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Police in **Hong Kong** used rubber bullets, tear gas and water hoses on crowds demonstrating against a proposed law that would allow people to be extradited to the Chinese mainland. Three days earlier, perhaps 1m marchers thronged the streets, worried that the law would make anyone in Hong Kong, citizens and visiting businessfolk alike, vulnerable to prosecution in Chinese courts, which are under the thumb of the Communist Party.

For the third time, a court in **New Zealand** prevented the government from extraditing a murder suspect to China. It asked the government to consider whether China could be relied upon to adhere to the human-rights treaties it has signed and whether a trial would be free from political interference.

Tsai Ing-wen, the president of **Taiwan**, survived a primary challenge from Lai Ching-te, her former prime minister. She will face the winner of the opposition Kuomintang's primary at the polls in January.

Kassym-Jomart Tokayev was confirmed as **Kazakhstan's** president in an election in which he won 71% of the vote—somewhat less than the 98% that his predecessor and patron, Nursultan Nazarbayev, won in 2015. Observers said both votes were unfair. Police arrested hundreds of peaceful demonstrators.

The government of the **Australian** state of Queensland issued the final approvals for the proposed Carmichael coal mine, to be built by Adani, an Indian conglomerate. Envi-

ronmentalists oppose the mine, arguing that coal threatens the climate and the Great Barrier Reef.

The Peronist revival

Mauricio Macri made a surprising selection for his running-mate in **Argentina's** presidential election in October: Miguel Ángel Pichetto, who leads the Peronist bloc in the senate. The other presidential ticket will be all-Peronist, including Cristina Fernández de Kirchner, a former president. Previous Peronist regimes have borrowed and splurged with unusual recklessness.

Jair Bolsonaro, **Brazil's** president, contradicted the country's central bank when he claimed a plan to create a monetary union with Argentina was under consideration. The central bank was further ruffled when Mr Bolsonaro said that a single currency could one day be used throughout South America.

A quick U-turn

Donald Trump dropped his threat to raise tariffs on goods from **Mexico**, after its government promised to do more to stop migrants from Central America illegally crossing the border into the United States. In Mexico the deal was hailed for averting a potential crisis. Mr Trump's critics said that some of the details were not, in fact, new.

Mr Trump claimed **executive privilege** (again) in withholding details from Congress about the procedure used for placing a question on the next census about citizenship. The House oversight committee recommended that the attorney-general and commerce secretary be held in contempt for refusing to co-operate.

The *New York Times* decided to end **political cartoons** in its international edition, following the publication in April of a "clearly anti-Semitic and indefensible" caricature of

Binyamin Netanyahu, Israel's prime minister, as a dog leading a yarmulke-wearing Mr Trump. Presumably if the paper ever publishes a reprehensible article, it will thereafter have to distribute only blank pages.

Spiralling

Dozens of people, including several children, were killed in a Dogon village in central **Mali**. The murders were blamed on a Fulani militia and are the latest in a series of tit-for-tat ethnic killings. In March a Dogon militia slaughtered more than 150 Fulani villagers.

A child became the first person in **Uganda** to die of Ebola, a deadly virus that has infected more than 2,000 people in the Democratic Republic of Congo next door. The boy had travelled to Uganda from Congo with family members, some of whom are also infected; his grandmother also died. Uganda's system for containing epidemics is far more effective than Congo's.

Protesters in **Sudan** called off a general strike and agreed to resume talks with the junta that took charge after the fall of the country's dictator, Omar al-Bashir, in April. Negotiations over who would lead a transitional government had collapsed when security forces murdered at least 100 demonstrators on June 3rd.



Botswana's high court legalised gay sex, striking down a colonial-era prohibition. Half of young people in Botswana now say they would not object to a gay neighbour, a marked increase in tolerance from previous generations.

Oil prices jumped after two tankers were reportedly damaged in a suspected attack off the coast of Oman. America has blamed Iran for several recent attacks on shipping.

A **Saudi Arabian** teenager faces possible execution for taking part in a demonstration when he was ten years old. The boy, now 18, has been held for four years.

Old tricks

Ivan Golunov, a **Russian** journalist who exposes corruption, was arrested after police claimed to have found drugs in his possession. Photos purporting to show a drug lab in his flat turned out to have been taken somewhere completely different. After huge protests, which included the front pages of normally quiescent newspapers, at his obvious framing, the authorities released him.

In **Moldova** police surrounded government buildings after a rival administration declared itself in charge. The pro-Russian president, who supports the new team, was sacked by the old team.

Ten candidates jostled to become leader of **Britain's** Conservative Party, and thus the country's next prime minister. Boris Johnson is the bookies' favourite, but not Europe's.

The British government amended the Climate Change Act to set a target of eliminating Britain's net emissions of **greenhouse gases** by 2050. The "net zero" target is the first in any G7 country. There are two wrinkles: it is unclear whether the target will include emissions from aviation and shipping; and policies adopted to reach the target may make use of international offsets.

Norway's parliament voted to require the country's sovereign-wealth fund, the world's largest, to divest from fossil-fuel companies. Energy giants that have invested heavily in renewables, such as BP and Shell, are excluded.

The proposed merger of **T-Mobile** and **Sprint**, first floated in April last year, faced a fresh hurdle as a group of American states led by California and New York launched a lawsuit to block it. The states are challenging the deal because it is “exactly the sort of consumer-harming, job-killing mega-merger our antitrust laws are designed to prevent”, according to Letitia James, New York’s attorney-general.

Playing defence

Antitrust concerns were also voiced when **United Technologies Corporation** announced its intention to merge its aerospace business with **Raytheon**, creating a \$166bn behemoth in the industry. UTC provides electronics and communications systems mainly to commercial airlines and Raytheon sells defence equipment, including the Patriot missile system, to the Pentagon. They hope the civil/military split of their interests will satisfy competition regulators. Donald Trump has already waded in, suggesting that the new “big, fat, beautiful company”, will raise costs for America’s armed forces.

The trade dispute between America and China was the hot topic at **Foxconn’s** first investor conference. The Taiwanese contract electronics manufacturer said customers were concerned about uncertainties surrounding trade arrangements, but it assured Apple that it could move production of the iPhone and other devices away from its factories in China if need be. Around 25% of Foxconn’s capacity is based in factories outside China. Foxconn also rejigged its management in preparation for Terry Gou’s departure as chairman to run for president of Taiwan.

Worries over trade continued to unsettle global markets. “The rising threat of protectionism” was cited by Mario Draghi, the president of the **European Central Bank**, as one factor in its decision on

June 6th to postpone further rises in interest rates until at least the middle of 2020. Mr Draghi pledged to use “all instruments” under his control to avert an economic setback in the euro zone.



Market jitters caused investors to flee to safe assets. The German government sold **ten-year Bunds** at a yield of -0.24%, meaning the buyers will lose money if they hold the bonds until they mature. It was the bond’s lowest yield on record in a direct auction.

Jean-Dominique Senard, **Renault’s** chairman, admitted that relations with Nissan, the French carmaker’s alliance partner, were tense, but said that they could rebuild trust. Mr Senard was speaking at his first shareholders’ meeting since taking up his position in January, after Carlos Ghosn’s arrest in Tokyo for alleged

financial misdeeds at Nissan. The French government, which holds a 15% stake in Renault, has undermined Mr Senard recently, most spectacularly by thwarting the company’s attempt to merge with Fiat Chrysler Automobiles. Mr Senard said he had been “saddened” by the state’s meddling.

Volkswagen ended its association with Aurora, a self-driving-vehicles startup, clearing the way for it to work with Argo, a similar outfit that **Ford**, which launched a partnership with vw this year, has invested in. This week Argo expanded testing of its fleet of autonomous cars to Detroit, the historic home of carmaking.

Salesforce, a highly acquisitive cloud-based software company, struck its biggest deal to date when it offered \$15.7bn for **Tableau**, a provider of computer-graphics for data bods.

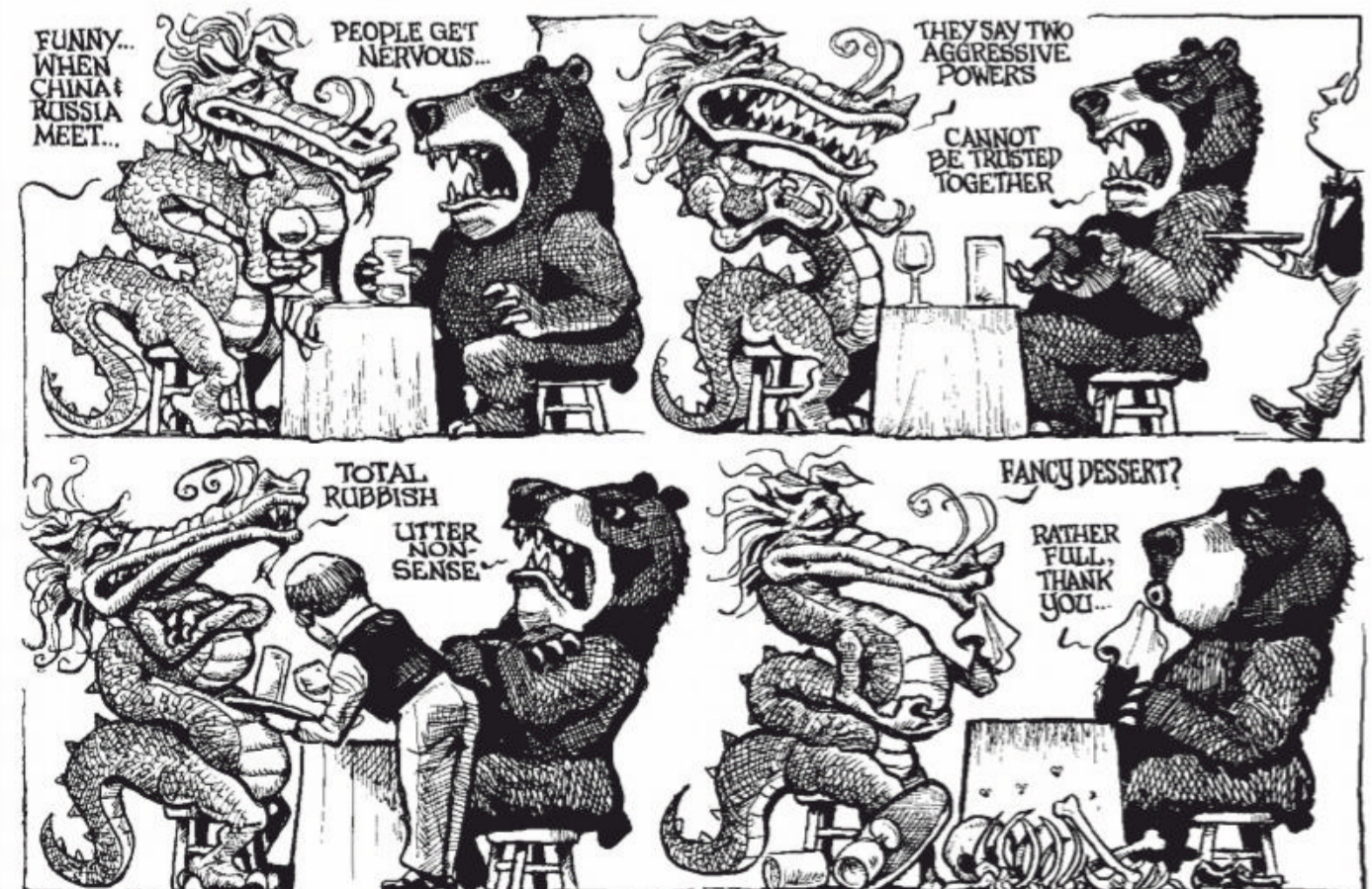
Insys, which makes a fentanyl-based painkiller spray, filed for bankruptcy protection, days after it settled with the federal government for its marketing of the product. Many of the pharmaceutical companies blamed for America’s opioid crisis face potentially large legal claims; they stand accused of pushing the drugs.

In what it described as an “unprecedented action”, the British government ordered **Whirlpool** to recall up to 500,000 tumble dryers over safety concerns. The American maker of white goods issued a warning in 2015 that certain brands of dryers might catch fire, but rather than issue a recall it tried to fix them.

Beyond Meat had a roller-coaster week on the stock-market. The American fake-meat company’s already buoyant share price soared after its first earnings report since going public in May revealed a boom in sales. But investors lost their appetite when an analyst warned that the stock was overpriced, sending the price down by a quarter.

A new chapter

Elliott Management, a hedge fund, agreed to acquire **Barnes & Noble** in a \$683m deal. Elliott also owns Waterstones, a British chain of bookstores that is thriving despite predictions that Amazon would kill it off. James Daunt, who, as managing director, is credited with reviving Waterstones is also to run Barnes & Noble, where he will hope to turn the page on the American bookseller’s declining fortunes.



Hong Kong

Huge demonstrations have rattled the territory's government—and the leadership in Beijing

THREE THINGS stand out about the protesters who rocked Hong Kong this week. There were a great many of them. Hundreds of thousands took to the streets in what may have been the biggest demonstration since Hong Kong was handed back to China in 1997. Most of them were young—too young to be nostalgic about British rule. Their unhappiness at Beijing's heavy hand was entirely their own. And they showed remarkable courage. Since the “Umbrella Movement” of 2014, the Communist Party has been making clear that it will tolerate no more insubordination—and yet three days later demonstrators braved rubber bullets, tear gas and legal retribution to make their point. All these things are evidence that, as many Hong Kongers see it, nothing less than the future of their city is at stake.

On the face of it, the protests were about something narrow and technical (see Briefing). Under the law, a Hong Kong resident who allegedly murdered his girlfriend in Taiwan last year cannot be sent back there for trial. Hong Kong's government has therefore proposed to allow the extradition of suspects to Taiwan—and to any country with which there is no extradition agreement, including the Chinese mainland.

However, the implications could not be more profound. The colonial-era drafters of Hong Kong's current law excluded the mainland from extradition because its courts could not be trusted to deliver impartial justice. With the threat of extradition, anyone in Hong Kong becomes subject to the vagaries of the Chinese legal system, in which the rule of law ranks below the rule of the party. Dissidents taking on Beijing may be sent to face harsh treatment in the Chinese courts. Businesspeople risk a well-connected Chinese competitor finding a way to drag them into an easily manipulated jurisdiction.

That could be disastrous for Hong Kong, a fragile bridge between a one-party state and the freedoms of global commerce. Many firms choose Hong Kong because it is well-connected with China's huge market, but also upholds the same transparent rules that govern economies in the West. Thanks to mainland China, Hong Kong is the world's eighth-largest exporter of goods and home to the world's fourth-largest stockmarket. Yet its huge banking system is seamlessly connected to the West and its currency is pegged to the dollar. For many global firms, Hong Kong is both a gateway to the Chinese market and central to the Asian continent—more than 1,300 of them have their regional headquarters there. If Hong Kong came to be seen as just another Chinese city, Hong Kongers would not be the only ones to suffer.

The threat is real. Since he took over as China's leader in 2012, Xi Jinping has been making it clearer than ever that the legal system should be under the party's thumb. China must “absolutely not follow the Western road of ‘judicial independence,’” he said in a speech published in February. In 2015 Mr Xi launched a campaign to silence independent lawyers and civil-rights activists. Hundreds of them have been harassed or detained by the police. The authorities on the mainland have even sent thugs to other jurisdictions to abduct people, including a publisher of gossip books about the party, snatched from a car park in Hong Kong

and a tycoon taken from the Four Seasons hotel in 2017. The message is plain. Mr Xi not only cares little for the rule of law on the Chinese mainland. He scorns it elsewhere, too.

The Hong Kong government says the new law has safeguards. But the protesters are right to dismiss them. In theory extradition should not apply in political cases, and cover only crimes that would incur heavy sentences. But the party has a long record of punishing its critics by charging them with offences that do not appear political. Hong Kong's government says it has reduced the number of white-collar offences that will be covered. But blackmail and fraud still count. It has said that only extradition requests made by China's highest judicial officials will be considered. But the decision will fall to Hong Kong's chief executive. That person, currently Carrie Lam, is chosen by party loyalists in Hong Kong and answers to the party in Beijing. Local courts will have little room to object. The bill could throttle Hong Kong's freedoms by raising the possibility that the party's critics could be bundled over the border.

It is a perilous moment. The protests have turned violent—possibly more violent than any since the anti-colonial demonstrations in 1967. Officials in Beijing have condemned them as a foreign plot. Ms Lam has been digging in her heels. But it is not too late for her to think again.

In its narrowest sense, the new law will not accomplish what she wants. Taiwan has said that it will not accept the suspect's extradition under the new law. Less explosive solutions have been suggested, including letting Hong Kong's courts try cases involving murder committed elsewhere. Anti-subversion legislation was left to languish after protests in 2003. There is talk that the government may see this as the

moment to push through that long-shelved law. Instead Ms Lam should take it as a precedent for her extradition reform.

The rest of the world can encourage her. Britain, which signed a treaty guaranteeing that Hong Kong's way of life will remain unchanged until at least 2047, has a particular duty. Its government has expressed concern about the “potential effects” of the new law, but it should say loud and clear that it is wrong. With America, caught up in a trade war with China, there is a risk that Hong Kong becomes the focus of a great-power clash. Some American politicians have warned that the law could jeopardise the special status the United States affords the territory. They should be prudent. Cutting off Hong Kong would not only harm American interests in the territory but also wreck the prospects of Hong Kongers—an odd way to reward its would-be democrats. Better to press the central government, or threaten case-by-case scrutiny of American extraditions to Hong Kong.

But would this have any effect? That is a hard question, because it depends on Mr Xi. China has paid dearly for its attempts to squeeze Hong Kong. Each time the world sees how its intransigence and thuggishness is at odds with the image of harmony it wants to project. When Hong Kong passed into Chinese rule 22 years ago, the idea was that the two systems would grow together. As the protesters have made clear, that is not going to plan. ■



The European Central Bank

Presidential credentials

The ECB is Europe's most powerful institution. Erkki Liikanen should be its next boss

ONE OF THE biggest jobs in Europe is up for grabs: head of the European Central Bank (ECB). It sets interest rates across much of the continent, supervises banks and underwrites the euro, used by 19 countries with 341m citizens. The ECB's outgoing boss, Mario Draghi, who steps down in October after eight years in charge, has done a sterling job in difficult circumstances. His tenure illustrates what is at stake. After a sovereign-debt crisis in 2010-12 threatened to sink the euro, it was Mr Draghi who ended the financial panic by pledging that the ECB would do "whatever it takes" to stop the euro zone from breaking up.

Although he saved the euro, Mr Draghi leaves behind problems. The economy is faltering; a recession at some point in the next eight years is possible. There is little prospect of fiscal easing—Germany doesn't want to borrow more and southern Europe can't afford to. So monetary policy is the main lever to stimulate growth. Unfortunately interest rates are close to zero. And the risk of another debt crisis bubbles away. Italy's populists have been ignoring demands from the European Commission to take control of the public debt, now 132% of GDP.

Europe's political leaders will gather on June 20th and 21st to divide up the top jobs in Europe, including the ECB presidency. The temptation will be to make the central-bank position part of the horse-trading, picking the new chief on the basis of nationality. Instead, for Europe's sake, the selection should be determined by three tests: economic expertise, political talent and sound judgment.

Technical competence matters. Interest rates are so low that the bank's toolbox may need to be expanded in creative ways. Political nous is more important than at other big central banks such as the Federal Reserve. The new boss must build support in the bank's 25-strong rate-setting body, and across 19 national governments and their citizens. The bank must also make the case for further reform to the euro zone, without which banking

and sovereign-debt crises are a constant danger. And, if a crisis does strike, sound judgment becomes paramount. If the markets sniff equivocation or muddle from the ECB president, the financial system could rapidly spiral out of control, as panicky investors dump the bonds of weaker banks and countries.

When Mr Draghi was appointed in 2011, he was already a strong candidate. Since then he has passed the three tests. He expanded the ECB's toolkit by standing ready to buy up unlimited amounts of sovereign debt, known as outright monetary transactions, or OMTs (the promise was enough to reassure investors and the policy has never been implemented). He put his personal authority on the line and marshalled support outside the ECB.

None of today's leading contenders is as impressive (see Finance section). Some risk undermining the bank's hard-won credibility. Jens Weidmann, the head of the Bundesbank, opposed OMTs. In a crisis, markets might worry that he would be prepared to let the euro zone collapse. Olli Rehn, the newish head of the Bank of Finland, could invite doubt, too. In a previous role in Brussels he was an enforcer of austerity on southern European countries, which might in the future need the ECB's help. Benoît Cœuré, the head of the ECB's market operations, is clever and impressive. But the bank's fuzzy rules appear to bar him from a second term on its board.

Erkki Liikanen, a former boss of Finland's central bank, has the best mix of attributes for the role. Although he is less technically strong than some other candidates, Philip Lane has recently taken over as the ECB's chief economist: the bank will not lack intellectual clout. Mr Liikanen was a vocal advocate of unconventional tools. His political skills have been tested both as a commissioner in Brussels and as finance minister in Helsinki. Mr Draghi has transformed the ECB, but 21 years after its creation, there are still nagging doubts about its strategy and firepower. With Mr Liikanen at its helm, they might be put to rest at last. ■



British politics

A Conservative clown show

The candidates to be prime minister are throwing away their party's reputation for economic prudence

BRITAIN'S CONSERVATIVES like to think they are the party of economic competence. Although they have overseen some debacles in recent decades, they have typically had a clear vision for the British economy. In the 1980s, under Margaret Thatcher, they deregulated markets, privatised state-run industries and encouraged home ownership. In the 2010s their defining idea has been fiscal rectitude. By cutting spending and slightly raising taxes they have contained the rise of Britain's public debt.

Competence has turned to chaos. This week Tory MPs nominated ten candidates to replace Theresa May as leader of the party, and thus as prime minister (see Britain section). In a tri-

umph of chest-thumping over economic reason, most say they are prepared to see the country crash out of the European Union without a deal. And, between them, the candidates are championing tax policies that are reckless, unjust and ill-informed.

Britain is a third of the way through the Brexit breathing space that the EU gave it in April. By the time a new prime minister is in place, there will be only three months to go—hardly enough time to renegotiate the deal Mrs May already struck with the EU, even were Brussels prepared to budge. Yet several Tory contenders, including Boris Johnson, the front-runner, promise that Britain will leave on October 31st come what may. The threat of a disorder- ▶▶

derly rupture with the EU hangs over Britain's economy, which appears to have shrunk in March and April, in part because car-makers halted production after the original Brexit deadline.

You might think that risking the biggest disruption to the economy since wartime was enough incompetence for one party. You would be wrong. Amid creaking public services—on which two-thirds of voters want more spending, even if it means higher taxes—the candidates are proposing huge tax giveaways, often directly to their supporters. Mr Johnson pledges to hand an average of £2,000 (\$2,550) a year to the top 10% of earners. Jeremy Hunt wants to slash corporation tax from 19% to 12.5%. Dominic Raab has suggested cutting the main rate of income tax by a barely credible five percentage points. Michael Gove would replace VAT with a lower sales tax.

These proposals range from unwise to extraordinarily bad. Mr Johnson's tax cuts would be both a waste of scarce resources and grossly unfair. He would reduce their cost by raising national-insurance contributions, a payroll tax. As a result the biggest beneficiaries would be well-off pensioners, because payroll taxes fall only on those in work. The policy is a shameless bribe to the elderly and prosperous Tory party members who choose the leader. Wealthy pensioners have already been coddled during Britain's period of austerity, enjoying protected benefits (such as free access to the BBC, taken away this week to much bleating) even as working-age welfare has been slashed. Many are homeowners who have also benefited from the soaring property prices that are locking youngsters out of ownership.

Mr Gove rightly condemns "one-club golfers", like Mr Johnson and Mr Raab, who want to cut taxes no matter the circumstances. But Mr Gove's plan to scrap VAT is a bogey. The tax distorts the economy less than most levies. It is also less regressive than is often claimed, because of exceptions for basic goods. And because it is paid by businesses throughout a supply chain, with each claiming back the tax paid earlier, it is hard to avoid. Mr

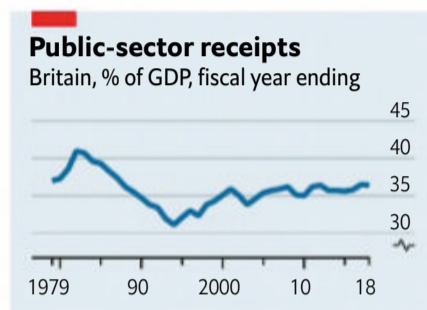
Gove's sales tax might be simpler, but it would create a single point of failure where avoidance would be lucrative: the final sale to consumers. Every rich-world economy has a VAT except America, which should have one. Where are Mr Gove's wonks?

Among the most-fancied candidates, Mr Hunt's plan is the least bad of a dire bunch. Corporation tax deters investment and is increasingly unsuited to a modern economy of digital, cross-border sales. Yet cutting it so deeply would be odd given the pressures on the budget and the fact that the rate has already fallen from 28% to 19% this decade. It would be better to overhaul the tax to target cashflows rather than profits—as proposed by Sam Gyimah, an MP who wanted to be leader but could not persuade enough of his colleagues to nominate him.

The sum total is a mix of ideas that smack of desperation and panic. Entertaining a no-deal Brexit is a reckless attempt to hold back Nigel Farage's Brexit Party at the ballot box. Mr Johnson's tax cut is a beggarly plea for party members' votes based on self-interest, but with little appeal to the broader electorate. Mr Gove seems anxious to find a benefit in Brexit (the EU requires that member states levy VAT).

Panic produces poor policy (see Bagehot). The Tories should be focused on an orderly Brexit while confronting economic questions that predate the referendum. For the party's market liberals, that should mean deciding how to promote a small-state philosophy in an already deregulated and privatised economy. For moderate "one nation" Tories, it should mean finding policies to help left-behind places and reduce regional inequality. For all of them, it should mean honesty about the fact that, in the long run, spending cannot go up as taxes are cut.

At the moment the Tories are leaving the big thinking on economics to Jeremy Corbyn, the hard-left leader of the Labour Party. They are failing to make the best argument against putting him in Downing Street—that he is a unique threat to British prosperity. Losing that debate is the greatest risk of all. ■



Sudan

Stop the war before it starts

A fragile state may disintegrate unless outsiders press its factions to talk

THE BURST of optimism in Sudan did not last long. In April, after months of mass protests, a tyrant was deposed. President Omar al-Bashir, who had ruled for 30 years, was ousted in a bloodless coup. No one was sorry to see him go. Mr Bashir had unleashed genocide in the western region of Darfur, his violent oppression drove the southern third of his vast country to secede, and he presided over a regime of exceptional cruelty and avarice. Alas, the joyful crowds who gathered in Khartoum to serenade his departure and paint their faces the colours of the Sudanese flag have been tragically let down.

The Transitional Military Council, a junta that took over, has no intention of holding free or fair elections, as the crowds demand. To underline this point, on June 3rd a paramilitary group called the Rapid Support Forces (RSF) started slaughtering peaceful protesters (see Middle East & Africa section). They shot and killed at least 100, probably far more. Some were thrown howling from bridges. Since then the RSF, which grew out of the Janja-

weed, a militia notorious for village-burning in Darfur, has terrorised the capital. Militiamen barge into shops and steal goods. Both men and women are raped. The clear aim is to intimidate civilians into giving up hope of a say in who rules them.

The junta, however, is far from united. The RSF reports to Muhammad Hamdan Dagalo, its deputy head, a warlord who goes by the nickname Hemedti. Although theoretically junior to the junta's chairman, General Abdel Fattah al-Burhan, Mr Dagalo has become the most powerful man in Sudan. By letting his hired killers rampage through Khartoum, he appears to be signalling that he wants to be president, and will deal firmly with anyone who gets in his way. Other members of the junta are unhappy with this. Officers of the regular army are hostile to Mr Dagalo's ambitions and furious that an ill-disciplined militia is looting the capital. This divide risks descending into civil war.

Sudan is a mosaic of feuds. One ended when the mostly non-Muslim and black African south split from the Muslim and Arab- ▶

dominated north in 2011. But South Sudan took most of the oil, leaving less cash for Khartoum to buy off the many northern factions. Mr Bashir stayed on top for three decades by setting these factions against each other. Hoping to coup-proof his regime, he divided power between the army, the RSF and the intelligence service. All now dislike and distrust one another. In April, when Mr Bashir ordered the intelligence services to fire on protesters and clear the streets, soldiers of the regular army protected the crowds. To prevent a civil war, the generals teamed up with Mr Dagalo to depose Mr Bashir. Now they are falling out.

Outsiders complicate the picture still further. Egypt, Saudi Arabia and the United Arab Emirates (UAE) support the junta and have promised it \$3bn in cash. But within the junta they back different forces. Egypt supports the army, perhaps because Egypt's president is also an army man. Egypt wants stability and hates the idea of a bloodthirsty militia with Islamist ties ruling its neighbour. Saudi Arabia and the UAE, by contrast, back Mr Dagalo with guns and money, because his militia has provided thousands of footsoldiers for their pointless war in Yemen.

Pro-democracy demonstrations keep breaking out in Sudan,

despite the regime's repression. Discipline in the armed forces is said to be breaking down: soldiers are demanding weapons to protect Khartoum from the RSF. Some predict open war, or even a Syrian-style implosion that sucks in outside powers.

To avert such a disaster, Sudan needs a power-sharing agreement, led by civilians but with representatives of the armed forces—an arrangement that worked reasonably well after a revolution in Burkina Faso in 2014. Outsiders should press for it. The African Union has made a good start by suspending Sudan and threatening sanctions on Sudanese military chiefs unless they hand over to civilians. The United States needs to persuade its Gulf allies and Egypt that they share a common interest in keeping Sudan stable (not least to keep out their regional rivals, Iran, Qatar and Turkey). The Trump administration should urge them to set aside their differences and work together to defuse the time-bomb in Khartoum. Donors should be poised to help any plausible effort to move towards election and civilian rule.

Sudan is wobbling on a cliff-edge above an inferno. A concerted international effort might just pull it back from the brink. It would be unforgivable not to try. ■

The European Union

A Balkan betrayal

The EU must keep its promise to open membership talks with North Macedonia

ENLARGING THE European Union long ago fell out of fashion. No country has joined since Croatia became the 28th member, in 2013. As the leaders of Hungary and Poland attack the independence of their judiciaries it seems quaint to argue, as many once did, that negotiating membership would instil democratic habits in countries with long memories of dictatorship. How much harder to make the case in the Balkans: Kosovo and Serbia are at daggers drawn, and Bosnia is an ungovernable mess.

But a happier story is unfolding in the country known, since February, as North Macedonia. After years of authoritarian misrule the new government, led by Zoran Zaev, has started tackling corruption and reforming the judiciary. In an unhappy region, the country's Slavic majority and Albanian minority enjoy good relations. And last year Mr Zaev's government signed the Prespa agreement with Greece, ending a destabilising dispute over the country's name. (Greece insists that "Macedonia" can refer only to a Greek region, but has grudgingly accepted "North Macedonia".)

Recognising all this progress, the European Commission wants the EU's governments to open membership talks with North Macedonia. It was the promise of accession to the EU (and to NATO, which is going ahead) that helped Mr Zaev push through Prespa at home. In June 2018 his bid to start talks was kicked down the road for a year. Now, alas, further delay is likely.

Opposition to the talks has come in part from France's president, Emmanuel Macron, who argues that the EU should concentrate on deeper integration rather than adding new members. History, however, suggests that there is not necessarily a trade-off between these goals. On the contrary, previous waves of widening have in the view of many required more deepening. Anyway, now that the European elections are over Mr Macron's oppo-

sition seems to have lessened: he probably feared the issue would help Marine Le Pen, his nationalist rival.

Other opponents of widening argue against admitting more eastern European countries in which democracy and the rule of law are weak. Bulgaria's accession, it is said, has allowed its numerous criminal gangs free access to the union. That is a fair objection for Albania, with which the commission is also proposing membership talks after its progress in other areas. But not for North Macedonia which has been doing well under Mr Zaev.

The commission's original hope was for ministers to approve the two candidates' EU bids at a meeting on June 18th. But resistance from MPs in Angela Merkel's Christian Democratic Union makes that improbable: she needs a mandate from parliament before she can agree. A special summit could be called in July were North Macedonia's bid sure to pass. But the Bundestag will soon begin its summer break, and another opportunity will not arise until October. By then the habit of delay may have become ingrained.

Such treatment would be shabby, and dangerous. North Macedonia's opposition is ready to pounce at any sign of failure. And by autumn Greece may well have a new centre-right government that will face strong pressure from anti-Prespa voters to stall the talks. More broadly, for the EU to break its promise to one Balkan state will boost leaders in others who say the Europeans cannot be trusted, and other powers sniffing around, from Russia to China to Turkey, will take note. Conversely, opening talks with North Macedonia will strengthen the hand of pro-European reformers throughout the Balkans. Starting talks does not commit anyone to concluding them, as Turkey knows only too well. To reject North Macedonia without even trying to reach an agreement would be cruel, self-defeating and wrong. ■



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Militias in Brazil

Your leader and article on the militias operating in Rio de Janeiro criticised Brazil's public-security policies ("Fighting thugs with thugs" and "Shadow state", June 1st). It is natural that policies be debated and differences discussed. But it is not acceptable for *The Economist* to insinuate, and at one point bluntly affirm, that the new government in Brazil has "links" with the militias. That is an irresponsible claim.

The federal government has taken decisive steps to combat organised crime in general and militias in particular. For instance, it has sent draft legislation to congress that clearly identifies militias and drug-trafficking factions as criminal organisations. It has also proposed that the leaders of these organisations face tougher prison sentences. These are but a few indications of the Brazilian government's firm determination to promote public security.

FRED ARRUDA
Ambassador of Brazil
London

The long list of recommendations you provided to deal with this problem—reform institutions, fairer services, a crackdown on corruption—omitted one item. The *favelas* will remain mired in drug-related violence because of the demand for illegal drugs.

MARSHAL ALAN PHILLIPS
Curitiba, Brazil

What causes the dead zone?

"Save the swamp" (May 25th) is correct in saying that nitrate is a big contributor to the dead zone in the Gulf of Mexico. The reduction in oxygen is caused by the difference in density of the fresh water from the Mississippi that runs into the salty waters of the Gulf. But the surface layer is relatively fresh and therefore less dense, and does not have low oxygen levels. Its oxygen concentrations are essentially in equilibrium with the atmosphere. The excess nitrate from the river supports algal blooms in the

coastal zone, and it is these blooms that reduce the oxygen levels in the bottom layer once they die and sink. The main thrust of the article, that wetlands can help reduce nitrate pollution, is certainly right.

PIERS CHAPMAN
Department of Oceanography
Texas A & M University
College Station, Texas

The importance of pawns

Johnson denigrated the pawn in chess by comparing the piece to a simple foot soldier that is "lowly and dispensable" (May 11th). This greatly underestimates their role.

François-André Danican Philidor, who wrote about the game in the 18th century, described pawns as "the soul of chess".

GERO JUNG
Montreux, Switzerland

Country above party

I take issue with Bagehot's remark, in his column on Boris Johnson, that the Tories punted and "won big" when they chose Winston Churchill, another "maverick", as their leader (May 25th). Churchill became prime minister not because the Conservatives thought he could lead them to electoral success, but because he was the only figure who could form a national coalition to tackle the worst crisis in British history. Britain did "win big", but the Conservatives did not. At Churchill's first electoral test, in 1945, they spectacularly lost. Churchill, like Benjamin Disraeli, another Tory leader mentioned in the column, achieved greatness by service to their country, not to their party. Their biggest accomplishments were cross-party in nature: leading the wartime coalition for Churchill, passing the 1867 Reform Act with the support of radical Liberals for Disraeli.

R.L.F. CALDER
London

I first became acquainted with Boris Johnson through an episode of "Top Gear". I thought his oafish, buffoonish manner was the typical poli-

tician's shtick. As I idly followed him over the years I realised he wasn't putting on an act. His callous refusal to accept even basic facts when shamelessly trolling for the position of prime minister by shilling Brexit was awful. It would be appalling if the Conservatives were to choose him as their leader. But having watched the Republican Party sell out every principle in the pursuit of power, and succeeding somewhat, I can almost understand their actions.

CARL OWEN
Moore, Oklahoma

Minority report

Computer algorithms are already being misused in the criminal-justice system ("Files, not faces", May 25th). A study by ProPublica examined 7,000 computer-generated "risk-assessment scores" on scores of people arrested in Broward County, Florida, in 2013 and 2014. It found that only 20% of those predicted to commit violent crimes went on to do so. Police may despise the grind of old fashion paper-pushing, but without much testing we are adopting these technologies at our peril.

PETER TUTHS
Research associate
Open Government Partnership
Arlington, Virginia

Under-qualified Germans

Another reason for the lack of skilled labour in Germany is the reluctance of school-leavers to take advantage of the admirable dual-education system, and instead enroll at a university ("Opening up a crack", May 18th). The problem is that every pupil who has passed the school-leaving exam, the *Abitur*, has the constitutional right to a place at university, even if he or she has to wait some semesters and has no real academic inclinations or talents. The result is a proliferation of abstruse and socially irrelevant courses, a drop-out rate of about 30% (a shocking waste of human and financial resources) and the lack of skilled

workers you mentioned.

Having spent 20 years as a lecturer, I can testify to the often poor quality of students at hopelessly overcrowded public universities and the high quality of those at private institutions, which have strict admission requirements. But in our modern, democratic society everybody is at least a manager and selection is frowned upon. That attitude is leading to big problems for the German economy.

ROGER GRAVES
Wentorf, Germany

Bible studies

An article on success in academia presented yet another example of the application of Matthew, chapter 13, verse 12, to worldly affairs ("Never give up", May 11th). "For whosoever hath, to him shall be given, and he shall have more abundance: but whosoever hath not, from him shall be taken away even that he hath." A more in-depth reading of those words in Matthew's Gospel reveals two important points. First, it is clear that Matthew is talking about spiritual knowledge, and not material matters. And second, Matthew suggests that serious and regular devotion to acquiring such knowledge is especially beneficial.

In that sense, Matthew anticipates your own conclusion: "If at first you don't succeed, try, try, try again."

CHRISTOPH STEINBRUCHEL
Nashville, Tennessee

Turning up at the office

Those who are sympathetic to Bartleby's intelligent critique of presenteeism at work ("The joy of absence", May 18th) should also remember Woody Allen's quip that 80% of success is showing up.

YACOV ARNOPOLIN
London

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A palpable loss

BEIJING AND HONG KONG

The people of Hong Kong look like losing a security dear to them

THIS IS A story told in tears. The most obvious were those streaming from the eyes of protesters in the shadows of Hong Kong's glass-walled office towers, while police tried to disperse them with tear gas, as well as plastic bullets, water hoses and clubs. The protesters had gathered late on June 11th to try to stop a debate in Hong Kong's legislature on an extradition bill. If passed into law it would allow, for the first time, the sending of criminal suspects from the territory to mainland China, where judges explicitly serve under the absolute leadership of the Communist Party.

The protest escalated on June 12th and succeeded in delaying the debate. But when the protesters refused to leave, and pushed forwards through police lines towards the Legislative Council building, violence broke out. Hospital officials say 72 people were injured, two seriously. The following day a few dozen protesters gathered, as well as many police. But as *The Economist* went to press, the city was calm.

The most revealing tears, though, were

those of Hong Kong's chief executive, Carrie Lam—tears all the more chilling for being seemingly heartfelt. On the sweltering afternoon of June 9th the city saw a huge march against the extradition law. As many as a million people may have joined it, possibly making it the largest demonstration since China took over in 1997. Mrs Lam was asked by a local television channel if she might consider shelving the extradition law in response to this protest. Sadly, she would not. "I'm a mother, too," she said, wiping her eyes. "If I let him have his way every time my son acted like that, such as when he didn't want to study, things might be OK between us in the short term. But if I indulge his wayward behaviour, he might regret it when he grows up." Her tone—self-righteous and pitilessly parental—was the authentic voice of Hong Kong's ruling elite

→ Also in this section

17 America's response

contemplating an display of defiance it cannot, and will not, tolerate.

Mrs Lam, who was hand-picked by a panel dominated by politicians and tycoons loyal to Communist rulers in Beijing, says the new bill will plug a "loop-hole"—as if previous leaders somehow forgot to draft rules for sending suspects to China's courts, which take orders from the Communist Party. Its opponents, she says, would make Hong Kong a refuge for fugitives. Besides, the authorities there note, the law excludes those accused of political crimes. To this opponents retort that Chinese dissidents routinely face trumped-up charges of offences like bribery or blackmail. When Gui Minhui, a Hong Kong-based publisher of scandalous books about Communist leaders, vanished in Thailand and reappeared in custody in China, the charges against him referred to a car accident more than a decade earlier.

Bad governments make bad law

The occasion, or pretext, for Mrs Lam trying to rush the law through with minimal debate was the murder in Taiwan of Poon Hiu-wing, a woman from Hong Kong. Chan Tong-kai, her boyfriend and the prime suspect, was subsequently convicted in Hong Kong of money-laundering. Hong Kong's government said that, to make sure Mr Chan stands trial in Taiwan when he finishes his sentence, the chief executive needed the power, with only limited proce- ▶▶

► dural oversight from the courts, to extradite fugitives to places with which Hong Kong has no extradition deal. These include other parts of China—which, as far as the governments in Hong Kong and Beijing are concerned, include Taiwan.

This will not wash. Taiwan will not use the proposed law to seek Mr Chan's rendition because it refuses to be treated as China's territory. Opposition lawmakers and academics in Hong Kong have drafted proposals for a one-off arrangement which would let the territory return Mr Chan to Taiwan with no new law.

As to Mrs Lam's loophole, it is not a bug but a feature, according to Margaret Ng, a barrister. The current extradition law took effect just months before the territory was handed over from Britain. Ms Ng, who was a legislator from 1995-2012, says that the officials drafting it chose to maintain a firewall between Hong Kong's justice system and that of the mainland. They wanted "to protect the rule of law in Hong Kong and confidence in Hong Kong as an international hub free from China's much-mistrusted system." If China's nostrum of "one country, two systems" was to mean something, this part of Hong Kong's system would have to stand apart from China's.

Anson Chan, who was the chief civil servant in the Hong Kong government both under the British and for the first four years of Chinese rule, notes that the colonial government considered granting Hong Kong courts extraterritorial powers to try serious crimes committed by Hong Kongers in the mainland as long ago as 1986. It did so precisely because it believed that Chinese courts were not trusted. Under China's current leader, Xi Jinping, she says "there is even less" trust today.

It was the prospect of losing that firewall that brought out the crowds on June 9th. If the organisers' estimate is correct, the turnout represented a seventh of the

From fireworks to tear gas

Hong Kong, GDP as % of mainland China's



territory's population. Many dressed in white, the colour of mourning. Several confided that this was their first time at a political demonstration. The scale of the protest was a surprise to many observers. It gave the lie to the oft-aided notion that Hong Kongers have tired of standing up for their freedoms.

An unexpected turn

The protest that began on June 11th was smaller, involving tens of thousands of demonstrators who returned to the city's administrative and ceremonial heart when the legislature was due to debate the bill. This time, most were dressed in black. Many were university students on their summer vacation. Others were workers from hundreds of businesses that had given staff the day off. They were mostly young. But they were not inexperienced. Many had taken part in the pro-democracy "Occupy Central" protests that snarled streets for weeks in 2014, also known as the "Umbrella Movement" after the means used by protesters to ward off pepper spray. On June 12th they had not just umbrellas but masks, scarves, hard hats and plastic

cling film for protecting bare skin. Some also came armed with bricks, which they hurled after the police began using force.

The scale of the protest against the extradition law has been a surprise even to pro-democracy activists. In an interview last year Benny Tai, a rumpled law professor from Hong Kong University who was one of the leaders of Occupy Central, expressed doubt as to whether his city might ever see large demonstrations again. "People are concerned that it is not safe to protest, especially in the business sector," he sighed. He talked of "holding the line" while waiting for democracy to stir in mainland China.

It would be interesting to hear Mr Tai's views now. But since April he has been in prison, along with other Occupy Central leaders. Some of today's crop of demonstrators will doubtless follow in their footsteps; and their sentences may well be longer than Mr Tai's 16 months. Mrs Lam called the protest "a blatantly organised instigation of a riot". If "riot" was meant in its strict legal sense, that suggests participants could face ten years in prison.

Officials in Beijing, too, were probably not expecting such widespread opposition to the bill. By now, 22 years after Hong Kong became a Chinese Special Administrative Region, the country's rulers had expected the territory's people to have accepted their allotted fate: a life of well-fed but politically neutered domestication, like so many golden-egg-laying geese. Recent years have seen the emphasis on autonomy at the time of the handover being overturned by proposals that would leave Hong Kong merely China's wealthiest and most international city. Hong Kong remains valuable to China as a global financial centre. But whereas the territory was responsible for over 15% of the combined GDP of China and Hong Kong in 1997, it provided less than 3% in 2018.

The costs of defiance, meanwhile, have risen. In 2003 marches convinced the authorities to shelve an anti-sedition law that Beijing wanted to impose, an upset which ►►



Up against it

Hong Kong's economy

Garrotting the golden goose

Erosion of the rule of law puts Hong Kong's privileged economic status at risk

AS EVENTS UNFOLD in Hong Kong, the world is watching closely. Vladimir Putin, who this week had to deal with demonstrations of his own, can observe a fresh case study in the handling of discontent, for note-sharing at his next meeting with Xi Jinping, his partner in a new axis of authoritarianism. Britain, the former colonial ruler, called for calm and urged the Hong Kong government to heed the concerns of its people and its friends abroad. But the reaction that really matters is in Washington, DC, where the response could have big implications for Hong Kong's future.

Nancy Pelosi, the Speaker of the House, said on June 11th that if the "horrific" extradition bill passes, Congress would have to reassess whether Hong Kong was "sufficiently autonomous" to justify its current status in trade with America, which sets it apart from China. Ms Pelosi has a long history of championing human rights in China. In 1991 she unfurled a banner in Tiananmen Square dedicated "To those who died for democracy in China". But support for Hong Kong's protesters is bipartisan. The Senate majority leader, Mitch McConnell, and fellow Republicans such as Marco Rubio and Lindsey Graham, have joined a chorus of condemnation. Plans are afoot to legislate for a review of America's relationship with Hong Kong.

The framework for that relationship is the US-Hong Kong Policy Act of 1992, which established continued separate economic treatment for the territory

beyond its handover to China in 1997. This boosted Hong Kong as a bridge between the rich world and a booming China. More recently, it has meant freedom from America's tariffs on China.

Even before the latest troubles in Hong Kong, however, concerns were growing that it would get caught in the crossfire of President Donald Trump's trade war with China. As restrictions on China led to the diversion of more transactions via Hong Kong, its privileged position has inevitably attracted attention. Transferring technology to Hong Kong may increasingly be seen as equivalent to passing it to China—not the intent of the Policy Act. Last year the US-China Economic and Security

Fortunate

Hong Kong, May 2019 or latest

Share of offshore RMB-denominated payments	75%
Share of offshore RMB-currency dealing	39%
Share of direct investment into China (avg. 2013-17)	63%
Share of direct investment from China (avg. 2013-17)	59%
Global financial centre rank (Out of 102)	3
Banking assets, % of GDP	851
Stockmarket value, % of GDP	1,207
Number of multinationals with regional HQ*	1,333
Number of banks	194

Sources: BIS; CEIC; government statistics; Hong Kong Monetary Authority; IMF; Long Finance; SWIFT; World Federation of Exchanges *Excluding mainland Chinese firms

Review Commission, set up by Congress to report on the security implications of trade, recommended a fresh look at export controls for sensitive technology via the treatment of China and Hong Kong as separate customs areas.

A lot is at stake. Hong Kong is China's conduit. It accounted for nearly 60% of direct investment both into and out of China in 2012-16 (see table). It has a mighty share of offshore yuan-denominated payments. Western firms put money and headquarters there because it is seen as part of the Western system. Its currency is tied to the American dollar. It ranks third in the world as a financial centre; its banking assets are worth a whopping 851% of GDP.

Such might makes it vulnerable. A belief that its financial system is no longer fungible with the West's would be devastating. Erosion of the rule of law, and louder questioning of Hong Kong's trading status, pose a growing threat.

Whether actually killing that status would do anything to help Hong Kong's protesters is doubtful. "That's a gun you don't want to shoot, frankly," says Jeffrey Bader of the Brookings Institution, a think-tank. But the deepening strategic rivalry between America and China will bring greater scrutiny of Hong Kong. Under the Policy Act the president can suspend specific privileges by executive order if he deems Hong Kong insufficiently autonomous. In the midst of a trade war with China, a big blow to Hong Kong's future may be only a tweet away.

led to the resignation of the first chief executive, Tung Chee-hwa. Since then, and most notably after Mr Xi became party leader in 2012, the central government has grown less patient. One of the most striking, and disturbing, aspects of the extradition-law crisis has been that members of the Standing Committee of the Politburo in Beijing have weighed in directly. Such unprecedented interventions say much about the central government's growing impatience with the territory.

Though news outlets and social media aimed at mainland audiences censored reports of the protests, in commentaries intended for overseas consumption Chinese state media have accused "foreign forces" of trying to create "havoc" in Hong Kong. Actually, this is a strikingly moderate, organic movement, backed by local lawyers, priests, scholars and by business lobbies

that usually shun politics. Mrs Chan spent four-and-a-half hours among the marchers on June 9th. They probably "held out very slim hope that the government will change these proposals" she says. "But they wanted to stand up and be counted."

Hong Kong has already endured limits on the freedom of locals to stand for election—they have to accept Chinese rule and forswear independence for Hong Kong—and has seen activists jailed. Critics and enemies of the Communist Party have never been truly safe, even without an extradition law. Some have been abducted, usually reappearing on the mainland mouthing stilted confessions of guilt. But the protection of their rights still matters to Hong Kongers. "People with a clear conscience in Hong Kong feel safe in their own beds," says Mrs Chan. Now, with the prospect of being taken into arbitrary detention by

China, that safety is at risk.

Mrs Chan hopes that the chief executive will think again and set out "viable options" for handling fugitives from China, with a long period of consultation. Alas, that seems too optimistic. It cannot help that Mr Xi is already under pressure within China's elite for his handling of the trade war with America, suggests Jean-Pierre Cabestan of Hong Kong Baptist University.

China's rulers have suffered a clarifying rebuke, and a lesson about the power of loss and the limits of bribing people to give up freedoms. Exposure to China's cynical version of the rule of law feels like an unbearable loss to many Hong Kongers—outweighing the rewards of integration with a faster-growing mainland. Assuming that the extradition law is rammed through anyway, it will be a victory for fear and resignation, not parental love. ■

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Race and life expectancy

Black lives longer

NEW YORK

The life-expectancy gap between black and white Americans has steadily declined

BACK IN 1980 when Harlem was still a byword for poverty, criminality and the decline of New York City, black men in the neighbourhood had a worse chance of living to the age of 65 than men in Bangladesh did. At that time Harlem's residents—almost all of them black, and many of them poor—died of heart disease at double the rate of whites. They died of liver cirrhosis, brought on by alcoholism or hepatitis, at ten times the rate of whites. And they were 14 times likelier to be murdered. Today the prominent corner of Malcolm X Boulevard and West 125th Street houses a Whole Foods, an upmarket grocery chain, and life expectancy is up to 76.2 years. That is still five years behind the rest of the city, but the gap is no longer so egregious.

The case of Harlem exemplifies a remarkable trend in American public health that is seldom noticed: the persistent gap in life expectancy between whites and blacks has closed substantially, and is now at its narrowest ever. In 1900, the earliest date for which the Centres for Disease Control and Prevention (CDC) publishes statistics, the life expectancy for black boys at birth was 32.5—14.1 years shorter than for

white boys. Put another way, the typical black boy had 30% less life to live. Incremental progress, however fitful, was made for the next century, but epidemics of crack, HIV and urban violence threatened to reverse it. By 1993, a peak year for violent crime, the life-expectancy gap between black and white men had widened again by nearly three years, to 8.5 years.

But then it began a sustained, steady fall. In 2011 the black-white gap had narrowed to 4.4 years for men (5.7% less) and just 3.1 years (3.8% less) for women. Though progress then levelled off until 2016, the most recent year available from the CDC, the trend is stable and not reversing.

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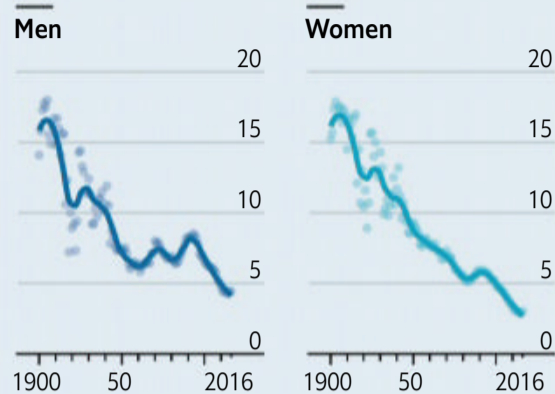
24 Lexington: Southern Baptists

The downward trajectory can be explained by several simultaneous phenomena, not all of them cheerful. Among the elderly, more of whom die after all than the rest, the narrowing is due to mortality from heart disease and cancer declining faster for blacks than for whites. But for premature deaths, racial gaps—especially between black and white men—have also narrowed because of substantially reduced mortality from homicide, the result of the great crime decline, and HIV, the result of improved medical therapies. Yet the emergence of the opioid epidemic, which kills whites at higher rates than other races, has also hastened the racial convergence.

Criminologists still do not know why violent crime and homicides began to decline in the mid-1990s. A wide array of theories have been proposed: the eroding appeal of crack cocaine, mass incarceration actually working as intended, legalisation of abortion, less lead poisoning of children and the improving economy. But the public-health consequences are abundantly clear, particularly for black men who were and remain the most frequent victims of murder. Patrick Sharkey and Michael Friedson, two sociologists, conducted a thought experiment showing that life expectancy for black men would have been 0.8 years lower if homicide rates had persisted at their levels in 1991. That is a remarkably large health effect—on the order of entirely eliminating obesity among black men. The authors calculate that 17% of the narrowing of the life-expectancy gap for black and white men between 1991 and

Race to the bottom

United States, life-expectancy gap in years between blacks and whites, by sex



Source: Centres for Disease Control and Prevention

► 2014 could be explained by the unexpected halving of the murder rate over that period.

Considerable improvement in the treatment of HIV has also decreased premature deaths for black men, who were hammered by the epidemic. An estimated 42% of the 1.1m Americans living with HIV today are black, triple their share of the population. At the peak of the epidemic, around 1994, the virus was killing blacks at an age-adjusted rate of nearly 60 per 100,000—or three times the rate at which opioid overdoses killed whites in 2017. Though blacks still make up a majority of Americans killed by HIV, the overall rates of death have plummeted to around 10 per 100,000.

At the same time as lifespans have been increasing for blacks, prospects for whites, especially the non-elderly, have sagged. This is mainly because of the rapid increase in deaths from drug overdoses, opioids chief among them. Death rates for whites caused by all drugs more than quadrupled from 1999 to 2017, and are now 32% higher than for blacks. Historically drug epidemics have disproportionately hit non-white Americans. But of the 47,600 people killed by opioids in 2017, 37,100 were white. Opioid addiction, suicide and overdose-related deaths all affect whites at much higher rates than blacks. Some of the reason for this may, ironically enough, lie in racial discrimination.

A life-saving bias

About three in four heroin addictions began with a legitimate prescription. The hotspots of the opioid crisis—the tri-state meeting of Ohio, Kentucky and West Virginia as well as rural New England—where blizzards of pills were later followed by a rise in overdose deaths, are much whiter than the rest of the country. “It is consistent with pretty different rates of prescribing opioids. We supplied it very differently to whites versus blacks in these areas,” says Ellen Meara, a health economist at Dartmouth College. “But we also know that there’s a lot of racial discrimination in our health-care system.”

Wherever they lived, blacks were less likely to obtain legal opioids in the first place. A study of pain-related visits to emergency departments between 1993 and 2005—a period that overlaps with the run-up to the crisis—shows that whites were substantially more likely to obtain an opioid prescription, even after controlling for the reported severity of pain and other factors. A wealth of studies have found similar effects. Doctors are also much more likely to stop prescribing opioids for blacks after detecting illicit drug use. In the case of opioids, racial bias probably saved lives.

Despite improvements in the racial gap, inequality in life expectancy by class and income still remains. The CDC has begun publishing estimates of life expectancy at the census-tract (or neighbourhood) level. Life expectancy at the 90th percentile is 83.1 years compared with 73.1 years at the 10th. In Chicago, census tracts a few miles apart can differ in average life expectancies by two decades. The estimates are quite close-

ly related to measures of income and poverty: a simple regression shows that a five-percentage-point increase in the poverty rate is associated with a one-year decline in life expectancy.

Research by Raj Chetty, an economist, and his colleagues shows that the income gap in life expectancy has been growing even as the racial one has been declining. So has the education gap. Although people have long assumed that higher socioeconomic status bought better health, that was not as true for blacks as it was for whites, says Arline Geronimus, a public-health professor at the University of Michigan. Now that is changing. “The convergence is due to more affluent, educated blacks living longer while less-affluent, less-educated whites are not living as long. It shouldn’t be interpreted as though we’ve made great strides,” she says. Even so, the improvements for black men run counter to the drumbeat of pessimism about race in America. Black lives are longer. ■

Worker-ownership funds

The winner (no longer) takes it all

How Warren Buffett’s billions may help Bernie Sanders defy ABBA

BERNIE SANDERS, a contender for the Democratic presidential nomination, will face plenty of opposition to his latest plan to force companies to hand over shares to workers. But at least he will not have to compete with ABBA. When the Swedish Social Democrats proposed the same idea in 1982, the pop group behind

“The Winner Takes It All” and “Money, Money, Money” helped lead opposition to the proposal, producing pamphlets and even hosting an open air gig to protest. In the end, ABBA saw off the socialist menace. The idea was watered down by the Swedish government, then scrapped in the 1990s.

Under the scheme being considered by the Sanders campaign, businesses will issue a small chunk of equity each year to a fund controlled by current workers. The fund will pay dividends to employees, while also giving them the same say as other shareholders. Supporters argue that companies rewarding bosses with equity has been the norm for years. If this is a sensible way to incentivise management, they ask, why not do the same for workers? Critics argue that it amounts to de facto confiscation by the state.

The idea, first devised by Rudolf Meidner, a Swedish economist, in the 1970s, lay dormant until it was rediscovered by British wonks, who pitched it to an increasingly left-wing Labour opposition in Britain. John McDonnell, the shadow chancellor, adopted it and announced that, under a Labour government, workers at businesses with more than 250 staff would be gradually handed 10% of the stock.

Also involved in blowing the dust off the idea have been Democracy Collabora- ►



Bjorn and Benny v Bernie and Buffett

Political ideology

Left nation

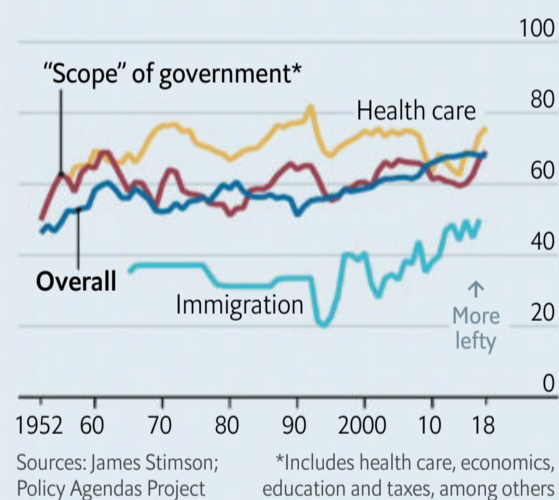
Donald Trump's presidency, like George Bush's before it, has moved America left

AMERICANS ARE more in favour of “big-government” policies today than at any point in the last 68 years. That is the conclusion of James Stimson, a political scientist, who has analysed long-running polls from the Universities of Chicago and Michigan to come up with annual estimates of the “public mood”. Mr Stimson estimates that the last time America was feeling this left-wing was in 1961, when the civil-rights movement was full-steam ahead and Alan Shepard became the first American to be launched into outer space.

Public opinion is contradictory: many more Americans describe themselves as conservative than as liberal; yet Americans prefer left-leaning policies to right-

High tide

Americans' ideology on key issues



leaning ones, even when these are accompanied by the promise of higher taxes. Mr Stimson's data show a steady leftward shift in Americans' views on the scope of government since 1952. And according to data from the Policy Agendas Project, an academic research group, the public also holds views that are more tolerant than ever on social issues like same-sex marriage; worries more about the environment; and is more enthusiastic about immigration and giving a helping hand to African-Americans.

The American public's preferences on policy have long shown an allergy to whatever the occupant of the White House is trying to do. In this respect public opinion is like a thermostat: when policy gets too hot, Americans turn the temperature down. When the government drifts too far right, Americans want to move back to the left, as happened in the 2018 mid-term elections.

Mr Stimson is careful not to suggest that the leftward swing is only a reaction to Donald Trump's presidency. He points out that the policy preferences he sees now “are the issues of American politics of earlier generations, the New Deal and Great Society agenda”. Mr Trump has done little to shift policy on Social Security, for example, so increasing leftiness on that issue may reflect real attitude-changes rather than thermostat-tweaking. On policy preferences at least, America is moving leftwards.

► tive, a think-tank which has lobbied heavily for the proposal on both sides of the Atlantic. One of their main backers is the NoVo Foundation, a fund set up by Peter and Jennifer Buffett, with the cash fronted by Peter's dad, Warren. A new model of business ownership is being developed with cash left over from the old one.

British businesses have started eyeing the scheme nervously, now that Mr McDonnell's Labour Party has a decent chance of taking power. Executives grumble that it is causing more of a headache than Britain leaving the EU. If Mr Sanders ends up in the White House, they will face a transatlantic pincer movement.

For lefties on both sides of the Atlantic, this is part of the plan. American thinkers hoping to shove the Democratic Party further left can point to Britain as a laboratory of left-wing ideas. Meanwhile British politicians, whose bookshelves bulge with biographies of dead American presidents and

boxsets of “The West Wing”, crave American approval. An idea backed by a presidential candidate seems less outlandish.

How far the proposal will go under Mr Sanders has yet to be decided. It is flexible. In effect the policy creates a knob, which can be twiddled between a redistribution of capital and control, all the way to handing the means of production to workers wholesale (as was Mr Meidner's original intention, until ABBA intervened).

Polling for Democracy Collaborative indicates that people like the idea: about 55% of American voters support putting up to half of a company's shares in a trust for workers. Even 50% of Republicans support such a scheme, with only 30% opposed. An idea that was rejected as too left-wing in 1980s Sweden is being revived in the twin engines of the Anglo-Saxon economy. Nevertheless, with ABBA on tour again in America this summer, maybe Mr Sanders should watch out. ■



Religion and freedom

I can do no other

Is helping illegal immigrants a protected religious practice?

ONE TROUBLE with liberty is that you never know what people will do with it. In recent years, American conservatives have been passionate defenders of individual religious freedoms, such as the right to have nothing to do with same-sex weddings. But Scott Warren (pictured above), an idealistic geographer who is facing felony charges for succouring migrants in the Arizona desert, has now become a standard-bearer for a very different sort of conscientious objection.

On June 11th his trial, which has been closely watched at the liberal end of America's religious spectrum, reached deadlock after jurors failed to agree despite three days of deliberation. That was a better result than Mr Warren and his many supporters feared. Prosecutors may seek a retrial.

Lawyers for Mr Warren, who has taught at Arizona State University, have insisted that a generically spiritual motive lay behind the actions he took, which involved feeding and sheltering two migrants. He has been charged with conspiring to harbour and transport illegal aliens, crimes punishable by up to 20 years in jail.

With the help of some eminent scholars, his defenders had made an unsuccessful but plausible enough effort to shelter him behind the Religious Freedom Restoration Act of 1993, a measure intended to protect a broad variety of religiously motivated acts from the heavy hand of the law. ►

Where does religion come in? Mr Warren is a leading light in No More Deaths, an NGO associated with the Universalist Unitarian Church, a liberal denomination, which tries to reduce the number of would-be migrants who perish in the desert. Nearly 3,000 bodies have been found in southern Arizona since 2001.

Although not formally religious himself, Mr Warren has much to say about the numinous nature of the desert and the rituals he performs when (as has happened 18 times) he discovers a dead body. On June 5th robed representatives of more conventional faiths, including a rabbi and an imam as well as many Protestant churches, came to the courthouse in Tucson to show their solidarity.

Jim Wallis, a prolific writer who is one of the best-known figures on America's religious left, says the case was crystal-clear: "He is being prosecuted for following the command of Jesus, which is to feed the hungry, refresh the thirsty and invite in the stranger." The case was so simple that it should not be a matter of political contention, he thought.

But the cause of religious freedom, which is one of America's founding ideals, has mutated ideologically in odd ways. The Religious Freedom Restoration Act (RFRA) drew near-unanimous support in Congress and was signed by Bill Clinton. It laid down that the government could not "substantially burden" an individual's religious liberty unless it had a "compelling interest" in doing so. The law was a counterweight to a Supreme Court ruling (concerning the use of intoxicants in Native-American rituals) which had made it a bit easier for the government to override individual liberty in matters of belief.

Then, in 1997, the Supreme Court ruled that the RFRA could not constrain the behaviour of state governments. That prompted states to pass their own versions of the RFRA, of which the most controversial was the one signed in Indiana by Governor Mike Pence, now the vice-president, which was denounced as a charter for discrimination against gay people.

As Elizabeth Sepper of the University of Texas, points out, the Clinton RFRA was intended to protect small, idiosyncratic minorities or individuals. Recently, RFRA-type laws have been used to shield members of the Christian majority from having to obey anti-discrimination laws. That has made the "religious freedom" slogan so unpopular on the left that House Democrats introduced a bill over the winter that would limit the scope of freedom-of-conscience cases to harm third parties.

Mr Warren is by no means the only progressive hero invoking religious liberty in court. The Clinton law is also being cited by seven left-wing Catholic activists from the anti-nuclear Plowshares movement, who

Burying the poor

Potters' fields

NEW YORK

What happens to the corpses of those who die poor or unclaimed in NYC

"NO ONE WHO sleeps there had a dollar to their name in life...the bodies interred here are as utterly forgotten and wiped away as if they never existed." This is how the *New York Herald* described Hart Island in 1874, five years after the city began burying its poor on the island off the Bronx. A century and a half later the poor and unclaimed are still buried in pine coffins, usually marked only with numbers, not names. These are stacked three deep in a trench, three feet below the surface. Each trench holds 150 adult coffins. Roughly 1,200 people are buried there each year.

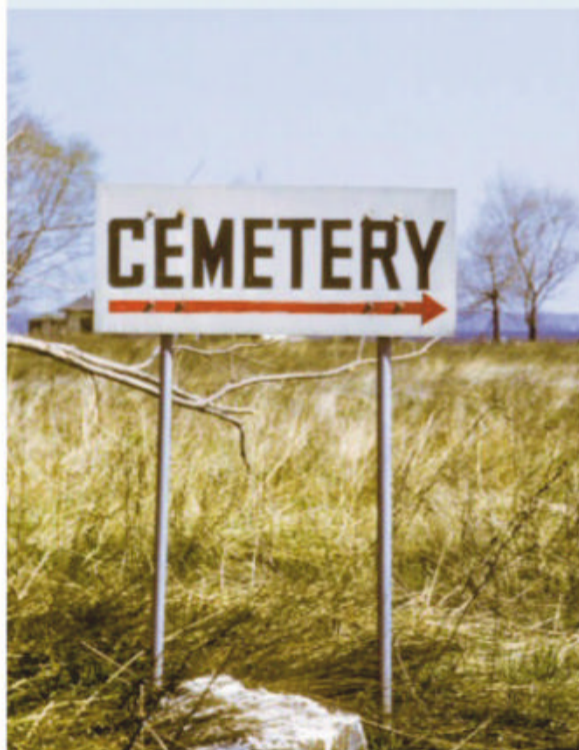
Jurisdictions across America are wrestling with what to do with their unclaimed dead. A state fund in West Virginia, which has been hit hard by opioid overdoses, ran out of money to bury the unclaimed dead last year. Some cities, including Los Angeles, cremate the unclaimed after a certain period, which is cheaper than burial. In North

Carolina unclaimed bodies are cremated, then stored for three years before being scattered at sea. In Washington's King County, which includes Seattle and its suburbs, the poor and the unclaimed are cremated and stored until a biennial burial ceremony. Because of the high number of migrant deaths in Pima County in Tucson, Arizona, its medical examiner's office handles more unidentified remains relative to population than any office in America.

Those who die without the means to pay for a funeral, which costs nearly \$9,000 on average, end up on Hart Island. Nearly two-thirds had next of kin who opted for a public burial. In all about 1m people lie there. The earliest victims of AIDS were buried there in 1985, far away from the other graves. Hart Island may be the largest cemetery for victims of the epidemic. During heavy rains bones are sometimes washed away and end up on nearby beaches.

The island, which has a stark beauty, is under the jurisdiction of the city's Department of Corrections. Four days a week eight inmates from Rikers, New York's biggest jail, travel to the island to dig graves and lower coffins into them. They are paid a \$1 an hour.

Because of Hart Island's close connection with jail and prisoners, it is difficult for relatives (or anyone else) to visit. "It is clear to me we can do better, much better for the people buried on Hart Island," says Corey Johnson, the Speaker of the city council. "This needs to be changed immediately." He is backing a bill that would transfer operations to the Parks Department, create an office to help those who need help with a burial and make travel to the island easier. The city also needs to think about what to do when Hart Island is full. The Department of Corrections says there will only be space for eight or ten more years.



Cold, cold Hart

face the possibility of 25 years in jail after entering a naval submarine base in 2018.

In some ways, the use of religious-freedom laws in left-wing causes is a mirror image of the tactics energetically employed by conservatives. By rooting successfully for the right of devout employers to opt out of contraceptive coverage, conservatives have loosened the accepted meaning of the term "substantial burden" and reduced the onus of proof.

If the pious owners of a corporation can

argue that their freedom is substantially burdened by a health-care plan, then it becomes a bit more plausible for an altruistic aid worker, or even a pacifist nun, to say that freedom is being curtailed unless they too are free to act on their ideals. As Brie Loskota of the University of Southern California puts it: "Conservatives have turned religious freedom into a super-right that undermines all others...their new idea is that an individual conscience can override absolutely anything." ■



Environmental policy

Green New Democrats

WASHINGTON, DC

The Democratic front-runners respond to the Green New Deal, whatever it is

ONE OF ELIZABETH WARREN'S formative political tangles, which prompted her move from law professor at Harvard to senator from Massachusetts, occurred in 2005 over a bankruptcy reform bill. Ms Warren was concerned about the repercussions for middle-class Americans, especially women, who would have a harder time filing for bankruptcy as a result of the bill. A particular target of her ire was Joe Biden, then a senator from Delaware and one of the bill's strongest backers. "Senators like Joe Biden should not be allowed to sell out women in the morning and be heralded as their friend in the evening," she wrote at the time.

To this day the two are seen as ideological foes. Ms Warren appeals to the left of the party, while Mr Biden has made a concerted effort to court moderate Democratic voters. Yet both contenders, who are placed second and first respectively in the Democratic field in YouGov's most recent poll for *The Economist*, have released environmental plans. The striking similarity of their schemes shows how the politics of climate change has evolved from a niche issue among Democrats to one of great urgency.

Those who called for a Green New Deal, particularly Alexandria Ocasio-Cortez, a first-term congresswoman from New York, can claim some credit for this change. A series of recent calamitous weather events—fires, polar vortices, hurricanes and floods—has also helped. In a recent YouGov poll 19% of Democrats said the environment was the most important issue for

them. That is second only to health care.

The Green New Deal, as first proposed, had two problems. The first is that it was only a sketch, with handwaving in lieu of detail on the massive economic reorganisation it envisages. The second is that it included a gratuitous list of progressive measures—including a federal jobs guarantee, universal basic income and universal health insurance—that are only tangentially related to climate policy. Many top-tier Democratic candidates, who would no doubt balk at such sweeping changes, signed on to the Green New Deal nonetheless. Yet with the release of Mr Biden's and Ms Warren's plans, both less quixotic and more scrupulous than the earlier sketches, the debate is much improved.

Make America green again

Mr Biden was one of the few leading Democratic contenders to resist endorsing the Green New Deal. He would instead release his own climate plan, he said. An adviser's comment that Mr Biden was seeking a "middle ground" gave rise to grumbling among activists that his would be a mish-mash that offered carbon taxes for liberals and fracking subsidies for conservatives. In fact, Mr Biden's plan is more ambitious.

He would like the American economy to be a net-zero emitter of carbon pollution by 2050. This would be achieved in two ways, including executive orders and actions (taking Barack Obama's playbook for climate policy and applying it much more ag-

gressively) that would bypass Congress. The second way, which would require legislation, is through \$1.7trn in federal funding for what Mr Biden calls a "Clean Energy Revolution". There are other proposals in there too, like developing high-speed rail and reforming zoning to encourage more dense, energy-efficient cities.

One innovation is to threaten tariffs on countries without adequate environmental policies. America accounts for 15% of the world's greenhouse-gas emissions. China accounts for nearly twice that. Mr Biden's language on this point—he says he wants "strong new measures to stop other countries from cheating on their climate commitments"—sounds almost Trumpian. Given that Mr Biden is the clear front-runner for the nomination, this perhaps paves the way for a future attack on the president for focusing his trade actions on the wrong problem. Climate change is a more serious problem for America's future than illegal immigration or bilateral trade deficits, Mr Biden could credibly argue.

Ms Warren's plan has a Trumpian echo, too: it was released under the banner of "economic patriotism". It represents, according to her, "my commitment to a Green New Deal"—one that applies the analogy of wartime mobilisation during Franklin Roosevelt's presidency to modern times. Hers is straightforward industrial policy, calling for \$2trn of investment over the next ten years for research and development, with three-quarters of that vast sum spent through federal procurement. Ms Warren thinks that all this production would generate 1m jobs, which would pay at least \$15 per hour and guarantee 12 weeks of paid family and medical leave. About \$100bn of the money would be spent on a "Green Marshall Plan", dedicated to exporting the clean-energy technology developed in America to other countries.

Curiously, both proposals dodge the question of a price on carbon, whether through direct taxation or a cap-and-trade scheme. Though research into more cost-effective technology for carbon capture and sequestration or solar power is helpful and necessary, a carbon price incorporating the negative externality of pollution would seem a simple first step. Mr Biden's plan only nods towards the principle "that polluters must bear the full cost of the carbon pollution they are emitting" and says nothing more on the subject. Ms Warren's plan does not mention it at all.

Both candidates employ clever staffers who know about carbon pricing. But they also employ strategists who note that carbon taxes are easily dismissed as energy taxes by political opponents. The lessons of 2010, when a Democratic effort to create a carbon market collapsed despite unified control of government, leading to an electoral backlash, have been well learned. ■

Lexington | On the edge

The Southern Baptists are beset by two related fiascos: sex scandals and Donald Trump



FORTY YEARS ago in Houston, Texas, a group of conservative pastors pulled off a heist at the annual meeting of the Southern Baptist Convention that reshaped both America's biggest Protestant denomination and its national politics. Liberal Baptists, who had dared question the literal truth of the Genesis myth, were denied leadership positions and, in due course, driven out. "Biblical inerrancy" was the conservatives' war-cry.

Within months they had joined battle in the culture and political wars, too. The Southern Baptists' hitherto nuanced position on abortion—they would allow it whenever a woman's well-being was in question—became one of implacable opposition. And the next year the convention's president, Adrian Rogers, was among a throng of Southern Baptists around Ronald Reagan as he uttered the line that sealed the bond between Republicans and the religious right: "I know you can't endorse me, but I endorse you."

This week in Birmingham, Alabama, Mr Rogers's 46-year-old successor, J.D. Greear, one of the youngest men to lead the denomination, attempted a more cautious reorientation. "We are at a defining moment regarding the future of our convention," he told a vast audience of "messengers" from its 47,000 churches.

That was an understatement. The confidence that fuelled the 1979 resurgence is long gone. The convention's membership of 15m, concentrated in the Bible belt, is its lowest in 30 years, and falling. Half of Southern Baptist children leave the faith; annual baptisms—which reached a high in the mid-1970s, when the moderates were ascendant—are at their lowest level in almost a century. Worse, the convention is gripped by two mutually reinforcing crises that are both illuminating and accentuating its decline.

The first is a split over Donald Trump far more rancorous and damaging than most non-evangelicals appreciate. At last year's confab, in Dallas, Mike Pence made headlines by giving a jarringly self-congratulatory speech. Less remarked on was the fact that around 40% of his audience had voted to bar the vice-president from speaking at all. The second crisis is a slew of sexual-abuse scandals that have made what is still the biggest Protestant denomination appear as unsafe for children as the Catholic church.

Recent investigations by the *Houston Chronicle* and *San Antonio Express-News* found that over the past two decades nearly 400

Southern Baptist officials, including several well-known pastors, had been credibly accused or convicted of abuse. These twin crises are not merely bad in themselves. They also appear to have flipped how many Southern Baptists look on their decline, turning an attitude of righteous stoicism into something closer to panic.

Though the revivalist hopes that attended the conservative resurgence were long ago dispelled, its enduring combination of fundamentalism and politicisation gave Southern Baptists two sorts of comfort. From the former, a hardened conviction of being heaven-bound even if the rest of society was going south; from the latter, the significant boon of presidential power every other cycle. Today's crises have whipped both comfort blankets away.

Most obviously, revelations that hundreds of women and children were abused in church camps and Sunday schools—and often cruelly suppressed when they tried to protest—have made it harder for Southern Baptists to find solace in their own holiness. Especially as the revelations point to something worse than a few bad apples: they are an indictment of the institutionalised male chauvinism that the conservative resurgence helped cement.

Even before the scandals broke, leading evangelical women such as Beth Moore were straining against the doctrine of "complementarianism" (a hoary idea of gender difference that gives men the whip-hand in the home and bars women from preaching). The impunity that hundreds of powerful male abusers long enjoyed has made this seem even less supportable—especially as leading complementarianists, such as Paige Patterson, an architect of the resurgence, were among those tainted by the scandals. "Did we win confessional integrity only to sacrifice our moral integrity?" asked another conservative, Albert Mohler, as the first wave of revelations broke last year. "This is exactly what those who opposed the conservative resurgence warned would happen."

The damaging effect of this on the convention's ability to evangelise—in theory, its core mission—is obvious. It has also highlighted the pre-existing damage done by politicisation, which has made the Southern Baptists largely unacceptable to half of America. And their contentious embrace of Mr Trump has made that situation even worse, by alienating the younger and non-white evangelicals they must recruit merely to tread water. Mr Greear, a conservative theologian with the relatively moderate outlook of his native North Carolina, has made increasing diversity in the convention a priority. Yet Mr Trump's election, he acknowledges, has driven a "quiet exodus" of blacks from its churches.

He is at least trying to confront both crises. This week he backed a change to the convention's rule-book that will make it easier to expel any church that fails to respond satisfactorily to allegations of abuse. A guarded critic of Mr Pence's speech last year, he also warned against cheerleading for Mr Trump. By the convention's recent standards this is progress, albeit insufficient.

Judge not...

It is unclear how much influence Mr Greear wields over the convention's disparate parts. It is also not obvious how, in practical terms, he can expect to wean his brethren off party politics without revising the tenets of the 1979 resurgence, which he claims to support. So long as Southern Baptists put fighting abortion and gay rights before the acts of grace and social justice they once gave equal billing to, they have only one party to support: the Republicans, whose shrinking, white coalition is the future they are trying to escape. Mr Greear can clearly see that looming cliff-edge. He just cannot bring himself to hit the brake. ■



North American diplomacy

Chatting over the fence

LOS CABOS AND OTTAWA

Mexico and Canada try to bypass Donald Trump

A FEW DAYS before Donald Trump announced that he was not going to act on his threat to impose a 5% tariff on Mexico's exports to the United States, a group of Mexican and American businessmen had dinner with two American politicians, one local and one national, in a Republican-voting state. The Mexicans produced economic data showing what the cost of such a tariff on the state and counties might be. The next day both politicians made public statements of concern about the levies.

Since June 7th, when the proposed tariffs were "indefinitely suspended", the focus has been on the work done by Mexico's negotiators in Washington. They agreed to send 6,000 national guardsmen to Mexico's southern border and to host asylum-seekers as they await news of their claims from the United States. Mr Trump later claimed to have a second "secret" deal with Mexico, waving a sheet of paper in front of photographers. It appeared to show a promise that there would be "burden-sharing" of processing refugees.

But the kind of work done in the American restaurant helps, too. Many in Mexico think their best chance of curbing Mr Trump's worst instincts is by persuading friends who can appeal to his self-interest. In 2017 the president reportedly reversed a decision to terminate the North American Free Trade Agreement (NAFTA) on his 100th day in office after his agriculture secretary, Sonny Perdue, dashed to his office with a map showing that the states he won in the election in 2016 would be worst hit by its demise.

In the lead-up to the introduction of NAFTA in 1994, Mexico and Canada paid American lobbying firms lots of money to woo politicians. But the "NAFTA coalition"

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decayed in the years before Mr Trump's rise. Now both countries are again trying to court people of influence—lawmakers and governors, particularly Republican ones, as well as business groups. Mexico especially is hoping that the lobbying effort will help dampen Mr Trump's wrath if the number of Central American migrants approaching the United States does not fall.

Hours before the tariff threat was lifted, Andrés Manuel López Obrador, Mexico's president, gave a speech at the first-ever Summit of North American Mayors, a seaside talkfest in the sunny resort town of Los Cabos. Some 120 mayors from three countries attended the event arranged by Marcelo Ebrard, Mexico's foreign secretary. (Mr Ebrard missed his own party, as he was trapped in Washington negotiating.)

Such summits are popping up with growing frequency. The associations of Mexican and American governors and Canadian premiers now meet each year. A meeting of Mexican and American CEOs held in Mexico in April was attended by Wilbur Ross, America's commerce secretary. Last year's elections in Mexico were the first in which senators were allowed to stand for a second term (until 2014, lawmakers could serve only one). That should help links between Mexican and American politicians to deepen over time.

In Washington, the Canadian and Mexican embassies trade tips on which American senators are pliable and which are te- ▶▶

►pid on trade (both worry about the trade-scepticism of newly-arrived Democrats). And each has painstakingly collected state- and even county-level economic data to be presented in one-on-one meetings. They pounce when lawmakers leave the capital for their home states, where their schedules tend to be emptier. “If there is a barbecue, we’ll go there,” says one official. Most American lawmakers are said to be surprised when told how much trade their district does across the Mexican and Canadian borders.

What is the effect of all this? One dip-

lomat jokes that it is like advertising. It gets through half the time, but no one knows which half: “You know that speaking to 20 influential people at a time, something will work.” Canada and Mexico both share borders with important states that helped Mr Trump win the presidency. Along the Mexican border, where there are large Mexican-American populations, not everyone shares Mr Trump’s antipathy to their southern neighbour. Mexico’s new ambassador to the United States, Martha Bárcena Coqui, has visited four states won by Mr Trump in her first five months.

The aim for now is to ensure that Congress will be quick to approve the United States-Mexico-Canada Agreement, Mr Trump’s revamp of NAFTA. And perhaps some lobbying will also work its way up the chain to Mr Trump. But even if it does not change his mind, this new diplomacy could also outlast the president. Efforts by North America’s regions to build links across borders have been “accelerated by our national leadership”, says Eric Garcetti, the Spanish-speaking mayor of Los Angeles, who will host the mayors’ summit next year. Those links will last. ■

Bello Lava Jato in trouble



Brazil’s gigantic anti-corruption probe could self-destruct

IT WAS BRAZIL’S most controversial trial since Tiradentes (“Toothpuller”) was hanged in 1792 for plotting in Minas Gerais against Portuguese colonial rule. In July 2017 Sergio Moro, a crusading young judge, convicted Luiz Inácio Lula da Silva, a popular former president, of corruption, sentencing him to nine years in jail for receiving a beachside apartment from a construction magnate who obtained padded government contracts. This week that conviction was called into question after the *Intercept*, an investigative news website, published hacked messages from Mr Moro and Deltan Dallagnol, the chief prosecutor in the case, which appear to throw doubt on the judge’s impartiality and the integrity of the prosecution.

For several reasons, Lula’s situation may not change much. But the sprawling anti-corruption investigation known as Lava Jato (Car Wash) may have suffered a fatal blow. The *Intercept* claims to have “an enormous trove” of hacked messages, many of them on Telegram, an encrypted communications app. In some ways, the material published so far amounts to less than is claimed.

Lula’s conviction, and his jailing after a failed appeal, barred him from running in last year’s presidential election. He was leading in the opinion polls but was far from certain to win. Jair Bolsonaro, the populist eventual victor, profited from widespread hatred of Lula’s Workers’ Party (PT) because of its catastrophic economic mismanagement and involvement in a vast web of corruption. Nevertheless, on Telegram the prosecutors expressed alarm at the prospect of Lula giving a press interview from jail. As much as political partisanship, that looks like self-preservation, since they had reason to fear the revenge of the PT

should it return to power.

More serious, perhaps, is the revelation that four days before unveiling his case against Lula, Mr Dallagnol doubted its solidity and rejoiced when his team found an old press cutting about the flat. The case relied heavily on the testimony, derived from a plea bargain, of the jailed construction magnate. Lula insists he never owned or occupied the flat.

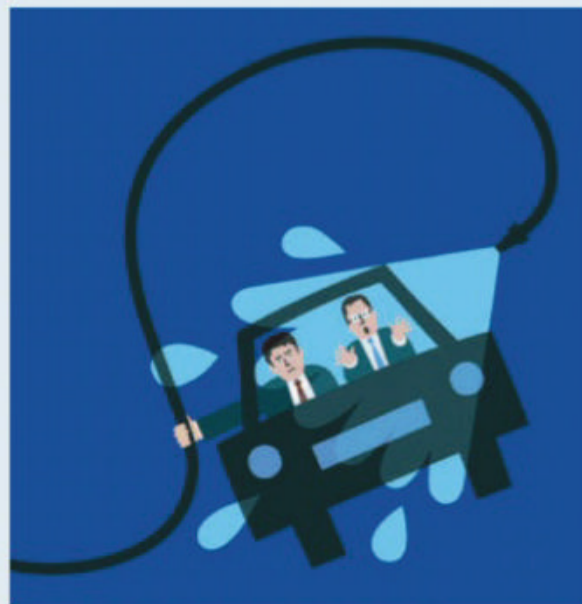
Most damaging are the many messages Mr Moro exchanged with Mr Dallagnol, in which he appeared both to coach and to chide him. The two seemed to work closely together. Under Brazil’s constitution of 1988, judges are supposed to be neutral arbiters. In practice, lawyers say, judges often exchange information with prosecutors. That is against both the law and the code of judicial ethics. In such an important case, Mr Moro should have known better than to break the rules.

Neither Mr Moro nor Mr Dallagnol has denied the authenticity of the messages, though they complain that they were obtained illegally. That means they might not be admissible as evidence in Lula’s

lawyers’ attempt to quash his sentence. Even if they succeed, the bigger picture still looks bad for Lula. In February he was convicted, on stronger evidence, of receiving a country house from construction firms; he faces another six cases. As for Mr Moro, he had already aroused suspicion over his motives when he became Mr Bolsonaro’s justice minister. He is a hero to many Brazilians. But his position now looks untenable.

Mr Moro and Mr Dallagnol were central protagonists of Lava Jato, in which some 200 businessmen, officials and politicians have been convicted. The investigation has plenty of enemies on the right as well as the left. Although many of its critics are self-interested, others worry about the prosecutors’ use of preventive detention and plea bargaining. For all that, Lava Jato has broken new ground in holding the powerful to account and revealing the unbearable scale of corruption in Brazil. Its excesses should be corrected. But its enemies will now feel emboldened to ensure that further investigations of politicians die.

Mr Moro is a close student of Mani Pulite (Clean Hands), an Italian anti-corruption campaign in the 1990s. It ended with a counter-revolution, led by Silvio Berlusconi, a prime minister and frequent target of investigation, which weakened judicial powers. In a study published by the IMF, Maria Cristina Pinotti, a Brazilian economist, notes that in Italy since then trust in the courts and other indicators of good governance have plunged—and so have productivity and economic growth. That is a warning for Brazil, whose economy has yet to recover from a slump in 2015-16, mainly because investment remains low. Having gone so far towards punishing corruption, it would be tragic if Brazil turned back now.



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OPERATING WORLDWIDE

Ayahuasca in Colombia

Bad trip

CAQUETA

Indigenous Colombians fear losing their hallucinogenic brews

IT IS A wet evening deep in the Amazon rainforest when members of the Koreguaje, a tribe of indigenous Colombians, line up to receive brews of ayahuasca, a hallucinogenic potion made from vines. They are handed out by *taitas*, or shamans, who have travelled in by boat along a river to reach the jungle. As the brew kicks in, the participants' stomachs rumble—diarrhoea and vomiting are the vine's other main effects. The *taitas* play a harmonica tune as some people go outside in search of relief; others lie back in their hammocks. The ceremony ends with the *taitas* singing to participants and patting their backs with dried leaves. At dawn, the ground around the shack is littered with used toilet paper.

For centuries ayahuasca has been taken in ceremonies like this one by several tribes inhabiting the Amazon region. In Colombia, consuming the brew is as much a political symbol as a cultural rite. Under the country's constitution, indigenous groups, who have long been persecuted by cocaine smugglers and others, are entitled to special rights such as collective land ownership and self-governance. But given that most people in Colombia have some Amerindian ancestry, claiming that status is difficult. Because ayahuasca has been used by these tribes since before the Spanish arrived in the 16th century, it is one of the few ways in which indigenous groups can prove to the government that they are culturally distinct. Tribe members have testified in court to its importance.

But now they face a new irritation: tourists and city-dwellers who are increasingly keen to try the potion for themselves. Some of them are excited by studies that suggest its active component, N,N-dimethyltryptamine, or DMT, may help with addiction and post-traumatic stress disorder. Others just want a trip.

The new trippers create demand for hallucinogenic services. Many new ayahuasca shamans have started touring Colombia giving *yagé* (another term for the brew) to enthusiasts. They charge anything up to 200,000 pesos (\$60) for ceremonies that gather up to 100 people. New shamans are modifying the traditional ayahuasca rituals. Insensitive backpackers can now combine it with distinctly non-Amazonian Indian elements, such as sweat lodges (North American Indian) or yoga (Indian Indian).

Commercialisation is giving ayahuasca a bad reputation. Some dodgy shamans are

Canadian basketball

Slam dunk, eh?

TORONTO

Canadians, desperate to win something, embrace basketball

PROFESSIONAL BASKETBALL got off to an inauspicious start in Canada. The first game in what would later become the National Basketball Association was played in 1946 at Maple Leaf Gardens between the New York Knickerbockers and the Toronto Huskies. The rules had to be explained to ticket-holders. The Knicks were stopped on their way to the game by a customs officer, who supposedly told them they would not “find many people up this way who'll understand your game”. The Huskies folded the next season.

That has not been a problem this year for the Toronto Raptors, who became the city's first NBA team in 1995. As *The Economist* went to press, the team was preparing for their penultimate game of the NBA championship. If they win, they

would take the cup, which would be a first for a Canadian team. Fans have filled the 19,800-seat Scotiabank Arena; tens of thousands more have camped outside. Canada's usual game is ice hockey, a sport so loved that it can provoke riots among a people famous for saying “sorry” when others tread on their toes. But could basketball edge it out?

The Raptors benefit from good marketing. They appointed Drake, a rapper who has tattoos of the Toronto area code 416 and the CN Tower, as their “global ambassador” in 2013. His courtside antics are now part of the spectacle. It also helps that Torontonians, 46% of whom are immigrants, are better reflected by the multiracial Raptors than the nearly-all-white Toronto Maple Leafs, an ice hockey team. The Raptors' biggest fan is a turbaned Sikh who has been to every home game in their 24-year history.

But probably the best explanation for the new fandom is the sweet taste of victory. No Canadian ice hockey team made the National Hockey League finals this year. The Raptors have made the playoffs of the NBA every year since 2014. Kawhi Leonard, an American who joined the team last year, has pushed them to unexpected heights.

According to the most recent census, ice hockey is still the sport Canadians are most likely to play. Basketball came fifth. But fans with a sense of history know that it was a Canadian, James Naismith, who invented basketball. Perhaps it is time for the game to come home?



said to infuse the drink with *borrachero*, a plant that contains hyoscyne, a drug that can make people vulnerable. Reports of sexual abuse have become common. Colombians were shocked last month when Orlando Gaitán, a popular (non-indigenous) shaman and a celebrated peace activist (his organisation won the Swedish Right Livelihood Award in 1990) was found guilty of sexually abusing three under-age girls. At least one foreign tourist has died after taking part in a ceremony.

Without ayahuasca tribes are “nothing”, says Ernesto Evanjuanoy, the president of UMIYAC, an organisation created by elders and medicine men from the five tribes most closely associated with the hallucinogen, who are uncomfortable with its use by others. In an effort to take back control, UMIYAC has created a code of ethics around the use of ayahuasca. Member shamans

must be approved by their community, and promise not to scam or sexually abuse their clients. The group hopes these measures will help prevent the brew from being stigmatised or criminalised.

But Alhena Caicedo, an anthropologist at Los Andes University in Bogotá, says it will be hard to stop people from selling ayahuasca. Most are extremely poor and lack other skills. The more money there is to be made, the harder it will be to enforce the code, which has no legal status. Ms Caicedo worries that if ayahuasca's popularity continues to spread, it could follow the same trajectory as coca, the plant used to make cocaine. Coca was once also considered sacred by certain Colombian indigenous tribes. But as cocaine consumption rose and cartels started killing people, the tribes lost control of the plant. Anyone growing coca today is treated as a criminal. ■



Indian politics

Costume drama

DELHI

What will Narendra Modi focus on in his second term?

NARENDRA MODI, India's prime minister, famously wears a different hat for every audience, from feathered head-dresses to towering turbans. He adopts different personas, too: a hug-happy uncle on trips abroad, a finger-wagging prosecutor against critics, a pious ascetic for the religious, a *chowkidar* (watchman) to please law-and-order nationalists. Now, after a landslide election that gave him an even stronger mandate than in his first five-year term, Indians are wondering which of these guises will prove to be the real Mr Modi. With no looming elections to distract, and the opposition crushed, he can do whatever he likes.

Judging from his ministerial picks, Mr Modi intends to be even more hands-on than before. Coalition partners of his Bharatiya Janata Party (BJP) had hoped for top posts. But Mr Modi owes them nothing: he won a parliamentary majority without them. So his bulging 57-person government consists largely of loyalists from his own party. Many of the new ministers are provincials with little experience of Delhi. The big exceptions are his new foreign minister, Subrahmanyam Jaishankar, a capable career diplomat, and the new home

minister, Amit Shah.

Tireless as Mr Modi, Mr Shah has for decades been a close henchman and enforcer. As president of the BJP he greatly strengthened party numbers and discipline, and is widely credited as the organisational genius behind the party's electoral success. Mr Shah's new job, with oversight of domestic intelligence and police, confirms his standing as second-in-command. He will take a hard line on unrest among Muslims in the seething state of Jammu & Kashmir and has promised a nationwide register of citizens to root out illegal immigrants, whom he labels "termites".

Power play

The new government has signalled plans to build on some of Mr Modi's first-term successes. During the campaign Mr Modi claimed to have brought electricity to all 600,000 of India's villages; the next step is to make it work around the clock. He will also bolster vote-winning social programmes, such as cash handouts to farmers and a broadening of health insurance for the poor.

Mr Modi's personal pledge to eliminate "open defecation" spurred the building of

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an impressive 92m toilets. His new government's laudable first promise is to follow this up by bringing safe, piped drinking water to every Indian home by 2024. As a start, it has merged a handful of agencies and ministries dealing with water.

Mr Modi's new minister of finance, Nirmala Sitharaman, has started off with a broom, sweeping 12 top bureaucrats out of the tax administration and inviting wider public consultation on the budget, which is due to be released in July. The ministry has won plaudits over the past five years for relative fiscal probity and for bringing in a long-awaited national goods-and-services tax (GST) to replace a web of local duties. But it remains unclear whether Ms Sitharaman, a former BJP spokesperson who most recently ran the defence ministry, has the understanding or her bureaucrats the will to sweep away a clutter of other tax rules which, among other things, discourage employers from adding workers or properly registering them, punish savers and impose unduly tangled compliance requirements on even small businesses.

An early test will be whether the government can simplify the GST and reduce rates. If it wanted to succour the moribund construction industry, for example, it could lower the tax on cement from 28%, as well as slash heavy fees for property registration. Corporate debt presents another challenge: just as a \$150bn accumulation of bad debts in the banking system peaked and began to decline last year, the debts of other sorts of finance firms ballooned dangerously. Mr Modi's government has until now reacted slowly and hesitantly to this mess, ►►

hoping that injections of fresh capital at state-owned banks, lower interest rates and rapid economic growth would help to paper over the disastrous lending. But this week Arvind Subramanian, a former adviser to Mr Modi, released a paper suggesting that the economy has been growing much more slowly than official data say (see Finance section). That suggests that more vigorous action may be needed.

For a prime minister with so resounding a mandate, Mr Modi has proved surprisingly shy about another pressing issue: administrative reform. India is peculiar in having a hugely fussy but remarkably skinny and understaffed bureaucracy. Around a quarter of central government positions are vacant at any given moment. Top bureaucrats are shunted between posts at bewildering speed. Rules rarely allow for the hiring of outside brainpower, such as ur-

ban planners or financial experts. Mr Modi has made a first chink in this system by allowing for contract employment of a limited number of specialists. But there is a long way to go.

On other big issues, such as the choking air pollution that afflicts northern India, or the water mismanagement that has led to dangerous shortfalls across the country, the government has been less than impressive. Some of Mr Modi's ministers have done incremental work to address pollution, but others dismiss complaints as exaggerated. Even as the government talks of bringing clean water to every home, it also suggests linking all India's big rivers with a series of canals, to the horror of environmentalists. India's problems are as varied as Mr Modi's hats. Only by concentrating less on appearances and more on actions will he get to grips with them. ■

Japanese names

Flipping out

TOKYO

A chrysanthemum by any other name would smell as sweet

THE WORLD calls the leader of China Xi Jinping. His North Korean counterpart is known as Kim Jong Un. The man who led North Vietnam to independence is almost always dubbed Ho Chi Minh. In all three instances, the surname comes first, and then the given names, as is customary in China, Korea and Vietnam. That is the custom in Japan, too. Yet English-speakers refer to the Japanese prime minister as Shinzo Abe, rather than Abe Shinzo. Why the inconsistency, asks Japan's foreign minister, Taro Kono—or rather Kono Taro, as he would like to be known. He says he plans to ask foreign media to start conforming to Japanese practice.

The oddity that upsets Mr Kono does not stem from the West attempting to impose its norms on Japan. When Matthew Perry, an American naval officer, forced Japan to end its self-imposed isolation in 1854, he had no qualms about referring to the Japanese officials he was threatening as they referred to themselves. Instead it was local elites who, after the Meiji Restoration of 1868, when Japan was rapidly modernising by imitating Western institutions and mores, took it upon themselves to reverse the order of their names for foreign consumption. The intention was to disassociate Japan from the rest of Asia and signal its advanced status to Westerners.

Mr Kono is no nationalist firebrand. He speaks fluent English and is hearteningly open-minded. Indeed, the cause is not really a nationalist one: even at the height of Japanese expansionism during the second world war, Japanese stuck to the convention he is now challenging. The cabinet and the wider population are split on the issue. Some organisations, such as Japan's national football team, already put family names first in English.

The debate is an illustration of Japanese culture's unique, and sometimes awkward, blend of east and west, which stems not only from the Meiji era but also from the American occupation after the second world war. The Japanese love both baseball and *shogi* (Japanese chess); sushi and doughnuts. Mr Kono argues that the switch to indigenous practice should occur in time for an impending series of showcase events including the Olympics, which Tokyo is hosting next year. But others would argue that Japan's relaxed and largely unselfconscious blending of foreign and local customs should be the main exhibit. ■

Recycling

Refusing refuse

South-East Asia is fed up with foreign waste

THERE IS NO point collecting recyclable waste unless someone is willing to buy it and actually do the recycling. Until late 2017 China was the world's biggest importer of scrap by far. This made sense. Like most other forms of manufacturing, recycling is cheaper there. Moreover, Chinese factories consumed lots of the resulting plastic and pulp, whereas developed economies, which tend to be net importers of goods, had plenty of plastic bottles and cardboard boxes to spare. It also helped that shipping to China was cheap, since ships would often otherwise return to the country with empty containers.

All this came to a halt when the Chinese government banned the import of all but the purest scrap material in 2017, killing a trade worth \$24bn a year. Waste dealers in the rich world had to scramble to find new buyers. South-East Asia soon emerged as the pre-eminent destination for foreign waste. Unfortunately, the region's recycling industry is much smaller than China's; its processing plants were quickly overwhelmed. Plastics from America and Europe have piled up in landfills. Lots of toxic rubbish has simply been torched.

South-East Asian governments are not pleased. They have begun to ban or crimp imports themselves, abruptly diminishing a booming business (see chart). On May 28th Yeo Bee Yin, Malaysia's environment minister, complaining that "garbage [was] being traded under the pretext of recycling", announced that

her government would be sending back 3,000 tonnes of foreign plastic. Much of it was of poor quality, she noted, and hence unrecyclable.

Thailand plans to ban plastic-waste imports by 2021. Vietnam's government has similar ideas. Kate O'Neill of the University of California, Berkeley, reckons these bans are motivated not only by environmental concerns but also by pride: Asia does not want to be the world's dumping ground.

Rodrigo Duterte, the president of the Philippines, recently threatened to go to war with Canada if it did not take back a shipment of plastic scrap. Canada agreed to take it away, and Mr Duterte stopped blustering after an election had passed. All the same, rich-world exporters might want to start work on Plan C.

Waste not

South-East Asia*, monthly imports of plastic waste from America and the EU, \$m



Sources: Eurostat; US Department of Commerce; *The Economist* *Indonesia, Malaysia, Philippines, Thailand, Vietnam



An election in Kazakhstan

Old problems, no solutions

ALMATY

A choreographed succession departs from the script

“HAPPY HOLIDAY!” cried a pie-seller in national dress as voters left a polling station in Almaty, Kazakhstan’s financial capital. A short stroll away in a leafy park, police were ruining the festive mood. Masked officers carried away prostrate protesters and hurled them into police vans. They were breaking up a peaceful demonstration by a few hundred dissenters who had gathered to demand change, even as the man on the verge of being elected president promised continuity.

With 71% of the vote, Kassym-Jomart Tokayev easily won the election, which was called after the resignation in March of Nursultan Nazarbayev, the autocrat who had ruled for three decades. Mr Tokayev’s closest rival, Amirzhan Kosanov, trailed far behind, on 16%. But monitors from the Organisation for Security and Co-operation in Europe said the poll showed “scant respect for democratic standards”.

Kazakhstan has never held an election deemed free and fair by credible observers. Mr Nazarbayev won the previous one with 98% of the vote. This week’s contest marked some superficial improvements. It was the first presidential election in 14 years to feature a challenger with a record of opposition. Mr Nazarbayev used to run against loyal supporters who took part simply to provide the illusion of competition. Democracy activists worry that Mr Kosanov, too, simply ended up providing a democratic veneer. How could it be otherwise in a country that has no formal opposition parties, and in which the media and civil society are muzzled?

The rubber-stamping of Mr Tokayev

(who was already interim president) is part of an experiment that Mr Nazarbayev has dreamt up for his country, untested elsewhere in the post-Soviet world. In an apparent effort to secure his legacy, he has handed over power to a chosen successor while still alive. Some speculate that Mr Tokayev is merely a seat-warmer for Mr Nazarbayev’s daughter, Dariga Nazarbayeva, who presides over the Senate.

Either way, Kazakhstan’s 78-year-old founding father is micromanaging the transition. Mr Tokayev, 66, is a Soviet-era apparatchik who became foreign minister and prime minister after Kazakhstan became independent. His diplomatic skills should help him juggle relations with Kazakhstan’s mighty neighbours, Russia and China, as well as the West—a trick Mr Nazarbayev managed with great dexterity.

But it is at home that Mr Tokayev will face his greatest challenges. Mr Nazarbayev’s resignation has spurred some of Kazakhstan’s 18m citizens—especially people under 29, who have only ever known Mr Nazarbayev as leader and are now over half the population—to challenge the regime’s zero-tolerance attitude towards dissent. The authorities in Almaty and Nur-Sultan, the capital recently renamed after Mr Nazarbayev, arrested 500 protesters on election day and hundreds more later, after results were released and Mr Tokayev sworn in. Three mothers are under house arrest after taking part in a demonstration in May. The regime has jailed people for demanding a fair election. One man held up a blank piece of paper, with no overt criticism of anyone, to test the limits of peaceful expression. Police grabbed and detained him. (He was later released.)

Such repression has backfired. It has become a catalyst for protests invoking a phrase from a century-old poem urging Kazakhs to shake off Russian colonial rule: “I’ve woken up.” Inventive videos mocking the government’s heavy-handedness have gone viral. Offline, activists have formed a new movement, “Oyan, Qazaqstan” (Wake Up, Kazakhstan). Their nine-point platform for political reform includes the abolition of the executive presidency. The government’s apologists have been deriding them as out-of-touch sophisticates.

Even if he wanted to, Mr Tokayev will find it difficult to adopt reforms in the shadow of Mr Nazarbayev, who will not want to see the system he fashioned dismantled. Despite the country’s oil wealth many complain of unemployment, low wages, corruption and a lack of access to housing, health care and education. Before the election, Mr Tokayev took to Twitter to promise “political modernisation”. “Old problems—new solutions,” he tweeted brightly. Kassymkhan Kapparov, a democracy activist, riposted tartly: “Old problems—old people who created them.” ■

Power generation in South Korea

A muddy future

SAEMANGEUM

The government wants greener energy. Who will pay for it?

STANDING IN THE middle of a huge coastal mud flat, Moon Jae-in, South Korea’s president, announced in October the beginning of “a new 1,000-year energy history” for his country. Behind him stretched a field of solar panels; a large windmill loomed in the background. The area, called Saemangeum, was dammed with the world’s largest seawall under a previous administration. Mr Moon wants it to become home to wind farms and solar plants capable of generating 4GW of power, to give South Korea a “brighter future”.

The site has unfortunate associations. The seawall, conceived in the early 1990s to reclaim land for agriculture, is the country’s most famous white elephant. It cost billions to build, but by the time it was completed, in 2010, there was little demand for new farmland. Environmentalists, meanwhile, lamented the destruction of an important way-station for migratory birds. Local fishermen complained their catches had shrunk. The vast expanse of stagnant, brackish water trapped behind the dyke hardly speaks of a greener future.

Yet a greener future is needed. By Mr Moon’s own admission, South Korea lags “embarrassingly behind” other countries when it comes to renewable energy. In 2017 43% of its electricity came from coal-fired plants, up from 39% the year before (the increase is because of another of Mr Moon’s policies, the slow phase-out of nuclear power). Emissions of greenhouse gases are rising, even though South Korea is a signatory to the Paris climate agreement and has pledged to reduce them to 20% below the level of 2010 by 2030. In April the government said it would increase renewables’ share of generation from the present 6% to 20% by 2030 and to 35% by 2040.

The commitment is timely. South Korean voters are increasingly sensitive to environmental matters, particularly the fine dust that blankets the country for large parts of the year. Scrutiny of coal-fired power plants and other industries is growing, and the authorities are backing away from their long-standing claim that most air pollution is blown in from China, and so is out of their hands.

But the government is woolly about how it will achieve its goals. A generous price subsidy for renewable generation was scrapped in 2012. Saemangeum aside, the country’s rugged terrain makes installing renewables expensive. The average ▶▶

▶ electricity price paid by consumers is around \$0.10 a kilowatt-hour, among the lowest in the OECD, a club of rich and middle-income countries. Raising it would be the obvious way to pay for the expansion (as well as to encourage efficiency). But that would be politically tricky, says Jung Tae-yong of Yonsei University in Seoul: “People think of electricity as a public good—they expect it to be cheap.”

That makes it hard for the government to attract private investment to projects such as Saemangeum. The local development agency is offering tax breaks and

preferential land leases to investors who are willing to take the plunge. Since 2012 the government has said that a steadily growing share of power sold by utilities—currently 6%—must come from renewable sources, but it is not rising fast enough to hit the government’s targets. “It’s just not that attractive to invest in renewable energy in South Korea,” says Mr Jung.

More than 90% of the country’s electricity is generated by KEPCO, a listed but state-controlled utility, which also controls the grid. Since the government began scaling back nuclear power in earnest in late 2017,

it has lost money in every quarter but one. In the first quarter of this year it posted an operating loss of 630bn won (\$525m), more than twice as much as expected. KEPCO blames the poor results mainly on the rising price of imported natural gas and coal, as well as having to cut back on cheap nuclear generation. It is thinking of petitioning the regulator to raise prices. Mr Jung thinks that this is the way forward. “We’re not a developing country any more. Eventually, the government will just have to admit that if we want clean and safe energy, we’re going to have to pay for it.” ■

Banyan The rugged nanny state

Australia’s pioneering image cloaks a bossy government

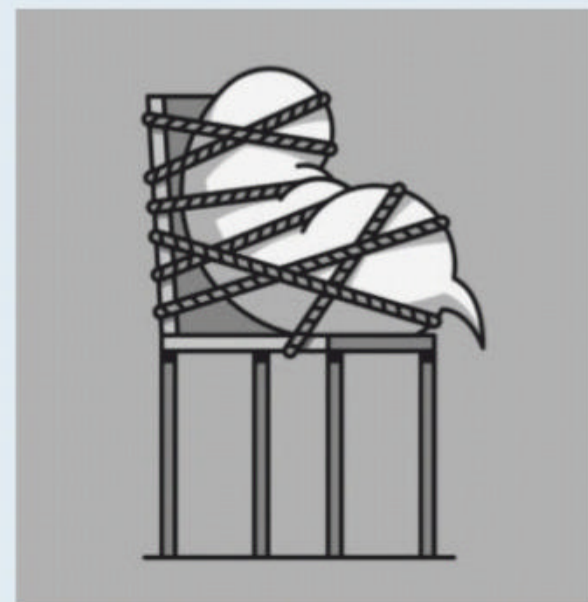
FOR A GROWING number of Australians, it is like stumbling out of bed and not recognising, let alone liking, the face you see in the bathroom mirror. In early June federal police raided the Sydney headquarters of the state broadcaster, the ABC. It had aired allegations of appalling deeds by Australian special forces in Afghanistan, including the killing of unarmed men and children. You might think the ABC was doing the country a service by revealing such gross misconduct. The Australian Defence Force itself had become concerned about a “drift in values” among elite troops in Afghanistan. Yet the warrant against the ABC read as if it was straight out of an authoritarian rulebook. Among other things it allowed investigators to “add, copy, delete or alter” material in the broadcaster’s computers.

The eye-rubbing is not just over press freedom, but about Australia’s direction as a liberal democracy. The whistleblower over the Afghanistan allegations was formerly a lawyer with the defence department. David McBride had followed public-interest disclosure rules by raising his concerns with his department. Only when he concluded that they were being ignored did he take his material to journalists. Far from being protected as a whistleblower, he is charged with the disclosure of unauthorised documents and faces a life sentence. His allegations, which have to do with events more than six years ago, have no obvious national-security implications today.

Nor is this an isolated case. The day before the ABC raid, police separately raided the home of a journalist at the *Sunday Telegraph*, one of Australia’s bestselling papers, in connection with a story about secret plans to expand the state’s surveillance powers to include

snooping on people’s e-mails, text messages and bank accounts. Last year a former spy, known as Witness K, and his lawyer, Bernard Collaery, were charged for (years ago) exposing Australia’s bugging of the government of Timor-Leste during sensitive negotiations over rights to offshore oil and gas. Meanwhile, a former employee at Australia’s tax office, Richard Boyle, faces 66 charges and no fewer than 161 years in jail for exposing its allegedly aggressive debt-collection techniques. When Mr Boyle reported such practices internally he himself became the subject of an investigation. Only after he refused to sign a gag order in return for compensation did he make his claims public.

All democracies face a tension between civil liberties on the one hand and national security and confidentiality within government on the other. The tensions have grown along with the threat of Islamist extremism. In Australia the establishment feels another profound insecurity, too: the insidious influence of an authoritarian China in commerce, society, academia and even politics.



Even so, the balance Australia has struck between freedom and security looks skewed. Since 9/11 government has passed more than 60 pieces of legislation that impinge on civil liberties (including one, last year, that obliges social-media firms to find ways for spooks to access encrypted communications). That is more than either America or Britain.

What is more, America’s first amendment and related laws protect journalists from police who want them to disclose their sources. Britain acknowledges the guarantees of free speech in the European Convention on Human Rights. Australia is almost alone among established democracies in lacking explicit constitutional protection for civil liberties. Its feeble whistleblower laws pointedly exclude protection for public servants—even in cases that have nothing to do with national security.

For all the opposition Labor party’s attempts to make hay out of the government’s discomfort, it has long been an enthusiastic backer of security legislation. Indeed, few Australians challenge the overweening state. Could their self-image as authority-averse larrikins be wide of the mark? Could it be that Australia’s rugged individualists are happy to defer to nanny?

Mr McBride, whose trial is due to start in a couple of weeks (and whose obstetrician father is credited with exposing the side-effects of thalidomide, a drug for morning sickness that caused babies to be born with deformed limbs), says the government is using the security apparatus “to fight its own people now”. He feels he has a duty to point this out: “I’ve never felt better. I’ve never liked myself more. I’ve never had a doubt it was the right thing to do for Australia.” Mr McBride, for one, is not afraid to look in the mirror.





Rare earths

Magnetic attraction

GANZHOU

Control of a crucial industry gives China power. Using it will be costly

IT LOOKS AT first like a classic Chinese painting: water-soaked paddies nestled against endless green hills. But then the brown begins. Abandoned brown pits on the hilltops. Brown gashes down their sides. Brown sludge in the streams. Ganzhou, until a few years ago, was southern China's mining country. The damage done in the name of economic growth involves an industry that has given China leverage in its trade war with America. The rocks extracted are rich in rare-earth minerals, used in everything from planes to smartphones. It is a dirty business that China dominates.

Rare earths, covering 17 elements on the periodic table, are in fact common. But China holds two-fifths of global reserves. In 1992 Deng Xiaoping quipped that "the Middle East has oil, China has rare earths." The chemicals used to extract them from the ore create toxic run-off, and for years China was more willing to bear that cost than other countries. By the early 2000s it accounted for almost all the world's production. "There were no laws back then and everyone here was digging up the ground," says Xie Yizhen, a local who worked in mining for 18 years.

Crucially, China has translated its con-

trol of the raw materials into dominance of the valuable next steps: turning oxides into metals and metals into products. To extend Mr Deng's comparison, it is as if the Middle East not only sat on most of the world's oil but also, almost exclusively, refined it and then made products out of it.

This is why rare earths now figure in the trade war. America can hobble Chinese tech giants by stopping American firms from selling them components such as semiconductors. But China could, in return, cut off their supplies of rare-earth products. The most important of these are specialised magnets for motors in electric vehicles, generators in wind turbines and missile-guidance systems. China produces more than 90% of the world's output, according to Citigroup, a bank. Even the Pentagon, through its suppliers, is a client.

China's rare-earth power is not a new worry. In 2010 it restricted exports—in order, it said, to protect its environment. The World Trade Organisation ruled against the restrictions after America and others challenged them. But since then many countries have fretted about relying on China.

So it is no surprise that in the past few weeks China has brandished rare earths as

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34 Debating contests

— Chaguan is away

a possible weapon. State media have played up the threat. "China gears up to use rare-earth advantage" ran a headline in *Global Times*, a nationalist tabloid, on June 9th.

But doing so is not so simple. After the scare in 2010 Japan lent money to Lynas, an Australian mining company with a refinery in Malaysia. Today, it can meet nearly a third of Japanese demand for rare earths. The Mountain Pass mine in California, which once supplied most of the world's rare earths but which shut in the early 2000s, has reopened. And on June 11th America said it would help other countries to develop their reserves. China's share of global rare-earth production fell from more than 95% in 2010 to 70% last year, and is likely to dip lower (see chart, next page).

A rare gift

China has much more leverage in downstream products. America last year bought about \$250m of rare-earth magnets from China, and there are no easy alternative sources. "These magnets are the farthest thing from a commodity that we can imagine," says Ryan Castelloux, of Adamas Intelligence, a rare-earths consultancy. They are made to exact specifications. And, says Mr Castelloux, the industry is small enough for China to be able to spot any American attempts to skirt a Chinese ban by importing magnets through other countries.

The Pentagon would probably be able to cope. An industry joke has it that it can carry its annual supply of heavy rare earths (the kind used in its missiles) in a single suitcase. Businesses would find it harder. David Merriman of Roskill, a metals re- ▶



► search firm, says it would disrupt the supply chain enough to put American car companies “at a competitive disadvantage”.

But it is far from certain that China will block exports to America. Doing so would also hurt Chinese companies, which are often the ones that build the motors and batteries for American customers using rare-earth magnets. Longer term, a ban would encourage the same process that happened in mining. Foreign firms, perhaps with government support, will invest in facilities to make finished products.

That would set back China’s grand strategy for rare earths, seen in the hills around Ganzhou. Over the past few years it has shut scores of unlicensed mines. At a huge cost, it is trying to clean up local rivers. The big state-owned mining firm in the area has started filling in some of its pits with grass and shrubs. China is still excavating plenty of rare-earth elements, especially in the north, but it has decided that it can buy much of what it needs abroad, and spare its own environment. Last year, it became a net importer of rare-earth concentrate.

Instead, China has shifted its focus to rare-earth products, to increase its downstream advantage. In an industrial park on the edge of Ganzhou, the government is ploughing money into factories that make rare-earth magnets and alloys. This manufacturing is much cleaner than the mining, and captures more value. Tellingly, when Xi Jinping, China’s president, visited the city last month, news reports showed him at JL MAG, a magnet company, not a mine.

At another company in Ganzhou, a manager shows off several of its products: little disc magnets, each containing about 30% rare earths. When the magnets are smaller than a fingernail, it is hard to pull them apart. When they are slightly bigger, just wider than a thumb, it is impossible to do so. That is a good metaphor for what China ultimately wants from rare earths, and for its economy more generally: to reach a size where no country, not even America, can pull away. Cutting America off now would undercut that ambition. ■

Debating contests

Dialectical materialism

WUHAN

Teenagers enjoy a rare chance to hone American-style argumentative skills

WHEN THE Chinese government first sent students to America in the late 19th century, it could not decide whether their goal should be to acquire specific technical knowledge or to absorb new ways of thinking. More than a century later, a third of a million Chinese students are enrolled at American schools and universities. Yet folks back home remain divided about what an American degree means.

Attending an American university is a good career move. It is also scorned as a soft option for well-off kids, scared of the *gaokao*, China’s brutal university-entrance exams. Yet many bright Chinese youngsters explain the appeal of an American education in remarkably idealistic terms. One place to hear such dreams, on a recent smoggy Saturday morning, is an English-language debating tournament in the central city of Wuhan. It follows a format popular at high schools across America, known as “Public Forum Debate”. On this occasion 182 teenagers are taking part.

At first sight, the event reeks of privilege. It uses the classrooms at a bilingual private boarding school in Wuhan with its own golf course and an ice-hockey team coached by imported Russians. But the debate is not for big-city elites. It is run by the National High School Debate League of China, a company founded by two young Americans in 2011. It stages contests in dozens of Chinese cities each year. This one has drawn pupils, aged 13-18, from nine cities. Many will never study overseas.

The proposition is: “Countries should prioritise climate-change adaptation over mitigation.” Teams have had three weeks to

prepare. An early round is won by a pair of 17-year-old girls who attend the international section (a bilingual school-within-a-school) of a state-run high school in Shenyang. In confident, rapid-fire English the duo argue that climate change should be treated with realism. They praise a sea wall being built in Jakarta and note the political lessons to be drawn from French *gilets jaunes* protests against a proposed fuel tax. The pair also had speeches arguing the opposite ready, in case the coin-toss had gone the other way.

Chinese pupils are pushed to study relentlessly, says one. But American-style debate forces students to “brainstorm a lot of ideas in a short time”. Unlike America, where debating clubs are dominated by shouty, self-assured boys, most contestants in the Chinese league are girls. Of its 20 highest-ranked debaters, 16 are female.

In a still-chauvinist society, the chance to argue forcefully and be applauded for it has a rare appeal, suggests Liam Mather, the league’s 20-something executive director. The winners in Wuhan are Joyce Yi and Erica Chen, from a state school in the southern boomtown of Shenzhen. Their swaggering first-round performance leaves two ill-prepared boys open-mouthed like fish. Ms Chen initially relished debating in English because “I’m kind of an argumentative person.” Then she realised the subtle effects of having to research both sides of an argument. Chinese education emphasises one correct answer to a question, she says.

The debaters are not starry-eyed about America. They talk of gun violence, inequality and crumbling cities. At a practice camp some call the American way of arguing “very chaotic.” But debate can prevent “huge mistakes” because competing perspectives are heard, notes Angela Pan, a teenager from Beijing. The young Chinese assert—perhaps a little optimistically—that American college students are diverse, free and informed about the world. They long to cross the Pacific and meet some. ■





Crisis in Khartoum

Sudan on the brink

KHARTOUM AND ADDIS ABABA

A struggle for power between the army and militias could lead to civil war

SAMAHIR MUBARAK, a 29-year-old pharmacist, points to a television in the corner of her living room. On the flickering screen a presenter warns viewers not to pick up the weapons that litter the streets of Sudan's capital, Khartoum. "Peaceful, always peaceful," urges the presenter of "Sudan of Tomorrow", a new TV channel.

For Ms Mubarak, the channel is a source of hope. She is an organiser of the peaceful protest movement that prompted the army to oust Sudan's murderous dictator, Omar al-Bashir, in April. On June 3rd, however, security forces killed more than 100 peaceful demonstrators, including 19 children. Since then, the capital has been in lockdown. The internet has been switched off and hundreds have been arrested. Many activists have gone into hiding. Television, Ms Murabak explains, is now one of the few ways to mobilise people against the Transitional Military Council, the junta that replaced Mr Bashir and is refusing to hand power to civilians. "If you look at people's faces there is anger," she says. "How can we

accept military rule now?"

There is little open rebellion. Most people stay at home, afraid of the Rapid Support Forces (RSF). This paramilitary group of perhaps 30,000 men, which is rampaging through the capital, grew out of the Janjaweed, a genocidal militia that has terrorised Darfur for two decades. On June 9th security forces ransacked the University of Khartoum and killed at least four of the few protesters brave enough to man the remaining barricades. A strike called by the opposition has paralysed the city. Nearly all shops, restaurants and small businesses

are shuttered. Wild dogs roam Khartoum's normally bustling streets.

Talks between the junta and the protesters broke down last month when it said it would not allow civilians to lead a transitional government. Relations have worsened further since the massacre, which the generals blamed on criminals and "organised groups paid by certain parties". International mediators including Abiy Ahmed, Ethiopia's prime minister, have tried to broker peace. But trust in the junta was further undermined when it arrested several opposition leaders a day after they had met with Abiy.

The mixed signals coming from the junta—negotiating one day and making arrests the next—may reflect splits within it. The main fracture line is between generals in the regular armed forces and Muhammad Hamdan Dagalo (widely known as Hemedti), who controls the RSF. Although the junta is headed by Abdel-Fattah Burhan, an army general, power has steadily shifted towards Mr Dagalo, his deputy, whose militiamen are now riding around the capital in gun trucks.

The RSF's brutality may be Mr Dagalo's undoing. Many officers regard it as an ill-disciplined mob. Residents of the capital, who weeks ago cursed the army, now look to it for protection from the "Janjaweed 2", as they have dubbed the RSF. "We need a military presence on the streets," says a nervous businessman. "If they left we'd be ►►

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▶ another Libya.”

Some think further atrocities by the RSF could spark fighting with the army. If that were to happen the RSF would “loot and shoot and kill anything”, says a UN official. “No creature will be spared, not even a donkey.” Those who can have quietly begun leaving the country.

There are also grumblings in the National Intelligence and Security Service, which had remained faithful to Mr Bashir until the end. Its leader, Salah Gosh, resigned shortly after the coup. It is not clear where the spies’ loyalties now lie, but they are thought to loathe the RSF for its betrayal of Mr Bashir, who used to call Mr Dagalo “Hemayti” (“my protector”) and who elevated the RSF into a praetorian guard. “The leader right now should be from the army,” says a former intelligence official.

Yet even the generals are divided about how to pull back from the brink of chaos. Many think that a political settlement with protesters is the junta’s best hope of gaining legitimacy and forestalling a civil war. But “there are elements within the junta which want to turn back the clock” and impose military rule “based on coercion not consent”, says Murithi Mutiga of the International Crisis Group, a watchdog.

International pressure may help convince them otherwise. On June 6th the African Union suspended Sudan until the generals give way to a civilian-led government. America has sent Tibor Nagy, its senior diplomat for Africa, to Sudan and has asked the junta’s main backers—Egypt, Saudi Arabia and the United Arab Emirates (UAE)—to use what influence they have to restrain the generals. Perhaps in response to the pressure, on June 12th the army said it would release political prisoners. The opposition movement called off its general strike in order to resume talks.

But there is little common ground. The generals still insist on having a military man in charge of the interim government. Leaders of the protest movement are demanding an international investigation into the massacre. They also want RSF troops to withdraw from Khartoum and other cities. Some, like Ms Mubarak, say no transitional government can include any of those responsible for atrocities.

One thing that ought to unite generals and opposition is that the longer the stalemate continues, the greater the risk of a civil war. That would not only be disastrous for the country, but could also suck in outside powers such as Qatar and Turkey, which have lost influence since the fall of Mr Bashir, or Iran, which has proved adept at filling vacuums.

Alex de Waal of Tufts University likens Sudan’s situation to that in Yemen, where regional powers have fought a proxy war since 2015. They could, he suggests, “do to Sudan what they’ve done to Yemen”. ■

Religious schools in Senegal

Chained to tradition

SAINT-LOUIS

Thousands of children are abused and forced to beg in religious schools

MBAR LIFTS up his trousers and points at the marks where the chains wore his skin away. He was 11 when his father sent him from his village to a religious school on the outskirts of Senegal’s holy city of Touba. His teacher made him recite passages from the Koran in the morning. Then Mbar (not his real name) was sent out to the streets to beg for money for his master until night fell. If he misbehaved, he was beaten or starved.

After two years Mbar ran home. But his father sent him to another school. This time he was not made to beg. Instead, he was chained to a wall. “I couldn’t move. They used to bring me a bucket to pee in,” says Mbar, in a cracked voice.

Senegal is one of Africa’s more successful countries. It is peaceful. Its government functions relatively well and the economy is growing at 7% a year. But along the old boulevards of Dakar, the capital, thousands of *talibé*—the “seekers” attending nearby religious schools—beg for change. Some boys are as young as four. Many families send their sons to such schools, or *daaras*, where they memorise the Koran. Some do so for religious reasons but, for many, *daaras* offer the only opportunity for children to get a basic education. Many *marabouts*, or religious teachers, respect children’s rights. And begging has long been accepted as a way of teaching *talibés* humility and funding their education.

But the system is almost completely unregulated, and rackets flourish. A new re-

port by PPDH, a coalition of Senegalese rights groups, and Human Rights Watch in New York, documents some of the abuse suffered by the estimated 100,000 children who are forced to beg.

Isolated and far from home, dozens of boys sleep in filthy rooms. They are given just enough food to survive. If they fail to meet their begging quota of about \$1 per day, or try to escape, they may be beaten, starved or chained for weeks at a time. Many are sexually abused. According to a psychologist at Samu Social, a centre working with boys in Dakar, many children try to kill themselves or hurt themselves deliberately so they will need medical attention and can get out of the *daaras*. From 2017 to 2018, researchers recorded at least 16 incidents in which children died from beatings, neglect or poor conditions.

Suffer the little children

Most of the boys come from farms or villages in Senegal, but some are also trafficked from the Gambia, Guinea Bissau and Mali. Agents go to rural areas and promise parents that the boys will study at the best religious schools in Senegal. The costs for the traffickers are minimal. They pay border guards about \$1 a child to smuggle them in from Gambia, says Issa Kouyaté, who runs Maison de la Gare, a *talibé* shelter in Saint-Louis, a city in northern Senegal.

Government officials have repeatedly pledged to deal with the problem, but their attempts have been half-hearted. The *daa-* ▶



Isolated and far from home



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1

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2

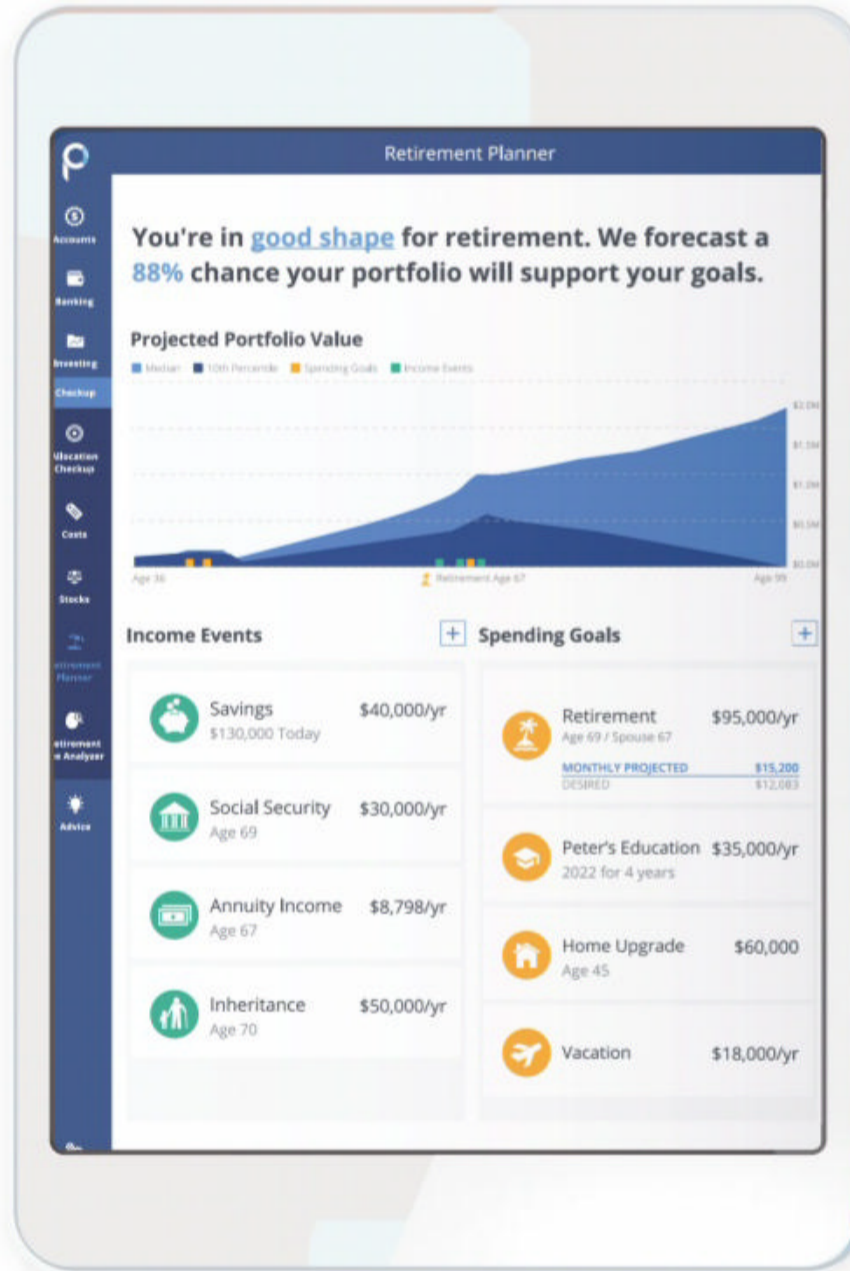
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4

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6

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► *ras* are powerful and the *marabouts* can influence the way people vote in elections. Politicians compete for their support.

In 2013 a law setting minimum standards for *daaras* was drafted. It has yet to be passed by parliament. In 2016 President Macky Sall spoke about taking the children off the streets and jailing those who forced them to beg. But official figures show that only about 300 children were helped in 2018. Children often beg openly outside police stations. The *marabouts* who abuse them rarely face justice.

All this may be storing up trouble for Senegal. “You have a large population of impoverished, abused children, isolated away from their families. I can’t think of a more perfect target population for criminals,” says Jeffrey Bawa of the United Nations Office on Drugs and Crime, a UN agency, adding that the boys were also likely to be future targets for jihadist recruiters.

Mbar was chained to the wall for a month. An older, stronger boy kept the keys for the chains in his robe and disciplined the children when the *marabout* was away. One night he left his robe on the floor near Mbar, who found the keys and unlocked himself from the wall. He couldn’t find the key for the chains around his ankles but it was enough. He jumped out of the window. Strangers helped him out of his chains and took him to a shelter in Dakar. After almost a year of eating good food, he is beginning to grow again and dreams of becoming a footballer. ■

Media freedom in Nigeria

Don’t gag me

LAGOS

Journalists and the opposition say that free speech is under attack

NIGERIA’S PRESIDENT, Muhammadu Buhari, once described press freedom as a “sound democratic ideal”. At the time he was on the presidential campaign trail, keen to prove himself a democrat and to jettison the baggage of his 20 months as military ruler in the 1980s. He told bosses of media companies that, if elected, he would uphold the constitution and respect freedom of speech.

Four years on—and just weeks into his second term in office—that promise is wearing thin. Earlier this month the Nigerian Broadcasting Commission (NBC) switched off transmission from Nigeria’s oldest private television channel and from radio stations owned by Raymond Dokpesi, a member of the opposition People’s Democratic Party, for “inciting broadcasts and media propaganda against the govern-



Gay rights in Africa

Love and the law

Botswana’s courts legalise gay sex

IN ZIMBABWE “SODOMY” can land you in prison for a year. In Zambia “carnal knowledge against the order of nature” could mean seven or more years behind bars. Uganda passed a law in 2013 punishing gay acts with life imprisonment, though a court later struck it down.

Botswana’s high court decided that such laws “deserve a place in the museum or archives and not in the world”. Judge Michael Leburu, who read out a unanimous verdict when the court struck down the country’s ban on gay sex, said: “It is not the business of the law to regulate private consensual sexual encounters.” This ruling follows the unbanning of gay sex in Angola in January and in Mozambique in 2015. So far, South Africa is the only sub-Saharan country that allows gay marriage.

However, gay people are still persecuted by law in more than 30 African countries. In some, such as Sudan and Somalia, their love is punishable by death. Although such laws are seldom

enforced, they leave people open to extortion and abuse.

Anti-gay laws also reinforce a culture of intolerance in many countries. In May religious conservatives rejoiced when Kenya’s High Court upheld a law that criminalises gay sex. Judges found that it did not violate a constitutional guarantee of freedom from discrimination, though it plainly discriminates against gay people. (Kenya’s constitution also promises everyone “adequate housing”, so perhaps the framers did not expect it to be taken literally.)

Botswana is a conservative place, too. Hereditary chiefs advise parliament, rather like hereditary lords do in Britain. But views about gay people are evolving. Discriminating against them at work has been illegal since 2010—despite the ban on their bedroom activities. And younger people in Botswana are more tolerant than their elders. Some 76% of 50-64-year-olds would object to a gay neighbour; only 48% of 18-29-year-olds would.

ment”. Within 24 hours they were back on air after a federal high court overturned the suspension.

Mr Buhari has not commented, but one of his aides praised the blackout. “Kudos to the NBC,” she tweeted. Mr Buhari’s supporters insist the suspension had nothing to do with politics. Critics note that the head of the NBC, who was appointed by Mr Buhari, is a member of the ruling party.

The brouhaha is an uncomfortable reminder of Decree Number 4, a media-gag-

ging rule imposed by Mr Buhari when he was a military ruler. It criminalised the publication of “any message, rumour, report or statement” that brought the government or any public officer “to ridicule or disrepute”—ie, any journalism feistier than a weather report.

Nigeria has vibrant and critical media. And unlike several other African leaders, Mr Buhari has never tried to shut down the internet to silence critics. But repression is on the rise. The Nigerian Guild of Editors ►►

called the closure of the stations a “barbaric crackdown” on free speech and pointed out that the government has closed several other radio and television stations over the past year. In January soldiers raided the offices of one of the country’s leading newspapers, the *Daily Trust*, and arrested reporters. In March a journalist who had previously been held without access to a lawyer for two years was rearrested. In both cases, national security was cited as justifi-

cation. The Committee to Protect Journalists, a watchdog in New York, has also recorded multiple instances in which security forces have beaten and arrested journalists, including an attack on a reporter by police on June 5th.

The lyrics of a musician Mr Buhari’s old military regime once jailed, the late Fela Kuti, still resonate as powerfully as ever. “Je’nwi temi” (“Don’t gag me”), he crooned in Yoruba. ■

three years. Flush with cash, families pack restaurants and malls. Payments have resumed to contractors. Workers are again building motorways. Kurdistan’s airspace has reopened. Threats by the national government to take control of Kurdish border crossings (and impose its convoluted visa process) never materialised. Trade with Iran, Turkey and north-eastern Syria, which is held by Syrian Kurds, is flourishing. Although the central government took control of Kirkuk and its oilfields, it exports much of the black stuff via the KRG’s pipeline, paying transit fees.

The Kurds played a big role in repelling Islamic State (IS) in 2014-16, seeing off 16 assaults by the jihadists on Kirkuk. But attacks by IS in and around the city are increasing again—and the national security forces are again looking to the Kurds for help. The Kurdish *Asayish*, or gendarmes, have kept their bases and are reviving their networks in the city; one of its commanders says he leads 2,000 men. In northern Kirkuk, it is as if the Kurds never left. Shopfronts are painted with Kurdish flags. Kurds in the city complain of Arabisation, but a huge statue of Jalal Talabani, a Kurdish leader and former president of Iraq, who died in 2017, still rises out of the hills above the northern entrance to the city.

The Kurds have become good at playing off regional rivals against each other. Iran and Turkey, which vie for influence in Kurdistan, have encouraged their merchants to return. Sanction-squeezed Iran needs outlets for exports; its oil trucks cram the roads of Iraqi Kurdistan. But America also sees the Kurds as a potential ally in its campaign to squeeze Iran, just as they were an ally in the battle against Saddam Hussein, Iraq’s former dictator, and IS.

For all the optimism, Kurdistan still faces challenges. Economic ties with the rest of Iraq are not what they were before the referendum. A chicken farmer says his sales inside Iraq, which fell by over half after the referendum, have only slightly recovered. Foreigners are returning to Kurdistan—but in smaller numbers. The government still wastes money on a bloated bureaucracy. Corruption is a problem. The Barzani and Talabani dynasties continue to dominate Kurdish politics, which would benefit from fresh faces.

Even though relations have improved, there is lingering distrust between the central government and the KRG—for good reason. The Kurds have not stopped dreaming of independence. Arabic is Iraq’s official language, but it has been three decades since it was properly taught in Kurdish schools. Courts refuse to accept Arabic documents without a Kurdish translation, says a businessman. Officials refer to the referendum as a step towards independence. “It is our title deed for a state,” says an official. “We will never give it up.” ■

Iraqi Kurdistan

Comeback Kurds

KIRKUK

Two years after a disastrous referendum, the Kurds in Iraq are prospering again

THE MONITOR recording the descent of a drill beneath the green hills of Khor Mor, in Iraqi Kurdistan, flashes 3,044—or just over 3km. In a caravan next to a roaring derrick a Canadian oilman and his team from Crescent Petroleum, a company based in the United Arab Emirates, watch for the first signs of gas. Other wells in the area are already meeting 80% of the electricity needs of Kurdistan. Capacity at an adjoining processing plant is set to double. The Kurds could begin supplying the rest of Iraq with gas by next year, says Falah Mustafa, the foreign minister for the Kurdish Regional Government (KRG). Exports of gas to Europe via Turkey could follow in 2022.

Such confidence signals an about-turn for Iraq’s Kurds, who enjoy relative autonomy from the rest of Iraq. In 2017 the enclave’s leaders reached for more, recklessly holding a referendum on independence, which passed overwhelmingly. The central government in Baghdad responded by booting Kurdish militias, known as the Peshmerga, out of oil-rich Kirkuk. It ended budgetary support for the regional government and, with the help of Turkey and Iran, closed its airspace and some border crossings. Western leaders abandoned the Kurds; foreigners fled the region. Masoud Barzani, Kurdistan’s humiliated president, resigned and left a power vacuum. Independence did not happen.

But, like its gas, Kurdistan is rising. On June 10th politicians from the central government converged on Erbil, the Kurdish capital, for the inauguration of Nechirvan Barzani, Masoud’s nephew, as the new president of the KRG. Turkey and Iran sent representatives. Kurdish opposition politicians, who protested against the government’s poor handling of the situation in 2017, will join the new government. Iraq’s prime minister, Adel Abdul-Mahdi, congratulated the younger Barzani. “Let’s have



Where there’s Kurds there’s a way

harmony with each other from now on,” said the president, from a podium festooned with Iraqi as well as Kurdish flags.

The Kurds owe their comeback, in part, to the national elections held last year. Turnout was low and the Kurds did well, becoming kingmakers in the new parliament. They helped Mr Abdul-Mahdi, who had fought with the Peshmerga in his youth, to become prime minister. In return Mr Abdul-Mahdi made Fuad Hussein, a close adviser to Masoud Barzani, his finance minister and restored budgetary support for the region (amounting to over 12% of the central government’s budget).

Lately Kurdistan’s economy has been booming. In March public employees received their full salaries for the first time in

The Gulf

Sovereign wealth, sovereign whims

MANAMA AND DOHA

Gulf sovereign-wealth funds are growing more ambitious

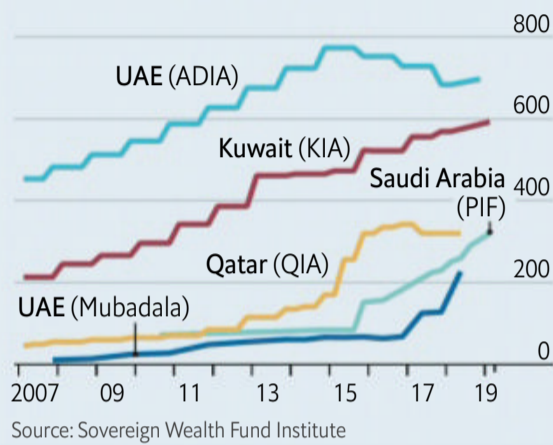
A DECADE AGO, few people in Silicon Valley had heard of Uber or the Public Investment Fund (PIF). The former had not provided its first ride. The latter, a Saudi sovereign-wealth fund, was a small entity with investments in local industry. But when the ride-sharing firm went public in May the PIF was among its five largest shareholders. It had bought a 5% stake in 2016 when Uber was valued at \$49 per share. It started trading at \$42. On paper, Saudi Arabia took a \$200m loss.

The world's sovereign-wealth funds control \$8trn in assets. More than a quarter of that is held by four Gulf countries: Kuwait, Qatar, Saudi Arabia and the United Arab Emirates (UAE). In decades past this was a dull business. The Saudi central bank parked the nation's oil wealth in Treasury bonds and other low-risk, low-return assets. Kuwait had one of the first stand-alone sovereign-wealth funds. It too invested in bonds and blue-chip companies.

No longer. All six Gulf sovereign-wealth funds are growing more adventurous. A few act like venture capitalists. Others use their billions to cement political alliances. The rest are trying to give a leg-up to local businesses and industries.

Gulf economies need to modernise and diversify away from oil and gas. Saudi Arabia, especially, needs to create good jobs for its swelling number of underemployed citizens. Sovereign-wealth funds can help. Some were originally set up to do little

An embarrassment of riches

Selected Gulf sovereign-wealth funds
Assets under management, \$bn

more than smooth the flow of revenue arising from bumps in commodity prices. Now, they are being given more ambitious goals. The princes who call the shots in the Gulf want to make their countries' savings work much harder. Others fret that the princes themselves are part of the problem—that tens of billions of dollars should not change hands on a royal whim.

Saudi Arabia is the most aggressive risk-taker of the lot. Though the central bank still holds \$500bn in assets, it is being eclipsed by the PIF, a pet project of the crown prince. Five years ago the fund had \$84bn under management. Today it has \$320bn. It has become an unexpected patron of Silicon Valley, with big stakes in Tesla and Lucid Motors, a rival electric-car manufacturer, as well as Virgin Galactic and Magic Leap, a maker of virtual-reality headsets. Another \$45bn went into a high-tech fund managed by SoftBank, a Japanese conglomerate. These deals could be lucrative—if the firms ever turn profits. Uber never has. The tie-up with SoftBank made the kingdom an investor in WeWork, a property startup that is posting huge losses as it pursues rapid growth.

Qatar, by contrast, seems to use its fund as an adjunct to diplomacy. It has a tiny population and the world's third-largest gas reserves, so its rulers worry little about short-term investment returns. "We don't have unemployment. All Qataris can find a job," says Ahmed al-Sayyed, a former director of the Qatar Investment Authority (QIA), which holds \$1m in assets for each of the emirate's 300,000 citizens.

In its early days it ploughed money into swanky investments in Europe: QIA owns a

large chunk of London, including the Harrods department store. A subsidiary owns the Paris Saint-Germain football club.

Lately its investments have taken on a political tinge. Last year it secured a 19% stake in Rosneft, a Russian energy giant. The emir also pledged to invest billions in Turkey (though Qatar has not yet done so). Both countries are important partners. Russia's military intervention in Syria made it a power in the region. Turkey has troops stationed in Qatar. No one questions these deals. The chairman of QIA and his deputy are relatives of the emir.

Bahrain and Oman lack the oil and gas wealth of their neighbours, and their holdings are an order of magnitude smaller. But they seem determined to use them as tools to modernise their economies. Bahrain's fund, Mumtalakat, was founded in 2006 with 8bn dinars (\$21bn) in assets. Its early investments were domestic. It bought a stake in Gulf Air, the state telecoms firm and other national champions. Just 3% of assets went abroad. Today the figure is 30%. Instead of risky tech firms, it focuses on companies offering services such as education and health care. It hopes to convince some to open regional offices in Bahrain, which positions itself as a services hub for the Gulf.

Other Gulf states are making similar attempts at state-directed capitalism. Abu Dhabi's Mubadala has made big investments in renewable energy, building solar and wind farms across the country. A \$200m subsidiary of Oman's main sovereign-wealth fund wants to bring high-tech firms to the sultanate. "The agenda is to develop the local ecosystem, not just to have capital flow to Britain or America," says Ali Qaiser, an Omani venture capitalist.

All could do well to look at the world's wealthiest sovereign, Norway, which manages about \$1trn in its oil-surplus fund. Parliament oversees its investments. A recent decision to dump oil and gas stocks and pour money into renewables was the subject of long public debate.

Funds in the Gulf lack such transparency. Some do not even publish regular financial statements. Each is controlled by a few officials close to the monarch. Qatar has bought assets that look more like vanity projects than sound investments. Saudi Arabia may regret gambling on tech firms beset with regulatory and managerial problems. Khadem al-Qubaisi, the former director of an Abu Dhabi fund, was arrested for his dealings with 1MDB, a defunct Malaysian development fund that was a cesspit of corruption.

Governments in the Gulf urge citizens not to worry about the future: when oil and gas revenue stops flowing, sovereign-wealth funds will pick up the slack. Those promises mean little if the funds are run like personal fiefs. ■





Prostitution

The new puritans

AMSTERDAM

Even the Dutch are debating whether to criminalise the buying of sex

“ARE YOU getting enough satisfaction in your bedroom?” purrs the narrator of a recent advert for IKEA, a Swedish retailer. If not, the “IKEA Karma Sutra” has the solution: loft beds for those who “are not afraid to be on top”; lustrous duvet covers to bring “feelings of ecstasy”. Swedes have a reputation for being pro-sex. Yet Sweden’s prostitution laws are surprisingly illiberal—and increasingly being copied elsewhere. The Netherlands is the latest country to flirt with the Swedish model.

In 1999 Sweden banned the purchase—but not the sale—of sex. A curious coalition of feminists and Christians backed the law. They argued that it would wipe out prostitution by eliminating demand, and that this would be a good thing because all sex work is exploitative. Anyone selling sex is a victim, even if she denies it. As for the men who pay for sex, they are predators who should be punished, campaigners believe.

Over the past two decades the Swedish model has been taken up by nearby Norway and Iceland, and beyond, by Canada, France, Ireland, Israel and Northern Ireland. In 2014 the European Parliament

urged EU members to adopt it. Spanish lawmakers are in the process of doing so. In America politicians in Maine and Massachusetts are calling for a similar approach. On July 3rd lawmakers in the Netherlands, where prostitution is legal and highly visible, are to start discussing such a law, as well as whether to ban pimps. As in Sweden, the crusade is cheered on by feminists and Christians with stern moral views. Exxpose, a Dutch organisation led by evangelical students, has gathered 40,000 signatures on a petition to criminalise the buying of sex. Parliament is unlikely to agree, in such a liberal country, but the campaign is spreading and there will

doubtless be more attempts.

Under current Dutch law, prostitution is regulated and taxed. The barriers to joining the profession are high: a licence to work as an individual prostitute can cost anywhere between €1,000 (\$1,130) and €10,000 initially and must then be renewed periodically. About a quarter of municipalities refuse to issue any licences at all, and Amsterdam, the capital, has been trying to reduce the size of its red-light district, which locals complain attracts organised criminals and excessive drug use.

Nationwide, the number of licensed sex businesses has fallen from 1,100 in 2006 to fewer than 700 in 2014. Many prostitutes work illegally, for various reasons. Some are coerced. (How many is hard to say, but estimates for the Netherlands put the figure around 10%.) Some are immigrants without work visas, or who cannot meet certain licensing rules, including one requiring the ability to speak Dutch. Some do not want to pay for a licence or be taxed. Some want to work from home, though this is harder than it could be, since advertising for such services online is illegal.

Evidence that the Swedish approach either reduces demand for commercial sex or harm to prostitutes is scanty. After buying sex was criminalised in Sweden, the number of women selling it on the streets of Swedish cities fell, but soon began to creep up again. The number of Swedish men who tell pollsters that they pay for sex has fallen, but that may reflect a reluctance to admit that they have committed a crime, rath-

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er than a genuine change in behaviour.

Other measures suggest that the sex business is still thriving. Between 2009 and 2012 the number of Thai massage parlours in Stockholm, which often double as brothels, nearly tripled to 250, according to the Swedish police. And growing numbers of sex workers ply their trade indoors or online, making them hard to count.

Despite the ban, many men are still keen to pay for sex. When Astrid, a Swedish prostitute who works throughout Europe, returned to Stockholm for a couple of days, she says she received 67 inquiries from potential clients. She accepted just two. The others were unwilling to disclose their names or telephone numbers, perhaps because they feared arrest.

Supporters of the Swedish model claim it protects prostitutes by giving them some power over clients, who will be worried about being shopped to the police. Prostitutes say it has the opposite effect. Face-to-face negotiations are more hurried. Kate McGrew of Sex Workers Alliance Ireland says that fewer sex workers are heeding what used to be red flags. For example, a trans woman was beaten up after taking on a client who asked if she was alone. Clients are more likely to insist on assignments in remote places. And because men refuse to reveal identifying information, prostitutes have little recourse if they are attacked.

In a study of more than 500 sex workers in France, nearly 40% said their power to negotiate prices and insist on condoms had diminished since buying sex was banned in 2016. Nearly 80% said their earnings had fallen, and almost 90% did not support the law. In Ireland violence against prostitutes shot up by almost 80% in the year after buying sex was banned, according to Ugly Mugs, a group that encourages sex workers to report attacks.

Yet the number of sex workers in Ireland who tell the police about such crimes has fallen. France has seen similar shifts. Sex workers are wary of contacting the cops for fear of being prosecuted for other things, such as immigration violations or brothel-keeping. Swedish-style laws are often used as a pretext to crack down on migrants, says Niina Vuolajarvi, a sociologist at Rutgers University. Norway introduced its law in part because voters objected to the sight of Nigerian sex workers on the streets. Since Ireland's law has come into effect, police have picked up just one man for buying sex, but they have arrested 55 sex workers, most of them foreign.

Natasja Bos, one of the leaders of Expose, claims that the Swedish model deters trafficking (ie, recruitment through force or deception) by discouraging both clients and pimps. But 15 years after the law was passed, Swedish police found no such decline. Men who might once have told police about women they feared had been traf-

ficked become reluctant to do so.

Advocates of a more liberal approach point to New Zealand, which treats selling sex like any other job. An official report says that "the vast majority" of sex workers are safer and healthier since prostitution was decriminalised in 2003. Those working on the streets report that their relationship with the police has improved. Likewise, in the Australian state of New South Wales, where selling sex is legal, prostitutes' use of condoms is higher than in other Australian states where it is banned.

No country has ever eliminated prostitution. Many people want more sex than they can get without paying. Sex workers meet that demand, and so long as the terms are freely negotiated, the law should not stop them, argue their unions. Police should concern themselves only with genuine cases of coercion. "Nobody wants a safer sex industry more than sex workers themselves," says Fleur (not her real name), of the Prostitution Information Centre in Amsterdam. Perhaps Dutch lawmakers should listen to the experts. ■

France

Emmanuel Macron's Act II

PARIS

The president kicks off a second big round of reforms

SIX MONTHS ago Emmanuel Macron was facing the most serious political crisis of his presidency. *Gilets jaunes* (yellow-jacket protesters) marched on the Elysée Palace, vowing to invade the presidential office. Tear gas hung over the wreckage of torched vehicles and smashed windows. Mr Macron's time as a credible reformist leader, it seemed, was up.

Today the French president has a fresh spring in his step. His poll ratings, though low, are back where they were before the

protests began. Mr Macron may have come in second to Marine Le Pen in the recent European elections, but only by a fraction. And the vote confirmed the collapse of the traditional French right and left that the young leader helped to engineer. Now, after months of crisis management, Mr Macron is launching "Act II" of his presidency. This second round of reforms, unveiled by Edouard Philippe, the prime minister, on June 12th, is designed to match in scale and ambition the shake-ups to the labour market, railways, education and fiscal policy that marked the first 18 months of his presidency. Besides a fresh emphasis on greenery, three structural reforms stand out: reorganisation of the public sector, reform of unemployment insurance and welfare benefits, and rationalisation of the French pension system.

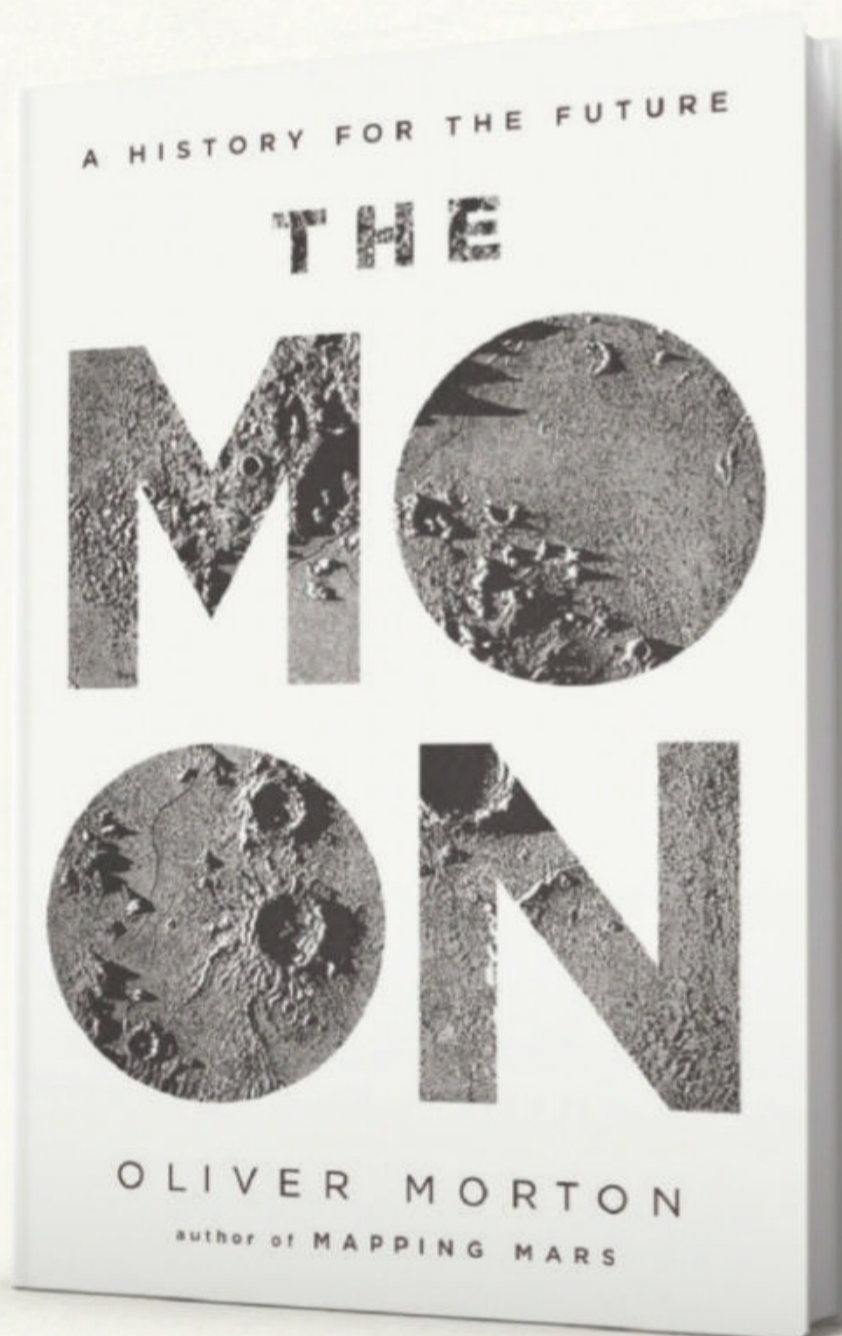
On the first, a bill to "transform" the public sector is already going through parliament. The purpose, says Olivier Dussopt, the junior minister in charge, is "to modernise management in the public sector, and make it more responsive—both for the careers of public-sector workers and for users of public services." France's mighty civil service employs 5.5m people, most with jobs for life. These are secured by passing an entrance exam, after which "management" is a generous term for what happens to careers. Bosses have little say over recruitment, let alone promotions, which depend on approval by committees, on which unions occupy half the seats. Teachers, for instance, need the committees' approval even if they want merely to change schools. The system cramps mobility and demoralises all concerned.

The new rules will enable managers to hire more easily from the private sector for short-term projects and longer contracts. The promotions committees will be relegated to judging contested cases. The idea is to give managers more freedom and responsibility, a change that Mr Dussopt calls "very profound". For French civil-service culture, these amount to "very radical changes", says Ross McInnes, the chairman ▶▶



THE MOON

A HISTORY FOR THE FUTURE



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► of Safran, an aeronautical giant, who co-chaired an official public-sector efficiency review last year.

A second reform, of benefits, is two-pronged. The government will soon unveil new rules for unemployment insurance which will, among other things, involve tapering payments and lowering payouts for higher earners. France is unusually generous. An employee on average earnings gets 68% of previous income if he loses his job, compared with 59% in Germany and 34% in Britain, according to the OECD. The reform will be controversial; talks between unions and employers on this subject collapsed earlier this year. Even more so will be the government's bill next year to merge housing and a tangle of other welfare payments into a single "universal benefit". The underlying principle of all this, says a presidential adviser, is "to make work pay".

Perhaps the boldest of all is pension reform, designed to merge 42 existing regimes into a single, fairer and more transparent system. The idea is to encourage job mobility and, implicitly, to delay retirement. The French currently spend more time in retirement than anybody else in the OECD, and the state pension system is in deficit. Mr Macron says he will not raise the legal retirement age, which would help meet that shortfall. But the merged system, when its rules are unveiled in the autumn, may end up encouraging later retirement anyway. The reform is as politically sensitive as it is ferociously complex. "It's probably the most ambitious reform of Macron's presidency," says Jean Pisani-Ferry, an economist who co-ordinated Mr Macron's campaign manifesto in 2017.

The president's newfound confidence will not in itself be enough to make these reforms work. Some in government worry that they involve a big political effort for little budgetary gain, at least in the short run. The government has already pushed its budget deficit back above the 3% of GDP Maastricht limit this year, partly because of income-support measures designed to calm the *gilets jaunes*. Others fear that Mr Macron has let slip his campaign promise to trim the size of the civil service. Detractors of a different sort accuse Mr Macron of wanting to privatise it, and to dismantle the welfare system. After the *gilets jaunes* have monopolised the airwaves for so long, unions are keen to make their voice heard.

If anything, the *gilets jaunes* protests showed that public policy cannot be decreed from on high, and Mr Macron claims that he has heard and understood this message. Yet his reputation also rests on a willingness to enact unpopular reform, at a time when his earlier policies are now starting to show promising results, notably in terms of job creation. Act II of Mr Macron's presidency will test whether those two objectives can be reconciled. ■



Russia

Five days that rattled the Kremlin

A rare climbdown by Vladimir Putin

A WEEK AGO few people had heard of Ivan Golunov, a freelance journalist who reports on corruption in Moscow. His work was published by Meduza, an independent news website that operates out of Latvia. Police and prosecutors ignored him.

That changed on June 6th, when police arrested Mr Golunov in central Moscow, beat him up and charged him with the possession and distribution of drugs. They denied him access to his lawyer, and refused to conduct forensic tests. The case was clearly fabricated. Photos purporting to show a drugs lab in Mr Golunov's flat were taken elsewhere, the police later admitted.

Russian social media exploded. Hundreds of journalists and citizens queued up in front of police headquarters to stage "single pickets", the only permitted form of protest, demanding Mr Golunov's immediate release. Some were promptly bundled into police vans, further increasing the general outrage.

The Kremlin had spent millions of dollars staging a summit in St Petersburg with Xi Jinping, the Chinese president, on the day of Mr Golunov's arrest. In the event, the formerly obscure journalist overshadowed the powwow. The story of his arrest circulated widely; international and Russian media ran pictures and posted videos of him in tears inside a cage in a courtroom. Actors, singers and other public figures denounced his treatment.

On June 10th three mainstream busi-

ness dailies, none of them radical, came out with identical front pages, spelling out in large print: "We Are Ivan Golunov". By 10am that day newsagents had sold out. Journalists announced a mass protest for June 12th, a holiday that marks Russia's independence from the Soviet Union. But 24 hours before the march was supposed to start, something changed. The police abruptly dropped the case and cleared Mr Golunov of all charges. Almost simultaneously, and surely not coincidentally, a court in Chechnya released another victim of the police's drug-planting tactics, Oyub Titiev, a human-rights campaigner. There is no doubt that the order to release both men came from the Kremlin. Yet Mr Putin is better known for encouraging rather than restraining his security services. So why the reversal?

First, Mr Golunov's release shows that the Kremlin is worried about losing its monopoly on force. An investigation by activists and supporters concluded that the journalist was nabbed by members of a corrupt group of FSB officers who work with the criminal underground, connections that Mr Golunov has exposed. Mr Titiev was arrested and jailed for crossing Ramzan Kadyrov, a strongman in Chechnya who commands a small army. But although neither arrest was sanctioned by the Kremlin, the gangs were only following the Kremlin's example. Having observed their ultimate bosses act with impunity against their opponents, the police and local FSB men decided there was nothing stopping them from doing the same.

By slapping them down, the Kremlin hopes to portray Mr Putin as the only true source of justice, a good tsar who can pardon and punish as he sees fit. This is no thaw. On June 12th the police broke up a peaceful rally against their tactics, detaining hundreds of protesters including some of the journalists who helped to get Mr Golunov freed. Alexei Navalny, Russia's most prominent opposition leader, was also arrested, but later bailed. He said that the Kremlin's actions only seemed illogical: "They are fantastically scared of consolidation in Golunov's case, so they first need to break up the solidarity and then intimidate and jail those who persevere."

The outpouring of support for Mr Golunov shows the power of online media and a growing mood for protest. Five years of declining incomes, added to brazen corruption and injustice, make a combustible mix; the Kremlin is keen not to add a spark. But it is also keen not to let protesters seize the initiative. As Mr Putin prepares for his annual televised phone-in show on June 20th, and contemplates ways of retaining power after the end of his final presidential term under the constitution, he needs quiet on the streets. Mr Golunov's case suggests he is unlikely to get it. ■

The politics of climate change

Germany's green makeover

BERLIN

Politicians are scrambling to respond to the Green Party's surge

THE TONE was measured, but the content alarming. Governments could “no longer close their eyes”, wrote Angela Merkel in the *Frankfurter Allgemeine Sonntagszeitung*, back in 1995. “Climate protection requires swift and energetic action.” Just four months into her job as Germany's environment minister, Mrs Merkel went on to broker a deal among her peers at a climate conference in Berlin that paved the way for the Kyoto agreement two years later.

Since then, at the global carousel of summits Mrs Merkel has kept up the advocacy that led some to dub her the “climate chancellor”. But at home, the urgency comes from elsewhere. At the European elections 48% of voters said climate change was their top concern. The Green Party came second in that election and now leads Mrs Merkel's Christian Democratic Union (CDU) in polls. Every week “Fridays for Future” protests fill the heart of Berlin with marching schoolchildren.

The change of mood among voters means “a wishy-washy policy course is no longer compelling,” says Ottmar Edenhofer, who directs the Potsdam Institute for Climate Impact Research. The CDU and its Bavarian sister party, the Christian Social Union (CSU), are scrambling to sharpen their climate profile. With their coalition partner, the Social Democrats (SPD), the parties must enshrine in law Germany's commitment to ensure that by 2030 carbon emissions are 55% lower than their 1990 level. That the SPD is spoiling for a fight makes that harder. The CDU itself is divided. Some back a carbon tax, with revenues redistributed to those hit hardest. Others want to expand the EU's emissions-trading scheme (ETS), a carbon market. Businesses want clarity. A decision will be taken by September, and legislation will follow.

Much of the frustration comes from Germany's sluggish performance. In the past decade it has spent a fortune rejigging its energy system while barely reducing emissions. This embarrassment comes with a price tag; under EU rules Germany could be liable for penalties worth tens of billions should it fail to meet its 2030 target. The 2020 goal is already abandoned.

Two factors explain this. First is Germany's ongoing dependence on coal, particularly lignite, the dirty brown sort. Thanks to hefty subsidies, renewables account for over 40% of electricity production. But Mrs Merkel's sudden abandon-

Moldova's political crisis

Plahotniuc v Putin

Russia and America both want Moldova's ruling oligarch to go

ON JUNE 8TH Nicu Popescu was on his way to a party in London. When the train entered the Channel Tunnel at Calais he was a humble think-tanker, based in Paris. When it emerged in Britain he had become foreign minister of Moldova. Since an inconclusive election more than three months ago, Moldovan political life has been gridlocked. Now it is moving at breakneck speed.

Moldova's corrupt leaders have long played its location, sandwiched between Ukraine and Romania, to their advantage. They have demanded bounty from Moscow, Brussels and Washington, warning that if they did not get it they would seek it elsewhere. But Vlad Plahotniuc, an oligarch who has dominated Moldovan politics in recent years, is so unpopular that he has managed to unite all three against him.

Elections in February produced a hung parliament. Subsequent negotiations failed to produce a new government, but the likeliest outcome seemed to be either new elections or a deal between Mr Plahotniuc's Democratic Party and the Russia-friendly Socialists. Then on June 3rd envoys from Russia, America and the EU arrived. Encouraged by the Russians, the Socialists struck a deal

with a new pro-Western party that holds the balance of power in parliament. Untainted by accusations of corruption, it is led by Maia Sandu, a popular former education minister.

But Mr Plahotniuc is not giving up power easily. The constitutional court, still controlled by his Democrats, has moved to dissolve parliament and replace the Socialist president with an ally of Mr Plahotniuc's. A TV station close to him broadcast a film of the old president apparently discussing illegal Russian party financing. He claims the words were taken out of context, but the old government is refusing to budge. Ms Sandu says that if it does not vacate government offices she will call her supporters onto the streets. Mr Popescu denies they are planning to storm the offices. “We are not commandos!”

Lacking international support, Mr Plahotniuc is losing his grip on power. But many suspect that the Russian strategy may be to get rid of him first, then eliminate Ms Sandu and take Moldova firmly back into the Russian sphere of influence. Her plan is also to deal with Mr Plahotniuc first and then defeat the Socialists at a new election. “I'm very optimistic,” she says.

ment of nuclear power after a tsunami-induced meltdown at a Japanese reactor in 2011, and warped price signals that made gas-fired power uneconomical, meant that cheap coal has made up much of the rest. The last mine is due to be shuttered by 2038. Too late, say activists.

Secondly, since 1990 Germany has failed to bring down its emissions from transport. Some cities have banned diesel-

powered cars from their centres, and car-makers are rewriting business models to avoid being overtaken by Chinese upstarts. But a future in which Germans zip around in electric cars is some way off. Nor are the incentives yet in place for the mass refurbishment of Germany's housing stock.

The governing parties face dilemmas balancing climate protection with their traditional economic goals. The CDU wants to avoid harming industry, already smarting from high energy prices, and is wary of the powerful motorists' lobby. The SPD fears for its industrial voter base. Many of the coal mines earmarked for closure lie in Germany's east, where the hard-right Alternative for Germany is popular.

All this bolsters the Greens, with their crystal-clear pitch, made from the safety of opposition. The party gains from voters' climate worries, but also from their frustration with a fractious coalition. Yet its success in soaking up votes from across the political spectrum hints at shaky foundations. It cannot remain all things to all voters. “We know our support is fragile,” says Kerstin Andreae, a Green MP. The party's influence, however, is not. ■



Charlemagne | A Brexit dividend

Britain's exit is the ideal moment to make English the EU's common language



FOR MOST of its life, the European Union had three main languages. German was its leading mother tongue. French was the preferred register of Brussels diplomacy. English was a widely used second language. But in recent years the rise of the internet and the accession of central and eastern European states have made English dominant. Today over 80% of the European Commission's documents are written first in that language, then translated into the EU's remaining 23 official tongues.

That has raised some hackles. "English is not the only official language of the European Union," huffed Jean-Claude Juncker, the European Commission president, last September. Some have hailed Brexit as a chance to re-establish French as the EU's leading language, or at least remove English as an official language. "By what miracle will 450m citizens have to be governed in this future minority language?" fumed one French journalist at the EU's failure to ditch the tongue of Boris Johnson and Nigel Farage.

On the contrary, there has never been a better time for the EU to embrace English as its single official language. Britain's exit makes the politics simpler. Philippe Van Parijs, a Belgian philosopher, argues that it will make English a neutral language within the EU (Ireland and Malta also speak it, but make up 1% of the remaining population) and thus ideal for exchange between Europeans of rival mother tongues. Given its Latinate and Germanic roots, he adds, embracing it would be an act of linguistic repatriation; returning the language to the European mainland. "We want our language back," he jokes. Second, Europe is growing together politically. From anti-migrant protests to the "Fridays for Future" environmental demonstrations by school pupils, causes are crossing borders more than before. Turnout rose to a 25-year high in the European elections last month after a campaign in which leaders, from Matteo Salvini of Italy's populist right to Emmanuel Macron of France's liberal centre, made an impact beyond their own countries. The French president wants to introduce pan-EU lists of candidates at the next elections. In this more genuinely European political era, a universally accepted lingua franca makes all the more sense. English is the only logical candidate.

Some fret that formalising its pre-eminence would entrench Anglo-Saxon culture and allow English-language publications

(like *The Economist*) to dominate. In fact, several big continental media houses—including most of Germany's major newspapers, Spain's *El País* and Greece's *Kathimerini*—now publish online English versions in order to take part in pan-European debates. Formalising English would merely encourage others to follow suit. The keenest proponents of an Anglophone EU are not Brits or Americans but Joachim Gauck, Germany's former president, and Mario Monti, Italy's former prime minister.

Another complaint from the English-bashers is that other political entities, like America, Canada and Switzerland, manage without a single official language. But unlike the EU, they all have centuries of history as common polities and a strong majority tongue; by contrast, only 18% of EU citizens speak German as their first language. Polyglot India is the nearest international comparator to the EU, but there too debates rage over whether to adopt a sole official language to add coherence.

The most compelling objection is that replacing Europe's babel with a common discourse in English is elitist. Yet that is precisely why the EU should do more to promote it as the definitive language of European exchange. Its current agnosticism has created a Europe where a brahmin class of multilingual university graduates can breeze from country to country and dominate pan-European debates. A firmer commitment to English at European and national levels would help extend that skill to Europeans who currently lack it.

The choice is ultimately not between an Anglophone Europe and a truly polyglot Europe but between wishful thinking and realism. Nicolas Véron, a French economist in Brussels, notes that English is already in effect the working language of the EU; a development that helped him and others set up Bruegel, one of the first genuinely pan-EU think-tanks, in 2005. Some 97% of 13-year-olds in the EU are learning English. The number of English-language university courses has risen from 725 in 2002 to over 8,000. Continent-wide political movements work overwhelmingly in English: the website and social-media accounts of Fridays for Future are in English, as are those of the right-populist Identitarian movement. At a rally of nationalist leaders in Milan before the European elections, Finnish, Danish, Dutch, Czech and German leaders all addressed the Italian crowd, to cheers, in English.

Spread the word

Formally acknowledging such realities would enable the EU and national governments to focus more resources on spreading English skills. Resources—some perhaps freed by shrinking the EU's mammoth translation operation—could go towards teaching the language to older and less-educated workers. It would spur more media organisations to publish in English and thus nurture the emergence of a genuinely pan-European media.

The biggest barrier is symbolic. "The language of Europe is translation," wrote Umberto Eco, an Italian author. The EU is proud of its everyday multilingualism, which becomes more fluent and accessible with every year as the use of machine translation tools grows. Yet the adoption of English as a common language should be seen not as a challenge but as a complement to this tradition. Europe is about diversity, and its patchwork of languages and dialects must be promoted and protected. But it is also about the sort of unity that is possible only with a common tongue, even imperfectly spoken. Universalising English while upholding the EU's native languages would be not a betrayal of the cosmopolitan European ideal, but its affirmation. ■



The Conservative leadership contest

Dealers and no-dealers

Hardline candidates say a no-deal Brexit would be fine. Moderates say it could be stopped by Parliament. Both may be in for a nasty surprise

FULLY TEN leadership candidates faced a first ballot of Conservative MPs as we went to press. In hopes of being one of the final two to go through to a vote by party members, they are vying to promise the most extravagant tax and spending plans. But the immediate challenge for the winner, who will take office in late July, will be Brexit, which is due to happen three months later. And here the promises vary from instant renegotiation of Britain's exit deal to withdrawing with no deal at all.

The timing is tight. Parliament is likely to go into recess just after the new prime minister is installed, and the European Union will go on holiday. MPs come back in September, but for less than two weeks before their party conferences. Brussels will be preoccupied with getting a new commission approved by the European Parliament by November 1st. A summit of EU leaders on October 17th-18th will come just a fortnight before the Brexit deadline.

The EU has made clear that it will not reopen the withdrawal agreement, which includes the backstop to avert a hard border in Ireland. Even so, most Tory leader-

ship candidates promise a swift renegotiation, and many are talking of a time limit to the backstop. Although a new prime minister would be listened to politely, it is fanciful to expect the EU to abandon the Irish—especially for a mistrusted hardliner such as Boris Johnson, the early favourite. That raises the chances of no-deal.

And here two misconceptions kick in. The first is the claim that Parliament is sure to prevent a no-deal Brexit. A majority of MPs have voted against the idea. In March backbenchers even took control of the agenda to call for an extension. The speak-

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er of the Commons, John Bercow, is willing to change the usual rules if necessary. Somehow or other, the argument goes, Westminster would stop a prime minister who is bent on leaving without a deal.

This may turn out to be correct, but it is not a certainty. No-deal is the default option in the absence of other action before October 31st. Any further extension of the deadline also requires the unanimous approval of EU governments. Charles Grant of the Centre for European Reform, a think-tank, believes they may agree, but adds that some exasperated leaders just want Brexit out of the way, deal or no deal.

Hardline leadership candidates like Dominic Raab have suggested suspending Parliament until November to stop it interfering. The attorney-general is reported to have called this unconstitutional but not illegal. Yet most candidates have condemned it as too anti-democratic to be a serious proposal. What is more, suspension is a royal prerogative, and no serious leader would want to draw the queen into political controversy.

Still, there are limits to what MPs can do. The March gambit—taking over the parliamentary timetable to pass a law demanding another extension—relied on there being legislation or an amendable motion before MPs. Brexiteers believe they can avoid both. On June 12th Labour lost by 11 votes an attempt to secure a day to try to block no-deal by law. It may have another go, but a new prime minister could deny it the necessary debating time. ▶

▶ The nuclear option might be a vote of no confidence in the prime minister. Yet any such vote is likely only in late October, after the EU summit. It might not be carried, as Tory MPs fear an election (see Bagehot). Even if it were, the Fixed-term Parliaments Act allows 14 days for a new prime minister to try to form a new government. If no one could do so, the outgoing prime minister could defer the date of a new election beyond October 31st. Hannah White of the Institute for Government, another think-tank, concludes that, though MPs may do their utmost to stop no-deal, a determined prime minister might thwart them.

This brings in the second big misconception, which is that no-deal would soon lead to friendly talks on a speedy free-trade agreement similar to Canada's, during which both sides could agree not to impose trade barriers. This is highly unlikely. A no-deal Brexit in October would be acrimonious, especially if a new prime minister refused to pay the £39bn (\$50bn) that Britain has agreed it owes. That would scupper hopes for a series of "mini-deals" to reduce disruption, as some candidates promise.

Any bid to start trade negotiations would see the EU putting all the demands in the withdrawal agreement back on the table as preconditions. It would also be impossible to exploit the rules of the World Trade Organisation that can allow trade barriers to be avoided. The WTO's non-discrimination provisions permit this only if both parties agree and are well on the way to forming a new customs union or free-trade deal, neither of which would be the case after a no-deal Brexit.

No-deal also has serious legal implications. Britain would become a third country. That not only implies tariffs and non-tariff barriers, but also falling out of most of the EU's regulatory agencies. Membership of the Europol crime-fighting agency would lapse, as would eligibility to use the European Arrest Warrant. Replacing any of these would be time-consuming.

And there is a treaty obstacle. So far Brexit negotiations have come under Article 50, allowing a deal to be agreed by a majority of EU governments and approved only by the European Parliament. Once Britain is a third country, any negotiations would fall under a different provision, probably Article 218, which requires not just unanimous agreement but also ratification by all national and several regional parliaments. After Britain had repudiated the negotiated withdrawal agreement, the temptation for one of these bodies to reject any replacement deal would be large.

The risk of a no-deal Brexit under a new prime minister is greater than many think, and the consequences more serious. Any would-be Tory leader should acknowledge this. The worry is that many of them don't even seem to realise it. ■

Climate-change protests

The sky's the limit

What can an airport do to defend against drone incursions? Not much

IT USED TO take some effort to shut down an airport. A quarter of a century ago the Irish Republican Army (IRA) fired mortar rounds into Heathrow on three separate days over the course of a week. It failed to make much of a dent. Nothing exploded, nobody died and the airport was closed for only a few hours. A plane carrying the queen touched down between two attacks.

No more. Just as modern-day organisers of a coup may be better off seizing a popular Instagram account than the national broadcaster, so too have the barriers to entry collapsed for shutting down the busiest airport in Europe. This summer Extinction Rebellion, a climate-change pressure group, may well achieve what the IRA failed to do, using nothing more than a drone of the sort available for under £100 (\$127) on Amazon. The first "non-violent direct action" will be on June 18th, followed by another ten days of action starting on July 1st.

What can be done to avert the cancellation of 1,300 flights carrying 220,000 passengers a day? Not a lot. Heathrow tried a detection system after drone sightings shut down Gatwick airport for several days before Christmas. This could help avoid the embarrassing state of affairs at Gatwick, where nobody was quite sure whether there really was a drone (there probably was, say experts). But removing the offending object from the sky is trickier.

The Centre for the Study of the Drone, at Bard College in New York state, recently counted at least 235 counter-drone systems on the market or under development, which promise to detect, track or intercept the machines. The technology for this ranges from the high-tech, such as radio

jamming or electronic hijacking, to the decidedly low-tech, using nets, projectiles or even eagles. But "in an environment like Heathrow your options are limited to electronic measures," says Arthur Holland Michel, who wrote the report. Blasting the things out of the sky would put people in danger. Jamming is not ideal either, since most drones operate on the same radio frequency as consumer Wi-Fi, and use the same GPS as everyone else.

And that is just the tip of the autonomous iceberg. Modern drones are not just "low and slow devices", says Anna Jackman of Royal Holloway, University of London, but are capable of speeds up to 160mph. Moreover they can be adapted by hobbyists both benign and malicious. Examples of DIY modifications include graffiti sprays, grabbing claws, firework launchers, flame-throwers, tasers, handguns and chainsaws. James Rogers of the University of Southern Denmark points to an environmental activist who landed a drone carrying radioactive material on the Japanese prime minister's residence. It sat there for nearly two weeks before it was discovered.

Even unmodified, drones can be made harder to tackle with the application of a little imagination. Modern drones can fly pre-set paths, obviating the need to communicate with an operator. Moreover, if taking out a single drone is hard, taking out a dozen—or a hundred—could be near-impossible. "You only need to have a few more drones than you have counter-measures and the drones have won the battle," says Mr Michel.

If technological measures do not present an obvious solution to the problem, legal ones might. Experts advocate harsher punishments for drone operators who intrude on sensitive sites such as airports, arguing that a catastrophic accident is a matter of "when, not if". If the threat of long prison terms and large fines does not deter protesters who believe they are saving the planet, the danger of unwittingly killing a few hundred people might. The risk, like the equipment, is sky-high. ■



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Bagehot | The edge of the volcano

The big question is not who will lead the Conservative Party, but whether it will survive



THERE ARE few things that Britain's Conservatives relish more than a leadership election. For candidates, it is a chance to talk about their favourite subject—themselves. For MPs and party members, it is an opportunity to trade their votes for favours or flattery. But the brighter Tories recognise that this is a leadership election with a difference: this time they are dancing on the edge of a volcano. The natural party of government for much of the past century-and-a-half could face catastrophe, in the form of an internal split or a wipeout in the next election.

The party's recent electoral performance has been disastrous. It saw its vote-share crumble to 9% in the European election last month and then came third in the Peterborough by-election. It is polling below 20%. Any honeymoon the next party leader enjoys is sure to be brief, for the Conservatives run a minority government that is trying to push through a complicated and controversial divorce bill in the face of profound divisions in their own ranks, not to mention the country, and mounting impatience in Brussels. The next prime minister could face a vote of no confidence within a month and a general election within a year.

The one thing Conservatives agree on is that they must see Brexit through if they are to survive, not just as a government but as a serious party. But doing so will take a heavy toll. Boris Johnson has pledged to get Britain out by October 31st. This could well mean a no-deal Brexit that plunges the country into chaos and destroys the party's remaining reputation for competence. Other candidates have promised to keep negotiating with the EU if necessary. But this could amount to the continuation of Mayism by other means—trying to wring concessions out of an adamant Brussels, wrangling with implacable ultra-Brexiteer Tory MPs, and watching activists defect to Nigel Farage's Brexit Party.

The Conservatives are beginning to realise that they could face not just an electoral setback but an extinction event. Having been one of the great beneficiaries of the British electoral system, they could suddenly become its victim. Under first-past-the-post, once you fall below a certain threshold—about a quarter of the vote—your number of seats collapses. Britain could soon have four viable parties that can each command roughly that share. The Conservatives in particular could see their supporters jumping ship for the

Brexit Party on one side and the Remain-supporting Liberal Democrats on the other. Not that long ago when Conservatives talked about "Canada" they meant a free-trade deal. Now they are just as likely to be referring to the election of 1993 that saw the Canadian Conservative Party wiped out.

The combination of Brexit and the leadership contest is reinforcing the party's biggest weaknesses: that it is the party of elderly homeowners in the south-east who did well out of the 1980s. For all his faults, David Cameron did a good job of detoxifying the party and recruiting bright young candidates who looked more like modern England. Brexit has acted as a Chernobyl of toxicity by giving airtime to the likes of Jacob Rees-Mogg and John Redwood. Various thinkers have tried to galvanise conservatism for a post-Thatcher age by showing that it has solutions to things like market failure and rampant greed. But the candidates have thumbed their noses at all this effort by putting so much emphasis on tax cuts for the well-off.

The leadership election is turning into a machine for maximising the conflict between the party and the country at large. Conservative members (who number 160,000) are 97% white, 71% male and overwhelmingly affluent. The members who are solidifying behind Mr Johnson, the most likely winner, are even more unrepresentative. A new study by Tim Bale, of Queen Mary University of London, shows that Mr Johnson's supporters are a fringe of a fringe: 85% support no-deal, compared with 66% of party members and 25% of the population. It's not just the tail that is wagging the dog, but the very tip of the tail.

In Parliament, the Boris surge is being driven less by the self-interest of the affluent than by the panic of the petrified. MPs are coalescing around him not because they like or trust him but because they fear that they will otherwise be crushed by the Brexit Party or the Labour Party. ConservativeHome, a news site for activists, endorsed Mr Johnson "on a wing and a prayer" for much the same reason. But his electoral magic will have to be potent indeed if it is to overcome not just his obvious moral failings but also the fact that his views are so far outside the mainstream.

The panic is infecting more than just the leadership election. In 2016 Michael Anton, an American conservative, wrote a provocative essay dubbing the forthcoming presidential contest the "Flight 93 election". He argued that, just as the passengers on the hijacked United plane in 2001 had no choice but to storm the cockpit, conservatives had no choice but to embrace Donald Trump, in order to avoid a victory by establishment Republicans (who were all sell-outs) or Hillary Clinton (who represented an existential threat to the republic).

Let's roll

Leading British Conservatives have started to talk like Mr Anton. Hard-Brexiteers are so worried about an establishment plot to block Brexit that they are embracing extreme tactics, such as suspending Parliament, and denouncing civil servants. A few months ago Mr Johnson was recorded at a private dinner salivating over the idea of Mr Trump "doing Brexit". "He'd go in bloody hard...There'd be all sorts of breakdowns, all sorts of chaos. Everyone would think he'd gone mad. But actually you might get somewhere." Now even more moderate Conservatives such as Jeremy Hunt and Rory Stewart have taken to talking about what the Conservatives can learn from Mr Trump. A panicking party seems primed to bring about "all sorts of breakdowns" and "all sorts of chaos". Whether this will "actually get somewhere" is another matter. ■



Delays in the skies

A holding pattern

BRUSSELS, BUDAPEST AND MAASTRICHT

Air-traffic control is a mess. Unions and other vested interests block reform

AT FIRST GLANCE, the industrial estate near Maastricht's out-of-the-way airport, hardly appears the future of civil aviation. But it houses the Maastricht Upper Area Control Centre (MUAC), where up to 100 air-traffic controllers work at a time to ensure that planes flying high above Belgium, Luxembourg, the Netherlands and north-western Germany do not bump into each other. Covering one of Europe's busiest air spaces, every day its controllers guide 1,200 planes through a 16km (10-mile) gap in Belgium between two military no-flight zones—without any near misses.

Founded in 1972 by Eurocontrol, an intergovernmental agency, MUAC was the world's first attempt to pool controllers between countries. Still the only such venture, it is one of the most modern and cost-efficient control centres in Europe. That is partly thanks to its use of technology. Pilots and controllers at MUAC, for instance, communicate through digital messages—

much faster than speaking over a two-way radio. "Here is the future," beams John Santurbano, MUAC's director. It is a future few countries are embracing, though rising congestion is making flight delays and cancellations more common across the world.

The Maastricht exception

MUAC's control room, alas, is far from typical. Most air-traffic controllers still rely on technologies used in the second world war. Planes are located by radar, though global-positioning satellites are cheaper and more accurate. Information is exchanged by voice radio instead of by data link. And—hard to credit in the digital age—in America controllers still hand each other slips of paper to track aircraft. Meanwhile, small drones—invisible to radar and impervious to voice messages—are proliferating and flying higher.

The system cannot cope with demand. And across the world, heavier traffic and

constrained control capacity are leading to big increases in flight delays and cancellations. In America the length of delays caused by air-traffic control problems soared by 69% between 2012 and 2017. In China the average delay per domestic flight spiked by 50% in 2017 and remains at an average of 15 minutes per flight. In Europe things are worsening faster than anywhere (see chart on next page). Last year, according to Eurocontrol, the length of delays due to en route air-traffic-flow problems grew by 105%. Over 60% of those delays were because of a lack of capacity or staff, 25% were weather-related and 14% caused by strikes by controllers and others. Eamonn Brennan, boss of Eurocontrol, expects things to be as bad, if not worse, this year.

The cost of this is huge. Eurocontrol estimates that the delays and cancellations caused by air-traffic-flow problems cost the European economy €17.6bn (\$20.8bn) last year, up by 28% on 2017. Holding planes in the air and making them fly farther wastes fuel. More efficient air-traffic control could bring fuel savings of 5-10% per flight, reckons Graham Spinardi of the University of Edinburgh. Moreover, public confidence has been shaken by several near-misses. In 2017 an Air Canada jet carrying 140 people misunderstood the controllers' instructions and nearly landed on a taxiway where four aircraft were parked. ▶

► In 2016 an Eva Air flight from Los Angeles flew perilously close to a mountain peak after an air-traffic controller's instructions confused right with left.

This is just what controlling air traffic is intended to avoid. The current system developed in the 1950s after a series of deadly mid-air collisions. In 1956 two aircraft collided over the Grand Canyon, killing all 128 on board. Soon after, in 1958, America gave the FAA the power to manage air traffic over its territory. Other countries soon set up their own air-traffic-control systems.

The market for air-traffic services is worth over \$14bn, according to Markets and Markets, a research firm. But unlike airlines and airports, air-traffic control is, with few exceptions, still run by national governments. Of the EU's 28 member states the air-traffic services of only two—Britain and Italy—have private shareholders.

Blue-sky thinking

The drawbacks to the present system of managing air traffic were evident even in the 1950s. In 1960 Britain, France, Germany and the Benelux countries set up Eurocontrol, intending to merge their airspaces. In 2001 the goal of creating a "Single European Sky" became official EU policy. The hope was that it would boost efficiency and that economies of scale would save money. A single air-traffic regulator could carve the continent into blocks based on traffic flows rather than national borders.

But, apart from the small area covered by MUAC, virtually no progress has been made since 1960. One reason is that Britain and France want to retain sovereignty over their skies for military reasons. But opposition also comes from the controllers themselves. Last October ATCEUC, an umbrella group for controller unions in Europe, attacked the idea of setting targets for improving air-traffic services as "a waste of time and effort". Trade unions see a merger as a backdoor for introducing new technology. That would cut costs for airlines and passengers—and threaten controllers' jobs. The ATCEUC insists that "humans have to remain at the core of air-traffic management". Moreover, unions and national politicians do not want a single regulator moving well-paid jobs to places in eastern Europe with cheaper labour.

Razvan Bucuroiu, Eurocontrol's head of network strategy, says that, blocked from fully integrating national systems, Eurocontrol is trying to reduce delays by encouraging airlines and national air-traffic managers to divert flights to less busy routes. It has also redesigned flight paths as far away as Malmö in Sweden to accommodate the new airport in Istanbul, which fully opened in April.

But these measures will only "stop the bleeding for one summer", explains Thomas Reynaert of A4E, an airline-trade body

based in Brussels. The extra capacity they produce will be gobbled up by rising demand for air travel. And the longer flights the plans entail will waste even more fuel.

So the EU is changing tack, releasing a report in April calling for the creation of a "Digital European Sky". Instead of merging each country's air-traffic manager, the focus is on cutting costs by, for example, setting a common standard for digitisation to ensure each country invests in compatible systems. A reform of licensing, which limits controllers to working only in one region, would also encourage them to move to where they are needed.

This reflects a realisation in Brussels that merging air-traffic-control services would not be a magic bullet. After all, America and China, continent-sized countries with single air-traffic control services, still endure rising congestion.

In many places, options are limited by the closure of air space for military purposes. In China four-fifths of air space is reserved for military use, according to the Centre for Asia Pacific Aviation, a consultancy. So the thin corridors open to civil aircraft are congested. Britain has dealt with this by closing military air space only during air-force exercises, instead of all the time as in the rest of Europe and China.

That governments run air-traffic systems themselves adds to the problems. In America for instance, the FAA, a government agency, is vulnerable to budget cuts from Congress and cannot borrow to invest in new technology to boost productivity. As a result, in 2017 the cost for each flight-hour controlled was almost a third less in Canada than in America, where Nav Canada is an independent company allowed to borrow. For instance, it has replaced paper slips with digital ones, and is licensing that technology to other control systems around the world. Public ownership may also encourage excessive pay demands from trade unions. In 2010 the Spanish government found that at least ten controllers were paid over €810,000 (\$1.1m) a year. Today the average Spanish controller takes

home more than €200,000 a year—over seven times the average salary in the country and more than pilots earn. France's militant air-traffic controllers spent the equivalent of nearly nine months on strike between 2004 and 2016, according to a report by a finance committee of the French Senate—mainly because of sympathy strikes for other public-sector workers.

Open skies

Nonetheless, airlines argue that privatisation alone is not the answer. Air-traffic services can charge extortionate prices whether or not they are in public hands, notes Kenny Jacobs of Ryanair, Europe's largest low-cost carrier. MUAC, for instance, made a profit margin of 70% in 2017. Air-traffic-control services should have to compete against each other to lower costs, argues Andrew Charlton of Aviation Advocacy, a consultancy based in Switzerland. If different private companies had franchises for different blocks, they could offer airlines competing prices and services to attract flights. And governments could encourage competition by holding auctions for these contracts every five or ten years.

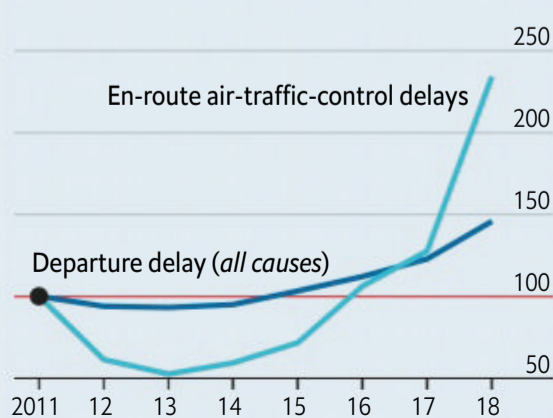
Nowhere has yet gone that far. But some countries do already contract out control of their upper-air space. Australia, Fiji and New Zealand have long run the upper-air space over Pacific islands for the islands' governments. HungaroControl, Hungary's forward-thinking air-traffic-control service, has done the same for Kosovo since 2014. It is also a pioneer of remote air-traffic-control towers for airports, hoping eventually to use its cheaper local labour to offer control-tower services to other airports from its base in Budapest.

Even so, real reform that will stop air-traffic-control failures from wrecking millions of holidays each summer is unlikely without more political will, says David McMillan of the ATM Policy Institute, a think-tank in Geneva. EU officials privately concede that in the short term they have given up hope of merging air-traffic services in the way Eurocontrol originally intended. Similarly, in America, a tentative proposal to split air-traffic-control services from the FAA into a separate entity, as in the rest of the developed world, was last year grounded in Congress. Although big airlines, airports and controller unions supported the proposals, the business-aviation lobby opposed them, worried that private jets might eventually be forced to pay for the air-traffic services they currently get free, thanks to American taxpayers.

And so, back at MUAC in Maastricht, Mr Santurbano jokes that if he had to advise a young person today on how to find a well-paid job unlikely to be disrupted by automation for decades to come, he would suggest air-traffic control. "That's how well reform is going in this industry." ■

Behind the times

Europe, average delay per flight
2011=100



Source: Eurocontrol



The life of German tycoons

The reticent rich

BERLIN

Inside the secretive world of Germany's business barons

IF THEY think their ranking on rich lists is too low, American tycoons fume. German ones kick up a fuss when theirs looks suspiciously high, explains Heinz Dürr. When a magazine called him a billionaire a few years ago, Mr Dürr rang the editor to remonstrate. The reporters had double-counted his ownership of Homag, a maker of wood-processing machines that Dürr, his family's mechanical-engineering firm, bought in 2014. Plutocrats have reached the top of politics in America and Italy, while in Asia the super-rich often display their wealth in ostentatious style. Germany's magnates love to shun the limelight.

The country is hardly short of super-rich people. It has the most of any country after America and China. In February *Forbes*, a magazine which tracks such things, counted 114 German dollar billionaires, more than double the number in Britain (see chart later in article). This equates to one for every 727,000 Germans, not a world away from America's tally of

one for every 539,000 (though it has 607 in total). The German Institute for Economic Research, a think-tank, estimates that the combined assets of the richest 45 Germans are roughly the same as those of the entire poorer half of the country.

That such figures are a surprise to many is testament to the persistence of attitudes outlined by Mr Dürr. German business barons have guarded their privacy more jealously than those from elsewhere. Almost everyone knows what Jeff Bezos, the boss of Amazon, looks like. Most French people will recognise Bernard Arnault, the luxury-goods magnate who is France's richest man. Neither the German nor English Wikipedia page for Dieter Schwarz, who controls Lidl and Kaufland, two supermarket chains, shows his photograph. And good luck with finding a snap of the Albrechts, owners of Aldi, a discount grocer, or the Reimanns, a super-rich clan that controls JAB, a privately held conglomerate that owns Krispy Kreme, Panera Bread and a

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host of other consumer-goods brands.

"We do not want to get noticed," says Nicola Leibinger-Kammüller, boss of Trumpf, one of the world's biggest makers of machine tools, which her father, Berthold Leibinger, bought from its heirless founder, Christian Trumpf. A devout Lutheran, Ms Leibinger-Kammüller, her father and her two siblings worked out a family code of conduct that members of the third generation sign when they turn 16. It covers succession and the sale of shares in the firm, but also guidelines for religious tolerance, modesty and respect for others.

A third of German entrepreneurial families have similar rules, according to a study by the WHU Otto Beisheim School of Management and PwC, a consultancy. The constitution of the Reimanns enshrines secrecy, reportedly obliging family members to sign a charter at the age of 18 whereby they pledge to stay away from day-to-day workings of the family business, shun social media, avoid being photographed in public and turn down interviews.

Several factors account for this anonymity. One is the nature of the tycoons' businesses. In America many vast fortunes have been made in finance or technology. Many rich Germans owe their success to staid businesses where progress happens not through headline-grabbing disruptive leaps but unremarkable incremental tinkering. Over half the riches of the country's ►►

▶ billionaires comes from dull endeavours such as retailing, manufacturing and construction. The ten wealthiest German families make cars (BMW and Volkswagen), brakes (Knorr-Bremse) and car parts (Schaeffler), or run supermarkets (Mr Schwarz and the Albrechts). Many of Germany's "hidden champions", which lead the world in niche endeavours like mechanical engineering, are tucked away in the countryside.

Culture, too, plays a part. Dirk Rossmann, the founder of an eponymous chain of pharmacies, says that fellow rich Ger-

mans are shy because they worry about making fools of themselves, not least in light of a national disposition towards *Sozialneid* (envy of those better off), and fear for their safety—especially in the wake of the tragic kidnap and murder in 2002 of Jakob von Metzler, an 11-year-old boy from a banking dynasty.

As in other countries, many German journalists are left-leaning and display instinctive hostility towards plutocrats. In March *Stern*, a weekly magazine, published a cover story about the "Shamelessly rich", illustrated with a gold spoon and arguing

that Germany's wealthiest 5% try to protect themselves against a redistributive welfare state by lobbying for lower taxes and hiding their wealth offshore. In May *Die Zeit*, a news weekly, published a series of articles about "the responsibility of the rich", and backed a wealth tax and higher inheritance taxes. "A billionaire cannot win in the German media," says Tobias Prestel of Prestel & Partner, who organises conferences for the family offices of the super-wealthy.

Chequered history is another reason to keep heads down. Most German billionaires are not self-made but scions of indus- ▶▶

Bartleby For the future, look to the past



Workers may need new ways of organising themselves

THE DEBATE about the future of work tends to divide commentators into two camps. The optimistic case is that technology may cause temporary disruption but will ultimately result in economic growth and thus more jobs. Combine harvesters reduced the need for agricultural labourers and personal computers eliminated the typing pool, but the displaced workers found other jobs in the end.

The pessimists argue that new technology, even if it does not cause mass unemployment, will create a "digital divide". The future will resemble a high-tech Downton Abbey, with the skilled elite lording it over the rest. Unskilled workers will be delivering pizzas to, and cleaning the bathrooms of, the likes of Elon Musk and Tim Cook.

A new report* from the consultants at McKinsey veers towards the optimistic camp. It predicts that men and women will be roughly equally affected by automation over the next decade, with 21% of working males and 20% of females losing their jobs by 2030. In the developed world, McKinsey estimates that men will tend to lose machine-operating jobs and women will lose clerical and service roles. But new jobs will be created, if not necessarily for the same people. Women will find work in the expanding health-care industry and men in the professional, scientific and technical fields (a higher proportion of men than women have science degrees).

Not all of these jobs will be well paid, especially for women, says McKinsey—just as, according to left-wing critics, the jobs boom of recent years has been in low-paid work (though data suggest that high-paying ones also rose fast). On the bright side, discouraged workers have rejoined the labour market as the econ-

omy has boomed and technology has made it easier for employers to find workers (and vice versa).

How much of this low-paid work is the result of the gig economy? Not much so far; it represents about only 1% of American employment. But in their book, "Ghost Work", Mary Gray and Siddharth Suri forecast that what they call "on-demand work" will reach 60% of the global workforce by 2055. They define this category to include those who work for temporary staffing agencies, have short-term contracts or who accept work from employers through websites or apps.

All this makes it sound as if the future of jobs will look like the past. Before the days of the factory and the office, many workers were part of a "putting-out system", in which merchants hired them to undertake specific tasks, such as spinning or weaving, for which they were paid a piece rate. The attraction to employers is that such work is cheap. The authors quote one marketing executive as saying that "We can save up to 40% by not paying benefits or allocating office space." Fur-



thermore, in two of the main markets where on-demand workers toil, America and India, they have little access to the legal protections associated with formal employment. A digital Downton Abbey, in other words.

However, the new forms of employment have a plus side. Many workers in emerging markets relish the opportunity to work at home and at times of their choosing. They are only expecting to supplement their family's other sources of income. On some platforms, workers are identified by a sequence of letters and numbers, meaning that they are free from discrimination on the grounds of age, religion or sex.

Workers may also look to the past to find a way to organise themselves. Some have set up online forums which share information on the most reliable employers. Ms Gray and Mr Suri suggest that these could be expanded to create the equivalent of medieval guilds which could enable workers to learn new skills. Such guilds could also act as a repository for employees' work records. At the moment, it is as hard—or harder—to transfer your work rating from one online platform to another as it is to wrest your user data from Facebook. Lack of interoperability means workers have to start each contract from scratch.

Responsible employers could pledge only to use workers from guilds and to apply minimum standards on issues such as prompt payment. They will benefit from more reliable and skilful employees. That way, if the workers of the world unite, everyone may gain.

* "The future of women at work: Transitions in the age of automation"

► trial dynasties. Their forebears were neither particularly private nor parochial. All that changed after the second world war, during which some had prospered under the Third Reich.

A few years ago the Reimanns, whose fortune dates back to a chemicals business founded in 1823 by Johann Adam Benckiser (hence JAB), asked Paul Erker, a historian at Munich University, to look into the family's behaviour under the Nazi regime. Mr Erker discovered that the then patriarch, Albert, and his son were early and ardent supporters of Adolf Hitler. They permitted the brutal abuse of forced labourers in their business and their own home.

Werner Bahlsen, the current head of the Bahlsen biscuit empire, said the family will hire a well-known historian to examine their Nazi past after Verena, his 26-year-old daughter, recently blurted in response to a question about Bahlsen's exploitation of forced workers that they were treated well. (Ms Bahlsen has since apologised for her "thoughtless" remark.)

The Quandts (BMW), Krupps (steel), Porsches and others have grappled with similarly tainted legacies. In 2000, 4,760 German companies including Siemens, Daimler, Deutsche Bank and Volkswagen, created a foundation that, along with the German state, raised more than €5bn (\$4.8bn) for survivors of Nazi atrocities and slave labour. The Reimanns chipped in €5m at the time. After the first results of Mr Erker's study became public, the family announced it would donate an extra €10m to charity (though did not specify which).

Unsavory pasts and secrecy may partly explain why Germans dislike the rich. In a survey last year by the Allensbach Institute, commissioned for a study by Rainer Zittelmann, a historian, the foremost qualities associated with the rich were selfishness (62%), materialism (56%), recklessness (50%), greed (49%) and arrogance (43%). Only 2% admitted that it was "very important", and 20% that it was "important", for them to become rich. Ipsos MORI asked similar questions of Americans and found that 39% of young respondents, who tend to be more critical of wealth than older ones, said it was important or very important for them to become rich.

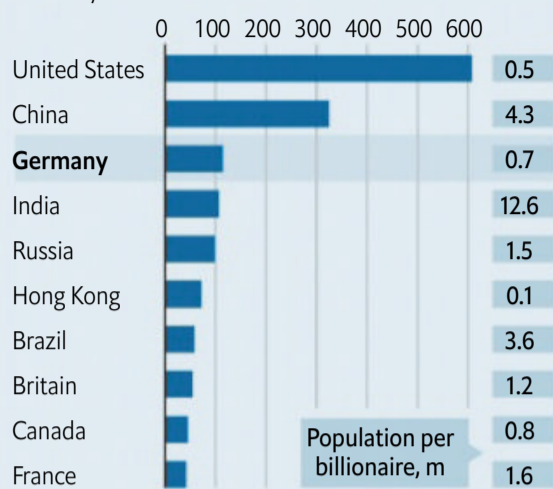
Germans are also likelier than Americans to blame the world's ills on the wealthy, according Mr Zittelmann. One in two Germans thinks that they caused the financial crisis or humanitarian disasters, compared with one in four Americans. Surveys also show that Germans are likelier than Americans, Britons or French to experience *Schadenfreude* when wealthy businessfolk lose their shirts in risky deals.

Such attitudes explain why German business barons have kept a low profile. Mr Rossmann lives an unassuming life by any measure. He does not own a smartphone or

Sensible rich Swabians

Number of \$ billionaires, by economy

February 8th 2019



Sources: Forbes; IMF

Population per billionaire, m

a fancy watch, has lived with his wife in the same relatively modest house for 35 years and buys a new Mercedes car every eight years. If he or others like him exert influence, it is typically close to home, often in an obscure small town. Ms Leibinger-Kammüller's generosity to her local parish led a leftist paper to christen her "the Madonna from Swabia" in an admiring profile last year. Families like hers may also maintain close relations with local politicians, who in turn make their voices heard in Berlin.

They have learned to keep those voices low. In 2006 the *Stiftung Familienunternehmen*, a foundation for family firms, lobbied so hard and loudly for lower inheritance taxes that its efforts backfired and the entire reform collapsed. A decade later their main national lobbies—the BDI (association of German industry), the BDA (association of German employers) and the foundation itself—put the case more subtly and managed to get easier rules that let heirs avoid paying inheritance tax provided they keep their business running for at least seven years and protect jobs and wages.

As the German rich mingle with plutocrats elsewhere and their companies have globalised, they are starting to become a little less diffident. This is not always to their advantage. Before Ms Bahlsen's tone-deaf comments about forced labour, she reacted to a proposal of a youth chief of the Social Democrats to collectivise big firms by saying, "I'm a capitalist. I own a quarter of Bahlsen, that's great. I want to buy a sailing yacht and stuff like that." But Mr Rossmann, who does not shy away from the press, thinks that Germany's rich should be more active in politics, which lacks a spirit of enterprise. Few have so far tried and none has succeeded.

Mr Dürr has raised his profile, too. After building his family's firm into a global leader and listing it on the stock exchange, he moved to the public sector as boss of Deutsche Bahn, the state-owned railways,

Germany, top \$ billionaires

February 8th 2019

Name	Industry	Wealth, \$bn
Beate Heister & Karl Albrecht Jr	Supermarkets	36.1
Dieter Schwarz	Supermarkets	22.6
Susanne Klatten	Cars	21.0
Stefan Quandt	Cars	17.5
Theo Albrecht Jr*	Supermarkets	17.4
Heinz Hermann Thiele*	Vehicle parts	13.6
Hasso Plattner*	Software	13.5
Dietmar Hopp*	Software	13.4
Georg Schaeffler	Machine parts	13.4
Klaus-Michael Kühne	Logistics	12.9

*Including family

which he merged with eastern Germany's Reichsbahn and in 1994 transformed into a privately run joint-stock company. Like Mr Rossmann, Mr Dürr does not hide from the public eye. He even briefly considered running for political office, though ultimately demurred. Old habits die hard. ■

Transport

Flying start

Drone deliveries are advancing in health care

A FEW YEARS ago Jeff Bezos made a prediction. By 2018 his e-commerce empire, Amazon, would be delivering items by drone. Prime Air has yet to launch. But startups are making progress—mostly in health care, where they are vying to tap into a lucrative, \$70bn global market in health-care logistics. As they deal with regulators and investors, these firms are charting the course for other aerial deliveries.

One of the best known is Zipline, based in San Francisco. It took off in Rwanda in 2016, where it is now a national on-demand medical drone network, delivering 150 medical products, mostly blood and vaccines, to hard-to-reach places. Maternal mortality rates are declining thanks to the delivery of blood. Other firms have used drones to supply medicines in Bhutan, Malawi and Papua New Guinea. Patients in many Swiss hospitals can receive results on the day a sample is taken. Zipline is expanding into Ghana and, later this year, into North Carolina, an American state with many out-of-the-way rural medical facilities. It wants to serve 700m people in the next three to four years.

For governments and regulators ner- ►►

vous about allowing drones to roam the skies, health-care deliveries offer a compelling reason to give it a go. Drones can fall out of the sky, collide with other air traffic, create perceived privacy concerns and make a noise. All this is hard to justify when they are delivering a light bulb. When they carry life-saving medicines the calculation is different. It is also easier, says Ben Marcus, founder of AirMap, a drone-technology firm, because health-care deliveries typically happen between a limited number of fixed sites, not to and from innumerable doorsteps.

Like most fast-growing startups, drone firms are coy about profitability but say they are generating revenue. Investors look convinced. On May 17th Zipline announced \$190m in new financing, which values it at \$1.2bn. Like its competitors, it sees lucrative opportunities. For one thing, medical parcels are lightweight but valuable, so drone costs would make up a relatively small portion of the final bill. Drones can also replace the stocks of expensive medicines hospitals keep just in case they are needed, by flying them quickly to hospital beds from a central hub. Lightweight electric drones are likely to be less expensive than car or motorcycle couriers, and faster. Andreas Raptopoulos, boss of Matternet, another drone-delivery firm, thinks that this could save hospitals millions in lab and pharmacy costs.

The prospect of such efficiency gains (as well as eco-friendliness) was factor in the partnership between Swiss Post and Matternet. Drones now serve three cities in Switzerland. Swiss Post says journeys of 45 minutes have been reduced to flights of a few minutes only. Matternet is, like Zipline, moving into North Carolina, where the local transport authority has championed drone delivery. UPS, a big delivery company, is using Matternet's drones to replace some courier cars to move medical samples across the state. UPS lags behind Swiss Post in drone delivery, but hopes that experience in health care will lay the groundwork for national expansion.

The future of drone deliveries of all kinds in America, and elsewhere, rests with regulators. In less developed countries the skies are empty and permission to fly can be granted by a single person. In developed countries, with their more crowded airspace and thicker rule books, everything takes longer.

The buzz in America stems from a pilot programme by the Federal Aviation Administration (FAA), which is using it to help develop a regulatory framework. As part of the project, Zipline is expected next week to announce its plans for health-care deliveries directly to the consumer. Some expect that by the time the FAA pilot ends in November 2020, Mr Bezos will finally have his way. ■

Computer games

Unconsoled

Cloud computing is coming to the video-gaming business

MORE THAN 70,000 gamers, developers and publishers descended on Los Angeles to goggle at each other's wares and show off their own at the Electronic Entertainment Expo (E3), which began on June 11th. This year big publishers like Ubisoft and Square Enix used the annual video-game jamboree to show off previews of new games. Keanu Reeves, an actor, hyped up "Cyberpunk 2077", a hotly anticipated title in which he plays a big role.

One of the most significant announcements at the show was also one of the briefest. Towards the end of a two-hour presentation, Phil Spencer, the head of Microsoft's gaming division, offered a few more details about Project xCloud, Microsoft's foray into cloud gaming. The service will be available in October, he said, before letting gamers loose to try a demo version in the conference centre.

Cloud gaming aims to do for video games what companies like Spotify and Netflix have done for music and films—make them available on any device with an internet connection. For the \$140bn gaming industry, that would be a revolution. The consoles and beefy PCs required to run modern games cost several hundred dollars. Cloud gaming aims to shift the computational heavy lifting into data-centres and to pipe the results to users over the internet. That would allow gamers to play cutting-edge titles on nearly any screen with an internet connection, no matter how feeble the underlying hardware.



Yet another excuse to stare at your phone

Microsoft is well-placed to make cloud gaming work, says Piers Harding-Rolls of IHS Markit, a research firm. It has a 20-year pedigree through its Xbox series of consoles, and its Azure cloud platform is the world's second-biggest, after Amazon Web Services. But it is not the only tech giant interested in the idea. A few days before E3, Google, which also runs a big cloud business, gave more details about Stadia, its own cloud-gaming product, which is due to launch in November. Industry rumours suggest that Amazon is mulling a similar business. The threat from the cloud giants helped to persuade Sony, which makes the PlayStation series of consoles, to jump into bed with its arch-rival. It already runs a cloud-gaming service called PlayStation but in May Sony signed a deal to employ Microsoft's Azure cloud platform in its future endeavours.

It all sounds promising in theory. Whether cloud gaming will catch on, though, remains uncertain, for it is technically much more demanding than existing streaming services. Unlike films or music, games are interactive, which means they must respond instantly to a player's input. The laws of physics impose limits on how quickly a player's commands can traverse the internet to reach a data-centre to be processed, and then how quickly the resulting video can be sent back. For the twitchy action games that dominate best-seller lists, even delays of a fraction of a second are an irritation for players. Such technical glitches are one reason that previous attempts at cloud gaming, by firms such as OnLive (which launched its service in 2010 but shut down in 2015), failed to catch on.

The cloud giants insist that times have changed. Microsoft, Amazon and Google have data-centres dotted around the world, which should help keep response times low. Consumer internet connections are faster than ever and data allowances more generous. And although dedicated gamers may turn up their noses at even short time-lags, cloud gaming could prove attractive to the less hard-core.

Cloud computing can be used in other ways, too. Rather than running the whole game remotely, one intermediate option is to use it for tricky calculations that are also relatively insensitive to small delays. "Crackdown 3", an action game released for the Xbox and PC in February, uses cloud computing for complex physics calculations, allowing players to blow up their environment in a realistic way without overtaxing their computers. An updated version of Microsoft's "Flight Simulator", shown at E3, was also, according to its trailer, "powered by Azure". Cloud computing has already disrupted everything from films to corporate IT departments. Gaming, it seems, is now also in play. ■

Antitrust in America

The break-up conversation

SAN FRANCISCO

Monopoly-busting tough talk does not necessarily mean big tech is in trouble

IF WE WILL not endure a king as a political power, we should not endure a king over the production, transportation and sale of any of the necessities of life." Advocates of a muscular approach to antitrust often quote the words of John Sherman. In 1890 the senator urged Congress to pass the antitrust act that carries his name. On June 11th they were uttered by someone who many believed would be less keen on such action. Makan Delrahim, boss of the antitrust division of America's Department of Justice (DOJ) used a speech in Tel Aviv to deliver the latest sign that America's long-slumbering antitrust machine has woken up and is looking around threateningly, particularly at the country's tech giants.

Signs of renewed vigour in antitrust enforcement are growing. Last week it emerged that the Federal Trade Commission, another antitrust agency, and the DOJ had agreed to divvy up the work, with the former looking into Facebook and Amazon and the latter Apple and Google (an investigation of the search firm is reportedly imminent). On June 11th, a Congressional committee opened an investigation into the impact of big tech firms on the news industry. And more than a dozen state attorneys-general are soon expected to do something similar. In another sign that big business is under antitrust scrutiny, on the same day a group of states sued to block a \$26bn merger between Sprint and T-Mobile, two big mobile operators.

In laying out a case against big tech, Mr Delrahim has used some of the same arguments as many of the industry's critics. Important digital markets, he explained, tend to be dominated by one or two firms, thanks to network effects. Such dominance is not necessarily bad for consumers. Even monopolies, such as that of Standard Oil, have led to lower prices. But price effects, he correctly argued, are "not the sole measure of harm to competition". The view in antitrust circles is that only price matters. Web browsers, for instance, are free, but in the 1990s Microsoft's bundling of one with its dominant Windows operating system hurt competition and innovation. The government's successful case against Microsoft, he said, "arguably paved the way for companies like Google, Yahoo and Apple to enter the market."

Mr Delrahim also hinted at what will be scrutinised. One area is "exclusivity agreements", where a dominant firm imposes

deals on suppliers, for instance when Microsoft forced makers of PCs to give preference to its browser. The other is mergers and acquisitions. These can be good for competition, he said, but added that there is "potential for mischief if the purpose and effect of an acquisition is to block potential competitors, protect a monopoly."

Critics of big tech shouldn't get their hopes up. Mr Delrahim stopped short of pointing to any specific case of how the big platforms may have run afoul of antitrust law, nor what he would do about it. And he seems intent to stay within established limits. Not only does he think that the law

as it stands is fit for purpose, but he did not mention the role of data, which underpins much of the power of the tech titans.

Rather than the start of a big antitrust push, the speech can be read as a reaction to mounting pressure to rein in big tech. Democrat politicians who want to be their party's presidential candidate have found calls for breaking up the firms to be popular but Mr Delrahim's speech is more likely a response to Republicans. They are increasingly worried that the growing efforts of platforms to moderate content produced by users limit free speech, particularly conservative voices.

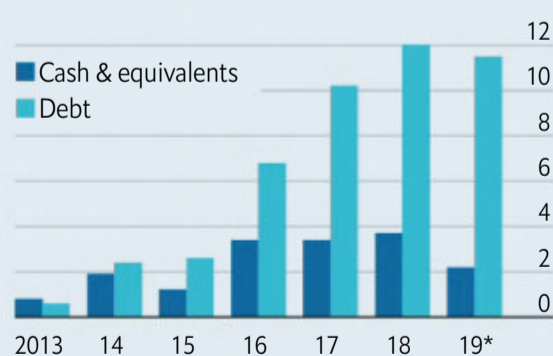
Then again, Mr Delrahim has the courage to act. In 2017 he went to court to block the megamerger of AT&T with Time Warner, though he lost the case on appeal. But if the Microsoft antitrust case is any guide, it will take years before a final decision in any potential case is handed down. America's antitrust machine is revving loudly but it is unclear whether it will ultimately produce anything more than noise. ■

Needing a recharge

Tesla, share price, \$

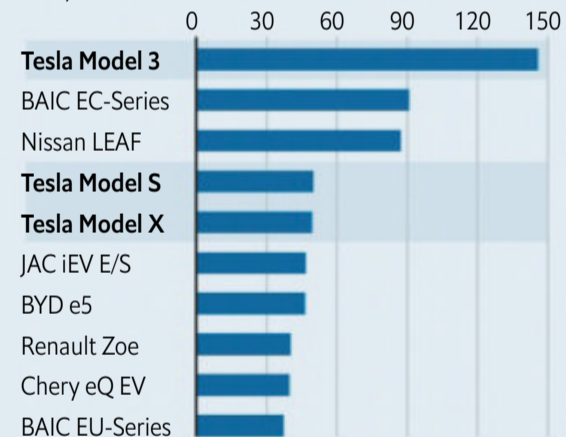


Tesla, cash and debt, \$bn

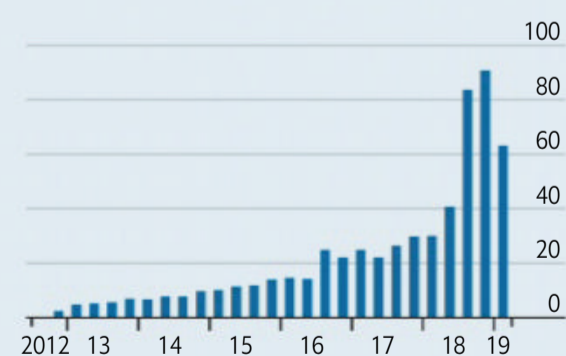


Sources: Datastream from Refinitiv; CleanTechnica; Bloomberg; Greentech Media

Battery-electric vehicles, worldwide sales 2018, '000



Tesla, quarterly vehicle deliveries, '000



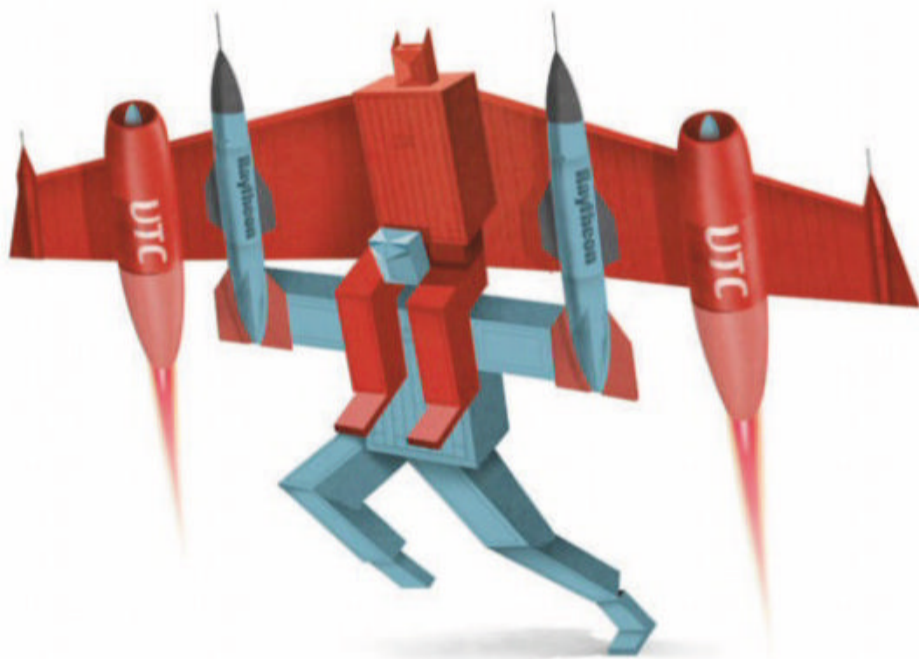
*Q1

Tesla's tribulations

At Tesla's annual shareholders meeting on June 11th Elon Musk was as ebullient as ever. But its shares, which started the year above \$300, have plunged close to \$200 and its bonds recently traded at an all-time low of close to 80 cents on the dollar. Deliveries of the Model 3, the firm's mass-market electric vehicle (EV), fell by over a fifth in the first quarter compared with the previous quarter, casting doubt on the firm's annual sales target. Tesla raised \$2.7bn in convertible debt and stock in May, but questions remain about how much cash it can generate—it burned through over \$900m in the first quarter. Tesla may have outsold competitors last year, but faltering demand and a phase-out of EV subsidies in America are tough new challenges it has to face.

Schumpeter | Fighting the next war

Military and industrial forces are behind America's biggest defence merger



WITH A DEEP voice and physique of a former American-football player, Greg Hayes, boss of United Technologies Corp (UTC), does not seem like the soft sort. But the ego is delicate. As he told Schumpeter in February while explaining his decision to carve UTC, a conglomerate dating back to the 1920s, into three parts, it was hard for him emotionally to accept that he may end up in charge of a smaller slice of the pie. Shed no tears, though. As he said those words, he was probably plotting a megamerger that could make him one of America's biggest military-industrialists.

On June 9th UTC, which is big in jet engines, and Raytheon, a prominent missile-maker, said they would join together to create America's second-largest aerospace and defence company after Boeing, with a combined market value of \$166bn. UTC shareholders will get 57% of the combined company, to be called Raytheon Technologies. The merger reflects two trends sweeping America: the reshaping of defence because of fears about China and the streamlining of industry because of shareholder activism.

Neither firm's share price reacted well to the news and feelings are mixed. Those who support the deal see it as a neat way of balancing UTC's cyclical aerospace business, which mostly supplies Pratt & Whitney engines for passenger jets, with Raytheon's more recession-proof defence capabilities, such as making Patriot missiles. Their combined \$26bn net debt is manageable. As usual, they promise to return a ton of money to shareholders.

Some critics say it bodes ill if two firms with apparently strong stand-alone businesses have to cling together for survival. Sceptics, besides worrying about the business logic, feel that Mr Hayes may be biting off more than he can chew. He aims to spin off UTC's lift business, Otis, and temperature-control firm, Carrier, early next year before completing the merger. And UTC is still integrating a new avionics business after buying Rockwell Collins for \$30bn last year. The promised gross annual cost savings of \$1bn by 2024 are paltry—mostly from combining head offices. Mr Hayes and his Raytheon counterpart, Tom Kennedy, promise to give half of that back to customers, the biggest of which is America's Defence Department. Nonetheless, President Donald Trump expressed concern about the impact of the deal on competition.

From a different standpoint, however, the president would

probably welcome the combination because the two trends it reflects may make America stronger. First defence. Amid rising geopolitical tensions, America is pouring money into high-tech armaments. The Trump administration, identifying a new era of "great power competition" with China and Russia, has boosted defence spending sharply this year and last, and hopes for a gargantuan \$750bn budget in 2020. Many analysts expect spending to plateau after that, but given the global frictions, that is no certainty.

The nature of spending is also changing, as fancy kit for intelligence, surveillance and other stealthy warcraft is given higher priority. Kara Frederick of the Centre for a New American Security, a think-tank, recalls that when she served as an intelligence officer in Afghanistan, for instance, the focus was terrorism; if you sent up a drone, there was little risk of having an enemy intercept its communications system. "The Taliban didn't even have an air force." But now America faces rivals, such as China, that match it technologically. For software, the Pentagon has urged Silicon Valley and other tech firms to overcome their ethical quandaries and help shield American forces from cyber-attacks, or develop machine learning to support them on the battlefield.

UTC and Raytheon, by pooling their technologies, will be better able to develop the new types of hardware of interest to the Pentagon. Examples are hypersonic missiles, which combine velocity—travelling at five times the speed of sound—with pinpoint accuracy. The merged firm intends to invest \$8bn a year in research and development on hypersonics and other systems, for instance by combining Raytheon's missile expertise with UTC's use of high-temperature materials and heat-management systems in engine turbines to stop the projectiles overheating. (In return, UTC hopes that Raytheon's cyber-security skills can help it counter such threats in aerospace.) Hawk Carlisle, head of the National Defence Industrial Association, a lobby group, expects defence mergers to unite traditional weapons contractors with tech firms.

Such combinations will be helped by the second trend that the merger underscores: the constant re-engineering of old-fashioned industrial structures, especially conglomerates. The motivation is partly to avoid attacks by activist investors and also to generate higher returns. Jorge Rujana of Bain, a consultancy, says managers who frequently streamline their portfolios by buying and selling assets have, over the past decade, returned far more to shareholders than those doing big one-off deals—or nothing. The fashion led two famous chemicals firms, Dow and DuPont, to merge in 2017 and simultaneously promise to split into three parts.

Trigger-happy

The trouble is that reconfiguring conglomerates can be a nightmare. General Electric has been through endless, pointless, contortions. Shareholders in DowDuPont have not been well rewarded. And activists are unpredictable. The newly formed chemicals giant was pressured to rejig its rejigging after interventions by two activists, Nelson Peltz of Trian and Daniel Loeb of Third Point. Already some accuse Mr Hayes of the "reconglomeration" of UTC by merging with Raytheon. William Ackman of Pershing Square, a UTC investor, has written a letter urging him to call it off. "It does not seem consistent with the Greg Hayes we know."

Perhaps Mr Hayes is keen to stroke his own ego; he will be the new firm's chief executive and, in 2022, become its chairman, too. But by grappling with the new dynamics of aerospace and defence, as well as the changing nature of the industrial firm, he is being proactive. It is better to fight the next war than the last one. ■

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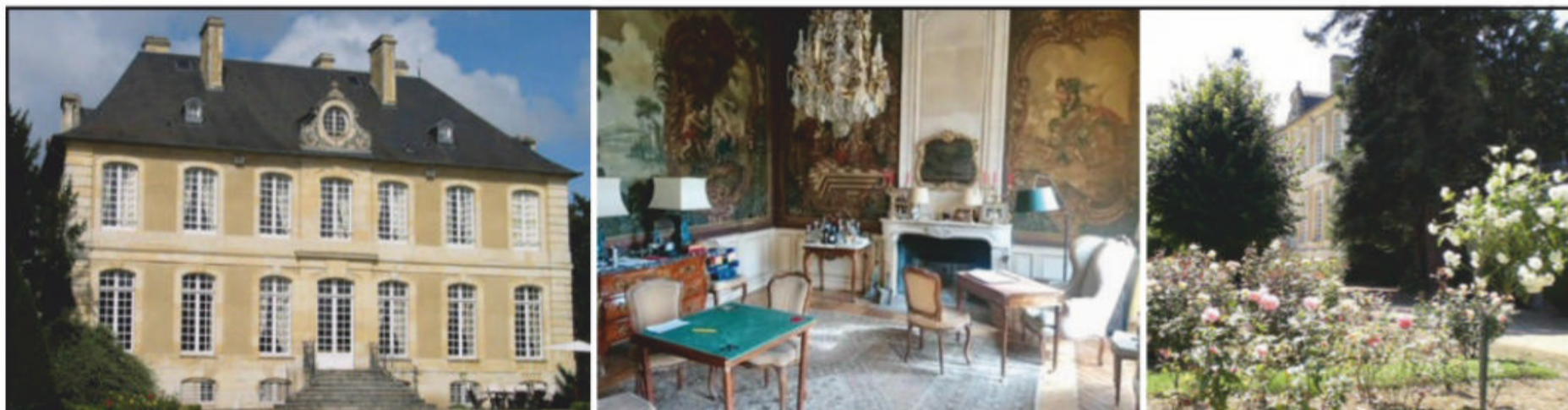



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18th century French chateau in the heart of Calvados - Normandy, France, set within 12 acres (4.8 hectares) of walled parkland.

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Facilities are in place both inside and outside to host weddings and events.

Additionally there are numerous outbuildings, including a 3 bedroom guest cottage, two 1 bedroom apartments and office space.

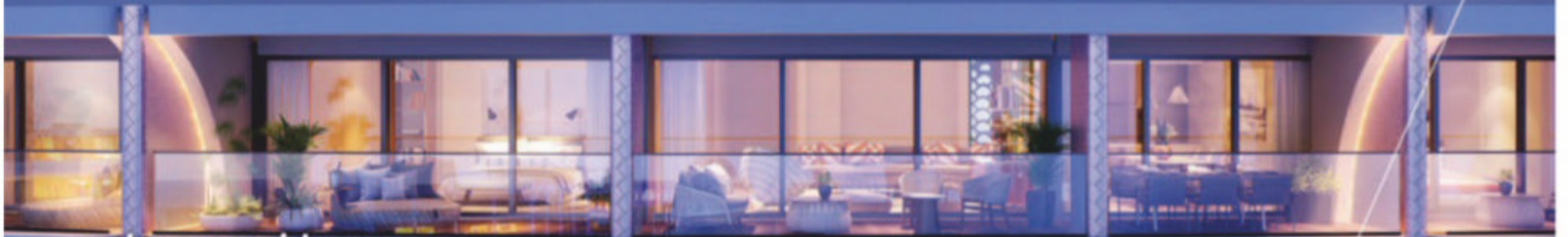
The property is surrounded by fields, and is 30 minutes from the sea, 2.5 hours from Paris, and 40 minutes away from both Caen and Deauville international airports.

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Erkki Liikanen, Finland

Former governor of the Bank of Finland

Pro Consensus-builder

Con At 68, getting on a bit

Backstory Former part-owner of a jazz bar in Brussels

Benoît Cœuré, France

Head of market operations at the ECB

Pro The geeks' favourite

Con ECB rules seem to bar a second term on its board

Backstory Fluent in Japanese

François Villeroy de Galhau, France

Governor of the Banque de France

Pro Macron's favourite

Con Seen as being too cosy with the banks

Backstory Scion of ceramics maker Villeroy & Boch

Olli Rehn, Finland

Governor of the Bank of Finland

Pro Politically astute

Con Past job as Brussels austerity-enforcer

Backstory Former top-division footballer—in Finland

Jens Weidmann, Germany

President of the Bundesbank

Pro Formidable intellect

Con Vocal critic of ECB policies

Backstory Former economics adviser to Angela Merkel

**The European Central Bank****Constrained optimisation****Europe is all about backroom deals. The ECB is distinct, but not immune**

“THE LONGEST lunch in history” is how Jonathan Powell, an adviser to Tony Blair, a former British prime minister, has described the appointment of the first head of the European Central Bank (ECB) in 1998. The French, keen to have their man in the job, had convinced the Germans that Wim Duisenberg, a Dutchman, should serve only half of his eight-year term before making way for a Frenchman. Mr Duisenberg resisted, giving in only after midnight.

The choice in 2011 of the third and current president, Mario Draghi, an Italian, involved less drama. Even so, France and Italy fell out after Lorenzo Bini Smaghi, another Italian on the bank's six-strong executive board, initially refused to give way to a French national. “What can I do? Shall I kill him?” Silvio Berlusconi, then Italy's prime minister, asked Nicolas Sarkozy when his French counterpart complained.

Mr Draghi departs in October. What tales will be told of his successor's selection? The scope for theatrics is greater than ever. The choice is always political: national leaders make nominations and eventually agree on a name. But Mr Draghi's term ends in the wake of European elections, as

they are also deciding other top jobs. At a summit on June 20th-21st the European Council of leaders aspires to pull off a package deal covering the key roles. Succeed or no, the next few months will be a test of whether the process for choosing the next ECB leader has become any more sensible.

No one knows precisely who is in the running: there is no formal nomination process. Among the five leading contenders, pictured above, is Jens Weidmann, the hawkish chief of the Bundesbank. As a former adviser to Angela Merkel he helped

form her hard line on Greece during its sovereign-debt troubles. Olli Rehn, the head of the Bank of Finland and a former EU commissioner, is also seen as a candidate.

Erkki Liikanen, Mr Rehn's well-liked predecessor in Helsinki and also a former commissioner in Brussels, is in contention, as is François Villeroy de Galhau, the governor of the Banque de France. So is Benoît Cœuré, a Frenchman already on the ECB's executive board, though the ECB's rules seem unlikely to permit him a second term as a member. Klaas Knot, the Dutch central-bank head, Klaus Regling, the head of the EU's bail-out fund, and Sylvie Goulard, deputy head at the Banque de France, are also mentioned.

Officials in Berlin and Paris claim that they see the ECB presidency as distinct from the three more political jobs of the heads of the commission and European Council and the high representative, or the EU's foreign-policy chief. They describe their approach as “3+1”, says Mujtaba Rahman of Eurasia Group, a consultancy. Perhaps Mr Draghi's crucial role in keeping the currency union together during the sovereign-debt crises in 2010-12 has taught everyone that the bank's president needs more than a modicum of competence.

Looming economic threats should remind them why their decision matters. A trade slowdown is hammering the euro area's economy. A row between Rome and Brussels over public debt risks unnerving investors. Market expectations of euro-zone inflation in five years' time have drifted below the bank's 2% target. On June ▶▶

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▶ 6th Mr Draghi said the bank would keep interest rates low for the next year, and raised the possibility of further asset purchases.

Mr Weidmann is the most contentious candidate. His vocal opposition to ECB asset-purchase programmes was reportedly derided by Mr Draghi as “Nein zu allem” (“No to everything”). Appointing him would be a mistake, says Christian Oden-dahl of the Centre for European Reform, a think-tank: the bank would be less activist in downturns and less supportive of fiscal easing. That prospect could lose him the support of countries keen on further integration, such as France and Spain, in which case Germany might instead plump for another northerner, perhaps one of the Finns.

But the decision cannot be divorced entirely from the EU’s tiresome preoccupation with balance of various sorts. Despite their noble talk about “3+1”, leaders still want national balance on the bank’s six-strong executive board, which, together with the 19 governors of national central banks, constitutes its policymaking body. Having had an Italian at its helm for eight years, and a Spanish vice-president, the received wisdom is that the ECB presidency now belongs to a northerner—if not to Germany, which has yet to hold the post.

Such calculations, surprisingly, are the reason Mr Weidmann seems to have support from Italy, even though it is the country most likely to benefit from the unconventional policies he has spoken against so forcefully. Its finance minister, Giovanni Tria, has said that he would be “open” to Mr Weidmann as president. The reason seems to be that once the top job is allocated, any compatriots already on the board tend to step down. If the job goes to a Frenchman or German, that would leave a gap for Italy to claim. Italian economists suspect further Machiavellian plotting: if the ruling populists were to elevate an official at the Bank of Italy to the ECB, that in turn gives them a chance to install one of their own at the bank in Rome, realising their ambition to gain influence over it.

The obsession with balance extends across European institutions. Leaders want to ensure that nationalities, genders and party affiliations are well-represented across the top jobs. Emmanuel Macron, France’s president, sees the commission presidency as the prize, says Mr Rahman. The price could be a German at the ECB.

All this means that expertise is not the sole criterion for replacing Mr Draghi. And until the commission presidency is decided, there are plenty of permutations. A drawn-out process raises the risk that the job is traded for other positions. Other names could emerge. A fudge, with the 68-year-old Mr Liikanen doing half a term and giving way for someone else, is not impossible. Just as a break with the past cannot yet be ruled out, nor can a reversion to it. ■

Dodgy data

The Indian growth fable

Official GDP figures have been disavowed—by a former official

ALMOST TWO years ago Arvind Subramanian, then India’s chief economic adviser, published a little-noticed passage in the finance ministry’s annual economic survey. The previous two years posed a “puzzle”, he wrote. India had reported miracle growth in GDP (averaging 7.5%) despite miserable growth in investment, exports and credit. He looked for comparable examples elsewhere since 1991. He found none. No country had grown faster than 7% in such circumstances. None, in fact, had grown faster than 5%. India’s rapid expansion, he warned, might be hard to sustain.

Or, indeed, hard to believe. Mr Subramanian’s official position meant he could not say that loudly then. But he is saying it now. In a paper published by Harvard University, where he is a visiting fellow, he argues that India’s growth figures have been greatly overstated. From the 2011-12 fiscal year to 2016-17, its economy officially expanded by about 7% a year, eventually outpacing China’s to become the fastest-growing big economy. That boast has helped entice over \$350bn of foreign investment in the past seven years. But India’s true growth, Mr Subramanian thinks, is more like 4.5%. Rather than outperforming China, India has underperformed Indonesia.

His paper starts by reporting a variety of indicators that have slowed sharply since 2011-12, even as growth has remained steady (see chart). He then tries to measure the size of the problem. Looking at more than 70 countries from 2002 to 2016, he es-

timates the typical relationship between GDP growth and four other indicators: the growth of credit, exports, imports and electricity. Before 2011 that relationship also held in India. But after it, India became an outlier. Its reported growth was over 7%, even as the weakness of imports, exports and credit suggested growth closer to 4.5%.

If India’s statistics are overstated, who or what is to blame? Political meddling is an inadequate answer, although this government, under Narendra Modi, has done plenty to arouse suspicion. In November statisticians revised down growth figures from last decade, taking the shine off the previous government’s record. In January they revised up growth in 2016-18, the two fiscal years most affected by Mr Modi’s daft and disruptive decision to remove high-denomination bank notes from circulation. Both exercises raised eyebrows.

But Mr Subramanian sidesteps these two recent controversies, excluding the latest revisions from his analysis. Instead he concentrates his fire on a more fundamental technical change: a new method of calculating GDP, from 2011-12 onwards, that was adopted in early 2015. Much of the preparation for this switch dated back to the previous government. And one of the new method’s strangest results was an upward revision of growth in the tumultuous year before Mr Modi took office, when the economy was reeling from high inflation and capital outflows. That contradicts the charge of political interference. Why would Mr Modi’s government fiddle the figures to flatter its hated predecessor?

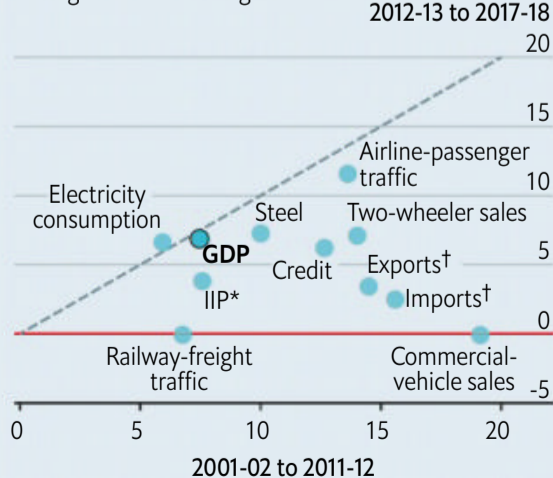
The new method may nonetheless suffer from other shortcomings. It may, for example, have failed to cope with the drop in oil prices in 2014. To illustrate: if an Indian company imports 10,000 rupees-worth of crude oil and adds 100 rupees of value to it, it might sell the refined product for 10,100 rupees. If the oil price subsequently halves, the company might try selling the same product for 5,110 rupees, boosting its margin. An unwary statistician might conclude that Indian prices have dropped dramatically. But the Indian part of the total (the only bit that matters for GDP) has increased in price (from 100 to 110 rupees). The confused statistician may then treat an increase in rupee profits as evidence of real growth, not merely higher prices. Such problems are less likely in more developed G20 countries, which keep better track of the prices of inputs.

As a check on his results Mr Subramanian searched for other outliers—countries growing much faster than alternative indicators would suggest. A big example is China, a familiar target of statistical scorn. During India’s spells of real and imagined miracle growth, it has often aspired to be the next China. In the production of dubious data, it is catching up fast. ■

Growth-Deficient Product

India, selected indicators

Average annual % change



*Index of industrial production †Goods and services

Source: “India’s GDP mis-estimation: likelihood, magnitudes, mechanisms and implications”, by A. Subramanian, CID faculty working paper, June 2019

Martin Feldstein

An economic institution

WASHINGTON, DC

Adviser to presidents, teacher and mentor to young economists

FOR A HALF-CENTURY Martin Feldstein was everywhere you looked in American economics. He was an astoundingly prolific columnist, sometimes churning out several a week, for several newspapers, on the big economic stories of the day. He was a fixture at conferences and seminars and the teacher, for two decades, of Harvard University's introductory economics course. He served presidents of both parties. In short Mr Feldstein, who died on June 11th aged 79, was an American economic institution.

Born in New York City, he spent most of his life in Cambridge, Massachusetts, at Harvard, where he moved in 1967 after a doctorate at Oxford. His early career was remarkably productive. In 1974 he published an influential paper examining how Social Security, America's public pensions system, affects saving patterns. Astonishingly, he concluded that the programme reduced personal saving by between 30% and 50%; throughout his life he was a staunch advocate for its reform.

In work with Charles Horioka he identified one of the great enigmas in international economics, now known as the Feldstein-Horioka puzzle. Economists reckon that capital free to move should go where returns are highest. There should therefore be little correlation between a country's savings and domestic-investment rates, since places with too little investment should offer investors higher returns, sucking in capital from abroad. In fact, they pointed out, the two rates are quite closely linked, an oddity that still motivates research. For his academic work Mr Feldstein was awarded the John Bates Clark medal in 1977, given (then every second year, now annually) to the top American economist aged under 40.

His work earned him the attention and respect of politicians. As the chair of Ronald Reagan's Council of Economic Advisers from 1982 to 1984, he helped shape the Tax Reform Act of 1986, which dramatically simplified the tax code and slashed tax rates. Two decades later he served Barack Obama as a member of the Economic Recovery Advisory Board, convened to gather ideas for addressing America's worst economic crisis since the Depression.

Yet Mr Feldstein's most enduring contributions are likely to be to the profession of economics itself. For 30 years he led the National Bureau of Economic Research



Pillar of the profession

(NBER), helping to secure its place as an essential conduit for economic scholarship. He convened regular meetings of scholars to encourage collaboration, and built the NBER's working-paper series into one of the world's most respected vehicles for publicising new research.

Just as important, he mentored and inspired scores of young economists, including some who became giants of the field and prominent public servants, among them Larry Lindsey, an adviser to George W. Bush, and Larry Summers and Jason Furman, who advised Mr Obama. For quite some time to come, Mr Feldstein's influence will still be there, everywhere you look in American economics. ■

Government debt

Open book

KAMPALA

How to stop governments borrowing behind their people's backs

IN 2016 THE government of Mozambique confessed to secret debts of \$1.4bn, or 11% of GDP, mostly as loan guarantees for state-backed companies. Growth faltered, the currency slumped and foreign donors pulled back. The results have been "devastating", says Denise Namburete, a civil-society activist, describing health centres that have gone two years without medicines. American prosecutors are pursuing eight people involved in the scandal, including three foreign bankers and a former finance minister, on charges of money-laundering and fraud.

The Mozambique case may be unusu-

al—or not. Even the IMF is scratching its head about how much governments truly owe. In some places the mystery is loans from China and other emerging lenders. In others it is advance payments from oil traders, liabilities from public-private partnerships or hidden loans from commercial banks. The Institute of International Finance (IIF), a group of banks and financial institutions, has responded to mounting concern by drafting principles on debt transparency. Finance ministers of G20 countries endorsed them at a summit in Fukuoka, in Japan, on June 8th-9th.

The IIF principles are voluntary and would apply only to lending from the private sector, not from states. Lenders would disclose any loans they make to low-income governments or state firms within 60-120 days of funds being released. Details would include the loan's purpose and structure, and a range within which the interest rate falls. The data would be held by an international institution, perhaps the IMF or World Bank.

The G20 countries could use their voting power at the IMF to insist it stores the data. Their endorsement will have weight with the private sector, says Sonja Gibbs of the IIF. Although lenders benefit from knowing more about government debts, some are reluctant to share information they consider commercially sensitive. They will need to be pressed to take part. "It will be a name and shame game," says Mark Plant of the Centre for Global Development, a think-tank. "That sometimes works, it sometimes doesn't."

How to give the scheme bite? One proposal is that sovereign-loan contracts that are not publicly disclosed within 30 days of signature should be unenforceable in court. Most international loans are made under New York or English law—as Mozambique's dodgy deals were—so tweaking the rules in those two jurisdictions would be a good start. Case law and legal institutions are so well established that business would be unlikely to move elsewhere, argues Tim Jones of Jubilee Debt Campaign, the British charity behind the idea. Some 51 MPs have written to the British chancellor to support Jubilee's proposal, among them former Labour and Conservative secretaries of state for international development. On June 5th the Labour Party said it would implement the idea if it wins power.

Legal changes are not yet on the G20's agenda. But rising debts are fuelling a sense of urgency. The IMF reckons that 44% of low-income countries are in debt distress or at high risk of it—even without more nasty surprises. The average developing country's external-debt payments have risen from 6.6% of government revenue in 2010 to 12.2% in 2018, calculates Jubilee. Clandestine debts could mean the actual picture is even worse. ■

Monetary policy

The tail that wags

NEW YORK

The market believes the Fed will cut rates by September. Should it?

THE FEDERAL RESERVE is changing direction. In December it predicted that it would raise the federal funds rate twice in 2019, to 2.75-3.0%. In March it thought it would hold rates steady instead. Investors now think there is a one-in-five chance that it will cut rates at its meeting on June 19th, and a 95% chance that it will do so by September (see chart). Jerome Powell, the Fed's chairman, has said it is "ready to act".

The reason for the change is a darkening world economy, caused primarily by the failure of America and China to strike a deal to bring their trade war to an end. Yet for all the ructions, the visible impact on America's hard economic data has so far been relatively small. True, American firms hired only 75,000 workers in May, on first estimate, well below the recent monthly average. But jobs data are volatile, and the unemployment rate is a very low 3.6%.

Where the pain of the trade war has shown up is mainly in financial markets. The ten-year Treasury yield, for instance, was 2.5% in early May but has since fallen to 2.1% as investors have rushed to safety and anticipated rate cuts. Large moves like these raise an uncomfortable question for the Fed. Should it yield to the market, thereby risking the appearance that monetary policy is set by traders? Or should it consider only backward-looking economic data, which move slowly?

Markets provide the aggregated wisdom of a crowd of individuals with money on the line. In most contexts their forecasts will outperform those of a financially disinterested committee, even one made up of experts. But there are other reasons why an apparent discrepancy between the two may endure.

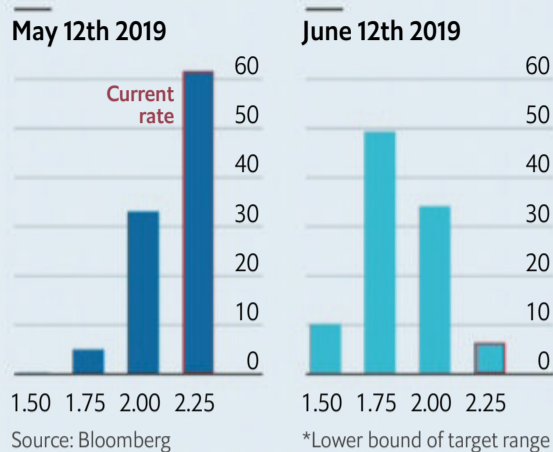
The first is that there is not really a discrepancy at all. Suppose the Fed and the market make the same judgment about the risk of an economic shock such as a trade war. "The Fed has the luxury of more time," says Torsten Slok, an economist at Deutsche Bank. It can wait to see what happens before changing policy, whereas investors must hedge their bets immediately to account for even unlikely events.

The second is that markets agree with the central bank about the economic outlook, but are confused about how it will act. "The Fed might have failed to communicate well," says Frederic Mishkin, a former rate-setter.

Only if these possibilities can be ruled

Washington hold 'em

Market-implied probability of given federal funds rate* after September 2019 meeting, %



out can central bankers conclude that markets are telling them something they need to hear about growth and inflation. Discerning this signal becomes trickier the more the Fed appears to respond to the market. To see why, suppose that the Fed ignores market movements completely, and instead sets policy in an entirely predictable way, responding only to hard data on growth and inflation. Any change in market expectations about Fed policy would then reflect only changes in investors' perception of the outlook for those variables. "If Fed policy is clear and systematic," says Charles Calomiris of Columbia University, "policymakers can glean useful information from markets." The more the Fed responds to the market, however, the more it is "looking in the mirror", as Alan Greenspan, a former Fed chairman, supposedly once quipped.

If monetary policy were entirely automated, however, the information embodied in markets would be useful but unused. What is more, reacting only to real data is like driving while looking only in the rear-view mirror. Central bankers often say that monetary policy works only with a lag of 18 months or two years. Many economists believe that flat-footedness at the Fed has been to blame for numerous post-war American recessions.

If the Fed wants to glean useful information from markets, it cannot pander to them. "The Fed needs to be the dog that wags the tail," says Mr Mishkin. But when market movements have a fairly clear cause—in today's case, the trade war—and the reaction is severe, it is likely that a rate cut will eventually be necessary. The short-term risk of moving in anticipation of events is that the outlook brightens and the rate cut then sparks inflation. Yet to the extent that economic data are telling a clear story, it is that inflation is contained. Consumer-price inflation, for example, slowed to 1.8% in May. That suggests it would be better for the Fed to get on with the rate cuts that the market expects. ■

Charity at scale

More is less

A promising-looking attempt to cut poverty grew, and flopped

A YEAR AND a half ago *The Economist* wrote about a promising approach to cutting poverty in Bangladesh ("On their bikes", January 27th 2018). RDRS, a charity, was offering small loans to more than 100,000 poor farmers on the condition that they migrated temporarily to a city for work. Everything seemed to be set fair. Smaller randomised controlled trials had shown that many men could be persuaded to move while the rice crop is growing, when there is not much work to be done at home. Although the migrants found only low-paid jobs, as rickshaw drivers, building labourers and the like, their fortunes had greatly improved. It looked like a true poverty cure.

Sadly, things soon began to go wrong. Evidence Action, the charity overseeing the scheme, heard rumours that somebody involved with the project may have sought to bribe a government official, though it could not substantiate them. More damningly, as the data came in, it became clear that in 2017 few men had been persuaded to migrate. On June 6th Evidence Action announced it was shutting down the scheme. What looked like a miracle cure for poverty now seems like a warning about the pitfalls of development projects.

Do-gooding schemes that work brilliantly in trials often fail when they are ►►



The wheels are coming off

► scaled up, says Justin Sandefur of the Centre for Global Development, a think-tank. Trials are often overseen by determined PhD students. When large charities or government officials take over, as they must if a project is to be done at scale, much changes. Rules and regulations multiply; bad behaviour becomes more likely. Big schemes can attract hefty opposition.

One charity in Kenya had shown that hiring teachers on fixed-term contracts improved pupils' test scores. So the government rolled out the contracts across the country. But a political backlash meant that

the contracted teachers were promised trade-union representation, just like ordinary teachers. Not surprisingly, an evaluation by Mr Sandefur and others found that the government's reform had no effect.

In Bangladesh the problem may have been targets. Many of the "migration organisers" who fanned out to villages, offering to subsidise journeys to cities, seem to have been expected to sign up 450 migrants each. They may have done what anybody would do in that situation: approach men who had migrated before or were especially eager to travel. Because most of those men

would have made the journey anyway, the project had little effect.

Mushfiq Mobarak of Yale University, who helped develop the Bangladesh migration project, says that the episode shows how important it is to keep collecting and analysing data as schemes grow. But, as he points out, it is possible that exactly the opposite lesson will be learned. Rigorous, ongoing analysis of development projects is slow, expensive, hard—and, as researchers keep discovering, liable to turn up uncomfortable facts. It is much easier just to assume that your project is doing good. ■

Buttonwood Against the clock

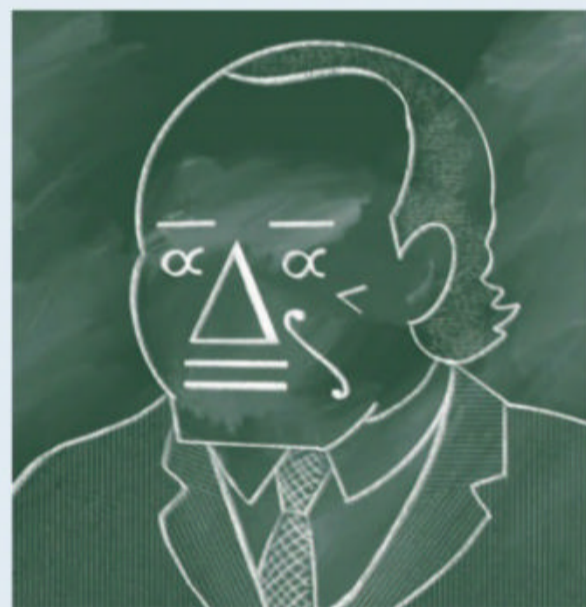
Robert Merton and the effect of time on portfolio choice

FINANCE THEORISTS are, as everybody knows, unworldly people who can scarcely tie their shoelaces, still less change a car tyre. Robert Merton confounds this stereotype. As he talks amiably at the London office of Dimensional Fund Advisors (he is the firm's "resident scientist"), you sense that here is a man who could fix a flat in no time. He would probably deliver a cheerful lecture on the importance of the correct tyre pressure while he was tightening the wheel nuts.

Mr Merton has always had a bent for engineering, whether financial or mechanical. He bought his first stock aged ten and completed a risk-arbitrage trade (on a takeover by Singer, a maker of sewing-machines) aged 11. He rebuilt his first car aged 15. In 1997 he won the Nobel prize for economics aged 53—a career high. A year later, a career low: LTCM, the hedge fund he co-founded, imploded. These markers of the passing years matter. For Mr Merton's specialism is the mathematics of time applied to finance.

His first paper on the subject was published almost exactly 50 years ago. Its title—"Lifetime Portfolio Selection under Uncertainty: The Continuous-Time Case"—is forbidding. The ten pages of equations that follow are daunting. But for Mr Merton, the equations are tools, no different from a car jack. They allowed him and subsequent researchers to clarify an important question: when does time horizon matter in investing and when does it not?

To start to understand the paper's importance, go back more than half a century to the birth of modern portfolio theory. Finance theory had been mostly a collection of stories and rules of thumb. Some was useful ("sell down to the sleeping point"). Little was rigorous. A new generation of scholars changed this.



Their first step was to assume that investors seek the highest returns for a given amount of risk. Stocks are riskier than bonds. The issue for portfolio choice is how much of this risk to bear. That will vary. Each person should indeed hold as much as is compatible with sound sleep.

In this new, formalised set-up, investors decide once and for ever how to divide their financial wealth. But real-life investing is a movie, not a snapshot. Time is a factor, on top of risk appetite. Mr Merton wanted to go further and discover how investors, faced with an uncertain future, should decide at each moment on their mix of risky and safe assets. The folk wisdom of the time said that young people should hold a riskier portfolio than older ones, because the passing of time makes stocks less risky. That turned out to be wrong—or, at least, it was not quite right.

In two papers published in August 1969, Mr Merton and his mentor, Paul Samuelson, showed that time horizon should make no difference to portfolio choice. But the result holds only if risk appetite is unchanging and stock prices are unpre-

dictable. Alter these assumptions, as future researchers would, and the results change. Mr Merton's use of continuous-time mathematics created a valuable template. Finance theorists were able to apply the same toolkit to solve related problems, says Hugues Langlois of HEC Paris, a business school. The best example is the Black-Scholes model for pricing financial options, for which Mr Merton was awarded the Nobel prize, along with Myron Scholes.

A lot of finance theory that came later would tease out the circumstances in which time horizon really does matter. The reckoning changes, for instance, when wealth is looked at in the round to include non-tradable human capital—knowledge, skills and abilities. Sitting in a London office, Mr Merton gives an illustrative example.

Say, a young person's human capital, which determines his future earnings, is 90% of his lifetime wealth, with the balance in stocks. And say that for an almost-retired person the proportions are reversed. If the stockmarket crashes by 40%, the young person has lost only 4% of his wealth. But the nearly retired person has lost 36%, which is much more serious. For older people, having all their financial wealth in stocks is not a sensible risk to take, says Mr Merton. Human capital is low-risk. If you have lots of it, you can take more financial risk.

The best lifetime strategy is a complex problem to solve, even for brainy people such as Mr Merton. But he hopes that, with the passage of time, the pension industry will create more user-friendly products. Cars are easy for their users; the complex work is done by designers and engineers. Pensions should be the same. Needs drive innovation, says Mr Merton. "That is why I'm an optimist."

American retail banking

The giants are coming

NEW YORK

Digital technology is likelier to strengthen America's big banks than usurp them

BY ALMOST ANY measure, America's biggest banks are behemoths. JPMorgan Chase's balance-sheet weighs in at \$2.7trn, Bank of America's (BoFA) at \$2.4trn. Citigroup tips the scales at almost \$2trn and Wells Fargo at \$1.9trn. Their combined market value is nearly \$1trn. Last year they raked in over \$100bn after tax.

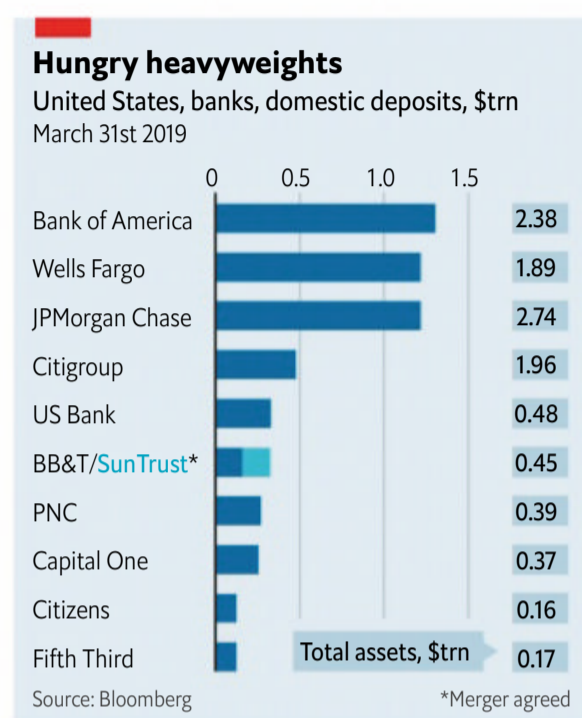
Yet by one gauge, the titans are curiously tiny. Together that quartet holds only about a third of Americans' deposits (see chart). The biggest names in other rich countries, from Canada to Sweden, have far larger shares. Perhaps only Germany's market, with its hundreds of municipal and co-operative banks, is similarly fragmented.

Despite years of mergers, including several mid-crisis in 2008-09, America still has over 5,300 banks. Almost 5,000 are "community" banks, mostly with assets below \$1bn, which collectively hold 15% of deposits. Even the giants are still filling gaps, the fractured geography of their retail networks reflecting the genealogy of past mergers. BoFA opened branches in Pittsburgh only last year and in Salt Lake City in January. The first Chase branches in Boston and Washington opened in late 2018.

Digital technology is already reshaping the landscape. After 147 years of disdain for retail banking, in 2016 Goldman Sachs launched Marcus, a consumer bank. It has snared \$35bn of deposits, helped by a posh brand and generous interest rates. "Our advantage is that we are unencumbered by legacy systems," says Harit Talwar, Goldman's global head of consumer business. Goldman built its platform in 11 months.

Many reckon that banks, burdened with old IT and ever-emptier branches, will suffer the fate of retailers and taxi drivers. The closure of Finn, JPMorgan's mobile brand for millennials, reported on June 6th, looks like further evidence that banks are not nimble enough for the digital age.

Not surprisingly, they disagree. Fragmentation means that even the biggest have room to grow; they believe digitisation will help. Their advantages start with sheer firepower: JPMorgan Chase spends \$1bn-odd a year on IT. They have tens of millions of customers and lots of data on their incomes and outgoings. Their brands are household names. Their funding costs are low, whereas financial-technology companies with no banking licences lack access to cheap, federally insured deposits. "They have to build something we already



have," says Dean Athanasia, president of BoFA's consumer bank—which in the past year has cut its cost-to-income ratio from an already decent 51% to 45%. Put all this together and, in the phrase of Mike Mayo, an analyst at Wells Fargo, "Goliath wins."

More surprisingly, most big banks still see branches as assets. Yes, they are closing lots. But to grow, they need to spread. The biggest cannot simply buy their way into new markets, because takeovers that create banks with more than 10% of all deposits are barred. So in the past few years BoFA has also set up shop in Denver, Indianapolis and Minneapolis; Ohio's big cities are next. JPMorgan Chase said in 2018 it would enter 20 markets and open 400 branches. It too is coming to Minneapolis this summer. Both are formidable competitors, aiming to reach the top three wherever they attack.

"We go in digital first," says Mr Athanasia. "But without the branch you can only get so far. Countless people have tried digital-only, and they never develop any scale." Branches of Merrill Lynch, BoFA's investing arm, have also been a bridgehead. But technology makes it easier and cheaper to reach customers. "Plenty of people download the app," says Jamie Dimon, JPMorgan Chase's chief executive. "But, in America, they hardly ever open a bank account until we open a branch nearby."

By contrast Citi, whose branches are concentrated in half a dozen cities, sees little need to open many more. A vast fee-free ATM network and its huge credit-card business, which offers both own-branded cards

and co-branded ones for American Airlines, Costco and others, mean it already has a mighty digital presence, says Stephen Bird, its global head of consumer banking. Citi hopes to persuade credit-card customers to open current (checking) and savings accounts, using extra card rewards as a lure. Drawing on its experience in Asia, it is offering digital lending products through its mobile app; people who would pay a credit-card bill at once may roll over a loan at a lower rate.

As giant banks expand, who loses? Community banks may seem most at risk. The smallest are already vanishing at a rate of five per week, mainly through mergers. But as a class, local lenders are more resilient than they look, thanks largely to their expertise in small-business lending. "The CEO of a small business can talk to the CEO of a small bank," says Aaron Fine of Oliver Wyman, a firm of consultants. "That value proposition is pretty solid."

Regional lenders, with neither the giants' heft nor the community banks' small-town appeal, may face a harder fight. This year BB&T and SunTrust, two southeastern banks, agreed to merge, creating America's sixth-biggest retail bank. More may bulk up to beat the behemoths.

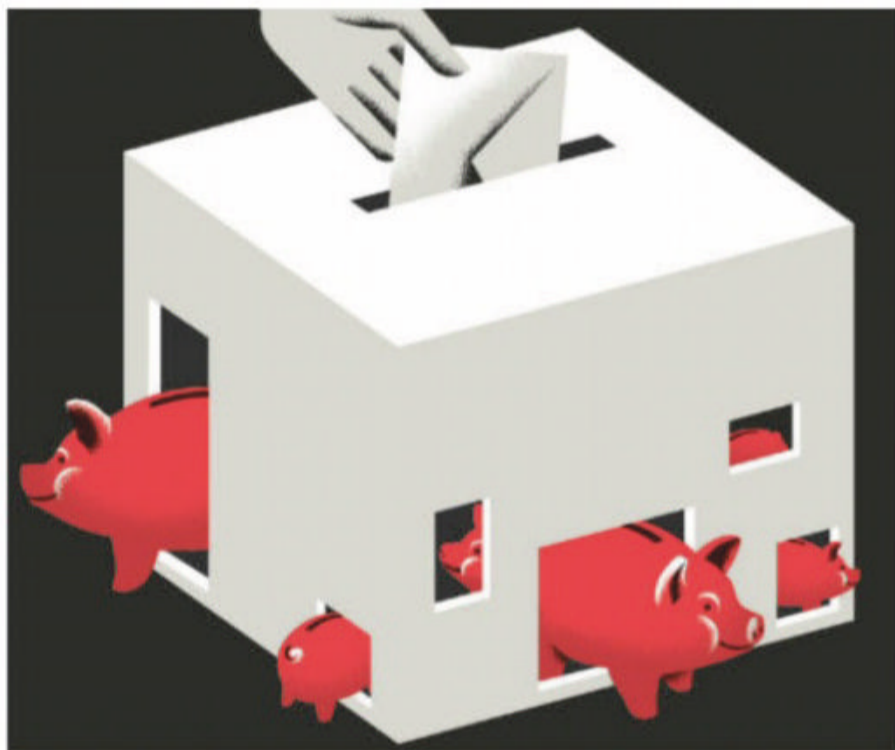
But the biggest regionals are not exactly surrendering. Betsy Graseck of Morgan Stanley notes that US Bank, based in Minneapolis, gained share in the year after BoFA opened; Wells, the city's other leading bank, gave up ground. US Bank, meanwhile, will this year open its first branch in Charlotte—by chance, BoFA's hometown. Tim Welsh, head of consumer and business banking, says that it already has an office serving thousands of mortgage, car-loan and credit-card customers there.

American banking is unlikely ever to be as concentrated as in many other rich countries. But digitisation will help the biggest get bigger. Though giants are rarely nimble, it still takes a lot to fell them. ■



Free exchange | Votes of confidence

Just how compatible are democracy and capitalism?



OF LATE THE world's older democracies have begun to look more vulnerable than venerable. America seems destined for a constitutional showdown between the executive and the legislature. Brexit has mired Britain in a constitutional morass of its own. Such troubles could be mistaken for a comeuppance. In recent years political economists have argued that rising inequality in the Anglo-American world must eventually threaten the foundations of democracy; a book on the theme by Thomas Piketty, a French economist, has sold well over a million copies. That argument channels a time-worn view, held by thinkers from Karl Marx to Friedrich Hayek, that democracy and capitalism may prove incompatible.

As powerfully as such arguments are made, the past century or so tells a different story. The club of rich democracies is not easy to join, but those who get in tend to stay there. Since the dawn of industrialisation, no advanced capitalist democracy has fallen out of the ranks of high-income countries or regressed permanently into authoritarianism. This is not a coincidence, say Torben Iversen of Harvard University and David Soskice of the London School of Economics, in their recent book, "Democracy and Prosperity". Rather, they write, in advanced economies democracy and capitalism tend to reinforce each other. It is a reassuring message, but one that will face severe tests in years to come.

Economists and political theorists have imagined all sorts of ways capitalist democracies might fail. The oldest is the worry that grasping masses will vote to expropriate the wealth (hard-earned or not) of entrepreneurs and landowners—and without secure property rights there can be no capitalism. Hayek thought that the governments of the early 20th century, in responding to the concerns of the masses, had over-centralised economic decision-making, a road that led eventually to totalitarianism. Other thinkers followed Marx in reckoning that it was the greed of the capitalists that would do the greatest harm. Joseph Schumpeter feared that as firms grew more powerful, they might push a country towards corporatism and clientelism, winning monopoly rights that would generate profits they could share with politicians. Mr Piketty and others say that inequality naturally rises in capitalist countries, and that political power becomes concentrated alongside economic power in an unstable way. Other economists, like

Dani Rodrik, have argued that full participation in the global economy forces a country to give up a degree of either national sovereignty or democracy. Lowering barriers to trade means harmonising trade and regulatory policies with other countries, for instance, which reduces each government's ability to accommodate domestic preferences.

But if capitalism and democracy are such uneasy bedfellows, what explains their long co-existence in the rich world? Mr Iversen and Mr Soskice see capitalism and democracy as potentially mutually supporting, with three stabilising pillars. One is a strong government, which constrains the power of large firms and labour unions, and ensures competitive markets. Weaker countries find it harder to resist the short-term expediency of securing power by protecting monopolies. The second is a sizeable middle class, forming a political bloc that shares in the prosperity created by a capitalist economy. A bargain is struck in which the state provides mass higher education on generous terms, while encouraging the development of frontier industries that demand skilled workers. Middle-class households thus reckon that economic growth is likely to benefit them and their children. (Rising inequality is not a threat to capitalist democracies, the authors reckon, because middle-class voters care little about the poor and do not support broader redistribution that could raise their tax bills.)

Providing the education, infrastructure and social safety net that support a prosperous middle class requires substantial tax revenue. For the system to hold a third pillar is needed: large firms that are not very mobile. Before recent rapid globalisation that was no problem. Yet even now firms are more rooted than commonly thought. Though multinationals are adept at shifting production and profits around the world, in a knowledge economy leading firms cannot break their connections to networks of skilled individuals like those in London, New York or Silicon Valley. Their complex business plans and frontier technologies require the know-how developed and dispersed through these local networks. That increases the power of the state relative to firms, and allows it to tax and spend.

Middlemarch

Quibble with the details, but the overarching story—immobile companies giving governments a degree of sovereignty, which they self-interestedly use to boost the middle classes—seems a plausible account of the stability of advanced capitalist democracies. It leaves plenty to be concerned about, however. It hinges on the middle classes feeling confident about the economy. A sharp slowdown in growth in real median incomes, as in America and Britain in recent years, might not send voters rushing to the barricades, but could strengthen the appeal of movements that threaten to disturb the status quo. Governments, too, are becoming less responsive to middle-class priorities. America's is too dysfunctional, and Britain's too distracted by Brexit, to focus on improving education, infrastructure and the competitiveness of markets.

Demographic change might also take a toll: older and whiter generations may not much care whether a would-be middle class that does not look like them has opportunities to advance or not. Then, too, the authors may have underestimated the corrosive effect of inequality. Threatening to leave is not the only way the rich can wield power. They control mass media, fund think-thanks and spend on or become political candidates. Proud democracies may well survive this period of turmoil. But it would be a mistake to assume survival is foreordained. ■

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Space business

Orbital ecosystem

SAN FRANCISCO AND DIDCOT

An in-orbit economy is taking shape

IN MAY 1999 a group of researchers from the Technical University of Berlin launched an unusual satellite. At a time when most of the machinery in orbit weighed thousands of kilograms, TUBSAT was a petite 45kg. A box that measured 32cm on each side, it carried three video cameras, the idea being to test whether such a titchy spacecraft could capture useful imagery of Earth. The researchers cited low mass, and the resultant low costs, as the benefits of such comparatively tiny satellites. They promised to open up “new market areas” for Earth observation.

It took around 15 years for them to be proved right. A few such “smallsats”, sometimes called nanosats or CubeSats, were launched every year in the decade up until 2014, when numbers spiked. Planet Labs, a Californian company founded by ex-Nasa engineers, launched 33 smallsats that year, each weighing just a few kilos. Planet’s satellites are spiritual successors of TUBSAT, designed to gather imagery of the Earth’s surface. The firm sells its customers images from around 150 active satellites it has in orbit.

Planet Labs is an industry leader. The cost of making and launching satellites has tumbled, enabling an array of new space-based businesses to emerge. In the past year smallsats have been launched that can use radar to peer through clouds or darkness. Others watch for illegal shipping activities and yet more are built to service or move around other satellites in orbit. Perhaps the most outlandish venture is a rescue satellite, designed to pull other satellites down to safety if something goes wrong, to avoid catastrophic collisions with neighbours.

Much of the recent attention has focused on the internet-connection constellations in low Earth orbit proposed by SpaceX and OneWeb. These have long been

planned, and the billions of dollars required to install them are feeding the entire market.

Many of the capabilities of the new smallsats already existed, but mostly as government projects or as secretive intelligence operations. America has long sought to inhibit the commercial development of radar satellites, so powerful are their surveillance properties. Military radar satellites, which bounce radio waves off the surface of the Earth in order to build up a detailed picture of it, were said to be capable of detecting enemy submarines by measuring the tiny disturbances that their wakes left in the curvature of the surface of the ocean.

Payam Banazadeh, the boss of Capella Space, a startup based in San Francisco and founded in 2016, says his firm will use smallsats to work similar magic. Capella’s satellites will use radio waves, rather than light, to create images of the surface of the Earth. Mr Banazadeh says that his smallsats will be able to measure the volume of oil-storage tanks, for example, which are often open-topped to avoid fire risks, simply by pinging a radar beam into them. The first operational satellite is intended to launch this year, one of a planned constellation of 36. A competitor, Finnish company ICEYE, already has satellites in orbit gathering data.

Capella relies on a host of new space businesses as suppliers. Blue Canyon Technologies, founded in 2008, will provide small thrusters that allow the satellites to ▶▶

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▶ be pointed at specific spots on Earth. A company called Phase Four, founded in 2015, will provide tiny ion drives that will allow Capella's satellites to adjust their altitude as needed. This will let the firm capture a wider variety of imagery.

Another new firm, Hawkeye360, takes a different approach. Instead of pinging the surface of the Earth with radio waves, it listens for any that are being emitted by activity down below. This kind of orbital signal sniffing also used to be the domain of governments. But smallsats have advanced to the point where Hawkeye can deploy clusters of three radio-frequency sensing satellites to pick up weak signals from the ground. The company says its primary service will be maritime surveillance, looking for anomalous radio signals such as a fishing vessel turning off its automated identification tracker near a marine protected zone. The stated purpose is to stop illegal fishing and keep ports secure, but it is easy to see how the smallsats could be used to curb oceanic migration too. Hawkeye's first cluster of satellites has been in orbit since December 2018.

The data deluge

All of these new forms of imaging generate huge volumes of data—terabytes a day, enough that getting it down to the ground for processing becomes its own problem. Some companies want to reduce the amount of data they send back by processing some of it up in space (see box). Barry Matsumori, a space-industry veteran, is boss of Bridgesat, a company that has developed a tiny, powerful laser, which can be embedded in spacecraft and which can beam data down to ground stations at extremely high bandwidths. ICEYE is one of its first customers. Bridgesat's first ground station, in California, is already in operation, and more in Italy and Sweden are on their way. The plan is to have ten around the world.

The firm has competition from Amazon, which just announced its own backbone service for data out of orbit and into its data centres, called AWS Ground Station. Capella is an early customer of the service, which uses radio waves rather than lasers to get data down from orbit. As with Amazon's cloud-computing business, the idea with Ground Station is to invest in plenty of expensive infrastructure and then charge startups only for what they use, making it easier and more affordable to run a business up in space.

Managing all those extra satellites gets tricky when the companies launching them have to get their orbits perfect the first time. Currently, companies get only one shot. D-Orbit, an Italian company, has built a "carrier" satellite that is designed to boost already-launched smallsats to their correct configuration.

AI in space

In high detail

Speeding up the processing of space images

MUCH OF THE information that is beamed back from space is useless. Pictures taken by satellites orbiting the Earth might take days to download, only to show lots of cloud obscuring the area of interest. The subject matter may also be surrounded by irrelevant information. All this uses up a lot of valuable bandwidth.

Processing data in space, before transmission, would reduce clutter, but this can be tricky. Cosmic rays randomly flip the ones and zeroes that computers operate on, introducing unpredictable errors. High levels of radiation can also damage electronic circuits. KP Labs, based in Gliwice, Poland, is building a satellite to overcome some of these problems. Their device, called Intuition-1, is controlled by a neural network, a form of artificial intelligence modelled on the human brain. The satellite is what is known in the trade as a 6U CubeSat, which means it is composed of six stan-

dard-sized 10x10x11.5cm modules.

Intuition-1 will be equipped with a hyperspectral imager, which takes 150 pictures of every scene it looks at. Each picture is at a different spectral frequency, so contains different information. The neural network stitches these together using powerful graphics chips hardened against radiation. The developers have also built error correction into their software.

Intuition-1 will view a 15km-wide swathe of Earth at a resolution of 25 metres per pixel. This will be able to reveal details such as how well crops are growing or allow the number of trees in a forest to be counted.

But instead of transmitting back every last bit of image data, the satellite will summarise what the user requests as useful information. This might, for instance, be a heat-map showing areas of weeds in a field or the location of a forest fire. Reducing the data load means that some of this information can be transmitted live.

The satellite will be used to prove that a hardened neural network can survive in space. This could pave the way for other space applications. For example, the Curiosity rover on Mars was successfully upgraded in 2016 with a set of algorithms to detect "interesting" rocks for investigation, instead of picking them randomly. A neural network could provide future rovers and deep-space probes with a better ability to make decisions.

The neural network and hyperspectral imager have already been built and tested by KP labs. The kit will go into a satellite body being constructed by Clyde Space, a satellite producer based in Scotland, and launched in 2022. After that there will be more intelligence in space.



Perhaps the most futuristic new problem for the space business is the risk of debris. The concern is that, with so many new satellites in orbit operated by so many different companies, the chance of losing control of one goes up. A collision could be disastrous, producing a wave of debris with a high chance of wiping out other satellites, potentially crippling the whole commercial low-Earth orbit ecosystem at a stroke. Astroscale, a Japanese company, is tackling this problem by building a prototype craft capable of being launched at short notice in order to grab any malfunctioning satellite and pull it down into the

atmosphere where it will burn up before it can collide with anything. The "rescue" craft will use computer vision to lock onto the out-of-control satellite and match velocity with it, then latch onto it magnetically. The company, which has raised \$132m in the past few years, is planning a demonstration of its technology next year.

Earth's orbits suddenly look busier than ever before. Companies are going into space because it offers a different vantage point, allowing them to gather valuable new, previously-unaffordable information. TUBSAT's "new market areas" are at last open for business. ■

Gene editing

Jump start

From designer babies to selfish genes, CRISPR is back in the spotlight

AS FAR AS experts are concerned, the technology of gene editing is nowhere near ready to be used to create gene-edited babies. This, of course, is separate from the question of whether it is morally right to do so. Nevertheless, around the world, would-be baby tinkerers have failed to get the memo. This week a Russian scientist announced his ambition to repeat a Chinese scientist's gene-editing experiment on human embryos, which lead to the birth of two babies with modified CCR5 genes last year. The Chinese effort was roundly condemned on grounds of safety and ethics. Moreover, at the start of June evidence emerged that the genetic mutation in the gene CCR5, one that offers protection against infection from HIV, is also associated with slightly earlier death.

The finding highlights the need to understand far more about how alterations in a cell's DNA translate into changes in how it functions. There are also a variety of concerns about the basic technology that need to be dealt with before it can be used widely in treatments for the sick—let alone to tinker with healthy embryonic humans.

CRISPR-Cas genome-editing systems, often just known as CRISPR, are molecular machines that can be programmed to home in on specific sections of DNA in the genome and cut both strands of the double helix molecule. This system allows genes to be knocked out or, in some cases, added.

It is not a perfect mechanism. One concern, for example, is that editing can alter DNA in places it isn't supposed to and that these "off-target" effects could trigger cancers. A second worry is that the cell can fill gaps with random DNA when it is making repairs. These could silence genes that the organism may need. A third concern is that although CRISPR successfully hunts down and cuts out faulty DNA, it is harder to get it to insert the right new genes.

Firms involved in developing CRISPR editing for use in medicines have downplayed concerns. Perhaps that was inevitable as they depend on investors' optimism. Rapid advances in many areas have supported the optimists' case that the gremlins in the new techniques can be overcome in time. "Yesterday's problems are not necessarily tomorrow's," observes Helen O'Neill, a molecular geneticist at University College London.

In that vein come two papers describing a way to improve CRISPR. The first from a

team led by Feng Zhang of the Broad Institute in Cambridge, Massachusetts, was published on June 6th, in *Science*. The second comes this week in *Nature* from Samuel Sternberg's team at Columbia University in New York.

Selfish genes

Both teams made use of "jumping genes" or transposons (often called selfish genes), which are pieces of DNA that seem to hop around genomes with little more purpose than to proliferate. They were thought to do so aimlessly but, in 2017, it was discovered that some contained gene-editing systems that were very good at recognising specific DNA sequences. These were able to control where the jumping genes landed. That, in turn, led to the idea, says Dr Sternberg, that it might be possible to harness jumping genes in gene editing.

Dr Zhang and Dr Sternberg have now demonstrated programmable CRISPR-Cas gene-editing systems that do just this by harnessing a protein encoded by a jumping gene known as Tn7. Dr Sternberg says that instead of making a double-stranded cut to DNA, and waiting for the cell to repair itself, in the new system the act of insertion happens at the same time a cut is made.

Because the transposon method of gene editing does not need a cell's own repair

mechanisms to conduct and make good the edit, it offers a mechanism for adding genes into a wider variety of cells. This includes neurons and, most critically, cells that are not currently replicating in a suitable way for CRISPR to work. Although the new papers only demonstrate that jumping-gene editing works in bacteria, scientists have high hopes that it might work in human cells.

The news is welcome in a field where the potential applications in medicine seem to grow by the day. Verve Therapeutics, a biotech firm in Cambridge, Massachusetts, recently said that it wanted to use genetic editing to protect patients from coronary heart disease. CRISPR Therapeutics, based in Zug, Switzerland, wants to edit beta cells, which produce insulin, so that they can be transplanted into diabetics without rejection. In all these therapies, regulators will have to assess the risks and benefits. That will be easier when small risks of mistakes are set against the benefits of curing a fatal disease. But if CRISPR is to be used more widely and safely, more understanding will be needed of how genetic changes actually relate to differences in how a cell functions.

That effort got a boost this week. Jennifer Doudna (pictured) of the University of California, Berkeley, who discovered CRISPR-Cas gene editing and is a leading scientist in the field, will collaborate with GSK, a drugs firm based in London, to elucidate the basic science of gene editing. The new Laboratory for Genomic Research, based in San Francisco, is a \$67m five-year collaboration that may ultimately be useful for drug development and would-be gene editors—whether they seek to make changes to adults or embryos. ■



Doudna and her team, watching out for jumping genes

Neuroscience

Spark of genius

Stimulating the brain with electricity can improve creativity

PAUL MCCARTNEY famously took the melody for “Yesterday” from a dream, while Thomas Edison argued that his best ideas came from hard work. Others have looked to coffee, drugs or love. But what if creativity could be turned on with a flick of a switch?

Elisabeth Hertenstein at the University of Freiburg, Germany, and her colleagues have done just that, using a technology known as transcranial direct current stimulation (tDCS). Their insights could help creatives to stay at the top of their game.

tDCS uses electrodes attached to the scalp to pass a tiny electrical current through the brain. Neuroscientists think the current makes the brain cells underneath the positive electrode (anode) work harder, while the negative electrode (cathode) has the opposite effect and calms activity in nearby neurons. In a paper published in *Brain Stimulation*, the scientists reported that 22 minutes of tDCS significantly improved the performance of university students on three standard tests used by psychologists to measure aspects of creativity.

The first test is called the Alternate Uses Task and measures conceptual expansion: typically by asking people to think of as many possible uses for an everyday object, such as a brick or a paperclip. The second, the Compound Remote Associate Task, asks for words that work as common prefixes or suffixes for unrelated terms. So the answer to “age; mile; sand” is stone. And the third, the Wisconsin Card Sorting Task, has long been used to track how well volunteers can adapt to changing circumstances by getting them to match pictures by shape, colour or number of objects, and then changing the rules of the game.

The student volunteers performed the best when the anode was attached above the right side of their inferior frontal gyrus (IFG)—part of the frontal cortex and a region associated with problem solving and spontaneity—and the cathode fitted above the left side of the IFG. The researchers were trying to increase activity in the right side and reduce activity in the left.

Christoph Nissen, a member of the research group, says the students given tDCS performed 10–20% better on the three tasks than those given a sham stimulation, in which the electrodes were put in place but the current was turned off. And when the electrode positions were reversed, the sci-

PUNCTURES ALWAYS seem to strike at the most irksome times. Scrambling around on the ground to change a wheel in the wet on the side of a busy road is a sure way to ruin any journey. And punctures can be extremely dangerous, especially if a tyre blows out at high speed on a motorway. For decades carmakers have sought various solutions, but with new materials and novel manufacturing methods, a genuinely puncture-proof car tyre has finally appeared.

This summer Michelin and General Motors (GM) will begin testing a prototype airless tyre on a fleet of Chevrolet Bolt electric cars. Although it does not need to be inflated, the self-supporting tyre is said to produce the ride and handling of a standard pneumatic tyre. And being airless, it is thus immune from punctures. The French tyre maker and the American car giant call the tyre Uptis (for “unique puncture-proof tyre system”). Provided the trials in Michigan go well, the two partners reckon Uptis tyres could be available for cars by 2024.

At first sight the Uptis (see picture) resembles the diminutive, airless rubber-spoked wheels already used on some small machines, such as golf carts, lawnmowers and certain all-terrain vehicles. There is a similarity, although the Uptis is designed to take the greater weight of a car and cope with high-speed manoeuvring. Uptis tyres are also different from “run-flat” tyres, which use beefed-up sidewalls to remain upright if punctured and must be driven at reduced speeds for a limited distance only.

The Uptis uses an integrated wheel and tyre that comes in one piece. The wheel part consists of an aluminium assembly in the centre, from which emerge spokes made from a new composite material described as “resin-embedded fibreglass”. The spokes are fitted to a conventional-looking tread

entists saw a corresponding decrease in measured creativity compared with the sham group.

Exactly how tDCS has this effect on the brain is not clear. The left side of the IFG works according to a more rigid interpretation of the world based on concrete features like language comprehension. Inhibiting that under the cathode, while encouraging activity in the more free-thinking right-hand side of the IFG with the anode, perhaps helped the students to

Tyre technology

Flat out useful

An airless, puncture-proof tyre

around the outside of the wheel. Michelin has filed some 50 patents on the technology.

The company reckons that as zoom tyres have to be scrapped worldwide every year because of punctures or the uneven wear caused by incorrect air-pressure, the Uptis will be more environmentally sustainable than standard tyres. It would also save weight, as vehicles will no longer have to carry a spare wheel, a jack, a puncture-repair kit or need to be fitted with a tyre-pressure monitoring system.

But an Uptis will still wear out, like a conventional tyre. When that happens it will need a new tread—one way Michelin and GM hope to do that is using a 3D printer to create a new outer shell for the tyre. That could open up new motoring possibilities, including having seasonal treads printed on your wheels: a summer one for faster roads and a winter tread for increased grip in the wet and snow.



Bad news for tyre fitters

think outside the box.

Dr Nissen says most of his team are looking for new ways to help patients with mental disorders, such as breaking patterns of repetitive negative thinking by encouraging cognitive flexibility. But his study's insights can be applied to work and jobs outside the lab or clinic. The Alternate Uses Task, for example, assesses the creative skills required to brainstorm new products or see previously untapped potential in an everyday object. ■



Policing social media

Guardians of the galaxy

Content moderators are the unacknowledged legislators of the online world

THEY ARE paid to spend their days watching filth: beheadings and chemical-weapons attacks, racist insults and neo-Nazi cartoons, teenagers encouraging each other to starve, people having sex with animals or with ex-lovers against whom they want revenge. When batches of images leap onto their screens, they must instantly sort them into categories, such as violence, hate speech and “dare” videos, in which people offer to do whatever a stranger asks. If the material violates the platform’s explicit policies (nudity, sensationalistic gore), they take it down. If it contains suicide threats or evidence of a crime, they alert law-enforcement authorities. If it is a borderline case (violence with possible journalistic content, say), they mark it for review. Some earn \$15 an hour, some a piece-work rate of a few cents per item, sorting anywhere from 400 to 2,000 a day.

With soldierly bravado, they insist the job does not upset them. “I handle stress pretty well,” says one of the social-media

Behind the Screen. By Sarah Roberts. Yale University Press; 280 pages; \$30 and £20

content moderators interviewed by Sarah Roberts in “Behind the Screen”—before admitting to gaining weight and developing a drink problem. They avoid discussing their work with friends or family, but it intrudes anyway. War-zone footage, child sex-abuse and threats of self-harm are especially hard to repress. “My girlfriend and I were fooling around on the couch or something and she made a joke about a horse,” says another moderator. “And I’d seen horse porn earlier in the day and I just shut down.”

Those who work directly for the big American internet platforms may boast about it to their friends, but they are mainly on short-term contracts with little kudos or chance of promotion. At a huge Silicon Valley firm that Ms Roberts calls MegaTech, the content moderators were barred from using the climbing wall. Even further down

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the hierarchy are third-party contractors in India and the Philippines, who handle material for corporate websites, dating sites and online retailers, as well as for the big platforms. Whether in San Francisco or Manila, their task is fundamentally the same. These are the rubbish-pickers of the internet; to most of the world, they are all but invisible.

An estimated 150,000 people work in content moderation worldwide. Ms Roberts’s book is one of just a few about them. Much of her research was conducted early this decade; for recent developments, she is obliged to refer to articles by journalists such as Adrian Chen of *Wired*. But in some ways little has changed. A short documentary Mr Chen made in 2017 about moderators in India suggests the job was largely the same as it was in California in 2012.

One reason content moderation is hard to investigate is that social-media companies prefer not to talk about it. The platforms have never been comfortable with their role as gatekeepers. Like much of Silicon Valley, their culture reflects the libertarian optimism of the internet’s pioneers, which Ms Roberts terms “an origin myth of unfettered possibility for democratic free expression”. Early cyberspace utopians thought censorship would soon be obsolete: the internet would treat it as a broken node and route around it. (The Great Firewall of China had not yet been erected.) Un- ▶

► til recently, strategists at giant social-media firms seemed to imagine they were still running the sorts of self-policing communities which existed on text-only messaging boards in the 1990s, and which survive today on forums like 4chan and Reddit.

The platforms also have less rarefied reasons to keep content moderation out of the public eye. America's law on online content, the Communications Decency Act of 1996, lets internet companies restrict it as they see fit, and holds them largely immune from liability for third-party material on their websites. A fear that legislators might deem the firms' methods biased or inadequate—and decide to regulate them—makes executives circumspect in both what they do and how they talk about it. The big platforms and their contractors routinely require moderators to sign non-disclosure agreements.

Since the American presidential election of 2016 and the Brexit referendum, controversies over fake news, hate speech and online harassment have forced internet companies to bring content moderation into the light—up to a point. Facebook says it now has 30,000 people working on safety and security worldwide, of whom half are moderators (many of them employed by outside contractors). Twitter has beefed up its moderation staff; it now boasts about the number of accounts it suspends, sometimes millions per month. A new German law requires internet sites to delete material that breaks hate-speech laws within 24 hours of a complaint. Last week YouTube began taking down thousands of channels that violated policies against racism, sexism and religious bigotry. It has also been criticised for algorithms (now amended) that routed family videos to viewers who expressed an interest in child porn.

Lines in the sand

These efforts have exposed the platforms to just the sort of criticisms they are least comfortable with. Alt-right YouTubers whose channels are taken down because of racism complain they are being censored by the liberal establishment. Some history channels were initially knocked out too, because they displayed racist material in order to critique it (they have since largely been restored). Still, when targets of suspensions complain, they are usually met by a boilerplate statement that their content violated company policies, with no explanation of what those policies are or exactly what the violation was.

As Ms Roberts shows, the opacity is ingrained. Social-media sites have often been reluctant to tell malefactors precisely what they did wrong. Beside the political risks, they fear that would let provocateurs flirt with the edges of prohibitions, and furnish endless fodder for challenges to

10 Minutes 38 Seconds in This Strange World. By Elif Shafak. Viking; 320 pages; £14.99

THE PROTAGONIST of Elif Shafak's 11th novel is dead when it begins. It is 1990, and the body of "Tequila Leila" has been dumped in a wheelie bin on the outskirts of Istanbul; yet, somehow, her mind remains active. "She wished she could go back and tell everyone that the dead did not die instantly, that they could, in fact, continue to reflect on things, including their own demise." Later a medical examiner muses on the fascinating research he has encountered, apparently showing that brain activity can continue for up to 10 minutes and 38 seconds after death. This is how Ms Shafak's book gets its title, and its conceit, as the dead-but-not-dead Leila scrolls back through the story of her life.

Ms Shafak, who writes in both Turkish and English, is the most widely read female author in her native country. In 2006 she was prosecuted for "insulting Turkishness" (in her novel "The Bastard of Istanbul", a character refers to the massacre of Armenians during the first world war as a genocide). She was acquitted, but has recently come under unwarranted pressure from the authorities again. Her novels are lyrical and often magical, drawing on a storehouse of Ottoman narrative culture; but they are also a reflection of her political beliefs, her characters frequently struggling against oppression.

In this book, Leila is a sex worker who comes to Istanbul from the distant eastern city of Van. Her childhood, her youth and the chain of events that lead to her death unspool through the sense-memories which haunt her as those 10 minutes and 38 seconds pass. Salt, cardamom coffee, spiced goat stew, sulphuric acid: each is a clue to a past that, during her life, she was in flight from. Memory, for

their decisions. A report in February by the Verge, a news site, found that a Facebook subcontractor's training regime required moderators to learn a decision-tree of rules, then justify which one led to a take-down. Even so, individual instances often involve subjective judgments, which are almost never explained to users.

For years, tech activists have called for more transparency about these boundaries. But some say that simply revealing

Anglo-Turkish fiction

Life after life



Elif Shafak, bard of the oppressed

her, is "a graveyard".

In death, the graves open. Leila's father had two wives; when she was born, she was given from the second to the childless first. The weight of this secret distorts Leila's life, as other damaging secrets corrode the whole clan. Five stalwart friends help her survive. Their own narratives punctuate the novel; together they form a family far more loving than the one Leila escapes.

Ms Shafak weaves the history of modern Turkey through her story, sometimes glancingly (in Van, Leila's parents live in a house which once belonged to Armenians) and sometimes more directly, as when Leila is caught up in a bloody clash between protesters and police in 1977. Yet this book is also a love-letter to Istanbul, which "like a lover's face" is "receding in the mist". By the end Ms Shafak persuades the reader to care powerfully about Leila, as the novel comes to a sorrowful but redemptive conclusion.

the rules is insufficient, because formal criteria can never capture the irreducible moral and political decisions moderators make. Ms Roberts's subjects already faced such dilemmas in 2011, when MegaTech decided that gruesome images from the Arab spring constituted news (and so could stay), but equally grim ones from gang conflicts in Central America had to go.

Others think the focus on what may be published misses the bigger question of ►►

▶ which posts get amplified—by being shared, liked or “ratioed” (the current term for a wave of negative comments). Last week Carlos Maza, a reporter for Vox.com, pilloried YouTube for refusing to take down videos by Steven Crowder, a conservative YouTuber who had mocked him using homophobic slurs. As well as complaining about the slurs themselves, Mr Maza said he had been subjected to online harassment by some of Mr Crowder’s many followers. This raises the difficult question of whether platforms should impose stricter rules on influential personalities.

A different approach was suggested last year by Tarleton Gillespie, a consultant, in his book “Custodians of the Internet”. Part of the problem, he says, is that both users and companies have got it wrong: content moderation is not a peripheral inconvenience,

but “in many ways, *the commodity that platforms offer*”. Increasingly, these sites are where people conduct their lives, and the task of keeping them within acceptable bounds of discourse, and excluding the unconscionable, may be the most important thing the firms do. It is too demanding for harried box-tickers.

Facebook has recently raised moderators’ pay; YouTube has limited their exposure to disturbing videos to four hours a day. But in general, as Ms Roberts chronicles, moderators are treated as low-skilled labour. She is particularly good at depicting how the strange international network of content moderation mirrors the class divides of other globalised industries. Just as it dumps some of its nastiest refuse in poor countries, the West leaves it to them to sort much of the internet’s yuckiest trash. ■

kaluk collected scrap metal to sell for pocket money and enjoyed watching episodes of “Thomas the Tank Engine” in his shed. He can barely read or write and had never been on a plane, but was able to draw complex maps with an uncannily precise bird’s-eye perspective. He was the “butt of jokes amongst people who were themselves the butt of jokes”, the author says of his ostracised life in a downtrodden part of the country.

Mr Sokaluk emerges as both vulnerable and an odd, sometimes malicious, pest. To the detectives, he was a cunning fiend capable of “unleashing chaos and horror”. To his lawyers he was hapless and naive. After the verdict was delivered they felt devastated, “for it seemed they were leaving behind a child”.

Another villain lurks in the background of this story: the Hazelwood power station, a coal-powered plant that looms over Latrobe Valley and provided almost a quarter of the state’s electricity before it was closed in 2017. Brown coal is dirty and unstable, and the lives of those associated with it are liable to be equally volatile. The plant’s privatisation in the 1990s led to a rise in long-term unemployment. “People’s friends and family worked cutting the stuff out, burning it, and then everyone breathed in the vapours of strife,” writes Ms Hooper. “The valley became a human sink.”

Unpredictable as arson can be, she learns that people are more inclined to destruction in places where “high youth unemployment, child abuse and neglect, intergenerational welfare dependency and poor public transport meet the margins of the bush”. In an age of climate change and stubborn inequality, in Australia and beyond, that is an unsettling conclusion to a gripping and insightful book. ■

Crime and the environment

Into the inferno

An inquiry into bushfires in Australia identifies more than one culprit

BEEHIVES SPONTANEOUSLY combust and trees ignite in sudden blasts. Burning birds fall from the sky. As embers the size of dinner plates rain down and a blaze roars “like seven jumbos landing on the roof”, people submerge themselves in any body of water they can find. They cover their faces with lily pads, pond slime, tea-towels or wet gloves. The sun is smothered by smoke and everything turns red. There is, reports Chloe Hooper, “no air in the air”.

This was how survivors described their experiences ten years ago, after hundreds of fires, giving off the heat of 500 atomic bombs, raged through the state of Victoria in south-eastern Australia. Thousands of homes were lost, 173 people died and 450,000 hectares of land were burnt to a crisp, over seven times the area that was incinerated in and around Paradise, California, last year. When investigators looked down from helicopters afterwards, it seemed that the roofs of houses had been peeled off, the rooms below resembling “chambers of the heart”.

Although many of the fires that wreaked havoc in the state were subsequently found to have been caused by failures in its badly regulated electricity grid, two turned out to have been lit intentionally. In “The Arsonist” Ms Hooper focuses on the infernos sparked by a “firebug” in the Latrobe Valley. She asks what she calls “the impossible question”: What sort of person would do this, and why?

The answers were not simple. Evidence was all around—in the wasteland, the rubble and the gum leaves of highly flammable eucalyptus trees, “thousands of fingers

The Arsonist. By Chloe Hooper. *Scribner*; 272 pages; £14.99

pointing the way the fire had gone”. But arson is notoriously difficult to solve: only 1% of wildfire arsonists are ever caught. The conviction of Brendan Sokaluk, a middle-aged man on the autism spectrum, for deliberately starting a blaze that killed 11 people, was a surprising success for the Victoria police.

But the road to the guilty verdict was rocky. Unemployed and eccentric, Mr So-



A world on fire

Art and love

A muse's burden

Passionate Spirit: The Life of Alma

Mahler. By Cate Haste. *Bloomsbury*; 486 pages; £26. To be published in America by *Basic Books* in September; \$32

ALMA MAHLER was the supreme femme fatale of early-20th-century Vienna. From composers to priests, artists to architects, scientists to writers, she conquered hearts—and broke them. Her first kiss was with Gustav Klimt; her first husband was Gustav Mahler. Her second was Walter Gropius, founder of the Bauhaus movement; her third, the writer Franz Werfel. Her lovers included Oskar Kokoschka, a daring artist who commissioned a fetishistic, life-size doll of Alma after she ditched him. A century on, she has become the subject of feminist revisionism. Was she a capricious muse—or victim of chauvinist oppression?

“Passionate Spirit”, Cate Haste’s seductively accessible biography, offers a sympathetic interpretation of Alma’s life. Written in elegant, lucid prose, her book is a treasure trove of European cultural riches and scandalous intrigue. She uses Alma’s diaries to capture her subject’s inner world.

Alma was born in 1879, the daughter of the painter Emil Schindler. She worshipped her father, which may help explain the magnetism that talented men exerted on her throughout her eventful life. Yet as Ms Haste emphasises, Alma was creative herself, pursuing both musical composition and piano.

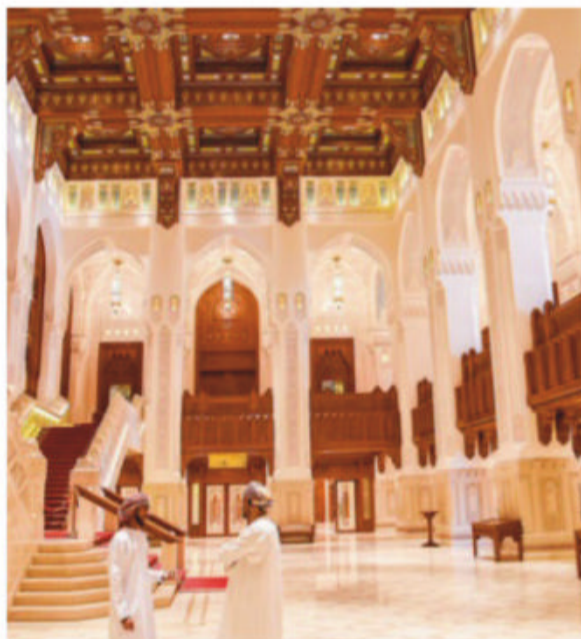
Her first serious fling was with the composer Alexander von Zemlinsky. She jettisoned him after meeting Mahler, whose fiancée she soon became. Sternly he decreed that there was room for only one artist in their relationship. Devastated, Alma nevertheless gave up her music for the sake of love. Theirs at first seemed a happy marriage, but, increasingly frustrated, she began an affair with Gropius. Gustav sought advice from Sigmund Freud, but Alma continued the dalliance until his death. Ms Haste thinks she took the only way out of an oppressive marriage. Others claim that she as good as killed her husband.

This biography captures the turmoil of Alma’s affairs, her artistic disappointments, visceral appetites and the tragic deaths of three of her four children. She emerges as a tough, lively, cultured and wilful woman, who also composed highly regarded songs that were characteristic of her era; a modern performer describes them as “sensual, charming and surprising”. As Ms Haste says, these works have

been overshadowed by Gustav’s genius.

This portrait of Alma is compelling; the feminist gloss, less so. Alma is known to have edited her diaries (and Gustav’s correspondence), making them unreliable records of her travails. His dominant streak does not account for her later behaviour. They were married for only nine years; Alma lived to be 85.

Did she have the tenacity and discipline to have been as prolific a composer as Gustav? She seems generally to have preferred more immediate forms of gratification. The sad truth, from a feminist perspective, is that, if Alma had actually led the life of a dedicated composer and forgone her sensational flings, she might now be a much less famous figure. ■



Culture in the Middle East

The sultan's song

MUSCAT

How Gulf rulers learned to love opera

IN “LAKMÉ”, AN opera by Léo Delibes, a Brahmin priest laments his daughter’s affair with a British officer. The patriarch’s view of forbidden love has a special piquancy at the Royal Opera House, Muscat (ROHM), where the work was performed earlier this year. One of the most spectacular opera houses in the world, the venue is the flagship of the art form’s swift rise across the conservative Gulf region.

In 1970, when Sultan Qaboos ousted his father, Oman had only two hospitals and three schools. Qaboos, now 78, has used some of the country’s oil wealth to update both its infrastructure and its image. The sultan is an autocrat (and a spendthrift), but he affects an enthusiasm for the arts. He founded the Royal Oman Symphony Orchestra in 1985; the ROHM (pictured)

opened in 2011. Its staircase and marble match the Opéra de Paris in grandeur.

But the region’s opera boom transcends Oman. Dubai opened a glass-cased opera house in the shadow of the world’s tallest skyscraper in 2016. Kuwait’s glitzy new culture complex staged “The Magic Flute” last year. Meanwhile Jordan’s open-air opera festival, the region’s first, is now held each year in Amman’s Roman amphitheatre.

One reason for the fad is economic. Qaboos wants to create jobs for Omanis and diversify beyond oil, including by boosting tourism. The ROHM has reputedly become Muscat’s second-most-popular sight, after the Grand Mosque; three-quarters of its staff are Omani.

Soft-power diplomacy is also part of the story. For example, a plan is afoot for Oman to fund an opera house in Beirut. A bid to recruit a Saudi minister to the board of La Scala in Milan—and for it to accept €15m from the Saudi government—foundered amid an outcry over human-rights abuses. But La Scala’s academy still plans to set up an opera school for children in Riyadh.

Oil has fuelled the opera boom, but Western expertise has helped. Jasper Hope, formerly of the Royal Albert Hall in London and now chief executive of Dubai Opera, has introduced a spin-off from the BBC Proms. Umberto Fanni, the well-connected director of the ROHM, has attracted prestigious artists to Oman. Plácido Domingo has sung there; a new production of “Rigoletto” by Franco Zeffirelli, a legendary director, is due to open in Muscat next year.

Still, adapting a mannered—and often bawdy—European art form to local tastes is a challenge. “The risk is that you disorientate audiences,” says Farid Rahi, CEO of Opera Lebanon (itself founded in 2015). “You need a very simple theatrical language.” Sex and religion cause particular problems. “When we staged ‘La Traviata’ [Verdi’s opera about a Parisian courtesan], we had water instead of wine,” Mr Fanni recalls. The production in Muscat emphasised the heroine’s “dignified journey to death rather than her libertine lifestyle.”

As well as European classics, the ROHM offers works from the Middle East, such as “Antar and Abla”, an Arabic opera commissioned by Opera Lebanon. Mr Fanni’s ultimate aim is to replace the imported shows that have hitherto dominated the repertoire with in-house productions. The Teatro Carlo Felice in Genoa provided the chorus and musicians for “Lakmé”, but the ROHM made the sets. Mr Fanni hopes soon to mix Omani musicians with the foreign players who occupy the orchestra pit now.

The complexion of the audience is also changing—slowly. When the ROHM was inaugurated during the Arab spring, protesters decried the project’s profligacy. Local interest in opera has risen; but even now, only around 15% of punters are Omani. ■

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NOTICE FOR EXPRESSION OF INTEREST FOR

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MPPMCL intends to execute Energy Storage Projects in Madhya Pradesh to make optimum use of Energy resources in M.P. For this purpose, "Expression of Interest" are invited from the interested parties.

Chief General Manager (RO), M.P. Power Management Co. Limited, Bhopal on behalf of Managing Director, MPPMCL hereby invites interested Service Providers/ RE Generators/Manufacturing firms/Utilities etc who has experience in the field of Energy Storage anywhere in India or abroad.

Please visit the Home Page of MPPMCL website <https://www.mppmcl.com> (Opportunities > business) for detail Eoi and notices.

1. Proposal will be received on email id energystorage@mppmcl.com. Interested Agencies can also submit hardcopy of their responses at below address:

CHIEF GENERAL MANAGER (REGIONAL OFFICE)

E-4, Prakash Parisar, Arera Colony,

Near Bhojpur Club, Bhopal-462016

Tel. : 0755-2423044

2. Information regarding last date of submission queries & Eoi proposal and other key dates will be updated on MPPMCL website. Participants are requested to visit website of MPPMCL on regular basis.

3. The E.O.I. should include relevant information as per details available on the above website.

4. The Chief General Manager (RO), MPPMCL, Bhopal reserves the right to accept or reject any or all offers.

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CHIEF GENERAL MANAGER (RO)

Economic data

	Gross domestic product				Consumer prices			Unemployment rate		Current-account balance		Budget balance		Interest rates		Currency units			
	% change on year ago		2019†		% change on year ago		2019†		%		% of GDP, 2019†		% of GDP, 2019†		10-yr gov't bonds		change on year ago, bp		per \$ % change
	latest	quarter*			latest								latest,%		per \$	Jun 11th	on year ago		
United States	3.2	Q1	3.1	2.2	1.8	May	2.2	3.6	May	-2.4		-4.7	2.1	-81.0	-				
China	6.4	Q1	5.7	6.3	2.7	May	2.9	3.7	Q1 [§]	0.2		-4.5	3.1	§§	6.91		-7.4		
Japan	0.9	Q1	2.2	1.0	0.9	Apr	1.1	2.4	Apr	4.1		-3.2	-0.1		109		1.2		
Britain	1.8	Q1	2.0	1.0	2.1	Apr	1.8	3.8	Mar ^{††}	-4.1		-1.6	0.9		0.79		-5.1		
Canada	1.3	Q1	0.4	1.6	2.0	Apr	1.7	5.4	May	-2.6		-1.1	1.5		1.33		-2.3		
Euro area	1.2	Q1	1.6	1.2	1.2	May	1.4	7.6	Apr	3.1		-1.1	-0.2		0.88		-3.4		
Austria	1.4	Q1	3.8	1.3	1.7	Apr	1.8	4.7	Apr	2.1		0.1	0.1		0.88		-3.4		
Belgium	1.2	Q1	1.1	1.2	1.9	May	2.2	5.7	Apr	0.1		-0.9	0.2		0.88		-3.4		
France	1.2	Q1	1.4	1.2	1.0	May	1.3	8.7	Apr	-0.6		-3.3	0.1		0.88		-3.4		
Germany	0.7	Q1	1.7	0.9	1.4	May	1.4	3.2	Apr	6.6		0.7	-0.2		0.88		-3.4		
Greece	0.9	Q1	0.9	1.8	0.2	May	1.3	18.1	Mar	-2.7		nil	2.7		0.88		-3.4		
Italy	-0.1	Q1	0.5	0.1	0.9	May	0.9	10.2	Apr	2.0		-2.9	2.4		0.88		-3.4		
Netherlands	1.7	Q1	1.9	1.6	2.9	Apr	2.6	4.1	Apr	10.2		0.7	-0.1		0.88		-3.4		
Spain	2.4	Q1	2.9	2.2	0.8	May	1.2	13.8	Apr	0.5		-2.2	0.5		0.88		-3.4		
Czech Republic	2.6	Q1	2.2	2.8	2.9	May	2.5	2.1	Apr [†]	0.2		0.5	1.6		22.6		-4.0		
Denmark	2.8	Q1	1.0	1.9	0.7	May	1.1	3.7	Apr	6.3		1.0	-0.2		6.60		-4.4		
Norway	2.5	Q1	-0.3	1.7	2.5	May	2.6	3.5	Mar ^{††}	8.1		6.5	1.5		8.63		-7.0		
Poland	4.7	Q1	6.1	3.8	2.3	May	1.8	5.6	Apr [§]	-0.5		-2.4	2.5		3.77		-4.0		
Russia	0.5	Q1	na	1.2	5.1	May	4.9	4.7	Apr [§]	6.9		2.1	7.7		64.5		-2.9		
Sweden	2.0	Q1	2.4	1.6	2.1	Apr	1.7	6.2	Apr [§]	2.2		0.8	-0.1		9.45		-8.4		
Switzerland	1.7	Q1	2.3	1.6	0.6	May	0.5	2.4	May	9.6		0.5	-0.4		0.99		-1.0		
Turkey	-2.6	Q1	na	-1.7	18.7	May	16.1	14.7	Feb [§]	-0.7		-2.3	17.3		5.83		-22.6		
Australia	1.8	Q1	1.6	2.5	1.3	Q1	1.7	5.2	May	-2.4		-0.2	1.5		1.44		-9.0		
Hong Kong	0.6	Q1	5.4	2.0	2.9	Apr	2.3	2.8	Apr ^{††}	4.6		0.5	1.7		7.84		0.1		
India	5.8	Q1	4.1	6.7	3.0	May	3.6	7.2	May	-1.8		-3.4	7.0		69.5		-2.9		
Indonesia	5.1	Q1	na	5.2	3.3	May	2.8	5.0	Q1 [§]	-2.7		-2.1	7.7		14,235		-2.1		
Malaysia	4.5	Q1	na	4.5	0.2	Apr	0.6	3.4	Mar [§]	2.0		-3.5	3.7		4.16		-4.1		
Pakistan	5.8	2018**	na	3.4	9.1	May	8.2	5.8	2018	-4.0		-7.0	14.1	†††	151		-21.8		
Philippines	5.6	Q1	4.1	5.7	3.2	May	3.6	5.1	Q2 [§]	-2.0		-2.5	5.2		51.9		2.1		
Singapore	1.2	Q1	3.8	1.8	0.8	Apr	0.5	2.2	Q1	18.7		-0.6	2.0		1.36		-2.2		
South Korea	1.6	Q1	-1.5	2.4	0.7	May	1.0	4.0	May [§]	4.5		1.0	1.6		1,181		-8.9		
Taiwan	1.7	Q1	2.3	1.8	0.9	May	0.3	3.7	Apr	13.1		-1.2	0.7		31.4		-5.1		
Thailand	2.8	Q1	4.1	3.5	1.1	May	0.9	1.0	Apr [§]	8.3		-2.9	1.9		31.3		2.4		
Argentina	-6.2	Q4	-4.7	-1.1	55.8	Apr [†]	49.2	9.1	Q4 [§]	-2.2		-3.4	11.3		44.7		-43.3		
Brazil	0.5	Q1	-0.6	1.0	4.7	May	4.0	12.5	Apr [§]	-1.0		-5.8	6.2		3.86		-4.7		
Chile	1.6	Q1	-0.1	3.0	2.3	May	2.1	6.9	Apr ^{§††}	-2.5		-1.4	3.5		693		-8.6		
Colombia	2.3	Q1	nil	3.1	3.3	May	3.1	10.3	Apr [§]	-3.5		-2.0	6.1		3,247		-11.9		
Mexico	1.2	Q1	-0.7	1.4	4.3	May	4.2	3.5	Apr	-1.8		-2.3	7.7		19.1		7.1		
Peru	2.3	Q1	-5.3	3.7	2.7	May	2.2	5.5	Apr [§]	-1.7		-2.0	5.6		3.33		-2.1		
Egypt	5.6	Q1	na	5.4	14.1	May	13.0	8.1	Q1 [§]	-0.9		-7.7	na		16.8		6.4		
Israel	3.3	Q1	5.2	3.1	1.3	Apr	1.2	3.8	Apr	2.7		-3.9	1.6		3.58		-0.3		
Saudi Arabia	2.2	2018	na	1.9	-1.9	Apr	-1.1	5.7	Q1	3.6		-5.4	na		3.75		nil		
South Africa	nil	Q1	-3.2	1.5	4.4	Apr	5.0	27.6	Q1 [§]	-3.2		-4.2	8.4		14.7		-10.7		

Source: Haver Analytics. *% change on previous quarter, annual rate. †The Economist Intelligence Unit estimate/forecast. §Not seasonally adjusted. ‡New series. **Year ending June. ††Latest 3 months. ‡‡3-month moving average. §§5-year yield. †††Dollar-denominated bonds.

Markets

In local currency	Index	% change on:	
		one week	Dec 31st 2018
United States S&P 500	2,879.8	1.9	14.9
United States NAScomp	7,792.7	2.9	17.4
China Shanghai Comp	2,909.4	1.7	16.7
China Shenzhen Comp	1,528.4	2.2	20.5
Japan Nikkei 225	21,129.7	1.7	5.6
Japan Topix	1,554.2	1.6	4.0
Britain FTSE 100	7,367.6	2.0	9.5
Canada S&P TSX	16,227.2	0.1	13.3
Euro area EURO STOXX 50	3,386.6	1.4	12.8
France CAC 40	5,374.9	1.6	13.6
Germany DAX*	12,115.7	1.1	14.7
Italy FTSE/MIB	20,463.3	1.5	11.7
Netherlands AEX	556.1	2.3	14.0
Spain IBEX 35	9,238.5	1.0	8.2
Poland WIG	58,917.6	2.3	2.1
Russia RTS, \$ terms	1,343.3	3.1	26.0
Switzerland SMI	9,859.7	2.1	17.0
Turkey BIST	92,605.8	2.5	1.5
Australia All Ord.	6,628.9	2.9	16.1
Hong Kong Hang Seng	27,308.5	1.5	5.7
India BSE	39,756.8	-0.8	10.2
Indonesia IDX	6,276.2	1.1	1.3
Malaysia KLSE	1,650.7	0.4	-2.4

	index	% change on:	
		one week	Dec 31st 2018
Pakistan KSE	34,937.9	-1.6	-5.7
Singapore STI	3,207.7	2.1	4.5
South Korea KOSPI	2,108.8	1.9	3.3
Taiwan TWI	10,615.7	1.5	9.1
Thailand SET	1,671.1	1.4	6.9
Argentina MERV	40,930.7	16.0	35.1
Brazil BVSP	98,320.9	2.4	11.9
Mexico IPC	43,800.2	0.9	5.2
Egypt EGX 30	14,158.1	2.7	8.6
Israel TA-125	1,434.4	-0.1	7.6
Saudi Arabia Tadawul	9,084.8	6.7	16.1
South Africa JSE AS	58,710.6	2.9	11.3
World, dev'd MSCI	2,134.4	1.8	13.3
Emerging markets MSCI	1,026.2	2.1	6.3

US corporate bonds, spread over Treasuries

	Dec 31st	
Basis points	latest	2018
Investment grade	171	190
High-yield	492	571

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

Commodities

The Economist commodity-price index

2005=100	% change on			
	Jun 4th	Jun 11th*	month	year
Dollar Index				
All Items	136.9	136.6	3.1	-12.5
Food	148.3	147.7	7.0	-4.7
Industrials				
All	125.0	125.1	-1.4	-20.5
Non-food agriculturals	118.4	117.7	0.6	-20.5
Metals	127.8	128.3	-2.2	-20.6
Sterling Index				
All items	196.4	195.4	4.7	-8.2
Euro Index				
All items	151.5	150.1	2.1	-8.9
Gold				
\$ per oz	1,321.4	1,326.3	2.3	2.1
West Texas Intermediate				
\$ per barrel	53.5	53.3	-13.8	-19.7

Sources: CME Group; Cotlook; Darmann & Curl; Datastream from Refinitiv; 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)

Cricket has evolved from a slow-moving game into three very different ones

Test



Matches stop after five days
Each team bats for two innings of unlimited balls. To avoid being bowled out quickly, batsmen often block the ball defensively.

One-day international (ODI)



Matches take one day
Each team bats for one innings of 300 balls. Because opportunities to score are limited, batsmen play risky shots more often than in Test matches.

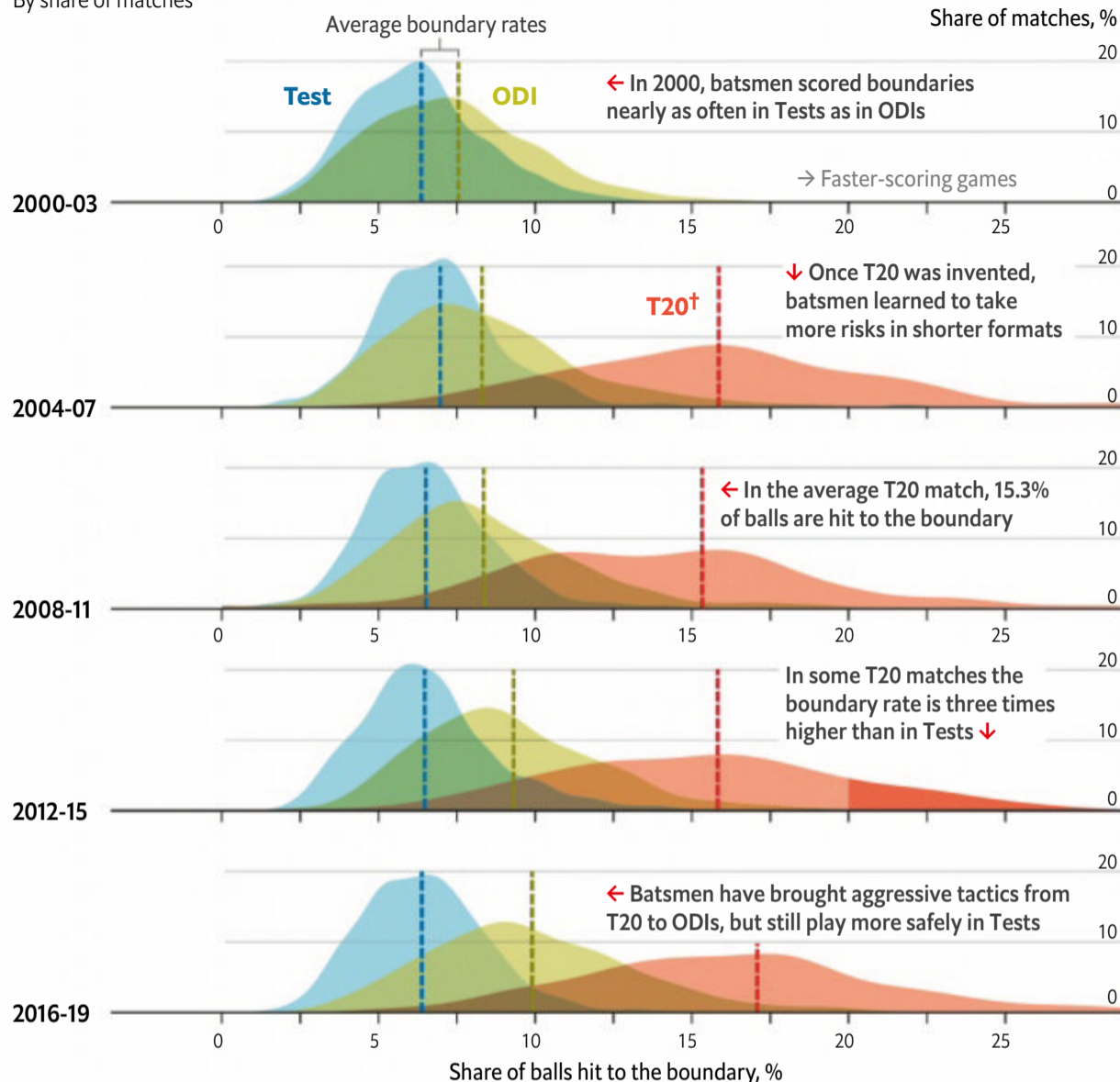
T20



Matches take four hours
Each team bats for one innings of 120 balls. Batsmen look to hit most balls to the boundary, because it is unlikely the whole team will be bowled out.

Rate of boundary shots*, by match format

By share of matches



*A shot that reaches the edge of the pitch †Includes Indian Premier League Sources: Cricinfo.com; Cricsheet.org; Navaneesh Kumar

Beyond a boundary

The sport's increasing sizzle owes much to India

CRICKET MATCHES between India and Pakistan are always heated. Their World Cup fixture on June 16th will be particularly fierce: in February an attack by militants on Indian police in Kashmir led to tit-for-tat airstrikes. Even neutral spectators, however, eagerly await pyrotechnics on the pitch. Scoring rates in cricket have been rising for decades, but in recent years they have exploded in the sport's newer, shorter formats. The game's evolution into a faster-paced, more exciting spectacle has been most notable in India. The Indian Premier League (IPL), founded in 2008, has become cricket's most lucrative product by copying the franchise system of American sports and importing star foreign players in a huge country with growing TV viewership.

The IPL's other innovation was to adopt the T20 format, devised in England in 2003.

Unlike Test matches—in which each team bats for two innings, taking up to five days—T20 gives each side one innings of 120 balls, limiting games to four hours. The rules are the same. Batsmen score as many runs as possible during an innings. Whacking the ball over the boundary rope yields four runs if it bounces on the field, and six if it does not. The fielders try to get the batsmen out by hitting the wooden wicket or catching an errant shot (among other methods of dismissal). Each side bats until either ten players are out or the fixed number of balls, or days, is used up.

In Test cricket batsmen often block the ball defensively, to preserve their wickets.

Cricket media rights

Annual global value, \$bn



But because it is rare for ten men to get out in just 120 balls, players in T20 try riskier shots in pursuit of faster rewards. The result makes baseball look sedate. Whereas an average night at Yankee Stadium produces two home runs, an average T20 match features 39 boundary shots.

These aggressive tactics have also been adopted in one-day internationals (ODIs), the format used in the World Cup, which gives each side one innings of 300 balls. Boundary rates in ODIs have soared since 2003. In contrast, the long increase of run-scoring in Tests stopped just when T20 was invented. It may not be possible to hit much more than 6.4% of balls to the boundary, as batting teams did in 2000-03, while occupying the crease for five days.

Purists insist that slow-building Tests are more gripping than a flurry of sixes. But a survey of fans in 2018 found that only 69% are interested in Tests, rising to 92% for T20. Media Partners Asia, a consultancy, expects broadcasters to pay \$1.4bn a year for T20 over the next four years, compared with \$190m for Tests. England and Australia hope to emulate the IPL's success, using a similar template. Once a sporting imitator, India is now setting the trend. ■



Did he or didn't he?

Claus von Bülow, socialite and protagonist of two sensational American trials, died on May 25th, aged 92

IN EVERY PERSON'S life, Claus von Bülow said once, there remained a big question mark. A shadow of doubt. It remained even if they had been convicted of a crime, and even if they had been acquitted. He had been both. His glitter-laden trials, among the first to be televised, caused a sensation in America. They left half the country thinking one thing, and half thinking another.

He was convicted in 1982 of the attempted murder of his wife, Sunny, by injecting her with insulin. In 1980 she had been found unconscious on the marble floor of the master bathroom of their mansion, Clarendon Court, in Newport, Rhode Island. Soon she was in a coma from which she did not emerge. She had low blood sugar, and he knew too much insulin would kill her. He had the motive: he wanted to leave her for his mistress, Alexandra Isles, a TV actress, but divorce would cut him off from Sunny's fortune. He also apparently had the means. A small black travel-bag had been found by Sunny's maid in his closet; it contained a bottle of insulin and a needle encrusted with it. The maid also testified that Sunny had fallen ill before from too much insulin, and her husband had refused for four hours to call a doctor. He called his mistress then to say that he was watching his wife die. The evidence was overwhelming; he was given 30 years.

But then he was acquitted. In 1984 his conviction was over-

turned, because the black bag had been taken without a search warrant and the first investigator's notes had not been turned over to the prosecution and the defence. The next year, in a second trial, every piece of the medical and forensic evidence was taken apart by his new million-dollar team of lawyers. Sunny, they showed, was psychologically fragile, heavily dependent on drink and drugs. On that night in 1980 she had binged on sweets, tranquillisers and a giant eggnog containing 12 fresh eggs and a whole bottle of bourbon. The culprit was not insulin. Nor was it the needle in the black bag, which would not have been encrusted after withdrawal from the skin. Nor, therefore, was the culprit her husband.

At the "Not guilty" verdict, he sank his head into his hands. Yet speculation roared on. He had not testified at either trial, so press and public could only look at his life to establish which verdict might be right. And he would add to their confusion, first by refusing after 1987 to speak about the case (the result of an agreement with Sunny's children by her first marriage, though he had already written 300 pages of his version), and second by showing that there was more than one Claus von Bülow; maybe several.

The "von Bülow" itself was slightly misleading. His father's side was Danish; his mother, whose name was Bülow, had distant German nobility. His English upbringing endowed him with a Cambridge degree and a call to the bar, but the aristocratic "von" had been added when he and Sunny married, in 1966. He was the one who collected Chippendale and ormolu furniture, but she was the one who had Clarendon Court, as well as a 14-room apartment on Fifth Avenue in Manhattan, in which to put it. Opera and theatre were his passions, and he loved to drop classical allusions as well as names; back in Newport during his second trial, greeted by his labradors, he felt "like Ulysses returning". But it was Sunny, whose first marriage had been to an Austrian prince, who brought most of the dukes, diamonds and gala nights into his life.

As an aristocrat, tall in his double-breasted suits, he could do stiffly jut-jawed one moment, warm and charming the next: a study in inscrutability, or a witty ornament to the highest social tier of Newport or New York. He also had an outrageous side. When he worked for John Paul Getty, the oil tycoon, in London in his bachelor days he fell in with the Clermont set, including John Aspinall and Lord Lucan (who had hoped to murder his wife, but killed the nanny), and hosted their illegal gambling parties. During his second trial he posed for *Vanity Fair* in zippered black leather, tight blue jeans and a devilish grin, with a new, thrice-divorced mistress in tow. He liked unsettling jokes, telling them in his best dark voice. "What is another name for fear of insulin? Claus-trophobia."

His feelings for Sunny changed in different lights. They had been happy early on and had a daughter, Cosima, whom he adored. He and Sunny fell out because she did not like him working; she did not mind his mistresses, as long as he was discreet. In sum she was a fair and decent human being who would, he thought, have been his strongest defender. He wore his wedding ring at the trials, though he had to get it back from Ms Isles. He spoke of wanting to visit Sunny, who lay comatose for 28 years until she died, but he moved to London by agreement with the stepchildren, giving up too any claim to her fortune. In Knightsbridge his life revolved round amusing dinner parties, theatre reviewing and quiet acts of charity. He complained that "Reversal of Fortune", a film of his trials made in 1990, did not tell the truth in dozens of small ways. He did not say what the truth actually was. In the end, the film had left the verdict open. He preferred to be seen as he generally was in London, as the victim of a miscarriage of justice.

He did not make that claim himself; he had agreed not to mention the case. Instead, he saw it as a tragedy that satisfied "all of Aristotle's definitions". Everyone was wounded. As for him, he was a tragic hero straight out of the "Poetics": neither a villain nor a virtuous man, but someone in between. His misfortune had occurred not because of depravity, but by some error, some ambiguous action. It was hardly surprising that there could be no catharsis. ■

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