment of missing out on financial gains that your peers have been clever enough to grab. Research by Patrick Bayer and James Roberts of Duke University and Kyle Mangum of the Philadelphia Federal Reserve turns up evidence of this sort of “investment contagion” during America’s housing boom. Analysing data from the Los Angeles metropolitan area, the authors find that residents became 8% more likely to take up property investment within the year for every neighbour living within a tenth of a mile who invested in housing.

But someone might also wish to invest in the same thing as others because of the opportunity for “joint consumption”, say Leonardo Bursztyn of the University of Chicago, Florian Ederer of Yale University, Bruno Ferman of the São Paulo School of Economics and Noam Yuchtman of the London School of Economics. That is, a person may derive enjoyment from an investment because it creates opportunities to talk about the investment with others and revel in the shared experience. That certainly helps explain why hobbyists of various sorts—like baseball-card collectors and Pokémon enthusiasts—might become involved in speculation. Swapping cards or gabbing about price movements is simply another way to bond with others over a shared pursuit. The rise of bitcoin and other cryptocurrencies has likewise been enabled by tight-knit communities whose members share interests and see participation in the crypto world as a part of their identity.

Better together

As the GameStop episode showed, trading as a fun group activity has spilled over into the staid world of company stocks, helped along by growth in retail-trading platforms and social networks. The video-game retailer’s shares jumped from around \$40 to \$400 in a fortnight, on virtually no news—powered, in part, by the activity of online communities like the WallStreetBets forum on Reddit, a social-media site. For many of the people sharing information about their bets and cheering each other on, financial gains or losses seemed secondary to the sheer joy of being part of the group. Investing became a consumption experience.

Not everyone may have felt it was worth the price of admission, though, particularly after GameStop shares sank back to Earth. An increasingly social finance raises thorny questions for policymakers. How easy should it be for novices to join in the financial-market equivalent of a flash mob? How should the financial power wielded by social-media influencers be regulated? Does the rise of investment as a mass social activity, pursued for kicks as much as for financial gain, threaten markets’ ability to direct money to productive ends? Yet it is also worth remembering that traders and markets have always been social beasts. A small fortune spent on an encrypted video of a cat may be less a sign of worrying change than a window onto how finance has always worked. ■



Covid and genetics

A mixed blessing

DNA inherited from Neanderthals can make people vulnerable to covid-19—or resistant to it

AS BEST AS scientists can tell, Neanderthals died out around 40,000 years ago. But they did not vanish from the Earth entirely. In the past decade it has become clear that Neanderthals mated with the ancestors of modern humans, and that at least some of those unions produced viable offspring. The upshot is that almost half of the Neanderthal genome still survives, scattered in small quantities among almost all modern people's DNA. (The exception is those with mostly African ancestors, for Neanderthals seem never to have lived in Africa.)

Such genes have been associated with everything from hairiness to fat metabolism. Many seem to be related to the immune system, and to affect the risk of developing diseases including lupus, Crohn's and diabetes. A pair of recent papers suggest covid-19 belongs on that list as well. Two long sections of DNA, both inherited from Neanderthals, appear to confer resistance or susceptibility to severe covid-19, depending on which is present.

The work was led by Hugo Zeberg and Svante Paabo at the Max Planck Institute

for Evolutionary Anthropology in Leipzig, whose researchers pioneered the study of Neanderthal DNA. Their first paper, published in *Nature* in September, described one Neanderthal DNA string, known as a "haplotype", that is associated with a higher risk of serious illness. Having one copy of the haplotype, which is found on the third of the 46 chromosomes possessed by humans, doubles the chances of a trip to intensive care. Those unlucky enough to possess two copies—one from each parent—face an even higher risk.

That genetic bad luck is not evenly distributed. The gene-sequence is most common among people of South Asian de-

scent, with 63% of the population of Bangladesh carrying at least one copy; and among Europeans, where the prevalence is around 16%. As expected, it is virtually absent from Africa. More strikingly, it is also very rare in large swathes of eastern Asia.

Exactly what the haplotype does is not clear. One gene within it encodes a protein that interacts with the cellular receptors that SARS-COV-2 (the virus which causes covid-19) uses to enter cells and hijack them. The haplotype is also thought to be involved in the production of signalling proteins, called cytokines, that help to regulate the immune system. An overly aggressive immune response is one mechanism by which covid-19 kills.

On the other hand, some of those cytokines protect against cholera. The researchers speculate that may be why the haplotype is common in Bangladesh and India, where cholera has long been a problem. And there is evidence that, even as evolution has been boosting the haplotype in some populations, it has been working to remove it from others. "The frequency differences between South Asia and East Asia are so dramatic that we cannot help but suspect that past selection is responsible," says Dr Paabo.

The second study, published this week in *Proceedings of the National Academy of Sciences*, concerns another Neanderthal haplotype, found on chromosome 12. Its effect is protective, though it is also less potent: having a single copy is associated with a 22% lower chance of critical illness. ▶▶

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► This helpful sequence is more well-travelled than the harmful one. It is present in every part of the world except sub-Saharan Africa. Between 25% and 35% of the population of Eurasia carry at least one copy. In Vietnam and eastern China more than half the population are carriers. It also exists, at much lower rates, among American populations of mainly African descent, many of whom will have some more recent Eurasian ancestry as well.

Scientists also have a better idea of what it does, for it was known to researchers even before the news of its Neanderthal origin. The haplotype hampers the spread of RNA viruses, of which SARS-CoV-2 is one, by driving cells infected with them to self-destruct quickly. It is known to provide at least some protection against West Nile virus, hepatitis C and, intriguingly, SARS-CoV-1, which caused the SARS outbreak that began in 2002.

Once again, the hand of natural selection is visible. The genes in the chromosome-12 haplotype are found in other mammals, and have been lost several times in other species. That hints that carrying them comes at a significant cost, leading them to be removed if they are not being heavily used. That they are common in most human populations suggests RNA viruses have been a thorn in humanity's side for much of its evolutionary history.

The researchers hope that their work might help shed light on why some countries, and some populations within countries, appear to have been hit harder by covid-19 than others. They point out, for instance, that Britons of Bangladeshi heritage suffer severe covid-19 at roughly twice the rate of the general population. But disentangling the effects of DNA will be tricky. Age, obesity and sex, among other things, all influence the severity of covid-19. Comparisons between countries are complicated by definitional differences and the difficulty of performing accurate counts, especially in poor countries. Despite the prevalence of the harmful haplotype, the official covid-19 death rate in Bangladesh is just 5.1 per 100,000, an order of magnitude lower than in countries where the haplotype is much rarer.

Still, a reminder that genetics matter alongside those other factors is still useful. If covid-19 becomes an endemic disease, as seems likely, cheap gene sequencing may, in future, help doctors assess which patients are likely to be vulnerable to its worst effects. Understanding the mechanisms by which genes confer resistance or susceptibility may help with the search for drugs. And history suggests that SARS-CoV-2 is unlikely to be the last novel coronavirus to make the jump to humans. If some populations are likely to be more vulnerable than others, that is worth knowing for next time. ■

Geoengineering

Floating a trial balloon

A controversial climate experiment could soon begin in Sweden

IF ALL GOES well, a balloon will soon rise from Esrange Space Center in Kiruna, Sweden. It will drift high into the upper atmosphere, where nothing will happen. The balloon will then return to Earth. Nevertheless, a collection of environmental groups—including the Swedish branches of Greenpeace and Friends of the Earth, and the Centre for International Environmental Law—is trying to stop it.

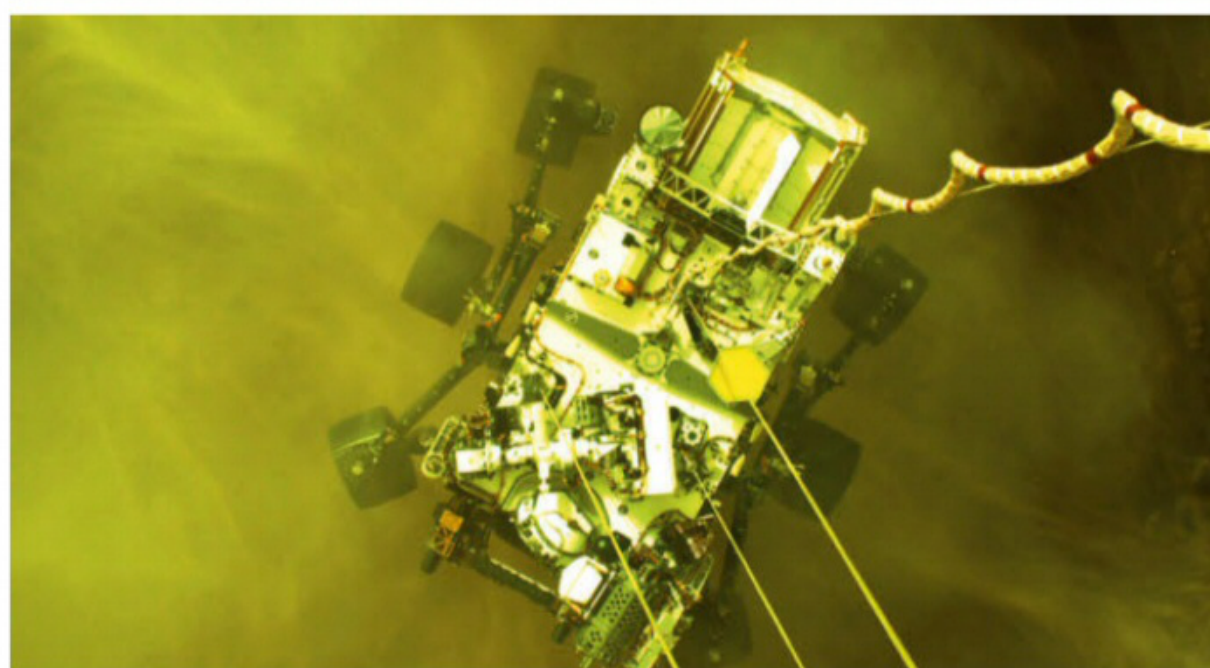
The campaigners are against the flight because of what comes next. The balloon is a test flight for something called the Stratospheric Controlled Perturbation Experiment, or SCoPEX, which is being run by the University of Harvard. The idea is that a future flight will release a small amount of calcium carbonate dust into the stratosphere, in order to help researchers learn more about solar geoengineering.

Geoengineering is the grand (and still mostly hypothetical) idea of deliberately fiddling with the Earth's systems to try to counter climate change. SCoPEX plans to test an idea called stratospheric aerosol injection (SAI), in which fine dust is injected into the upper atmosphere to boost the amount of sunlight reflected back into space. In the coming days, an advisory committee, also based at Harvard, will decide whether the initial flight can go ahead.

Opponents worry about two things. The first is known as moral hazard. If solar geoengineering works, it could reduce pressure to deal with climate change at its source by cutting greenhouse-gas emissions. The second concerns something called "termination shock". In order to keep temperatures low, the reflective particles would have to be topped up indefinitely. A sudden stop could result in very rapid warming. Raymond Pierrehumbert, a physicist at the University of Oxford, says solar geoengineering is too risky even to research outside of computer simulations.

Not all environmentalists are opposed. The world is likely to miss the target, set in the Paris agreement, of keeping warming to 1.5°C. "We're not well-served by not understanding what these technologies represent," says Steven Hamburg of the Environmental Defence Fund, an American organisation. Mr Hamburg favours small-scale geoengineering research. Other green organisations, including the Natural Resources Defence Council, have also tentatively endorsed exploring the idea.

Exploration is likely to carry on in any case. Once a taboo, geoengineering is being taken increasingly seriously. A recent report of the Intergovernmental Panel on Climate Change suggested that SAI could help keep warming below 1.5°C. The National Academy of Sciences, Engineering and Medicine in America has developed a research plan for solar geoengineering; that country's government flagged \$9m for research into the subject this year. Both China and India have launched research programmes of their own. Activists will continue to oppose experiments. But balloons will likely fly anyway. ■



A video-call from Mars

On February 18th "Perseverance", a one-tonne NASA rover, landed on Mars. The miracles of modern technology meant that, for the first time, footage of the event could be transmitted back to Earth. By February 22nd viewers could watch the spacecraft carrying the rover descend by parachute. As it approached the surface it began to hover using rockets, before lowering the rover safely to the ground with cables.

Electricity transmission

Look, no wires!

A New Zealand firm wants to try transmitting electricity through the air

BEHIND NIKOLA TESLA'S former laboratory at Wardencliff on Long Island, New York, are some old foundations. They are all that remains of a 57-metre tower which Tesla began building in 1901 as part of an experiment to transmit information and electricity wirelessly over long distances. It half worked. As he foretold, wireless communications have had world-changing effects. But he failed to get electric power itself to travel very far. As a consequence, within five years work stopped and the tower was later scrapped to help repay his debts. Tesla—a pioneer who, among other things, developed the generation and transmission of alternating current—faded into relative obscurity.

And so it remained until Tesla's name was revived by Elon Musk as the brand for his electric-car company. Now Tesla's vision of wireless power transmission looks like making a comeback, too. Emrod, a firm based in Auckland, has collaborated with Powerco, a New Zealand electricity distributor, to develop a prototype system for use in an enclosed test facility. Then, in a separate project, the plan is to beam energy from a solar farm on the North Island to a client several kilometres away.

The aim is to transmit the power as a narrow beam of microwaves. That will overcome the two fundamental flaws in Tesla's plan. One was how to charge people for electricity they can simply scoop from the air. The other was the need to overcome the law of radiative propagation, which states that the strength of a signal is inversely proportional to the square of the distance it has travelled from the transmitter. The upshot is that a signal's strength falls sharply even over short distances. Transmitting power in a tight beam, instead of radiating it in all directions, helps minimise the issue.

Power-beaming, as Emrod's process is known, has been tried before, but mainly for military applications, or for use in outer space. In 1975 NASA, America's space agency, used microwaves to send 34kw of electricity a distance of 1.6km—a record that still stands. It has never, though, been developed for commercial use.

Emrod's operation will begin cautiously. It will start by transmitting what Greg Kushnir, the firm's founder, describes as "a few kilowatts" over 1.8km. It will then gradually increase both power and distance. The crucial variable is the efficiency with



How they did it in the old days

which it can be done. According to Mr Kushnir, this is currently around 60%. That, he reckons, is already good enough to make power-beaming commercially viable in some circumstances, such as reaching remote areas without spending money on costly power lines. But, to improve matters, Emrod has two other tricks up its sleeve. One is to employ relays. The other is to spice up the receivers with so-called metamaterials.

The relays, which are passive devices that do not use any power, work like lenses, refocusing the microwave beam and sending it on its way with minimal transmission losses. They can also steer it, if necessary, in a new direction. This means that transmitter and receiver need not necessarily be in line of sight of one another.

Metamaterials are composites containing tiny amounts of conductive metals and insulating plastics arrayed in a manner that causes them to interact with electromagnetic radiation such as microwaves in particular ways. They are already employed in so-called cloaking devices that help warships and military aircraft hide from radar. But they can also be used in a receiving antenna, to convert electromagnetic waves into electricity more efficiently.

Broadcasting powerful microwaves through the air does carry risks. Similar waves are, after all, the means by which microwave ovens heat what is put into them. Emrod says brief exposure to its beams should not cause any harm to people or animals as the power density is relatively low. Nevertheless, to avoid accidents the beams will be surrounded by so-called laser curtains. These are low-power laser beams that are not themselves harmful. But if a curtain is twitched by the interposition of things such as birds or low-flying helicopters (which in New Zealand are used to round up sheep), that interruption

will be detected instantly and the microwave transmission temporarily cut. Batteries at the receiving end will fill in during any outages.

If power-beaming does take off, Emrod will not have the field to itself, for a number of other firms are working on the idea. TransferFi, based in Singapore, is developing a system that shapes beams of radio waves, which generally have a lower frequency than microwaves, to transmit power to specific receiving devices. This is a short-range idea, designed to power gadgets in factories and homes.

PowerLight Technologies, an American firm, has been working with that country's armed forces on using lasers to transmit power to remote bases and also to power drones while they are in the air. The company also has its eyes on commercial applications. So does Mitsubishi Heavy Industries, a Japanese engineering firm. Mitsubishi, in particular, has lofty ambitions. Besides industrial applications on Earth, it is exploring how the technology might be used to send power to the ground from geostationary satellites fitted with solar panels. That would involve transmitting it more than 35,000km. Less a case of "beam me up, Scotty" than "beam me down". ■

Clean energy

Toothpaste in your tank

Hydrogen goop could be more convenient than hydrogen gas

ON PAPER, HYDROGEN looks like a dream fuel. Coal, oil and natural gas generate planet-warming carbon dioxide when burned. Hydrogen produces pure water. Hydrogen crams more energy into less space than batteries do (though, admittedly, less than petrol or diesel do). And an empty tank can be refilled with hydrogen much faster than an empty battery can be refilled with electricity.

In practice, things are trickier. Storing meaningful quantities of hydrogen gas requires compressing it several hundred-fold. Liquefying it is another option, but one that requires cooling the stuff to -253°C. Either process requires rugged tanks. Over time, hydrogen gas can infiltrate metals, weakening them and potentially causing cracks. Tanks must be built from special materials designed to resist this breakdown.

There may be a better way. Researchers at the Fraunhofer Institute for Manufacturing Technology and Advanced Materials in Germany, led by Marcus Vogt, think that supplying hydrogen as goop rather than ▶▶

► gas offers a way around some of its limitations. They have been experimenting with a chemical compound that can be pumped into a cartridge and then persuaded to give up its hydrogen on demand.

Their invention, which they dub “Powerpaste”, bears a passing resemblance to toothpaste. Its main ingredient is magnesium hydride, a compound that, when introduced to water, reacts with it to form hydrogen and magnesium hydroxide (a substance more familiar as milk of magnesia, a stomach-settling antacid). The escaped hydrogen can then be diverted into a fuel cell, where it reacts with oxygen from the air to generate electric power. The magnesium hydroxide waste is emptied from the reactor automatically.

Dr Vogt’s scheme offers several advantages over batteries, petrol and more conventional ways of handling hydrogen. One is the storage of more energy per litre, and per kilogram, than either batteries or petrol can manage. A second is ease of refilling, which is simply a matter of swapping an empty cartridge of paste for a full one, and topping up the water, which is stored in a separate tank. A third advantage is that, unlike a battery, the paste does not gradually lose its stored energy if it is left on the shelf.

Moreover, the paste itself is non-toxic, as are the reaction’s by-products. But there are plenty of subtleties to work through. Left to its own devices, magnesium hydroxide reacts only slowly with water because the reaction forms a barrier on the material’s surface that inhibits further chemistry. To overcome this, Dr Vogt and his team have found a chemical additive that greatly accelerates the reaction. They have also found a way to ensure that the reaction can be controlled precisely enough to supply only as much hydrogen as is needed at any given moment.

The paste is unlikely to up-end the clean-car industry, where battery-powered vehicles have already established themselves as the dominant technology. But Dr Vogt nonetheless hopes that his invention may find niches. One early use could be in small vehicles such as scooters, or in flying drones where weight is at a premium. It is hard to scale down the sorts of heavy-duty tanks needed to store elemental hydrogen, he says. Powerpaste could thus enable longer ranges for scooters, and flight times for drones measured in hours rather than minutes. Miniature stoves aimed at campers are another idea.

A pilot plant in Brunswick, a city in Lower Saxony, will be able to produce four tonnes of the stuff per year when it is finished later this year. And heavier-duty uses are certainly possible, if that is what customers would like. Dr Vogt has already built a small demonstration unit for the German army. ■

Ocean ecology

Meet the new boss

CAPE TOWN

What happens when one apex predator elbows out another

IT USED TO be a common sight. These days it is rare. On January 18th members of Shark Spotters, a South African charity, recorded a juvenile great white shark as it breached close to Strandfontein, a seaside resort in False Bay, not far from Cape Town. It was the first such sighting in over a year.

Great whites used to be common off the Cape of Good Hope. Tourists would pile into boats to watch them, with the bravest descending into underwater steel cages to see the sharks up close. But in recent years the great whites have been driven out by two representatives of an equally fearsome species—the killer whale. It is a striking example of a truism that is often under-appreciated in discussions about conservation: ecosystems can be changeable things.

The revolution began in 2015 at Castle Rock, a nearby marine reserve. In November of that year, divers tipped off marine biologists about dead broadnose sevengill sharks scattered across the ocean floor. All had suffered the same cause of death, namely a vertical gash down the abdomen. “It was like the opening scene of a horror film,” says Leigh de Necker, a researcher who works at the Two Oceans Aquarium in Cape Town. “Only the sharks’ livers had been removed.”

That precision led the researchers to wonder whether local fisherman might be to blame. But following a dive of their own, some different suspects hove into view. Two male killer whales surfaced to investi-

gate the researchers’ vessel. Later post-mortems showed the sharks’ pectoral fins stamped with tooth marks. “The killer whales must have each grabbed one pectoral fin and pulled, until the sharks tore down the middle,” says Ms de Necker.

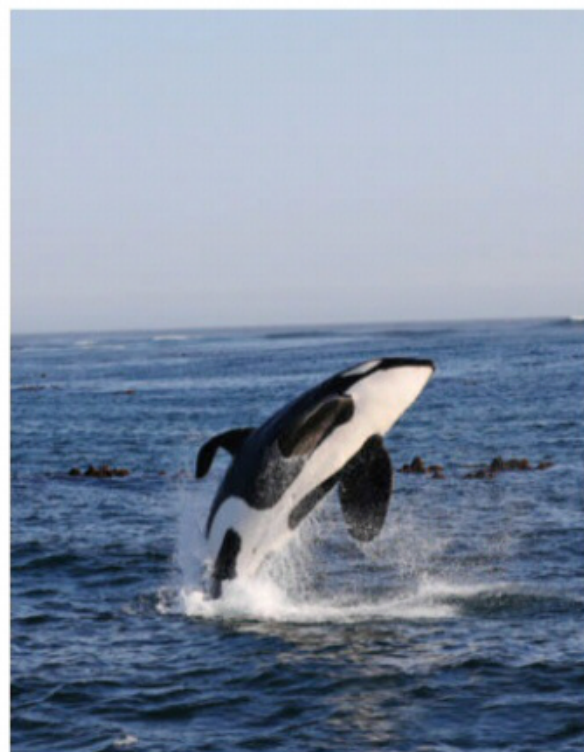
Killer whales are not unknown in the waters off the Cape. But they usually prey on other cetaceans, especially the dolphins that frequent the coast in the southern hemisphere’s summer. The new pair—named “Port” and “Starboard” for their dorsal fins, which flop distinctively to different sides—bore a greater resemblance to the killer whales seen off British Columbia, which are known to hunt both large schools of fish and sharks.

The killer whales soon moved on to bigger prey. On May 3rd 2017 a great white carcass washed up on a beach in nearby Gansbaai. Once again, it sported a gash in its abdomen under the right pectoral fin, through which its liver had been removed. The following day a second great white washed ashore. It was followed, two days later, by a third. Autopsies revealed similar injuries. By July 4th six great whites had washed up dead, at times that matched sightings of Port and Starboard nearby.

Sightings of great white sharks began dropping sharply. Between 2005 and 2015 Shark Spotters averaged 205 sightings a year off the beaches in False Bay. By 2018 that number had dropped to around 50. In 2020 not a single great white was seen. “There is only one variable that has substantially changed in that time,” says Sarah Waries, Shark Spotters’ boss. “That is the arrival of Port and Starboard.”

The changes at the top of the food web have rippled through the rest of the ecosystem. Among the great white’s favourite prey were Cape and Brown fur seals. In the great white’s absence other species, including sevengills and bronze whaler sharks, appear to be moving in to fill its niche. But seal populations are rising. That, in turn, is making life hard for African penguins, an endangered species which the seals like to eat. Since other marine species are much harder to monitor, other changes are likely going unnoticed.

Humans are part of the ecosystem, too. The killer whales may simply be opportunists that have found an ecological niche more comfortable than their previous one. But some marine biologists wonder if their arrival is a consequence of human activity—specifically heavy fishing farther offshore, which may have depleted the sorts of fish the killer whales are more accustomed to eating. Whether or not they are the cause, the humans—like the penguins—are feeling the consequences. Cape Town’s once-thriving shark-tourism industry used to host thrill-seekers, wildlife enthusiasts and documentary film-makers. Today it is struggling. ■



Not the same as the old boss



Covid, cinema and censorship

The siege of Bollywood

MUMBAI

Disrupted by covid-19, India's film industry also faces a plague of meddling

THEY SAY that Bollywood is where India's dreams are made. But at the moment it is not romantic reveries, fantasies of vengeance or snappy dance moves that preoccupy its film-makers. It is instead a dystopian nightmare, as two simultaneous epidemics threaten a century-old industry that produces more movies than its closest rivals, in China and America, put together.

One of these scourges is relatively new, and wreaking havoc in plain sight. For six months last year, covid-19 kept India's 10,000 cinemas completely closed. The screens have since begun to open, but mostly at half-capacity and—because spooked producers have postponed their hoped-for blockbusters—showing only second-run fare. As a result ICRA, a credit-rating agency, anticipates that box-office revenue during the year to April will tumble by a crushing 80-85%. By last September these direct losses were already reckoned at \$1.2bn; then there is the ripple effect along an entertainment-industry food chain that employs perhaps 300,000 people, as hundreds of productions were

delayed or cancelled.

The other scourge is older and more subtle, though it seems suddenly to have grown more virulent. This is the chronic disease of interference, as various outsiders seek to bend, shape and influence Bollywood to their liking. Such creeping pressures take many forms, from the blunt obstruction of state censorship, to financial squeezes, to legal challenges that can lead to labyrinths of litigation, to the threat of audience boycotts or even violence.

Orange is the new black

The blow from covid might seem to be the bigger peril. But although traditional feature production has indeed been hit, and

cinemas themselves bruised, in a sense the challenge has accelerated a transition that was already under way. As in Hollywood, the ebb of money from big screens to smaller ones, specifically towards on-demand streaming video, known in India as OTT (over-the-top), has turned to a flood as millions of households enlivened their lockdowns with new subscriptions. Revenue from OTT in 2019 was less than half the \$1.5bn earned from movie tickets, but by 2024 it could be twice as large, industry insiders believe. Small wonder that global firms such as Netflix, Amazon and Disney poured some \$520m into streaming production in India last year. For the first time, dozens of Indian feature films chose to launch on OTT rather than in cinemas, a trend that will stick now that big-name stars have eschewed their doubts about small-screen roles.

Yet while the shift to OTT has helped keep Mumbai's studios working, it has also invited scrutiny. Politicians long ago developed a habit of using Bollywood to score points. Such overweening concern has successfully tamed traditional cinema and television: producers are all too aware how many ways there are to wreck a production, or for them to go broke. Top actors have boosted careers by fawning over ministers, and been rewarded with sinecures as MPs, among other perks. Unregulated and largely foreign-financed, OTT has proved a refreshing exception. In a few years it gained a reputation for punchy re-

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►alism and politically daring allegory. “It was like the teacher is not in class, so go have some fun,” explains Tanul Thakur, a film critic.

This is where the meddling plague has come into play. Powerful people were not amused by portrayals of police, politicians and religious figures as corrupt, brutal and hypocritical in OTT series such as “Mirzapur” and “Sacred Games”. More alarmingly for many in the industry, which historically has adopted the broadly secular, liberal leanings of cosmopolitan Mumbai, official displeasure has been backed by noisy and highly organised public campaigns, an often compliant press and approving judges. Compared with past episodes of bullying, such as in the 1990s when local parties in Mumbai rallied emotions by attacking specific films, this time something wider is at stake. “The driver now is control of Bollywood, and it is indeed very vulnerable,” says Shakuntala Banaji of the London School of Economics.

Pressure has been mounting since the Hindu-nationalist Bharatiya Janata Party (BJP) took power in 2014, thinks Mr Thakur, accelerating after the landslide re-election in 2019 of Narendra Modi, the prime minister. The heat reached OTT platforms last year. Following complaints, among them that a kissing scene in “A Suitable Boy”, a British serialisation of an Indian novel, encouraged intimacy between people of different faiths, in November the government decreed that OTT production would fall under the supervision of the Ministry of Broadcasting and Information.

This January the screws tightened, particularly following the release of “Tandav”, an edgy thriller produced by Amazon Prime that contrasts the viciousness of politics with the idealism of student activism. NewsLaundry, an investigative news website, revealed the workings of a social-media campaign to attack the series, spearheaded by a BJP politician. As soon as “Tandav” aired he ordered 20,000 followers to demand that it be banned for “disrespecting” the police and Hindu religious feelings. Half a dozen lawsuits assailed the show (which received mediocre reviews). Its director and producer quickly apologised, agreeing to cut an ostensibly offensive scene in which a student in a play acted the role of a Hindu god. They appealed to India’s Supreme Court to protect them from prosecution, but in a perturbing ruling a bench of judges refused, holding that even actors should be held accountable for any offence their roles might cause. Not surprisingly, several scheduled OTT releases were soon postponed or cancelled.

Had this been an isolated case, there would be less worry in the industry. But the particular interest in “Tandav” reflected another trend. Two of its main actors happen to be Muslim, as many of India’s lead-

ing stars have been since the birth of Bollywood. Only in the past decade, however, has religious affiliation become much of an issue. Now legions of social-media trolls see “the three Khans”, a trio of top-billing he-men, as fair game for attack as alleged Pakistani sympathisers, or promoters of “love jihad”. For instance, a Twitter account called Gems of Bollywood smears the industry as a tool of Muslim propaganda; “Urduwood” is the term used, a reference to the language predominantly spoken by South Asian Muslims. It recently accused Salman Khan, one of the celebrity trio, of having “one mission”—to convince Hindus to be circumcised.

“They are going after a few big names to

teach them a lesson,” says Ms Banaji. “And also to install their own heroes instead.” According to Mr Thakur, anyone who stands up against the pressure is liable to be cold-shouldered by their peers. But it is not just critics who are worried for Bollywood’s future. In a blog post, Siddharth Roy Kapur, president of the Producers’ Guild of India, a lobbying group, urged India’s government to protect a vital industry by breaking its silence and denouncing witch-hunts. Producers should be overseeing films, “not running helter-skelter between police stations and courts across our vast country”. You cannot run a business, he added, which is subject to veto by every one of India’s 1.3bn people. ■

The online life

More of a rat

No One Is Talking About This. By Patricia Lockwood. *Riverhead Books*; 224 pages; \$25. *Bloomsbury Circus*; £14.99

WOULD THERE be a Patricia Lockwood without the internet? Once described as “the poet laureate of Twitter”, she belongs to a cadre of writers whose careers can be charted in viral online moments: a video of her reading a poem she wrote called “Rape Joke”; a daring essay on the novels of John Updike; even a feted tweet, sent to the *Paris Review*, a literary magazine, asking, “So is Paris any good or not?”

“No One Is Talking About This”, her first novel, is about how a collective internet addiction moulds and changes the way people think. The implication is that, although its American author might indeed exist without the web and the intellectual contortions it encourages, she would not be the “Patricia Lockwood” her admirers know today.

The unnamed narrator is a compulsive web user, and the novel is written in zippy gobbets that imitate the truncated thought-processes cultivated by Twitter. In front of her screen, she feels the world “pressing closer and closer, the spiderweb of human connection grown so thick it was almost a shimmering and solid silk”. After the election of Donald Trump, though, she senses something toxic and strangulating in the virtual community. She compares her fellow users to lab-rats hitting levers for food pellets: “When we hit the button, all we were getting was to be more of a rat.”

Ms Lockwood’s prose has a knack of grabbing the reader by the throat, and the book’s first hundred pages are a dazzling

set of digressions on her theme. It is only halfway through that, having received a call from her pregnant sister saying that something is seriously wrong with her unborn child, the narrator returns to her family and the ensuing horror.

In the second half of the novel, Ms Lockwood often feels like a writer at the mercy of her own talent. Her cult reputation rests on the dance of her sentences; but here, rather than developing the sense of intimacy that the story requires, the barrage of just-so descriptions and unexpected asides opens up a distance between her narrator and her readers. They will be divided as to whether the hairpin bends of the prose are worth the ride—and whether the author now needs to let “Patricia Lockwood” go.



The virtues of reality

Spies and lies

No regrets

The Happy Traitor. By Simon Kuper. *Profile Books*; 288 pages; £14.99. To be published in America by New Press in May as *"Spies, Lies and Exile"*

HAD HE NOT escaped from Wormwood Scrubs in 1966, the death last year of George Blake, a former double-agent, might have drawn little attention. But the jailbreak was a sensation, inspired a stage play and, in Britain, conferred on Blake an aura of almost Bond-like derring-do.

Simon Kuper tells this extraordinary tale with wit and vim in his entertaining account of the spy's life. Blake, who had worked for the British Secret Intelligence Service (SIS) since the second world war, was unmasked as a Soviet mole (probably by a Polish double-agent) and given 42 years in prison for treason in 1961. Behind bars, he recruited a couple of peace activists and an Irish adventurer called Sean Bourke, all nearing release, and hatched a plot. Bourke flung a rope ladder over the prison wall; Blake climbed it and jumped, injuring himself, and the pair dashed to a nearby flat. On hearing of the escape, fellow prisoners sang "For he's a jolly good fellow". Two months later Blake was on his way to East Germany, hidden in a camper van driven by one of the peaceniks.

A question that bubbles through this book is how far Blake was a traitor in the manner of the Cambridge spies Kim Philby, Guy Burgess and Donald Maclean. They were all upper-middle-class Englishmen who never went to prison. Blake, who was born in Rotterdam in 1922 and died in Moscow at the age of 98, was different.

His mother was Dutch; his father was from a Jewish family in Istanbul and became a British citizen after serving in the British Army during the first world war. When the next war broke out, "Poek" Behar, as George was then known, worked for the Dutch resistance before escaping via France and Spain to England in 1943, where he was talent-spotted by SIS. It seems never to have occurred to his bosses that, though a passionate anti-Nazi, Blake (as he had become) might not be a committed patriot.

The author was drawn to him partly because of shared characteristics—both Jewish, Dutch-speaking and British. Visiting Moscow in 2012 Mr Kuper bagged an interview with Blake, on the condition that it should not be published in English until after his death. Their three-hour meeting at Blake's dacha (a gift from the KGB) pro-



Out to the cold

vides some fresh insights in a narrative that otherwise relies on archives, the Stasi's in particular.

When and how Blake was turned is not entirely clear. Posted by SIS to Seoul in late 1948, he was captured by the invading North Koreans 19 months later. He had been leaning towards Soviet communism, but during his three-year detention his conversion was completed by reading "Das Kapital" and witnessing the suffering of Korean civilians under American bombing. By the time he was released, he was a signed-up Soviet agent with a KGB handler.

For nine years, Blake led the strange and stressful life of a double-agent, supplying the KGB with more information about Western intelligence operations than it could process. His greatest coup came during a stint in West Berlin in the mid-1950s, when he revealed plans for a secret CIA communications-tapping tunnel into the eastern sector before it was built.

It is hard to know how much damage he did to Western interests. Mr Kuper is rightly sceptical about the impact of spooks on either side of a struggle settled by much bigger forces. What is not in doubt is that Blake's betrayal of up to 600 SIS agents in eastern Europe, by his own account, led to numerous arrests and executions. He never showed any remorse, regarding the casualties as soldiers, like himself, who knew the rules of a dangerous game.

The book's title reflects Blake's contentment with the life he made in Moscow, where (as well as remarrying) he eventually repaired relations with the family he had left in London. Like many who encountered him, Mr Kuper clearly found Blake good company and in some ways sympathetic. Was he a fundamentally bad man? A rogue, certainly, but at heart he was an ideologue whose devotion to a flawed creed sent brave people to their deaths. ■

Commodity-traders

Black-gold rush

The World for Sale. By Javier Blas and Jack Farchy. *Oxford University Press*; 416 pages; \$29.95. *Random House Business*; £20

THE COMMODITY-TRADERS who feature in "The World for Sale" are not the kind who yell orders at each other in the ring of the London Metal Exchange. Javier Blas and Jack Farchy, journalists at Bloomberg News, are instead interested in the small band of mostly private companies that move bulk commodities from there to here. It is a fascinating and revealing story, largely because of where "there" is: usually a place where many people would prefer not to do business, run by characters they would prefer not to do it with. A handful of swashbucklers became billionaires by overcoming such qualms.

The opportunities to make these riches came in three big waves. During the 1960s and 1970s commodity-traders were pivotal in breaking the established Anglo-American oil cartel known as the "seven sisters" and establishing a new one in OPEC. Fortunes were made in the wake of the free-for-all that followed the collapse of the Soviet Union. And after 2001 these figures were instrumental in the integration of China into the global trading order, supplying vast quantities of raw materials from Africa and elsewhere. Along the way, as the authors describe, some traders helped apartheid-era South Africa sidestep economic sanctions, sold oil for Saddam Hussein's Iraq and funnelled dollars to Vladimir Putin's Russia. There are tales in the book of breathtaking trades, such as shipments of rebel oil from war-torn Libya or deals bartered amid the brutal "aluminium wars" in the Russia of the 1990s.

The wonder is that so few firms, owned by a tiny number of people, were able to grab such a hold on global commodity-trading with so little oversight. Vitol, a Dutch trading house, became the largest independent oil-distributor under Ian Taylor, its British boss, in part by being venturesome in former Soviet republics. Many of the industry's branches sprang from a single tree—Philipp Brothers, a trading outfit based in America but with roots in Hamburg, at which a young Marc Rich made his name as a trader.

Rich saw more clearly than others how emerging Middle Eastern petro-states would reshape the oil market. He set up Marc Rich & Co in 1974, after a breach with ▶▶

► the Philipp Brothers' brass over the profits from a bet on Iranian oil. He became the model for a new style of commodity-trader—a bold risk-taker on personal terms with unsavoury leaders. His firm in turn spawned Trafigura and Glencore, a mining giant that listed in London in 2011.

"The World for Sale" has an elegiac air. Rich died in 2013; Taylor in 2020. Ivan Glasenberg, the hard-charging boss of Glencore, will retire this year. Deeper factors are at work, too. The rapid growth in China's economy in the first decade of this century, which spurred a commodity "super-cycle",

will not be repeated. And public disquiet over the ethics of dealing with shady regimes is growing. Rich spent two decades as a fugitive from American justice because of his business with Iran; other commodity-traders have since had expensive brushes with the law. America has used the dollar's role as a global currency to enforce economic sanctions more effectively.

Meanwhile the suppliers and customers of the traders have become more astute. The super-profits of the middlemen were in part based on superior private knowledge. It is much harder to make so much

money from arbitrage now that information flows so freely.

Still, the instinct to buy low and sell high will endure. Peddling stuff dug up from the ground may always be a mucky business, but if it becomes too unrefined for Western tastes, others are bound to step in. As Messrs Blas and Farchy say, the leading hawk of Iranian crude is now Zhuhai Zhenrong, a Chinese trading house. "The Chinese", Taylor told the authors in 2019, "probably are willing to take much more risk than we are." The seeds of a sequel to this gripping book lie somewhere here. ■

Johnson The human touch



Grammar's resistance to artificial intelligence illuminates the nature of language

IF YOU FREQUENTLY Google language-related questions, whether out of interest or need, you've probably seen an advertisement for Grammarly, an automated grammar-checker. In ubiquitous YouTube spots Grammarly touts its ability not only to fix mistakes, but to improve style and polish too. Over more than a decade it has sprawled into many applications: it can check emails, phone messages or longer texts composed in Microsoft Word and Google Docs, among other formats.

Does it achieve what it purports to? Sometimes. But sometimes Grammarly doesn't do what it should, and sometimes it even does what it shouldn't. These strengths and failings hint at the essence of language and the peculiarity of human intelligence, as opposed to the artificial sort as it stands today.

Begin with the strengths. In a rough piece of student writing, Johnson counted 14 errors. Grammarly flagged five. For example, it sensibly suggested inserting a hyphen in "post cold war [world]". It spotted a missing "the" in the phrase "with [the] European economy". And it noticed an absent "about" in "wondering [about] the state of Europe". By using Grammarly, the author of this essay could have avoided some red ink.

On the other hand, Grammarly has a problem with false positives, calling out mistakes that are not. The other two suggestions were not disastrous, but neither did they relate to "critical errors" as Grammarly maintains. In the assertion that enlargement had "created a fatigue" within the European Union, Grammarly needlessly suggested deleting the "a". In another error-ridden sentence it recommended removing a comma, which fixed none of the problems. This false-positive tendency is not a

deal-breaker for reasonably skilled writers who just want a second pair of eyes; you can dismiss any suggestion you like. But truly struggling scribblers might not know when Grammarly's ideas would make their prose worse rather than better.

Then there are the false negatives, or the mistakes Grammarly fails to notice. Depending on the text, Grammarly can seem to miss more errors than it marks. The company's chief executive, Brad Hoover, describes it as a "coach, not a crutch"—which sets expectations more appropriately than some of the ads do.

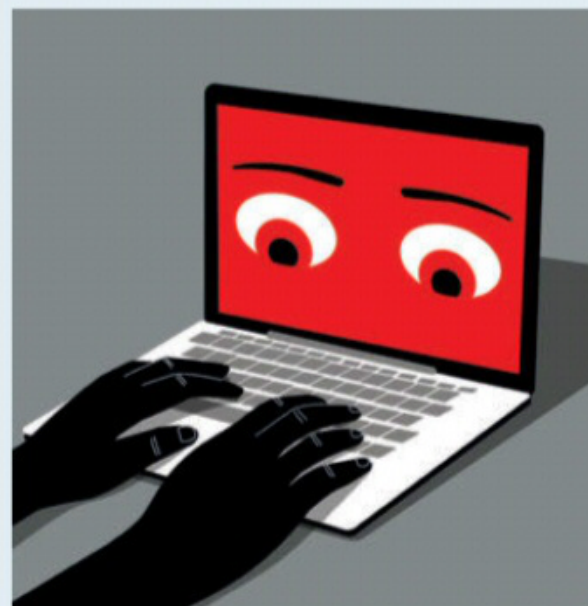
Artificial-intelligence systems like Grammarly are trained with data; for instance, translation software is fed sentences translated by humans. Grammarly's training data involve a large number of standard error-free sentences (so it knows what good English should look like) and human-corrected sentences (so the software can find the patterns of fixes that human editors might make). Developers also manually add certain rules to the patterns Grammarly has taught itself. The software then looks at a user's prose: if a

string of words seems ungrammatical, it tries to spot how the putative mistake most closely resembles one from its training inputs.

All this shows how far artificial "intelligence" is from the human kind (which Grammarly wants to correct to "humankind"). Computers outpace humans at problems that can be cracked with pure maths, such as chess. Advances in language technology have been impressive in, for example, speech recognition, which involves another sort of statistical guess—whether or not a stretch of sound matches a certain string of words. One Grammarly feature that works fairly well is sentiment analysis. It can rate the tone of an email before you send it, after being trained on texts that have been assessed by humans, for example as "admiring" or "confident".

But grammar is the real magic of language, binding words into structures, binding those structures into sentences, and doing so in a way that maps onto meaning. And at this crucial structure-meaning interface, machines are no match for humans. Computers can parse (grammatical) sentences fairly well, labelling things like nouns and verb phrases. But they struggle with sentences that are difficult to analyse, precisely because they are ungrammatical—in other words, written by the kind of person who needs Grammarly.

To correct such prose requires knowing what the writer intended. But computers don't work in meaning or intention; they work in formulae. Humans, by contrast, can usually understand even rather mangled syntax, because of the ability to guess the contents of other minds. Grammar-checking computers illustrate not how bad humans are with language, but just how good.





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Tenders



TENDER NOTICE

MASHAL SPORTS PRIVATE LIMITED INVITES BIDS FOR MEDIA RIGHTS OF THE PRO KABADDI LEAGUE

Mashal Sports Private Limited (Mashal) hereby invites bids from reputed third parties of national and international standing, which fulfil the eligibility requirements set out in the Invitation to Tender (ITT) to acquire certain Media Rights (as defined in the ITT) for 5 seasons (Season 8 – Season 12) of Pro Kabaddi League to be held during 2021 – 2025. The shortlisted, eligible bidders shall be allowed to bid for one or more of the following Media Rights Packages, through an online e-auction process:

Package A: This consists of Global Television Rights; Rest of the World Digital Rights; Sponsorship Rights – On-air and On-ground (including Title Sponsorship); Audio Rights; Film Rights; Fixed Media Rights; Clip Rights; Footage Rights and Public Exhibition Rights. Package A Rights holder will also have the obligation to produce the World Feed.

Package B: This consists of India Digital Rights; Mobile Activation Rights; Inflight/On-Board Rights and Virtual Reality Rights.

Package C: This consists of Gaming Rights which includes rights to fantasy sports; gaming, mobile kabaddi simulation; esports and other kabaddi games.

Package D: This is the Consolidated Rights Package i.e. all Media Rights offered under Packages A, B and C.

Bids may be submitted for one or more of the Media Rights Packages as specified in the ITT. The details relating to the Media Rights Packages, terms and conditions governing the submission and evaluation of bids including eligibility requirements and performance obligations in respect of each Media Rights Package are contained in the ITT which is available at www.pklmediaauction.com (Tender Portal). The purchase price for ITT is INR 2,50,000 (Rupees Two lakh fifty thousand only) plus taxes for entities incorporated in India and USD 3,500 (United States Dollars Three thousand five hundred only) plus taxes for entities incorporated outside India (non-refundable and non-adjustable). Interested parties are requested to register themselves on the Tender Portal, pay relevant amount(s), and upload relevant documents for downloading and accessing the ITT.

Bids will only be accepted from entities that purchase the ITT or from entities within the same group as the entity that purchases the ITT, or from a consortium including at least one member that purchases the ITT. Further, mere registration on the Tender Portal and/or purchase of the ITT does not qualify or entitle the party to participate in the online e-auction. The eligibility of any participant to participate in the auction shall be governed by the ITT and shall be at the sole discretion of Mashal.

Important timelines are as follows:

Relevant Event	Date/Timeline*
Last date to purchase the ITT document	12 March 2021
Last date for bidders to submit bid documents	02 April 2021
Date of online auction	05 April 2021

* The timelines mentioned may be changed by Mashal at its sole discretion.

Anupam Goswami
CEO – Mashal Sports Private Limited & League Commissioner – Pro Kabaddi League

www.pklmediaauction.com

Economic data

	Gross domestic product				Consumer prices			Unemployment rate			Current-account balance		Budget balance		Interest rates		Currency units	
	% change on year ago				% change on year ago			%			% of GDP, 2020†		% of GDP, 2020†		10-yr gov't bonds		per \$	
	latest	quarter*	2020†		latest	2020†									latest,%	change on year ago, bp	Feb 24th	% change on year ago
United States	-2.5	Q4	4.0	-3.5	1.4	Jan	1.3	6.3	Jan		-2.5		-14.9		1.4	nil	-	
China	6.5	Q4	10.8	2.3	-0.3	Jan	2.5	5.2	Dec‡§		1.7		-5.8		3.1	\$\$	6.45	9.0
Japan	-1.2	Q4	12.7	-5.3	-0.6	Jan	nil	2.9	Dec		3.5		-12.2		nil	-8.0	106	4.5
Britain	-7.8	Q4	4.0	-9.9	0.7	Jan	1.0	5.1	Nov††		-2.8		-14.3		0.7	9.0	0.71	8.4
Canada	-5.2	Q3	40.5	-5.3	1.0	Jan	0.8	9.4	Jan		-2.1		-13.5		1.3	12.0	1.26	5.6
Euro area	-5.0	Q4	-2.4	-7.6	0.9	Jan	0.3	8.3	Dec		2.6		-9.2		-0.3	18.0	0.82	12.2
Austria	-4.0	Q3	54.6	-7.4	0.9	Jan	1.4	5.8	Dec		2.1		-8.6		-0.1	25.0	0.82	12.2
Belgium	-4.7	Q4	0.8	-6.2	0.3	Jan	0.4	5.8	Dec		-1.1		-9.4		-0.1	14.0	0.82	12.2
France	-5.0	Q4	-5.3	-8.3	0.6	Jan	0.5	8.9	Dec		-2.3		-10.9		-0.1	11.0	0.82	12.2
Germany	-3.6	Q4	1.4	-5.3	1.0	Jan	0.4	4.6	Dec		6.8		-4.8		-0.3	18.0	0.82	12.2
Greece	-9.6	Q3	9.5	-9.9	-2.0	Jan	-1.3	16.2	Nov		-6.6		-9.2		1.0	nil	0.82	12.2
Italy	-6.6	Q4	-7.7	-8.9	0.4	Jan	-0.1	9.0	Dec		3.2		-11.3		0.7	-29.0	0.82	12.2
Netherlands	-2.9	Q4	-0.5	-4.4	1.6	Jan	1.1	3.6	Jan		8.4		-6.1		-0.3	4.0	0.82	12.2
Spain	-9.1	Q4	1.6	-11.0	0.5	Jan	-0.3	16.2	Dec		0.7		-12.3		0.3	9.0	0.82	12.2
Czech Republic	-5.3	Q3	1.2	-5.7	2.2	Jan	3.2	3.2	Dec‡		3.6		-6.5		1.6	18.0	21.4	8.6
Denmark	-3.8	Q3	2.4	-4.0	0.6	Jan	0.4	4.4	Dec		8.5		-3.6		-0.2	30.0	6.13	12.2
Norway	-0.6	Q4	2.6	-1.3	2.5	Jan	1.3	5.0	Nov‡‡		1.3		-4.2		1.4	2.0	8.45	10.4
Poland	-1.8	Q3	-2.8	-2.8	2.7	Jan	3.4	6.5	Jan§		3.6		-7.9		1.4	-56.0	3.72	6.5
Russia	-3.4	Q3	na	-3.1	5.2	Jan	3.4	5.8	Jan§		2.0		-3.8		7.0	87.0	73.8	-11.3
Sweden	-2.6	Q4	2.0	-3.0	1.6	Jan	0.5	9.3	Jan§		4.8		-3.5		0.4	47.0	8.31	17.1
Switzerland	-1.6	Q3	31.9	-3.0	-0.5	Jan	-0.7	3.5	Jan		9.1		-3.7		-0.3	50.0	0.91	7.7
Turkey	6.7	Q3	na	0.4	15.0	Jan	12.3	12.9	Nov§		-5.4		-3.4		12.8	64.0	7.21	-15.1
Australia	-3.8	Q3	14.0	-2.9	0.9	Q4	0.9	6.4	Jan		1.2		-7.3		1.6	66.0	1.26	19.8
Hong Kong	-3.0	Q4	0.7	-5.8	1.9	Jan	0.3	7.0	Jan‡‡		6.2		-7.6		1.3	-1.0	7.75	0.7
India	-7.5	Q3	125	-7.0	4.1	Jan	6.6	6.5	Jan		1.2		-9.3		6.2	-22.0	72.3	-0.5
Indonesia	-2.2	Q4	na	-2.2	1.6	Jan	2.0	7.1	Q3§		-1.6		-7.2		6.4	-6.0	14,085	-1.5
Malaysia	-3.4	Q4	na	-5.3	-0.2	Jan	-1.1	4.8	Dec§		4.8		-7.4		3.0	-2.0	4.04	4.7
Pakistan	0.5	2020**	na	-2.8	5.7	Jan	9.5	5.8	2018		0.1		-8.1		10.1	†††	159	-2.9
Philippines	-8.3	Q4	24.4	-9.4	4.2	Jan	2.6	8.7	Q4§		3.4		-7.8		3.6	-69.0	48.6	4.8
Singapore	-2.4	Q4	15.9	-5.8	0.2	Jan	-0.2	3.2	Q4		18.2		-13.9		1.3	-32.0	1.32	6.1
South Korea	-1.3	Q4	4.4	-1.0	0.6	Jan	0.5	5.7	Jan§		3.8		-5.7		1.9	43.0	1,112	9.7
Taiwan	5.1	Q4	5.8	3.0	-0.2	Jan	-0.2	3.8	Dec		13.8		-1.5		0.4	-15.0	27.9	9.4
Thailand	-4.2	Q4	5.4	-6.1	-0.3	Jan	-0.8	1.5	Dec§		3.7		-6.4		1.6	70.0	30.0	5.5
Argentina	-10.2	Q3	61.7	-9.7	38.5	Jan‡	42.0	11.7	Q3§		0.6		-8.6		na	na	89.6	-31.1
Brazil	-3.9	Q3	34.6	-4.4	4.6	Jan	3.2	14.1	Nov§‡‡		-0.7		-15.8		8.1	138	5.43	-19.3
Chile	-9.1	Q3	22.6	-6.2	3.1	Jan	3.0	10.3	Dec§‡‡		1.4		-7.9		2.9	-84.0	705	14.8
Colombia	-3.5	Q4	26.5	-7.0	1.6	Jan	2.5	13.4	Dec§		-3.6		-8.8		5.2	-36.0	3,577	-4.6
Mexico	-4.5	Q4	13.0	-8.3	3.5	Jan	3.4	4.4	Dec		2.6		-2.8		5.7	-80.0	20.5	-6.5
Peru	-1.7	Q4	37.9	-12.0	2.7	Jan	1.8	13.1	Jan§		1.0		-8.0		4.2	31.0	3.65	-6.6
Egypt	0.7	Q3	na	3.6	4.4	Jan	5.1	7.2	Q4§		-3.6		-8.5		na	nil	15.7	-0.7
Israel	-1.3	Q4	6.3	-3.6	-0.4	Jan	-0.6	4.5	Jan		3.9		-11.8		1.1	49.0	3.26	4.9
Saudi Arabia	-4.1	2020	na	-4.2	5.7	Jan	3.4	8.5	Q3		-3.7		-10.6		na	nil	3.75	nil
South Africa	-6.0	Q3	66.1	-7.1	3.2	Jan	3.2	32.5	Q4§		1.1		-14.5		8.8	-8.0	14.6	3.6

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 Feb 24th	% change on:	
		one week	Dec 31st 2019
United States S&P 500	3,925.4	-0.2	21.5
United States NAScomp	13,598.0	-2.6	51.5
China Shanghai Comp	3,564.1	-2.5	16.9
China Shenzhen Comp	2,347.3	-4.6	36.2
Japan Nikkei 225	29,671.7	-2.0	25.4
Japan Topix	1,903.1	-3.0	10.6
Britain FTSE 100	6,659.0	-0.8	-11.7
Canada S&P TSX	18,484.5	0.6	8.3
Euro area EURO STOXX 50	3,706.0	0.2	-1.0
France CAC 40	5,798.0	0.6	-3.0
Germany DAX*	13,976.0	0.5	5.5
Italy FTSE/MIB	23,098.2	-0.3	-1.7
Netherlands AEX	664.5	-2.4	9.9
Spain IBEX 35	8,269.6	1.8	-13.4
Poland WIG	57,596.3	-2.4	-0.4
Russia RTS, \$ terms	1,445.9	-1.1	-6.7
Switzerland SMI	10,727.7	-0.8	1.0
Turkey BIST	1,483.0	-3.7	29.6
Australia All Ord.	7,049.4	-1.5	3.6
Hong Kong Hang Seng	29,718.2	-4.4	5.4
India BSE	50,781.7	-1.8	23.1
Indonesia IDX	6,251.1	0.4	-0.8
Malaysia KLSE	1,557.6	-2.4	-2.0

	index Feb 24th	% change on:	
		one week	Dec 31st 2019
Pakistan KSE	45,362.6	-3.0	11.4
Singapore STI	2,924.6	0.1	-9.3
South Korea KOSPI	2,995.0	-4.4	36.3
Taiwan TWI	16,212.5	-0.9	35.1
Thailand SET	1,491.1	-1.6	-5.6
Argentina MERV	49,606.7	-5.3	19.0
Brazil BVSP	115,667.8	-3.9	nil
Mexico IPC	45,151.4	0.2	3.7
Egypt EGX 30	11,435.4	0.2	-18.1
Israel TA-125	1,615.3	-3.0	-0.1
Saudi Arabia Tadawul	9,115.8	0.3	8.7
South Africa JSE AS	66,200.8	-1.4	16.0
World, dev'd MSCI	2,802.4	-0.5	18.8
Emerging markets MSCI	1,376.8	-4.7	23.5

US corporate bonds, spread over Treasuries

Basis points	% change on:	
	latest	Dec 31st 2019
Investment grade	127	141
High-yield	376	449

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

Commodities

The Economist commodity-price index				
2015=100	Feb 16th	Feb 23rd*	month	year
Dollar Index				
All items	163.6	193.8	22.4	76.0
Food	127.8	129.2	3.8	34.2
Industrials				
All	197.1	254.1	33.7	106.6
Non-food agriculturals	144.6	363.8	175.6	266.2
Metals	212.6	221.6	6.9	70.4
Sterling Index				
All items	179.3	209.7	19.2	62.4
Euro Index				
All items	149.7	176.8	22.4	57.3
Gold				
\$ per oz	1,810.5	1,805.4	-2.6	9.1
Brent				
\$ per barrel	63.5	65.5	17.0	17.4

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)

→ Evolutionary pressure has helped the same SARS-CoV-2 mutations arise at different times in different locations

Selected SARS-CoV-2 lineages*

Dec 5th 2019 to Feb 22nd 2021

E484K mutation

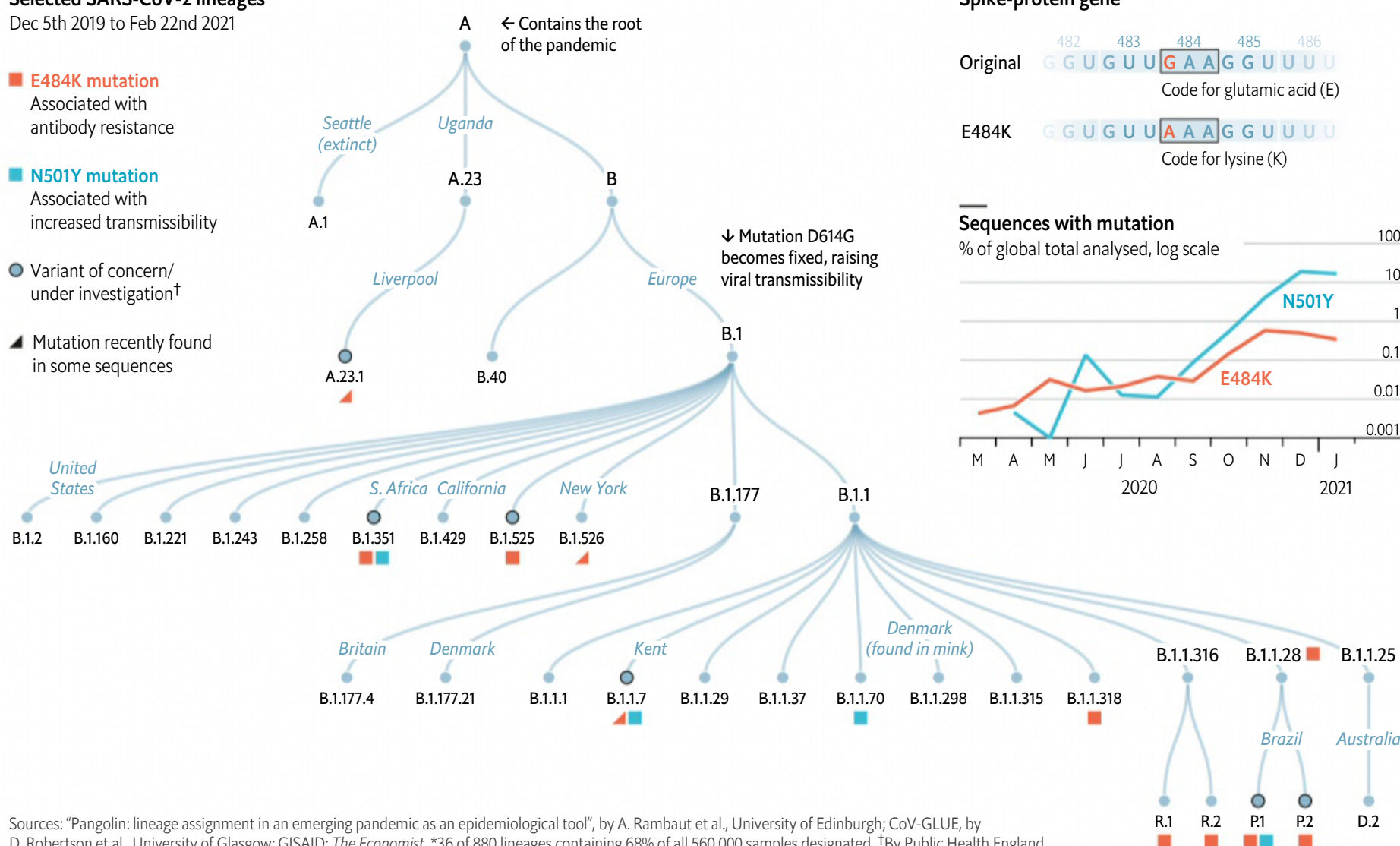
Associated with antibody resistance

N501Y mutation

Associated with increased transmissibility

Variant of concern/under investigation†

▲ Mutation recently found in some sequences



Sources: "Pangolin: lineage assignment in an emerging pandemic as an epidemiological tool", by A. Rambaut et al., University of Edinburgh; CoV-GLUE, by D. Robertson et al., University of Glasgow; GISAID; The Economist *36 of 880 lineages containing 68% of all 560,000 samples designated †By Public Health England

It's a family affair

Convergent evolution may make travel restrictions redundant

THE GENETIC mutations that cause evolution may arise at random. But natural selection often produces creatures that are similar, despite living in different environments. For example birds, bats, pterodactyls and insects all developed wings independently, because they were a nifty way to travel. This process is known as convergent evolution.

Viruses evolve, too. SARS-COV-2, which causes covid-19, replicates while infecting its host. As it does, the virus's genetic information—a sequence of 30,000 RNA letters—is sometimes corrupted. These mutations can make SARS-COV-2 more dangerous in several ways. They can increase transmissibility, evade detection by tests, avoid immune responses (including from vaccines) and cause more severe illness.

This makes tracking the evolution of SARS-COV-2 crucial. Of the 110m covid-19 cases found worldwide, scientists have sequenced and published the genomes of

600,000. By comparing these sequences and other viral characteristics, evolutionary biologists create phylogenetic trees—a set of hypothetical relationships between sequences which show how the virus has evolved over time.

All trees begin with an initial sample from Wuhan sequenced in January 2020, with subsequent samples as descendants. Sequences with similar new features are grouped into "lineages", using criteria and a nomenclature developed by researchers at the universities of Edinburgh and Oxford. So far 41,000 mutations have been documented, falling into 880 lineages.

Only a handful of these mutations make the virus more dangerous. Most occur within the 3,800 letters used for the virus's spike protein, which helps it bind to its host. Sometimes they can combine to pose several new threats, as they seem to have done in a Californian lineage that is worrying scientists. New studies suggest that this lineage may be more infectious, evade antibodies and cause more severe illness. Sequencing done in the state shows that this variant could already be responsible for a majority of cases there.

Two common mutations have appeared in many other worrying lineages. As with the wings of birds and bats, these familiar foes have evolved independently in differ-

ent places. The first mutation, known as N501Y, increases transmissibility. It is present in the "Kent" lineage that has run riot in Britain since December, as well as some lineages elsewhere. The second, known as E484K, enables the virus to partially avoid the host's antibodies. It is prevalent in Brazil and South Africa. E484K has also recently been spotted in new lineages in America and Europe, including Britain.

This convergent evolution could eventually render travel bans from South America and Africa redundant. Yet E484K's sudden appearance in many places, regardless of border controls, may hold a silver lining. Far better that the virus produces a few recurrent threats than many different ones. The hope is that drug companies can tweak vaccines to zap these mutants.

More worrying is the world's lack of genetic surveillance. Though Britain has sequenced only 6% of all its cases, that is still nearly as many as the rest of the world combined. With just £32m (\$45m) of funding it can now analyse 30,000 genomes a week. America, which has sequenced just 0.4% of its covid-19 cases, is trying to speed up. The government recently released \$200m, with perhaps another \$2bn to follow. As the new threat in California shows, the world needs such investment to keep up with natural selection. ■



The secret persuader

George Shultz, economist, businessman and secretary of state, died on February 6th, aged 100

IPRESENT THAT," said the secretary of state. He spoke firmly. He had been accused in the Senate Foreign Relations Committee in 1986 of "lack of moral backbone" on economic sanctions against South Africa. "I hate to hear a senator of the United States calling for violence," he told his young haranguer. "You may kick me around as secretary of state, but I'm a taxpayer."

Members of the committee laughed out loud—with him, and against their fellow senator. George Shultz might be in the dock, but for all his free-market rigour, forged in the Chicago School, he was too experienced and too reasonable to be hectored by Joe Biden of Delaware. As they argued (not for the last time), he was serving in his fourth cabinet post under his second Republican president. Even after his retirement every president, treasury secretary and secretary of state, Republican or Democrat, sought his counsel. In 2021 Mr Biden wished he could do the same.

Attacking Mr Shultz on race was anyway unwise. He was staunch on equality. Once, in Fort Worth, he neatly outwitted a hotel receptionist who insisted she had no room for the black colleague travelling with him. "Give him the other bed in my room," he said. (His friend was quickly "found" a room after all.) As Richard Nixon's secretary of labour, he marshalled his full federal power to force the Pennsylvania construction unions to take black members.

From Labour he had gone to the Office of Management and Budget, and from there to the Treasury Department, where he had some sharp run-ins with the president. First, he was pressed to use Treasury tax officials to harass names on Nixon's "enemies list"—and refused. Then, after the president in 1973 reimposed price controls, he resigned. Along the way he chaired a White House oil-import task-force that warned, all too correctly, of rocketing oil prices as America's production fell.

He remained a mystery to many. Across any table his face was

expressionless and his gaze steely, the very image of the duty-driven marine he was. At home or in the office, at Stanford or the Hoover Institution, he listened more than he spoke. If what he heard was flabby, he would give a monosyllable back. Never acid, just brief. And only then: "Now, let's discuss that."

Yet underneath was a man of style and fun, who never denied that he had a tiger tattoo on his backside, and who danced with Ginger Rogers at a White House dinner (she told him she thought she was dancing with Fred). He and Australia's prime minister, Bob Hawke, would party together. Year after year the likes of Helmut Schmidt and Lee Kuan Yew beat a path to his Stanford door, where he would cook them his "patented style" scrambled eggs for breakfast. In Washington his key friend was his tennis partner Kay Graham, owner of the *Washington Post*. After the grief of losing his first wife, Obie, to cancer, his second wife, Charlotte, was California's official social whirlwind. Life with her was a ball.

When, in 1982, Nancy Reagan persuaded her husband to jettison the turbulent Al Haig from State and "call George" (who, since 1974, had been running Bechtel in California and teaching at Stanford) he was dining quietly in north London. Obie spent the evening in silent tears at the thought of leaving Stanford. He felt daunted himself. Foreign policy-making as such was not his beat, and just then it was a war zone of clashing opinions: especially on whether the icy stand-off between America and the Soviet Union could ever be unfrozen.

Unlike the CIA and Caspar Weinberger's hawks at Defence, he believed that the Russians could be talked to and could even change. It would take time, but he was now applying his intensely deliberative method to foreign policy. At their twice-weekly private chats he steered Ronald Reagan round to his opinion. America should show its strength, and Nato's cohesion, most forcefully by deploying Pershing ballistic missiles in Germany in 1983. Then it could simply outspend the Soviet Union on defence. At the same time it should slowly negotiate to get rid of nuclear weapons entirely. Trust was the key, a condition he prized over every other. (Among many reasons, he admired Reagan because he was as good as his word.) He talked every week, secretly, to the Soviet ambassador in Washington, and warmed at once to Mikhail Gorbachev as a man with whom he could have a proper, quiet conversation—one that led, in 1987, to a ban on intermediate-range nuclear forces. (Mr Gorbachev too became one of the friends who visited him at Stanford, declaring: "I see, George, that you have chosen to live in paradise.") By the time he left State, he felt the cold war was all over bar the shouting. The fall of the Berlin Wall followed quickly, and with it Soviet suzerainty over half of Europe.

Back in California, he turned his full attention to the seeding and improving of government. He collected talent for Hoover, drawing Henry Kissinger from Washington, General Jim Mattis from the marines, and Milton and Rose Friedman, the stars of free-market teaching, from Chicago. From Stanford he sent to Washington Condoleezza Rice, the first black woman to be national security adviser and later secretary of state, and two young-Turk disciples, Mike Boskin and John Taylor, to drive economic policy. Meanwhile he lured the mighty to Hoover for his two-day think-sessions (and Charlotte's parties), inviting them to grapple with his two final intellectual challenges: how to eliminate nuclear weapons, and how to build coherent governance as voices multiplied. After trust, his coin of the realm, cohesion mattered most.

And he just liked reaching out. Back in 1980, over a Stanford weekend, he implacably persuaded the editor of *The Economist* that an ex-B-movie actor and right-wing ex-governor of California would make a great president. The resulting endorsement seemed so improbable that—at a tight moment in the race against Jimmy Carter—it was cited by hundreds of media outlets across the United States. When he was elected, Reagan invited the editor to supper to thank him. The editor accepted, but told him over coffee: "You should really be thanking George Shultz." ■



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