

**The
Economist**

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Europe's Super League: a football fiasco

German politics get interesting

Why are SPACs being whacked?

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India's covid catastrophe





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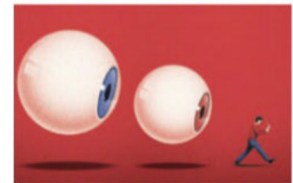
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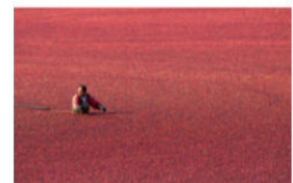
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Deep into a second wave of covid-19 infections, the government in **India** lowered the age for inoculation to 18, liberalised the approval of vaccines, handed more power to the states and redirected oxygen supplies. New recorded cases have soared past 300,000 a day, up from 20,000 in early March.

Australia and New Zealand inaugurated a **travel bubble**, allowing passengers to travel between the two countries without the need to quarantine. A fully vaccinated employee at Auckland airport tested positive for covid-19 a day after travel restarted.

An **Indonesian** submarine carrying 53 sailors went missing while participating in a training exercise near Bali. The navy lost contact with the vessel soon after granting permission for a dive. An oil spill has been found nearby.

Vladimir Putin used his state-of-the-union speech to warn the West against "crossing the red line", saying that this would trigger a "swift and tough" response. Tensions have risen, following the imposition of additional sanctions by America in response to political meddling by **Russia**. Mr Putin has amassed troops on Russia's border with Ukraine, though it is not clear what he aims to do with them.

At the same time, concerns grew for the health of **Alexei Navalny**, Russia's leading opposition figure, who is in prison and on hunger strike. Thousands of Mr Navalny's supporters responded to Mr Putin's speech with demonstrations in several cities.

Germany's Greens chose Annalena Baerbock, who is only 40, as their candidate for chancellor in September's election, wrong-footing Angela Merkel's Christian Democrats, who have been arguing about who they think should succeed her. A day later the CDU anointed Armin Laschet as its standard-bearer, though he has failed to impress voters in recent months.

In **Hong Kong** Jimmy Lai, a publisher and critic of the government in Beijing, was sentenced to 14 months in prison for participating in pro-democracy protests in 2019. Four former opposition politicians were also jailed. Martin Lee and Margaret Ng, two veteran campaigners, and three other activists were given suspended sentences.

Xi Jinping said that countries which are "bossing others around" and interfering in internal affairs "will not be well received". The Chinese president made his comments days after America and Japan pledged to co-operate on resisting **China's** territorial claims in the East and South China seas.

A jury found Derek Chauvin guilty of the murder of **George Floyd** during an arrest in Minneapolis last year, when the policeman knelt on Floyd's neck for nine minutes. In a remarkable statement made while the jury was deliberating, the judge singled out comments by Maxine Waters, a Democratic congresswoman, as possible grounds for Mr Chauvin to appeal. Ms Waters had urged protesters to "get more confrontational" if Mr Chauvin was acquitted.

Joe Biden enraged some Democrats when he signed an order capping the annual number of **refugees** to America at 15,000, in line with the number allowed under Donald Trump. Mr Biden has promised to increase the cap. Amid intense criticism the White House said the order had been "the subject of some confusion", and the

cap for the rest of this fiscal year would be increased, the number to be set by May 15th.

Idriss Déby, the president of **Chad**, died of wounds he sustained while visiting troops in a battle with rebels. A military council led by Mr Déby's son, Mahamat Idriss Déby, suspended the government and constitution and assumed power, promising to hold elections in 18 months.

A fire on **Table Mountain** swept onto the campus of the University of Cape Town, destroying student accommodation and a library housing a unique collection of books related to African studies, including rare editions published in the 1500s.

The **Syrian** parliament scheduled a presidential election for May 26th. The war-torn country is also suffering from a growing economic crisis, but President Bashar al-Assad is not expected to allow any serious competition.

For the first time in six decades **Cuba** is no longer ruled by a Castro. At the congress of the ruling Communist Party Raúl Castro stepped down as first secretary. His successor is Miguel Díaz-Canel, a 61-year-old apparatchik who became president, the second-most powerful job, in 2018. Mr Díaz-Canel has much to do. Protests and frustration are growing on the socialist island.

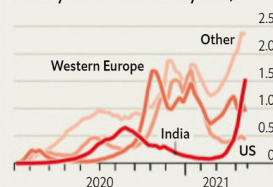
Chrystia Freeland, **Canada's** finance minister, unveiled the Liberal government's first budget since 2019. Vowing to finish "the fight against covid", Ms Freeland outlined C\$101bn (\$81bn) in new spending over three years, including a national child-care programme.

NASA flew a small robotic helicopter on **Mars**, the first time that a machine from Earth has undertaken a successful flight on another planet. *Ingenuity* hovered for just a minute, but it is hoped that further flights will last longer and cover more ground.

Coronavirus briefs

To 6am GMT April 22nd 2021

Weekly confirmed cases by area, m



Vaccination doses

	Total '000	% of adults with 1st dose	2nd
Israel	10,354	96	89
Bhutan	479	94	0
UAE	9,675	74	46
Maldives	335	70	13
Britain	43,458	63	20
Chile	13,353	55	39
Malta	283	55	25
United States	213,388	54	32
Bahrain	1,119	48	38
Hungary	4,789	43	18

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

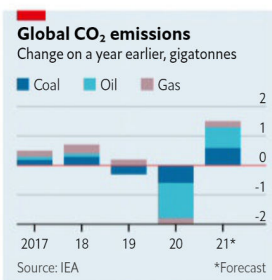
The EU's medicines agency recommended that the **Johnson & Johnson** vaccine should carry a warning about blood clots being a very rare possible side effect, but reiterated that the benefits of the jab far outweigh the risks.

A regulatory body in **Brazil** approved the emergency use of a cocktail of medicines to treat mild and moderate cases of covid-19. The treatment is thought to reduce the chances of hospitalisation significantly. The country's death toll surpassed 380,000.

Sweden's government warned that it might introduce stricter restrictions. "There is no room now to start living as if the pandemic is already over," said the health minister.

The State Department updated its **travel advice** for American citizens. Its "Level 4: Do Not Travel" advisory will apply to 80% of the world's countries.

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



As the Biden administration drew up its ambitious climate-change targets, the International Energy Agency forecast that energy-related **carbon-dioxide emissions** will rebound in 2021 after a steep fall during the pandemic, and grow by 4.8%. That would represent an increase of 1.5 gigatonnes, the second-largest rise on record. With restrictions on travel still in place, emissions from oil are expected to remain below the levels of 2019, but emissions from coal will rise a bit, and reach an all-time high from natural gas. China's emissions will increase by 6% over 2019, and India's by 1.4%, but America's will be 5.6% lower.

Booming industrial production and exports fuelled an 18.3% expansion in **China's economy** during the first quarter compared with the same three months last year, when the country went into lockdown and its economy contracted. Compared with the previous quarter, GDP grew by just 0.6%.

Reeling from its exposure to the collapse of Archegos, an investment fund, **Credit Suisse** decided to raise SFr1.7bn (\$1.9bn) from investors in order to bolster its capital buffers. The Swiss bank's write-off of loans to Archegos led it to a net quarterly loss, overshadowing a surge in revenues from its investment bank. Switzerland's financial regulator said it was investigating "possible shortcomings in risk management" at the bank.

The board at **Boeing** extended the mandatory retirement age to 70 for David Calhoun, allow-

ing him potentially to continue as chief executive for six more years.

A bidding war broke out for **Kansas City Southern**, a railroad company that transports freight in America and Mexico, when Canadian National submitted a \$33.7bn offer, \$4bn more than a proposal from Canadian Pacific.

The writing's on the wall

Stora Enso, a packaging and woods-products company, announced the closure of two factories in Finland and Sweden, because changes in consumer behaviour during the pandemic have accelerated the decline in demand for **paper**. Sales from paper will account for just 10% of the company's revenues after the closures, down from 70% a decade ago.

Toshiba rejected an offer to take it private from **CVC**, saying the lack of detail in the proposal made it impossible to evaluate. The Japanese conglomerate said that the private-equity firm had decided to "step aside" and await further guidance, but it was open to serious proposals. CVC was reportedly counting on Kurumatani Nobuaki to stay at the helm as Toshiba's chief executive, but

he has resigned. Mr Kurumatani used to run CVC's operations in Japan.

The union that tried to organise workers at an **Amazon factory** in Alabama filed objections with the National Labour Relations Board about the voting process. It alleges that, among other things, the company, threatened employees with significant lay-offs and cuts to pay if they supported unionisation. In the end 70% decided not to join.

Apple allowed **Parler**, a social-media app favoured by right-wingers, to return to the iPhone's App Store, citing Parler's promise of stricter moderation. The app had been removed by Apple and Google, and its hosting pulled by Amazon, after the assault on Congress in January. The case sparked arguments about the power of big tech platforms to regulate political debate.

Britain's government announced an investigation into **Nvidia's** planned \$40bn takeover of **Arm**, a Britain-based chip-design firm, on national security grounds. South Korea's competition watchdog said it also would look at the deal, which faces scrutiny in America and China, too.

The European Union unveiled proposals that would regulate the use of **artificial intelligence** within member states, with big fines for miscreants. Planned restrictions on the police's use of facial recognition look especially strict.

Elon Musk's **SpaceX** won the contract to build the landing craft for NASA's project to put two astronauts on the Moon, perhaps in 2024. Its bid beat rival proposals from Blue Origin, founded by Jeff Bezos, and Dynetics, which is based in Huntsville, Alabama. SpaceX provides craft for NASA's other big commercial space programmes.

Own goal

A select group of 12 football clubs tried to form a **European Super League**, an idea that has been knocking around for decades. By mid-week, nearly all had withdrawn from the proposal, after it was roundly criticised by fans, players, pundits, domestic leagues and the world governing body, FIFA. Even politicians put the boot in. The league could have generated billions for the elite teams involved, but fans dismissed it for betraying the roots of the beautiful game and gave it the red card.



Covid catastrophe

India's giant second wave is a disaster for it and the world

APRIL 14TH was a big day in India. Hindus and Sikhs gathered to mark the new year. Many Muslims celebrated the first day of Ramadan at late-night feasts with friends and family. In Haridwar, a temple town that this year hosts the Kumbh Mela, an intermittent Hindu festival that is the world's biggest religious gathering, between 1m and 3m people shoved and jostled to take a ritual dip in the Ganges. And across the country, the number of people testing positive for covid-19 for the first time surpassed 200,000 in a single day. It has continued to surge since, reaching 315,000 just one week later—the highest daily figure in any country at any point during the pandemic. Deaths, too, are beginning to soar, and suspicions abound that the grisly official toll is itself a massive underestimate. Makeshift pyres are being constructed on pavements outside crematoriums to deal with the influx of bodies (see Asia section).

This horrifying second wave is a catastrophe not only for India but for the world. Allowing the virus to circulate unchecked increases the risk that dangerous new strains will emerge. One worrying variant first detected in India, called the “double mutant”, has already been found in several other countries, including America and Britain. Even as scientists labour to understand how big a threat it poses, more variants are appearing.

A more immediate consequence of India's second wave for the rest of the world is a disruption to vaccine supplies. India had hoped to be the world's pharmacy. But with case numbers exploding the government has restricted exports of vaccines. In the first half of April India shipped just 1.2m doses abroad, compared with 64m in the three prior months. The Serum Institute of India, a private company that manufactures the AstraZeneca vaccine, has defaulted on commitments to Britain, the European Union and COVAX, a scheme to supply more shots worldwide. African countries that had been counting on India to provide them with vaccines are looking on in dismay (see Middle East & Africa section).

With its crowded cities and rickety health care, India is not an easy place to curb an infectious disease. Yet some parts of the country were remarkably successful for a time at slowing transmission. Deaths from the first wave of the pandemic, which peaked in September, were surprisingly low, for reasons that are not clear. And Narendra Modi, the prime minister, was quick to institute a nationwide lockdown a year ago, albeit one that failed to plan for the millions of unemployed migrant workers who were at first corralled, destitute, in cities and then allowed to return to their native villages, taking covid-19 with them.

In short, until earlier this year, India's government, like so many others, had a patchy but not disastrous record in fighting the pandemic. But through complacency and distraction, Mr Modi has allowed things to spiral out of control. In January he boasted, “We not only solved our problems but also helped the world fight the pandemic.” Yet in early March, as cases began ticking up in the opposition-run state of Maharashtra, his government, far from helping, attacked the state government in the hope of bringing it down.

Mr Modi's unrelenting quest for partisan advantage has also been on display in West Bengal, one of four states holding elections this month. He and his lieutenants, like their rivals, have held countless huge rallies during a weeks-long campaign, without masks or any form of social distancing. This risks propagating the pandemic among the state's 100m people, of course, but it has also distracted the government from fighting the spread of the disease. Amit Shah, Mr Modi's right-hand man and the home minister, was on the campaign trail for 12 of the first 18 days of April.

That may help explain why Mr Modi's vaccine policy has been such a shambles. By mid-February the government had ordered barely enough doses to protect 3% of the population (not counting those it is hoping to get from COVAX). Keen to promote India's scientific prowess, regulators approved Covaxin, an indigenous vaccine, before it had completed all the necessary trials, even as they insisted that foreign shots must clear extra hurdles. Less than 10% of the population has received a first dose of vaccine. This is more than in many countries, but India is a huge vaccine-producer and could have done better.

There are signs of improvement. On April 13th the government announced fast-track approval for imports of vaccines that have been approved by various rich countries. It is also belatedly throwing money at procurement. This week it said it would release some \$400m to help the Serum Institute boost production. Mr Modi's Bharatiya Janata Party (BJP) called off its remaining big election rallies on April 18th. And on April 19th the government updated its vaccine policy to allow anyone over the age of 18 to get a shot, starting next month.

That is of limited use, however, given the shortage of supply that prevails in most of the country. Several states have already run out. India is vaccinating only 3m people a day, or 0.2% of the population, barely exceeding some rough estimates of the real number of daily infections. And even if production increases or more doses arrive from abroad, the current wave is too severe to be stopped by inoculations alone.

The irony is that, having won election after election, Mr Modi commands tremendous authority. He is India's most powerful prime minister in a generation. The BJP controls both houses of parliament, and runs most state governments. If there was ever a moment to make use of all this clout, this is it.

Mr Modi should adopt strict curbs on mass gatherings right away—including the religious events he promotes as part of his Hindu-nationalist ideology. He ought also to be trying to limit travel around the country, without leaving migrant workers high and dry, as in his first lockdown. The health minister, who thinks diseases can be cured with the help of cow urine, must go.

Ways must quickly be found to ramp up vaccine production. That does not mean seizing control of private firms or their output, but rather helping them secure the supplies they need from countries such as the United States (see Science & technology section). Unless India's second wave is brought under control, the entire world will suffer. ■



Russia's future

Putin's next move

Russia's president menaces his people and neighbours. The West should raise the cost of his malign behaviour

ONE MAN commands a police state. The other is locked up and close to death. Nonetheless, Vladimir Putin fears his prisoner. Alexei Navalny may be physically weak: after most of a month on hunger strike, he was moved to a prison hospital on April 19th, perhaps for force-feeding. Yet he is still Russia's most effective opposition leader. His jocular, matter-of-fact videos resonate with voters. One, a guided tour of a gaudy palace that Mr Putin denies owning, has been viewed more than 116m times. Mr Navalny has built a movement by mocking the Kremlin's lies, and challenges Mr Putin's party at elections. That is why he was poisoned last year, and then jailed on bogus charges. It is why his organisation has been branded "extremist" and is being ruthlessly shut down. It may also explain why Mr Putin, eager to change the subject and fire up patriotic Russian supporters, is once again menacing the neighbours (see Briefing).

He has massed more than 100,000 troops on the border with Ukraine, a country he has already partly dismembered by grabbing Crimea and backing pro-Russian secessionists in the Donbas, an eastern region. His propagandists warn of a looming (but imaginary) genocide of Russian-speakers there. More than 200,000 of them have been issued with Russian passports, giving Mr Putin a pretext to intervene if they claim to be in danger. Military analysts doubt that a full-scale invasion is afoot—the troop movements are too blatant for a surprise attack. But Mr Putin's navy has threatened to block the Kerch strait, cutting off parts of Ukraine from the Black Sea. His goal may be to intimidate its leaders and extract concessions, such as formal autonomy for the Donbas. Or perhaps he wants to provoke a Ukrainian reaction, to furnish an excuse for a war that a Kremlin official said might be "the beginning of the end of Ukraine". His state-of-the-nation speech on April 21st offered only the vaguest of clues.

In it, Mr Putin promised handouts for the masses and pain for his enemies. He repeated a conspiracy theory about the West trying to assassinate Alexander Lukashenko, the despot of next-door Belarus. He vowed that those who threaten Russia's security "will regret their actions more than anything they've regretted in a long time". As he spoke, his goons rounded up dissidents.

Mr Putin is weaker than he looks, but that makes him dangerous. His previous Ukrainian adventures came when the Russian economy was in trouble and his polls needed a boost. Today, his personal polls are sliding and barely a quarter of Russians support his party. Protests against Mr Navalny's arrest in January were the largest in a decade. And events in Belarus worry Mr Putin: Mr Lukashenko has been so weakened by protests that he now depends on Russian support to stay in power. If something similar were to happen to Mr Putin, he has no one to turn to. Facing protests at home, he may lash out abroad, in Ukraine, Belarus or elsewhere.

All this poses a challenge for President Joe Biden and his allies. When deciding how to deter Mr Putin, the West should be realistic. No one wants war with a nuclear power, and sanctions are often ineffective (see Finance section). They rarely work if

they are unilateral, or their aim is too ambitious. Even the strictest embargoes have failed to dislodge lesser tyrants in Cuba and Venezuela. Russia has fashioned a siege economy, inward-looking and stagnant but hard for outsiders to throttle (see Briefing). Talk of an embargo on Russian oil and gas exports, meanwhile, is naive. The world must one day find alternatives to fossil fuels, but suddenly shutting off a supplier as big as Saudi Arabia would cause global economic tremors—so it won't happen.

The aim of sanctions should be modest: not regime change, but to raise the cost to Mr Putin of aggression abroad and oppression at home. Mr Biden has made a good start, imposing a raft of financial sanctions for hacking and election-meddling, which can be tightened if Mr Putin transgresses more (see United States section). Harsher curbs on Western financial institutions dealing with Kremlin-linked firms would add to the pain. Mr Biden is also trying to cajole allies to present a united front, as they have so far failed to do. Germany should kill Nord Stream 2, a gas pipeline intended to bypass and squeeze Ukraine. Britain should crack down more on money-laundering. Individuals implicated in abuses should have their assets frozen and be barred from entering the West.

NATO should step up. It must strike a balance: reassuring Russia's neighbours without feeding the Kremlin's paranoia. Some

Russians imagine that NATO might invade to help Ukraine recapture its lost turf. Mr Biden should make clear that it won't. But NATO should beef up its presence in the Black Sea, and its members should continue to supply Ukraine with defensive weapons.

Russia is far less important than China, either to the world economy or to climate talks. But it still matters a great deal. It is the single

most prolific stoker of instability on Europe's borders, and arguably the most energetic troublemaker in rich democracies, funding extremist parties, spreading disinformation and discord. How the West deals with it also sets a precedent. China's leaders are certainly watching. If Mr Biden lets Russia roll over Ukraine, they may assume that Taiwan is fair game, too.

Unlike his predecessor, Mr Biden sees Mr Putin clearly. Rather than embracing him, he has called him a killer. But he also keeps communications open. He has suggested a summit. That would be a mistake if it merely boosts Mr Putin's prestige, but not if it de-escalates military tensions and signals resolve. The diplomatic spadework that precedes it will be crucial. Fortunately, Mr Biden has hired plenty of Russia experts, and actually listens to them.

In the end it will not be outsiders who decide Russia's future. The long, hard task of creating an alternative to Mr Putin's misrule can be performed only by Russians themselves. Meanwhile, democracies should lend Russian democrats their moral support, just as they did in the Soviet era. Mr Biden should press hard for Mr Navalny to be released, immediately and unharmed. The world needs dissidents like him to hold the Kremlin to account. Without such checks, Russia will remain a thuggish kleptocracy, and its neighbours will never be safe. ■



Germany's election

September showdown

The battle to succeed Angela Merkel just got interesting

POST-WAR GERMAN elections have tended to be polite contests between middle-aged men and, more recently, a middle-aged woman, trotting out worthy but similar centrist policies. The process reached its snooziest last time around, in 2017, when the two main parties went into the campaign having spent the previous four years yoked together in a "grand coalition". That gave them even less scope to offer competing visions to unenthused voters. This year, happily, things will be different.

For a start, there is a genuine chance that the election, to be held on September 26th, will produce Germany's (and almost the world's) first Green head of government in the form of Annalena Baerbock, a 40-year-old parliamentarian with no ministerial experience but plenty of energy, policy nous and a past as an accomplished trampolinist. In a smooth if opaque operation on April 19th, the Green Party anointed Ms Baerbock, rather than her co-leader, the more experienced but more academic Robert Habeck, as its candidate for chancellor. The party saw that she offered it the best chance in September.

The succession process has been messier for its conservative rivals, the Christian Democratic Union (CDU) and its sister party, Bavaria's Christian Social Union (CSU). On April 20th, after a long struggle that has exposed divisions within and between the two parties, they agreed that the CDU's boss, Armin Laschet, should be their standard-bearer, even though voters prefer the CSU's man by a massive margin. Ms Baerbock could hardly have hoped for a better start. Her party has been running a strong second place in the polls, behind the CDU/CSU.

Voters now face a real choice. The Greens have come a long way from their radical anti-growth *Fundi* (for "fundamentalist") roots, and have plenty of experience of government. They form part of the ruling coalition in 11 of Germany's 16 states. Even so, if

they won power at the federal level they would pursue a much more ambitious climate policy. They want, for instance, to cut greenhouse-gas emissions by 70% from the 1990 baseline by 2030, rather than the existing target of 55%. They would more than double the level of carbon taxes, set tougher targets for renewables in power generation and accelerate the closure of Germany's coal-fired power plants.

In other areas too, the Green programme is a genuine alternative. The Greens will be more receptive to spending money, both at the European level, in the shape of more EU-backed funding for investment in weaker countries, and in Germany itself, where the strictures against deficit financing have resulted in surprisingly creaky infrastructure, especially of the digital variety. The Greens are divided over foreign policy, but may be tougher on Russia and China and less inclined to put trade ahead of human rights.

The CDU/CSU, in contrast, will offer business as usual. But that appeals to many Germans, especially those who fear the Greens are still anti-business. The parties have won the most seats at every federal election since 2005. The cautious, consensus-building Mr Laschet has demonstrated that he is tenacious, even if he lacks the charisma of his CSU rival, Markus Söder.

One way or another, though, Germany's future looks greener—and Europe's with it. Even if Ms Baerbock fails to become chancellor, the numbers suggest it will be impossible to construct the next ruling coalition without the Greens. A new grand coalition has been all but ruled out by the Social Democrats, who have seen their popularity plummet as a result of being involved in the past two; the far-right Alternative for Germany remains a political pariah; and the liberal Free Democrats are a marginal force. Ms Baerbock will have a fistful of strong cards to play. ■



Bubbly Wall Street

The SPAC spectacle

Snatching sanity from the jaws of financial absurdity

SUSPEND YOUR disbelief. That seems to be what modern financial markets require of investors. GameStop, a tiny and humble retailer that was swept up in an online-trading mania earlier this year, is still worth \$1bn. Digital animations are being sold through online tokens for millions of dollars. The stock of Dogecoin, a digital currency that was until recently considered to be a parody, is valued at almost \$50bn. Crypto, meme-stocks, NFTs—each new financial fashion seems to bring its own terminology and the whiff of absurdity.

Many investors would add to that list special-purpose acquisition companies (SPACs). They are an alternative way of taking firms public that bypasses the cumbersome initial public offering (IPO) process. The pace of deals has been furious. Between

January and April some \$100bn was raised through SPACs, many of which are now hunting for firms to buy. Some 84 companies have announced they will float via SPAC mergers so far in 2021, versus 123 using IPOs. The SPAC trend is a giant experiment with a different way to take firms public. And it is also a test of the firms involved, most of which have either been hidden away in private markets for years, or are so nascent that they are more concepts than companies.

So just how mad is the SPAC frenzy? At first glance, pretty mad. This boom has occurred in spite of the dodgy track record of some firms that have gone public in this way in the past. Regulators grumble that the process is easy to manipulate. The executives who run SPACs frequently take a whopping slice of equity ►►

for themselves, to the detriment of the outside investors who usually stump up far more cash. Often they make fanciful promises. *The Economist* has totted up the management forecasts of a panel of 50 recent or pending SPAC deals. Around half of the firms are loss-making. In aggregate the 50 firms generate about \$1bn of annual gross operating profits today but have forecast to investors that this will rise to a miraculous \$15bn by 2023. There are pockets of extreme delusion. Of the eight electric-vehicle (EV) firms ushered into public markets by SPACs in 2020, five expect to progress from making no revenues to \$10bn-worth in under five years. Not even Google, one of the most successful firms in history, pulled that off. It took it eight years.

Yet while the overall figures look wild, the good news is that the SPAC boom is becoming more discerning. The market capitalisation of Virgin Galactic, a space-technology company, has fallen from \$13bn to \$5bn since February. Shares in Opendoor, a real-estate firm, have halved. Investors who funded the VectorIQ Acquisition corporation saw their money grow seven-fold after it merged with Nikola, an electric-truck maker, in June 2020. But shares in the firm have since dropped back below its debut pri-

ce. Investors have cooled on SPACs that are still hunting for targets. Bill Ackman, a Wall Street tycoon, has a \$4bn vehicle that was trading at a 50% premium to its cash value in February, in anticipation of it doing a deal that would be instant alchemy. The premium has since fallen to just 17%.

There are other signs of market discipline in action. Short interest is growing as sceptical investors bet against SPACs and the firms they have backed. After a spectacular start to the year just \$2.5bn has been raised through new SPACs since March 29th, as fund managers grow less giddy and warier of writing blank cheques. This scepticism is a healthy sign of the market maturing.

Institutional investors should use their clout to improve the process. That means making sure that the slice of shares that SPAC creators are awarded is not excessive, insisting managers' pay is tied to delivering on the forecasts they make, and applying a discount to firms that give outside investors limited voting rights. Not all companies that go public through SPACs will succeed, but having an alternative way to float companies is welcome. Still, if anyone comes up with a SPAC for a firm selling NFTs in EVs, run for the hills. ■

Chad

The false promise of stability

The violent death of Idriss Déby has unsettled a region—and a Western policy of propping up strongmen

IF ONE WERE to draw a line across Africa at roughly its widest point, it would cross a zone of almost uninterrupted instability, from the clan feuds of Somalia to the jihadist rebellions of the Sahel. At the mid-point of this line would be Chad, a powder-keg surrounded by blazes. (Its neighbours include strife-torn Libya, Sudan and the Central African Republic.) President Idriss Déby, the soldier who ran it for the past 30 years, has prevented Chad from exploding. But now he is dead. On April 20th the army said he had died of wounds sustained in battle. He was personally leading his troops against rebels who were heading for the capital, N'Djamena. His passing, and a subsequent military coup by his son, have cast a shadow over the region, and over France's policy of propping up African strongmen.

Instead of handing power to the leader of parliament, as required by the constitution, the army put in place a military council headed by Mr Déby's 37-year-old son, Mahamat Idriss Déby (pictured). The African Union, which is supposed to have a "no coup" policy, uttered barely a murmur. France, Chad's main Western ally, turned a blind eye, too (see Middle East & Africa section).

Chad hosts a large French army base and the headquarters of Operation Barkhane, an effort to fight jihadists in the Sahel involving 5,100 French troops. Its small army punches well above its weight. During the cold war, Chadian troops driving Toyota pickup trucks repelled the tanks of Muammar Qaddafi, a Soviet-backed Libyan dictator. In 2015, after the jihadists of Boko Haram had overrun north-eastern Nigeria, it was Chad's turbaned warriors who ejected them from the main towns. This year, when France was searching for allies in its fight against Islamic State and other jihadist groups in the Sahel, it was Chad that answered the call, sending 1,200 battle-hardened fighters into the border

area between Niger, Mali and Burkina Faso.

Chad's previous dictator, Hissène Habré, was especially brutal. He seized power in 1982, after a Western-backed rebellion, and ruled for eight years. He is said to have ordered the deaths of 40,000 of his people. Many died in an underground prison known as *La Piscine*, a converted underground swimming pool where inmates were tortured, raped and beaten to death. However, America appreciated his help holding back the red menace. Ronald Reagan welcomed Habré to the White House and praised his "commitment to freedom".

Mr Déby overthrew Habré. Under him, the secret police committed fewer atrocities, but did not stop entirely. Plenty of his opponents were tortured or murdered, and elections were skilfully rigged in his favour. None of this seemed to affect the support he enjoyed from France, which bombed rebels for him in 2019. After his death the French government said it had lost "a courageous friend". Far from condemning the illegal transfer of power to the junior Déby, French officials expressed their "strong attachment to Chad's stability". Nigeria's government agreed. "The immediate objective is the stabilisation of Chad," it said, adding that democracy was "an ultimate goal".

This is short-sighted. It is the constant deferral of democracy that has brought Chad to its current sorry state. It is fighting rebels, who are now thought to be less than 300km from the capital. Analysts fear the army will splinter, leading to civil war. Some liken Chad to Libya, which collapsed into carnage after the death of Qaddafi. Instead of backing the next dictator, Chad's friends should be pushing for talks between the government, rebels and, crucially, the civilian opposition and for a quick restoration of the constitution followed by clean elections. ■



The EU's response to covid-19

You ask "What has gone wrong?" (April 3rd) with the European Union, pointing out that our economic growth rate has lagged behind America and China. It is worth looking beyond point-in-time comparisons. Despite a slow start, vaccination campaigns are now gaining pace across Europe. Some 360m doses are expected to be delivered by the summer. This is a vital step towards normality and towards Europe becoming a globally significant supplier of vaccines.

I fully accept that America's budgetary response has been substantive and will provide a valuable boost to global growth. However, it doesn't diminish the fact that the 27 countries of the EU have stood together and deployed unparalleled support, both at member-state level and collectively. The EU has chosen to focus its economic response on protecting income and employment through job-retention schemes. With the support of the SURE instrument, up to 30m jobs across Europe were protected in 2020. Next Generation EU, a €750bn (\$900bn) recovery fund, will fundamentally transform our economies with a focus on digitalisation and climate change.

These measures would have been unthinkable in a pre-pandemic Europe. Governments will take further steps, at national level, to accelerate our efforts. We are at a difficult moment in Europe, but do not underestimate our determination to turn this around.

PASCHAL DONOHUE
President of the Eurogroup of finance ministers
Brussels

Dwelling on caves

"Yes, Basques are different" (April 10th) reinforced the unfortunate tendency of some Basques to claim the history of their neighbours. The oldest and most spectacular cave paintings in Europe are indeed in caves at Altamira (shown in your photograph) and else-

where in Cantabria, which borders the Basque region but is not part of it. The Cantabrians, too, have a strong identity, while proudly embracing their Spanishness.

GRAHAM MCKEE
Dundee

American English

Few efforts to address the befuddling inconsistencies of English language orthography (Johnson, April 10th) have begun as auspiciously as America's Simplified Spelling Board. It was established in 1906 with the generous financial support of Andrew Carnegie, who believed that making English easier to learn would turn it into a global language and thereby foster world peace. The group's directors included such luminaries as David Josiah Brewer, a justice on the Supreme Court, Nicholas Murray Butler, the president of Columbia University, and Mark Twain. Even President Theodore Roosevelt threw his early support behind the group's efforts.

The organisation's initial work included such changes as dropping the "u" in words like color and valor that have taken hold in American English. But many proposals never caught on, including changing "ough" to "o" to represent the long vowel sound in the re-spelled words altho, tho and thoro. Or changing the -ed suffix to -t in new spellings, such as drest, kist, nipt and washt. In the face of public ridicule on both sides of the Atlantic, the effort ended with a whimper. Carnegie became frustrated with the group's approach and funding dried up after his death in 1919. The Simplified Spelling Board simply fizzled out.

Despite its constant challenges to neophytes and native speakers alike, Carnegie's dream of English becoming a world language has largely been fulfilled. Though his vision of the language being a stepping stone to world peace seems ever more unlikely.

ALAN SOHN
Teaneck, New Jersey

Accounting for methane

Misleading accounting rules are also obscuring the impact of methane emissions on global warming ("The other greenhouse gas", April 3rd). Treating methane as "CO₂ equivalent" using the standard 100-year global warming potential, as many countries and the UN convention generally do, undervalues the effect of a new methane source, such as a fracking operation, by a factor of four to five over the 20 years following its introduction. But it also overvalues the ongoing impact of a constant methane source, such as a long-established rice-paddy field or herd of cattle, by a factor of three to four.

Errors like these make it impossible to track progress on a long-term temperature goal. Fortunately, warming-equivalent measures are available that simply require gases with lifetimes longer than 100 years, like CO₂ and nitrous oxide, to be reported separately from methane and the rest. Separate reporting of these cumulative climate pollutants in national and corporate commitments and net zero strategies would be an easy win for COP26, and transform the transparency of the forthcoming global stocktake of progress in achieving the goals of the Paris agreement.

MYLES ALLEN
University of Oxford
ADRIAN MACEY
Victoria University of Wellington

A laissez-faire approach

Free exchange noted that developing countries lack a strong incentive to collect data (April 10th). Indeed. They might in fact have a strong incentive to deliberately avoid data. In "The Data Detective", Tim Harford tells of Sir John Cowperthwaite's approach to this question when he was financial secretary of Hong Kong during the 1960s. Sir John refused to endorse the collection of even the most basic economic data during a period of rapid growth. His rationale

was that civil servants who collected it might be tempted to use it, thus creating pressure for government intervention in the economy.

MARTIN BIRT
Uxbridge, Canada

Dead blossoms

The ethereal transience and beauty of Japan's cherry blossoms have long inspired poets and writers ("As the seasons defy norms/", April 10th). But they were also used for inspiration of another kind by Takijiro Onishi, vice-admiral of the imperial Japanese navy during the second world war. In October 1944 he penned a haiku to inspire young Japanese Zero fighter pilots as they took off on their suicide-missions to crash dive into American ships:

*In blossom today, then scattered
Life is like a delicate flower
How can one expect the
fragrance to last for ever?*

SUNNY MAHAJAN
Jackson, Tennessee

Dancing peacocks

It takes a range of personalities to ensure the smooth running of an office (Bartleby, March 20th). During an office retreat, we were asked to do the DOPE Personality Test. This divided us into doves, owls, peacocks and eagles to help us understand that people have different ways of functioning. For example, the way you would engage with an introvert owl is different from how you would engage with an extrovert peacock. We now appreciate each other a little better.

The evening proved that the test was reasonably accurate. Some music was played and a handful of people got up. Every single one of the dancers was a peacock that night.

SUROOR ALIKHAN
Geneva

Letters are welcome and should be addressed to the Editor at The Economist, The Adelphi Building, 1-11 John Adam Street, London WC2N 6HT
Email: letters@economist.com
More letters are available at: [Economist.com/letters](https://www.economist.com/letters)



Something is rotten

MOSCOW

The Russian president is growing ever more repressive. That is largely because he is losing support

THE TENS of thousands of young people who marched through Moscow's city centre on April 21st were peaceful and cheerful, even if they were calling their president, Vladimir Putin, a killer. They were smiling as they demanded freedom, perhaps relieved not to be beaten or arrested by the riot police who watched. A timid sense of spring filled the air.

They were there in support of Alexei Navalny, Russia's leading opposition politician, who is in prison and on hunger strike. Stanislav, a university student who did not give his last name for fear of being expelled, had been terrified of joining the protest. But the prospect of walking with others like him, of feeling part of a "political nation", brought him to the streets. He, like others, expected the worst.

They had every reason to. In recent days Mr Navalny's closest associates have been arrested. The editors of a student magazine that expressed support for him have been detained. Police have been knocking on the doors of those spotted at earlier rallies

to issue warnings. Students who have shown support for the dissident have been threatened with expulsion or fines.

Mr Navalny would surely have been pleased that so many overcame their fear. His career has been a crusade against apathy and learned helplessness. But though the marchers seemed almost resigned to being arrested en masse, Mr Putin did not play to their expectations. He did not wish to spoil the impression of his own state-of-the-nation speech earlier that day, in which he handed out promises and perks.

Behind the façade of benevolence is only menace. Mr Putin is terrorising his opponents and threatening his neighbours. He has locked up Mr Navalny in one of Russia's harshest penal colonies and denied him medical care. Mr Navalny has written on Instagram (through his lawyers) that his

hunger strike has turned him into "a skeleton, staggering around his cell", enough to scare children into eating their porridge.

Most of Mr Navalny's closest allies have been detained or have fled abroad. His political organisation faces liquidation. On April 21st, as Mr Putin addressed the nation, his security goons were whisking away those of his opponents who had not yet left the country. One cameraman, who worked on the investigations into graft with which Mr Navalny shamed Mr Putin, faces two years in prison for a tweet. Even Vladimir Ryzhkov, a veteran Russian liberal politician who was not part of Mr Navalny's movement, was detained.

The stakes could not be higher, Mr Navalny's people said. They called the protest not just to save Mr Navalny's life, but to prevent Russia from sliding into terror. "If we keep silent now, Russia will descend into complete darkness," declared Mr Navalny's team on YouTube.

Just a year ago this claim would have seemed hyperbolic. But Mr Putin's regime has been growing ever more lawless, concentrating power in the hands of security services whose main preoccupation is eliminating any threat to the president and his cronies. "We are seeing a rapid resurrection of neo-Stalinism and its ideology of state terror, directed both against its own citizens and the outside world," said Kirill Rogov, a Russian political analyst.

The transformation began last March, ►►

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▶ when Mr Putin scrapped term limits that would have forced him to stand down as president in 2024. That move hinted at the president's belief that the regime cannot survive without him—and that he cannot survive without it. The prospect of a peaceful transfer of power seems increasingly improbable. He and his cronies have a single goal: his survival. They fear losing their wealth, freedom and possibly more, were Mr Putin to lose his grip on power.

Mr Putin witnessed the danger of a popular revolt when protests erupted last August in Belarus, after Alexander Lukashenko, the country's dictator, stole an election. That uprising lacked a single political leader: Mr Lukashenko jailed his opponents or drove them out of the country. In Russia, by contrast, the opposition had a focus. Mr Navalny, who cheered the Belarus rebellion as a harbinger for Russia, was gaining support. The Kremlin was rattled. Just a few days after the protests started in Belarus, while Mr Navalny was campaigning in Siberia, Russian security agents poisoned him with Novichok, a nerve agent.

What a worthy man

Mr Navalny fully expected to be imprisoned or worse when he returned to Moscow, on January 17th, after his recovery in Germany. A judge swiftly jailed him for supposedly violating the terms of his parole, itself the result of a trumped-up conviction in 2014. Far from solving Mr Putin's problems, imprisoning Mr Navalny has boosted his moral authority, radicalised the political situation in Russia, further undermined the president's legitimacy and left Mr Putin with few good options.

Though Mr Navalny has never been allowed to register a political party or participate in presidential elections, he is now the only credible opposition in Russia. He has built a formidable political machine with some 37 regional headquarters across the country. Financed largely through crowdfunding, it has 250 permanent staff and thousands of volunteers. Mr Navalny also set up an anti-corruption foundation that is behind his explosive investigations, including of a billion-dollar secret palace alleged to have been built for Mr Putin.

The Kremlin used to harass Mr Navalny's supporters. Now it is steamrolling his movement. State prosecutors are demanding that Mr Navalny's anti-corruption foundation and his network of regional headquarters be outlawed as "extremist organisations", equating them with Islamic State and al-Qaeda. On April 26th, behind closed doors, Moscow's court will consider the prosecutors' lawsuit. They say Mr Navalny's organisation works in the interests of foreign states and is plotting a "colour revolution" in Russia—a fear that has haunted the Kremlin since the uprisings in Georgia and Ukraine in the 2000s.

The court's verdict is in little doubt, which means anyone working or volunteering for Mr Navalny could face criminal charges.

The Kremlin rationalises its domestic repression by portraying Mr Navalny as part of a Western plot to discredit Mr Putin. "Russia is under frontal attack from the West. The United States is our enemy and does everything in its power to undermine Russia's position on the international stage," Sergei Riabkov, Russia's deputy foreign minister, declared recently.

The real reason for Mr Putin's repression is that he and his party are losing support. With parliamentary elections due in September, approval ratings for his United Russia party have sunk to 27%. Trust in the president is slipping too. And the popularity of other opposition parties, however slight, is rising along with an appetite for economic protest. Mr Putin risks having to rig the results so outrageously that his position could be even more discredited.

What makes that risk so acute is Mr Navalny's strategy of "smart voting". Unable to register his own party, Mr Navalny has called on his supporters to vote for whoever is best placed to defeat the Kremlin's candidate, no matter which party they represent, nor how uninspiring or unpalatable they might be. The Kremlin has threatened to brand anyone supported by Mr Navalny's smart voting a "foreign agent".

The persecution of Mr Navalny is occurring during Europe's worst military crisis since Russia invaded Ukraine, annexing Crimea, in 2014. A build-up of over 100,000 Russian troops around eastern Ukraine and in Crimea, under way since March, is expected to reach 120,000 by the end of April, according to Ukraine's government.

A major Russian camp has been established at Voronezh, 200km (125 miles) from the Ukrainian border (see map), but the

"central focus" now appears to be farther south in Crimea, says Dara Massicot of the RAND Corporation, a think-tank. Some 50 aircraft have been sent to the peninsula, and the Black Sea Fleet, which has its headquarters in Sevastopol, has been reinforced with four large landing craft from the Mediterranean. It held large-scale amphibious exercises "against a notional enemy" on April 20th.

Russia's aim in amassing so much firepower is probably to squeeze Volodymyr Zelensky, Ukraine's president. Mr Zelensky has clamped down on pro-Russian media outlets and oligarchs in recent months, to the Kremlin's frustration. He has also resisted granting autonomy to Russian-backed separatists in the Donbas region of eastern Ukraine. In recent weeks, sniper fire against Ukrainian forces has risen markedly while drones operated by the Organisation for Security and Co-operation in Europe, which monitors the shaky ceasefire, have been jammed.

Mr Putin cannot risk a war that would produce heavy Russian casualties. But he desperately needs some form of victory to boost his standing. On April 14th William Burns, the director of the CIA and a former ambassador to Moscow, warned that the Russian mobilisation would suffice for "a limited military incursion". One possibility, suggests Marek Menkiszak of the OSW think-tank in Warsaw, is "more firepower, more casualties and local offensives by separatists" in Donbas.

In his state-of-the-union speech, after rattling through a long list of giveaways to please domestic voters, Mr Putin turned to foreign policy. "The purpose of Russia's policy is to ensure peace and security of our citizens," he said. He blamed the West for all tensions. Gennady Zyuganov, the leader of the parliamentary Communist ▶▶



► Party, has called on the Kremlin formally to recognise the separatists in Donbas, whom Russia has been arming and supporting since the start of the war in 2014.

If Mr Zelensky were to respond forcefully to such provocations, he would risk providing a pretext for a larger attack. Russia has issued over 200,000 passports to Russian-speakers in Donbas since 2019. On April 8th a Kremlin official warned that threats to those newly minted nationals could invite a war that “would be the beginning of the end of Ukraine”.

Ukraine is not the only potential trouble-spot on the former Soviet map. Belarus is another. In his state-of-the-union address, Mr Putin reiterated a conspiracy theory that America had plotted a coup and the assassination of Mr Lukashenko.

This story originated in Russia on April 17th, when Russia's security services claimed to have foiled an American plan to kill Mr Lukashenko. Russian media amplified the message. In an “exclusive report” on state television, Dmitry Kiselev, a TV anchor who is Mr Putin's propagandist-in-chief, said it was clear that Western intelligence planned to murder Mr Lukashenko, organise a military intervention and occupy symbolic places in Minsk, the capital.

Mr Putin chose to mention this bogus story on a telephone call to President Joe Biden two days later. Many experts worry that Mr Putin might treat the conspiracy theory as a pretext for tying Belarus into a tighter political and military union with Russia. Mr Lukashenko, who had earlier hinted at a major development by saying that he was making the most important decision of his three decades in power, is expected in Moscow on April 22nd.

This sabre-rattling forms part of a wider political crisis between Russia and the West. On April 17th the Czech Republic publicly blamed the GRU, Russia's military-intelligence agency, for explosions at ammunition depots in 2014. A few days earlier, America imposed sanctions on Russia for a long list of transgressions, including the huge SolarWinds cyber-espionage campaign. In the space of less than a month, America, Bulgaria, the Czech Republic and Poland kicked out Russian diplomats suspected of being spies, prompting retaliatory expulsions by Russia.

Western officials are mulling how to respond to the Russian build-up and any subsequent attack. American officials are considering whether to send more arms to Ukraine, on top of anti-tank missiles and counter-artillery radars sent in previous years. Allies are also discussing fresh sanctions. But as Mr Putin said in his speech, if the West were to challenge Russia and its (unspecified) red lines, it will be subjected to a Russian response that will be “swift, asymmetric and tough”. In Russia's climate the smell of spring could be deceptive. ■



The Russian economy

Under siege

PERM

The Kremlin has isolated Russia's economy, protecting it from shocks but choking growth

ON A RECENT weekday in Perm, an industrial city of 1m people on the edge of western Siberia, patrons packed Toropomodoro, a popular pizza restaurant. “We were back to pre-pandemic levels of customers by June, and they’ve remained at that level since,” says Maxim Minin, the owner. Russia's economy shrank by just 3% last year, leaving it in better shape than many. That is in part because the government did not reimpose a national lockdown after a second wave of covid-19 in the autumn. (Russia's excess-mortality rate—313 per 100,000 people, far beyond that of America—suggests the human toll was enormous.) But it is also because the Russian economy has long experience of isolation.

Since 2014, when Russia annexed Crimea and invaded eastern Ukraine, the Kremlin has commanded the economy like a fortress under siege, building up reserves, decoupling from the world economy, and preparing for the potential impact of Western sanctions or fluctuations in oil prices. This fortress is effective at protecting against outside shocks. But inside its walls it breeds stagnation and malaise, which fuel Alexei Navalny's opposition movement and the protests against Vladimir Putin, Russia's president. “It's about stability, not development—or more specifically about control,” says Natalia Zubarevich, an economist and geographer.

“They won't let the economy die, but in this system development isn't possible.”

The foundations of the fortress are high reserves and low debt. For Mr Putin, the Russian government's default in 1998 was a formative trauma. When he became president a little over a year later, he set out to build up the country's reserves. When the global financial crisis sent oil prices plummeting in mid-2008, Russia had \$570bn on hand, equivalent to almost a third of GDP. This proved handy. The government burned \$220bn refinancing banks and defending the rouble. But after the crisis it kept spending on the armed forces, public-sector salaries and pensions. Firms went on a borrowing spree of their own. When the West slapped Russia with sanctions and the oil price crashed in 2014, the economy spiralled out of control.

Russia has since rebuilt and restructured its reserves. At the end of 2020, it had \$183bn in its rainy-day National Welfare Fund (NWF), the most since 2009. Russia's overall international reserves stood at \$596bn, equivalent to nearly two years of imports. To hedge against sanctions, the central bank has also shifted its holdings away from American banks and out of American dollars: the share of its international reserves held on American territory fell from 30% in 2013 to just 7% now. It has more of its overall reserves in gold (24%) ►►

than in dollars (22%) (see chart 1).

Both the corporate sector and the state have paid down their debt. Squeezed by sanctions, Russian firms shed liabilities: since 2014, non-financial firms have reduced the amount of debt owed to foreign creditors by 25%. Banks cut theirs by 65%. The government ran budget surpluses in 2018 and 2019. Even after some deficit spending during the pandemic, its debt is equivalent to around 20% of GDP; only one-fifth is held by foreigners. Fresh American sanctions barring financial institutions from buying new Russian bonds (see Finance section) were calibrated to limit their impact; but even a wider ban on the secondary market may merely lead to more debt being held domestically. Russian banks buy most of the new bonds: during the most recent bond issuance earlier this month, state-owned VTB Bank scooped up some 70% of the offerings.

Russia has also cut its dependence on dollar invoicing. The share of its exports handled in dollars has fallen from 80% in 2013 to less than 60% last year (see chart 2). Less than half of Russia's trade with China is settled in dollars. In trade with the EU, the euro has almost overtaken the dollar.

The Kremlin would like to see cyber-decoupling, too. A law passed in 2019 is intended to give the government the ability to cut the Russian internet off from the rest of the world. It follows earlier data-localisation laws designed to force foreign companies to store Russian users' data in Russia. Home-grown Russian technology firms already compete with Western giants in many sectors. Yandex runs head-to-head with Google in the Russian search market; it beat Uber to dominate ride-hailing. Two Russian companies, Wildberries and Ozon, sit atop the nascent e-commerce market, where Amazon does not operate.

Yet Russia has neither the breadth of home-grown technologies nor the technical capabilities at the state level to erect a Chinese-style firewall. Although the Kremlin frets about the reach of foreign social networks, such as YouTube, where Mr Navalny broadcasts, their wide audiences and a lack of local alternatives make banning them unpalatable. An attempt to block the messaging app Telegram in 2018 ended with Pavel Durov, the firm's Russian exile founder, outfoxing the Russian regulators and racking up millions of new users.

An attempt this year to slow down Twitter using new filtering tools was swiftly followed by the Kremlin's own site crashing. Despite directives to ditch outside IT, in 2019 the government's audit chamber found that 96% of state institutions still use unapproved foreign software. Eschewing Western technology has often meant using more Chinese stuff, a prospect less abhorrent for the Kremlin than relying on America, but still uncomfortable.



Russia's economy remains highly dependent on hydrocarbons. Despite years of promises, no meaningful diversification has taken place. Hydrocarbons still account for more than 60% of exports, and some 40% of government revenues. Though China has been buying more Russian oil and gas in recent years, the EU remains Russia's biggest customer and Russia the EU's biggest supplier, accounting for 30% of the bloc's crude-oil imports and 40% of its natural gas. That would make any embargo on Russian energy exports too disruptive for the West to stomach.

No future in the fortress

As resilient as Russia's fiscal fortress may be, preserving it means tight limits on spending. Russia's covid-19-related stimulus measures amounted to just 4% of GDP, according to the World Bank. The pandemic, in Mr Putin's eyes, is not the proverbial rainy day the NWF was intended for: the fund actually grew in 2020. The limited stimulus was instead financed by borrowing. Most of the stimulus came through tax breaks and loan guarantees, rather than direct support to small- and medium-sized firms or households. As Tatiana Maksimenko, director of a children's centre in Perm, says, "For the government, I don't have much value. My business is small and

my taxes into the budget aren't huge."

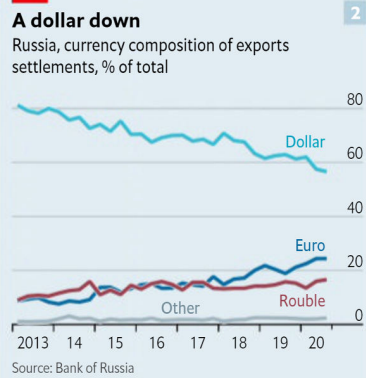
Real incomes fell by 3.5% in 2020, leaving the average Russian's income 10% lower than in 2013. One survey showed that after a six-week lockdown at the start of the pandemic, nearly half of households had no savings or only enough to cover a month of expenses. Food prices have risen by 7.7% since February 2020. The cost of basic products such as sunflower oil and sugar has grown by 27% and 48% respectively. Some of the hottest businesses in Russia these days are discount retailers, such as Svyetofor, a Siberian chain that forgoes shelves and displays its cut-price products in cardboard boxes on the floor.

The future looks no brighter. Russia will struggle as the world moves away from fossil fuels. Little has been done to prepare for a greener future. Renewable energy currently accounts for less than 1% of Russia's power generation. Investments in clean energy between 2014 and 2019 amounted to just \$5bn, one-sixth of Brazil's over the same period and one-tenth of India's, according to BloombergNEF, a data provider. Some economists are alarmed. "The rents that we enjoyed for the last 20 years will never come back," a former finance minister, Alexei Kudrin, wrote last year. "That's a huge challenge for all of economic policy."

The petrodollars stopped generating growth long ago. In 2000-08, amid an oil boom, Russia grew by 6.6% a year; in 2012-19, GDP growth averaged just 1%. That pace leaves Russia trailing not only other countries at a similar level of development, but even rich countries, which tend to grow more slowly. It amounts to just half the rate the Soviet Union saw from 1977 to 1985, the latter part of the era known as "Stagnation".

In the late 1980s, Mikhail Gorbachev tried to resuscitate a moribund economy, launching reforms that helped lead to the Soviet regime's collapse. Mr Putin is determined not to repeat that. Boosting growth would require embarking on reforms that would challenge his grip on Russia's politics. Yet without structural changes, the IMF reckons that Russia's growth in the coming years will remain below 2%.

If the Kremlin hoped that stagnation would mean social stability, growing discontent is proving otherwise. According to the Levada Centre, an independent polling group, the number of people who expect economic protests in Russia has risen from 26% a year ago to 43%. For Artyom, a 30-year-old stock trader who protested in Perm in the wake of Mr Navalny's arrest in January, demonstrating was not just about the "lawlessness" of the Kremlin's treatment of a critic. His frustration had been building for other reasons: "the inability to provide future prospects and improve people's quality of life". A slice of pizza at Toropomodoro is a poor substitute for a vision of the future in Russia. ■





India's surging outbreak

First as tragedy

DELHI

A second wave was inevitable. The government's failures were not

AMERE THREE months ago India was starting to feel good about itself. The wave of covid-19 that crested in the autumn seemed to be ebbing away. True, the virus had stolen lives and battered livelihoods, but now schools were reopening, friends were getting together and a looming season of state elections promised a return to normal politics. Best of all for many in a cricket-mad country, India's team had just roared back from a rocky start to snatch victory over a fierce rival, Australia.

Addressing university students in late January, Narendra Modi, the prime minister, drew parallels between cricketing glory and his government's war on covid, noting that both situations presented challenges that required a positive mindset. "With made-in-India solutions, we controlled the spread of the virus and improved our health infrastructure," he boasted. "Our vaccine research and production capacity have given a shield not just to India but to many other countries in the world." In February Mr Modi's Bharatiya Janata Party (BJP) passed a resolution hailing him as a visionary who had "defeated" covid-19.

A month is a long time, in pandemics as in politics. Until March, India was recording barely 13,000 new covid-19 cases a day, fewer than Germany or France and a drop in the ocean for a nation of 1.4bn. The caseload then began to tick gently upwards, until suddenly, late in March, it was rocketing. On April 21st India clocked 315,000 new positive covid-19 tests, above even the biggest daily rise recorded in America, the only other country to record such highs. In contrast to America, however, the pandemic's trajectory in India is near-vertical (see chart 1 on next page). Its vaccination effort, albeit impressive in scale and organisation, is simply too late to change the

course of the virus any time soon. "They said flatten the curve and we did," laments a wry recent tweet. "We just put it on the wrong axis."

More disturbing still, India's soaring official covid-19 count represents the tip of an iceberg. Because of low testing rates outside big cities, say epidemiologists, the actual caseload could be anything from ten to 30 times higher. A national serological survey conducted in December found 21% of Indians were carrying covid-19 antibodies, compared with an official tally which suggested that only about 1% of India's people had been infected by that time. More recently, local journalists who have cross-checked hospital and funeral records against government numbers have found similar, gaping discrepancies across the country. One report revealed that in the second week of April, when authorities in Vadodara, a city in the state of Gujarat, announced seven covid-19 deaths, the count in two hospitals alone was more than 300. This suggests that India could be facing not 2,000 deaths a day, as the current official count shows, but something much higher.

The surging caseload has scattered many dominoes, including trust in Mr Modi's government. However much attention the health infrastructure received during 16 months of pandemic, it was not enough to make up for decades of underinvestment. In big cities in recent weeks, let alone provincial towns, hospitals have fallen fatally short of staff, beds, blood, drugs, oxygen and even oxygen canisters. The vaunted

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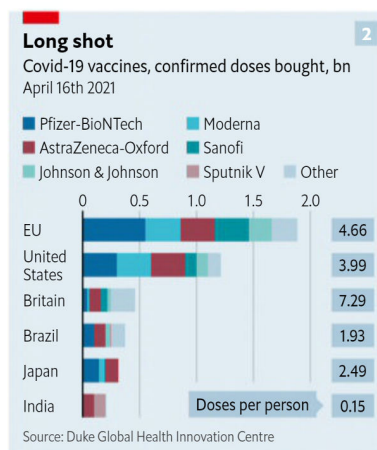
► “Made in India” vaccination campaign has flopped disastrously. It turns out that the government counted wrongly, placed orders late, underfunded local suppliers and needlessly rejected foreign vaccines, meaning that by mid-April just 1.3% of Indians had received a full double dose, and instead of supplying the world with vaccines, India has banned exports.

Worse still was the government’s seeming indifference to the mounting tragedy. Even as the scale of India’s second wave grew obvious, Mr Modi and his top ministers not only failed to block, but actually encouraged vast gatherings of unmasked people, both at their own giant election rallies and at the Kumbh Mela, a month-long Hindu festival that brings millions of pilgrims to a single small town on the Ganges.

The focus of most Indians just now, however, is less on the failings of Mr Modi’s government than on their own anguish. “Last year, possibly you knew someone who knew someone who got covid,” says an IT executive in Mumbai. “This time it is everyone within spitting distance that either has it, or just got over it, or has a close relative who has died from it.”

Survey evidence from India’s commercial capital supports the comment. Whereas the first wave hit hardest in Mumbai’s slums, this time the virus is also ripping through high-rise housing estates, shopping centres and corporate offices. Geographically, the virus is spreading more widely, too. Poor rural regions such as eastern Uttar Pradesh and Bihar, which escaped lightly last year, have now been hit hard. Their high population density and pitiful lack of health care make it hard to quantify the impact. Yet even by the official count the number of active cases in Bihar tripled in just one week, from 20,000 on April 13th to nearly 60,000 on the 19th.

If the presence of the illness is pervasive, so, largely thanks to social media, is the terrifying reality of mass death. Disturbing scenes have grown familiar: ambulances in mile-long queues to deliver covid patients, engines running to keep oxygen



pumps working; body bags heaped in mortuaries; dozens of funeral pyres blazing at once; a middle-aged man lying in front of a health officer’s car, pleading for a spot for his dying father in a hospital; a 65-year-old journalist tweeting his own dying hours as he waits in vain for oxygen. On April 21st television viewers witnessed a multiple tragedy, as an oxygen leak at a hospital in Nashik, a city 140km north of Mumbai, shut down ventilators for an hour. Twenty-four covid patients died.

Predictably, the tragedy has sparked panic buying. The black-market cost of Remdesivir, a drug reputed to help with serious covid-19 cases, has reportedly soared from around \$12 per shot to as much as \$600. The rush to secure personal oxygen tanks has left hospitals struggling to stay supplied. Surging demand for PCR tests has created backlogs, with labs that issued results within hours now taking days.

Mr Modi’s slowness to respond to this avalanche of grief has perplexed even supporters. His party appears to have been so blinkered by its desire to win control of West Bengal that it was only after all its rivals began cancelling events due to covid-19 that the BJP toned down its own campaign in the state’s eight-phase election (see next story). And Mr Modi personally promoted the Kumbh Mela pilgrimage. Only after the head of the second-largest of India’s 13 main *akhadas*, or circles of Hindu religious devotees, died of covid-19 following his ritual dip in the Ganges did Mr Modi suggest that perhaps a symbolic pilgrimage might be more appropriate this year. There is no doubt that the Kumbh Mela was already a giant super-spreader. Authorities in Gujarat, Mr Modi’s home state, tested passengers on a single train returning from the pilgrimage. Thirty-four came back positive. In Uttarakhand itself, the official number of active cases has risen seven-fold since the start of April.

Belatedly, Mr Modi has moved in other ways to slow the epidemic. Faced with a

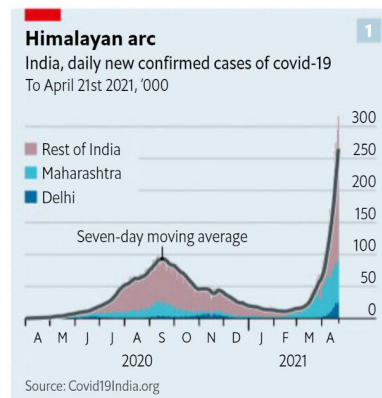
shortage of vaccines (see chart 2), his government has now come up with lots of money for Indian producers and liberalised the market, allowing both states and private entities to buy and distribute stocks. Swallowing national pride, it has also agreed to fast-track approvals for half a dozen foreign vaccines. Government directives have tried to steer as much oxygen as possible to medical use, diverting some from equipment used by the fighter jets of the air force. Correcting course following his premature and overzealous imposition of a national lockdown last year, which crippled India’s economy, Mr Modi now largely lets individual states set their own covid-19 rules.

This is all well and good, but does not explain why, given more than a year of warning, Mr Modi’s government failed to make adequate preparation for a second wave. After the world’s biggest vaccine maker, the privately owned Serum Institute of India (SII), took a risk and signed a deal in June to manufacture the AstraZeneca vaccine at its plants in Pune, numerous foreign governments came knocking for hundreds of millions of doses.

India’s government, by contrast, signed its very first contract with SII only in January this year, for a puny 11m doses. More galling still, Mr Modi’s government funded another Indian producer, Bharat Biotech, though its product had not completed all trials at the time, and it had less experience scaling up production. Obsessed with *atmanirbharta*, Mr Modi’s newish slogan of national self-reliance, India’s government meanwhile rejected applications by Pfizer-BioNTech, among others, to license local versions of their vaccines, stipulating that they would first need to conduct local trials. All this dither and miserliness mean India can now only drip-feed its people with some 3m doses a day. At this rate they will not all get shots before the end of 2022.

India’s government has also been slow to fund another crucial part of the anti-virus struggle, gene-sequencing. As varied and adaptive strains of the virus have emerged around the world, it has become even more vital to understand how they are spreading. Yet only since January has India’s government started to divert enough resources to help institutions with the capacity to do the needed research.

There is no telling how much worse India’s current covid-19 wave will get, or how long it will last. Medical historians note that in the last great global pandemic of this scale, the Spanish flu a century ago, India suffered a mild first and then a mass-murderous second wave. About a third of the estimated 50m people who died worldwide in that epidemic were Indian. Alas, notes Chinmay Tumbhe, the author of a book on the subject, India produced time-liner statistics then than it does now. ■



Politics in India

The road show must go on

SINGUR

Why Narendra Modi's party is pulling out all the stops to win in West Bengal

FRESH FROM a rural helipad, Amit Shah climbed to the top of a motorised chariot under the blazing sun. As home minister and right-hand man to Narendra Modi, India's prime minister, Mr Shah is regarded with awe and fear by both allies and opponents in the national capital. But in the sleepy Bengali town of Singur, ordinary voters are less sure what to make of him. From his convoy, he tossed out rose petals. Uniformed drummers danced. A phalanx of young men raised the party's Hindu-oriented war cry. The townsfolk were mostly nonplussed. Ninety minutes later Mr Shah was back at the helipad on his way to another constituency. Three days later, on April 10th, Singur voted in the election that will choose a government for West Bengal. On May 2nd the ballots will be counted and the fate of the state revealed.

By the day of the road show, India's official count of daily new infections of covid-19 had already surpassed its first peak last year. Since then, three of the candidates standing for the state's 294 seats have died of covid-19. Midway through the eight-phase election, though, nothing could slow Mr Modi and Mr Shah's Bharatiya Janata Party (BJP), which is determined to crush the incumbent state government led by the Trinamool Congress (TMC). The BJP has already swept past the once-indomitable Communists of West Bengal to become the state's main opposition. It also effectively controls both houses of the national parliament, most of India's nominally independent institutions and, with allies, 17 of its 28 states. Why then the all-out war—public health be damned—to win one more?

The TMC's leader, Mamata Banerjee, is part of the explanation. In recent years she has emerged as the fiercest critic of the BJP who wields actual power. Derek O'Brien, a TMC leader, judges that if Mr Modi were to win in West Bengal it would demoralise the rest of the opposition for decades to come. Ms Banerjee's style is to fight back with sharp words and stagecraft, playing the underdog as she wheels around with her leg in a cast, an injury sustained while campaigning. She faces voter discontent over the petty corruption institutionalised by her party's cadres. Yet she is not shy of using every advantage that comes with her office. In that respect she resembles Mr Modi, who capitalises on his firm control of the national government. National en-

forcement agencies, for instance, have a tendency to hound Ms Banerjee's allies until they join the BJP. The Election Commission is also regarded as having taken Mr Modi's side in the contest, for instance by showing lenience to its candidates who make anti-Muslim remarks.

Silencing Ms Banerjee is not the BJP's only goal. The party's Hindu-first, Muslim-last conception of nationalism has taken root in western India and the populous north. But it has struggled to find a foothold in the east (where West Bengal is located, confusingly) and in the south. Identitarian politics has not made much headway in Bengal. But if Bengali Hindus can be persuaded to think of themselves as Hindus first, the BJP should be able to lock in an enduring majority. About 30% of the state's population is estimated to be Muslim, which makes Mr Modi's sectarian politics look like a winning strategy.

The BJP argues that it would usher in "double-engine" growth, by co-ordinating central and state programmes and eliminating graft. Many ordinary Bengalis are interested in seeing whether their lot would indeed improve if, for once, they had a chief minister who got along with the prime minister. Lastly, the BJP must keep an eye on its position in the Rajya Sabha, the upper house of the national parliament, whose members are appointed by state legislatures. If, as seems inevitable, the BJP loses seats in northern states over a farmers' agitation simmering around Delhi, it will need to compensate for those losses with gains from a big state somewhere else. West Bengal, with 100m people, fits the bill.

If the BJP prevails, its march across the country is nearly complete. Asked what summits remain to be scaled after Bengal, Mr Shah replied that "there are many states left". He named the next five on his list. The BJP is nothing if not tenacious. ■



Putting his mettle to the petals

Pakistan's religious extremists

A government held to ransom

RAWALPINDI

Imran Khan is struggling with a dilemma of his own making

WITHIN AN HOUR of hearing about the arrest of the leader of Tehreek-e-Labbaik Pakistan (TLP), a group that agitates against perceived insults to Islam, Rajab Ali had left his ironmonger's shop in Rawalpindi's China Market and joined thousands of protesters to denounce Imran Khan's government. Mr Ali may have voted for the prime minister three years ago, but the TLP's mission to defend the honour of the Prophet Muhammad trumped party loyalty. The TLP was calling for the French ambassador to be expelled for the repeated publication in his country of cartoons of the Prophet; Mr Khan was wrong to try to silence its righteous demands. "We came out onto the streets because we are Muslims," explains Mr Ali.

Since the arrest of the TLP's leader, Hafiz Saad Rizvi, on April 12th, at least four policemen and an unknown number of protesters have been killed in riots, with hundreds more hurt. Main roads have been closed and shops shut. The French government has urged its citizens to leave the country. Mr Khan at first vowed not to be blackmailed by violence, but has since given in to several of the TLP's demands.

The former cricketer's showdown with a movement notorious for holding the government to ransom has been brewing for months. The TLP has in just a few years become one of Pakistan's most powerful lobbies. It was created to stop reform of the country's strict blasphemy laws after the trial of Asia Bibi, a Christian farmworker whose wrongful conviction caused an international outcry. The TLP has since used its defence of blasphemy laws as a rallying cry. It led huge demonstrations on behalf of a bodyguard who shot dead the governor of Punjab province, after he called for their reform. Some reckon its agitations are helping to radicalise Pakistan's Muslims.

Support for the TLP swelled last year when Emmanuel Macron, France's president, defended the publication of cartoons that crudely caricatured the Prophet Muhammad. Mr Khan's condemnation of Mr Macron failed to appease the extremists, who started nationwide protests demanding a suspension of diplomatic ties and a ban on French goods. As protesters laid siege to the capital, Islamabad, the government seemed to cave in, with a promise to seek parliament's approval to kick out the French envoy. Mr Rizvi was threatening a new wave of unrest to force Mr Khan to ►►

► keep his word when he was arrested.

Riots ensued. Mr Khan then banned the party under anti-terrorism laws. "No one can be above the law and the constitution," declared Mr Khan on April 17th. Yet hours later, while the government negotiated for the release of policemen taken hostage, the interior minister said parliament would debate the diplomat's expulsion after all.

The concession is the latest of many. For decades the state has fostered the radical ideology that spawned groups like the TLP, then mobilised them as political weapons. When TLP crowds brought Is-

lamabad to a standstill in 2017 in protest against changes to an oath made by MPs, a senior military man was filmed handing them envelopes of money. It is little surprise that, when confronted by religious radicals, the authorities struggle to face them down.

Mr Khan's party claims that there has been no climbdown. Mr Rizvi remains in custody. Yet in China Market traders had no doubt who had blinked first. "The government has made the TLP heroes," says Shoaib Mansoor in his electronics shop. "Because of this they have got stronger." ■

Kyrgyzstan's referendum

Back to the khanate?

BISHKEK

The new president wins worryingly wide powers

NO ONE CAN accuse Sadyr Japarov, the president of Kyrgyzstan, of lacking ambition. Sprung out of prison and into office during political unrest six months ago, he has now won a popular mandate to grant himself unchecked powers as he redesigns the Central Asian country's political architecture. On April 11th, three months after his landslide victory in a presidential election, a thumping majority of voters—79%—endorsed a constitutional blueprint granting him overweening powers, albeit with a turnout of just 37%.

The new arrangements do away with the parliamentary system introduced after Kyrgyzstan's second post-Soviet revolution in 2010 to safeguard against strongman rule. Henceforth the president will make all important political and security appointments and control a cabinet headed by his chief of staff, with the post of prime minister scrapped. He will be able to dabble in parliamentary and judicial business, appoint judges and propose legislation to an emasculated parliament. It will function in an awkward tandem with the "People's Kurultai", an as yet undefined new assembly that may be able to bypass parliament.

A country that has toppled three presidents in revolutions since 2005 needs a firm hand to steer it back to stability, argues Mr Japarov. "I'm for presidential rule," explains a pensioner playing with his grandchildren in a leafy park in Bishkek, the capital. "If there's one boss, you ask him. When there are a hundred bosses, you don't know where to turn."

But one man's firm hand is another's iron fist. Despite the turbulence of the past two-odd decades, Kyrgyzstan has been the most democratic of the five post-Soviet Central Asian countries. "A khanate is not for us," says Askar Kerimbekov, a lawyer who voted against the changes. "This 'khanstitution' cannot be adopted," railed an MP, Dastan Bekeshev, in an impassioned speech in parliament, using a derogatory nickname for the amended constitution. He warns against a "usurpation of power" as strongman rule returns.

Seemingly intent on confirming his critics' fears, Mr Japarov's first move after the referendum was to put his health minister in front of the cameras to promote a miracle cure for covid-19 espoused by the president. Gulping down a concoction of wolfsbane, a poisonous root, the minister ►►

Australian place names

Nominal interest

SYDNEY

Aboriginal names are replacing colonial ones—to conservatives' annoyance

YOU CANNOT go far in Australia without stumbling on a spot named after an act of colonial violence. The continent is dotted with Massacre Bays, Deadman's Creeks and Murdering Gullies. Suicide Bay, in Tasmania, commemorates an especially grizzly slaughter. In 1828, a party of white shepherd-convicts cornered an indigenous clan on a clifftop and murdered 30 men as punishment for slaughtering the settlers' sheep. They threw the bodies into the water.

Aboriginals have long said that the bay's name was upsetting. This month it was wiped from the map. It is now called Taneneryouer, meaning "trauma" in a native tongue. More than a dozen other places in Tasmania have new or second names drawn from indigenous history.

Renaming has happened haltingly across Australia for decades. Ayers Rock, a monolith in the continent's red centre, was given a dual name, Uluru, in 1993. Few Australians now call it by its European moniker. A Mount Nigger and seven Nigger's Creeks stained maps in Queensland until 2017. But recent protests against racial discrimination have invigorated calls to blot out offensive names. Some politicians are sympathetic.

The legacies of various colonial bad-dies are under scrutiny. The King Leopold Ranges in Western Australia, named after a Belgian ruler, have become the Wunaamin-Miliwundi mountains. The name of John Batman, a founder of Melbourne who hunted and shot Aboriginals, has been removed from a park (now Gumbri, meaning "white dove"). Benjamin Boyd, a Scottish settler who trafficked slaves from Pacific islands, is next in line for a reckoning. An Aboriginal group in New South Wales wants to scratch out Boydton as well as a national park named after him.

Some Australians see all this as woke nonsense aimed at erasing the past. Many threw up their hands in horror when the company that owns a popular cheese called Coon announced in January that it would rebrand the product as Cheer. It was named after Edward William Coon, a pioneering American cheesemaker, and so is not racist, they asserted.

That kerfuffle has prompted another at Coon Island, near Sydney. It is named after the site's first white settler, a miner who earned a nickname for his sooty appearance. The local council is looking for an alternative. The name is "just not appropriate in this day and age", Kevin Baker, a conservative councillor, told an Australian news website. Some of his constituents disagree. The debate, says Kentan Proctor of the local Aboriginal land council, "has brought out prolific racism in the community". A new name seems unlikely to change that, alas.



► acknowledged it could cause “spasms and death” if misused.

Elected to serve a single six-year term under the old constitution, Mr Japarov may hope to remain in office for over a decade by invoking a new provision that allows leaders two terms of five years. He declares, among other things, that he will eradicate organised crime, which has become pervasive. That pledge was seemingly called into question, however, when Raimbek Matraimov, a former top customs official detained over allegations—which he denies—that he was the kingpin behind

a massive smuggling ring, walked free without charge after the referendum.

Mr Japarov denies that he is making a grab for total power. He is no autocrat in the making but a democrat determined to “learn the lessons of history”, he told *The Economist* in January. “If we have seen revolutions happen before our eyes three times, because of the injustice of the rulers, why would I repeat those mistakes?” He promises to usher in an era of stability.

For the time being, most Kyrgyz appear to be staunchly behind Mr Japarov, seeing him as a breath of fresh air compared with

the venal political class that has been running the show. A recent poll identified him as Kyrgyzstan’s most trusted politician, and revealed that 70% of citizens are optimistic about their country’s trajectory, jumping upwards from just 41% before he came to power. But as Mr Japarov acknowledges, he had better deliver or his long-suffering people will turf him out. “He’s promised a lot,” says an admirer who voted to give him these all-encompassing powers. “They always promise a lot, but nothing gets done. If he doesn’t deliver, he’ll be overthrown like the others.” ■

Banyan Tug of war

Mongolia’s president tries to ban its ruling party

WITH THE yak-tail banners, or *tug*, of state authority behind him, Khaltmaagiin Battulga read out his presidential decree outlawing the Mongolian People’s Party (MPP). Banning political parties is the stuff of tin-pot dictatorships. Yet Mongolia, which broke from the Soviet Union’s orbit in a peaceful revolution in 1990, had until now been notably democratic. And the MPP is not just any party, but Mongolia’s oldest, the social-democratic successor to the Marxist-Leninist machine that ruled under Soviet tutelage. Last month it celebrated its centenary. Mr Battulga’s move on April 18th is especially gobsnapping because the MPP is the ruling party. It runs the government and has a supermajority in the State Great Khural, the parliament. Mr Battulga is from the rival Democratic Party (DP), which looks increasingly distant from the democratic revolution that gave birth to it. Is Mongolian democracy now under threat?

Personal pique on the part of Mr Battulga, a former wrestling champion, is not hard to divine. In 2019 the State Khural under the MPP passed constitutional amendments to check the powers of the president and strengthen parliamentary rule. Future presidents were limited to a single term. Whether current or former presidents could run again was unclear. But on April 16th the constitutional court ruled that they could not—a blow to Mr Battulga’s intention to seek re-election in early June.

As justification for his dramatic decision, the president in his decree accused the MPP of manipulating the constitutional court and of making its own the state apparatus and all its levers. To that he added the accusation that the MPP was militarising the state and using the armed forces to entrench power.

No doubt, the court’s ruling has suddenly made politics more brittle—few Mongolians trust the judiciary’s independence. And the MPP has changed voting rules to strengthen its parliamentary grip. Yet little suggests the MPP will refuse to give up power. Past post-election transitions have been largely smooth. If the DP performed abysmally in parliamentary elections last year, it is because people were fed up with its incompetence.

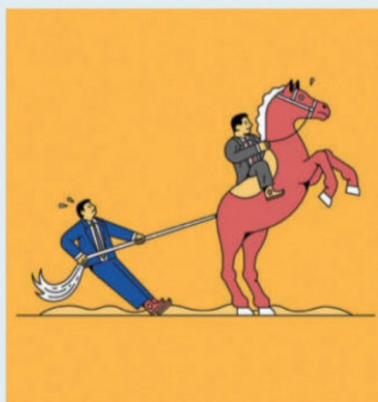
As for the militarisation of the state, Mr Battulga’s claims are overblown, says Julian Dierkes of the University of British Columbia. Admittedly the MPP chairman (and prime minister until January), Ukhnaagiin Khurelsukh, whom the president singled out by name, is a former army man with a predilection for medal-pinning and uniformed pageantry. But Mr Battulga’s accusation that an NGO founded by Mr Khurelsukh to improve the lot of retired military personnel is a front for the militarisation of the state looks wild. The army keeps out of politics.

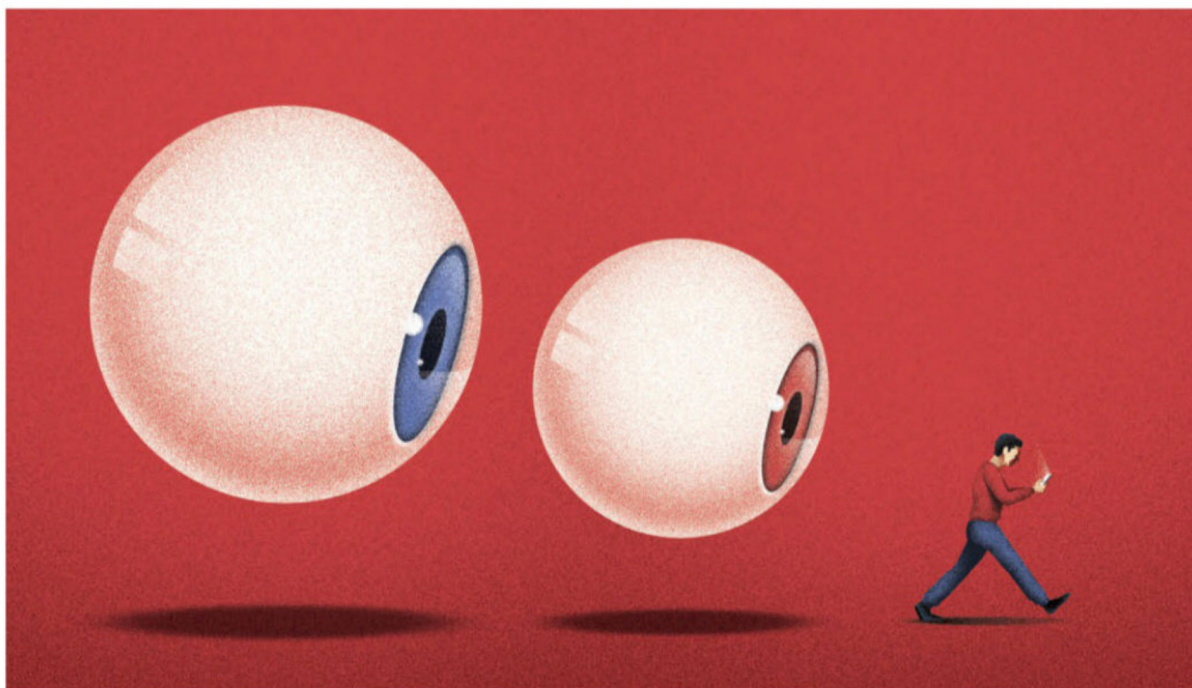
What happens next is hazy. Mr Battulga’s decree may be ignored by the MPP, or

kicked to the courts. He may expect Mongolians to come out on the streets against the MPP. After all, Mr Khurelsukh stepped down as prime minister in the face of spontaneous protests against the heavy-handed policing of the pandemic. But if Mr Battulga’s plan is for street confrontations, it is an irresponsible one. In 2008 riots sparked by allegations of vote-rigging left five Mongolians dead and the MPP headquarters a charred hulk. Sumati Luvsandendev of the Sant Maral Foundation, a polling outfit, predicts that few will come out in support of the president’s decree. Ordinary Mongolians see it as Mr Battulga’s battle and not theirs; so do the president’s fellow DP members. He has long got under the skin of its old dinosaurs, while at the same time disappointing the modernisers who once backed him. His four years in office have been largely bereft of purpose other than the cultivation of his own power, which now looks on the wane.

His decree, if it is defied, may provide evidence of that. The MPP, while accusing the president of overstepping his powers, appears in no hurry to stoke confrontation. Conveniently for Mr Khurelsukh, stepping down as prime minister allowed him to ready a bid for president. He is nearly certain to get the MPP’s nomination. Now that Mr Battulga’s impetuous move has thrown the DP into even greater disarray, Mr Khurelsukh is also likely to prevail over whom ever it puts forward.

As for Mr Battulga, his decree has engendered talk of his impeachment. Impeachment or no, after leaving office he risks prosecution for abuse of power and even corruption. He is likely to be best remembered for this week’s test—with luck, not to destruction—of Mongolia’s democratic guard rails.





Hacking China

Watching them watching you

Domestic surveillance programmes benefit foreign spies

IN MARCH ELON MUSK, the world's third-richest man, spoke to a conference in Beijing by video link. The cars that Tesla sells in China do not, Mr Musk insisted, share data with American security services. He was responding to the news that the Chinese armed forces had banned Teslas from their facilities over such concerns. A month later the firm took to Chinese social media to assure customers that the numerous cameras in their vehicles were "not activated outside North America", and so could not be used to snoop.

Concerns about security define the trade of technology between America and China. Most attention is focused on the extent to which Chinese giants such as TikTok and Huawei might be infiltrating America for nefarious purposes. But China has had concerns of its own. After the contours of American surveillance were laid bare in 2013 by Edward Snowden, a National Security Agency (NSA) contractor and whistleblower, the Chinese government began a campaign to replace all Western technology in government offices, lest it be used to spy. The brouhaha over Tesla's cars

shows how much security concerns have grown in the decade since Mr Snowden's revelations. As connectivity becomes part of more consumer products, paranoia about their other uses rises.

China's suspicion contains an irony, however. Removing Western devices from Chinese networks will not keep China secure from its adversaries, because the Chinese government itself insists upon weakening the security of those networks and devices for its own purposes. Though America tends to hyperventilate about Chinese intrusion, it is China whose digital security is more precarious.

This is because of the Chinese government's insistence on being able to monitor and control the information that flows through the country's digital networks. For

instance, all messages sent on WeChat, China's most widely used messaging application, must pass through central servers as plain text, unencrypted, so that the company can filter and censor them according to the government's requirements. This makes those servers a ripe target for any foreign agents who want to spy on Chinese citizens, who between them have more than a billion WeChat accounts.

Tencent, the app's corporate owner, must build elaborate digital-security systems to allow it to keep inspecting its users' messages while simultaneously denying that ability to attackers. That is a difficult task. "If I were a Western intelligence agency, those servers would be incredibly valuable," says Matthew Green, a cryptography expert at Johns Hopkins University.

Weak security is the rule, not the exception, in digital services for the Chinese public. Email and social media must all facilitate state access, as must industrial networks used to run factories and offices, even if the extent to which the government uses that access varies. In August it banned the most up-to-date version of a protocol used to encrypt web traffic, known as TLS, from the Chinese internet, because it makes online surveillance harder.

The government has different security standards for itself, but these are secret. Speculation about the devices and systems that senior party members use to communicate is common. In 2013 Peng Liyuan, the wife of President Xi Jinping, was photographed using an iPhone, one of the few

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► devices available in China which does offer a measure of security through its iMessage program. It was news around the world. Within a year Ms Peng was seen using a Chinese device.

Internet users in China have long objected to the low standards of data protection. Online crime and leaked databases are rife. Last year someone stole the account details for all 538m users of Sina Weibo, a microblog, and posted them on the dark web for sale. The government has responded by promoting programs for companies to improve customer-data protection, even as it simultaneously enforces weakness in the security of all systems. But as long as the government demands access to data on Chinese people, those data can never be robustly protected.

Though the American government does not publicise its cyber-operations, leaks demonstrate their extent. The documents provided to journalists by Mr Snowden show that the NSA found its way inside Huawei's networks starting in 2007, looking for evidence they were being used as a back door by the Chinese government (if it found any, it was never made public). There is little question that spy agencies in America and other countries use China's weak security to their advantage.

China's jeopardy increases as the value of data which flow through poorly secured networks goes up, both in economic and national-security terms. The Chinese government's plan for economic growth ensures that this is what will happen. It plans to expand its digital economy, automating factories and creating smart-transport infrastructure. As with WeChat, if the government wishes to monitor these systems, it will build them to be less secure than they could be and so vulnerable to foreign interference in a way that equivalent networks in the West do not have to be.

"The Chinese government knows the trade-off," says Matt Perault, a technology-policy scholar at Duke University in North Carolina. "They are willing to bear it, which suggests that they are willing to tolerate a significant amount of foreign surveillance on their citizens."

The government's calculation is unlikely to change. Its focus on surveillance and censorship of its own people is growing. But the tension between security against enemies within and those without will intensify. Cyber-attacks using weaknesses that the government itself has demanded might prove embarrassing. If the stand-off with Taiwan were to escalate, China's weak security would be a serious disadvantage. And the more entrenched its reliance on surveillance and censorship becomes, the harder it will be to remove the weakness on which that control is built, should the day ever come when it no longer believes the trade-off worthwhile. ■

Health care

Dangerous work

Violence against doctors is frighteningly common

PATIENTS IN CHINA keep attacking their doctors. On January 27th Hu Shuyun, a physician in the southern province of Jiangxi, died after being assaulted on a ward. A few days earlier three medical workers at a hospital in Hangzhou, an eastern city, were injured when a patient set off a homemade bomb. Every month brings more shocking stories. Chinese even has a word for it: *yinao*, meaning "medical disturbance". Between 2004 and 2016, the number of such disputes that ended up in court rose from 8,854 to 21,480. But only a fraction of cases get that far. In 2016 the National Health and Family Planning Commission acknowledged that it had mediated more than 60,000 disputes.

The problem of *yinao* has become so acute that, on March 1st, Shanghai became the first city to start a blacklist of people deemed to have engaged in banned behaviour in medical facilities. As well as facing criminal penalties, they can be barred from holding public-sector jobs and denied access to outpatient services under the social-credit system, in which bad behaviour

can mean loss of rights and privileges.

These measures build on a national law that came into effect last June. It is the first to specify that citizens have a right to "basic health-care services" provided by the state. It also bans them from attacking medical staff. In July Beijing's city government adopted its own guidelines for hospital security, recommending checks at entrances and surveillance cameras inside. On April 15th Beijing's health commission said that 86 hospitals had installed facial-recognition systems.

China's doctors have long worried about violence. In 2015 600,000 physicians signed a petition calling for an end to such assaults. A survey in 2019 found that 85% of doctors had encountered violence at work. Officials have hailed medical staff as heroes during the covid-19 pandemic, but at the height of the outbreak last year there were several reports of patients with the disease assaulting doctors.

Much of the anger originates in the 1980s, when reform began on the free, state-funded health-care system. Hospitals, starved of government funds, began charging patients for treatment, and often resorted to overprescribing. Many ordinary people were unable to pay. This has created a "generalised sense of distrust" towards the medical profession, says Cheris Chan of the University of Hong Kong.

Even though the government initiated further reforms in 2009, under which nearly everyone is now covered by some form of basic health insurance, the quality of care in rural areas is still poor. So people go straight to large city hospitals, many of which sell tickets for consultations that touts buy up and resell for profit.

Fully 36% of spending on health care in China comes from patients, compared with 14% in the OECD, a club mostly of rich countries. The insurance system gives hospitals an incentive to treat out-of-province patients, since they must pay upfront. And China still has only two doctors per 1,000 people, compared with 3.5 on average across the OECD. Most are poorly paid.

Medical scandals further undermine confidence. A well-known case in 2018 involved hundreds of thousands of children receiving faulty vaccines after the manufacturer fabricated inspection records. In February this year 70 people were arrested for making fake covid-19 vaccines.

Tougher regulations to protect doctors from angry patients do not seem to be working. Since the new laws were introduced in Beijing more than 180,000 prohibited items such as knives have been seized at hospital entrances. With covid-19 under control, people are going back to hospitals. This could cause violence to rise again. Until the government deals with underpaid doctors and overstretched hospitals, it is likely to continue. ■



Hong Kong crackdown

Jimmy Lai, publisher of the *Apple Daily* newspaper, was jailed for 14 months on April 16th for taking part in protests in 2019. His jailing, with other veteran activists, is part of a crackdown by China's leaders. Martin Lee, known as Hong Kong's "father of democracy" and Margaret Ng, a barrister, received suspended sentences. Mr Lai wrote to colleagues telling them to be careful because "freedom of speech is dangerous work now".

Chaguan | Art attack

Hong Kong's noisy patriots denounce a world-class collection of Chinese art



CHINA'S LEADERS seem sure that innovation can co-exist with authoritarian rule. Their confidence looks more rational than it once did: Chinese firms dominate some high-tech fields. Still, they have to explain a counterpoint: when freedoms increased in China over the past 40 years, greater creativity always followed.

Uli Sigg, a Swiss businessman and diplomat, first reached China in 1979, as reformers began to dismantle the Mao-era planned economy. Later, he spent decades building an unrivalled collection of contemporary Chinese art. He was sent to China by Schindler, a Swiss manufacturer of lifts, for whom he established the first Chinese joint-venture with a foreign firm. Rather than a capitalist revolution, he describes years of caution, as entrepreneurs worried that open doors would slam shut. He recalls campaigns against Western "spiritual pollution" that frightened colleagues into ditching suits and ties and reverting to workers' jackets in blue cotton. But time and again, opening sparked innovation.

An art-lover, Mr Sigg reached China during a brief moment of creative daring. Months earlier, avant-garde artists had staged an unauthorised show on the railings of the national gallery in Beijing, before police swooped. Soon afterwards their movement was pushed underground for much of the 1980s. Many were young, self-taught, and technically crude. Few ordinary Chinese saw their art. Yet those who did were visibly excited by its spirit. "Traditional art takes you to a sublime place and then you come back. Contemporary art changes you. It produces an openness; maybe it is stupid or aggressive. But that is the link to creativity," explains Mr Sigg. Foreigners often assumed that artists were dissidents. In fact, after growing up amid the bossy propaganda of socialist realism—vast canvasses of dauntless workers, bumper harvests and benevolent leaders—many were tired of politics and content to share their work with a few elite insiders.

In the 1990s Mr Sigg set out to record this ferment, putting his own tastes aside to acquire hundreds of artworks as a public institution might. At one point he sought to preserve propaganda images that younger artists despised, though their aesthetic influence was obvious. He found former masters of socialist realism in dingy provincial apartments, and bought once-feted paintings now rolled up under their creators' beds. These forgotten propa-

gandists offered another lesson: skills prized in a closed system are little help when times change. An oddly poignant item in the Sigg collection is a very late work of socialist realism: a painting of Mao's successor, Hua Guofeng, visiting North Korea in 1978, as doves flutter over his head. In its garish way it represents a peak of technical accomplishment, which soon became pointless as Hua was ousted and state-sponsored kitsch gave way to photography.

As Swiss ambassador to China from 1995 to 1998, Mr Sigg watched cultural bosses wrestle with the Western world's excitement over Chinese avant-garde art, and with the same foreigners' confounding lack of interest in state-approved paintings of flowers and birds. Later, some officials moved to harness the global renown of freethinking artists. Before Ai Weiwei became an exile exonerated by the Chinese state, he helped to design the Bird's Nest stadium for the Beijing Olympics of 2008.

In 2010 museum bosses in Hong Kong approached Mr Sigg, after hearing that he hoped to donate his art to a public gallery in China. The government had a site to offer, a vast new harbourside museum in West Kowloon, known as M+. This enthusiasm for experimental art was not a sudden whim. Starting in 1998, Hong Kong's leaders had publicly fretted that the city's economic base, built around finance, logistics and an overheated property market, was dangerously narrow. Their solution came in three parts: strengthening Hong Kong as a financial centre, increasing ties to the mainland and promoting creativity. The first local leader after the end of British rule, Tung Chee-hwa, called for Hong Kong to become "the most cosmopolitan city in Asia". He offered support for creative industries, buttressed by schools that would promote critical thinking via a new subject, liberal studies.

Mr Sigg warned Hong Kong officials about sensitive images in his collection. These include pictures of pro-democracy protests in June 1989 and one of Mao inspecting a urinal, in a homage to Marcel Duchamp. They were undaunted, asking why he would consider offering such works to mainland cities with strict censorship, and stressing Hong Kong's artistic freedoms. In 2012 he donated 1,463 works, worth \$160m, and sold the city 47 more.

The hunt for degenerate art

That was then. Now, liberal studies are blamed for inspiring Hong Kong's young to join anti-government protests in 2019, and schools must offer lessons in loving China. On April 19th President Xi Jinping called for Chinese universities to produce students who are both curious and absolutely loyal to the Communist Party.

As for Mr Sigg's collection, it is under fire from Hong Kong politicians seeking to prove their own loyalty. They accuse some images, notably one of Ai Weiwei giving the Tiananmen gate in Beijing his middle finger, of "spreading hatred" against China, in breach of a National Security Law passed last year. Hong Kong's chief executive, Carrie Lam, pledges to be on "full alert" as M+ staff distinguish between artistic freedoms and national-security threats.

The opening date of M+ is unclear. Mr Sigg can only hope that no artists are banned, for without Ai Weiwei, a Chinese contemporary art museum "would have no academic credibility", he says. Asked whether he regrets his gift to Hong Kong, Mr Sigg replies that he collected the artworks to save them for China's people. He is sure they will all be shown one day, though he may not see it.

Perhaps China's rulers are confident because the innovation they prize is technological, not cultural. Propaganda full of "positive energy" is creative enough for their needs. Hong Kong had its own artistic ambitions. But pleasing the party is the priority. ■



Foreign policy under Joe Biden

Overload

NEW YORK

His foreign policy isn't Donald Trump's. Nor is it Barack Obama's

THE BIG red button was meant as the emblem of a renewed, warmer relationship, and the Americans thought they had emblazoned it with the word “reset” in Cyrillic. “We worked hard to get the right Russian word,” said the secretary of state, Hillary Clinton, as she presented the gift to the Russian foreign minister, Sergei Lavrov. “Do you think we got it?”

Mr Lavrov smiled. “You got it wrong,” he said, as the two of them pushed the button together. The word was in fact “overload”.

That was in 2009, when the administration of Barack Obama was new. Twelve years on, the formidable Mr Lavrov remains in the role he has held since 2004. But now, as he faces yet another American administration, he is contending with diplomats who have had some time to learn on the job as well, many of them during the eight years Mr Obama was in office. Whereas Donald Trump, during his presidency, pursued his own peculiar version of a reset with President Vladimir Putin—joking with him about Russian election interfer-

ence and saying the two liked one another—President Joe Biden has called Mr Putin a killer without a soul. And yet Mr Biden also says he wants to work with him.

As Mr Biden nears the 100-day mark of his administration, the moment at which the American establishment likes to take the measure of a new president, the pattern emerging in his foreign policy differentiates it not only from that of his immediate predecessor, Mr Trump, but also from that of Mr Obama, whom he served as vice-president. As often as his aides stress they

are working with “allies and partners”, an implicit elbow thrown at Mr Trump, they also emphasise they are being “clear-eyed” about their adversaries. That is a subtle step away from Mr Obama, who in retrospect has often been judged naive in seeking a reset with Russia, negotiating an imperfect nuclear deal with Iran and welcoming the rise of China.

In each of these areas, as in his decision to abandon the 20-year war in Afghanistan, Mr Biden is trying to temper his long-held ideals about America's role with realism about the world as it is. His overall goal, as one of his advisers put it, is to pursue a “strengthening of the multilateral, rules-based order, in which the United States takes a role to make sure authoritarian states don't undermine those rules”. Mr Biden is attempting a two-track policy, trying at once to resist and relate to such regimes: to constrain their territorial ambitions and discourage their human-rights abuses and transnational meddling, while working with them where their interests might overlap with America's.

Mr Biden has yet to get key members of his foreign-policy team in place, including, in the case of Russia, a Russia director at the National Security Council or his number-three official at the State Department, Victoria Nuland, who is expected to take a strong hand in Russia policy. She has yet to be confirmed by the Senate. But in a rare instance of continuity, Mr Biden has

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held over the Trump-appointed ambassador to Moscow, John Sullivan. Further, Bill Burns, the director of the CIA, is a former ambassador to Moscow, and the secretary of state, Antony Blinken, was deputy national security adviser and then deputy secretary of state under Mr Obama. Mr Biden himself is drawing on experience in the Obama administration and, before that, on the Senate Foreign Relations Committee. America has not had a president so steeped in foreign affairs in 30 years.

In the view of Mr Biden's advisers, an American failure to stand up to Mr Putin over the past 12 years—what Ms Nuland has called America's "ambivalence and neglect"—has enabled his adventurism, an assessment that may exaggerate the influence anyone can hope to have over Mr Putin. This administration's approach to Russia, as to China and Iran, is a matter of wary calibration and diplomatic choreography.

Mr Biden went out of his way to surprise no one except the press with the sanctions he imposed last week on Russia for interfering in the 2020 American election, conducting the vast SolarWinds cyber-hack, and other nasty acts. He called Mr Putin and warned him of forthcoming penalties two days before he announced them. The European Union, Britain and others were ready with statements of support once he did.

Mr Biden called this "measured and proportionate". Yet the Americans also made clear they had included a ratchet, to allow them to tighten sanctions if Russia continued to misbehave: for example, blocking American financial institutions from buying rouble-denominated bonds in the primary market. Mr Biden's executive order provided the authority to expand those debt sanctions.

But in his telephone call to Mr Putin, Mr Biden mixed his message of rebuke by proposing a summit meeting to be held in Europe this summer, framed around arms control. Daniel Fried of the Atlantic Council, a foreign-policy think-tank, who served as assistant secretary of European and Eurasian Affairs under George W. Bush and at the beginning of Mr Obama's administration, said the mixed message was unusual, and welcome. "American administrations have had a tendency to fall into two traps in dealing with Russia," said Mr Fried, who was with Mrs Clinton when she presented the button. "It's either 'reset' or a hard line across the board." By contrast, he added, "The Biden team has given themselves room to work with Putin, without pulling their punches."

The American exchange with Russia had a businesslike, even ritualised air. After levelling the penalties, which also included sanctions on 32 Russian companies and individuals and the expulsion of ten officials attached to the Russian mission in

Washington, Mr Biden said that he had urged Mr Putin to "respond appropriately" rather than exceed the American blow. Mr Putin seems to have got the message. A day later Russia said it would expel ten American diplomats and banned eight current and former American officials from entering Russia. Mr Lavrov said that, for now, Russia would not impose "painful measures" on American companies. The Russians and Americans moved on to discussing Mr Biden's proposed summit.

The same mix of firmness and solicitation has characterised Mr Biden's approach to Iran and China. He pledged during the campaign to swiftly revive the nuclear deal with Iran negotiated by Mr Obama and abrogated by Mr Trump. But although Mr Biden pressed for direct negotiations with Iran, he disappointed the Iranians, and some Democratic allies, by not immediately lifting sanctions imposed by Mr Trump as "maximum pressure".

The Iranians "had different expectations of the Biden administration", one administration official said. "They thought President Biden would immediately come in and take unilateral steps." Negotiations are continuing in Vienna but, regardless of the outcome, the administration plans to retain some Trump sanctions over matters unrelated to Iran's nuclear programme.

Mr Biden has accused the Chinese government of genocide, and he is rallying international opposition to China's hegemonic ambitions in Asia. That was why his first foreign visitor to the White House was Japan's prime minister, Suga Yoshihide. After their meeting, on April 16th they issued a statement stressing among other things "the importance of peace and stability across the Taiwan Strait". The Chinese government snarled back, calling the statement an attempt to divide the region.

Here's the deal

At the same time, Mr Biden's climate envoy, John Kerry, was meeting his Chinese counterpart in Shanghai. In a sign that at least one adversary is prepared to accept some dissonance in American policy—or perhaps that the enemy of your enemy can be your shared enemy—the two men emerged on Saturday with a joint statement committing their nations to working together against climate change.

But issuing joint statements, like talking about summit meetings, is pale progress compared with closing coal plants, withdrawing troops, decommissioning nuclear weapons or halting genocide. Almost 100 days in, President Biden has shown that he can make a hard decision, as he did on Afghanistan. He has many more ahead of him as he seeks to strike not just a theoretical balance but actual compromises between an idealist's hopes and a realist's expectations. ■



Joe Biden's climate summit

Promising the Earth

NEW YORK

American leadership on climate change faces a credibility deficit

IF CLIMATE ACTION was measured in speeches, America could feel sure of success. In the run-up to Joe Biden's virtual climate summit, on April 22nd and 23rd, his deputies were everywhere: John Kerry, the special climate envoy, extolled decarbonised shipping; Jennifer Granholm, the energy secretary, touted green jobs with American unions; Antony Blinken, the secretary of state, explained climate diplomacy beside the Chesapeake Bay. But as *The Economist* went to press Mr Biden was expected to offer something more tangible: a pledge to halve greenhouse gas emissions from 2005 levels by 2030, with a goal of net-zero emissions by 2050.

That would count as real progress for an American president, even if Donald Trump had not set a subterranean bar. An emissions target, or nationally determined contribution, is required by the Paris agreement which Mr Trump rejected and which Mr Biden rejoined. Setting a bold target now, the thinking goes, will encourage other countries to do the same before the next big United Nations climate conference, in Glasgow in November. America could support a transition to cleaner energy in poor countries and invest in innovations to be deployed the world over. Yet other leaders have reason to eye American promises with scepticism.

In the 1990s Bill Clinton's administration negotiated the Kyoto protocol, but the



For more listen to our Babbage podcast at economist.com/climatesummit2021

► Senate declined to ratify it. Barack Obama pushed for the Paris agreement, only to have Mr Trump declare in 2017 that America would withdraw. Mr Obama promised to supply \$3bn in climate finance for poorer countries; \$2bn of that is still outstanding. After Mr Trump shunned the Paris agreement, green-minded governors pledged to support it. But they too are falling short. Those states are on track to limit their emissions by 18% below 2005 levels by 2025, according to the Environmental Defence Fund, compared with the 26-28% goal set by Mr Obama.

Mr Biden's infrastructure bill, presented in March, includes support for electric cars, renewables and innovation, as well as a clean-electricity standard requiring the power system to be emissions-free by 2035. It would be America's most important climate legislation to date. Yet Republican opposition means that it may not pass the Senate as proposed.

Even if it did, it might not do enough. Climate Action Tracker, a policy group, reckons that to meet the goals of the Paris agreement at least 95% of America's car sales must be zero emissions by 2030. Mr Biden proposes support for electric cars, but no deadline for phasing out petrol-guzzling ones. "Eventually we are going to need additional climate legislation in the forms of standards, mandates, a carbon price," argues Jason Bordoff, the co-dean of Columbia University's Climate School.

Mr Biden's attempt to encourage decarbonisation abroad is no simpler. His budget proposes \$1.2bn for the UN's Green Climate Fund, but Mr Biden is also interested in mobilising green finance in other ways. America's Development Finance Corporation may advance more clean-energy projects abroad as alternatives to coal. The White House has signalled support for climate-linked debt relief for poor and middle-income countries. Mr Bordoff points to debt relief in the 1980s tied to investments in biodiversity. "You might imagine something like climate-for-debt swaps to drive investment in low-carbon energy," he says.

However, America's most important foreign interlocutor is the one with which relations have most steeply declined. The International Energy Agency expects China to account for more than half the rebound in coal consumption this year. Mr Kerry, in a visit to Shanghai this month, urged that climate be a "stand-alone" issue. Li Yifei, co-author of "China goes green", contends that climate is inextricable from debates over geopolitical influence, intellectual property or industrial policy. "Climate change, by definition, is not a stand-alone issue," he argues. Mr Biden's meeting is a display of his determination. But success will depend on the cooperation of his adversaries, in Congress and in Beijing. ■

Derek Chauvin's trial

Two degrees and reparation

CHICAGO

George Floyd's death is now officially a murder

AFTER GEORGE FLOYD died on the ground outside Cup Foods, in Minneapolis, last May, millions of Americans who joined the largest civil-rights demonstrations in the country's history were in no doubt that he had been murdered. They had watched a horrific video, lasting more than nine minutes, which they believed showed a homicide taking place. They observed how Derek Chauvin, a white police officer, restrained Mr Floyd by kneeling on his neck. They heard how bystanders, including a nine-year-old child, said repeatedly that the policeman was killing him, and begged him to stop. Fellow police officers, and others watching live but remotely, voiced concern. Most powerfully, they heard how, handcuffed and prostrate, Mr Floyd himself warned that his life was slipping away. He told Mr Chauvin he could not breathe. Among his dying words were offers of love to his family.

After the three-week trial of Mr Chauvin in Minneapolis, it was still hard to imagine a jury could decide anything other than that a murder had taken place that day. After just one day of deliberations, and having put no questions to the court, the jury did indeed convict Mr Chauvin of both second-degree murder (which implies an unreasonable use of force, but not that he necessarily intended to kill) and third-degree murder (suggesting reckless disregard for life). He was also convicted of manslaughter. He could face 40 years in prison.

The prosecution's case had been

straightforward. Much rested on the now-infamous bystander video, on similar footage the police recorded themselves, and on powerful testimony by witnesses, including the nine-year-old. One official, who had been watching events by live video, recalled how she could not understand why Mr Chauvin, flanked eventually by three other police officers, held Mr Floyd immobile for so long, when there was no sign of threat or even resistance from him. She wondered if her video feed had frozen because of the unchanging image on her screen. Even when paramedics arrived and tried to resuscitate Mr Floyd, the police officer looked reluctant to stop applying deadly pressure. A former police chief testified that Mr Chauvin, an officer for 19 years, would have been taught not to use his knee on the neck of a suspect in such a way, and certainly not for so long.

Added to that was the evidence that accumulated before the trial. The city of Minneapolis, shortly before the court sessions began, said it was paying \$27m—a record compensation sum—to Mr Floyd's family. That naturally suggested an admission that Mr Chauvin had committed an unusually heinous crime. It clearly made things harder for the defence lawyers. Probably more difficult to overcome was the earlier conclusion from the autopsy on Mr Floyd. The examiners ruled that he died not coincidentally from some other cause (such as opioids or other drugs in his body) but clearly as a result of "homicide". The defence did not put Mr Chauvin forward as a witness—understandable on the assumption that the defendant, in cross-examination, would be forced to explain how he had been the subject of 22 previous complaints or internal investigations.

After the guilty verdicts, is this an opportunity for further reform? It is increasingly common for shootings by police, or other violent acts, to be captured on video—either on bodycams or on bystanders' phones. In many cities, too, the public release of official footage is obligatory within a short time of a fatal incident. That may give an impression that deadly violence by police is becoming more common, but in fact the reverse could be true. Historically it has been rare for serving police officers to be prosecuted (let alone successfully) for killing in the course of their work. By one estimate, in 98% of cases in which police kill someone nobody is charged with a crime. That may have created a sense of impunity, encouraging some officers to behave recklessly with the lives of those people they were supposed to protect. The Department of Justice has launched an investigation into the Minneapolis police department. But helping to end that sense that officers are above the law may be the most powerful, and positive, contribution that Mr Chauvin's conviction will offer. ■



Minneapolis breathes again

Transgender treatments

Blocked

WASHINGTON, DC

Trans medicine gets entangled in the culture wars

AS TRANSGENDER medicine has boomed in America, the number of doctors offering puberty blockers and cross-sex hormones to children who identify as the opposite sex has surged. In some states the World Professional Association for Transgender Health lists more than a dozen endocrinologists who work with children. In Arkansas it lists just one. Yet this month the state became the first to ban the prescription of such drugs to those aged under 18. Unless the American Civil Liberties Union (ACLU), which has become a vocal champion of trans rights, succeeds in blocking the law, the Save Adolescents from Experimentation (SAFE) Act will come into effect this summer.

Arkansas is one of more than 16 states to have introduced such a bill in recent months, according to the ACLU. An even greater number have introduced legislation that would prevent transgender girls from playing on female sports teams (Arkansas passed such a law in March). Lawmakers in these mostly conservative states are pushing back against the Biden administration's embrace of gender ideology, which holds that trans people should be re-

cognised as the sex with which they identify (meaning trans women should have access to women-only spaces, from prisons to hospital wards) and that trans-identifying children should have access to puberty blockers and cross-sex hormones.

For lawmakers to impose a blanket ban on the use of such drugs in children is a mistake, argued Arkansas's Republican governor, Asa Hutchinson, when he vetoed the law (the House and Senate overrode his veto). It created, he said, "new standards of legislative interference with physicians and parents as they deal with some of the most complex and sensitive matters involving young people". He also described the law as a product of America's culture wars. His point was exemplified by lawmakers' hyperbolic claims that young children in the state are undergoing sex-change surgery (they are not). Doctors, meanwhile, worry about the law's wider ramifications. Dr Janet Cathey, a co-founder of the state's first transgender clinic at the University of Arkansas for Medical Sciences, says she worries it will deter young doctors in other medical fields from wanting to work in Arkansas.

Yet the bills are not only political opportunism. They are also a response to mounting concerns about the use of puberty blockers and cross-sex hormones in children. Blockers, which are prescribed from around the age of nine to children who feel desperate about developing secondary characteristics of their sex, like breasts and facial hair, are not licensed for this purpose, nor have they undergone a clinical trial for it. Research shows they cause bone damage and may affect brain development.

Doctors who treat trans-identifying children say blockers buy time while patients work out whether to proceed to cross-sex hormones. Yet the vast majority of children on blockers go on to hormones, suggesting the drugs operate more as a push than a pause. Cross-sex hormones, meanwhile, cause myriad severe health problems, including uterine atrophy and heart problems for trans men on testosterone. They can cause sterility.

All this is prompting other countries to introduce curbs on the use of blockers. Last year, British judges ruled that children were unlikely to be able to give meaningful consent to taking them. Their review was sparked by the case of a young woman, Keira Bell, who took blockers and hormones as a teenager (and at 20 had her breasts cut off) before realising that she was a lesbian woman, not a trans man.

America, where health care is more profit-driven and decentralised than in most rich countries, seems a long way from even a discussion of the need for such limits. Instead, the focus is on affirming the desire for medical transition. Some states have passed laws banning "conversion therapy", a term misused to describe therapy that explores causes of gender dysphoria other than trans-ness. Professional bodies, like the American Academy of Paediatrics, have endorsed affirmative care and puberty blockers. Some of its members believe this is a mistake, but fear they will lose their jobs if they say so publicly.

The view routinely expressed in America is rather that puberty blockers "save lives" (an allusion to the belief that trans children are at a greatly heightened risk of suicide; there is no evidence for this). Health-care professionals who work with trans children extol the wonders of blockers and hormones. When asked about worries that these drugs are being prescribed without first properly exploring other comorbidities common in trans-identifying youngsters—like depression and anorexia—Elizabeth Stout, a psychologist in Little Rock, Arkansas, suggested that blockers and hormones could sometimes function as a cure-all. "It is often the case that treating the gender dysphoria first eliminates the need to treat the other mental-health concern at all," she said. ■



Walter Mondale dies aged 93

The career of Walter Mondale is a reminder of how unfair politics can be. As a legislator he was among the greats, helping to drag the Democratic Party towards acceptance of civil rights, including as co-sponsor of the Fair Housing Act, which made it illegal for landlords to discriminate by race. As vice-president to Jimmy Carter he is credited with making that office more professional. As a presidential candidate in 1984, though, he was a disaster, losing 49 states to Ronald Reagan (whose record on civil rights was poor) in one of the most lopsided elections in American history.



Religion in America

Baptism by fire

MOBILE, ALABAMA

The Southern Baptists consider a change in direction

ED LITTON recalls looking at the black-and-white photograph and guessing it dated back to the early 1900s. He was off by nearly a century: it had been taken in 1981, less than ten miles (16km) from the wood-panelled office where he sits. In the photo, the body of Michael Donald, a 19-year-old African-American from Mobile, Alabama, hangs from a tree. Two Ku Klux Klan members, angry that a jury had failed to convict another black man accused of killing a police officer, picked Donald at random to retaliate. His is believed to be the last recorded lynching in America. “It blew my mind,” Mr Litton says. “When I looked at it, I realised we live in a real segregated culture.”

This spurred him and his congregation to mend relations with African-Americans in their community. If elected president of the Southern Baptist Convention (SBC), America’s largest evangelical Protestant denomination, in June, he will lead more than 47,000 churches as they, too, attempt to heal the wounds of racism, which runs deep in their history. The SBC was founded in 1845 by separatist Baptists who wanted to appoint slaveholders as missionaries.

It is not the only reckoning ahead of them. An investigation by the *Houston Chronicle* published in 2019 found more than 700 cases of sexual abuse in SBC churches over two decades. Mr Litton and other nominees for the post—including Al

Mohler, president of Southern Baptist Theological Seminary—will have to confront these issues as their numbers shrink. After peaking at 16.3m adherents in 2006, the SBC has lost nearly 1.8m members.

Several prominent black pastors left after a group of seminary presidents, among them Mr Mohler, declared in November that critical race theory—a collection of thinking on racism that originated with legal scholars—is “incompatible” with SBC doctrine because it purportedly replaces the gospel with race as the framework for understanding human nature. The SBC’s National African-American Fellowship agrees that some aspects of the theory do conflict with their theology. But they say the presidents’ inflexible position dismisses “the lived experiences of African-Americans and other ethnic groups”.

The gospel according to Kendi

Critical race theory has sparked heated debate before. A resolution at the SBC’s last annual gathering that affirmed its utility as an “analytical” tool prompted a faction of Southern Baptists to create their own network of conservative churches. They are supporting one of their leaders, Mike Stone, for SBC president. Mr Litton laments that people who speak about racial issues are labelled as liberals or Marxists. “Critical race theory is being touted as a baseball bat

to beat people up,” he says.

In recent weeks debate has turned to women’s place in the church, after Beth Moore, a popular Bible teacher, announced she no longer identifies as a Southern Baptist. For nearly 30 years she inspired women to study the Bible; her books are in the homes of millions of Southern Baptists. In 2018 Ms Moore recounted how she had been ridiculed for being a female leader within conservative Christianity. But her criticism of Donald Trump made her a pariah. A survivor of sexual abuse, she was perplexed Christians would put on a pedestal a man who boasted about groping women.

Ms Moore’s departure reflects wider concerns about how women who have survived abuse are treated. “Not only are their cries and pleas not heard, but oftentimes they are actively villainised,” says Rachael Denhollander, a lawyer and ex-gymnast who initiated the criminal case against Larry Nassar, a former doctor for the US gymnastics team accused of sexually abusing hundreds of women and children. At their last annual gathering Ms Denhollander challenged convention leaders to believe victims and stop predators. The SBC’s decentralised structure has hampered efforts to create a registry of offenders.

Controversy also surrounds doctrines on sexuality that create power imbalances between men and women notably “complementarianism”, according to which men and women are equal but have distinct roles. Only men can preach and be pastors; women can teach but not preach. After leaving the SBC, Ms Moore apologised for being “complicit” in teaching such doctrines as if they were essential to Christian belief. She has not completely abandoned complementarianism, but she says it should not be a litmus test of evangelical faith (many SBC pastors and leaders, by contrast, believe that someone who rejects complementarianism also rejects the authority of the Bible).

Fears of liberalism creeping into the SBC are probably misplaced. An analysis from Ryan Burge, from Eastern Illinois University, shows that more Southern Baptists believe in the literal interpretation of the Bible than ever. A survey from Lifeway, the SBC’s publishing arm, found that since 2016 pastors have grown hesitant to preach on race. One pastor, who spoke on condition of anonymity, said he was asked to resign for his emphasis on confronting racism. “We know you are passionate about racial reconciliation,” he was told, “but our church is not the platform for that.”

Mr Litton says discussions over critical race theory and the role of women matter, but they can be harmful if they supersede agreement on the essentials of the faith, such as the gospel. “When theological debate is the centre of Southern Baptists’ life, it is not good,” he says. ■

Lexington | The Great Game

The European Super League was a miserable effort at Americanising Europe's favourite sport



IT HAS BEEN a bad month for imperial hubris. First Joe Biden admitted the failure of America's effort to export liberal democracy to Afghanistan. Now European football fans have rejected another attempted American export, in the form of the reviled European Super League, even more crushingly.

Most Afghans were ambivalent about America's democratising. By contrast, the response of European players, coaches and fans to the effort to export the American sporting model was unanimous and furious. A former captain of Manchester United (owned by the Glazer family, who also own the Tampa Bay Buccaneers), described the League as a "criminal act" against the fans.

The captain and manager of Liverpool football club, which is mostly owned by the American investor John Henry, owner of the Boston Red Sox, also condemned it. Supporters of some of the 14 leading English football clubs which were to be excluded from the scheme burned Liverpool shirts. After joining a panicked retreat from the league this week, 48 hours after it had been announced, Mr Henry issued a grovelling apology to his team's fans: "I'm sorry and I alone am responsible". That was more mollification than Red Sox fans got, after he offloaded their best player, Mookie Betts. And Mr Henry was right to offer it. English football clubs are even more reliant on gate revenues than Major League Baseball (MLB). And their fans are even more zealous and less forgiving than the Red Sox Nation—let alone the usual peripatetic American sports fan.

As in Afghanistan, the American investors were wilfully ignorant of an alien culture. Local allies, in the form of Real Madrid's president, Florantino Perez, and Juventus's chairman, Andrea Agnelli, proved unreliable guides to the natives. (Disclosure: Exor, which is a big shareholder in Juventus, also owns a stake in *The Economist's* parent company.) The League was pitched as a mid-week addition to its members' current fixtures, to provide more games among Europe's best. It would have eaten into their domestic commitments, however, offending local fans. Such stresses are routine in America's franchise system, which the league resembled; they were anathema to Europe's sporting culture.

The American system is a century-old marketplace of rival sports leagues, often founded by entrepreneurs, which vie to attract investors to their city-based franchises. MLB, a merger be-

tween the National and American leagues, is the result of one such rivalry. The churn of leagues and franchises inherent in this system explains the fluidity of American fandom. The Washington Nationals, a franchise of the National League, began as the Montreal Expos and is the capital's fourth major baseball team; the other three folded or moved on. By contrast, the basic unit of European sport is not the league but the club, an institution that tends to be much older and more locally rooted than any franchise, and far more fervently followed.

Most leading English and many Spanish and Italian clubs are over a century old and ripple with local associations and mythologies. Liverpool's main rival is not Manchester but Everton, whose stadium is a mile from its own. Barcelona's team is synonymous with the cause of Catalan nationalism. The hierarchy of governing bodies the clubs submit to is essentially a means to manage their pre-existing rivalries. The Super League promised to obliterate much of this. It would have undermined the hierarchy and scrambled the rivalries while delivering sport devoid of meaning—association football without the all-important associations.

At the 125-year-old heart of pan-European competition is an understanding that qualifying for it is a reward for success in the domestic contests that local fans care about most. Not even supporters of the dozen Super clubs want to bypass that. "We want our cold nights in Stoke" read a banner carried by a Chelsea fan, protesting against his team's part in the league. Even more offensive to such fans was a reasonable assumption that the contest had not been designed with them in mind, but for millions of foreign fans, in Asia and America, who care less about such details. In America's rapacious sports market, where a new fan is as valuable as an old one, this would be normal; in European football, it was heresy.

The other big reason for the scheme's fate was also evident in America's failed state-building: it did not even reflect the strengths of the American system it was channelling. America was doomed in Afghanistan from the moment it pushed a rigidly centralised governing system, which fostered regional anger and corruption; Americans, let alone Afghans, would have gone to war with it. Similarly, the proposed league would have replicated the investor-friendly closed structure of America's leagues without most of the compensatory measures, such as cross-subsidies and rookie drafts, built into them to foster competition.

The putative league would have been an exhibition of elite football, not a true contest, as was further underlined by the fact that the participating clubs were not even the best in Europe, but merely the richest. One of them, Arsenal, owned by the American real-estate tycoon Stan Kroenke, is barely one of the best in England. This would have represented another bastardising of the American system. Shorn of true competition, the league would have resembled baseball's interminable, money-spinning post-season without the long slog of the regular season that makes sense of it. English football fans are not alone in needing their cold nights in Stoke; baseball fans spend them in Pittsburgh.

A strategic review would be wise

America long ignored the signs it was losing in Afghanistan. America's football investors were also forewarned to tread carefully. The mob that welcomed the reviled Glazers to Manchester chanting "Die, Glazers, die!" was a definite hint. If they are wise, they will now take a less interventionist role. They are unlikely to withdraw, having mostly enjoyed decent returns. Indeed their hubris was mainly greed. ■



Immigration to Canada

A wider welcome

VANCOUVER

The government wants more immigrants. It is changing its ideas about who should gain entry

THE PAST year of lockdowns and travel restrictions has been terrible for migrants. In the first six months of 2020 members of the OECD, a club mainly of rich countries, issued half as many residence permits as they did the year before, a record decline. But one country is determined to buck the trend. In October Canada's government said it hoped to admit 1.2m new residents from 2021 to 2023, equivalent to 3% of the population. The targets for this year and next are a total of 100,000 higher than originally planned.

Even among high-immigration countries, Canada stands out. Australia has kept its annual immigration target steady at 160,000. Employers in New Zealand should give priority to training people already in the country, says its immigration minister. Canada, by contrast, is gung-ho. Immigration is "a key element" of Canada's economic recovery and its long-term prosperity, says Marco Mendicino, the minister in charge of it. Without it, the country will age. Within 15 years the ratio of workers to pensioners will fall from three to two.

The pandemic has not just sharpened Canada's zeal to import foreign talent. It is also changing the government's idea of what talent means. On April 14th Mr Men-

dicino announced that Canada would open pathways to permanent residence for 90,000 people with temporary permission to stay. Most are workers in health care and other "essential occupations", which can range from lorry drivers to bricklayers. The rest are graduates of Canadian universities. That weakens a longstanding distinction between two types of foreigners: "permanent residents", most of whom eventually become citizens, and people entitled to work or study in Canada but who are eventually expected to leave.

Temporary residents are vital to the economy. Canada admits more of them than the permanent sort (see chart on next page). The country has 1.6m non-permanent residents, estimates Syed Hussan of the Migrant Workers Alliance for Change, a pressure group. In 2018 700,000 foreign students spent C\$22.3bn (\$18bn), the equivalent of 1% of GDP. Other transient

types staff care homes and harvest crops as well as doing jobs that require more education. Seasonal farm workers come to Canada for eight-month stints for an average of 10-15 years, says Mr Hussan.

But temporary status has a dark side. Many workers have permits that oblige them to work for a particular employer, which makes them vulnerable to abuse. Last year 2,000 agricultural workers caught covid-19 in Ontario, according to Mr Hussan, after they were confined to the farms where they worked. Even students can suffer. Some who work as low-paid delivery people exhaust themselves competing to be named "managers", an often spurious title that improves their chances of getting permanent residency. Worst off are undocumented foreigners, many of whom have overstayed their permission to remain in Canada, and whose numbers are thought to be growing. Most have no entitlement to health care or education.

Canada is choosy about who can stay. Most offers go to "economic-class" migrants (and their families) on the basis of their ranking in a points system that scores for education, fluency in English or French, their profession and offers of a job in Canada. The country's foreign-born population is the best-educated in the OECD. In the next three years Canada also plans to admit as permanent residents roughly 175,000 refugees and 270,000 relatives, mostly parents and grandparents of people already in the country.

Tales of taxi-driving doctors prompted Canada to tweak the points system to admit more people that employers want to hire. But it still gives too much weight to

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► credentials, many experts think. And the pandemic taught Canadians the value of workers with less schooling. "They go out, risk their lives, potentially contracting the virus...so we have some food on the table," says Harald Bauder at Ryerson University.

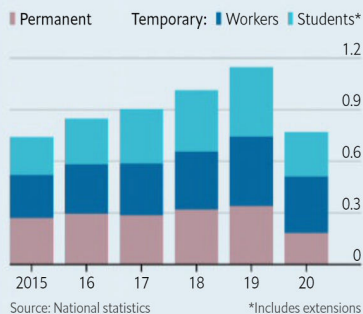
Before the pandemic the government had begun to give temporary migrants more chances to settle down. Since 2008 it has offered permanent residency to workers with experience in the country, provided they are skilled and speak one of its languages. Under pilot schemes it also gives 5,500 residency permits a year to care workers and 2,750 to agricultural workers (though not seasonal ones). But now the government is becoming more flexible. In February it invited 27,000 people in the country to apply for permanent residency under its "Express Entry" programme for economic migrants. To do so it cut the number of points needed to qualify from an average of 461 to 75, the lowest ever.

The flow of migration is likely to return to normal by early next year. But the shift towards what Mr Mendicino calls "a fast, innovative and inclusive pathway to permanent residence" may last. Some immigration advocates want the government to go much further. Jenna Hennebury of Wilfrid Laurier University in Waterloo, Ontario, points out that workers who take Mr Mendicino's new pathways will still have to speak decent English or French. She fears they are a "fleeting move of convenience" to meet the new targets.

Even so, these changes will transform many a life. Carla Martinez, who arrived from Mexico in 2017, hopes to be among the 30,000 essential workers to get permanent residency under the new scheme. In her first job as a carer she worked "12-14-hour days with no overtime and no weekends". She later found "the dream family" to work for. But she wants to become a physiotherapist. As a temporary resident she would pay C\$90,000 for her training. With permanent status, it would cost just C\$15,000. "I wish I could have been doing it by now," she says. ■

More to come

Canada, resident admissions, m



Vaccine queue jumping

Kicking covid

Footballers have never been so eager to get a booking

FOOTBALL FANS are used to moments of magic from Lionel Messi. Earlier this month the Argentine forward produced yet another clinical finish—this time off the pitch. On April 13th Mr Messi helped to score 50,000 vaccines for Conmebol, the South American football confederation, after sending three signed shirts to Sinovac, a Chinese pharmaceutical company. Conmebol says its goal is to jab all professional players ahead of the Copa América tournament this summer. But the ball is not in the back of the net just yet. For one thing, five of the confederation's ten members, including Argentina, a co-host of the tournament, have yet to approve the use of the Sinovac vaccine.

Mr Messi's is not the only attempt to win footballers early jabs. In Mexico 19 players from Rayados, a team in Monterrey, flew to Dallas to get injected this month. Several from its local rivals, Tigres, also crossed the border to get an appointment. The Mexican government promised to vaccinate the men's and women's football teams and their staff if they qualified for the Olympics (only the men did so). In Brazil Athletico Paranaense is not only pledging vaccines for its players and staff, but for its entire paying fan base. Many clubs have lost members, says Andrew Downie, a sports journalist (who has occasionally written for *The Economist*). The jabs are a way of enticing back fans.

In a region with both horribly high numbers of covid-19 deaths and slow vaccine roll-outs, injections are a prize worth winning. In Mexico the roll-out has been politicised by Andrés Manuel López Obrador, the president. He decided to initially give vaccines to people in rural, poorer areas rather than those most at risk of dying. Mexicans who can afford to do so are getting the vaccine in Texas. In Brazil Jair Bolsonaro, the covid-sceptical president, has said he wants to make it easier for corporations to buy vaccines—a move many Brazilians view as a way to shift the goalposts for the privileged. In February the revelation that ministers in Argentina, Ecuador and Peru had got themselves and their friends jabbed early stirred outrage.

In contrast, the popularity of footballers has not yet taken a dive. In Mexico public opinion has softened as more and more people, not just the super-rich, cross the border to get jabbed. "It's no longer taboo," says Andrés Díaz, a football journalist who



The shirt off his back

is thinking of making the trip himself, now that it has become clear that states such as Texas are more than happy to give out surplus vaccines. Footballers may be better inoculated than politicians against charges of "VIP immunisation". A survey in 2018 found that 61% of Mexican and 50% of Brazilian respondents said they trusted professional athletes and footballers; only 13% and 7% respectively said the same for politicians. Still, putting young, fit footballers ahead of society's most vulnerable could turn out to be an own goal. ■

Guatemala's courts

Domino effect

MEXICO CITY

The country is backsliding on efforts to curb corruption

OVER THE past decade Gloria Porras, a judge on Guatemala's constitutional court, has earned a reputation for fearless independence. It came as little surprise to some, then, that on April 13th Congress refused to confirm her nomination for a third five-year term. The move is the latest effort to oust Ms Porras, who has faced a series of lawsuits from groups believed to be acting on behalf of corrupt politicians, smears in the media and attempts to strip her of her immunity as a judge.

Resistance to crusading judges is growing. The constitutional court is the primary target since it deals with politics and crime. Ms Porras often ruled against the rich and in favour of the marginalised. She boosted the rights of indigenous people, who make up at least 40% of the population of 18m. She also helped block a congressional proposal to provide amnesty for ►►

► crimes against humanity.

The backsliding started under the administration of Jimmy Morales, president from 2016 to 2020. In 2019 he refused to renew the mandate of CICIG, a UN-backed commission that successfully prosecuted dirty politicians and businessmen. But Ms Porras says pressure on her has intensified since Mr Morales's successor, Alejandro Giammattei, took office.

The judicial system has been hindered in other ways, too. In 2009 a law was adopted to bring transparency to the committees that appoint judges to the Supreme Court

and Courts of Appeal. But according to the Washington Office on Latin America (wOLA) a human-rights lobby group, the process has been marred by conflicts of interest and criminal manipulation. For example, an increasing number of law schools have been created to try to influence which judges are picked (the committees are partially drawn from these schools). Last year the special prosecutor's office against impunity, a state body, suggested that a businessman in pre-trial detention for corruption had attempted to rig the selection process. Congress, as the blocking of Ms Por-

ras's confirmation shows, is also biased. It barred another judge, Néster Vásquez, from taking his seat on the constitutional court. Other judges on the court have close links to the president: one of them, Leyla Lemus Arriaga, was his chief of staff.

This will further weaken the rule of law in Guatemala, one of the factors behind the migration of its citizens northwards. "The constitutional court was one of the last checks and balances in the country," says Adriana Beltrán of wOLA. The abuses that will follow its taming are yet another reason to leave. ■

Bello After the myth, the grim facts

Cuba has a new leadership. It will have to deliver results, fast

ENSCONCED IN ITS island fastness 100 miles from Florida, Cuba's communist regime has outlasted countless premature obituaries. All remained calm when Fidel Castro was taken ill in 2006 and handed over the reins to Raúl, his younger brother. It did, too, when Raúl turned the presidency over to Miguel Díaz-Canel, his hand-picked successor, in 2018. At a Congress of the ruling Communist Party on April 16th-19th Raúl also relinquished command of the party to Mr Díaz-Canel, a 61-year-old apparatchik. A new, slightly younger leadership has seamlessly taken over, under the slogan "unity and continuity". Yet the fact that the party had to proclaim that nothing is changing suggests that beneath the surface it worries that things might.

For almost half a century Fidel ruled with communist dogma and erratic Caribbean charisma. Raúl set about tidying up the mess he inherited. He launched a cautious economic reform, under which some 600,000 of the workforce of 4.8m are self-employed or in co-operatives. He allowed Cubans to buy houses and mobile phones, and to use the internet. With Barack Obama he re-established diplomatic ties with the United States. He separated the roles of party and government and introduced term limits. The Congress completed this rationalisation. Raúl's fellow gerontocrats have left the ruling politburo (though Raúl's son and son-in-law hold powerful military jobs). José Ramón Machado Ventura, a Stalinist enforcer who was second secretary, has gone but not been replaced. That leaves Mr Díaz-Canel free to reshape the party's ranks.

With all trace of the charismatic authority wielded by the Castro brothers gone, the new leadership will be judged purely by results. Its problem is that

there are few of these. True, the regime has handled the covid-19 virus effectively, thanks to its prowess in public health. But the pandemic has halted tourism and hammered an already weak economy. Declining aid from Venezuela, the impact of additional American sanctions under Donald Trump and long-standing inefficiencies have combined to squeeze imports and cause widespread shortages.

This prompted Mr Díaz-Canel to implement, on January 1st, a long-delayed unification of the two national currencies, and with it a huge devaluation. This is designed to force state companies to become more efficient and encourage them to export more. It has set off inflation which may reach 500% this year and could cause real wages to fall by 15%, reckons Pavel Vidal, a Cuban economist. This is an irreversible step. "There are only two possible paths: either progress in structural reforms and openness, or an unravelling," Mr Vidal argued in a recent report.

Until now the incipient private sector has amounted to little more than a subsistence economy. Many economists expect-

ed the Congress to authorise private small and medium enterprises (SMEs). No such luck. Warning against "greed", Raúl said sternly: "there are limits we cannot cross" because they would lead "to the destruction of socialism itself". Nevertheless, the message from the Congress was that economic reform won't stop, says Ricardo Torres, an economist at the University of Havana. He thinks SMEs will be gradually allowed, starting with food production and IT.

In a society infantilised by paternalism, younger Cubans are digitally connected and impatient. The past few months have seen unprecedented demonstrations for more cultural freedom by artists and activists. These groups include environmentalists, anti-racists and feminists. They are hard to dismiss as agents of "imperialism", though Mr Díaz-Canel tried to. The regime is controlling this "the traditional way, with repression, constant arrests and permanent police harassment", according to Rafael Rojas, a Cuban historian in Mexico. The Congress hinted at tiny chinks of greater openness: the party's rigid ideology chief was replaced by Rogelio Polanco, a more "flexible" figure, says a party source. And Mr Díaz-Canel offered talks with young people and intellectuals, though they want much more.

The iron control of the Cuban police state is not immediately threatened. But frustration is growing. "Much more than before, people are saying they want to leave," says a young teacher. That is a problem in a country whose population is declining. When post-revolutionary generations came to power in China and Vietnam they made sure that their people felt the benefits of economic growth through state capitalism. Mr Díaz-Canel will ignore that lesson at his peril.





Covid-19 in Africa

Doses of scepticism

FREETOWN, JOHANNESBURG, KINSHASA AND LILONGWE

Africa's vaccination drive is off to a slow start—and not just because of scant supplies of inoculations

AS A NURSE in Lilongwe, the capital of Malawi, Linda Banda is at the front of her country's queue for a covid-19 vaccine. But she is wary. "I'm not sure it's a safe move," says the 26-year-old.

Such attitudes are complicating Malawi's plans. The country received its first vaccines on March 5th. Seven weeks later it has used only about half of its 512,000 doses, most of which came via COVAX, an alliance co-led by the World Health Organisation (WHO). About 16,000 doses are set for the incinerator after expiring last week.

African countries can ill afford to waste vaccines. Just 6m doses have been administered in sub-Saharan Africa, fewer than in New Jersey. Globally 13% of adults have received a first dose, versus 1% in the region (see chart on next page).

COVAX, which has supplied most of Africa's doses, has been hampered by India's restrictions on vaccine exports (see Asia section). Yet supply is not the only problem. Many African countries are struggling to use their doses because of operational failings and low demand. Africa CDC, a public-health body, wants 60% of

the continent vaccinated by the end of next year. The target looks increasingly ambitious. If it is not met there could be dire consequences for Africa—and, potentially, the rest of the world.

Forty-seven of Africa's 54 countries have started a vaccination drive. Some have done so efficiently. Angola used on-line registration. Rwanda surveyed village elders so it knew where to find priority groups. It distributed doses to more than 500 health centres within days of receiving them on March 3rd. Ghana, which has administered nearly 90% of its jabs, drew on its experience in 2018 of vaccinating 6m people in a week against yellow fever. Volunteers were recruited from institutions such as Rotary clubs. Drones carried vials

to remote parts.

Yet of the 45 countries for which the WHO has data, 32 have used less than half of their vaccines. A few, like Zambia, received COVAX deliveries only this month. But most have had supplies for longer. Uganda, which has dispensed just 24% of its stock, delayed starting for about ten days and has been slow to distribute doses. An ad hoc approach is common. During an event at the Gambian president's residence, he and cabinet ministers got a jab. "Then they ended up vaccinating everyone, including the cleaners," says one observer.

Mamunur Rahman Malik of the WHO in Somalia says countries are using the wrong approach. Somalia has done little outreach and instead relies on people showing up to sites, some of which are closed for Ramadan. It has wrongly assumed that organising covid-19 shots is the same as, say, measles jabs. "But this is not like mothers bringing their children."

A lack of money is making matters worse. CARE, a charity, reckons that for every \$1 spent on vaccines, another \$5 is needed to make sure they reach arms. COVAX says it needs about another \$3bn to carry out its plans for buying and delivering vaccines this year. In October the World Bank pledged \$12bn for vaccines and their roll-outs globally, but as of April 20th it had approved projects worth only \$2bn. Just seven of them are in Africa.

Logistical difficulties are coupled with vaccine hesitancy. In a five-country survey published on March 9th by Afrobarometer, ►►

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▶ a pan-African pollster, an average of 60% of respondents said they were unlikely to try to get vaccinated. After starting with similar eligibility criteria to the West, most countries have expanded who can get jabbed. Strange as it may seem for a continent with so few vaccines, in many countries anyone wanting a dose can get one.

Hesitancy has several causes. A 15-country survey by Africa CDC last year found that half of respondents believed covid-19 was planned by a “foreign actor”. One-third thought that vaccine trials had killed African children. Such falsehoods spread rapidly on WhatsApp. They can also be amplified by religious leaders. In Nigeria powerful pastors such as Chris Oyakhilome have spread misinformation.

The main vaccine available to African countries has not helped. Roger Kamba, the head of the anti-covid taskforce in Congo, blames its nearly two-month delay on the need to assure people following European decisions about the AstraZeneca jab. “We are telling people to take the vaccine but they see all the time on TV that there are problems with it.”

Hesitancy also has prosaic causes. For many Africans covid-19 is simply not a big deal. Official caseloads and death tolls are relatively low. Unlike in rich countries, there is no talk of needing a vaccine to go about daily life. “I did not, at any point, deny the existence of covid-19, but what I doubt is its existence in Sierra Leone,” says Mohamed Kabia, a student in the west African country (official death toll: 79).

African epidemiologists such as Charles Wiysonge of the South African Medical Research Council argue that demand will respond to supply. “Hesitancy is partly a function of so few doses.” It is hard to run mass vaccination campaigns without masses of vaccines. Even successful countries do not know when they will be able to give second doses. “We have a plan

but no supply,” says Anthony Nsiah-Asare, health adviser to Ghana’s president.

John Nkengasong, the head of Africa CDC, laments that just 1% of the vaccines used in Africa are manufactured on the continent. For the time being it is mostly reliant on two sources: COVAX and the African Union’s deal with Johnson & Johnson (J&J), which has agreed to provide 220m doses. But when they will arrive is unclear.

Some governments are looking at other options. Having declined to use the AstraZeneca vaccine, South Africa has belatedly signed its own deals with J&J and Pfizer. The Sinopharm vaccine has been approved by 11 African countries, but others are wary because the WHO is still reviewing it. Governments are struggling to get Russia to send doses of the Sputnik vaccine.

Kwaku Agyeman-Manu, Ghana’s health minister, says he has had more than 50 meetings with businessmen who say they can get doses. A middleman “from the Middle East” brought 16,000 Sputnik doses to Accra, he says. Much better would be for countries with excess doses to give or sell them to countries like Ghana. Sadly he has received little response from such places. “No one is listening,” he sighs. ■

Chad

The dictator dies

N'DJAMENA AND DAKAR

The long-time strongman is killed by rebels, threatening to rock the region

His presidency started with a rebellion. It also ended with one. On April 20th television stations in Chad interrupted their normal broadcasts to show a room full of men in uniform—medals gleaming and red berets neatly pressed—where an army spokesman announced the death of Idriss Déby, who had ruled Chad for 30 years. The announcement came just hours after election officials provisionally declared Mr Déby the winner of a flawed presidential election held on April 11th. Mr Déby, who came to power after mounting a coup in 1990, reportedly died after being injured on the battlefield while visiting troops fighting a rebel incursion that began on the very day of the election.

Although the exact circumstances surrounding Mr Déby’s death are not yet clear, the transfer of authority that followed it is highly irregular. The government and parliament have been dissolved and a military council led by Mr Déby’s 37-year-old son, Mahamat Idriss Déby, has taken charge. By ignoring the constitution, the army has in effect staged a coup. It says it will rule for 18 months until “free and democratic” elec-



tions can be held. That may be too long for many people in Chad. “We don’t want a militarised Chad any more” says Bienfait Djedior, a 31-year-old student in N’Djamena, the capital. “We want a democratic Chad...where reason rules, not force.”

During his three decades in power Mr Déby brought neither democracy nor development. Instead he cracked down on opponents, protesters and the press. The recent election was no exception. Witnesses told Human Rights Watch (HRW), a monitoring group, that in February police beat peaceful protesters with whips and sticks. In March police officers reportedly drove into a car taking injured demonstrators to hospital, and then pulled the passengers out and hit them. Another protester told HRW he was tortured with electric shocks at the police headquarters. An attempt to arrest an opposition candidate, Yaya Dillo, ended in a shoot-out that he says killed his mother and a 11-year-old son.

Although the country has earned billions of dollars from oil, a fifth of its children die before they turn five. Yet Mr Déby proved adept at winning friends in the West, forming alliances with France and America, which saw him as an ally in the fight against jihadists. France has a large military base in Chad. Operation Barkhane, its 5,100-strong military force roving the Sahel, has its headquarters in N’Djamena. “France loses a courageous friend,” lamented the French government in a statement after Mr Déby’s death.

The dictator’s demise is likely to rock an already tottering government beset by opposition on many fronts. Since 2015 the jihadists of Boko Haram have been attacking across the border from neighbouring Nigeria and Niger. Their atrocities have pushed thousands of Chadians from their homes. The government has also faced repeated incursions by rebels based in Libya and Sudan. In 2019 fighters advancing from Libya towards N’Djamena were halted only after French aircraft bombed them.

This month’s rebel attack seems to have pushed deep into Chad, with fighting reported some 300km north of the capital. Despite this, France has so far refrained from direct involvement, apparently offering reconnaissance and intelligence sup- ▶▶

Lagging behind

Covid-19 vaccinations, % of adults with first dose To April 22nd 2021



port instead. French reluctance to intervene more forcefully may have been crucial. Besides Chad's president, the rebels claim also to have killed 14 other senior officers in recent fighting.

The third front where the government has been battling is in the capital itself, recently roiled by repeated protests. Police and demonstrators clashed in February over Mr Déby's decision to run for a sixth term, and again this month in the run-up to the election. Opposition leaders have denounced the seizure of power by Mahamat Idriss Déby as a coup. In a statement America also emphasised the need for a transition "in accordance with the Chadian constitution", which calls for the head of the National Assembly to take over and to hold elections within 90 days.

That contrasts with France, which has simply muttered warily about the need to "establish an inclusive, civilian government" after a "limited period". The younger Mr Déby will probably maintain a close relationship with France and keep supporting Western efforts to fight jihadists in the Sahel, says Nathaniel Powell, a military historian at Lancaster University in Britain. At the request of Emmanuel Macron, France's president, Chad recently sent 1,200 soldiers to help fight jihadists in Burkina Faso, Mali and Niger.

But the crisis at home may require those forces to come back. The opposition is ready to take to the streets again. Rebels from the north, who claim to be fighting for democracy, are promising to march on the capital. Divisions are appearing in the army, with one general denouncing the transition as a "coup". Hence there is "a real fear of civil war", says Cameron Hudson of the Atlantic Council, an American think-tank. "We are afraid," says Ramadan Mahamat, a 37-year-old teacher in N'Djamena. Every Chadian is asking one question: "What is going to happen to us?" ■



The late Déby as a young rebel

Stateless in Zimbabwe

Papers, please

Legacies of old laws leave thousands of Zimbabweans stateless

BOTSHIWE DUBE gave birth to all seven of her children at her home. This was not because she wanted to. Nor was it because there was no hospital in Tsholotsho, her home town in Zimbabwe. It was because she is stateless. Without papers proving she is Zimbabwean, she cannot gain admission to a hospital.

Ms Dube lost her identification documents in 1983. At the time, the army was carrying out massacres of her ethnic group, the Ndebele, some of whom were deemed to have rebelled against the regime of Robert Mugabe, Zimbabwe's late despot. Perhaps 20,000 Ndebele were murdered. Many lost their papers when soldiers burned their houses down.

Under international law everyone is entitled to a nationality. Of Zimbabwe's 15m people, perhaps 300,000 are at risk of statelessness, according to the UN's refugee agency. Stateless people there are "trapped in a vicious cycle of poverty and marginalisation", reports Amnesty International, a watchdog. Without papers "most can only secure precarious and low-paid work" on farms or in mines.

The ruling party has long sought to disenfranchise groups it suspects of not supporting it. In 1984 it passed a citizenship law that made it harder for people to prove citizenship. It was widely used to render Ndebele stateless—and therefore unable to vote. When Ms Dube has tried to replace her lost documents, registration officers have repeatedly told her that they cannot find her name in the system.

Excessive bureaucracy can make people stateless, too. Zimbabwean hospitals have to record all new births, but the process is not simple. They must include details that can only be verified with the mother's birth certificate. Rather than break this rule, they often turn away pregnant women who do not have such a document. This forces those women to undergo risky births at home, which then go unrecorded. Partly as a result of this, fewer than half of births are registered. Not one of Ms Dube's children or grandchildren has an identity document. Children without papers can be enrolled in school, but without an ID card they cannot officially complete it, go to university or get a well-paid job. "Even cattle are better, because they are recorded in a book," Ms Dube told Amnesty.

The consequences of statelessness are far-reaching. Vimbai Munondinziweyi's

family has been in Zimbabwe for three generations—her grandmother migrated from Zambia. But she has no papers because her mother and grandmother had none. Her dreams of becoming a lawyer were cut short after she had to drop out of school and get married at 16. Her new husband has papers but unless she has her own, too, the children she wishes to have will one day face a similar fate to hers.

At independence in 1980, Mugabe's government promised that anyone born in Zimbabwe would automatically be a citizen. But it quickly tightened the rules to exclude those whose parents came from elsewhere. That affected a lot of people. During the colonial period 20-30% of farm workers were migrants from nearby countries such as Malawi, Mozambique and Zambia. Their descendants, some of whom were stripped of Zimbabwean citizenship under Mugabe, had often lost ties to the countries their families had migrated from, and became stateless.

A constitutional amendment in 2001 empowered the state to revoke the Zimbabwean citizenship of people who had merely a potential claim to citizenship of another country. This was partly aimed at white farmers, some of whom were bankrolling a new opposition party. But it affected descendants of migrants from just about anywhere.

The amendment was revoked in 2013, and dual citizenship is now allowed. But people without documents still find it hard to prove who they are. The government has tried to use mobile registration centres to help people get identity cards. But without the data needed to retrieve lost documents, workers at the centres don't have the power to confer citizenship, so entire families have given up. They register businesses under their friends' names, they travel illegally if they must, and their deaths go unrecorded, as if they never existed. ■



A precious commodity

Saudi Arabia

The prince's big bet

DUBAI

Loads of investment may transform the economy—or drain the state's coffers

SIX YEARS ago almost no one outside Saudi Arabia had heard of the Public Investment Fund (PIF), an entity that held government stakes in blue-chip firms and had fewer employees than a typical supermarket. Today it aspires to become the world's largest sovereign-wealth fund. It spent billions last year on foreign investments, buying stakes in Western oil firms and cruise lines and even bidding for Newcastle United, an English football club. At home it is building resorts, a financial district and a futuristic city on the Red Sea.

Sovereign-wealth funds in the Gulf are meant to provide for a post-oil future. This can be a contradictory task: they must act as responsible stewards of oil wealth while investing in risky projects to drive diversification at home. The PIF is trying to do both simultaneously and at great scale. Yet its boundless ambition risks running up against the hard realities of maths.

On March 31st the crown prince, Muhammad bin Salman, announced a plan to invest 27trn rials (\$7trn) in domestic projects over the next decade. These numbers should be taken with a pinch of salt. Saudi Arabia's GDP last year was 2.5trn rials; Prince Muhammad's target would mean absorbing annual investment the size of the kingdom's entire economy. Last year its investment-to-GDP ratio was 27% (see chart). He hopes foreign direct investment will exceed \$500bn over the next decade, optimistic in a country where inflows totalled \$106bn over the past decade.

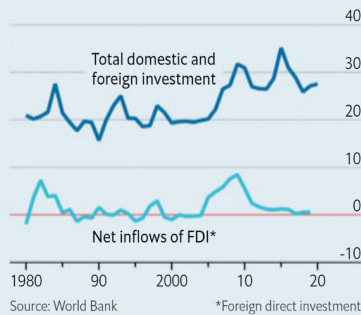
The centrepiece of his announcement was a scheme called *Shareek* (Partner), which would see dozens of publicly listed Saudi firms reduce their dividends and steer 5trn rials into local investment. The biggest of the bunch are Aramco, the state oil giant, and SABIC, a petrochemicals company owned by Aramco. Any dividend cuts would thus land hardest on Aramco's majority shareholder: the Saudi state.

That would mean further pressure on the budget, which shrank by 7% this year and is increasingly consumed by recurring items. In 2020 the finance ministry earmarked 173bn rials for capital expenditure, 17% of total outlays. Actual spending was lower, an estimated 137bn rials, as projects were cancelled or postponed amid low oil prices and the pandemic. This year's budget allocates just 101bn rials (10% of expenditure) for capital spending.

Further investment comes from off-

MoFundMe

Saudi Arabia, % of GDP



balance-sheet sources such as the PIF, which says it will invest 150bn rials annually between 2021 and 2025 in everything from agriculture to aerospace. This sort of top-down development alarms some Saudi businessmen, who worry that the fund will crowd out the private sector.

For the crown prince, though, the PIF is not moving fast enough. He wants the fund to invest about \$800bn over the next decade—twice its current level of spending. His target also dwarfs the PIF's current assets, estimated at \$400bn. To raise more capital, Prince Muhammad said in January that the government could sell further tranches of Aramco stock and transfer the money to the PIF. Aramco's balance-sheet has seen better days, though: net income last year was \$49bn, which forced it to borrow to pay a \$75bn dividend (a payout it guaranteed during its initial public offering). The PIF could sell stakes in other firms to locals, meaning Saudi investors would finance it. In March it agreed to borrow \$15bn from foreign banks, the third time since 2018 it has taken on debt.

The PIF is not the only fund eyeing rapid growth. Mubadala, a sovereign-wealth fund of Abu Dhabi, one of the seven United Arab Emirates (UAE), went on a spending spree in 2020. It sank money into tech firms poised to profit during the pandemic and is now looking at fresh investments in America, hoping to capitalise on President Joe Biden's plan to spend \$2trn on infrastructure. But Mubadala has been more cautious about deploying capital at home. The UAE has only 1m citizens, and most of GDP and government revenue derive from things other than oil.

Prince Muhammad is gambling on a rapid transfer of wealth: money that has accumulated for generations in state coffers will flood the Saudi economy in a decade. The urgency is needed after decades of sluggish policymaking. But it is a risky bet. So much investment might help industries such as tourism and tech. But it might just as well empty the PIF's coffers simply to buy a herd of white elephants. ■

Transport in Egypt

Daily disasters

DUBAI

Why trains keep crashing

THE IMAGES are so familiar as to be almost mundane: a carriage flipped on its side like a child's toy; passengers scrambling to help survivors. On April 18th a train derailed near the Egyptian city of Toukh, north of Cairo, killing 11 people and injuring almost 100. It was the third serious accident in less than a month, including a collision between two trains that killed 19 people.

The official response was equally routine. Abdel-Fattah al-Sisi, the president, formed a committee and promised to compensate the victims. The conductor was detained. The transport minister, Kamel al-Wazir, a former army general, shuffled some top jobs at the railway authority. He did not sack himself, saying he would be a "traitor" if he quit his post.

Egyptians could be forgiven for cynicism. Their country has an appalling number of railway accidents. There were more than 2,000 in 2018, the most recent year for which data are available. Mr Wazir took charge in 2019, after a train slammed into a buffer at Cairo's main station and exploded.

Decades of underinvestment mean infrastructure is fraying. The average locomotive is 30 years old. Workers are poorly trained and overworked. Drug use is a problem, particularly of tramadol, a cheap opioid. In March the World Bank announced a \$440m loan to fix up the network, which should help—if spent wisely. But the national railway has a habit of steering dubious contracts to army-backed firms.



Sadly routine

► tom-up approach. It created a 52-member “high-level expert group” to develop its proposals, collected further input via an “AI alliance” of interested parties and published a white paper on which everybody could comment online (1,250 groups and individuals did so). The result is a document of more than 100 pages with 85 articles and no fewer than nine annexes that tries both to mitigate the potential harm of AI and to maximise its opportunities—almost to a fault, as the many exceptions and exceptions to exceptions show.

Rather than regulating all applications of AI, the EU’s rules are meant to focus on the riskiest ones. Some will be banned outright, including services that use “subliminal techniques” to manipulate people. Others, such as facial recognition and credit scoring, are considered “high-risk” and so subject to strict rules on transparency and data quality. As with GDPR, penalties for violations are stiff: up to €30m (\$36m) or 6% of global revenues, whichever is higher (in the case of a firm as big as Facebook, for example, that would come to more than \$5bn).

Even more than usual, however, the devil is in the details. Facial recognition for the purpose of law enforcement in public places, which raises the spectre of pervasive surveillance, is prohibited, but only if it is done in real time and barring any other “substantial public interest”, such as finding missing children. All high-risk AI services must be tested for legal conformity, but this can often be done by the provider itself. And EU member states are encouraged to create regulatory “sandboxes”, in which firms can try out novel services without fear of being hit by a penalty.

Unsurprisingly, many interested parties are unhappy. Human-rights advocates criticise mushy language and loopholes. “There’s a real question-mark over whether the regulatory framework is robust enough,” says Sarah Chander of European Digital Rights. In contrast, business groups complain about the regulatory burden. The law will “limit the areas in which AI can realistically be used”, warns Benjamin Mueller of the Centre for Data Innovation, a think-tank supported by tech firms.

Much will still change in a legislative process that will take years, perhaps even longer than the four years it took GDPR to get from proposal to adoption. But even if things move faster, the EU may have a harder time setting global rules, or at least strict ones, says Anu Bradford of Columbia Law School, who has written a book about the Brussels effect. In the case of some AI applications, such as algorithms that can be perfected without needing to be trained using massive inputs of data, providers may decide that offering special versions in Europe is worth their while. And having been rather surprised by the success of

GDPR, lobbyists will redouble their efforts to get their voices heard in Brussels.

Yet the fate of the “Artificial Intelligence Act” (AIA), as it could end up being called, may well be decided in America. If GDPR took the world by storm, it was partly because Congress not only failed to come up with any data-protection legislation of its own, but also did not bother to co-operate with lawmakers in Brussels. The new administration wants to do better, but so far the transatlantic rapprochement in AI and other things tech is off to a slow start. Only if both sides work together will they beat back China’s ambitions for tech supremacy and keep digital authoritarianism at bay. ■



Covid-19 and the Netherlands

Terraced grousing

AMSTERDAM

A pricey rapid-testing programme rings alarms

SIPPING A BEER on a pub terrace may be the Netherlands’ holiest rite of spring. But the country’s grim incidence of covid-19, currently far higher than in Germany or Italy, has kept its pubs shut. As the weather has warmed, cries of “open the terraces!” have sounded ever louder in Dutch politics, and this week the government gave in. From April 28th cafés may open outdoor seating (two people per table, maximum) between noon and 6pm. Meanwhile the state is eyeing a more permanent solution. It is funding pilot programmes to explore whether rapid testing of patrons can allow reopening of restaurants, museums, cultural events and the like.

The budget is huge: €1.1bn (\$1.3bn) through August, more than 0.1% of GDP. Of

that, €2.7m goes to experiments this spring with large-scale events such as theatre performances and football matches. But critics say these are so flawed that they may prove useless. Participants are asked to get follow-up tests and report the results, but only about four-fifths do, spoiling the results for epidemiologists. Oddly, the researchers say they are not even trying to study whether the events lead to more infections, but only whether participants follow social-distancing rules. Public documents do not specify the trials’ research questions, as would be expected for a scientific project. “It is completely unclear what they are going to study,” says Maarten van Smeden, an epidemiology professor at the University Medical Centre Utrecht.

Neither do they explain the risk model used to assess the danger of holding big events during a pandemic. The “lateral flow” rapid tests are less accurate than PCR ones. Studies show they miss about 10-15% of people with asymptomatic covid-19. In areas where the virus is rife, some will get through. This week the city of Breda cancelled one of the planned trial events, a music festival with 10,000 attendees, when it became clear that dozens of infectious people could be in the crowd.

Also worrisome is the way the programmes were organised. The initial lobbying came from VNO-NCW, the national business association. Rather than doing the rapid testing itself, the government contracted out the job to a type of public trust called a *stichting*. That trust, Stichting Open Nederland, which was set up in February, has no independent board of supervisors. It is not clear how much control the health ministry has over it.

Stichting Open Nederland granted a no-bid contract to a private company, Lead Healthcare, to set up testing infrastructure and provide the first month’s worth of kits. Experts argue that all this broke the rules. “If the government outsources a task, it has to do a public tender,” says Elisabetta Manunza of Utrecht University. Hugo de Jonge, the health minister, has admitted the procedure contravenes EU procurement law, but said it was necessary for the sake of speed. Yet urgent tenders can be executed in a few weeks.

The Netherlands has not handled the pandemic well. Its lockdowns have been hesitant and its vaccination programme slow to get started. The government’s decision to reopen *terrasses* (and to end a curfew in force since January) went against the advice of its own infectious-disease board, which is worried that hospitals are nearing capacity. For most Dutch, the priority is getting vaccinated. They see the government’s sloppy, expensive rapid-testing programme as evidence that it pays too much attention to placating interest groups and not enough to public health. ■

Charlemagne | The Draghi delusion

Too much is being expected of the Italian prime minister



ITALIAN POLITICS has a saviour complex. In the 16th century, Machiavelli despaired that “Italy remains without life and awaits the man...who is to heal her wounds.” In the modern era, redemption has taken peculiar forms. It once bore the appearance of Silvio Berlusconi, a cruise-ship-singer-turned-media-mogul who promised to upend politics and instead ended up repeatedly in court. A few years later came Matteo Renzi, a young reformer who over-promised, under-delivered and then imploded. Now salvation has appeared in the shape of Mario Draghi, a celebrated former president of the European Central Bank, who became prime minister in February. One Italian politician compared him to Christ.

Where once this saviour complex was an Italian affliction, the rise of Mr Draghi has turned it into a European one. A decision by Mr Draghi’s government to block vaccine exports by AstraZeneca was applauded as a muscular approach to a company that had defied the EU. When Ursula von der Leyen, the first female president of the European Commission, was banished to a sofa during a meeting with Recep Tayyip Erdogan, Mr Draghi labelled the Turkish president a “dictator”. Buyers of Italian bonds, a pernicky focus group, have sent yields on Italian debt tumbling. Diplomats rejoice at the arrival of someone in Rome with whom they can do business. Glowing portraits of Mr Draghi appear in the international press. A new saviour had arrived, this time for all of Europe.

Great expectations of Mr Draghi are understandable. They should, however, be tempered. At the ECB, he earned the nickname “Super Mario”. But running a central bank, even one as politically fraught as the ECB, is different from running a country. The ECB always had the powers required to fight the crisis; it just needed someone with the political nous to wield them. At the ECB, one can pull a lever and money comes out. In the Italian government, one can pull a lever and find it is connected to nothing at all.

Italy does have a louder voice on the European stage thanks to Mr Draghi. But this should not require a miracle. Italy is a founding member of the club, its third-most populous country and its third-biggest economy. Prior to Mr Draghi, it was not always treated as such. Power within the EU increasingly resides in the European Council, the regular summits of European leaders. In this format, Italy’s carousel of changing prime ministers becomes a

weakness. Those riding it were often underqualified. Giuseppe Conte, Mr Draghi’s predecessor, was an unknown lawyer before rising to the highest sphere of European politics. Mr Berlusconi was a tax-dodging clown with a penchant for sex parties. Compared with this, statesmanship is easy.

If Mr Draghi enjoys a higher profile on the European stage than his predecessors, it is because his fellow leaders have shrunk. After 16 years as the centre of EU politics, Angela Merkel is becoming a peripheral character as her retirement in September nears. Where Emmanuel Macron once saw the continent as his stage, domestic concerns increasingly trump European ones ahead of French elections next year. The current heads of the main European institutions, meanwhile, were chosen for convenience rather than talent. It is not hard to rule a void.

The market, too, has developed a saviour complex about Mr Draghi. Bluntly, Mr Draghi’s government can write cheques because it is he who leads it. Earlier this month, his government announced plans to add €40bn (2.4% of GDP) in stimulus, and bond yields barely budged. In contrast, when in 2018 an Italian government led by populists and the hard right proposed a budget with a total deficit of 2.4% of GDP, the markets threw a tantrum. But this privilege will not last. Mr Draghi will not be around for ever. His role is likely to be a temporary one (an election is due in the next two years). Reforming Italy is not a quick job. The litany of things that must be overhauled ranges from the courts to schools to endemic tax evasion. A comprehensive shift is impossible under Mr Draghi. All he can do is leave behind a blueprint for others. At that point, doubts about Italy will creep back into the system.

He who is highly esteemed is not easily conspired against

There is an optimistic and a pessimistic view about the Draghi effect. In the optimistic telling, a short spell in office can lead to long-term change. Mr Draghi’s government will lay out how Italy intends to spend its roughly €200bn share of the EU’s €750bn (\$895bn) recovery fund. This will act as a de luxe straitjacket for future governments, who will not be able to veer from Mr Draghi’s plans without the commission stopping the cash. Mr Draghi can leave behind a new fiscal blueprint for the EU as a whole, and perhaps keep an eye on things as Italy’s president. In Germany, a new government featuring the Greens would be one dedicated to looser spending rules and deeper European integration, two long-held aims of Mr Draghi. Meanwhile, Mr Macron, who is usually up for both, will still be France’s president, at least until elections in a year. It is a fortunate alignment.

In the pessimistic view, however, Mr Draghi offers only a respite rather than a redemption. That fellow EU leaders will only truly accept a technocratic Italian prime minister is an ugly precedent. Ultimately, well over half of Italian voters support parties, whether the Northern League, the even further-right Brothers of Italy or the left-populist Five Star Movement, that both markets and European leaders view as beyond the pale. Likewise, for those European countries that are attempting to block further financial integration, Mr Draghi is a win-win. If Mr Draghi succeeds, then steady government and deeper integration are possible only under a “Super Mario” figure, who are hard to come by in Italian politics. If, however, he fails, then further integration should be avoided, since even Mr Draghi could not fix Italy. Those “chosen by God for the redemption of Italy” were often instead “cast off by fortune”, as Machiavelli wrote. Those seeking salvation today may end up just as disappointed. ■



Commercial law

Ruling the world

Globalisation brings business to London's courts, and creates new competition

IN NUR-SULTAN, as the capital of Kazakhstan is now known, there is a small corner of England. The gleaming court of the Astana International Financial Centre, an investment zone opened in 2019, is led by a British chief executive, and served by nine British judges, who wear gold-and-black gowns trimmed with blue of the republic's flag. Their chief justice, Lord Mance, was the deputy president of the Supreme Court. They apply law closely modelled on that of England and Wales, and a streamlined version of London's procedural rules. Kazakhstan's judiciary is weak, but these judges' independence is guaranteed by the constitution. The court's electronic system for filing bundles is as whizzy as any in the world. "They want this to be seen as rooted in all the qualities of London, effectively transplanted there," says Andrew Spink QC, one of the judges.

English commercial law, like football, has been exported around the world. The game has been honed, and star players signed. Globalisation is both bringing more business to London, and creating new courts such as that in Nur-Sultan.

That means jobs for British lawyers, and new competition for London.

Britain has the second-largest legal market in the world after America, at £36.8bn (\$51bn) by fee revenue, encompassing top City firms to high-street solicitors. Commercial litigation—the business of representing companies who've fallen out in court—is possibly the most prestigious bit, attracting the biggest brains and often the fattest fees. Its home, the Rolls Building a mile west of the skyscrapers of Leadenhall Street, is a complex of 31 court rooms (some super-sized, others with translation booths) which before covid-19

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Read more from this week's Britain section:
Economist.com/Britain

moved cases online had the throng and aesthetic of a municipal airport. It is thriving. The number of commercial cases in London has more than doubled since 2015, to 292 in the year to April, according to an analysis published on April 22nd by Portland Communications, a consultancy. The number of barristers serving foreign clients has doubled in a decade too.

Commercial courts underpin globalisation, assuring investors their rights will be protected when they venture abroad. They are also functions of it, for parties are free to choose where to go should things go wrong. For traders in medieval Europe, that was Bruges and Antwerp. Today, it's often London. Take a Wednesday last month, when softly-spoken English barristers represented the Maltese owners of a ship damaged in Bangladesh, and those of the Panamanian vessel said to be to blame; the Danish tax authority, and the trader in Dubai it accuses of fraud; the Bank of St Petersburg, in a dispute with a Russian port boss; and a Cypriot property developer accused of swindling British pensioners.

London is attractive, for English judges don't take bribes, are seen as not favouring home litigants over foreigners and don't generally get leant upon by politicians. They are often specialists, which means judgments tend to dig more deeply than those elsewhere, says Derek Sweeting QC, chair of the Bar Council, the barristers' professional body, and the common law can "adapt and develop embryonically" to new kinds of business dispute. Formats have

► been tweaked to speed up big cases.

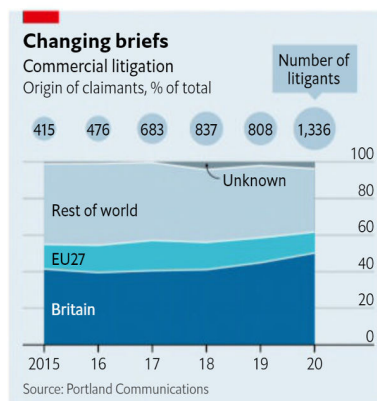
But that dominance is under pressure, from Brexit and tougher competition. The clientele in London is growing, but also becoming more domestic: Brits accounted for more than half of litigants last year, for the first time since Portland's survey began, while those from Europe and the rest of the world have fallen as a share, to 12% and 35% respectively (see chart). "Business decisions are being made, and contracts are being written, that don't as a muscle reflex include London as the default legal battleground," says Philip Hall, a partner.

British lawyers have lost the automatic right to practice in Europe, and migration will become harder. EU rules which govern where cases are heard and ensure judgments are recognised and enforced throughout the bloc have dropped away. Britain hoped to join the Lugano Convention, a treaty that would deliver a similar effect. The European Commission is opposed, arguing it is part of the plumbing of the single market that Britain has left. Brits detect an appetite to strip the branches.

The result will be fragmentation, as judgments become more costly to enforce. Lawyers expect some litigation will shift to Europe. (This year's bulge in cases may be due to a dash to meet the Brexit cut-off, some barristers think. Cases brought by covid-19 may be a factor, too.) Since the Brexit vote, English-speaking commercial courts have opened in Frankfurt, Hamburg, Paris and Amsterdam, and some academics want a single European court to rival London. It would be "ridiculous" if English judgments went unenforced, says Duco Oranje, a judge of the Netherlands Commercial Court. "We are not aiming at getting cases out of the teeth of the London commercial court, but strange things are happening," he says. Mr Sweeting says Britain's reputation for the rule of law, on which it trades, risks being tarnished by the government's fights with lawyers and threat to break the Brexit treaty.

Competition is growing elsewhere, with new courts emerging in the United Arab Emirates, China and Singapore since 2004. (Lord Mance also serves in Singapore, while Lord Thomas, the former Lord Chief Justice, is president of Qatar's commercial court.) Such courts generate new litigation, by fostering foreign investment, reckons Mr Spink (who is also a head of Outer Temple Chambers, a London set with outposts in Dubai and Abu Dhabi). But they can also draw work from their regions that would otherwise go to London, and nibble at its lead.

The judiciary's answer is to prepare for the next wave of globalisation. Sir Geoffrey Vos, the Master of the Rolls, occupies a post dating to 1286, but talks like a Silicon Valley evangelist. Video hearings pioneered during the pandemic should be kept, he ar-



gues, for they make London more accessible to far-flung claimants. He has drawn up guidance on how judges should apply English law to crypto-assets, such as bitcoin, and to self-executing "smart" contracts. How judges weigh liability for decisions made by AI systems is another thorny question, and if London answers it clearly, he argues, the litigants will come. Brexit will not cause London's legal work to dry up any more than it will the rest of the City's, nor will competition. The question is whether London can ride new tides. ■

Darktrace

Out of the shadows

Can Darktrace repair London's dented tech-listing hopes?

DELIVEROO'S FLOTATION in March did nothing to enhance London's prospects of becoming a tech-listing magnet. Shares in the meal-delivery startup are trading at two-fifths below their offer price. Now London's hopes hang on Darktrace, a cyber-security firm which this week confirmed its plan to list on the London Stock Exchange in early May.

Darktrace is expected to seek a valuation of around £3bn—modest, compared with Deliveroo's of £7.6bn. Software is a better business than food delivery, too, and Darktrace has powerful connections. Founded in 2013 by cyber specialists from GCHQ, Britain's signals-intelligence service, maths whizzes and sundry artificial intelligence (AI) experts, its advisers include Jonathan Evans, MI5's former chief.

From the beginning Darktrace took a different approach on cyber defence for companies. The long-accepted methodology has been to build a perimeter "wall" against attacks based on what has been learned from past attacks. But against so-

phisticated cybercrime today that kind of "point solution" defence is about as effective as hilltop Tuscan villages deploying stone walls against artillery, says Mike Lynch, who founded Autonomy, another software company. After selling it to America's Hewlett-Packard in 2011 for \$10.3bn, he created Invoke Capital, a venture-capital fund, whose first investment was in Darktrace. Some Invoke Capital executives moved to Darktrace, including its chief executive, Poppy Gustafsson.

Darktrace's machine-learning software assumes attacks have already penetrated, then finds and responds to the malware, ransomware and other nasties. It took time for security chiefs to accept it unearthing their systems' failures. In the early days, on occasion, Darktrace would set its software running inside a company, find malicious code and the company would show them the door, says Mr Lynch.

No longer. Darktrace has 4,700 customers spread between Britain, the rest of Europe, America and Canada and the rest of the world. With the industry expanding fast, the firm expects its revenues to grow by around 36% in the year to June. It reckons it should be able to sell to most of the world's medium to large companies, meaning a potential market of \$40bn.

Even with Darktrace's next-generation technology, there is a nagging doubt about bang for buck. Spending on cyber security increases every year but the attacks keep succeeding. Darktrace and other firms are whizzes at talking up their products. But customers may eventually ditch their software if there is more hype than efficacy.

Darktrace spent a whopping 82% of revenue on sales and marketing last year, and 6% on research and development. Its cybersecurity capability is very good but not transformational, according to a veteran of the field. Thus, Darktrace's language about its revolutionary "cyber AI" is "questionable," he adds. Investors will watch to see if the firm's clients, who typically sign up for a few years, stay put. At present the vast majority of them do, according to the firm's figures.

Institutions will also consider risks associated with Darktrace's ties to Mr Lynch, whose sale of Autonomy later kicked off Britain's biggest-ever fraud case. He is currently fighting extradition to America. HP is claiming \$5.1bn, a sum that derives its size from the sheer scale of the American firm's overpayment for Autonomy. HP alleges that Mr Lynch inflated revenues through improper accounting. Mr Lynch says the charges are baseless and that HP mismanaged Autonomy. If he is obliged in future to sell down his sizeable shareholding in Darktrace, that could depress the share price. But techies and investors may also be thanking him for backing not just one but two British tech unicorns. ■

Bagehot | Football Tories

What the fracas about a European Super League reveals about today's Conservative Party



IF ONLY BORIS JOHNSON had been as quick to respond to the threat of covid-19 as he was to react to the threat of a new football super league. No sooner had six British clubs announced their plan to form a breakaway league with top European clubs than the government swung into action. Mr Johnson arranged a summit in Downing Street to discuss ways of scuppering the scheme. Angry Tory MPs suggested possible punishments for miscreants: a wind-fall tax on the breakaway clubs, fewer work permits to prevent the signing of players from abroad, unleashing competition law, withdrawing police support from matches and introducing a German-style ownership structure whereby fans own a controlling 51% of the clubs.

The Super League, a soufflé of arrogance and greed, quickly collapsed under sustained assault from government and fans. Ed Woodward, the Manchester United executive widely thought to be at the heart of the scheme, resigned. But despite its speedy demise the fracas reveals something significant about the Conservative Party's changing attitudes to business, markets and globalisation.

In the Thatcher era the Conservatives acted as cheerleaders to the money-fuelled transformation of a game that had become synonymous with dilapidated stands and hooliganism. The most famous teams such as Liverpool and Manchester United became global brands with a rising number of foreign players and fans. Foreign billionaires bought storied clubs despite having no roots in the cities that gave birth to them. Millionaire players and their wives and girlfriends set the era's vulgar tone. The rickety old stadiums were replaced by American-style arenas but the skyrocketing cost of tickets priced poorer fans out of the game.

Mr Johnson approved of this transformation as recently as 2005 when he pronounced that allowing the sale of Manchester United to the Glazer brothers, American sports entrepreneurs, was "basic Conservative philosophy". But this week he played a very different tune, reprimanding the "billionaire club owners" for dislocating football from its host communities. In an article in the *Sun*—a newspaper owned by Rupert Murdoch, who did as much as anybody to drive the commercialisation of the game, and once tried to buy Manchester United—he told fans: "It is your game, and you can rest assured that I'm going to do everything I can to give

this ludicrous plan a straight red."

Mr Johnson's thumbs-down reveals a profound change in the Conservative Party: the return of the business-scepticism that Edward Heath expressed when he decried "the unacceptable face of capitalism". Mr Johnson has long since sloughed off his Thatcherism and now supports a more strategic approach to business, sometimes befriending business people—particularly supporters of Brexit like Sir James Dyson—but sometimes showing them the cold shoulder. He supports an ambitious programme of state intervention to "level up" the country and name-checks Michael Heseltine, Thatcher's most formidable critic, as one of his heroes, citing, in particular, his regeneration of Liverpool. Carrie Symonds, his girlfriend, is a fan of all things green, even if that means sacrificing growth. A new generation of northern Tory MPs constantly speaks up in Parliament on the plight of small-town Britain. Danny Kruger, a former adviser to Mr Johnson, made a memorable maiden speech in which he argued that "social infrastructure" should be treated as seriously as "economic infrastructure".

It is tempting to blame this shift on Brexit. The business establishment campaigned to stay in the European Union, and Tory Brexiteers discovered the pleasures of business-bashing, memorably encapsulated in Mr Johnson's succinct "fuck business". The 2017 Tory manifesto rejected "untrammelled free markets" and the "cult of selfish individualism", lauding instead the "institutions that bind us together" and "the good that government can do". But in truth the shift had begun well before the referendum. A growing number of Tories worried that Margaret Thatcher had tried to produce a country in the image of her father, a hard-working shop-keeper, and had instead produced one in the image of her son, a low-achieving spiv. Some were ashamed of the impact on Britain's traditional working class which, according to Ferdinand Mount, who ran Thatcher's Policy Unit, was "subjected to a sustained programme of social contempt and institutional erosion".

The Conservative Party has always had a powerful communitarian tradition. Obscured by Thatcher (who was in many ways a Manchester School liberal rather than a Tory), it is thriving once again. Edmund Burke lamented that "the age of chivalry" was gone and that of "sophists, economists and calculators" had arisen. Benjamin Disraeli attacked Robert Peel's decision to repeal the Corn Laws on the grounds that it would dissolve the feudal ties that kept Britain together. The ensuing split consigned the party to two decades in the wilderness. Stanley Baldwin dressed as a tweedy squire and denounced "hard-faced men who look as if they had done very well out of the war". Harold Macmillan, the son of a publisher who married a daughter of the Duke of Devonshire, preferred the feudal nexus to the cash nexus. John Major, in his faltering attempt to break with his predecessor, summoned up images of long shadows on country cricket grounds and old maids bicycling to Holy Communion through the morning mist.

Today's Tory communitarians are different from their predecessors. They focus on post-industrial towns rather than mist-enveloped villages. They treat the working class rather than the landed aristocracy as the embodiment of community spirit. They are football Tories rather than cricket Tories. But they use the same weapons: an appeal to "one nation", suspicion of the global market, nostalgia for the world before money-grubbing tore society apart, and an ability to run hot and cold on business, sometimes praising and sometimes savaging it. The football tycoons to whom Mr Johnson has given the boot will not be the last capitalists to feel the power of this new form of populist communitarianism. ■



Women in war

Officers and gentlewomen

Female soldiers are changing how armed forces work

RACHEL GRIMES served three tours of Northern Ireland as an officer in the British army. Her colleagues in the Royal Ulster Constabulary, the region's erstwhile police force, noticed that things were different when she—the only woman present—joined police and army patrols. The team's behaviour changed. Fellow soldiers behaved with more restraint. At checkpoints, locals stopped to talk for longer. She did not notice these things at the time.

Her epiphany came years later, when she deployed as a gender adviser to United Nations forces in the Democratic Republic of Congo (DRC). She recalls seeing women and children gathered on the edge of a village—victims of rape cast out by their communities. “The last thing a Congolese woman wants to see is a man in uniform,” she recalls, unsurprisingly, in a place where soldiers commit a lot of rape. “But a woman in uniform is different.” At one

meeting with women in Eringeti, on the edge of Virunga National Park, the information they shared about when and where attacks might occur was far more useful than other intelligence gleaned by the UN.

Between 1957 and 1989 only 20 women ever served as UN peacekeepers, anywhere. But the number of female soldiers has been growing of late. Women now make up a fifth of officers in the US Army, for example. In 16 countries, including Britain and France, as well as America, they are allowed to serve in combat roles once reserved for men. The growth has prompted new thinking about what female soldiers can bring to soldiering. It is also forcing commanders to confront the impact war has on women more generally. But progress is not always as fast as it should be, and without more radical change, some ideas about what women soldiers can achieve seem overblown.

In many respects, the UN has played a leading role in championing female soldiers. It has pledged to increase the share of women in military forces from 1% in 1993 to 15% by 2028, and to 20% in police units (see chart). “This is not just a question of numbers,” claimed Antonio Guterres, the UN's secretary general, in 2019, “but also of our effectiveness in fulfilling our mandates.” Among the pioneers were 103 Indian women sent to Liberia in 2007 as the first all-female police unit. Subsequently, all-female police units from Bangladesh were deployed to Haiti and Congo.

Such ideas are spreading more widely. Canada's chief of defence staff, the country's most senior officer, has a gender adviser. So too do the chiefs of Canada's army, navy and air force. NATO, where Lieutenant-Colonel Grimes now works, has also made the issue a priority. General Curtis Scaparrotti, who was NATO's top commander until 2019, points to America's use of all-female units, or Female Engagement Teams, in Iraq, where they were called Lioness teams, and later in Afghanistan. “Women had a great deal of influence in those families and societies,” he recalls. Yet conservative norms and cultural taboos often prevented male troops from interacting with them.

In modern wars, soldiers do more than ►►

▶ just inflict violence on enemies. They also build trust and gather intelligence. And when predominantly male forces interact with women, too often it goes badly. In 2011 the US Army conducted a study to ask why so many Afghan soldiers had attempted to murder their Western colleagues. One recurrent complaint was Western troops “violating female privacy during searches”, particularly on night raids. “They take photos of women even when we tell them not to,” complained an Afghan soldier. Female American soldiers, noted the study, “were viewed as having better attitudes and being more respectful and respected.”

Women often find that they can navigate the battlefield in unique ways. “Being a female soldier means that you’re almost like a third gender,” says Captain Lizzy Millwater, a British officer who advises the UN mission in Mali. “You can engage the male population on patrol, but you are also then able to engage with the women and children without being seen as a threat.” Western armed forces were not the only ones who have learnt this lesson. Jacqueline O’Neill, Canada’s ambassador for women, peace and security, notes that most suicide-bombers for Boko Haram, a Nigerian jihadist group, are women. “They know women can have more access in markets, and are less likely to be searched at checkpoints,” she says.

Yet many armies have been slow to make use of this experience. “We do a fairly good job at promoting this in other places, like Africa and Latin America,” says Joan Johnson-Freese, a professor at the US Naval War College in Rhode Island. “But in the United States it is entirely possible to graduate from a professional military education institution and never hear of it.” She points out that the \$4m allocated by the Trump administration for women, peace and security issues in the 2018-19 defence budget—the first time it had received any money at all—was dwarfed by the sums spent on Viagra and other erectile-dysfunction medicine by the Pentagon, some

\$84m in 2014.

On International Women’s Day on March 8th the UN published videos of female peacekeepers in action, challenging viewers’ possible prejudices with banners asking “Think we play a supporting role?” and “Think we’re bystanders?”. But in practice, they often are. Studies of UN missions have shown that female peacekeepers are more likely to be sent on missions later in a conflict, when fewer bullets are flying. They are particularly underrepresented in conflicts where pre-existing rates of sexual violence are higher. When they are deployed, they are often kept on base and away from the front lines more than men.

Sabrina Karim of Cornell University has found that women are held back because commanders still feel the need to protect them from danger, even if that prevents them from doing their job. The assumption that the loss of a woman in battle would cause uproar in the media is part of that calculation. “They are time and again barred from making meaningful contributions to the places where they are needed most,” says Dr Karim.

Ma’am yes ma’am

Pushing for more female peacekeepers without dealing with the things that stop them from doing their jobs well carries risks both to the women and to the mission, says Gretchen Baldwin from the International Peace Institute, a think-tank in New York. If they are seen to be there only to fill quotas, the men with whom they are deployed will continue to treat them as mere tokens, not fit to engage in combat.

If, in their haste, countries send women who are ill-prepared, that could make matters even worse. In the early days of all-female units in Afghanistan, for instance, many female troops were in effect ordered to serve in such units regardless of their interest in doing so. “This resulted in [all-female units] that lacked motivation and members with little or no formal training,” noted a US Army study in 2014, “both of which can have serious consequences for mission success and personnel security.” Georgina Holmes of King’s College London found that female peacekeepers from Rwanda sent to Darfur said afterwards that they had been overwhelmed and had not received enough training to deal with the many victims of sexual violence they encountered. Military trainers in Rwanda told Dr Holmes that they thought female peacekeepers inherently possessed the skills required to support victims.

Ms Baldwin also points to the hypocrisy of military leaders’ refusal to deploy women to “dangerous areas”—for which they are well trained—while not considering the risk of harassment and worse they face from fellow soldiers. “It’s not at all uncommon for women to say they feel far less safe

Sisters in arms

Female participation in UN peace operations, %



on base with colleagues than when they are on patrol,” she says. Unsurprisingly, then, progress in meeting the UN’s own target for women peacekeepers has been slow. Today the count for female peacekeeping troops stands just above 5%, though the UN has said it is “advocating consistently” for troop-contributing countries to speed up.

The UN is trying to get to grips with these problems. Peacekeepers are getting more training on gender issues. Pre-deployment training now includes a module on preventing sexual exploitation by UN personnel and a module on preventing and responding to sexual violence suffered by civilians. As part of the Elsie Initiative, a Canadian-backed project, UN officials are redesigning camp layouts to have better facilities for women. Separately, some women with young children are being offered the option of shorter deployments.

Women are also being deployed in new, more effective ways. The UN peacekeeping mission in Congo has 15 female engagement teams, each with 10-15 female soldiers commanded by one or two officers. But when Moroccan peacekeepers in that country went out in all-female patrols, they were not taken seriously until they deployed alongside men, says Major Helen Bryan, the British gender adviser to the mission. “The Congolese men are less accepting of female teams. If it’s a mixed team, they can see that the ladies are doing exactly the same jobs as men—they’re not just doing ladies’ things.”

Yet some of the claims made for the special benefits of having female peacekeepers are a little implausible. The UN, for example, does not just argue that women will be more sensitive in dealing with other women. It also argues that female peacekeepers are “critical” for “empowering women in the host country”—that their mere presence helps to promote the idea that a woman can aspire to do any job. In Liberia, for example, the example of India’s female police contingent and other all-female units has been credited with increas-

We happy few

Number of personnel in UN peace operations
February 2021, '000



ing the share of girls going to school, and even with inspiring local women to join the national police force. Such claims, naturally, are extremely difficult to prove.

The presence of women soldiers can only go so far. In Beni, a city in eastern Congo, on April 8th local police fired live rounds into a crowd of people who were protesting against the peacekeepers' failure to do anything to prevent massacres that have afflicted the city since 2014. There and elsewhere, peacekeeping missions are often criticised for failing to protect civilians when it would put peacekeepers' lives at risk, or upset host governments. For all the talk of female peacekeepers paving the way for better relations with the locals, limits persist.

By the same token, having women in uniform does not prevent the men in uniform from behaving badly. In recent years UN peacekeepers in Congo, Haiti and Liberia have been accused of rape and other forms of sexual abuse. The UN set up a unit to assess soldiers' conduct only in 2005; not until 2015, under pressure from the American government, did it begin revealing which countries' troops had been accused of abuse. Mr Guterres claims that the presence of more female soldiers may lead to more reporting of sexual violence by peacekeepers. But in reality it seems that women find it as hard as men to report on their fellow peacekeepers.

The debate over female peacekeepers reflects wider issues with the role of women in national armed forces. On the surface, women are more accepted than ever, even in combat roles. A poll of American troops and veterans in January 2019 found that 70% approved of women serving in combat roles; 30% disapproved. But in reality, many remain sceptical. One European officer recalls male colleagues expressing widespread distrust of efforts to up the number of female peacekeepers: "The sense was that women should not serve in patrol, so why should they be deployed? And if 15 women go, then 15 men don't get their medals."

Efforts to bring change can often become hostage to wider culture wars. Last autumn, for instance, the Pentagon delayed the promotion of two female generals for fear that Donald Trump would veto it. In March, shortly after their promotion was secured under Joe Biden, Tucker Carlson, a host on Fox News, mocked the idea that "pregnant women are going to fight our wars...It's a mockery of the US military." China's army, he said, was "more masculine". He was rebuked by the Pentagon, but many viewers agreed with him.

Some armed forces are doing better. NATO's training scenarios now test soldiers with gender "injects"—checking they do not overlook a civilian woman who may have critical information, for example.

One country that has done especially well is Canada. The same US Army study which pointed to American troops' missteps with Afghan women noted that Canadian troops "were often said to be more respectful and respected". That may have reflected a broader military culture in which gender issues have been taken seriously.

For over a decade Canada's government has used a method with the ungainly name "gender-based analysis plus". It requires assessing how any policy or initiative—whether directed at troops on the ground or civilians at home—would affect men and women differently. It has led to a number of changes, says Lisa Vandehei, who leads a "director of gender equality and intersectional analysis" in Canada's department of defence.

Land, air and she

Canada's navy, for instance, recently redesigned its working uniform to ensure it would not only fit women better, but could also be tailored to provide modesty for those who wanted it. The air force is looking at how to modify ejection seats on training aircraft to lower the minimum body weight required for safe use. And other aircraft are now being designed with female anthropometry in mind. Even obscure bits of military kit are not spared scrutiny. Ms Vandehei points out that even chemical-weapon detectors, configured for heavier male bodies, are being examined to see if the threshold at which they activate needs to change.

One problem is that gender is not a routine part of military education for the next generation of commanders. Since 2018 Britain's defence academy has run a twice-yearly course for "human security" advisers, which has trained 130 British staff and

30 foreign ones, but it tends to attract those already interested in the topic. At the Naval War College, Professor Johnson-Freese says that, after six years of effort, she succeeded in including a single text on women, peace and security on the syllabus for the first time this year. None of the other war colleges—for the army, air force and marines—includes the subject in compulsory classes at all. "It is fundamental to military operations but still people feel it is part of diversity and inclusion or a niche subject," says Lieutenant-Colonel Grimes.

Changing the ethos of conservative and male-dominated institutions, as armed forces tend to be, is not easy. Kristin Lund, who has served as head of the United Nations Truce Supervision Organisation and commander of its mission in Cyprus, has pointed to a culture where "posters with half-naked women" hang in mission gyms as a key reason why armed forces struggle to retain women. "How many women do gym in bikinis?" she asked in a speech in 2019, noting dryly that, under her command in Cyprus, posters of scantily clothed women "vanished."

As the number of female soldiers rises, more countries will have to tackle this sort of institutional sexism. Modern armies no longer rely on physical brawn alone; they require troops savvy with technology and capable of navigating complex battlefields. They need to change so that women can serve on equal terms. As Ms O'Neill, the Canadian ambassador, says: "We never want to lose sight of the fact that women shouldn't have to prove their added value to militaries... The vast majority of women just want to do the job." After all, as she points out, "when was the last time we had a public event on the value-added of men in a military organisation?" ■



Take cover



The sports business

They think it's all over

The world's biggest football clubs attempt to revolutionise the sport, but trip over their own bootlaces

THEY PROMISED to “deliver excitement and drama never before seen in football”, and for a few short days they succeeded—just not in the way they had hoped. On April 18th a dozen of Europe's top football clubs announced plans to disrupt the game with a breakaway “Super League”. Investors cheered. But fans revolted, broadcasters turned up their noses and governments vowed to block the plan. Within 48 hours half of its founding members dropped out. It was soon declared dead.

What began as a daring bid to seize control of elite football now looks like a damaging own goal. The Super League promised its members financial security and sporting prestige. Instead the “dirty dozen” rebels have been forced to grovel to supporters and in some cases jettison their bosses. Their bargaining power over rival teams and league organisers has been weakened. They may face tighter regulation by governments responding to furious fans.

The plan was for 20 clubs to compete in a Europe-wide league, kicking off in Au-

gust. Fifteen “founding” clubs would be guaranteed a spot every year, with the remaining five places awarded competitively. The 12 clubs that broke cover comprised England's “Big Six” (Arsenal, Chelsea, Liverpool, Manchester City, Manchester United and Tottenham), plus three from Spain (Barcelona, Atlético Madrid and Real Madrid) and three from Italy (AC Milan, Inter Milan and Juventus, whose part-owner, Exor, also owns a stake in *The Economist's* parent company). JPMorgan Chase was to stump up €3.3bn (\$4bn) of financing to get the league off the ground. An equivalent women's competition was planned.

The venture's stated aim was to give the world's best clubs more chances to play each other than Europe's main existing club competition, the Champions League. Barcelona and Bayern Munich have faced each other fewer than a dozen times in their history. Big clashes would bring in more viewers and more money: the Super League's organisers had hoped that broadcasting rights might generate €4bn a year, nearly double the €2.4bn brought in by the

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Champions League in the 2018-19 season.

Automatic qualification looked even more appealing. Unlike American teams, European sides play in open leagues, where poor performers get demoted to a lower tier, with stingier broadcasting and sponsorship deals. Club owners thus gamble on making it to the top, investing generously at the expense of profits. In closed contests like America's National Football League (no relation to what Americans insist on calling soccer), clubs face no risk of relegation and so co-operate more. “Draft” systems allocate talent more equally and wages are often capped—something that the Super League hinted it might do, via an agreed “spending framework”. Clubs in closed leagues must worry only about economic competition from rival leagues, which require more upfront investment to start than an individual club.

The combination of less risk and less competition for talent produces higher profits for owners. Forty-three of the world's 50 most valuable sports teams are American, according to a ranking last year by *Forbes* magazine. By contrast, European sport is a dicey business: between 1992 and 2014 there were 45 insolvencies in the top three tiers of English football, 40 in France and 30 in Germany. “Football is essentially insolvent,” notes Stefan Szymanski, a sports economist at the University of Michigan. Without their deep-pocketed owners, most clubs would not be going concerns. The American owners of teams ►►

► such as Manchester United and Liverpool look at the European system and wonder, “Why this insecurity?” says François Godard of Enders Analysis, a research firm. That explains why investors liked the Super League. United’s share price rose by as much as 10% the day after it was announced and that of Juventus by 19%.

Fans saw it differently. “Created by the poor, stolen by the rich”, read one of the banners displayed outside Manchester United’s ground. A poll by YouGov found that 79% of British football fans opposed the Super League, 68% of them “strongly”; opposition was fiercer still among fans of clubs outside the “Big Six”. Sensing the mood, broadcasters including Sky and Amazon hurried to distance themselves from the league. Boris Johnson, Britain’s prime minister, vowed to “do everything I can to give this ludicrous plan a straight red”. All six British teams pulled out on April 20th, followed by Atlético Madrid and the two Milanese teams. At that point the league’s organisers pronounced it dead.

Some of the clubs involved are thought to have seen the idea as, at worst, a bargaining chip to negotiate better terms with their existing league. The top clubs have long argued that, as the main attraction, they deserve a bigger slice of revenues and a bigger say in how leagues are run. Breaking away has always been used as a threat—and has often worked. In 1998, the last time the idea of an elite European competition was raised, Europe’s football association responded by enlarging the Champions League, as the big teams had requested.

The Super League’s implosion shows the threat was empty, says a director of another top-flight Premier League club. The debacle presents “an opportunity for the wider community to drive a harder bargain”, he says. A new round of Premier League broadcasting rights is to be auctioned soon. The Big Six are in a weaker position than before to negotiate their cut.

Another threat comes in the form of regulation. Britain’s sports minister, Oliver Dowden, promised to “put everything on the table” to stop the new league, from competition law to governance reform. On April 19th the government launched a wide-ranging review into how football is run. British fans have noted that no German club joined the rebels, which they attribute to Germany’s community-ownership model (though ownership by fans did not dissuade Barcelona and Real Madrid from joining). The French, Spanish and Italian leagues, which are in poorer financial health than England’s, will be watching the outcome closely. “Owners should remember that they are only temporary custodians of their clubs; they forget fans at their peril,” Mr Dowden declared. Spectators who enjoy a sporting upset could be in for an exciting season. ■



The energy transition

The gaseous mega-bet

NEW YORK

Is natural gas a bridge to a greener future, or a trap?

ENERGY COMPANIES have no seat at the climate high table convened by President Joe Biden on April 22nd and 23rd, to which he has invited 40 other world leaders to discuss how to speed up the shift from dirty energy. From the sidelines, coal firms will scowl at efforts to curb demand in Asia and oil drillers will wince at support for electric cars. Watching particularly closely will be those companies which have bet big on natural gas. As the energy transition gathers momentum, no fuel’s future is hazier than that of the least grubby hydrocarbon.

Proponents see gas as the “bridge fuel” to a greener world. They include the five largest international oil firms: Exxon-Mobil, Chevron, Royal Dutch Shell, Total and BP. These supermajors saw gas rise from 39% of their combined hydrocarbon output in 2007 to 44% in 2019 (see chart 1 on next page). That year producers approved a record level of liquefied natural gas (LNG) capacity. Those projects will come online in a few years. Shell, which in 2016 paid \$53bn for BG, a British gas group, now says its oil production peaked in 2019, but that it will expand its gas business with annual investments of about \$4bn. Total expects its crude output to sink over the next decade, but for gas to rise from 40% to 50% of sales. In February Qatar Petroleum, a state-owned giant, said it would begin the largest LNG project in history.

Yet debate is intensifying over whether gas will be a bridge or a dead end. Mr Biden

and his counterparts elsewhere appear to be serious about achieving net-zero emissions by 2050. That would require accelerating the phase-out of all fossil fuels, gas included, unless paired with technology to capture and store emissions. Inexpensive wind and solar power already threaten gas-fired electricity, particularly in America and Europe. Even as demand looks uncertain, cheap gas from state-owned firms such as Qatar’s will add to global supply. Some companies’ bets will go bad.

On the demand side, gas remains a sensible gamble in some ways. A gas-fired power plant belches about half the emissions of a coal-fired one per unit of energy. The fuel benefits from diverse sources of demand, too. In addition to producing electricity, gas is used to make fertiliser and generate heat for buildings and industry. Unlike exhaust from a car, emissions from a factory can theoretically be captured and stored below ground. Gas can also be used to generate hydrogen, which may in turn serve as a form of long-term energy storage.

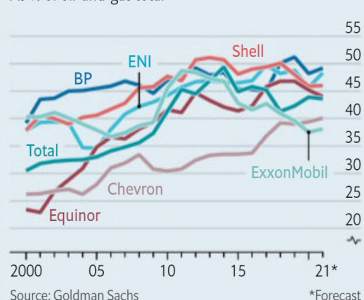
However, companies’ investments have not always gone as planned. A rush for gas between 2008 and 2014 was part of a broader stampede by energy giants, as higher energy prices spurred investments with little regard for costs, explains Michele Della Vigna of Goldman Sachs, an investment bank. In 2019 Chevron said it would write down as much as \$1bn, largely owing to underperforming shale-gas assets in Appalachia. Gas comprised the bulk of the \$15bn-22bn of impairments announced by Shell last June. In November ExxonMobil said it would write down the value of its gas portfolio by \$17bn-20bn, its biggest impairment ever. Its \$41bn purchase in 2010 of XTO Energy, a shale-gas company, may be the worst-timed investment made by an oil major in the past 20 years.

Two big questions now hang over future demand, each difficult to answer with any certainty. The first is how fast governments limit carbon emissions. The extraction, liquefaction and transport of gas produce their own emissions, on top of those from its eventual combustion. Gas production also releases methane, a greenhouse gas that is about 80 times more potent than carbon dioxide over a 20-year period. Adding methane leaks from fracking or pipelines, the Natural Resources Defence Council, an environmental group, calculates that American LNG exports in the next decade may produce greenhouse gases equivalent to the annual emissions of about 45m new cars—not counting burning the stuff for energy.

Responding to climate concerns, the Netherlands and some Californian cities have banned gas in new buildings. Britain will do so from 2025. “To put it mildly,” Werner Hoyer, president of the European

Compressed

Oil majors, natural-gas production
As % of oil-and-gas total



Source: Goldman Sachs

*Forecast

Investment Bank, declared in January, “gas is over.” John Kerry, Mr Biden’s climate envoy, warned in January that natural-gas assets risked becoming stranded. The International Energy Agency, an inter-governmental group, reckons that demand growth will slow to about 1.2% a year until 2040, from an average of 2.2% in 2010-19. If governments move more aggressively to restrain temperatures, demand could be lower in 2040 than it was in 2019 (see chart 2). BP offers a more bearish scenario: if the world were to reach net-zero emissions by 2050, gas demand would peak within the next few years and nearly halve by mid-century. “For the business to survive,” argues Massimo Di Odoardo of Wood Mackenzie, an energy consultancy, “it’s not just about marketing gas. It’s about marketing gas and managing emissions.”

The second question with respect to demand is how quickly rival technologies advance. Already, about two-thirds of the world’s population lives in places where power from new wind and solar farms is cheaper than from new gas plants, according to BloombergNEF, a data provider. Electric heat pumps threaten gas in buildings. In future, gas with carbon capture and storage (CCS) may prove pricier than hydrogen generated by renewable electricity. Mr Biden’s proposed \$2trn infrastructure bill in-

cludes support for CCS, but also for things that may challenge gas’s role in industry, power and heating. The European Union aspires to make its members leaders in hydrogen, hoping it could one day replace gas in many applications while using existing pipelines and other infrastructure.

Then there is the matter of supply. Maarten Wetselaar, Shell’s gas chief, says the industry used to expect the market to be undersupplied and the price set by the marginal buyer. Instead, the world has plenty of gas courtesy of American shale, he notes. On top of that, private firms must compete with state ones in Qatar and Russia, which can extract gas cheaply and have a political imperative to monetise reserves while they can. Qatar’s new project will raise its LNG capacity by 40% by 2026. And a growing spot market and shaky demand have made LNG buyers less interested in traditional long-term contracts. At least a quarter of LNG supply is now uncontracted, estimates Mr Di Odoardo. As approved projects come online, the share of uncontracted LNG may exceed 50% by 2030.

All this is prompting some in the industry to rethink their embrace of gas. Last July Dominion Energy, an American utility, cancelled plans for a controversial pipeline and sold its entire pipeline business to Berkshire Hathaway, a huge conglomerate, for \$9.7bn. In November Engie, a French energy company, scrapped plans to sign an LNG contract with NextDecade, an American firm, over concerns about shale emissions. Other firms are trying to adapt to a gas business that looks set to grow both more competitive and more complex.

Big players are now applying a higher cost of capital to their hydrocarbon investments, with a greater focus on profitability, notes Mr Della Vigna. Scale is turning to their advantage, too.

Shell’s share of gas production actually fell in recent years, as it sold off less profitable gas assets in America and Nigeria. Mr Wetselaar maintains that Shell is well positioned to deal with the market’s new realities. Unlike smaller players, which depend on long-term supply contracts to attract financing for new projects, Shell can use its balance-sheet. Trading capabilities make it easier to sell LNG to diverse buyers. For those who want zero-emissions energy, Shell has already sold ten “carbon neutral” LNG cargoes, paired with offsets. Total plans to double its LNG sales over the coming decade, while touting its plans to reduce methane emissions. ExxonMobil reckons that its new investments in CCS will both limit emissions and support its traditional business.

Such plans are unlikely to sway those who want investment in all fossil fuels to plunge. Companies’ plans can be disrupted by any number of forces—in March an attack in Mozambique prompted Total to

suspend a giant LNG project there. The changing market means only the safest, most profitable projects backed by the strongest firms are likely to move forward.

NextDecade, having failed to secure Engie as a client, has delayed a final investment decision on a proposed facility in Texas and scrapped another. It had sought to build an LNG import terminal in Ireland but in January Irish officials let a preliminary agreement with NextDecade expire. Gas may not quite be over. But the industry could soon be defined not by the projects that advance but those that don’t. ■

Business software

The robots are coming

SAN FRANCISCO

A Romanian startup is Europe’s most successful tech export since Spotify

THE PANDEMIC will fade, but its effects will linger. With workers confined to their homes, many of the processes they would once have carried out in the office had to be automated. This has given a boost to “robotic process automation” (RPA), a tautological label for software that does this. Having got a taste of RPA, managers want more. This desire helps explain how UiPath, an obscure software firm from Romania, managed on April 20th to raise \$1.3bn in an initial public offering (IPO) on the New York Stock Exchange. This valued it at around \$30bn, higher than what Spotify, the hit Swedish music-streaming service, fetched when it listed in 2018.

All corporate information technology (IT) is about automation. But often a company’s various systems do not talk to each other. Information from invoices or from software that lacks an export function has to be copied by hand. Advances in artificial intelligence, specifically computer-vision algorithms that can scan documents and scrape computer screens, have enabled UiPath and its competitors, such as Automation Anywhere and Blue Prism, to do away with this tedium.

Narrowly defined, the RPA market is small, with sales of no more than \$3bn last year, estimates Saikat Ray of Gartner, a research firm. So UiPath and its rivals have built “automation platforms”, which include programs to identify tasks and others to perform them. By automating ever more processes, such tools create their own demand. In this broader view, sometimes called “hyperautomation”, RPA could generate \$30bn a year in the next three to five years, says Mr Ray. Bain, a consultancy, puts the figure at \$65bn.

Whether you define the market broadly ►►

Fluid dynamics

Worldwide natural-gas demand, trn cubic metres



Source: International Energy Agency

*Limits the rise in global temperatures to 1.65°C, with a 50% probability

or narrowly, UiPath is estimated to have nearly a third of it. Like Daniel Ek of Spotify, Daniel Dines, who founded UiPath in 2005 and relaunched it in 2012 as an RPA vendor, knew that to succeed he had to think beyond his small home market and even Europe. Before the pandemic UiPath invested heavily in global distribution. Covid-19 then came at just the right time. Revenues nearly doubled to \$600m, bringing the firm close to profitability.

Keeping its lead will not be easy. The giants of corporate IT, including Microsoft (where Mr Dines cut his teeth) and SAP, are

pushing into process automation. They have deep relationships with many firms, can offer bundles of business software and sell their RPA wares cheaply or give them away for nothing. UiPath does not have a moat to protect it against this onslaught, says Zane Chrane of Bernstein, a broker. Its first-day share-price pop of 20% merely brought it back in line with the valuation in a private funding round in February—modest by recent tech-IPO standards. Still, Mr Chrane thinks the market is big enough for many vendors. Plenty of customers may prefer UiPath's specialised products to

less cutting-edge RPA add-ons in a bundle.

The Romanian firm has already succeeded in one respect: offering more proof that Silicon Valley is losing its monopoly on brilliant startups, says Rich Wong of Accel, a venture-capital firm (who sits on UiPath's board). Besides pushing companies to embrace automation, covid-19 has pushed venture capitalists to embrace Zoom pitch meetings—and clever ideas outside the range of their Teslas. A decade ago three-quarters of early-stage venture deals by value occurred in America. Last year the same share happened outside it. ■

Bartleby The new office etiquette

The pandemic requires some changes in workplace customs

AS THE VACCINATION programme in most countries accelerates, people will be thinking about going back to the office, if only for a couple of days a week. Many workers will have got out of the habits of the 9-to-5 day and the prevailing customs. The pandemic will also have changed attitudes towards behavioural traits that were seen as quite normal before the appearance of covid-19. Here are some suggested dos and don'ts for the new world order.

Don't tell others about your exotic holidays. Most people have had little to do but stare at the garden fence since the lockdown started. They don't want to hear about your trip to the Maldives, even if you did sit through two weeks of quarantine afterwards. People only put up with the rules because they were told they were all in the same boat; they don't want to know that you have a yacht.

By the same token, don't humble-brag. A lot of people will have struggled during the lockdown so don't boast about how you taught your kids ancient Greek and differential calculus while also hosting a dozen Zoom calls a day. Nor is this a competition like the Monty Python Yorkshireman sketch "You had Wi-Fi? You were lucky. I had to make do with a manual typewriter and a carrier pigeon to send messages."

Don't come to the office with a cold. Traditionally, people have been expected to arrive at the office with one, even when sneezing so often they could pass as one of Snow White's little helpers. But the pandemic has demonstrated that viruses are highly transmissible. Pretty soon the worker's desk is littered with discarded tissues and the kettle has been commandeered for hot honey and lemon drinks. Fellow workers will be very lucky if they don't catch it. A cold is nothing

like as serious as covid-19. Still, now that we know people can work at home, there is no excuse for inflicting your sniffles on your colleagues.

Be hygienic. In the weeks before the lockdown, many people came to realise how being in the office meant touching a lot of common surfaces: door handles, light switches, printer buttons. So wash your hands (or use hand sanitisers) as often as possible. Hold the door open for colleagues so they don't have to touch the handle as well. It is a good rule to follow at all times as other viruses (influenza, norovirus) often strike.

Clear your desk every evening. For the near future, many people will be hot-desking so don't leave behind soft-drink cans, bicycle helmets, crucial memos, etc, for the cleaner or next occupant to deal with. If this system is going to work, managers will need to provide lockers so workers can store important material.

Don't stand so close to me. Everyone has become used to keeping a bit of social distance from others during the pandemic. So it is only going to seem more in-

trusive if you get within three feet or so of a colleague when you go back to the office. It is worth, therefore, keeping the Police song in mind. Don't pull up your chair so close to a person that your arms and legs are almost touching. If the lift already has several passengers, don't push in: wait for the next one.

Keep your voice down. Employees have spent much time on video calls during lockdown where research suggests they speak 15% louder than normal, perhaps because they subconsciously are addressing someone far away. It will take time to get used to normal conversation again but don't start like a Shakespearean actor doing the Henry V speech at the battle of Agincourt.

Don't dress too informally. It has been more than a year since male employees have worn a suit and tie, or female employees have searched their wardrobes for a carefully tailored outfit. Dress-down Fridays have become an everyday occurrence, especially below the waist (and out of camera range). Maybe office fashion will never go back to the pre-pandemic era but there are limits; in particular, men should avoid the shorts-and-sandals combination. You don't have to dress for a funeral but you shouldn't dress for the beach.

Do be tolerant of nervous colleagues. Some people may be more reluctant to return than others. This may be down to individual health reasons, or as a result of a family member being vulnerable. Don't make cracks about part-time work, or forget to include them in discussions because they are only on Zoom. And don't automatically assume that people want to shake hands (let alone hug) when they see you again. Not every element of "remote working" will disappear overnight.



The future of carmaking

The non-motor show

SHANGHAI

The live trade show is back—with a new guest list

PETROLHEADS DESCENDED on China's largest exhibition complex on April 21st for the opening of Auto Shanghai, the first big global car show since the start of the pandemic. Dozens of typical exhibitors, from Cadillac to Kia, flaunted their latest models to China's burgeoning consumer class. Yet the most popular booths, as judged by foot traffic, belonged to a clutch of Chinese companies with little carmaking experience: Huawei, a telecoms giant; DJI, the world's biggest drone-maker; and Evergrande, a property developer.

The newcomers aim to capitalise on China's new thirst for electric vehicles (EVs). Last year 1.3m of them were sold in the country, accounting for two-fifths of the global total, estimates Canalis, a research firm. As part of its anti-pollution drive, China's government wants every other new car sold to be an EV by 2035.

Tech firms like Huawei and DJI are betting that future EVs will compete not so much on the "eye appeal" of their hardware as on the sophistication of their software. Fully autonomous vehicles, able to understand their surroundings, are the ultimate (if distant) goal. Conveniently, both Huawei and DJI have developed advanced laser-based detection systems which, they reason, could easily be applied to passenger cars. China's most popular search engine, Baidu, another star turn, unveiled its own radar self-driving technology.

Some of the firms are joining forces with conventional carmakers to get to market quickly—important in an industry where first-mover advantage matters, as Tesla has shown. Huawei is teaming up with Beijing-based BAIC Group to roll out its new luxury EV. Baidu recently entered into a "strategic partnership" with Geely, which owns Volvo among other brands, to mass-produce "intelligent" EVs (which are short of full autonomy).

Other newcomers prefer to do things in-house. Evergrande is building its own EV factories. It aims, ambitiously, to compete with Mercedes-Benz, BMW, Audi and Tesla, says Dai Lei, an executive at the company. Xiaomi, a purveyor of smartphones that has given the Shanghai jamboree a miss, pledged last month to invest \$10bn over ten years in its new EV business. Xiaomi gamely insists it has "distinct and unique advantages in manufacturing cars", despite having no history of making them (and its planned investment being a frac-

tion of what carmakers familiar with producing at scale, like Volkswagen, are ploughing into EVs).

Proponents of do-it-yourself argue they can recoup initial outlays on new factories down the line by not having to share revenues with partners. They add that the incentives of established carmakers are not aligned with those of the newcomers; Geely's own EV marque, called Zeekr, is on display at Auto Shanghai not far from Baidu's booth. For all the talk about "win-win co-operation", rivalry is likely to intensify.

As the two approaches evolve, one thing looks certain: lots of wannabe EV-makers will struggle. Even if Auto Shanghai returns in future years, unlike many Western car shows killed off by the pandemic, plenty of the current edition's budding exhibitors will not. ■

Pharmaceuticals

Lab life

BERLIN

Can Merck's new boss maintain the German drugmaker's winning streak?

FEW COMPANIES have a history as long and interesting as Merck. Founded in 1668 by Friedrich Jacob Merck as a pharmacy in Darmstadt, the world's oldest apothecary has survived several European wars, two world wars and the Nazi regime. In 1917 America's government confiscated its American subsidiary under the Trading with the Enemy Act. It has operated as a rival business, based in New Jersey but, confusingly, also named Merck, ever since.

Belén Garijo, the no-nonsense 60-year-old Spaniard who will take over as Merck's chief executive on May 1st, says she is keenly aware of her company's heritage and its unique ownership structure. Fully 70% of the company is still in the hands of the 13th generation of Mercks (the rest is

owned by public investors). And it was at the family's instigation that Stefan Oschmann, the outgoing CEO, and Ms Garijo, his deputy, transformed Merck through a series of bold acquisitions from a drugmaker living off legacy medicines into a conglomerate that makes gear and chemicals for biotechnology labs as well as pharmaceuticals. "Diversification is strength," insists Ms Garijo, who herself embodies diversity, becoming only the second woman ever to head a firm in the DAX 30 index of Germany's bluest chips.

Investors applauded the strategic shift under Mr Oschmann (see chart). Merck's market value increased from €36bn (\$41bn) in 2016 when he took the helm to €63bn, more than Bayer, another big German drugmaker, which has almost twice as many employees as Merck, and nearly as much as BASF, a chemicals giant. Last year the group's revenues rose by 9% to €17.5bn; net profit shot up by 51% to €2bn.

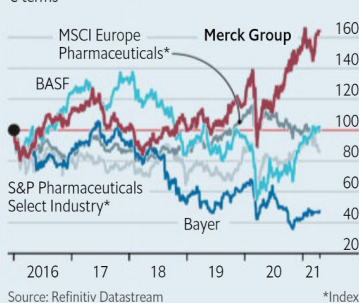
The most immediate task for Ms Garijo is to manage a shake-up of the executive suite. The company is installing new heads of drugmaking, research and development, and the American pharmaceuticals business. It is also looking for a new head of the lab division; Udit Batra, who used to run it, left after Ms Garijo pipped him to the top job last year.

The new boss must also ensure that the commercial potential of the course charted by her predecessor is realised, says Matthew Weston of Credit Suisse, a bank. Some big bets appear to have disappointed. Bintrafusp alfa, a drug to fight lung cancer that is in the late stages of development, did not show any benefit over a rival drug in trials. Only two other drugs are close to potential clinical use, a lung-cancer treatment and one to fight multiple sclerosis. In 2020 sales of the medicines business edged down by 1%.

In the pandemic year this was handily offset by the strong performance of Merck's lab division, which has become the firm's biggest arm. Its sales increased by nearly 10% to €7.5bn in 2020. In February Merck announced that it will significantly accelerate the supply of the fatty bubbles needed to make the Pfizer-BioNTech vaccine against covid-19. Few companies in the world are able to produce these custom lipids in large quantities for vaccine production. The company has also said it will invest in production capacity for disposable plastic materials for bioreactors, another essential ingredient for makers of covid-19 vaccines.

The lab business should continue to thrive once the pandemic abates, thinks Mr Weston. That will let Ms Garijo focus on medicines, which as former head of the pharma division she is well placed to do. Mr Oschmann will be a tough act to follow—but not an impossible one. ■

Gearing up

Share prices, January 1st 2016=100
€ terms

Source: Refinitiv Datastream

*Index

Schumpeter | Modi operandi

Amazon and Walmart confront Indian politics



IN THEORY, THE battle for e-commerce in India should be a purely commercial one, in which two of the world's biggest retailers, Walmart and Amazon, compete with each other and Reliance Industries, a conglomerate that also owns India's biggest retailer. In reality, there is a fourth force: the prime minister, Narendra Modi, and untold numbers of small merchants that support his Bharatiya Janata Party (BJP). As nationalists, they naturally side with Reliance, which is led by Mukesh Ambani, India's richest man. That makes the battle visceral, mixing business, politics, xenophobia and billionaires.

Before Reliance Retail, Mr Ambani's commercial arm, launched its own e-commerce platform last year, Amazon and Walmart-owned Flipkart were the undisputed lords of online selling in India. They invested heavily in technology, logistics and payments to build market shares of about 35% each in what is still, partly as a result of curbs on their activities by the Modi government, a relatively underexploited e-commerce market. Now, coinciding with a renewed surge in covid-19 cases in India, the risks they face are rising. Lockdowns may favour Reliance Retail, especially given the prominence of its online grocery store, JioMart. And yet more government efforts to hobble the foreign-owned e-merchants may be on the way. As a result, Amazon and Flipkart are themselves having to play politics to defend their interests. It is an unsavoury situation. Just when foreign firms are looking for big and attractive alternatives to China to invest and grow, India's government, like that of China, is becoming surlier.

Foreign-owned e-commerce firms already faced tough restrictions before Mr Modi took office in 2014. After Walmart's \$16bn purchase of Flipkart in 2018, the rules were tightened further, with unexpected severity. Two restrictions predominate. First, foreign firms are prevented from holding inventory or selling their own goods, which both Amazon and Walmart do in other markets. They can offer their platforms only as "marketplaces" for other buyers and sellers. Second, the degree to which they can own big sellers on their platforms is limited, to prevent those sellers acting covertly on their behalf. Reliance Retail endures no such restrictions, even though it raised \$6bn last year from foreign investors. As an Indian company, it enjoys what bullish analysts at Jefferies,

an investment bank, call a "regulatory advantage".

The restrictions imposed three years ago left a few loopholes for Amazon and Flipkart to exploit. Yet both firms remain under threat on several fronts. New rules on foreign investments are under consideration, which may tighten up those loopholes and force the two market leaders to reduce or eliminate ownership stakes in their anchor sellers. And both have been under investigation by the antitrust watchdog, the Competition Commission of India. They insist the probe has no merit.

Amazon is engaged in a legal battle to stop Mr Ambani's \$3.4bn takeover of Future Group, India's second-biggest retailer. Amazon alleged that the sale breached the terms of its investment in a unit of Future that barred its sale without Amazon's consent. India's Supreme Court is expected to rule on the matter shortly. A victory for Mr Ambani would boost his ability to offer "omnichannel" commerce in India; the acquisition would add about 1,700 Future stores to Reliance's 3,500 existing ones and also benefit JioMart. As foreign-owned retailers, Amazon and Flipkart are largely prohibited from mixing physical and digital channels.

For years both firms kept low profiles in India. No longer. This month Flipkart forged a partnership with part of the Adani Group, a conglomerate led by Gautam Adani, an industrialist whose fortune has soared recently thanks to investments in physical and digital infrastructure. The pact is for the construction of a giant warehouse and data centre, but many discern political motivations, too. Mr Adani's firm has deep roots in Gujarat, the state in which Mr Modi built his power base. Flipkart may feel it needs a domestic champion, especially as it mulls a flotation this year that Bernstein, a broker, says could value it at \$40bn-50bn.

Amazon is also seeking to win over the BJP's vociferous supporters. It is using its brand power to recruit its own army of small retailers. Jeff Bezos, its founder and the world's richest man, was ridiculed in January last year for being snubbed by Mr Modi on a high-profile visit to India. But he still pledged \$1bn of investment to help digitise small businesses. This month Andrew Jassy, Amazon's CEO-in-waiting, doubled down on the offer, pledging another \$250m to launch a small-business venture fund in India. Such investments are all framed in the context of Mr Modi's slogan of a "self-reliant India". They also win hearts and minds.

So much for self-Reliance

Few are likely to shed many tears for either Amazon's or Walmart's Indian travails. They take no prisoners in their businesses outside the country. And within it both have built such strong moats that the position of neither is in jeopardy. As Arpan Sheth of Bain, a consultancy, says, "Walmart and Amazon are here to stay."

The lament is chiefly for India itself. Reliance needs no more protection than it currently enjoys. According to Jefferies, its retail revenues are already greater than those of the next ten Indian retailers combined. E-grocery, in which JioMart excels, is expected to grow ten-fold within five years, in part by digitising *kirana*, as Indian neighbourhood shops are known. Its telecoms network, Jio, has over 400m subscribers and extends into India's poorest areas. Its payment platform, linked up with WhatsApp, a messaging service owned by Facebook, also has huge potential.

Some see Reliance as the Indian equivalent of Alibaba, China's e-commerce titan. The big difference is that the Chinese government has sought to kneecap Alibaba and its co-founder, Jack Ma. In India, it is Reliance's rivals that are getting the rough treatment. That bodes ill for competition—and hence for India itself. ■



Economic sanctions

Handle with care

Sanctions are now a central tool of governments' foreign policy. The more they are used, however, the less effective they become

IN 2016 JACK LEW, America's then treasury secretary, reflected on how his country had, over decades, "refined our capacity to apply sanctions effectively". But he also gave a warning: overuse "could undermine our leadership position within the global economy, and the effectiveness of our sanctions themselves".

If the message was "proceed with caution", it was lost on Donald Trump, who became president soon after. The screw was turned against China, Iran, Russia, Venezuela and others. The steady increase in sanctions "proved to be a rare constant" on Mr Trump's watch, says Adam Smith of Gibson Dunn, a law firm. During Mr Trump's four-year term, the Office of Foreign Assets Control (OFAC), which oversees American sanctions programmes, targeted roughly twice as many entities and individuals a year as it had during the two-term presidencies of George W. Bush and Barack Obama (see chart).

Those who thought Joe Biden would sound a retreat were quickly set straight. True, his administration, hoping to revive a nuclear deal with Iran struck by Mr Obama

but abandoned by Mr Trump, is talking to the Islamic Republic about easing his predecessor's "maximum pressure" sanctions. However, his first few months in office have also seen a host of new sanctions.

On April 15th America announced sweeping measures against Russia for election-meddling, cyber-attacks and more. A month earlier America and West-

ern allies had imposed asset freezes and travel bans on several Chinese officials for their role in human-rights abuses in Xinjiang. Since Mr Biden took office America has also sanctioned officials deemed to have undermined Hong Kong's autonomy; announced curbs on China's access to American technology for supercomputers; and targeted companies linked to the junta behind Myanmar's coup.

Such measures show how sanctions have become a central tool of foreign policy. Governments increasingly see them as a way to try to change other states' behaviour in situations where diplomacy alone is insufficient, but military intervention is seen as too risky or heavy-handed.

As the use of sanctions has grown, so has their variety. What was once a smattering of trade embargoes has become a global mesh of coercive tools, some covering countries or whole economic sectors, others single firms or individuals. Mr Trump's targets included Huawei, a Chinese 5G-network provider, and TikTok, a video app; Mr Biden's sanctions cover a Russian troll farm and a Pakistan-based firm that allegedly creates fake IDs used by trolls.

Mr Biden is likely to make use of America's Magnitsky Act (named after a lawyer who died in a Russian prison) to move against foreign officials accused of corruption or serious human-rights abuses. Western countries—including Britain as it looks to forge a post-EU sanctions policy—are increasingly adopting "thematic, values-based policies" that target such mis-

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Weapon of choice

United States, additions to OFAC* sanctions list



creants, says Emil Dall of the Royal United Services Institute (RUSI), a think-tank.

This sophistication is partly a matter of necessity. Targets were once mostly economic small fry, such as Cuba and North Korea; now they include much bigger fish, such as China and Russia. As targets have grown, so has the potential for collateral damage. A blanket embargo on China for locking up Uyghurs, say, could produce intolerable economic blowback.

Large targets, however, also feel more emboldened to hit back. China responded to the Xinjiang sanctions with countermeasures against European politicians, diplomats and a think-tank. Its growing economic clout means it can wound when it retaliates. It may also, over the longer term, have a corrosive effect on sanctions: the more the large targets respond by seeking to reduce their reliance on American finance and technology, the weaker America's global economic leverage becomes—and the less potent sanctions' impact.

The first recorded use of sanctions was in 432BC, when the Athenian Empire banned traders from Megara from its marketplaces, thereby strangling the rival city-state's economy. However, "not until the 20th century did modern concepts of international sanctions—a collective denial of economic access designed to enforce global order—become prominent," writes Benjamin Coates, a historian, in an essay published last year.

The League of Nations led in forging multilateral sanctions in the early 20th century. The UN later did the same against obnoxious regimes from white-supremacist Rhodesia to Saddam Hussein's Iraq. America, for its part, stepped up its unilateral sanctions after the second world war. OFAC was created in 1950, a decade after a forerunner had been set up to freeze the US assets of the Danish and Norwegian governments, in order to stop the Nazis seizing them. During the cold war, Congress

gave the president new powers to impose sanctions. Cuba was a favourite target.

Use intensified in the 1990s, with America targeting Iran as it flirted with nuclear-bomb-making. But the most dramatic shift in America's approach followed the 9/11 terror attacks in 2001. The Patriot Act, passed soon after, targeted terrorist coffers. Thus began an era of more carefully tailored, or "smart", sanctions that sought to hamstring terrorists, dictators and others by restricting their access to American-owned or influenced financial plumbing (an example of the latter being the SWIFT interbank network). This change of tack "made sanctions so much more powerful than they were before", says Mr Coates.

Double-edged swords

Another inflection point came around 2010, as America upped its use of "secondary sanctions", which target not only the perceived bad guys but also threaten anyone doing business with them with financial excommunication. Their power was most apparent in Iran: European firms saw golden opportunities there after the 2015 nuclear deal but backed away in droves after Mr Trump reimposed sanctions, and added secondary ones, in 2018.

American policy has undergone two further shifts over the past decade. The first, sparked by Russia's annexation of Crimea in 2014, was to go after bigger fish. America and other Western powers unveiled sanctions against dozens of Russian agencies, companies and members of Mr Putin's circle. In doing so they were taking on an economy more than twice the size of any other previously targeted with such comprehensive sanctions.

The second shift was Mr Trump's splattergun approach. So varied were his targets and so devoid of diplomacy his manner (he once threatened to "obliterate" the economy of Turkey, a NATO ally, during a spat over Syria) that sanctions wonks were left

wondering if there was any method in the madness. But his administration undeniably displayed creativity. "What Trump came upon were nuances in ways to target big players like Russia and China, with sanctions that were not quite sanctions," says a former OFAC official. His restrictions on Chinese tech and telecoms firms, for instance, hit their ability to design chips, source components or operate effectively in many Western countries.

They also greatly added to the stress on banks and companies that have to comply with sanctions. Unlike conventional sanctions, which work by freezing trade, the financial sort "turn private actors into enforcers", says Mr Coates. The cost of steering clear of blacklisted people and entities has risen relentlessly, especially for banks. An executive at one global bank says that after being caught and fined for breaching American sanctions, it has spent "a couple of billion" dollars on hiring more compliance people and installing better screening technology to avoid a repeat.

A big outlay, to be sure, but falling foul of OFAC can cost even more. Until around a decade ago, sanctions enforcement was a technocratic backwater. Today penalties can run into the billions, with operating restrictions often tacked on to increase the pain. In 2014 BNP Paribas, a French bank, pleaded guilty to processing thousands of transactions involving countries blacklisted by America, paid an \$8.9bn fine and was forced to suspend its dollar-clearing operations in New York for a year.

The cost would be easier to bear if sanctions usually achieved their aims. Measuring success is difficult; even American government departments involved in sanctions don't carry out their own assessments. But it is clear that many fail. The maximum-pressure measures against Iran have neither dislodged its theocratic regime nor halted its nuclear ambitions; the country has more enriched uranium now than when Mr Trump took office.

Moreover, sanctions provoke countermeasures. The most direct way is for the target country to issue counter-sanctions. An alternative is to use legal mechanisms to negate sanctions. "Blocking statutes" aim to shield domestic companies by prohibiting them from complying with another country's sanctions. The EU's statute dates back to the 1990s, and was strengthened after Mr Trump pulled out of the Iran accord. It has sparked litigation in Britain, Germany and the Netherlands, and several cases are before the European Court of Justice (ECJ). In Britain, Metro Bank is being sued by a group of Iranian clients who argue that the bank's closure of their accounts without warning—after Metro found it had breached American sanctions—violated the blocking statute. The outcomes will have big implications for

In the crosshairs

United States, selected countries on the Specially Designated Nationals and Blocked Persons list
January 4th 2021, by target of sanctions

	Entities (of which: banks)	Individuals	Aircraft	Vessels	Total
Iran	939	394	195	205	1,733
Syria	171	457	38	10	676
Ukraine	178	230	3	8	419
North Korea	162	130	16	106	414
Russia	176	158	nil	nil	334
Venezuela	89	141	56	47	333
China	132	114	nil	nil	246
Cuba	73	5	nil	4	82
Belarus	13	25	nil	nil	38
Hong Kong	nil	8	nil	nil	8

Sources: Peterson Institute for International Economics; Office of Foreign Assets Control

► European firms operating in Iran, or wishing to, but caught between competing sanctions regimes. China issued a blocking statute in January (based on Europe's), but is yet to flesh out the extraterritorial measures to which it applies.

The use of courts to challenge sanctions goes beyond blocking statutes. Maya Lester, a London-based barrister, has worked on several cases on the impact of sanctions on commercial contracts, and many more involving individuals and entities—including Iranian banks—suing to be removed from blacklists. Several have suc-

ceeded. There are legal challenges in America, too. Last year a court halted Mr Trump's attempted blacklisting of TikTok. In March a federal judge suspended a similar ban on Xiaomi, a smartphone-maker.

The biggest long-term threat to sanctions' effectiveness involves efforts by targets to circumvent them. A time-honoured way to do this is to trade through sanctions-busters: black-marketeers using shell companies, fake trade paperwork and other dark arts. Turkey and Dubai—particularly the latter's trading houses and free-trade zones—have been weak links in en-

forcing Western sanctions on Iran.

More important, countries targeted by sanctions, and those that want to trade with them, are exploring ways to decouple economically from those that impose them, particularly America. China has responded to American technology bans by scaling up plans to invest in producing chips at home. It is also trying to reduce its reliance on the dollar and American banks by, for instance, making the yuan more appealing in international finance.

Digitisation might help it do so. China's central bank is a world leader in develop- ►►

Buttonwood The art of war

The pitfalls of trading geopolitical risk

TALK TO THOSE who regularly buy and sell financial assets in the world's trouble spots and you soon come across a perennial source of irritation. Everybody is an expert. The prospect of conflict turns every know-nothing spreadsheet jockey into a military strategist or Kremlin-watcher. Buttonwood shares this indignation on behalf of newspaper columnists everywhere. Making bold statements based on a little knowledge is our racket. Move along, please. We're already working this corner.

There is plenty just now to occupy the armchair general. Geopolitical risk is on the rise after a pause for the pandemic, concludes a recent paper from BCA Research. Three proto-conflicts in particular are hogging headlines and testing the resolve of the new administration in Washington. Russia has deployed enough troops to stage fresh incursions into eastern Ukraine. Iran has stepped up its nuclear programme, to the ire of Israel. And China is menacingly carrying out drills around the island of Taiwan.

An escalation of these tensions has the potential to knock markets sideways. And it is tempting for investors to try to anticipate a flare-up, so as to harvest "geopolitical alpha", the excess returns from bearing conflict-related risks. By and large, the temptation should be resisted. Trading successfully around geopolitics is a lot harder than it looks.

Perhaps the most seductive idea to repel is that you have some expertise. Genuine experts are not in short supply. Just about anyone who spent time at the State Department or as a national-security adviser appears to have set up a consultancy. But there are pitfalls for the unwary, as Marko Papic of Clocktower Group, an alternative-investment firm, argues in his book "Geopolitical Alpha".

The first thing to remember is that former intelligence agents no longer have access to classified intelligence. Be especially wary of high-conviction views, says Mr Papic. Consultants tend to exaggerate the likelihood of the worst outcomes, because it is a good way to showcase their insight. A true expert will be circumspect, setting out scenarios and pinpointing the factors you need to monitor.

In fact few geopolitical events have a lasting impact on stockmarkets. As Mr Papic shows in his book, the pattern from the 1962 Cuban missile crisis onwards is for a short-term fall in America's stock-market to be followed by a rally over the following year, and often quite a strong one. An exception is the Yom Kippur war and the subsequent oil embargo. But in general, markets regain their poise. The economy carries on. From this we might grope towards the germ of a useful trading rule. The best way to profit from geopolitical risk might simply be to trade against the excessive fears of others.

At the outset of a geopolitical crisis, events move more quickly than you can

trade on them. You read of tensions in the Middle East. So you buy oil futures. But algorithmic traders will beat you to the punch. You could chase the escalation. But now you are a momentum trader, rather than a geopolitical-risk trader. And sometimes there is no obvious trade to execute—or the seemingly obvious trade doesn't entirely make sense. When North Korea stepped up its missile testing in 2017, a popular trade was to buy credit-default swaps, a form of insurance, on South Korean government debt. But you might reasonably ask whether a debt default would really be your biggest concern in the event of a nuclear strike.

If you instead decide to look for over-sold assets, you still have some thinking to do. You might, for instance, decide that Russian assets are cheap. The trouble is that tensions between Russia and America could easily worsen. If you want to "buy the dip" in this way you should have a theory of how things might eventually be resolved, based on informed judgments about what each party to a conflict wants and what their political and economic constraints are. You would need to map the potential flashpoints from here to there. If you judge that a conflict cannot de-escalate easily, the wiser course might be to stay away.

In geopolitics, a little knowledge can be a dangerous thing. Yet investors cannot be entirely agnostic about the broad sweep of international relations. The long boom of the 1990s is not easily detached from the fall of the Berlin Wall. China's accession to the World Trade Organisation in 2001 ushered in a commodity super-cycle. Avoid the narrow purview of the typical spreadsheet jockey. But beware the armchair geopolitical strategist—especially if it is you.



ing a digital currency, which is being tested in several cities. It "could fundamentally change how Chinese companies do business by 2022 or 2023", says the head of one globally active bank. If successful, it may then start to be adopted in other parts of Asia and later farther afield. China would also like to loosen America's grip on the cross-border payments infrastructure. It has its own version of SWIFT, called CIPS, which simplifies cross-border payments in yuan.

Europe, too, is seeking to strengthen its single currency's role in global commerce. The euro is now used to settle some international oil shipments, for instance by commodities firms buying from Russia. (The oil trade has traditionally been denominated in dollars.) Russia's capital markets have become much less reliant on foreign investors since the Crimea-linked sanctions were imposed seven years ago—one reason why its markets shrugged off America's latest restrictions.

It would be easy to exaggerate this trend. The EU's attempt to create a barter mechanism to help its firms get around American sanctions has failed to take off. China's financial system is opaque and largely closed. The yuan accounts for just 2.4% of global payments, while the dollar makes up 38%. CIPS is minuscule. Still, the direction of travel is clear.

For now, the sanctions-compliance world remains fixated on policy in Washington. There are few signs of a significant let-up in the pressure applied by the Trump administration, except perhaps, with strict conditions, on Iran. That said, Mr Biden is likely to work harder than his predecessor to "pair sanctions with diplomacy", says RUSI's Mr Dall.

The changes in China's approach to sanctions, however, may be more dramatic. It shows signs of becoming more assertive, including by being quicker to retaliate. It has growing leverage as a huge market for foreign firms hawking everything from consumer goods to commodities, and as financier-in-chief of America's national debt. It may also be developing a taste for pre-emptive sanctions. A report by the Centre for a New American Security, a think-tank, counted ten such cases in 2010-18, triple the number in 1978-2000. In 2019 China announced sanctions on American arms-makers that supply Taiwan. More recently, it imposed an unofficial ban on Australian coal over Canberra's "offensive" anti-China rhetoric.

China will also continue to try to turn Western sanctions to its advantage. They have helped it advance its interests abroad, for instance by filling the economic void left by American sanctions on Iran and Venezuela. In March China reportedly signed a \$400bn, 25-year deal to invest in Iran's energy sector and upgrade its trans-

port and manufacturing infrastructure.

This increased muscle-flexing underlines that the world of sanctions is becoming less unipolar. China's reach may be limited by its small role in international finance, relative to trade. But its share is growing, and it is not alone in looking for ways to reduce reliance on the greenback. A China no longer reliant on America or other outsiders for financial plumbing or critical technologies is likely to feel more emboldened to, say, attack Taiwan.

And this raises the spectre of the irreversible shift Mr Lew warned of: that a tool designed to be one of the most forceful expressions of American power instead fatally undermines its economic hegemony. The stakes could hardly be higher. ■

Bad debt in China

Righting Huarong

HONG KONG

Will China bail out one of its most powerful financial institutions?

THE EXECUTIVES of Huarong Asset Management have not been able to hide from China's authorities. A corruption probe into the state-owned financier in April 2018 sent senior staff and business partners scattering abroad, only to be rounded up in an international dragnet. One casino tycoon with close links to Huarong was captured in Cambodia. Its former chairman, Lai Xiaomin, was put to death in January for what a Chinese court called egregious financial crimes and bigamy. Until recently the company proved much better at hiding its debt and disguising losses. Huarong, which as of June had 1.7trn yuan (\$262bn) in assets, is thought to

have lent with abandon to some of China's riskiest borrowers. Three years after regulators began mucking out the mess left by its previous management, the risks are spilling into global markets.

The first sign of trouble came when the company failed to issue its financial statements for 2020 by the deadline of March 31st. It attributed the delay to a "relevant transaction" that auditors needed time to assess. Then, *Caixin*, a financial publication, reported that a significant restructuring was being discussed, sending its bond prices to record lows. By mid-April its debt securities were trading at junk prices. Regulators kept mum for weeks, allowing panic to spread to other state-owned securities, before declaring on April 16th that Huarong had ample liquidity. This eased some concerns over the \$22bn in offshore bonds held by global investors. On April 20th Huarong's offshore financing unit sought to allay worries further, saying it made a profit in the first quarter.

Yet the spectre of restructuring or default at a group in which the Ministry of Finance has a nearly 60% stake continues to rattle markets. Larry Hu of Macquarie, an investment bank, noted that the turbulence at Huarong is "likely to be the beginning of a series of credit events in 2021".

The concerns are justified. Huarong, one of four distressed-asset management companies (AMCs), is among China's most powerful financial institutions. Created in the late 1990s to deal with 1.3trn yuan in bad debts from the country's four largest commercial banks, the groups have thrived as China's banking system continued to produce mounds of dud credit (as of June, Huarong alone held distressed assets worth 841bn yuan). The AMCs were designed to be wound down as the first cache of toxic assets were worked out or liquidated. They have instead become sprawling conglomerates, both within China and in Hong Kong. Under the direction of Mr Lai, Huarong transformed itself into an investment bank with dozens of subsidiaries doing everything from securities broking to high-yield cross-border lending. Many of its losses are thought to be linked to loans to companies that have since gone bust.

The AMC business model has been highly controversial. Instead of merely buying soured debts from commercial banks, they began borrowing at low rates from banks and then lending last-resort funds at high cost to troubled companies. A recent paper by Ben Charoenwong of the National University of Singapore and others concludes that AMCs have been in the business of concealing banks' bad assets from regulators, and often reselling them at inflated prices to investors that borrow heavily from the same banks. This and other bad practices have led to a non-performing-loan rate for commercial banks that could



Beijing's bad-debt dilemma

► be two to four times higher than the officially reported 1.8% at the end of 2020. Moreover, China's banks have largely recapitalised the AMCs through bond purchases, notes Andrew Collier of Orient Capital Research.

Officials are growing more comfortable with defaults at state-owned enterprises. Late last year the default of Yongcheng Coal sent a signal that even important regional state firms could be allowed to fail. But Huarong presents a much bigger and more systemic challenge for Beijing. The suggestion of a restructuring has already started to reshape how investors view the country's most powerful financial institutions. Centrally controlled state firms have long been considered too big and too important

to fail, and therefore seen as prime targets for investment. Any shift in that sense of security would force global investors to rethink how they invest in China. That might be why the central bank was reported on April 22nd to be considering assuming 100bn yuan of Huarong's assets.

Regulators are "walking a very fine line" between financial stability and moral hazard, says Ming Tan of S&P Global, a rating agency. They must weigh the potential for financial chaos if an institution of Huarong's size and complexity collapses, against the effects of bailing out a reckless conglomerate, along with its global investors. They may have learnt, too, that bad assets, no matter how well disguised, cannot stay hidden for ever. ■

Isaiah Andrews

Model behaviour

WASHINGTON, DC

A mathematical economist wins the John Bates Clark medal

ECONOMISTS LIKE to crunch numbers and build models to guide policymakers. But who guides them in turn? Isaiah Andrews of Harvard University has been trying to help. On April 20th the American Economic Association awarded him the John Bates Clark Medal, a prize for leading economists under the age of 40, for his efforts.

Mr Andrews did not expect to become an econometrician (an economist who specialises in statistics). But during graduate study he was drawn towards questions about the lessons and limits of data. With Matthew Gentzkow of Stanford University and Jesse Shapiro of Brown University, he suggested a way to assess the quality of economists' models. He also showed economists how to work out how much their findings might change under alternative assumptions, helping them fend off accusations that their results were a feature of their assumptions rather than the data.

In work with Maximilian Kasy, now of Oxford University, Mr Andrews cast light on the fact that economists are too eager to pursue striking results, and journal editors too prone to approve them. Studies that find that minimum wages have no significant effect on employment, for example, are only a third as likely to be published as those finding a stronger negative effect. The researchers developed a way to adjust reported results for this publication bias—and found that the average effect of a higher minimum wage on employment fell by half.

Mr Andrews, with others, also explored what is called the winner's curse when it comes to choosing between



Best in class

policies: the policy that performs best in a trial may owe its top rank to chance, and will later be doomed to disappoint. To illustrate this the researchers turn to a trial that assesses the most effective ways of encouraging people to donate to charity, by combining requests for specific donations with promises to match the initial contribution. The researchers find that if the charity chooses the method that does best in a trial, it will always overestimate its donations. They suggest ways to make a more realistic estimate that takes account of the role of chance.

All told, the prize-giving committee concluded, Mr Andrews had helped turn econometrics "back towards the study of the most important problems faced in empirical research".

Emerging markets

The wave v the tantrum

HONG KONG

How one emerging-market worry is giving way to another

DESPITE THEIR supposed dynamism, emerging markets often struggle to escape their past. A few months ago, investors worried that this year would turn out to be a repeat of 2013, when rising bond yields in America prompted a sharp sell-off in emerging markets, known as the taper tantrum. Now investors are worried that 2021 will be a grim repeat of last year, as another, more virulent wave of covid-19 infections spreads through Brazil, India and elsewhere.

To give shape to these fears, analysts have been busy drawing up lists of the most vulnerable countries, based on everything from inflation to infection rates. They have been looking for this year's successors to the "fragile five" (Brazil, India, Indonesia, South Africa and Turkey), the countries that were hardest hit by the taper tantrum eight years ago. So it is notable that the man who named the original five, James Lord of Morgan Stanley, a bank, has chosen this moment to turn "outright bullish" on some emerging-market assets, telling his clients to "buy local bonds". What explains his calm in the face of calamity?

The calamity is, after all, undeniable. India's second wave is terrifying (see Asia section) but not unique. The recorded number of new infections per 1m people is still higher (over the past two weeks of data) in Argentina, Brazil, Chile, Colombia and Turkey than in India. JPMorgan Chase, another bank, last week cut its growth forecasts for India and Brazil, following earlier cuts for the Philippines and much of central Europe. It now expects the combined GDP of emerging markets (excluding China) to grow by 5.9% this year. That is barely any faster than the pace expected of developed markets (which are projected to grow by 5.7%) and would leave emerging-market GDP only 1% bigger than in 2019.

But even as the covid-19 wave is repeating itself, the bond tantrum is not. The yield on ten-year American government bonds has stopped rising and slipped back below 1.6%, despite strong data on jobs, housing, manufacturing and retail sales in the world's biggest, boomiest economy. The "real" yield on inflation-protected bonds is now -0.7%, about the same as it was at the end of February. If the American bond market remains this well behaved in the coming months, then foreign investors will find it harder to resist the spicier rewards offered by bonds denominated in ►►

▶ the rand, real or rupiah.

Indeed, one reason why the tantrum has receded is because the virus has not. As the pandemic begins to interrupt the emerging world's economic recovery, their central banks will surely worry less about any gathering inflationary pressure. Morgan Stanley believes that central banks in Brazil, Russia and Mexico among others are unlikely to raise interest rates as sharply as markets now expect. The delayed recovery is bad for emerging economies, but not necessarily bad for their governments' paper. Bonds usually do well when growth is slow and central banks are doveish, notes Mr Lord.

He nonetheless acknowledges two dangers to this view. One is that American bond yields start climbing again sooner than he expects. Another risk is that the delayed recovery in a big emerging economy turns into something worse, frightening investors and raising worries about the government's creditworthiness. In that case, the price of local bonds would fall (and yields would rise), even in the absence of any threat of inflation. In the rich world, people flock to their governments' bonds even in the worst of times. In the emerging world, investors unfortunately do likewise, flocking to rich countries' assets and abandoning their own. That is another way in which emerging economies remain trapped by their past. ■

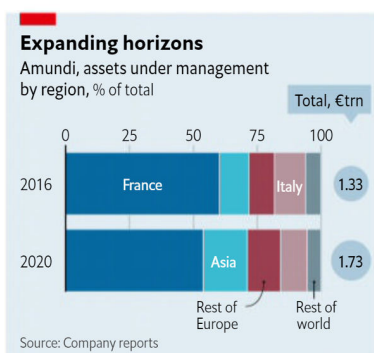
Amundi

Alpha plus

After an impressive decade, what next for Europe's BlackRock?

THE PRACTICE of elevating a company's chief executive to chairman has come to be frowned upon, if only because a new boss often struggles to break free if her predecessor is looking over her shoulder. Not so at Amundi, Europe's biggest money manager. In May Yves Perrier, its CEO since 2010, will move upstairs and Valérie Baudson, his current deputy, takes the helm as chief executive. Shareholders have reacted to the news rather well: Amundi's share price has risen by 11% since it was announced in February.

That shows how much they value continuity at the firm. Under Mr Perrier Amundi's assets under management and net income more than doubled, to €1.7trn (\$2.1trn) and €962bn by the end of 2020. Its market capitalisation has swollen from €7.5bn in 2015, when it went public, to around €15bn. The firm is still a cut below America's titans: BlackRock, for instance,



manages about \$9trn in assets. Yet Amundi is nearly twice as big as its closest continental rival, and the only European firm in the global top ten. The question for Ms Baudson is whether the firm has much more room to grow.

Three factors have underpinned Amundi's rise since it came into being in 2010, a result of the merger of the asset-management arms of Crédit Agricole and Société Générale, two French banks. One is the €650bn in assets it took over from its parents, which gave it the scale to spread out costs and pocket recurrent income. Cleverly, it signed quasi-exclusive distribution contracts with the banks, ensuring its role as the main manufacturer of investment products for their institutional clients, and that revenue would remain stable.

Amundi then used its excess cash to acquire rivals, including the asset-management arms of UniCredit, an Italian bank, in 2016, and of Banco Sabadell, a Spanish lender, in 2020. Whereas the portfolios it inherited gave it a foothold in retail investment, where margins are higher, these deals allowed it to expand its distribution network further. Amundi made integrating those units smoother by developing its own data- and portfolio-management platform, rather than relying on suppliers—its third smart choice and one that BlackRock has made too. That has curbed operating costs: at 51% of income, they are among the lowest in Europe.

Ms Baudson can expect a benign few months. Unable to spend much during lockdowns, households have stashed record amounts at banks, some of which should flow to money managers. Yet beyond the short-term bump, being “the biggest, most efficient manufacturing machine” may not suffice, says Haley Tam of Credit Suisse, a bank. Unlike BlackRock, Amundi cannot tap a vast domestic market, and its routes to growth are narrowing.

Some woes are common across the industry. Margins are being crushed. The shift to low-cost “passive” funds, which track an index, is accelerating in Europe and dragging managers' average fees down. Competition is fierce. And lower in-

terest rates (and therefore returns) are making active managers' hefty fees more conspicuous precisely when regulators are demanding more transparent disclosure on costs and charges.

Other concerns are specific to Amundi. Some of the contracts that it so cleverly signed with banks will soon expire. History suggests they are usually renewed, but on worse terms for the manager, says Mike Werner of UBS, another bank. And, in an attempt to seek extra returns for its clients, Amundi wants to grow its alternative-investment franchise. But it faces stiff competition from specialists. And its scale is a problem. The firm is too big for this comparatively tiny business to make much of a difference to the top line.

Mr Perrier is unfazed by all this. Amundi has room to expand, he argues. Over half its assets still come from France (see chart). The firm already has a foothold in fast-growing markets, such as India, where it has a joint venture with the country's largest bank, and China, where it has a tie-up with AgBank and Bank of China, two big lenders. It is targeting €500bn in Asian assets by 2025, up from nearly €300bn today. “The idea that in the next five to seven years China becomes as important as France is not stupid,” Mr Perrier says.

Even in Europe, organic growth is possible. The shift from defined-benefit to defined-contribution pension schemes, which give savers more discretion over how they invest, should boost retail investment, says Tom Mills of Jefferies, an investment bank. The huge interest in environmental, social and governance products also helps: last year these accounted for around 70% of Amundi's net inflows.

Amundi also has about €1.2bn of excess capital available for acquisitions. The firm is in talks to buy Lyxor, Europe's third-largest provider of exchange-traded funds (ETFs), from Société Générale for €825m. A merger would make Amundi the second-biggest provider of ETFs (after BlackRock).

The firm is venturing out into new activities, too. Last year it set up a division to license its suite of software to smaller managers, putting it in competition with BlackRock (analysts expect Amundi to price its services more cheaply). It aims to increase such sales sixfold by 2025, to €150m. That would give the share price a leg up: Mr Perrier notes that such businesses are typically valued at 20-22 times earnings, compared with 13-14 times for the whole group.

Done well, all this could sustain rapid growth. It helps that Ms Baudson brings experience of the fastest-growing parts of the business, notably the ETF unit, which she currently runs. She has relatively little experience of executing acquisitions. But if she needs advice, the consummate deal-maker will be just a flight of stairs away. ■

Free exchange | Protection racket

How to think about vaccines and intellectual property in a pandemic



WITH ANY luck, the world will be awash in covid-19 vaccines by the end of the year. For now, though, it is not, and of the billion or so doses that have been produced the vast majority have been administered in richer countries. Deaths, by contrast, are increasingly concentrated in poorer ones, like India, where only about nine in every 100 people have been jabbed, compared with 64 in America. Some governments are floating radical options to remedy the mismatch. India and South Africa, for instance, propose that members of the World Trade Organisation waive intellectual-property (IP) protections for covid-fighting technologies, including vaccines. Some in the rich world are warming to the idea; in America, ten Democratic senators recently urged President Joe Biden to back it. Drugmakers, however, warn that it would deal a crippling blow to innovation. Even though IP protections are not a big constraint on vaccine production today, the experience of covid-19 suggests that a re-examination of IP rights in the context of health emergencies is overdue.

The economic argument for IP protections seems compelling enough. Innovation is costly and risky. Pharmaceutical companies invest heavily in drug development with no guarantee of success. If other firms could freely copy a newly discovered treatment, then its price would quickly fall to the marginal cost of production, leaving the innovator unable to cover the costs of development. A short-term monopoly on production granted to innovating firms is needed to make the upfront investments economically worthwhile. Patents provide this protection.

IP protections do not always work in quite this way, however. Studies routinely find little or no evidence that strengthening them boosts subsequent innovation, argue Michele Boldrin and David Levine of Washington University in St Louis; pharmaceuticals, where IP rights are often assumed to be essential, are no exception. Patents award rich profits to firms even though private investment accounts for only about a third of spending on American biomedical research, they estimate. Other rewards to innovation, such as financial prizes, could yield more breakthrough drugs at lower cost. Yet for now, IP protections are crucial to the businesses of most of the firms developing covid-19 vaccines.

Should some of these be waived in a pandemic that continues

to claim more than 10,000 lives a day? Advocates argue that the pandemic is clearly an extreme event that warrants an exemption from IP laws. The rapid creation and production of so many covid-19 vaccines is a testament to the long years of private investment in the associated technologies and the urgency with which experts at biotech firms moved when the pandemic began. But there is no ignoring the vast public resources that made these efforts possible, from support for basic research to piles of government cash. Nor would a waiver endanger pharma firms' viability. Pfizer would still be highly profitable even if you excluded its expected vaccine-related profits of \$4bn in 2021.

Yet industry interests are right to say that liberating vaccine IP would not unleash a flood of new production. Most of the world's vaccine-making capacity is already in use, in some cases because developers signed licensing agreements with other manufacturers. AstraZeneca, for instance, struck just such a deal with the Serum Institute of India, the world's largest vaccine-maker. Other constraints on production have bound more tightly than IP rules, including the limited availability of raw materials and expertise needed to safely produce doses. Some of those have been imposed by governments themselves, through export restrictions that interfere with supply chains (see Science section).

Moreover, the biggest obstacle to expanding capacity is not IP protections, but proprietary resources and other know-how, which are not shielded by patents. Many poorer countries face no patent barriers to using the mRNA technologies employed by Pfizer and Moderna; the obstacle is instead a lack of familiarity with new techniques. Similarly, would-be producers of adenovirus-type vaccines, such as that developed by AstraZeneca, lack access to the specially developed cell lines needed to create them.

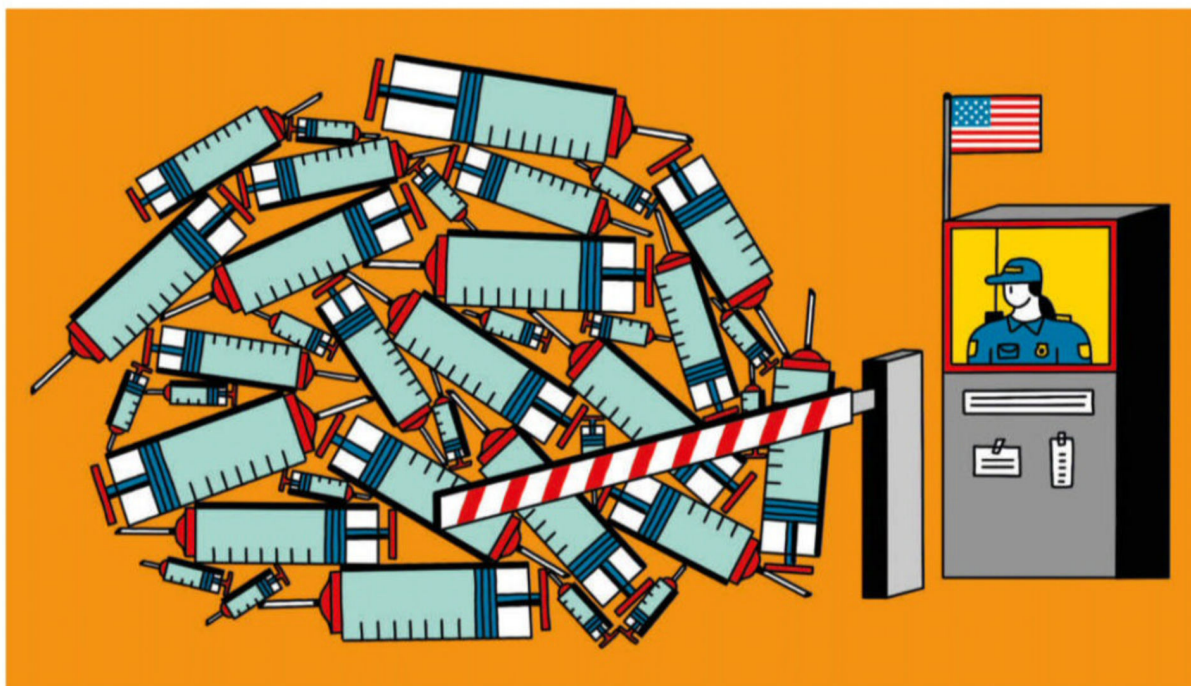
A patently bad idea

This state of affairs illustrates deficiencies in how both drugmakers and governments have handled the vaccine effort. Firms have been reluctant to share cell lines, data and tacit know-how with producers that could one day pose a competitive threat, slowing the creation of new, and life-saving, production capacity. In some cases trade rules permit governments to grant compulsory licences—the right to use a patented invention without the inventor's consent, for a price. But such licences are of no use if developers do not also share the other information and resources needed to produce doses. An initiative to aid such sharing set up by the World Health Organisation, for instance, has been all but ignored by the industry.

Yet the experience of the past year also suggests how governments might do better when they next negotiate contracts, say for vaccines to counter new variants. Having invested so much in development, they neglected to include measures in contracts to compel drugmakers to share the information other manufacturers need to quickly produce vast amounts of vaccines. Nor have they sought to press firms to transfer the technology needed to expand manufacturing. In the meantime, governments could do more to rethink the ground rules for technology transfer and the sharing of intellectual property, so as to be prepared for the next pandemic. Costly errors were made, their toll measured in lives. But they need not be repeated. ■



For more, read our By Invitation commentaries: by Mariana Mazzucato, Jayati Ghosh and Els Torreale at economist.com/vaccinewaiver; and Michelle McMurry-Heath at economist.com/novaccinewaiver



Covid-19 and the Defence Production Act

A vaxxing problem

American export controls threaten to hinder global vaccine production

LAST WEEK, the billionth dose of covid-19 vaccine was made. It is a sign of how greatly capacity has expanded over the past six months that the next billion could be produced by May 27th, according to Airfinity, an analytics firm (see chart on next page). Yet this ambition is at risk from American export controls on raw materials and equipment. Production lines in India, turning out at least 160m doses of covid vaccine a month, will soon grind to a halt unless America supplies 37 critical items.

On April 16th Adar Poonawalla, head of the world's biggest vaccine-maker, the Serum Institute of India (SII), begged President Joe Biden, in a tweet, to "lift the embargo of raw material exports out of the us...Your administration has the details". Suresh Jadhav, SII's executive director, says that in the next four to six weeks manufacturing of two vaccines will be affected: AstraZeneca's, of which SII makes 100m doses a month, and Novavax's, of which it expects to make 60m-70m doses a month. SII says it first alerted the American government about this two months ago.

That was shortly after the Biden admin-

istration announced, on February 5th, plans to use the Defence Production Act (DPA)—a law dating from the 1950s that grants the president broad industrial-mobilisation powers—to bolster vaccine-making. This legislation, previously invoked for similar reasons by Donald Trump when he was president, has helped American pharmaceutical companies to secure a variety of special materials and equipment, including plastic tubing, raw goods, filters and even paper, that are needed for vaccine production. But firms which export such products point out that the DPA hinders their ability to sell them abroad. They must seek permission before exporting these goods. That requires time and paperwork. And if the government decides it

needs the goods in question to remain in the country, the firms concerned may be barred from exporting them at all. Some people are also worried about pharma companies outside America stockpiling goods because of concerns about delays caused by American export controls. Together, export controls and stockpiling risk gumming up the global supply chain.

To be used in vaccine manufacturing, products have to be approved by regulators. So finding substitutes quickly can be impossible. SII is not alone in its concern. On March 24th Micheal Martin, Ireland's prime minister, warned that export bans (and not just from America) would harm global vaccine production. He noted that the Pfizer vaccine involves 280 components from 86 suppliers in 19 countries. Indeed, American export controls particularly harm European vaccine companies, which need special bags from America in which to make their products. At a vaccine supply-chain meeting in March, one such firm complained of 66-week delivery times for the supply of these bags.

American pharma firms are inconvenienced too, though. For example, Johnson & Johnson, one of the country's biggest, had intended to do the filling and finishing of its vaccine domestically. But the invocation of the DPA has forced it to change its plans. Scarce management time has then had to be spent securing deals for this business in Spain, Germany, France and Italy, as well as transferring technology to local firms in South Africa and India. »

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► Sai Prasad, head of the Developing Countries Vaccine Manufacturers Network, says the DPA and any other export restrictions will be a serious impediment to the ability of the industry to make and supply vaccines. He observes that making a batch of vaccine can take between 60 and 180 days. Disruptions in raw materials, packing materials and single-use consumables will thus lead to disproportionately longer delays. In short, vaccine production lines cannot come to a halt and then start up again quickly. The consequence of a missing item could be a disruption in supply which is felt for months.

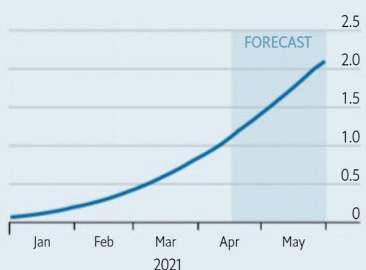
Trading places

Thomas Cueni, head of the International Federation of Pharmaceutical Manufacturers, says he is extremely concerned about current constraints on supply chains around the world. These concerns are widely shared, and were echoed recently by Richard Hatchett, head of the Coalition for Epidemic Preparedness Innovations (CEPI), an international partnership to develop vaccines that is working with industry on the problem. CEPI has appealed to the World Trade Organisation for support. And on April 14th that organisation's boss, Ngozi Okonjo-Iweala, held a meeting with representatives of various governments, businesses and lobby groups to discuss ways that the strengthening of supply chains could happen.

If all goes swimmingly, the world could produce as many as 14bn doses of vaccine this year. But if raw materials do not arrive where and when they are needed, production will fall far below that estimate. Shortfalls in India will hinder its own vaccination programme, which is ramping up amid an alarming second wave of infections (see Asia section). And since India has banned the export of finished vaccines while it serves domestic needs, it will not be able to fulfil its commitments to outsiders, including many in the world's poorest countries. The consequences of America's actions could thus be terrible indeed. ■

Rising hopes

Worldwide covid-19 vaccine production
Cumulative doses, bn



Coffee and climate change

Stimulated thinking

How to save the coffee crop from global warming

COFFEE IS A multi-billion dollar industry that supports the economies of several tropical countries. Roughly 100m farmers depend on it for their livelihoods. Unfortunately for them, and for the many other people around the world for whom coffee is a near-essential adjunct to life, coffee bushes grow best in a rather narrow range of temperatures, so their cultivation is threatened by a changing climate. But a chance discovery by Aaron Davis of the Royal Botanic Gardens, Kew, in Britain, published in *Nature Plants*, may offer a way out. Dr Davis and his colleagues report that they have tracked down a type of wild coffee which is both pleasant to taste and tolerant of higher temperatures.

The existing coffee market is dominated by *Coffea arabica* and *Coffea canephora*. *Arabica* hails from the highlands of Ethiopia and South Sudan. It prefers temperatures of 18-22°C. *Coffea canephora*, commonly called robusta, originated at lower elevations in west and central Africa. It was once thought capable of coping with temperatures of 30°C, but recent work suggests that it does not flourish above 24°C.

Lots of other coffee species are known (122 at the last count). And many do, indeed, grow in places warmer than those preferred by *canephora* and *arabica*. But all were thought to have poorer flavours, smaller beans and lower yields. Dr Davis, however, came across a paper written in 1834 by George Don, a Scottish botanist, which described a species from the lowland hills of Sierra Leone. Don dubbed it *Coffea stenophylla*, and wrote that it had a flavour superior to *arabica*'s.

This piqued Dr Davis's interest, for *stenophylla* still grows, he discovered, in parts of Guinea, Sierra Leone and Ivory Coast that have temperature ranges between 24 and 26°C. He and his colleagues also learned that *stenophylla* was farmed up until the 1920s, after which *canephora*, which had higher yields, took over. *Stenophylla* was then gradually forgotten.

That history of previous cultivation did, however, suggest *stenophylla* was worth looking into. The crucial question was, was Don's panegyric to its flavour justified? To find out, Dr Davis enlisted the assistance of Delphine Mieulet of CIRAD, an agronomy-research centre in Montpellier, France. Together, they arranged a competition involving 18 professional coffee tasters who assessed, in a blind comparison, a set of



Coming to an espresso machine near you

samples that included *stenophylla*, two types of *arabica* and one of *canephora*.

Stenophylla performed well. It was rated as having higher fruitlike qualities than a Brazilian *arabica* and an Indonesian *canephora*, and also a more favourable acidity and more complex flavour profile, though slightly less of these desiderata than an Ethiopian *arabica*. It had nearly the same body as the others, and lacked an unpleasant, earthy bitterness found in the Brazilian *arabica* and the Indonesian *canephora*. When asked if what they were tasting was *arabica*, the judges said "yes" 81% of the time for samples of *stenophylla*, compared with 98% for the *arabica* from Ethiopia. They identified the Brazilian *arabica* as such only 44% of the time, and (showing no one is perfect) misidentified the *canephora* as *arabica* on 7% of occasions.

All told, these results suggest that Don's report from 1834 is correct. *Stenophylla* does taste like *arabica*. And, crucially, it tolerates higher temperatures than either *arabica* or *canephora*. That opens two possible courses of action. One is to cultivate it directly, though this might run into the yield problem which led to its abandonment in the first place. The other is to crossbreed it with existing cultivars, to endow those high-yielding varieties with its heat tolerance. Whichever path is pursued, though (and they are not mutually exclusive), the rediscovery of *stenophylla*'s qualities offers hope not only to coffee growers who might otherwise have had their businesses harmed by rising temperatures, but also to the world's caffeine addicts, who need now worry less about the future supply of their drug of choice. ■

Cancer research

An inward observatory

How to map tumours using the techniques of astronomy

OVER THE past two decades Alexander Szalay, an astronomer at Johns Hopkins University in Baltimore, has helped create the most detailed maps of the cosmos yet made. His raw material comes from the Sloan Digital Sky Survey, which began in 2000. So far, this project has charted a third of the heavens and observed nearly 1bn astronomical objects.

The survey's telescope, which sits on a mountain top in New Mexico, collects its data by recording the arrival of photons of light on a charge-coupled device. This turns them into an electrical signal that Dr Szalay and his confrères translate into a representation of reality by winnowing out the noise and determining, from what remains, what sorts of objects the telescope is looking at and how far away they are.

Now, Dr Szalay has added a microscope to his telescope. In collaboration with Janis Taube, a colleague at Johns Hopkins who is a pathologist, he is developing AstroPath. This is a project that combines his knowledge of astronomy with hers of pathology into a system which does for images of cancer cells and tissues what the Sloan survey does for images of the universe.

Dr Szalay, ever handy with an astronomical analogy, compares the most common current approach to the examination of images of cancers—which is to look in great detail, but at only a few tumours—to studying the universe using the Hubble Space Telescope. This instrument can focus on only a restricted area of the sky, but is then able to record what it sees with im-

mense precision by spending lots of time taking long exposures.

As a consequence, the Hubble has surveyed only 45 of the 41,253 square degrees which constitute the celestial sphere. By contrast, the Sloan survey has so far covered, in a more cursory manner, about 15,000 square degrees of that sphere. This sweeping approach lets astronomers understand the universe's large-scale structure by seeing entire clusters of galaxies and the relationships between them.

Both methods are valuable. But because fewer cancer biologists use the second than the first, AstroPath is designed to fill the gap. The specialised microscopes the project uses capture images of broad slices of tumours, and do so in multiple wavelengths. These images are then subjected to data-analysis techniques developed as part of the Sloan survey.

In particular, AstroPath employs a technique called immunofluorescence to make its images. This works by using antibodies to attach fluorescent tags to specific sorts of protein molecules. That permits the distributions of these proteins throughout a tumour to be mapped cell by cell. So far, AstroPath can do this simultaneously for between 20 and 30 proteins. Dr Taube's long-term goal is to do likewise for hundreds of individual tumours of more than 20 different types, enabling comparisons to be made both within and between types.

Currently, AstroPath has scanned more than 226m cells from three types of tumour—lung cancer and two skin cancers, melanoma and Merkel-cell carcinoma. Dr Szalay points out that dealing with these three alone meant processing more pixels than the whole Sloan survey to date. But this is only a start. Eventually, he and Dr Taube aspire to collect and process 1,000 times more data than this.

For herself, Dr Taube particularly hopes AstroPath will flag up molecules that will help her develop blood tests for melanoma

and lung cancer, and will improve her understanding of how tumours respond to a form of treatment called immunotherapy. Some cancers are able to put the brakes on the immune system's anti-tumour activity. Disable this ability and the immune system can return to the fray. She hopes to identify markers, such as the levels of a substance called PD-1, a so-called immune checkpoint protein, that will be able to predict whether a patient will respond to such therapy—and, if so, precisely which sort of it.

The project's wider aim, though, is to make the results available to the world as a cancer atlas in a format similar to Google Maps. Then, any interested oncologist can take a look and draw conclusions relevant to his or her own area of interest and expertise. If that can be done, it really will enable cancer researchers to reach for the stars. ■

Evolutionary stasis

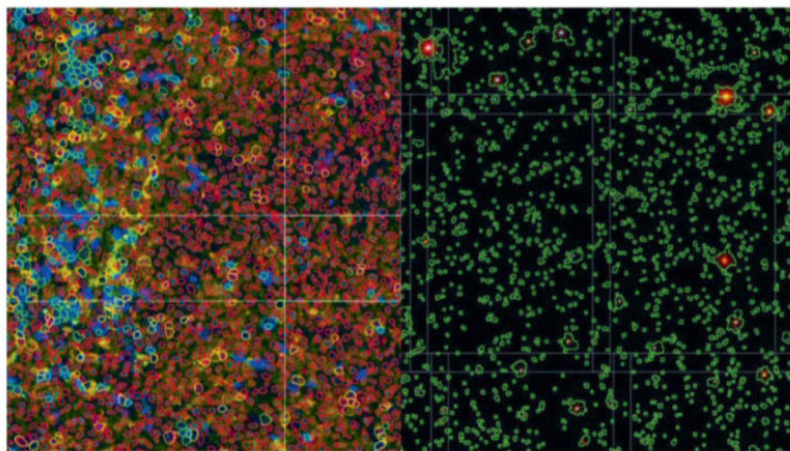
Gold bug

An odd survivor from the distant past

A LOT HAS happened in the past 165m years. Dinosaurs populated Earth and then died off. The ancestors of whales gave up the land and went back into the oceans. The ancestors of humans gave up the trees and came down to the plains.

And all the while, a species of bacterium which lives deep underground and feeds on chemicals extracted from rocks continued merrily along without any apparent change at all. The term "living fossil" is much bandied about to describe modern creatures that look like relicts of the past. In this case, though, it really does seem an appropriate description. Not only is *Desulforudis audaxviator* found, like real fossils, inside rocks, it also seems to have remained unchanged since the Jurassic.

Desulforudis was discovered in 2008, in water collected from a gallery 2.8km below ground in the Mponeng gold mine in South Africa, the world's deepest. Or, rather, its genetic trace was, for the bacterium itself resists cultivation in a laboratory. The species derives its energy by reacting sulphate ions with hydrogen molecules and it scavenges from the rocks it inhabits the carbon and nitrogen atoms that it requires to assemble the organic molecules from which it is built. From the point of view of organisms living at the surface, which derive their energy ultimately from the sun, via the photosynthesis of plants, this might seem to be a rather specialised way of life. But before photosynthesis evolved, bio-▶



Microscopic v macroscopic

► chemistry of this sort would presumably have been normal.

What is not normal is the implication of a finding reported in *ISME Journal* by Ramunas Stepanauskas of the Bigelow Laboratory for Ocean Sciences, in Maine, and his colleagues. They have shown that samples of *Desulforudis* which have been collected from Siberia and California since the bug's discovery are genetically almost

identical to the one from South Africa.

In most species, mutations happen frequently. Such random genetic changes are often damaging, and are eliminated by natural selection. But beneficial or neutral mutations may be preserved, and will accumulate over the course of time. If a population becomes divided, so that its various parts cannot interbreed, their genetic make-up will gradually diverge. The degree

of divergence gives clues as to how long ago the separation occurred.

On the face of things, then, the similarity of these three widely separated *Desulforudis* populations suggests their common ancestor is recent, and that its descendants dispersed rapidly around the planet. How that could be is a mystery. *Desulforudis* grows and reproduces slowly, so if it simply spread through its rocky, subterranean habitat, the aeons involved should have permitted a lot of mutation. In theory, it could have escaped into the air or the sea, which would have let it travel far and wide. However, both oxygen and salt would be toxic to this species, so that seems unlikely in practice. Moreover, when Dr Stepanauskas and his colleagues searched a big database of genes from surface-dwelling microbes, just in case, they found no trace of any DNA from *Desulforudis*.

It looks, therefore, as if *Desulforudis* did indeed migrate across the world through the rocks it lives in. And the likelihood that this happened long ago is made all but certain by the fact that the three populations in question live on separate continents, now barely connected by the sorts of continental rocks the bacteria inhabit.

I met a traveller from an antique land

The last time Africa, Eurasia and North America were well connected was when they were part of a single supercontinent, called Pangaea. That land mass formed about 270m years ago, held together for a while, and then gradually broke up again between 165m and 55m years ago. It is this sequence of events which led Dr Stepanauskas and his colleagues to the conclusion that *Desulforudis* must have remained essentially unchanged for so long.

Dr Stepanauskas says that *Desulforudis* seems to have developed mechanisms which replicate DNA with tremendous accuracy, and which correct any errors that do occur. Why such mechanisms might help this particular species, when most others are more fault-tolerant, is unclear. One possibility is that its environment is so stable that "locking in" an optimal genetic configuration is an evolutionarily effective strategy. Such stability might be a consequence of it living in what its original discoverer, Dylan Chivian of the Lawrence Berkeley National Laboratory, in California, called "a single-species ecosystem". *Desulforudis* has neither parasites, nor predators, nor prey.

From the human point of view, a hyper-reliable DNA copying mechanism could have applications in biotechnology—and, to this end, the researchers have already applied for a patent on one of the bug's enzymes. Even if that does not prove useful, though, *Desulforudis* was already an intriguing organism. It is made more intriguing by this discovery. ■

Aeronautics on Mars

The Wright stuff

A small helicopter has taken off on another planet

IN DECEMBER 1903 Orville and Wilbur Wright's *Flyer* lifted off the ground for the first time, near Kitty Hawk, North Carolina, and proved that powered, controlled flight was possible on Earth. On April 19th, at 7.34am Universal Time, a small American helicopter called *Ingenuity* proved it works on another world, too. Following an intricately planned flight sequence six years in the making, the 1.8kg craft spun its contra-rotating twin rotor-blades at 2,400rpm, to ascend from the surface of Mars. It climbed to an altitude of three metres, hovered for 30 seconds, took a photograph of its own shadow (pictured) and touched back down on the ground.

Flying conditions on Mars are rather different from those on Earth. Though it has only a third of Earth's gravity at its surface, which sounds as if it might make the task of flying there easier, Mars's atmosphere has a mere hundredth of the density of Earth's. This means there is little air to push against when attempting to fly. To compensate, *Ingenuity*'s blades spin five times faster than those of a typical helicopter on Earth.

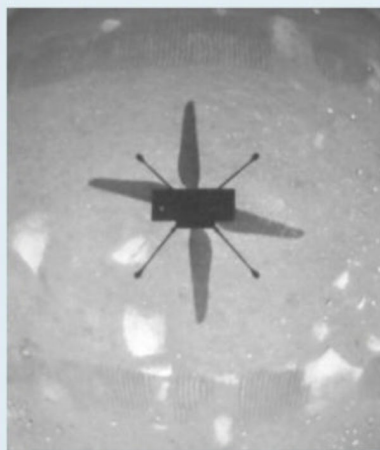
To keep its flight stable with such fast-moving blades requires hundreds of adjustments a second, based on a stream of information from sensors aboard the aircraft. This complexity explains why the test flight, which was supposed to happen a week ago, was delayed. The project's engineers identified software problems during a high-speed spin-test of the rotors, and these had to be fixed.

Ingenuity's flight brings space scientists closer to a new way of exploring other worlds. Over several decades, rovers designed by NASA, America's space agency, have become ever-more sophisticated mobile laboratories. But they still move slowly and cautiously, and can operate only over reasonably flat ground. Future flying machines could carry payloads around quickly, or survey wide areas of terrain, regardless of its rough-

ness. They could also fly close up to cliff faces that have interesting-looking rock formations, or deep into cave systems.

Despite the daunting engineering challenges required, NASA already has plans to use such machines in future exploration. In 2026 a mission called *Dragonfly* will, if all goes well, be launched towards Titan, a moon of Saturn. Using eight rotors, this aircraft will carry its suite of scientific instruments to dozens of places, to examine the habitability of the local environment and perhaps look for signs of life.

Ingenuity does not carry any instruments, since it is just a technology demonstrator, though it will send back pictures of its travels. Despite its diminutive size and capabilities, however, the aircraft has now been given the official designation "1G1" by the International Civil Aviation Organisation—the United Nations agency responsible for such matters. In homage to the builders of *Flyer*, it also carries a small piece of cloth from one of *Flyer*'s wings, and its Martian aerodrome will henceforth be known as Wright Brothers Field.



Me and my shadow



Kudos in the arts

And the winner is...who cares?

In the age of the algorithm, the clout of the tastemaker is diminishing

THE ORGANISERS of the Academy Awards are going to some lengths to lure stars to this year's ceremony, which will take place on April 25th. To bypass travel restrictions, nominees and their guests have been designated "essential workers". All attendees will be tested for covid at least three times. Zooming in is banned, so simultaneous mini-events are to be held in London and Paris for those who can't make it to Los Angeles.

The bigger challenge may be persuading viewers to tune in from home. If other awards shows are a portent, the Oscars are in for a difficult night. Last month the Grammy music awards got just 9.3m viewers in America, less than half the number who watched last year. In September the Emmys, television's equivalent, notched 6.4m, another record low.

The pandemic has not helped: most of last year's big films were postponed because cinemas were shut, dimming the Oscars' allure. But the decline of interest in arts awards has been long in the making (see chart on next page). It signifies grow-

ing boredom with ritzy galas, in an age when lots of stars broadcast directly to Instagram themselves. It betokens frustration in some quarters with a lack of diversity in judging panels and nominees—and, in others, with the perceived left-wing bias of the industry. More than that, though, it is evidence of a deeper shift in the entertainment world, in which the common popular culture that awards shows celebrate is itself being eroded.

Top of the bots

Years of sliding ratings have sparked calls to jazz up the Oscars, a three-hour backslapping fest stuffed with commercial breaks. Ideas include more offbeat categories and more involvement for fans. But

this kind of makeover hasn't much helped other awards shows. This year's Grammys, which included spectacles such as Lil Baby re-enacting a police shooting and rapping on top of a squad car, was hailed by the *Los Angeles Times* as the best in memory; its ratings were still the worst. Its defenders point out that young music fans hardly watch any TV these days. But the online buzz is quietening too. Google searches in America for the Grammys this March were one-third lower than five years ago; queries for the Oscars and other gong shows have seen a similar drop.

Ranking the best artists of the day made more sense in an era when most people imbibed broadly the same content. When it was launched in 1981, "MTV made the world into a monoculture, where everybody was focused on the same acts," says Bob Lefsetz, a veteran music-industry analyst. Those days are long gone. Today Spotify offers more than 70m songs, a figure which grows by 60,000 a day. Viewers who once chose from a handful of TV channels and a couple of local cinema screens now have access to hundreds of cable and streaming services. User-generated content, on YouTube and the like, has added near-infinite options.

Audiences navigate this ocean of culture with the help of personalised recommendations, making them even less likely to see and hear the same things. Playlists cooked up by the algorithms of Spotify, Apple Music and others have become the

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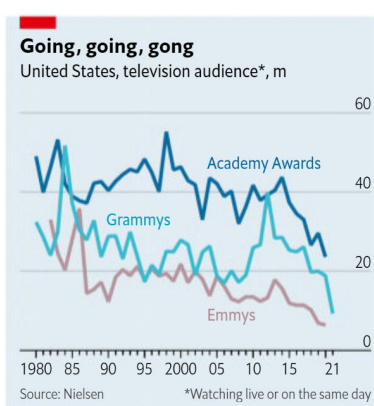
▶ main means of discovering songs. Half of Netflix subscribers in America say they rely on their TV for viewing suggestions, up from 37% two years ago, according to Ampere Analysis, a research firm. Only 3% of British book-buyers say that prizes steer their choices, according to Nielsen, another research company, which finds that readers are three times more likely to make their decision after browsing an online bookshop like Amazon, where recommendations are made algorithmically.

The upshot is that the entertainment monoculture once epitomised by the Oscars has splintered into microcultures. “We’re in an asynchronous world, where what can be a summer hit show or song to us, nobody else might have heard of or watched,” says Mark Mulligan of MIDIA Research, a consultancy. As for arts prizes, “with every year that goes by, there’s a larger share of the audience for whom they mean much less.” How relevant are the Grammys to a listener who has been led down an algorithmic rabbit-hole into an obsession with sea shanties? Why would someone tune in to the Emmys if their favourite screen idol is an ineligible TikTok star like Charli d’Amelio? (Look her up—or ask a teenager.)

The diminishing role of industry tastemakers is reflected in the sort of art now being produced. To make it onto computer-generated playlists, songs must avoid getting skipped, so tracks increasingly open with a catchy “pre-chorus”. New releases may have up to a dozen writers making sure that every section sparkles—a “genetically modified hit”, quips Mr Mulligan, who doubts that “awkward listens” like Radiohead would do as well today. “Bohemian Rhapsody” by Queen, which takes more than a minute to get going, would not be released, he suspects. Songs have become shorter, since artists are paid per stream. Labels are even making sure that the titles are Alexa-friendly.

Islands in the stream

Amid this algorithmic takeover, the role of awards has evolved. Their influence on audiences has not evaporated altogether. In the two weeks after it won this year’s Grammy for best album, for instance, streams in America of Taylor Swift’s “Folklore” leapt by 6.7m, or 21%, according to MRC Data. But the economics of streaming mean such filips are worth less to the artists than they once were. Ms Swift will have pocketed a little under \$20,000 in royalties from her post-Grammy uplift in streams, plus about \$35,000 from extra album sales, calculates Will Page, author of “Tarzan Economics” (and formerly of Spotify). That compares with royalties of around \$1.1m that he thinks Adele, the winner in 2012, made from her Grammy-induced jump in record sales. “The upfront transaction of a cinema



ticket or CD was made for awards bumps. The same can’t be said for monetising consumption downstream on Netflix and Spotify,” says Mr Page.

As for film and tv awards: ironically it is the streaming services, which have helped erode the entertainment monoculture, that now value prizes most highly. Clinching Oscars gives them legitimacy as “proper” film studios in the eyes of customers—and performers, who tend to dislike going straight to video. Instant availability means that audiences can watch Oscar-winning films at home as soon as the victors are announced. Netflix, which has more nominations than anyone else this year, created a page in its app to lead subscribers to its nominated films, which have duly enjoyed a boost in views. The streaming market among young people is saturated, so streamers are courting the over-35s, who still set store by awards, says Richard Broughton of Ampere Analysis. With older

viewers in mind, streamers are commissioning more of the grown-up productions that judges esteem, such as Netflix’s “The Trial of the Chicago 7” and Amazon’s “Sound of Metal”, two nuanced dramas.

As offerings proliferate and interests diverge, one way for awards and critics to remain relevant can be seen in the book world. The ease of books’ distribution and the relative cheapness of their production mean publishing has never been as monocultural as Hollywood. Book awards have long focused on slices of the market, such as high-quality literary fiction, where they retain significant clout.

The 13 novels longlisted for the Booker prize in 2019 sold an average of 160 copies in Britain in the week before the list was announced, and 470 the week after, according to Nielsen. The winner gets an average bump of about 10,000 sales in the week after the ceremony in the autumn, says Philip Stone of Nielsen, with a tail that lasts until Christmas (and a valuable boost overseas). Making it into one of the “book clubs” run by celebrities such as Oprah Winfrey means a still-bigger bonanza. For a few literary megastars, such as Margaret Atwood, all this makes relatively little difference. For others, it is transformative.

The Oscars judges seem to be taking a leaf out of the book world, homing in increasingly on niche cinema. Between 1980 and 2003 most “Best Picture” winners were among the ten highest-grossing films in America in the year of their release, according to a ranking by the *New York Times*. In the 16 years since, none has been. That is partly because the box-office top ten has been dominated by superheroes and remakes, which may do well commercially but tend not to get the nod for gongs. Even so, judges seem to be embracing lesser-known movies. Only three of the past ten winners even made the top 50 at the box office. The two most recent, “Green Book” and “Parasite”, barely made the top 100.

The result is that the Oscars are having a greater commercial impact on the films that win (as the Booker always has), albeit from a relatively low base. “Parasite”, a Korean-language black comedy, doubled the number of American screens on which it was shown in the month after being named Best Picture, according to Gower Street Analytics, a research company. “Nomadland”, an uncommercial drama which is the bookmakers’ favourite to win this year, would likewise reap a big dividend.

Cultural prizes are supposed to highlight the best work in their genres; but, says Mr Lefsetz, for successful performers these days, “the awards show is always in the rear-view mirror.” The more that judges and other tastemakers unearth artists who have been passed over by algorithms, the more relevance they will retain amid the rise of the robot critics. ■



Peacekeeping

Local heroes

The Frontlines of Peace. By Séverine Autesserre. Oxford University Press; 240 pages; \$27.95 and £18.95

IN THE PAST five years wars have cost more than \$10trn annually, calculates Séverine Autesserre. That is 13% of the world's GDP or \$4 a day for each of its inhabitants; 2bn people live in conflict zones. Her book is about finding better ways to stop them.

Take the east of the Democratic Republic of Congo. One of the world's most expensive peacekeeping missions has been there for more than 20 years, yet armed groups are multiplying. Massacres—often perpetrated embarrassingly close to UN bases—are routine. Locals nickname peacekeepers “body collectors” for habitually turning up when it is too late; many want them to leave. Earlier this month protesters blocked roads with burning tyres and brought the cities of Goma and Beni to standstills. Ms Autesserre, a frequent visitor to the region, candidly observes some of the mission's most absurd mistakes and considers how better to prevent bloodshed in Congo and elsewhere.

Part of the trouble is that foreign peacekeepers and aid workers often exist in homogeneous bubbles, which she calls “Peaceland”. From Haiti to Somalia, Congo to Afghanistan, Peacelanders live in compounds in posh neighbourhoods, roll around in four-by-fours, get drunk with other foreigners and often distrust locals. Ms Autesserre's criticisms are scathing and often justified, but she empathises with the Peacelander too—“an outsider living and working far from family, in constant fear, and confronting a lack of basic facilities while performing a job that is emotionally draining”. Security measures imposed by charities or missions can prevent Peacelanders leaving their bases, or put certain neighbourhoods off limits. The author approves of a proposal for “calculated disobedience” on their part.

The distance between outsiders and locals leads to preposterous missteps. Ms Autesserre describes a scheme in Congo in which rebels were offered \$100 for their weapons. But a Kalashnikov goes for \$40 on the black market, so fighters turned in rusty guns, bought two new ones and still had money for beer. Staff from the mission gave mobile phones to a handful of people in dangerous villages so they could call if the situation deteriorated. But the villages

had neither phone signal nor electricity. Peacekeepers often descend on war zones without speaking the local languages, relying instead on a few harried translators.

Ms Autesserre's solution is bottom-up peacebuilding. Peacelanders should spend more time working with communities, understanding their grievances and earning their trust, rather than hobnobbing with government officials and UN bigwigs. More responsibility should be given to locals. Neglecting them leads to failure (as in Kenya, where people joke that NGO stands for “Nothing Going On”) or emasculation (Haitians have nicknamed their country “The Republic of the NGOs”). By contrast, in two surprising oases of peace, Somaliland and the island of Idjwi in Lake Kivu in eastern Congo, the “collective eyes and ears of people” have helped keep violence at bay.

Building peace in war-ravaged countries such as Congo is extremely complicated (as Ms Autesserre acknowledges). After all, the mission there is obliged by the government to work with the army—which is itself responsible for some of the worst abuses. Closer collaboration with communities is only a start. But it would be an improvement on the current malaise, as this timely critique of Peaceland's denizens and sponsors shows. ■

Schumpeter's heirs

Innovate to accumulate

The Power of Creative Destruction. By Philippe Aghion, Céline Antonin and Simon Bunel. Translated by Jodie Cohen-Tanugi. Belknap Press; 400 pages; \$35 and £28.95

JOSEPH SCHUMPETER thought capitalism was doomed. Incumbent firms would grow too powerful, leading to corruption and, eventually, socialism. His mid-20th-century pessimism has become fashionable today, as societies grapple with inequality, climate change and tech giants. Yet some of Schumpeter's professional heirs are optimists. In “The Power of Creative Destruction” Philippe Aghion, Céline Antonin and Simon Bunel, three economists, apply his most powerful idea to contemporary debates in their discipline. The result is sweeping, authoritative and—for the times—strikingly upbeat.

Elementary models of growth focus on the accumulation of capital, with technological progress and advances in productivity assumed but poorly explained. The Schumpeterian paradigm of creative destruction, of which Mr Aghion is a modern



The march of progress

champion, puts innovation at its core. In this view, ideas drive long-term growth. People are motivated to innovate by the prospect of monopoly rents (an aberration in simplistic economics). But innovation also destroys rents by displacing the previous generation of entrepreneurs.

Take development. Critics of free markets like to argue that the fast growth of Asian economies such as South Korea in the late 20th century proves the desirability of state intervention, given that these places often sheltered firms from competition and subsidised their exports. The Schumpeterian paradigm emphasises knowledge. When countries are far from the frontier of innovation, the important thing is to learn how to imitate the best, which the government and businesses might manage arm-in-arm. But economies must later become innovative themselves. In South Korea this was achieved fortuitously. In the late 1990s the Asian financial crisis bankrupted some *chaebols* (industrial conglomerates) and exposed others to competition in part because of policies imposed as a condition of an IMF bail-out. The happy result was an economy that produces ideas.

The authors are not market fundamentalists. They emphasise that innovation is self-perpetuating. Advances in one area, such as internal-combustion engines, will naturally lead to more—and the state can nudge firms down the right path. To tackle climate change, they recommend subsidies for green innovation alongside taxing carbon emissions. They are unafraid of calling for industrial policy in sectors such as aerospace, where the initial costs of entry are high and demand is uncertain (meaning the private sector has an incentive to wait for someone else to innovate first). It is crucial, they urge, that govern- ➤

ments always encourage new entrants rather than impeding them.

What about labour markets and inequality? The authors are sceptical about some contemporary doom and gloom. Automation creates more jobs than it eliminates, they reckon. Innovation yields fortunes at the very top but does not seem to boost overall inequality, as measured by the Gini coefficient—a subtle rejoinder to those who think that the success of billionaires is America's biggest problem. Creative destruction is a force for social mobility: California's elites have higher in-

comes than Alabama's, but its poorest have more opportunities too. Tax cuts on capital income, like Sweden's in the early 1990s, stimulate innovation and growth.

Inequality resulting from lobbying and regulatory capture, however, is cancerous: it brings slower growth and less social mobility. The authors also call for an "insurer state" to redistribute wealth and protect workers against the vicissitudes of a dynamic economy. And they worry about the runaway success of technology giants stifling ingenuity, arguing that competition regulators should be as concerned

with the incentive to produce ideas as with companies' market shares.

Schumpeter was an outsider among the Keynesian economists of his day. His ideas were rooted in the real world of business, not the ivory tower. This book, by contrast, is in part a defence of economics (and of third-way liberalism). Its brevity relative to its ambition means that it is not always convincing; sometimes the evidence adduced is thin. But the overall argument is compelling and, with creative destruction falling out of political favour, it carries a trace of Schumpeterian subversion. ■

Johnson Woof's the word

The desire to find language in man's best friend overlooks what makes a dog a dog

THE BROWS seem to furrow. The face turns to the ground. Nearby, your shoes lie in tatters. You know—simply know—that your dog is ashamed of having destroyed your only decent pair, and is meekly trying to tell you so.

Dogs' faces seem to beg to be interpreted. And lots of humans cannot resist interpreting them in the terms delimited by human languages. A puppy licking your cheek enthusiastically is bestowing a "kiss". A dog using its body with no apparent practical goal is "playing". If they could speak like their owners, many humans want to know, what would their dogs have to say?

Into the market for answers step Christina Hunger, author of the forthcoming book "How Stella Learned to Talk", and Alexis Devine, the owner of Bunny, a canine TikTok star with over 6.3m followers and 130m "likes". After careful training, both Stella and Bunny can paw a series of buttons that make a recorded voice speak one of several dozen programmed words. Both Ms Devine and Ms Hunger claim that their dogs string meaningful sequences together: that they are using language.

Human linguists tend to be sceptical of "talking" animals. To understand why, consider Noam Chomsky's devastating review in 1959 of "Verbal Behaviour" by B.F. Skinner, a pioneer in behavioural psychology—a pivotal exchange at the birth of modern linguistics. Skinner described human language acquisition as he did other learned behaviours: the strengthening of a response after conditioning with a stimulus. If saying "food" gets you food, you're more likely to say it.

Mr Chomsky took Skinner's conditioning mechanisms to their absurd conclusions. Skinner wrote that "if we are shown a prized work of art and

exclaim *Beautiful!*, the speed and energy of the response will not be lost on the owner." Mr Chomsky noted that this reasoning might lead people "to shriek *Beautiful* in a loud, high-pitched voice, repeatedly, and with no delay". Real humans, by contrast, might in fact show appreciation through a long moment of silence, and then a barely murmured compliment.

People use words in many odd ways. They talk about things that are not the case and hypothesise about things that might be. They make jokes. Dogs like Stella, by contrast, do indeed act a lot like Skinner's conditioned beings. They press a button that says "outside" when they want to go outside; unsurprisingly, rewards strengthen the drive to comply.

Ms Hunger came up with her button system after working with children who were not developing language normally. The field of "Alternative and Augmentative Communication" has helped many youngsters express themselves better (often with tablet computers), to their relief and their families'. But some dog experts dislike the practice of foisting word-based

communication onto pooches. By focusing on a basic kind of language that seems human—at least in Skinner's view—it neglects dogs' abilities to express themselves in their own ways.

Though novice dog-owners are sometimes embarrassed by the habit, they quickly become used to their new companions' fondness for sniffing the behinds of other dogs, who reciprocate. The animals are using exquisitely sensitive noses and anal glands to exchange information, about age, health and sexual readiness, among other things. Dogs urinate frequently not, as once assumed, primarily to claim territory, but to leave similar bulletins for others.

Posture, too, conveys masses of information between dogs: stance, hackles, eyes, ears and teeth contribute to a range of messages transmitted between them. Finally, their own vocalisations, though hardly of the words-and-syntax type that make up human utterances, are more sophisticated than the "Hey! Hey! Hey! Hey!" many humans hear. Barks, growls, murmurs and whines vary widely.

Impartial scientists have yet to report on the "talking" abilities of dogs like Stella and Bunny (though Bunny is being studied at the Comparative Cognition Lab at the University of California, San Diego). In the meantime, ordinary owners can have a go at training their dogs with the advice Ms Hunger offers. Or they can try another approach: buy one of the many good books on understanding how dogs naturally communicate, and spend the time they might invest in programming buttons on getting to know their pets instead. Having another species in the house is fascinating as well as fun. Even the best-trained dog is a poor conversationalist in human terms—but a brilliant one on their own.



Economic data

	Gross domestic product				Consumer prices		Unemployment	Current-account	Budget	Interest rates		Currency units	
	% change on year ago				% change on year ago		rate	balance	balance	10-yr gov't bonds	change on	per \$	% change
	latest	quarter*	2021†		latest	2021†	%	% of GDP, 2021†	% of GDP, 2021†	latest, %	year ago, bp	Apr 21st	on year ago
United States	-2.4	Q4	4.3	5.5	2.6	Mar	2.1	6.0	Mar	-2.7	-13.5	1.6	99.0
China	18.3	Q1	2.4	8.5	0.4	Mar	1.6	5.3	Mar	2.6	-4.8	3.0	97.0
Japan	-1.4	Q4	11.7	2.7	-0.4	Feb	0.2	2.9	Feb	3.2	-9.0	nil	-8.0
Britain	-7.3	Q4	5.2	5.1	0.7	Mar	1.7	4.9	Jan	-12.6	0.8	49.0	0.72
Canada	-3.2	Q4	9.6	4.8	2.2	Mar	2.1	7.5	Mar	-2.1	-9.2	1.5	95.0
Euro area	-4.9	Q4	-2.7	4.2	1.3	Mar	1.2	8.3	Feb	3.3	-5.9	-0.3	20.0
Austria	-5.7	Q4	-5.6	3.8	2.0	Mar	1.7	5.7	Feb	3.0	-6.1	nil	-7.0
Belgium	-4.9	Q4	-0.3	3.8	0.9	Mar	1.0	5.7	Feb	nil	-7.0	nil	-12.0
France	-4.9	Q4	-5.7	5.3	1.1	Mar	1.1	8.0	Feb	-1.7	-7.2	nil	-1.0
Germany	-3.6	Q4	1.4	3.5	1.7	Mar	1.8	4.5	Feb	6.8	-4.0	-0.3	20.0
Greece	-5.9	Q4	11.1	2.5	-1.6	Mar	0.1	15.8	Dec	-5.8	-5.7	0.9	-153
Italy	-6.6	Q4	-7.5	3.4	0.8	Mar	0.7	10.2	Feb	3.0	-10.5	0.8	-142
Netherlands	-2.8	Q4	-0.5	3.1	1.9	Mar	1.9	3.6	Feb	11.4	-3.4	-0.3	1.0
Spain	-8.9	Q4	0.1	5.8	1.3	Mar	0.8	16.1	Feb	1.5	-8.7	0.4	-39.0
Czech Republic	-4.8	Q4	2.5	3.8	2.3	Mar	2.2	3.3	Feb	1.7	-5.5	1.9	52.0
Denmark	-1.4	Q4	2.7	3.0	1.0	Mar	0.7	4.6	Feb	7.4	-1.3	nil	20.0
Norway	-0.6	Q4	2.6	2.6	3.1	Mar	1.6	5.0	Nov	2.4	-1.7	1.4	65.0
Poland	-2.8	Q4	-2.8	4.0	3.2	Mar	2.4	6.5	Feb	2.1	-4.9	1.6	23.0
Russia	-1.8	Q4	na	2.7	5.8	Mar	4.6	5.4	Mar	4.0	-1.7	7.2	81.0
Sweden	-2.1	Q4	-1.0	2.4	1.7	Mar	1.4	9.7	Feb	4.0	-2.3	0.4	42.0
Switzerland	-1.6	Q4	1.3	2.5	-0.2	Mar	0.3	3.3	Mar	8.1	-0.9	-0.2	21.0
Turkey	5.9	Q4	na	3.9	16.2	Mar	11.9	14.1	Feb	-2.3	-3.1	17.6	518
Australia	-1.1	Q4	13.1	3.1	0.9	Q4	2.0	5.6	Mar	2.2	-7.6	1.6	77.0
Hong Kong	-3.0	Q4	0.7	3.3	0.4	Feb	1.8	7.2	Feb	3.2	-3.6	1.2	50.0
India	0.4	Q4	42.7	10.4	5.5	Mar	5.2	6.5	Mar	-1.0	-7.0	6.1	-14.0
Indonesia	-2.2	Q4	na	3.3	1.4	Mar	2.8	7.1	Q3	-0.1	-6.5	6.5	-124
Malaysia	-3.4	Q4	na	4.4	0.1	Feb	2.4	4.8	Feb	3.5	-6.0	3.1	16.0
Pakistan	0.5	2020**	na	1.7	9.1	Mar	8.8	5.8	2018	-1.9	-6.9	10.0	206
Philippines	-8.3	Q4	24.4	6.6	4.5	Mar	4.0	8.7	Q1	-0.9	-7.4	4.1	24.0
Singapore	0.2	Q1	8.3	4.8	0.7	Feb	1.8	3.3	Q4	16.5	-4.1	1.6	58.0
South Korea	-1.2	Q4	5.0	3.3	1.5	Mar	1.5	4.3	Mar	4.5	-4.7	2.0	55.0
Taiwan	5.1	Q4	5.8	4.5	1.3	Mar	1.6	3.7	Feb	15.1	-0.5	0.4	-10.0
Thailand	-4.2	Q4	5.4	3.3	-0.1	Mar	0.8	1.5	Dec	4.0	-6.0	1.6	58.0
Argentina	-4.3	Q4	19.4	6.2	42.6	Mar	41.9	11.0	Q4	2.1	-6.0	na	93.0
Brazil	-1.1	Q4	13.3	3.2	6.1	Mar	6.7	14.2	Jan	-1.0	-7.6	9.3	234
Chile	nil	Q4	30.1	6.0	2.9	Mar	3.5	10.3	Feb	-0.2	-6.9	3.5	41.0
Colombia	-3.5	Q4	26.5	4.8	1.5	Mar	2.6	15.9	Feb	-3.3	-8.9	6.1	-81.0
Mexico	-4.3	Q4	13.7	5.1	4.7	Mar	3.8	4.5	Feb	2.4	-2.8	6.4	-66.0
Peru	-1.7	Q4	37.9	8.5	2.6	Mar	2.4	13.9	Mar	-0.2	-7.0	5.1	98.0
Egypt	2.0	Q4	na	2.9	4.4	Mar	6.2	7.2	Q4	-3.1	-8.1	na	15.7
Israel	-1.5	Q4	6.5	3.4	0.2	Mar	1.4	5.1	Feb	3.9	-9.2	1.0	19.0
Saudi Arabia	-4.1	2020	na	3.0	5.0	Mar	2.5	7.4	Q4	3.1	-3.0	na	3.75
South Africa	-4.1	Q4	6.2	2.0	3.2	Mar	3.7	32.5	Q4	-1.6	-9.2	9.1	-125

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

		% change on:	
In local currency	Index	one week	Dec 31st 2020
United States S&P 500	4,173.4	1.2	11.1
United States NASComp	13,950.2	0.7	8.2
China Shanghai Comp	3,472.9	1.6	nil
China Shenzhen Comp	2,277.2	2.6	-2.2
Japan Nikkei 225	28,508.6	-3.8	3.9
Japan Topix	1,888.2	-3.3	4.6
Britain FTSE 100	6,895.3	-0.6	6.7
Canada S&P TSX	19,143.3	-0.1	9.8
Euro area EURO STOXX 50	3,976.4	nil	11.9
France CAC 40	6,210.6	nil	11.9
Germany DAX*	15,196.0	-0.1	10.8
Italy FTSE/MIB	24,161.4	-1.7	8.7
Netherlands AEX	709.4	-0.4	13.6
Spain IBEX 35	8,519.8	-0.8	5.5
Poland WIG	59,083.6	-1.8	3.6
Russia RTS, \$ terms	1,464.2	-1.7	5.5
Switzerland SMI	11,209.1	0.5	4.7
Turkey BIST	1,330.5	-5.6	-9.9
Australia All Ord.	7,258.9	-0.3	6.0
Hong Kong Hang Seng	28,621.9	-1.0	5.1
India BSE	47,705.8	-1.7	-0.1
Indonesia IDX	5,993.2	-0.9	0.2
Malaysia KLSE	1,596.6	-0.1	-1.9

		% change on:	
	Index	one week	Dec 31st 2020
Pakistan KSE	45,306.5	nil	3.5
Singapore STI	3,155.1	-0.8	10.9
South Korea KOSPI	3,171.7	-0.3	10.4
Taiwan TWI	17,202.1	2.0	16.8
Thailand SET	1,580.0	2.5	9.0
Argentina MERV	47,616.5	0.7	-7.0
Brazil BVSP	120,062.0	-0.2	0.9
Mexico IPC	48,867.6	1.1	10.9
Egypt EGX 30	10,642.5	5.2	-1.9
Israel TA-125	1,692.9	-0.3	8.0
Saudi Arabia Tadawul	10,095.4	2.5	16.2
South Africa JSE AS	67,145.8	-1.0	13.0
World, dev'd MSCI	2,933.0	0.7	9.0
Emerging markets MSCI	1,336.9	nil	3.5

US corporate bonds, spread over Treasuries

		Dec 31st 2020
Basis points	latest	
Investment grade	122	136
High-yield	365	429

Sources: Refinitiv Datastream; Standard & Poor's Global Fixed Income Research. *Total return index.

Commodities**The Economist commodity-price index**

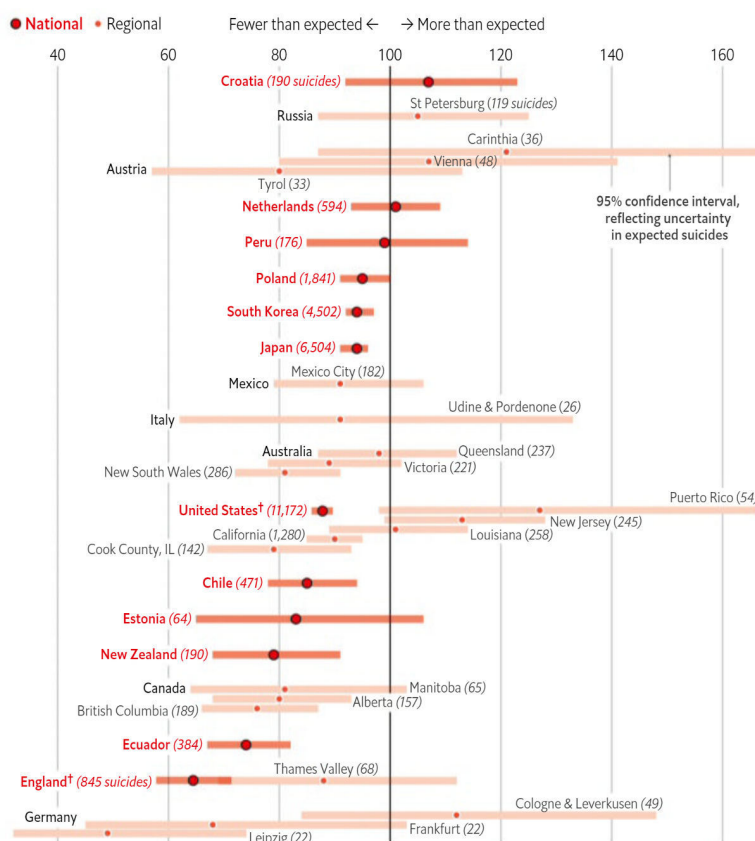
		% change on:	
2015=100	Apr 13th	Apr 20th*	month
Dollar Index			
All items	167.8	176.7	8.4
Food	127.3	131.7	4.5
Industrials			
All	205.6	218.8	10.8
Non-food agriculturals	158.8	164.2	9.0
Metals	219.4	235.0	11.2
Sterling Index			
All items	186.5	193.4	-0.6
Euro Index			
All items	156.0	162.7	6.9
Gold			
\$ per oz	1,742.6	1,776.0	2.8
Brent			
\$ per barrel	63.8	66.7	9.9

Sources: Bloomberg; CME Group; Cotlook; Refinitiv Datastream; Fastmarkets; FT; ICCO; ICO; ISO; Live Rice Index; LME; NZ Wool Services; Thompson Lloyd & Ewart; Umer Barry; WSJ. *Provisional.

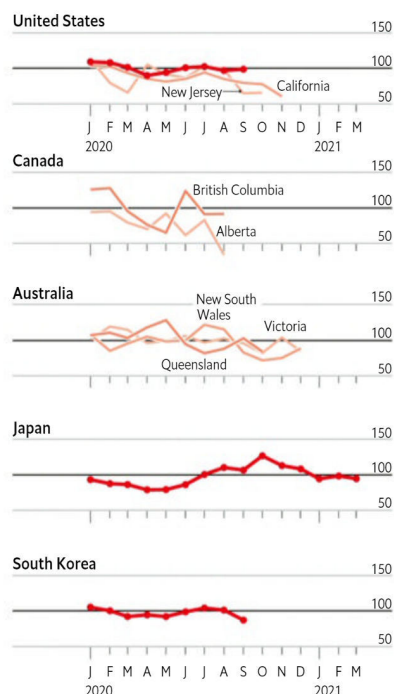
For more countries and additional data, visit [Economist.com/indicators](https://www.economist.com/indicators)

→ Suicide rates either declined or showed no meaningful increase as the covid-19 pandemic struck

Number of suicides in April-July 2020 as % of those expected based on pre-covid-19 trends*



Number of suicides by month as % of 2016-19‡ average, selected countries/regions, 2020-21



Sources: "Suicide trends in the early months of the covid-19 pandemic", by Jane Pirkis et al.; national statistics; *The Economist*

*Based on long-run trends and/or seasonal variation in each country

†The Economist estimates for national figures

‡Except United States, 2014-19; California, 2017-19; British Columbia, 2018-19; New South Wales, 2019; Japan, 2015-19

Welcome reprieve

Confounding expectations, suicide has become rarer during the pandemic

IN MAY 2020 the Australian Medical Association (AMA) issued a warning on mental health. Amid the SARS outbreak of 2003, the suicide rate rose among elderly women in Hong Kong. Studies suggest suicide is also more common during recessions. Based on these precedents, the AMA projected that covid-19 could cause a 25% increase in suicides. In some scenarios the AMA considered, extra deaths from self-harm could exceed those caused by covid-19 itself.

Fortunately, this does not seem to have come to pass. Data from the Australian states of New South Wales, Queensland and Victoria show that there were 2% fewer suicides between April and September of 2020 than in the same period of 2019.

Australia has had a mild pandemic relative to other Western countries. However,

even places that covid-19 has ravaged show a similar pattern. A recent study of 21 countries in the *Lancet* measured how suicide rates changed between the first and second quarters of 2020, after adjusting for seasonality and for the long-run trend in each country before the pandemic began. In the median jurisdiction with available numbers—many data sources were sub-national, such as provinces—there were 10% less suicides between April and June 2020 than expected, and 7% less than in the same months of 2019. Weighted by population, the average declines were 7% relative to expectations and 11% compared with 2019.

The study focuses on the early months of the pandemic. In theory, the problem could have grown worse over time. Suicides did surge in Japan late last year, yielding the country's first year-on-year rise since 2009. Its government appointed a "minister of loneliness" in response.

However, in the first quarter of 2021 Japan's rate returned to its pre-pandemic level. Recent numbers from other countries do not show evidence of a spike in suicides either. The *Lancet* authors also analysed the subset of jurisdictions for which data

were available up to October, and found similar trends to those from the second quarter. Beyond that study, England reported a 12% decline in the year to September. And in America, a paper by scholars from the Centres for Disease Control and Prevention found a 6% drop in 2020.

The surprising stability of suicide rates suggests that broadly shared gloom does not necessarily predict deep individual despair. One potential explanation is that by providing fiscal support that shielded citizens from the financial consequences of the pandemic, governments in rich countries have reduced a cause of stress that could, in the worst cases, lead to suicide.

Few developing countries, which are less able to cushion economic blows, have released data for 2020. However, Malawi reported a 52% increase in suicides last year. Although the country did not have a severe covid-19 outbreak or a strict lockdown, its economy slowed down sharply. More data are needed from other countries with weak social safety nets to determine whether the financial lifelines offered by some governments have actually kept especially vulnerable people alive. ■



Just one big lie

Bernard Madoff, deviser of the biggest Ponzi scheme in history, died in prison on April 14th, aged 82

IT WAS RARE for Bernard Madoff to invite anyone to his investment-advisory office. Almost all the employees in his brokerage firm, Bernard L. Madoff Investment Securities, were kept out of that part, and had no idea what went on inside. The door was locked. Like his other offices, it was immaculate, with a starkly modernist décor of black, white and grey. When he caught one of his employees eating a pear there, dripping juice onto the grey carpet tiles, he immediately ripped out the stained tile and laid another. No sloppiness allowed.

He set the tone himself, in a Savile Row suit with his wedding ring, gold or platinum, exactly matched to the wristband of his vintage watch of the day. All was done with elaborate care, including the handling of other people's money. A very simple scheme ensured that, come what may, his private clients received compound average annual returns of a steady 15% on their investments. It worked so well that despite the recession of the early 1990s, the financial crisis of 1998 and the September 11th attacks, savings sent to him inexorably grew, as if by magic.

Everyone wanted to know how it was done, and he was not about to tell them. If they pressed him he would say it was a proprietary strategy, with details not to be discussed. This was a private fund, secret and exclusive; what went on there was no one's business. Clients loved that special feeling. Their funds would be diversified, they learned, across solid property, blue-chip stocks like Intel and Coca-Cola, Treasury bonds. He knew the ways of the market inside out; he had even modernised it, helping to launch the first electronic stockmarket, Nasdaq, and becoming its chairman. He was famously respected on Wall Street. All that, and he charged no commission for his money-management services! He was happy, he would say, just to earn commissions on the trades.

Happy because, in that mysterious office, he was carrying on the biggest Ponzi scheme in history. It was simplicity itself. The

money sent to him by new investors was used to pay existing investors, as well as any redemptions (which he honoured in full and promptly). Some was also diverted into beach houses for him and the family in Long Island and Cap d'Antibes, and into trips to Las Vegas for the accounts manager. The money flowed round and round in a delightfully circular way. And there was plenty of it: by 2001 he was managing billions, and his clients included Tufts and Yeshiva universities (he was a trustee of Yeshiva), HSBC, Nomura, the Royal Bank of Scotland, Steven Spielberg, John Malkovich and several Jewish charities. As a Jewish boy from Queens, he had a special interest in helping such causes, as he told Elie Wiesel, the Nobel peace prizewinner, over dinner once. Wiesel's foundation invested \$15.2m with him, and lost it all—as did almost 5,000 other investors, most of them ordinary elderly folk, who lost a total of \$64.8bn on paper and around \$20bn in hard, and hard-earned, cash. That money was still being recovered on the day he died.

No trades were ever made with it. It went straight to him and to the scheme. Meanwhile he trusted a tiny band of employees to insert fake trades into customer statements, based on his own best calculations of how share prices had moved. If inspectors asked for records he could not immediately produce, these too would be fresh-made and, if too suspiciously warm from the printer, cooled in the office fridge.

Inspectors seldom got suspicious, however, because they liked and trusted him. He had not spent a third of his time in Washington in the late 1980s and early 1990s, cosying up to the Securities and Exchange Commission, for nothing. In 1992 the SEC found out that two accountants from his father-in-law's firm had channelled \$440m to him since 1962, offering clients annual returns of up to 20%, but not registering the notes they issued with the SEC as the law required. He returned the money (taking it from one of his largest investor's accounts), and the regulators left him alone. Sometimes they even asked his advice on market operations. So when the financial press in the early 2000s began to smell something rotten in his secret system, regulators still trusted him entirely. Five inspections brought up nothing alarming.

It took the financial meltdown of 2008 to expose him. Suddenly he had more than \$12bn to find for investors withdrawing their funds in panic, and he could not cover it. In December he confessed to his two sons, who worked for him, that it was all just one big lie. Then, while he took the staff out for a party at a Mexican restaurant, the family lawyer called the regulators in. His sons, who both died before him, were never reconciled with him.

Everyone was dumbfounded. His legitimate business had flourished for 36 years, skilfully built up from trading over-the-counter penny stocks to a firm with 200 employees and a glassy Midtown office. He did not need the money. At his trial in 2009 he called his giant fraud a "problem", something out of his control. But that hardly squared with a scam he had been conducting, in its tiniest details, since the 1960s. And the scam itself did not fit with the Bernie his employees thought they knew, treating them in his quiet, fussy way like family; or whom his wife Ruth thought she knew, after 50 years; or with the industrious, outgoing student who had worked his way through college by installing lawn-sprinklers on the side; or that affable guy at the country club who would softly suggest, over supper, that his closed fund might have room for just one more.

Not being a man of many words, he said little to explain himself after his arrest. His talk of "torment" and "horrible guilt" was given short shrift by the judge, who sentenced him to the maximum possible, 150 years. His sorrow, the judge thought, was mostly for the more than \$170bn in assets that were forfeited by court order: for the \$7m Manhattan penthouse, the power boats, the private jet. The accused himself remarked that the fraud had gone on and on because he could not accept the fact that for once in his life, he had failed. In other words, he could not bear to tell his clients that he was not a magician. So he ruined them instead. ■