

# The Economist

Local heroes: Asia's tech giants

The Democrats' hypocritical tax plans

Of stablecoins and free banking

Why Interpol needs policing

DECEMBER 4TH-10TH 2021

The threats  
to the world  
economy



**“They helped us change the game with  
AI, 3D and Infosys Cobalt cloud-first solutions.”**

- Roland-Garros



[www.infy.com/Roland-Garros](http://www.infy.com/Roland-Garros)



## On the cover

Omicron amplifies three dangers that stalk the global economy: leader, page 11. With its wonky spike, the variant looks ominous. How bad is it likely to be? Briefing, page 18. Assessing China's slowdown, page 59. How vulnerable are emerging economies? Page 60

**Local heroes: Asia's tech giants**  
For vibrant, competitive internet firms, look to emerging markets: leader, page 12. Grab's upcoming \$40bn Nasdaq listing is a key test for Asian tech, page 53

**The Democrats' hypocritical tax plans** They make a mockery of the party's progressive pledges: leader, page 12. Why Democrats may spend hundreds of billions subsidising the rich, page 30

**Of stablecoins and free banking** The explosion in pegged digital tokens revives a debate about 19th-century American banks: Free exchange, page 66

**Why Interpol needs policing** The election of a worrying new president is the latest thing to go wrong at the global policing agency: leader, page 14. A tussle for control of Interpol pits good cops against bad, page 51

→ The digital element of your subscription means that you can search our archive, read all of our daily journalism and listen to audio versions of our stories. Visit [economist.com](http://economist.com)

## The world this week

8 A summary of political and business news

### Leaders

11 The world economy Danger ahead

12 Build Back Better SALT in the wounds

12 Technology The third way

13 Sex and gender Bad medicine

14 Global crime Who will police Interpol?

### Letters

15 On Kyle Rittenhouse, Centerra Gold, housing, social mobility, London's bridges, business speak

### Briefing

18 The Omicron variant Watchful waiting

## Asia

21 India's falling fertility

22 Kyrgyzstani thuggery

23 South Korea's floating city

23 Business succession in Japan

24 Banyan Violence in the Pacific



## China

25 Single mothers unite

26 Women's tennis v China

27 Chaguan The democracy war with America



## United States

30 SALT's giant tax break

31 Tainted drinking water

32 Crime-spotting tech

32 Roe's last stand

33 Navy shipyards

34 Road rage rising

35 Lexington Son of a slave



## The Americas

36 Mexican supply chains

37 Honduras's election

38 Bello Cultural mestizaje



## Middle East & Africa

39 Omicron's economic hit

40 Africa's data centres

41 China and Africa

41 Iran and the nuclear deal

42 Saudi Arabia's booze ban



**Chaguan** Dysfunction in the West tempts China's Communist Party to make risky boasts, page 27



**Europe**

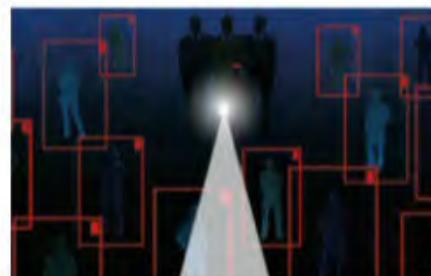
- 43** Spain and migrants  
**44** Spanish accents  
**45** Beefing up Ukraine's army  
**45** Nord Stream 2  
**46** Italy's next president  
**47** **Charlemagne** The EU's Global Gateway

**Britain**

- 48** Conversion therapy  
**49** When spooks speak  
**50** **Bagehot** Jordan Peterson and the lobster

**International**

- 51** Tussles at Interpol

**Business**

- 53** Asia's tech landscape  
**54** Twitter's founder leaves  
**55** **Bartleby** The once and future office  
**56** China's celeb crackdown  
**56** Christmas chart toppers  
**57** Intellectual property  
**58** **Schumpeter** A shake-up at J&J

**Finance & economics**

- 59** China's Omicronomics  
**60** Emerging markets  
**63** Carbon pricing  
**63** India and bond indices  
**64** **Buttonwood** Have SPACs cleaned up?  
**65** Norway's oil fund  
**66** **Free exchange** Policing stablecoins

**Science & technology**

- 67** Random numbers  
**68** Water's arrival on Earth  
**69** Perovskite phone screens  
**69** Hybrid helicopters  
**70** Trypanosomes and bees

**Books & arts**

- 71** India's contested archaeology  
**72** Middle Eastern Christians  
**73** Paul McCartney's memoir  
**73** A forgotten 18th-century war  
**74** Greta Garbo's mystique

**Economic & financial indicators**

- 76** Statistics on 42 economies

**Graphic detail**

- 77** The gulag's surprising legacy

**Obituary**

- 78** Stephen Sondheim, transformer of American musicals

The Economist

Volume 441 Number 9274

Published since September 1843  
 to take part in "a severe contest between  
 intelligence, which presses forward,  
 and an unworthy, timid ignorance  
 obstructing our progress."

**Editorial offices in London and also:**  
 Amsterdam, Beijing, Berlin, Brussels, Chicago,  
 Dakar, Dallas, Dubai, Johannesburg, Madrid,  
 Mexico City, Moscow, Mumbai, New Delhi, New  
 York, Paris, San Francisco, São Paulo, Seoul,  
 Shanghai, Singapore, Tokyo, Washington DC

**Subscription service**

For our full range of subscription offers, including  
 digital only or print and digital bundled, visit:  
[Economist.com/offers](http://Economist.com/offers)

If you are experiencing problems when trying to  
 subscribe, please visit our Help pages at:  
[www.economist.com/help](http://www.economist.com/help)  
 for troubleshooting advice.

To manage your account online, please visit  
[my.economist.com](http://my.economist.com) where you can also access  
 our live chat service which is available 24/7.  
 To call us, contact our dedicated service centre on:

Asia: 00800 7711 2711  
 Singapore: +61 2915 75069

**PEFC certified**

This copy of *The Economist*  
 is printed on paper sourced  
 from sustainably managed  
 forests, recycled and  
 controlled sources certified  
 by PEFC  
[www.pefc.org](http://www.pefc.org)



"BEAUTY LIES IN THE DETAILS OF  
THE GRANDEST STRUCTURES,  
AND THE FINEST."

ORAÏTO,  
CREATOR OF SHAPES, WEARS THE  
VACHERON CONSTANTIN TRADITIONNELLE.

**VACHERON CONSTANTIN**  
GENÈVE

ONE OF  
NOT MANY.



Governments scrambled to limit the transmission of **Omicron**, the latest strain of covid-19, which initial evidence suggests spreads faster than earlier mutations, including Delta. First identified in South Africa, Omicron has been detected in dozens of countries. The World Health Organisation warned that Omicron poses a “very high” global risk. Joe Biden said it was “a cause for concern, not a cause for panic”. The governments of Israel and Japan stopped foreigners from crossing their borders. Restrictions on travel from southern Africa were imposed by America, Britain, the European Union, South Korea and a host of other countries.

Ursula von der Leyen, the president of the European Commission, said it was time for all EU member states to discuss whether to make covid-19 vaccines mandatory. So far, only Austria has done so.

**Australia** delayed a further easing of its border restrictions by a fortnight because of Omicron. **Singapore** tightened its entry procedures, but its land border with **Malaysia**, one of the world’s busiest crossings, was reopened to vaccinated travellers. It had been shut for 20 months.

The UN issued a report on **Afghanistan’s** economy. It predicted that GDP will shrink by 20% within a year. Foreign aid, which had accounted for 40% of GDP, has been sharply curtailed since the Taliban’s military takeover in August. Their policy of making it hard for women to work makes the country poorer. Stopping girls from going to school will, in

the long-run, have an even worse economic effect.

### Bong” Go gone

In the **Philippines** an ally of the president, Rodrigo Duterte, withdrew from the presidential race. The exit of Christopher “Bong” Go leaves the government without a candidate in May’s election, though Mr Duterte’s daughter, Sara, is running for the separately elected post of vice-president. Ferdinand Marcos junior is the front-runner for president.

**India’s** fertility rate fell below replacement level. An Indian woman can expect to have 2.0 children, down from roughly six in 1947. The country’s population is now predicted to peak a decade earlier than previously expected, at perhaps 1.6bn people in 30 years, and then to shrink.

Russia and America traded angry words over **Ukraine**. Antony Blinken, the American secretary of state, warned the Kremlin, which has been massing troops at the border with Ukraine, not to invade. If it does, he threatened economic sanctions rather than an American military response. A day earlier Vladimir Putin had described any deployment of NATO troops or missiles in Ukraine as “red lines” for him.

The European Commission launched what it is calling its **Global Gateway scheme**, an attempt to rival China’s Belt and Road Initiative. The idea is to use EU investment guarantees to help raise as much as €300bn (\$340bn) of public and private investment in the developing world. Critics say this is mostly a repackaging of various existing schemes.

Talks on the future of the **nuclear deal** signed between Iran and six world powers resumed in Vienna. Joe Biden wants to revive the agreement, which his predecessor ditched three years ago. Western diplomats were guardedly optimistic after Iran agreed to discuss steps to come back

into compliance with the deal. But international inspectors also reported that Iran was continuing its nuclear work.

Back in **Iran**, big demonstrations rattled the regime. Riot police were deployed in the city of Isfahan, where thousands of residents protested about a lack of water. Locals say a long-running drought has been made worse by official bungling and the diversion of water to other cities.

Conservationists flew 30 **white rhinos** from South Africa to Rwanda. It was the largest such airlift aimed at protecting the endangered animals.

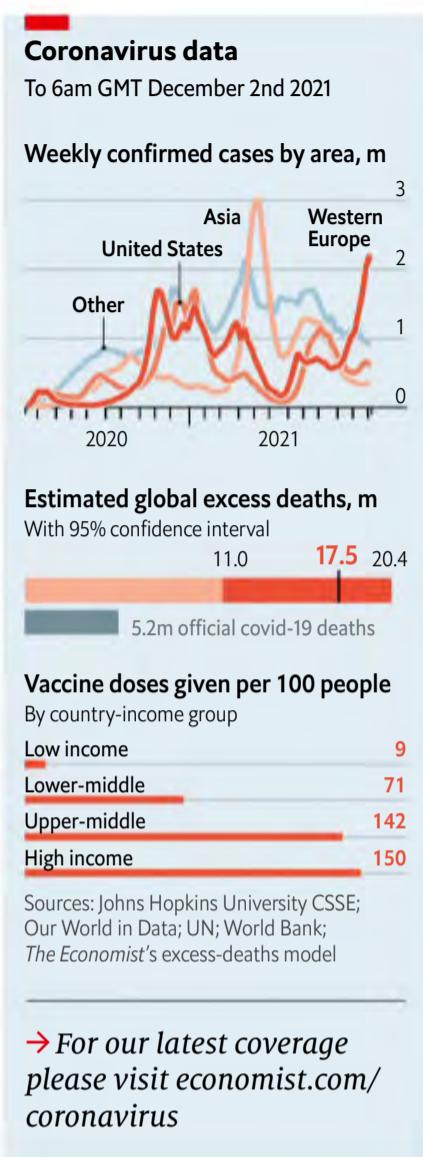
**Uganda** fired shells and launched air strikes across its border into the Democratic Republic of Congo. It hit camps used by the Allied Democratic Forces, a rebel jihadist group that was behind two deadly bombings in Kampala, Uganda’s capital, in November.

### Abortion on trial

America’s Supreme Court heard arguments about **abortion**. A law in Mississippi bans most abortions after 15 weeks. It has not been enforced because the Supreme Court has held for nearly half a century that states may not ban abortion before a fetus is viable. Pro-life activists hope, and pro-choice activists fear, that the current court will reverse this ruling and return the matter to the states. If so, several states would quickly ban most abortions.

America’s air-force secretary said his country was engaged in an “**arms race**” with China in the development of hypersonic weapons. He said this did not necessarily involve boosting their number, but rather their quality. The chairman of the Joint Chiefs of Staff has said that China tested such technology this year, calling it close to a “Sputnik moment”.

The Women’s Tennis Association suspended its tournaments in **China**. It cited



→ For our latest coverage please visit [economist.com/coronavirus](http://economist.com/coronavirus)

uncertainty surrounding Peng Shuai, a Chinese tennis star who last month accused a former deputy prime minister of sexually abusing her. The WTA worries that Ms Peng has been silenced.

Xiomara Castro was declared the winner of the presidential election in **Honduras**. Ms Castro is from the left-wing opposition. Her win marks the first real political change for over a decade in a country riddled with corruption and organised crime. She campaigned as a moderate, though many of her allies are on the far left.

Fifty-five years after gaining independence from Britain, **Barbados** became a republic, removing the British monarch as its head of state. At a ceremony on the Caribbean island, Prince Charles acknowledged the “appalling atrocity of slavery”. One of the first acts of the new republic was to proclaim Rihanna, a pop star born in Barbados, a national hero.

**Jack Dorsey** stepped down as chief executive of Twitter, which he helped found in 2006. Investors have long thought that Mr Dorsey was spreading himself too thin between Twitter and Square (soon to be renamed Block), a payments company that he will still lead. He was sacked as CEO in 2008, but returned to the job in 2015. Last year a hedge fund sought his removal, after Mr Dorsey said he wanted to spend some time in Africa. He once likened Twitter to a “global consciousness”. The job of running this universal system of awareness now falls to Parag Agrawal, the former chief technology officer.

Britain's competition regulator looked to unwind a merger involving Big Tech when it directed **Meta**, the parent company of Facebook, to sell **Giphy**, a database of animated GIF files that social-media users attach to their posts. Both companies are American. The regulator concluded that Facebook's acquisition of Giphy last year could concentrate Facebook's market power in Britain, and also curtail Giphy's potential to expand its own advertising services.

A regional director of America's National Labour Relations Board ordered **Amazon** to allow workers at a warehouse in Alabama a second vote on whether to unionise, finding that the company had “hijacked” the process. In April a closely watched vote on joining a union, the first at an Amazon centre in America, was overwhelmingly rejected by employees. Amazon might appeal to the full NLRB against the decision to hold a re-run.

**Nubank** lowered the target share-price range for its forthcoming IPO in New York. The Brazilian fintech firm, Latin America's most valuable startup, could still be valued at \$42bn, placing it above Brazil's biggest bank in terms of market capitalisation. Meanwhile **Grab**, a “super app” offering a wide range of services and based in Singapore, prepared

to make its stockmarket debut on the Nasdaq exchange by merging with a special-purpose acquisition company.

### Omigod, Omicron

Markets were unsettled by the potential for Omicron to hamper economic recovery. Global **stockmarkets** plunged after South Africa announced that it had discovered the latest strain of covid-19, and remained febrile. **Oil prices** also swooned on the prospect for reduced demand. Brent crude fell to \$70 a barrel, from \$82.

Jerome Powell also spooked markets when he said it was time to drop the word “transitory” from the Federal Reserve's statements on **inflation**. The central bank's chairman admitted that the risk of higher inflation had increased, and indicated that he would support a quicker pace of monetary-tightening measures.

The **euro zone's** average annual rate of inflation rose to 4.9% in November, the highest it has been since the creation of the single currency more than 20 years ago, adding more pressure on the European Central Bank to start winding down its stimulus programme. In

Germany inflation stood at 6%, a level not seen since the aftermath of reunification three decades ago.

The **Australian economy** expanded by 3.9% in the second quarter over the same three months last year, but shrank by 1.9% compared with the previous quarter. Melbourne and Sydney ended their extensive pandemic lockdowns only in October.

### Unorthodox



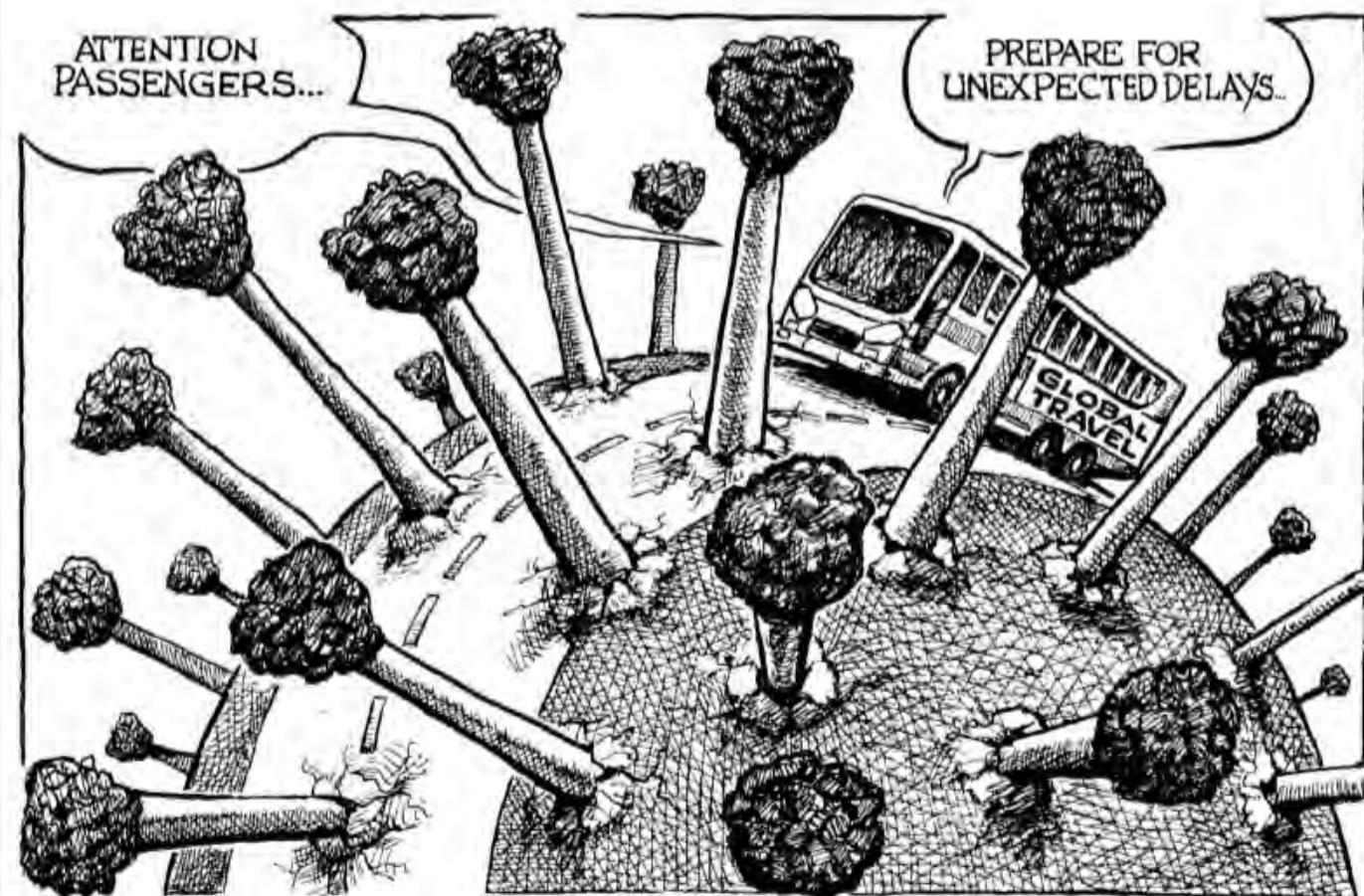
With the lira plunging to new lows, prompting another intervention by the central bank to prop up the currency, **Turkey's** finance minister resigned, and was replaced with an ally of the country's president, Recep Tayyip Erdogan. Mr Erdogan believes that his insistence on interest-rate cuts has created an economic boom: GDP grew by 7.4% in the

third quarter, year on year. But the plunging lira and inflation of nearly 20% have made household goods much more expensive, leading to recent street protests.

The UN reported that international **tourist** arrivals were up by 58% in July to September compared with the same three months last year, but were still 64% below the same quarter in 2019. Tourist arrivals for the whole of 2021 are expected to remain 70-75% below those of 2019, about the same as 2020.

**Nissan** outlined an ambitious plan to invest in electric vehicles. The Japanese company will spend ¥2trn (\$17.7bn) on producing new electric or hybrid models, aiming for an “electrification mix” of more than 50% globally by 2030. It will still sell cars with internal-combustion engines.

Australia's securities commission said it would fine **Westpac**, one of the country's biggest banks, for wrongly charging customers, including dead people. The regulator found that, among other things, Westpac had sought fees from over 11,000 deceased customers “for financial-advice services that were not provided due to their death”.



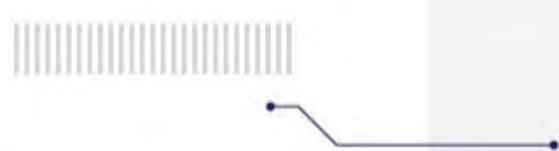


NANYANG  
TECHNOLOGICAL  
UNIVERSITY  
SINGAPORE

Nanyang Business School



Business Insights



Public Policy



# ENABLING INNOVATIVE PUBLIC LEADERSHIP



Network



The **Nanyang Fellows MBA** allows public sector leaders to reimagine digital transformation and leverage best business insights and leadership practices from the public and private sectors to augment policy-making for sustainable impact. In-depth classes at Tsinghua University, China and University of California, Berkeley, USA enhance the programme with global perspectives.

Learn more



To explore the Nanyang Fellows MBA, scan the QR code or contact us at +65 6790 6621 / [fellows@ntu.edu.sg](mailto:fellows@ntu.edu.sg).

# Danger ahead

## Omicron amplifies three dangers that stalk the global economy

A LITTLE MORE than a year after the first success of a covid-19 vaccine in a clinical trial, a sense of dread has struck much of the world. The Omicron variant of the coronavirus, first publicly identified on November 24th, may be able to circumvent the defences built up by vaccination or infection with covid-19. The World Health Organisation declared that Omicron poses a “very high” global risk. The boss of Moderna, a vaccine-maker, warned that existing jabs may struggle against the heavily mutated new variant. Faced with the ghastly prospect of yet more lockdowns, closed borders and nervous consumers, investors have reacted by selling shares in airlines and hotel chains. The price of oil has slumped by roughly \$10 a barrel, the kind of drop often associated with a looming recession.

As we explain this week (see Briefing) it is too early to say whether the 35 mutations on Omicron’s spike protein help make it more infectious or lethal than the dominant Delta strain. As scientists analyse the data in the coming weeks, the epidemiological picture will become clearer. But the threat of a wave of illness spreading from one country to the next is once again hanging over the world economy, amplifying three existing dangers.

The first is that tighter restrictions in the rich world will damage growth. On the news of the variant, countries scrambled to block travellers from southern Africa, where it was first identified. Israel and Japan have closed their borders entirely. Britain has imposed new quarantine requirements. The pandemic abruptly ended a freewheeling era of global travel. Restrictions were being eased this year, but the past week has shown that gates are slammed shut much faster than they are opened.

The spread of Omicron is also likely to intensify limits on free movement at home. Europe was curbing many domestic activities even before the variant arrived, in order to fight surging infections of Delta. Italy is keeping most of the unvaccinated out of indoor restaurants, Portugal requires even those who are vaccinated to have a negative test to enter a bar and Austria is in full lockdown. The long-awaited recovery of the rich world’s huge service industries, from hospitality to conferences, has just been postponed.

A lopsided economy fuels the second danger, that the variant could raise already-high inflation. This risk looms largest in America, where President Joe Biden’s excessive fiscal stimulus has overheated the economy and consumer prices rose by 6.2% in October compared with the previous year, a three-decade high. But inflation is also uncomfortably high elsewhere, at 5.3% globally, according to Bloomberg data.

You might think Omicron would lower inflation, by depressing economic activity. In fact it could do the opposite. Prices are rising in part because consumers are bingeing on goods, bunging up the world’s supply chains for everything from Christmas lights to trainers. The cost of shipping a container from the factories of Asia to America remains extraordinarily high. For overall inflation to recede, consumers need to shift spending back towards services like tourism and eating out. Omicron may delay this. The variant could also trigger more lockdowns in key

manufacturing nodes such as Vietnam and Malaysia, aggravating supply glitches. And cautious workers may put off their return to the labour force, pushing up wages.

That may be one reason why Jerome Powell, the chairman of the Federal Reserve, indicated on November 30th that he favours monetary tightening. That stance is right, but brings its own dangers. The spillover effects could hurt emerging economies, which tend to suffer capital outflows and falling exchange rates when the Fed tightens (see Finance & economics section).

Emerging economies have greater reserves and depend less on foreign-currency debt than they did during the Fed’s botched attempt to unwind stimulus during the taper-tantrum of 2013. Yet they must also cope with Omicron at home. Brazil, Mexico and Russia have already raised interest rates, which helps stave off inflation but may reduce growth just as another wave of infections looms. Turkey has done the opposite, cutting rates, and faces a collapsing currency as a result. More emerging economies could confront an unenviable choice.

The final danger is the least well appreciated: a slowdown in China, the world’s second-biggest economy. Not long ago it was a shining example of economic resilience against the pandemic. But today it is grappling with a debt crisis in its vast property industry, ideological campaigns against private businesses, and an unsustainable “zero-covid” policy that keeps the country isolated and submits it to draconian local lockdowns whenever cases emerge. Even as the government considers stimulating the economy, growth has dropped to about 5%. Barring the brief shock when the pandemic began, that is the lowest for about 30 years.

If Omicron turns out to be more transmissible than the earlier Delta variant, it will make China’s strategy more difficult. Since this strain travels more easily, China will have to come down even harder on each outbreak in order to eradicate it, hurting growth and disrupting supply chains. Omicron may also make China’s exit from its zero-covid policy even trickier, because the wave of infections that will inevitably result from letting the virus rip could be larger, straining the economy and the health-care system. That is especially true given China’s low levels of infection-induced immunity and questions over how well its vaccines work.

### Vexing variants and worrying weeks

It is not all gloom. The world will not see a re-run of the spring of 2020, with jaw-dropping drops in GDP. People, firms and governments have adapted to the virus, meaning that the link between GDP and restrictions on movement and behaviour is one-third of what it was, says Goldman Sachs. Some vaccine-makers expect fresh data to show that today’s jabs will still prevent the most severe cases of the disease. And, if they must, firms and governments will be able to roll out new vaccines and drugs some months into 2022. Even so Omicron—or, in the future, Pi, Rho or Sigma—threatens to lower growth and raise inflation. The world has just received a rude reminder that the virus’s path to becoming an endemic disease will not be smooth. ■



Build Back Better

# SALT in the wounds

## The Democrats' fiscal policy makes a mockery of their progressive pledges

THE TAX plans of President Joe Biden were once full of lofty promises. He and Democrats in Congress would reverse Donald Trump's tax cuts, make the wealthy pay more and fully fund all manner of desperately needed climate and social-policy programmes with the proceeds. The middle class would rise and the top 1% would manage. As the messy drafting of Mr Biden's main spending bill—the Build Back Better Act—nears its conclusion after months of wheeling and dealing, it is clear that, when it comes to tax, the result is not lofty at all.

The president was unable to whip his slim congressional majorities into reversing Mr Trump's tax law and increasing marginal rates on capital gains, corporate profits or top individual incomes. And so his plan to raise revenue is a hotch-potch of unorthodox measures, including a new minimum tax on corporate-book income, an excise tax on stock buy-backs and a new surtax on those with incomes above \$10m. The wisdom of these measures can be debated. What cannot is a last-minute addition to the bill that would spend hundreds of billions of dollars subsidising the richest residents of New York and California.

The state-and-local-tax (SALT) deduction lets Americans cut their federal-tax liability if they pay lots of income and property tax at the state and local level (see United States section). Before 2017 this provision was limitless, letting plutocrats in high-tax states deduct all the property tax on their mansions and the state income tax on their millions, at the expense of federal taxpayers everywhere. Mr Trump's tax law capped the tax exemption at \$10,000. Rather than welcome this as a step towards their goal of more redistribution, Democrats in high-tax states moaned that they had been punitively targeted. Just before Build Back Better passed the House of Representatives on November 19th, they raised the cap to \$80,000 a year.

The result is a fiscal fiasco. In the next five years the benefit will cost \$275bn. Exactly none of it will go to the bottom 60% of

earners. Instead 70% of the gains will go to the top 5%. For a party that came to power condemning Mr Trump's tax reform for being regressive, the stain of hypocrisy will be hard to wash out.

If the politics are bad, the policy is worse. The central promise of Mr Biden's agenda was to craft a more muscular state that will be able to grapple with long-term threats such as climate change, pandemics and social dysfunction. Yet what is supposedly built back better will count for nothing if it does not exist. In order to pay for that \$275bn giveaway, the Democrats have jettisoned some of Mr Biden's pledges, including free tuition at community college, and scheduled others to disappear in a few years' time. They are betting that a future Congress will be shamed into finding the money to save these from the axe.

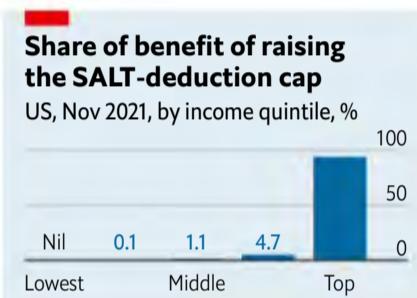
That may turn out to be wishful thinking.

It is also callous. The expanded child benefits have significantly reduced poverty among the most needy Americans, but the programme is due to expire after just one more year. If Democrats held back the hundreds of billions from the SALT deduction, they could almost completely fund a permanent child-benefit scheme. They prefer to give each member of the

top 1% of earners an average tax cut of \$15,000, five times the amount the benefit pays for each child.

The best hope of improving the bill comes in the Senate, where all Democrats must vote for it to pass. Mr Biden is so desperate to see the bill into law that he will not criticise it. Some, like Bernie Sanders, have proposed a compromise limiting the larger SALT deduction to families making less than \$400,000 a year—which tells you just how regressive the current bill is.

There is no way to tweak the SALT deduction to make it desirable. It should be scrapped entirely. But because that will not happen, the debate is whether it can be wrestled into something less bad. Given the steady degradation of Build Back Better, optimism would be unwise. ■



## Technology Local heroes

### For vibrant, competitive internet businesses, look to emerging markets

A DECADE AGO the relentless expansion of American internet giants promised world domination. With their vast home market affording them economies of scale, the likes of Amazon, PayPal and Uber looked destined to monopolise the screens of everyone from Californian charmers to Kalahari farmers.

Today America still rules the global tech industry, broadly defined, accounting for 71% of the market value of listed firms. Nonetheless a different pattern has emerged in the part of the technology industry that focuses on providing internet services to consumers. Here, activity is more dispersed and less American. The trend has been highlighted this year by a rush of flota-

tions of emerging-market internet firms (see Business section).

Instead of a few monoliths, three different categories of business have formed. Using a taxonomy first drawn up by Asia Partners, an investment company, you can define the first group as the global platforms. These still dominate in services where minimal physical presence is required, in particular search, social media and cloud computing. Giants like Alphabet and Facebook (now Meta) generate just over half their sales outside America and are among tech's most international businesses.

A second category has become important in some places: the protected national champion. China's tech giants are keen to ex-

pand abroad, but their profitable home markets are largely sealed against international competition and they are subject to increasingly heavy-handed guidance from their own government. This protected model of tech is becoming popular in other authoritarian countries. Russia has favoured home-grown outfits in e-commerce and fintech, and in the past year has cracked down on the activity of Silicon Valley firms.

The third digital type—local heroes—is prevalent across much of the rest of the world. In Asia and Latin America local and regional companies often rule in e-commerce, gaming, digital payments, ride-hailing, food delivery and other app-based services. Examples from South-East Asia include Sea, Grab and GoTo; South Korea has Kakao and Coupang; and Argentina has MercadoLibre. In India giants including Reliance and Tata aim to promote super-apps that provide a range of services, even as specialists, such as Zomato, a delivery firm, are scaling up.

Typically, these firms operate in markets where it is useful to be on the ground, or where local tastes are what count. In South-East Asia supply chains are highly decentralised, rewarding such knowledge. In fintech regulatory differences make it harder for international groups to thrive. Activity is booming. India's Unified Payments Interface, a system which connects banks and non-banks to make cheap and immediate payments, recorded about \$100bn of transactions in October, more than four times the amount in the same month two years ago. Mynt, a startup that provides mobile payments and loans, has just become the Philippines' first-ever unicorn, meaning that it is valued at over \$1bn.

These businesses have been helped by a surge in the avail-

ability of capital, especially as global investors search for alternatives to China, where President Xi Jinping's tech crackdown will mean lower profits. Of the \$342bn spent on takeovers of emerging-market tech firms so far this year, 71% came from economies outside China, the highest share in 11 years. Emerging-market tech companies outside China issued \$53bn in equity markets so far in 2021, more than twice the previous record. Venture-capital outfits that once focused on America, and maybe China, are scouring the planet looking for startups.

The success of the third type of internet firm is cheering. They boost competition and innovate to solve local problems,

such as mapping cities without registered property. In contrast to American and Chinese firms, they come with little to no geopolitical baggage and are creating clusters of software developers and seasoned investors around the world who may go on to create another generation of startups. Local pension funds no longer have to put money to work on Wall Street in order to get exposure to the digital economy.

Inevitably, there are risks. Some countries may be tempted to shelter their local heroes from competition, or limit how much outsiders can disrupt vested interests at home. Local expertise may not travel well. Capital markets can be unforgiving—share prices in India's Paytm, a payments firm, have tumbled after a botched listing last month—and rising interest rates will make capital more expensive. When the supply of capital dries up, groups still struggling to make money could be in trouble.

Even so, the odds have receded of a global army of smartphone users all tapping an identical set of apps on their screen. Variety should flourish instead, and that is to be welcomed. ■



### Sex and gender

## Bad medicine

### Britain's planned ban on conversion therapy is not what it seems

ONE PIONEER tried transplanting testicles from straight men into gay ones. Sigmund Freud thought hypnosis might work. Priests and imams have tried to “pray away the gay”; doctors administered electric shocks while patients were shown erotic images, in an attempt to recast pleasure as pain.

Psychologists, psychiatrists and quacks have been trying to “cure” homosexuality for at least a century. These days, thankfully, “conversion therapy” is much less common than it used to be. Partly that is because it does not work. Mainly, though, it is because society has changed. Although homophobia still exists, people across the West increasingly see same-sex attraction as something normal and unremarkable. But Britain's government wants to clamp down on conversion therapy all the same. A bill to make the practice illegal will soon be put before Parliament, after a rushed consultation (see Britain section).

Such therapy is always pointless, often cruel, and occasionally dangerous. Yet the government should rethink its plans, because the proposed law is muddled. It conflates sexual orientation with the nebulous and changeable concept of “gender identity”. The government wants “conversion therapy” to include talking treatments that explore why someone's gender identity is at odds with their biological sex. A ban would leave the field of

gender medicine to those happy to shepherd patients—including the growing number of under-18s who see themselves as transgender—into “gender affirmation”, in which their cross-sex identity is treated as permanent. This approach fast-tracks many children onto powerful drugs and sometimes surgery.

That would be a bad idea. There is little evidence that the affirmative approach relieves gender dysphoria—the misery of feeling at odds with one's biological sex. Key to medicine's 20th-century transformation from guesswork to science was the notion that doctors should prescribe treatments only when there is good reason to think they work. Yet the evidence base for the affirmative approach is thin. The drugs it uses were not clinically tested for this kind of therapy. Clinics lose track of patients, making it hard to assess outcomes. Putting the force of the law behind unproved medical treatments is wrong.

What is more, the evidence that does exist is not reassuring. Clinics and psychologists report that many trans-identified patients also suffer from depression and anxiety. Some have had abusive childhoods; many are gay or lesbian and may be confusing their emerging sexuality with a cross-sex identity. A few seem to have homophobic parents for whom the idea of having a straight (trans) “daughter”, say, is preferable to having a gay son. ■

► Between 60% and 90% of children identified as trans eventually seem to reconcile themselves to their biological sex, so long as their cross-sex identity is not uncritically affirmed. Talking to patients about their feelings should not be illegal.

Starting puberty blockers often begins what doctors call a “treatment cascade”. Data from European clinics suggest the vast majority of those prescribed puberty blockers go on to take cross-sex hormones. The drugs are powerful, and so have powerful side effects. Puberty blockers may stunt growth and weaken bones. (A recent case in Sweden documented a teenager with osteopenia, a debilitating brittle-bone disease usually restricted to the elderly.) Cross-sex hormones produce irreversible changes, including the growth of facial hair and a deep voice in women, and the growth of breasts in men. Long-term use can affect fertility. Surgery to remove breasts is permanent, as is surgery on the genitals, which also guarantees sterility. As the growing number of “detransitioners” shows, some of those who undergo such treatments come to regret them bitterly.

A ban on talking therapies would leave the government swimming against the tide. Much of what passes for gender medicine has been pursued recklessly, with little care for the long-term well-being of patients. Yet even within the field, doubts are spreading. Hospitals in Finland and Sweden have backed off from prescribing drugs to the under-18s, in favour of talking therapies. In America, where any deviation from gender affirmation risks provoking attacks on social media, prominent gender doctors are beginning to worry that drugs and surgery have been handed out too readily. An exception is Canada, where a similar ban on conversion therapy has been in place since 2017 and is now being strengthened.

For some trans-identified patients, drugs and hormone treatments will be the right outcome. But for many others, perhaps most, they may not. That is why talking therapies must be available in treatment. Britain’s health service has recently embarked on a review of paediatric gender medicine, which the new law would pre-empt. Ministers should think again. ■

#### Global crime

## Who will police Interpol?

**The election of a worrying new president is just the latest thing to go wrong**

MATTHEW HEDGES, a British doctoral student, says he spent nearly seven months mostly in solitary confinement in a prison in the United Arab Emirates (UAE). He tells of being drugged, interrogated, blindfolded and forced to stand all day in manacles. He falsely confessed to being a spy just to end the agony, he says. He was eventually pardoned and freed. To his horror, the man he accuses of complicity in his torture, Ahmed Naser al-Raisi, the inspector-general of the UAE interior ministry at the time, who was in charge of prisons, was neither sacked nor demoted. The UAE denies the claims and on November 25th Mr al-Raisi was elected Interpol’s new president.

Interpol was set up to help countries’ police forces work together to catch crooks. It has an unfortunate habit of employing them instead. Jackie Selebi, its president from 2004 to 2008, was later sentenced to 15 years in jail for corruption in his native South Africa. Meng Hongwei, the boss from 2016 to 2018, was summoned back to China, disappeared, reappeared in the dock and got 13-and-a-half years for bribery. (His wife says he was framed.) A cynic might ask: whose side is Interpol on?

The agency does not arrest people, but is essentially a communications hub. Its main tool is the “red notice”, which is akin to an international arrest warrant (see International section). Member states give Interpol the names of criminals on the lam and ask for a red notice. This used to be rare. In 2001 fewer than 1,500 were issued. That figure has grown more than sevenfold. In all, more than 66,000 red notices are active. Most are for real criminals, but autocratic regimes have found they can also be used to persecute exiled dissidents.

Russia, responsible for 43% of the 7,500 red notices that have been made public, is a serial abuser. Petr Silaev, a green activist who found asylum in Finland, was accused of “hooliganism”, arrested in Spain and had to fight to avoid extradition to Russia. China is another. In July a Uyghur living in Turkey was detained

in Morocco on the basis of an Interpol red notice. Democracies seldom hand over dissidents to autocratic regimes, but other autocrats have no such qualms. And red notices can do harm even without extradition. They can ruin careers and make it harder to board a plane or open a bank account. Many people wrongly assume that a red notice stems from a thorough investigation by an international body, rather than, say, a despot’s secret police.

Interpol staff are trying harder to weed out the most egregious requests. Reportedly, Turkish officials attempted to upload the names of 60,000 Gulenists onto Interpol’s database, but were rebuffed. (Members of this Islamist movement have been especially persecuted in Turkey since some of them backed a coup in 2016.) American senators introduced a bill in May that would require additional checks before American police act on Interpol notices.

But more is needed. For a start, Interpol’s president should be chosen in an open vote. Today’s secret ballots of all 195 member states make it hard to spot arm-twisting. That would still leave autocratic regimes with a lot of influence. So internal reforms are needed, too.

Requests for red notices from abusers should be subject to strict scrutiny. Currently there is not much, and it is opaque. Persistent abusers should be shut out. In 2012 Interpol blocked Syria’s access to its databases, but in October it inexplicably let the blood-drenched regime back in. Making Interpol more transparent and rigorous will cost money. Its annual budget is just €145m (\$164m)—less than that of the New Orleans police department. Rich democracies should chip in more.

Interpol belongs to the machinery of international governance, an area of competition between democracies and autocracies. It is supposed to bolster the rule of law, by helping catch real globetrotting criminals. It must do more to resist being captured by dictators and autocrats who would like to turn it into a branch of their own secret police. ■



## Let the juries decide

Your pre-verdict article on the trial of Kyle Rittenhouse suggested that the overarching question of gun laws in America, and particularly "when shooting a person is acceptable", is one for the political system and not a jury ("Provoking questions", November 20th). Looking to politicians for a clear answer as to what constitutes reasonable self-defence is impractical. These are the same politicians who, depending on whether they appeared on MSNBC or Fox News, described the trouble in Kenosha as either a peaceful demonstration or riotous looting. To these politicians Mr Rittenhouse is either a vigilante chaos-tourist who wanted to kill innocent people, or a well-meaning young man who looked to protect his community and was ambushed by mentally deranged criminals.

These are the same politicians, including our president, who publicly communicate their opinion about a defendant before the jury's conclusions. They promote narratives that view shootings through the lens of either systemic racism or woke fascism, pushing their followers to take to the streets if the verdict doesn't match theirs.

Can we really expect politicians to grapple with complex legal issues covering the combination of circumstances, protagonists and weapons that lead to a lethal conflict? These are questions that only a jury can answer, after evaluating the evidence of the specific conflict in question.

TONY VENEZIA  
Park City, Utah

## Mining in Kyrgyzstan

We agree that the Kumtor gold mine is vital to Kyrgyzstan (Banyan, November 6th). We take issue, however, with the assumption that Centerra, the mine's owner, did not engage with the Kyrgyz government about how it could best benefit the country and its people. For nearly 30 years Centerra and its predecessor have operated the

Kumtor concession in close co-operation with many Kyrgyz governments. As the largest private employer in Kyrgyzstan (more than 99% of employees are Kyrgyz nationals), Kumtor contributed almost \$4.5bn to the economy between 1994 and 2020.

We have always resolved disputes with successive Kyrgyz administrations through negotiation and compromise, yet the current government has shown no willingness to engage in meaningful dialogue since sending secret police to seize the mine on May 15th. The government's illegal conduct threatens not just Centerra's interests but the future of foreign direct investment in Kyrgyzstan.

SCOTT PERRY  
Chief executive officer  
Centerra Gold Inc.  
Toronto

## Investment and rents

Governments are wrong, you say, to think that allowing private-equity firms into housing markets will drive up rents ("Barbarians at the garden gates", November 20th). Your reasoning implies that more investment in housing should be welcomed because it would bring down house and rental prices. This is not the case. In many countries, private equity has invested primarily, and sometimes exclusively, in existing housing stock. This was certainly the experience in the two largest European markets for private-equity investment, Germany and Spain. Landlords increased rents and often failed to maintain properties.

Even when investment takes place in new construction rather than existing housing, we cannot assume that more supply automatically lowers prices. This has definitely not been the case in Spain and Ireland. Both countries heavily oversupplied housing in the run-up to the 2008 crisis. Did prices fall? No. They rose well above the European average.

House prices are no longer simply driven by housing

supply and demand, but rather by the supply of finance to housing. Expanding mortgage credit drives up prices, as does the arrival of new landlords who think they can make more money than current landlords. And investments require returns. If investors pay a higher price so, inevitably, will their tenants.

PROFESSOR MANUEL AALBERS  
University of Leuven  
Leuven, Belgium

Allowing private equity in housing should not come at the expense of the push for equitable housing, especially mandatory requirements for affordable housing. These require that a certain percentage of newly built homes have cheap rents for people on low incomes. The homes in a development that are sold at market rate subsidise the affordable ones, making the venture profitable. Affordable-housing policies allow big funds to make a return while providing inexpensive homes to a city's working class.

ANTHONY HASCHEFF  
New York

## Struggling to get ahead

The case for investing in social mobility in America is stronger than your briefing suggests, because it rests on political as well as economic grounds ("Stuck in place", November 6th). In a recent paper Philip McCann, who coined the term "geography of discontent", wrote that "Social mobility is the crucial indicator of populist voting."

Contrary to popular perceptions, populist voters are not uniformly deplorable, stupid and racist; they are deeply motivated by perceptions of a rigged, socially immobile economy. Whether a citizen has an unlucky start in life or is knocked down by an economic crisis, too many Americans cannot get ahead on their own merits. Given the Democrats' recent drubbing in Virginia, the party would do well to pivot away from condescending culture wars and towards a fairer economy where

opportunity is more equal and reward is allocated in line with contribution.

It is important that the message of social mobility is not confused with income and wealth inequality. We have shown that the latter are poor predictors of populism. People generally prefer fair economic outcomes regardless of whether they are equal or unequal.

ERIC PROTZER  
Research fellow  
Growth Lab  
John F. Kennedy School of Government  
Harvard University  
Cambridge, Massachusetts

## Spanning the ages

"London's bridges are falling down" (November 13th). Indeed. In 1282 a royal charter was granted establishing the Bridge House Estates as a charity to maintain London Bridge and subsequently other bridges leading into the City of London. Today it stewards a fund of around £1.6bn (\$2.1bn). A simple solution to London's bridge woes would be to place them in the charity's ownership, and for the local council authorities to pay an annual fee in exchange for ongoing maintenance.

CALUM GALLEITCH  
Gordon, Scottish Borders

## Business phraseology

Thank you to Bartleby for his short guides to business speak (November 20th). He nailed it on the head with most of them, though I would amend this:

### "Do you have five minutes?"

Ostensible meaning: This question will take five minutes to answer.

Actual meaning: This question will take 45 minutes of discussion and two days of analysis to answer.

IVAN GRABOWSKI  
Westwood, Massachusetts



## NATIONAL TRANSMISSION & DESPATCH COMPANY LIMITED

### JOB OPPORTUNITY

National Transmission and Despatch Company Limited (NTDC) is a public limited company incorporated under the Companies Act, 2017. The Company owns and operates the high voltage transmission system in the Islamic Republic of Pakistan and the AJK. The Company employs a staff of over ten thousand for managing the transmission network.

### MANAGING DIRECTOR

Consistent with the objectives of the government to reform the power sector, the Ministry of Energy (Power Division) and the Board of Directors of the Company have initiated action plans to transform the Company into a dynamic corporate entity to meet with the emerging challenges in the power sector in the country. These include improving system reliability, extending the network to acquire/transmit power from the new generation and import power from neighboring countries, and instituting a range of reforms in all the Company's functional areas. Specific initiatives include but are not limited to the following:

- Preparation of strategic business plan and rationalization of organizational structure;
- Establishing the mechanism for streamlining processes and procedures for timely completion of projects;
- Introducing a performance-based compensation system and initiating performance audits;
- Implementation of organizational restructuring, Enterprise Resource Planning and SCADA projects;
- Ensuring efficient and speedy Procurement;
- Automating and managing the regulatory compliance for NEPRA;
- Overseeing the implementation of NTDC actions with respect to CTBCM;
- Reducing the Transmission Losses in line with NEPRA targets and International benchmarking ;
- Manage strategic initiatives undertaken to improve system reliability and security;
- Ensuring smooth coordination with Ministries, Planning Commission, NEPRA, CPPAG, PPIB, AEDB, PPMC, WAPDA, DISCOs, GENCOs along with International funding agencies, etc.

To realize these objectives, the Company intends to engage a well-reputed professional to lead the Company through this transformation plan.

#### AREAS OF RESPONSIBILITY

The Managing Director will report to the Company's Board of Directors and actively work to transform the Company to support the growth of the power market in the country and deliver value to its shareholders and customers. In addition to management of operations, the Managing Director will be responsible for extension in the network, development and implementation of strategic plans and initiatives to achieve the performance targets set by the government and the Board. Build and groom teams of seasoned, energetic and dedicated professionals for future leadership and succession planning. The ideal candidate must demonstrate visionary leadership skills and possess management and team-building capabilities and experience.

#### QUALIFICATION AND EXPERIENCE

A Bachelor's degree in Engineering would be the minimum requirement. A Master's degree in Engineering or Business Management from HEC recognized/accredited Universities would be a desirable plus.

The application along with attachments should be emailed at [gmhr@ntdc.com.pk](mailto:gmhr@ntdc.com.pk) on or before 15<sup>th</sup> December 2021 and the hard copies should be sent at the address given below subsequently.

For more details, instructions, terms and conditions please follow the website link [www.ntdc.gov.pk/careers](http://www.ntdc.gov.pk/careers).

**General Manager (HR) NTDC**

2nd Floor, Hall No. 8, Shaheen Complex, Egerton Road Lahore, Pakistan  
Tel: +92-42-99205523, +92-42-99202574, Email: [gmhr@ntdc.com.pk](mailto:gmhr@ntdc.com.pk)



**GRESHAM**  
COLLEGE

### MERCERS' SCHOOL MEMORIAL PROFESSOR OF BUSINESS

Applications are invited for the position of the Mercers' School Memorial Professor of Business. Gresham College has been giving free public lectures since 1597; today these lectures are both presented in person in London and live-streamed to a global audience. Gresham Professors are outstanding in their fields and superb communicators, able to connect with an audience whose members may not have specialist expertise in the subject, but who will be informed people with a thirst for increased knowledge and understanding.

The Professorship of Business (formerly Commerce), which was founded in 1985, is open to any discipline within the field, covering topics such as business, economics, economic history, commerce, management, entrepreneurship, or finance.

The appointment is part-time from 1 August 2022 and normally for three years. Gresham Professors present a series of six one-hour lectures each academic year. They also fully participate in College life, attending the Academic Board, participating in promotion and outreach, attending social events and acting as ambassadors for the College. The post offers excellent opportunities to widen public exposure for the successful candidate. The College pays an annual stipend of £8,000 (plus reasonable expenses) and encourages applications from all backgrounds and communities.

Further information is available on the Gresham website at:

<https://www.gresham.ac.uk/vacancies/business>

Informal discussion may take place with the Academic Registrar, Dr M. Clare Loughlin-Chow, Gresham College, Barnard's Inn Hall, Holborn, London EC1N 2HH.

Telephone 020 7831 0575 Email: [c.loughlin-chow@gresham.ac.uk](mailto:c.loughlin-chow@gresham.ac.uk)

The closing date: 9:30 am Monday 24 January 2022. Interviews will be in London on Wednesday 23 February 2022.

## A New Challenge?



#### Unique Access to Confidential Opportunities

InterExec is the global leader in enabling Top Executives to access £200k/\$300k to £2m/\$3m+ unadvertised vacancies worldwide.

We act discreetly through a 15,000 strong international network.

**Inter Exec**  
UNIQUE NETWORK • OUTSTANDING TALENT

[london@interexec.net](mailto:london@interexec.net) [www.interexec.net](http://www.interexec.net) +44 (0)20 7256 5085



With about 90,000 students and 10,000 employees, including approximately 7,400 academics, the University of Vienna is one of the largest educational institutions and a leading research university in Europe. The oldest and largest university in the German-speaking area offers a wide range of academic disciplines and internationally outstanding research areas in twenty faculties. Research-oriented teaching and the promotion of young researchers are guiding principles for the University of Vienna.



The University of Vienna advertises the position of the

## Rector

to be filled as of 1 October 2022. The term of office of the Rector is four years and reappointment for a second and third term is possible. The current Rector will not apply for this function again.

**The University of Vienna is looking for a leader who combines an excellent academic reputation and international experience with the ability to successfully manage and guide a large institution through a period of transformative change.**

**Therefore, candidates for this position must have experience**

- in academic research and teaching;
- in international academia and the European Research Area;
- in the management of organisations and
- in human resources management, gender equality and diversity management.

### They will have competences

- in positioning the University in international competition (university rankings);
- in networking and cooperating at the international level;
- in sustainability management with regard to the environment, social issues and corporate governance (ESG criteria) as well as
- in further developing and implementing digitalisation and
- in bringing a large and diverse student population to its full potential.

Applications comprising a curriculum vitae as well as ideas regarding the future development of the University should be addressed in electronic form by **10 January 2022** to the **Chair of the University Board of the University of Vienna, Eva Nowotny: bewerbung.rektor-in@univie.ac.at**

The University pursues a non-discriminatory employment policy and values equal opportunities and diversity ([diversity.univie.ac.at](http://diversity.univie.ac.at)). The University puts particular emphasis on increasing the number of women in senior and academic positions.

[www.univie.ac.at](http://www.univie.ac.at)



## Ombudsperson

### Panama (Full-time position)

CAF, Development Bank of Latin America, is a multilateral financial institution that supports sustainable development in its shareholder countries and Latin American integration. It serves the public and private sectors, providing multiple financial products and services, as well as the generation and dissemination of knowledge, integrating social and environmental criteria.

As part of this strategy, CAF is taking actions to ensure the application of best practices in personnel management that provide efficient and effective processes to support all employees, addressing and following up on labor-related complaints, claims, requests and inquiries until they are addressed or resolved, in coordination with the established bodies.

CAF is looking for an Ombudsperson to lead these activities, a position at the Panama office that reports directly to the Executive President and the Board of Directors when required. The Ombudsperson will be responsible for the strategy and management of labor-related complaints, claims, petitions and inquiries

from any institution employee; mediation and resolution of individual labor-related disputes; advice to CAF employees on how to handle labor-related disputes, with strict confidentiality.

Candidates who wish to apply must be university professionals, fluent in Spanish and English (Portuguese is desirable), with a master's degree in Labor Law, Human Resources or related areas and vast proven work experience (at least 20 years) in conflict addressing, mediation and resolution. Applicants must have experience in this role (Ombudsperson), have knowledge of the Latin American and Caribbean region and experience in the banking sector (Multilateral Banking is highly desirable).

If you want more details, you can visit

[www.caf.com/ombudsperson/](http://www.caf.com/ombudsperson/)

**Closing date: December 15, 2021**



## Watchful waiting

LONDON, MAINZ AND SAN FRANCISCO

**With its wonky spike, the Omicron variant looks ominous. How bad will it be?**

VIROLOGISTS WILL tell you that predicting how a new virus might evolve is a fool's errand. Predicting that it will evolve, though, is money in the bank. The virus that causes covid-19, SARS-CoV-2, is no exception. Since the first copy of its genome was published on January 10th 2020, sequenced from a sample collected in Wuhan days earlier, some 5.6m SARS-CoV-2 genomes have been added to GISAID, a database. They have been arranged into 23 clades—groupings with a distinct common ancestor which differ from the original sequence and from all the others in at least one particular. Each clade has had the

chance to outcompete the other versions, and almost all have failed. Most differences do not make much of a difference. Then again, some do—spectacularly so.

Between November 15th and 25th the number of new cases of covid in South Africa jumped from fewer than 400 a day to more than 2,000. Sequencing showed that a large number of these were down to a variant initially known as B.1.1.529, and subsequently designated Omicron (see Middle East & Africa section). In genomic terms, Omicron is wildly different from any other variant seen to date.

The nature of its differences suggested,

in theory, that it might be better at getting into human cells than its relatives were. It might also be better at avoiding the attentions of antibodies from vaccination or an earlier infection. Virologists had long thought that a variant which combined both those advantages “would be a pretty dangerous thing”, according to Noubar Afeyan, a co-founder of Moderna, one of the manufacturers of mRNA vaccines against SARS-CoV-2. But they also thought it was unlikely. Now “Omicron is exactly that”, Mr Afeyan says. Its mutations and its apparently rapid spread added up to something potentially scary.

On November 26th the World Health Organisation (WHO) accordingly labelled Omicron a “variant of concern”, the fifth version of the virus to be thus marked out. Stockmarkets around the world fell sharply on the news. Companies sensitive to covid restrictions, such as airlines and hotel chains, were hit hard. The dollar, a safe-haven investment in times of uncertainty, has strengthened. But this was not a shock on anything like the scale of that seen during the initial spread of the disease.

The WHO has warned that the new strain carries a “very high” risk of causing surges in infection all around the world. As yet, though, such a surge has been seen only in South Africa, and things may stay that way. It is possible that the surge had other causes and that any variant around at the time would have spread. Or some factor which favours the variant in South Africa may be absent everywhere else.

There is precedent for this. Southern Africa suffered a wave of the Beta variant at the end of 2020, but it never became established elsewhere. Alpha swept across Europe but never became established in southern Africa. The reasons a variant spreads in one place and not another are, like much of the rest of evolution, thought to be largely environmental. For SARS-CoV-2 a crucial part of the environment is the immune system, and immune systems are different all over the world. How different genes, endemic infections, general levels of health, microbiomes and more end up stopping one variant from displacing another is largely uncharted territory.

But not all variants stay local. First detected in India roughly a year ago, Delta displayed a level of transmissibility which saw it outcompete other strains almost everywhere, establishing itself as the dominant strain and often causing new waves of disease as it did so.

It is the possibility that Omicron might now outcompete Delta—either through being inherently more transmissible, by being better at overcoming prior immunity, or a bit of both—that has the world on edge and may yet see markets lose their cool. Many countries have banned or restricted

travel from southern Africa. Some, like Israel and Japan, have banned all foreigners from coming in. Despite this, by December 2nd over two dozen countries had reported the presence of the Omicron variant within their borders (see the map on the next page). That seems to suggest the cat is already out of the bag; if Omicron has the ability to displace Delta, it is probably already in a position to do so.

Delaying the inevitable can still provide real benefits, because health systems are sensitive to the rate at which viral waves grow and peak: slow is better, fast is worse. European countries, already struggling with a winter wave of the Delta variant and worried about the risk of flu, are tightening measures like mask-wearing and restrictions on mingling. There is ever more talk of vaccine mandates. The prospect of renewed distancing, working from home and even lockdowns is adding to a range of other economic worries around the world.

Western countries where double vaccination is common are providing more booster shots. That makes sense even if it turns out that the antibodies the immune system generates in response to existing vaccines are not as well-tailored to Omicron as they were to earlier variants. The boosters will not make better antibodies, but they will spur the body into making more of them, at least for a while. Studies have found that the quantity of antibodies against SARS-CoV-2 matters even if the antibodies are not specific to the variant. Vaccine-makers are looking at how to change their offerings to deal with the newcomer more effectively—and trying to work out whether they actually need to.

At the genetic level, Omicron differs from the original Wuhan version in more than 50 places. But it is also very different from other recent versions of the virus (see chart 1). Its closest relatives are versions of the virus first spotted at least a year ago and rarely sequenced since. There are three possible explanations for this.

One is that Omicron's ancestor managed to circulate for almost a year without being detected by the genomic-surveillance apparatus, and while picking up many more mutations than any other variant has. This seems unlikely. Another is that Omicron's ancestor jumped into and out of an animal population over the past year, picking up its large number of mutations there. Many of the mutations are completely new, not seen before in any variant, lending some credence to this hypothesis.

But it is the third possibility which seems most likely, not least because similar things have been documented before. This is for the ancestral SARS-CoV-2 to have infected someone with a compromised immune system. Because such people are unable to get rid of it, the virus can evolve inside them for months, accumulating mutations as it does so. Their bodies provide what Sharon Peacock of Cambridge University calls an "evolutionary gym" on which variants can both build up their strength and learn some new tricks.

### Omicron you're so fine

The most worrying of Omicron's mutations are in the gene that describes the spike protein. This is the tool the virus uses to bind itself to cells and enter them. Delta probably owes its greater transmissibility in part to the fact that it sticks better to cells. Its mutations produce a spike in which nine of the amino acids in the 1,273-amino-acid-long chain from which the protein is made are distinctively different. The mutations in an unnamed variant called C.1.2, which boasted one of the most mutated spike ever seen until the past few weeks, changed 14 of the amino acids. Omicron's mutations change 35; ten of the mutations have never been seen in any of the variants of concern to date.

Almost half of the 35 changes are in the receptor-binding domain, the business end of the protein when it comes to entering cells and also the part targeted by the



most effective antibodies. By changing the shape of this part of the protein, the mutations could make Omicron better at getting into cells and also less easily recognised by antibodies that work against a different version of the spike.

A mutated spike is not necessarily a better spike. C.1.2 derived no benefit from having more mutations there than any other variant—it never spread all that far and may now be extinct. But the locations of Omicron's mutations make it worrying. "If you look at the sequence on paper, because of the number of mutations and where they are, it is very concerning because of the impact on neutralising antibodies," says Susanna Dunachie, an immunologist at the University of Oxford.

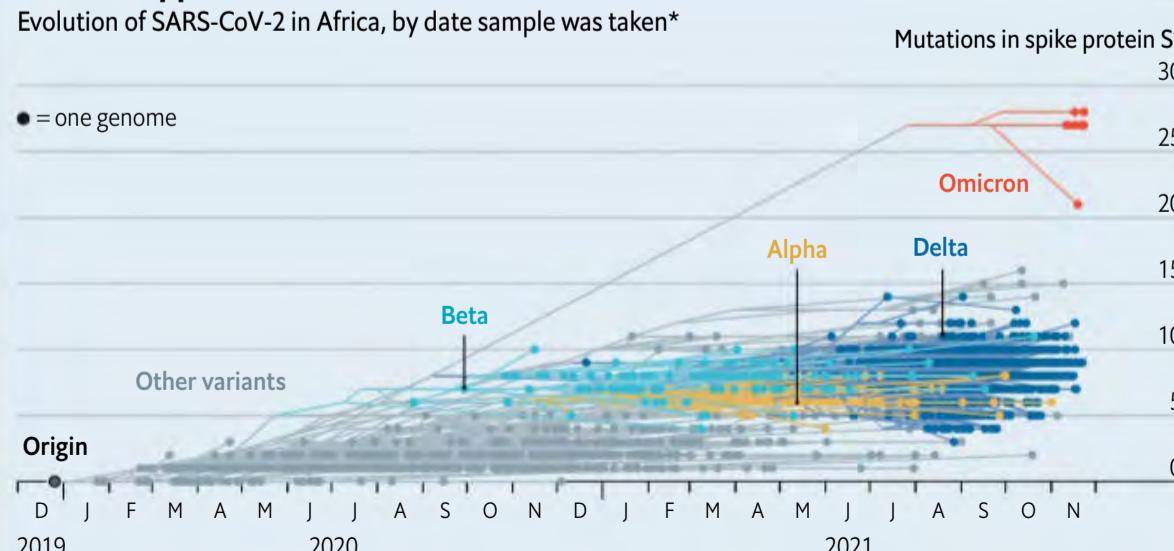
Some other mutations are worrying, too. After binding to a cell, the spike breaks in two at a juncture called the furin cleavage site, allowing the viral genome to get inside. Ravindra Gupta of Cambridge worries that Omicron's three mutations close to this site will give it an advantage in replication similar to that enjoyed by Delta. Another mutation may allow it to confuse the way in which the immune system uses a chemical messenger called interferon.

Computer modelling using AlphaFold, a program developed by DeepMind, a British artificial-intelligence research company owned by Alphabet, to predict the shape of Omicron's spike also suggests that antibodies will stick to it at least a bit less well, says Colby Ford, a computational biologist at the University of North Carolina at Charlotte. Experimental approaches that compare the effect of the individual mutations involved tend to agree—but the complexity of protein-folding means that the effects of different mutations are not strictly additive; some will reinforce each other, others will cancel each other out. The experiments that should provide a clear idea of what is going on will be those which pit a wide range of antibodies against the whole protein as found on virus particles. Such work is going on all over the world, nowhere more urgently than in the laborato-

### A varied approach

Evolution of SARS-CoV-2 in Africa, by date sample was taken\*

● = one genome



ries of the various vaccine-developers.

Ugur Sahin, the boss of BioNTech, one of the two companies that have developed mRNA vaccines against the virus, accepts that because the vaccines get cells to make spike proteins according to the recipe used in the earliest genomes to be sequenced, the neutralising effect of vaccine-elicited antibodies will be lower for Omicron. But he adds that it is not clear how great the reduction will be, and points out that immunological protection is not provided by antibodies alone.

Vaccines engage the immune system's T-cells as well. These are lymphocytes that respond not just to finished proteins, as antibodies do; they also recognise protein fragments. Because 97% of Omicron sequences are identical to the original virus found in Wuhan, Dr Sahin says, these T-cell responses should still work. He expects that most fully vaccinated people with boosters should at worst fall only moderately ill if infected with Omicron. Alessandro Sette, an immunologist at the La Jolla Institute for Immunology and his colleagues have shown that T-cells preserve 93-97% of their targeting capacity when faced with a new variant.

Nonetheless, BioNTech is working on a vaccine using mRNA that describes the Omicron spike. So is Moderna. Both companies have been down this road before, developing tailored vaccines against Beta and Delta. They did not go into production because they did not, in the end, prove necessary; the original vaccines held up well. Whether the same looks likely to be true for Omicron should be known, the companies say, in a matter of weeks.

The makers of vaccines that use other approaches to their trade are also exploring the possibilities of doing something specific to Omicron; but the mRNA technology is inherently quicker to work with, and being first on the market would be a huge advantage. Morgan Stanley, a bank, reckons that both firms could make about 6bn booster shots next year.

When studying vaccines against Beta and Delta, both firms worked to develop procedures that would allow modified versions of their jabs to be approved quickly by regulators. Dr Sahin says that if a new vaccine does turn out to be needed, his firm could deliver it within 100 days: the estimate includes regulatory approval. The time taken to change production procedures, though, would make it unlikely that substantial quantities of an Omicron-targeting vaccine could be produced before the middle of 2022. Changing a production line from one vaccine to another also means a halt to vaccine output on that line.

### Economic immunity

The fact that old vaccines will still work to at least some extent and new ones are possible is reassuring. But if, through a mixture of high transmissibility and immune evasion, Omicron does prove better at infecting, and reinfecting, the world, then some bumpy months could lie ahead, not least for the economy. Jerome Powell, the chairman of America's Federal Reserve, has suggested that if people became scared of the variant they might drop out of the labour force. That could worsen labour shortages and lead to wage growth. If it were to hit Vietnam, or even China, hard, the supply-chain crunch could worsen.

But though many wonks are cutting their global-growth forecasts by a few tenths of a percentage point none of them is extending the y-axis below zero, as they had to back in March 2020. According to a straw poll conducted by Deutsche Bank on November 29th, just 10% of participants in the financial markets thought that the new variant would be the "biggest topic in financial markets at year-end". This is because the economy has evolved a level of tolerance to the disease; it no longer disrupts life as much as it used to, and so given levels of covid cases, hospital admissions and even deaths have less of an economic impact than they once did.

Analysis by Goldman Sachs, a bank,

combines data on mandated social-distancing measures and the amount of adherence they meet with into an "effective-lockdown index". The previous two significant variants, Alpha and Delta, caused lockdowns to tighten, but to a significantly lower level than in early 2020 (see chart 2). In the past nine months only a handful of countries have locked down as stringently as they did in 2020.

Developed-world governments are less willing to impose forceful measures, in part because vaccines have substantially weakened the link between cases and hospital admissions and death. Better drugs and treatments have also helped, and new antiviral pills from Merck and Pfizer should improve things further—though existing therapies based on mass-produced antibodies may be less effective when faced with Omicron's spike.

They have also found that some measures, including curfews and school closures, bring few benefits at a high cost; they are thus no longer part of the toolkit. More policymakers also acknowledge that covid is becoming endemic, raising the bar for interventions. In America many state governors have promised never to implement lockdowns again. On November 30th the British government resisted suggestions from their medical advisers that people should limit social contacts.

Public compliance with restrictions has also faded. People are less scared of the virus or more resigned to their fate. The Netherlands and Austria are technically in lockdown, but people are about twice as mobile as they were at the beginning of 2021, according to an analysis of Google mobility data on visits to sites of retail and recreation, workplaces and public-transport stops carried out by *The Economist*.

And what social distancing still goes on, either because of rules or choices, has less economic cost than it used to. People can work more efficiently from home because they have invested in technologies that enable them to improve their virtual office. Businesses are also better able to cope with lockdowns. Retailers have improved their online offerings, whereas restaurants and bars do more takeaway. In the middle of 2020 a ten-point tightening in Goldman's index provoked a 6% decline in GDP. But the effect weakened in subsequent months; it now sits at about 2%.

In the coming days and weeks Omicron will show its true colours. It could prove to be extremely dangerous. But in the two years since people in Wuhan started to come down with a strange new disease, much has been learned about SARS-CoV-2, how to treat it and how to live with it. That, at least, should be some comfort. ■



Explore our interactive at  
[economist.com/tracking-coronavirus](https://economist.com/tracking-coronavirus)

### Superspreaders?





**India's population**

## The patter of fewer tiny feet

DELHI

**For the first time, India's fertility rate has fallen below replacement level**

WHEN SOMETHING happens earlier than expected, Indians say it has been "preponed". On November 24th India's health ministry revealed that a resolution to one of its oldest and greatest pre-occupations will indeed be preponed. Some years ahead of UN predictions, and its own government targets, India's total fertility rate—the average number of children that an Indian woman can expect to bear in her lifetime—has fallen below 2.1, which is to say below the "replacement" level at which births balance deaths. In fact it dropped to just 2.0 overall, and to 1.6 in India's cities, says the National Family Health Survey (NFHS-5), a country-wide health check. That is a 10% drop from the previous survey, just five years ago.

This is big news not just for India but, seeing that its 1.4bn people are nearly a fifth of humanity, for the planet. The number of Indians will still grow, because many young women have yet to reach child-bearing age. But lower fertility means the population will peak sooner and at a lower figure: not in 40 years at more than 1.7bn, as

was widely predicted, but probably a decade earlier, at perhaps 1.6bn.

India's government has sought a lower fertility rate for decades. At independence in 1947 it was close to 6. The new republic had also just suffered a terrible wartime famine in Bengal, which left 2m-3m dead. The excessively gloomy ideas of Thomas Malthus, a 19th-century English economist who warned that population growth would inevitably outstrip food production, cast a long shadow over policymakers. The consequent fear of a "population bomb" drove the creation of the world's first national family-planning programme in 1952.

It took 25 years for the fertility rate to fall to 5. Impatient at this progress, Indira

Gandhi, who was then the prime minister, took drastic action. During the Emergency of 1975-77, when she ruled by decree, her son Sanjay led a notorious campaign of forced sterilisation. This set back many reasonable policies, such as promoting the voluntary use of contraceptives, though they later returned.

The southern state of Kerala was the first to see fertility fall below replacement level, in the 1990s. One by one, other states have followed. Out of India's 36 states and "union territories", 29 now have rates of 1.9 or less. In poor and largely rural Uttar Pradesh and Bihar, the rate stands at 2.4 and 3 respectively. But it is falling faster in those places than in the country as a whole.

The share of parents using contraception continues to grow. More than two-thirds of couples now do, compared with 54% five years ago. Another striking change is a steadily rising age of marriage. In the 2005-06 survey, the proportion of women aged 20-24 who had already been married at 18 stood at 47%. This has dropped by half in 15 years, to 23%, meaning that women are spending fewer child-bearing years with a partner. Improving education has also had an impact. India's data show a perfect correlation between years of schooling and numbers of births.

Slowing growth will reduce long-term pressure on some resources that are relatively scarce in India, such as land and water. The news may have other benefits, too. Politicians have often used fear of popula-

### → Also in this section

- 22 A thuggish election in Kyrgyzstan**
- 23 South Korea's floating city**
- 23 A succession crisis in Japan**
- 24 Banyan: China and the Solomons**

tion growth to rally votes, typically by accusing "a particular community"—a circumlocution referring to India's 15% Muslim minority—of having too many babies. Narendra Modi, the prime minister, has warned of a looming population explosion. Members of his Bharatiya Janata Party (BJP) have even called for limits to family size. In July legislators in BJP-controlled Uttar Pradesh proposed a law that would deny government services to families with more than two children.

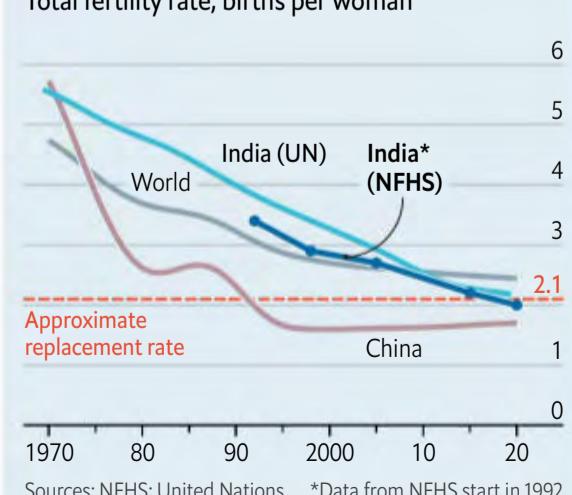
The Indian government's new numbers may curtail these execrable suggestions. Fertility among Indian Muslims is generally higher than among Hindus. This is in part because so many are poor. But the difference has steadily narrowed; between 2005 and 2015 the fertility rate among Indian Muslims dropped from 3.4 to 2.6. Data on religion have yet to be parsed from the latest survey, but the fertility rates it shows for India's only two Muslim-majority territories, the Lakshadweep Islands and Jammu & Kashmir, are far below replacement level and among the lowest in India, at 1.4.

While a declining fertility rate is broadly a sign that India is richer and better educated than before, it will also bring worries. Economists have long heralded the "demographic dividend", when productivity rises because a bigger slice of the population pyramid is of working age. This window will now be narrower, and India will have to contend sooner with a fast-growing proportion of elderly people to care for.

Stark discrepancies in fertility rates between states also carry dangers. In future more Indians from the crowded north will seek jobs in the richer and less fecund south. Politicians will also face the hot issue of how to allot parliamentary constituencies. Back in 1971 Mrs Gandhi froze the distribution of seats among states. The result is that whereas an MP from Kerala now represents some 1.8m constituents, one from Uttar Pradesh represents nearly 3m. When the freeze on redistricting lifts some time in the next decade, these disparities will spawn a big fight. ■

### A refreshing dip

Total fertility rate, births per woman



### Politics in Kyrgyzstan

## Ready for take-off?

BISHKEK

**The election was cleaner than usual, but an air of thuggishness still prevails**

THE LAST time Kyrgyzstan had a general election, just over a year ago, the consequences were, by any democratic criterion, far from orthodox—and even by the eccentric and sometimes violent standards of the mountain republic they were unusual. When the incumbent president wangled a parliamentary majority with copious vote-buying, protests erupted that led to his resignation. At the same time Sadyr Japarov, who was serving a ten-year prison term for kidnapping, was sprung by his backers from jail at night and propelled into the posts of prime minister and acting president. He was subsequently confirmed as president at an election in January. Now, in the parliamentary election that he oversaw on November 28th, a majority was duly found to support his agenda. And this time a revolution looks less likely.

The Organisation for Security and Co-operation in Europe, which monitors elections among other things, pronounced this one broadly "competitive". Vote-buying was less blatant and the poll was fairer than usual, at least by the low standards of Central Asia.

All the same, there is plenty to worry about in the region's smallest and most fragile state. Democracy is hardly secure. Parliament has rarely stood up to Kyrgyzstan's presidents, several with reputations for corruption and high-handedness. Mr Japarov has pushed through constitutional changes to strengthen presidential powers at the expense of parliament, whose membership he has thinned. This week's election result was meant to be a vote of confi-

dence. A deputy prime minister recently predicted that Kyrgyzstan would "take off like a rocket" afterwards.

Alas, lift-off may be delayed. Pro-government parties, most of them newly minted marriages of convenience, did indeed do well, taking most of the 54 party-list seats. Mr Japarov's backers also won a good number of single-seat districts. The president now commands a clear majority in the 90-seat house.

But proponents of reform and clean government made little headway. A turnout of 35% suggests an alarming level of fatigue among voters, after four nationwide plebiscites in just over a year. The new, mixed electoral system bewildered many; nearly 10% of ballots were spoiled. Actual policy was hardly debated by candidates during the campaign.

Above all, despite its relative cleanliness, the election did nothing to dispel an air of thuggishness and dirty dealing that hangs over Mr Japarov's regime. The brother of the president's feared security chief, Kamchybek Tashiyev, won a seat. A neighbouring district was easily claimed by the brother of an immensely powerful mafia kingpin, Rayimbek Matraimov, who has been accused of benefiting from a host of cross-border smuggling rackets.

Earlier this year Mr Japarov made a great show of Mr Matraimov's arrest and admission of guilt, though it was unclear precisely what crimes had been acknowledged. But his fine of \$3,000 looks like a good bargain for Mr Matraimov, who, in a land where state welfare barely exists, stays popular in his southern fief by sprinkling it with hospitals and mosques.

A few days after the election, thuggishness was on display in a street in Bishkek, the capital, when masked goons set about an opposition leader, Omurbek Tekebayev, who has castigated Mr Japarov, especially over the expropriation of Kyrgyzstan's biggest foreign-exchange earner, Kumtor gold mine, from its Canadian owner.

That kind of intimidation, plus a reservoir of popularity for Mr Japarov in some quarters, may for the time being deter unrest of the sort that has curtailed three presidencies in the past decade or so. Yet Askar Sydykov, who heads the International Business Council, a lobby for the country's beleaguered entrepreneurs, says businesspeople have a litany of problems: inflation; wild swings in the value of the som, the national currency; pandemic-related disruptions to cross-border trade; and energy shortages exacerbated by government corruption and ineptitude, just as winter begins to bite.

Mr Japarov claims, somewhat plausibly, that he inherited these failings. But voters will not swallow this excuse for long—especially since he has grabbed so many levers of power. ■

## Seasteading

# A stop in the ocean

### The UN promotes floating cities

FOR YEARS some libertarians have dreamed of creating floating settlements. Fans of “seasteading” talk of setting up self-governing hamlets in international waters, which would charge little or no tax. In 2019 Chad Elwartowski and Supranee Thepdet, an American and a Thai, spent time living in a small cabin floating some 12 miles off Thailand’s coast. The Thai government objected, towing away their “seastead” soon after it was built.

Elsewhere in Asia governments see value in tempting people to live on water (but not to govern themselves). In November officials in Busan, a port in South Korea, said they planned to offer space for a floating neighbourhood that may be built near its shore. The project is endorsed by UN-HABITAT, a UN agency that deals with urbanisation. Itai Madamombe of Oceanix, the company that aims to fund and build the floating platform, says its prototype will cost around \$200m and have room for 300-500 people. In theory, linking lots of these together could create a district that could house 10,000.

The idea is to demonstrate a tool cities might use to adapt to rising sea levels. Building floating city-blocks is arguably more sustainable than land reclamation, which requires masses of sand. Busan’s authorities seem to think the project will boost its shipbuilders. South Korean cities have a history of backing big infrastructure projects that may benefit local industry.

One of Oceanix’s founders, Marc Collins Chen, previously ran a firm seeking to create a special economic zone in a Tahitian lagoon. (Some seasteaders recognise that living in international waters would be inconvenient and expensive; better to work with governments prepared to offer some autonomy in calm seas close to shore.) That project failed amid protest from locals, who did not relish the idea of an influx of tax-avoiders.

There is no plan for residents of Busan’s floating neighbourhood to benefit from any special rules. Instead, the goals are technical: to find out if floating districts can be comfortable, affordable and scalable. These lessons may one day help people who still hope floating homes can help them escape the grabbing hand of the state. But not if governments get there first.

### Business in Japan

# At the sharp end

TOKYO

### Japan’s small companies lack spark—and successors

INOUE TOYOSAKU moved to Tokyo in 1913 and became an apprentice to a metal-worker. When he struck out on his own a few years later he found profit making scissors for hair salons. The company he founded, Tokosha, now sells its Joewell brand scissors in more than 50 countries, for as much as ¥330,000 (\$2,900) a pop. “We make scissors in the Japanese countryside but export to New York, London and Paris,” boasts Inoue Kenji, a grandson of the founder and Tokosha’s current boss.

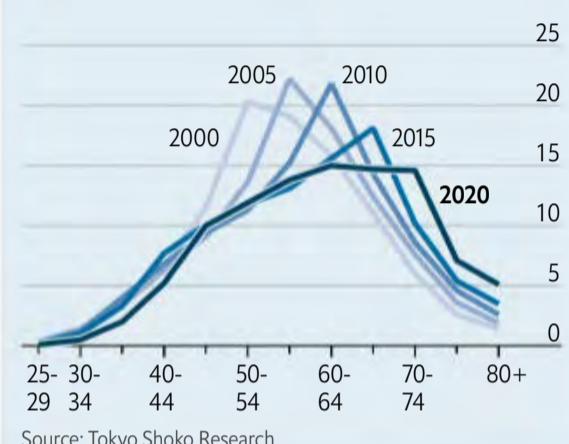
Companies such as Tokosha, which has around 50 employees, make up a big share of Japan’s economy. The country has some 3.6m small and medium-size enterprises (SMES), which employ 70% of workers (in Britain the figure is 61%). These firms are less productive than peers in other wealthy places. The gap between the labour productivity of Japan’s SMES and its bigger companies is greater than the average in the OECD, a club of rich countries.

In the coming years even the better small firms may face a reckoning. Hundreds of thousands of profitable businesses responsible for millions of jobs risk shutting down because their ageing owners cannot find successors. Consolidation would make SMES more spritely, and save good ones from closing needlessly. But efforts to encourage it are going slowly.

Japan’s small businesses are often family-run. But families have fewer children than they did in the past, and fewer of them are excited about inheriting the family trade. In 2000 some 80% of leadership changes at SMES involved one family mem-

### Hanging around

Japan, bosses of small and medium-sized enterprises, % by age group



Source: Tokyo Shoko Research

ber handing control to another; now it is only 34%. Committing to take over the family business can require youngsters to abandon dreams of city life to toil for years at their parents’ feet. “Being a successor is lonely,” says Suzuki Hiroaki, who this year won a business competition that the government runs for them. “There are conflicts with family members, with fathers.”

Though mergers are becoming more common, many business owners remain loth to sell to competitors or foreigners. Getting all the decision-makers in a family to agree to the terms of a sale is difficult, says Tsunoda Michie of Sapporo University: “Many miss the chance to sell, and so many profitable companies close.” Some 60% of the 50,000 or so SMES that closed down last year were in the black when they shut. Researchers at the International Monetary Fund and Japan’s Research Institute of Economy, Trade and Industry argue that these closures also increase the likelihood of their suppliers and buyers shutting their doors—a domino effect with macroeconomic implications, especially in rural areas.

As their owners age, Japan’s small firms may start to lose their dynamism. In 2000 some 21% of SME bosses were 65 or older. By 2020 it was 42% (see chart). Research suggests that Japanese firms with older managers see sales and profits grow at a slower pace than those with younger ones. Older managers are less likely to seek entry into new business fields, less likely to make capital investments and less likely to foster a corporate culture that encourages trial and error.

Government policies have not helped. ↗



Closing time

► Japan provides generous support to SMEs through long-standing credit guarantees. That helps poor performers stay alive (and three-quarters of Japan's small firms are over ten years old, compared with half in most rich countries). The subsidies also dry up as firms get bigger, giving them an incentive not to.

Suga Yoshihide, who stepped down as prime minister in September, was conscious of these problems. His government introduced subsidies encouraging SMEs to merge with each other and to expand into new lines of business. It slightly raised the

minimum wage, which is low by the standards of rich countries, in the hope of prodding business owners to seek ways to make their staff more productive. But many small-business owners have railed against these reforms.

Kishida Fumio, who succeeded Mr Suga as prime minister, is taking a milder approach. He has talked up causes that please small-business owners, such as finding ways to stop large firms bullying subcontractors. Making companies bigger need not be the only way of boosting productivity, argues Okada Koichi at Meiji University

in Tokyo. He says the government could do more to help SMEs invest in technology.

Companies such as Tokosha see little advantage in mergers. Given the time it takes to train craftspeople, "you can't all of a sudden make these companies bigger," Mr Inoue says. His customers are aficionados who appreciate subtle differences between brands. "Every scissor has its own flavour," he adds. Mr Inoue has not thought much about buying competitors or selling his firm. But he does worry about who will succeed him. He hopes his nephew will take over one day. ■

## Banyan A familiar script

*China's influence in the Solomon Islands is one factor in an explosion of violence*

THE EVENTS that unspooled in the Solomon Islands on November 24th were from an old script. Protesters from Malaita, the most populous island, crossed to the biggest, Guadalcanal, with grievances over corruption and inequality. They called for the prime minister to go. Near parliament in Honiara, the capital, the protest descended into violence. Three days of looting in the city left much of Chinatown destroyed. Three people died in burning buildings. The damage runs to millions of dollars. It will be a long haul back to normality.

The Solomon Islands is a threadbare state, and Malaitans have always been among the poorest islanders. Investment and jobs are concentrated on Guadalcanal. Over the decades Malaitans flocked there, which stoked ethnic tensions. In the late 1990s natives of Guadalcanal campaigned, through intimidation, to drive Malaitans off the island. Rival militias fought. In 2003 the government asked Australia for help. The Australian-led Regional Assistance Mission to Solomon Islands (RAMSI) was popular. Its police and troops could not stop rioting in 2006. But it did prevent the Solomon Islands tipping from threadbare state to failed one. RAMSI wound up in 2017, when the Solomon Islands signed a security treaty with Australia.

On November 25th the prime minister, Manasseh Sogavare, invoked the treaty. Within hours Australian police and troops were on a plane back to Honiara. And so the old spool unreels. But this time the plot has a new, geopolitical twist. On coming to power in 2019 for the fourth time, Mr Sogavare severed long-standing diplomatic relations with Taiwan and took them up with China, which had been spraying promises of money and development about the region.

Daniel Suidani, Malaita's premier, fiercely opposed the switch. Like many of Malaita's Christians, he condemns China's rulers' communism and atheism. He warns that Chinese companies would bring few benefits. He wants a referendum on secession. His advisers say China is behind attempts to oust him with no-confidence votes.

As for China, its nationalistic press and academics accuse America and Australia of fomenting unrest as a means of emboldening Taiwan and thus splitting the motherland. Mr Sogavare also blames "foreign powers" for the turmoil, even as he asks for Australian help.

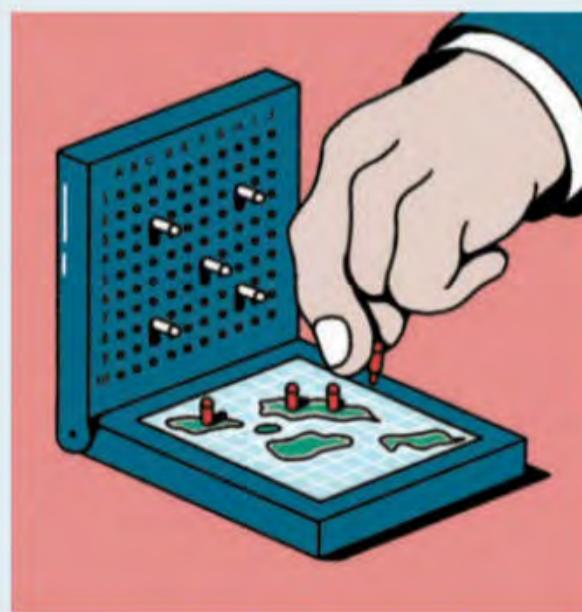
Mr Sogavare's finger-pointing is an effort to shift attention away from his own government's corruption and its failure to help the poorest. China's finger-pointing is cynical, solipsistic or ill-informed. An inglorious tradition of attacks on Honiara's Chinese-run businesses, including during riots in 2006, long predates China's official presence. Many shopkeepers—economic migrants from Fujian province—lord it over locals. They sit on stacks

of plastic chairs, monitoring staff and watching for shoplifters. Locals resent their economic dominance, and these Chinese lack the social networks that help protect other ethnic groups in the Solomon Islands from violence. Instead they fortify their shops and warehouses with steel shutters and high windows. Nearby squatter camps full of underemployed young men are a powder keg. In late November squatters breached the forts and looted rice and cooking oil.

Although the roots of the violence are local, no foreign power involved in the geopolitical struggle that is playing out across the region is blameless. China has followed Taiwan in filling slush funds for friendly MPs. The government's cosy ties with Chinese state enterprises are resented in a country that has long been exploited by foreign timber companies and mining firms.

Taiwan tried to create a public-relations splash by giving protective gear to Malaita, but not the rest of the country, during the pandemic. As for America, it became interested in the Solomon Islands only under Donald Trump. A year ago his administration earmarked \$25m for Malaita. This unusual move of allocating money to a subnational government accounted for over a tenth of all its new funding in the Pacific. As Mihai Sora of the Lowy Institute, a think-tank in Sydney, writes, currying sympathy with local actors without considering deeper social and political currents undermines social cohesion.

Australia, still the region's go-to power, now has to deal with the consequences. How much time Mr Sogavare will have to pick up the pieces is unclear. Four of the eight Malaitan MPs in his government have quit. On December 6th he will face a no-confidence vote.





→ Also in this section

26 Women's tennis v China

27 Chaguan: The democracy war

#### Unmarried mothers

## Against the tide

SHANGHAI

### China stigmatises extramarital births. Single mums want to change that

SOON AFTER Zhang Jiajia gave birth to a boy in 2017, she went to her local social-security centre in Shanghai to claim maternity benefits. These would include reimbursements for services such as prenatal check-ups and midwifery, as well as compensation for lost workdays. But Ms Zhang (a pseudonym) was turned away. The centre wanted proof of marriage. As a single mother, she had none.

China's government wants citizens to have larger families. With just 12m babies born last year, the country's birth rate was the lowest since 1978, according to recently released data. China's fertility rate—the average number of children a woman is likely to have during her lifetime—is among the lowest in the world, at 1.3. In May officials allowed couples to have three children, having previously limited most to two (a one-child policy was enforced, often brutally, from 1979 to 2016). Local governments are encouraging procreation with new

support that includes longer parental leave and fatter subsidies.

Divorced or widowed mothers can claim these benefits, but those who have never married, including lesbians whose unions are not recognised in China, usually cannot. Worse, some of them face fines. In March Ms Zhang took Shanghai's medical-insurance bureau to court to demand equal treatment. "This isn't just about the money," says the 38-year-old, who works in the city's financial district. "It's about the right to give birth."

China does not explicitly ban extramarital births. Its marriage law guarantees the same rights for children born out of wedlock as those born in it. Yet the family-planning law says that procreation involves "a husband and wife". Local officials often take that to mean that unwed mothers are in violation of that legislation. In a wealthy city like Shanghai, lost benefits would range from 30,000 yuan (\$4,700) to

120,000 yuan. Unmarried mothers sometimes have to pay the same "social maintenance fees" that are extracted from couples who have more children than allowed. The levies can add up to several years of working-class income.

It used to be that the offspring of unmarried mothers were often denied *hukou*, or proof of a person's place of origin. This made it hard for them to obtain identity papers, enroll in state schools or receive subsidised health care. In 2016 the government reminded officials that children born outside marriage must be given *hukou*. That seems to have worked.

But public attitudes to single parenthood are changing more quickly than those of officials. In 2015 an unmarried mother launched an online crowdfunding campaign in the hope of raising 40,000 yuan to cover her social maintenance fee. She raised over 9,000 yuan overnight. In 2016 an NGO supporting LGBT rights, called Rainbow Lawyers, published an online questionnaire about single mothers. Though not a representative sample, more than 2,080 people responded. Nearly nine in ten said unmarried mothers should get the same benefits as married women. Three in four said fines for extramarital births should be abolished.

Last year just 8m couples got married in China. The number has fallen for seven ►

► years in a row. Cohabitation and conception out of wedlock are becoming more common as sexual mores change. Even so, extramarital births remain widely stigmatised. Research published last year by Li Wenzhen of Renmin University found that 60% of women who get pregnant while in a non-marital relationship go on to marry their partner and give birth to the child. Abortions are also common.

Ms Zhang worries that her son may also be shunned by society. A state kindergarten refused to admit him because she would not give details of his father, whom she had divorced after he abused her. (Her son was conceived during a brief reunion.) She refused on principle, regarding the information as irrelevant since the father had no right of custody. Ms Zhang sent the boy to a private school instead.

Women are beginning to fight back. In 2017 Zou Xiaoqi (pictured on previous page), who is also from Shanghai, became the first single mother to sue the government for maternity benefits. She lost every case over the course of four years.

But her battle was closely watched. Some single mothers have been emboldened by it to take their employers to court. In parts of the country, firms are responsible for paying employees during maternity leave (a minimum of 98 days on full salary) but can claim the money back from the state. Fearing that the government may not reimburse them, some employers refuse to give such pay when the woman is single. Some unmarried women, once pregnant, are even fired. Female job applicants are still often asked about child-rearing plans, despite a ban on this. Ms Zou and Ms Zhang are part of a support group on WeChat, a messaging app, of over 100 unmarried mothers seeking better treatment.

Earlier this year, many in the group cheered when Shanghai appeared to remove a bureaucratic hurdle to obtaining maternity benefits. Rather than requiring proof of marriage, an app allowed mothers to check a box agreeing to take legal responsibility if they were found to be breaking family-planning policies. Ms Zou was one of at least eight unmarried mothers in the city who did so and duly received the amount that married women would get. But within a few months, other mothers' applications were being refused again—Ms Zhang's among them. Officials gave no explanation for the about-turn.

Only in the southern province of Guangdong do single mothers routinely receive benefits. This stems from an overhaul of its family-planning rules in 2016. Progress elsewhere is piecemeal. China bans single women from undergoing procedures such as egg-freezing or *in vitro* fertilisation to help with reproduction. In August officials in the central province of Hunan said they would consider allowing sin-

gle women to freeze their eggs. But they insisted that a marriage licence would still be needed to retrieve them.

The shift to a three-child policy has given hope to single mothers that social maintenance fees may be abolished. The central government says this is being considered. The charges are currently imposed mainly on families with four children or more, a rare sort. On November 25th Shanghai published its own rules for implementing the three-child policy. They included incentives to have children and appeared to scrap the fees altogether.

The Communist Party wants to boost births, while preserving traditional values. Chen Yaya of the Shanghai Academy of Social Sciences speculates that extramarital births could become a bountiful source of babies, if they were less stigmatised. In the OECD, a club mainly of rich countries, the proportion of births out of wedlock rose from 6% in 1960 to 40% in 2016, notes Ms Chen. There are exceptions: only 2% of births in socially conservative Japan are non-marital. It is not clear what Chinese women would choose, if officials were to give them the freedom to do so. ■

sault. Steve Simon, the WTA's boss, used language typical of human-rights groups, not of firms with profits at stake. He accused China's leadership of failing to handle the matter credibly: "I have serious doubts that she is free, safe and not subject to censorship, coercion and intimidation."

For years most executives of global sporting leagues, as well as athletes with high profiles in China, have strained to avoid offending Chinese officials lest they lose access to a lucrative market. But as China's human-rights abuses have become more egregious, the reputational risk of keeping quiet has grown. In November the International Olympic Committee held a video call with Ms Peng and gave a sunny assessment of her well-being. It was widely viewed as a craven effort to help China stifle controversy in the buildup to the Winter Olympics in Beijing in February. America's National Basketball Association (NBA) has tried to keep on China's good side since a team executive's tweet in 2019, expressing support for protests in Hong Kong, prompted a temporary ban in China on NBA broadcasts. Adam Silver, the NBA's chief, said the episode cost the league hundreds of millions of dollars.

The WTA had already burned its bridges in China in November, when Mr Simon publicly urged Chinese leaders to investigate Ms Peng's allegations. They had been published on her social-media account and quickly censored. The alleged abuser, Zhang Gaoli, retired as deputy prime minister in 2018 and has not commented. Mr Simon also demanded proof of Ms Peng's safety. Famous champions like Serena Williams and Naomi Osaka tweeted their concern, using the hashtag #whereispengshuai. Contrived-looking videos of Ms Peng appearing relaxed in Beijing were released online by state media. They also published a purported email in which she distanced herself from the allegations.

By pulling out of China, the WTA faces losses of tens of millions of dollars annually, including sponsorships for its tournaments (nine had been scheduled in China for 2022) and fees for online streaming rights. Athletes who have backed Ms Peng have also taken a risk, including that of being shut out of China and thus being denied the opportunity of winning prize-money and endorsements there.

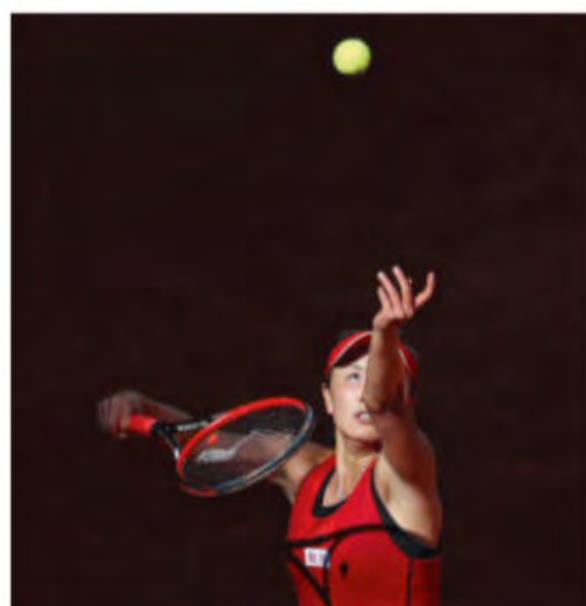
There has been less sporting criticism of other human-rights problems in China, including the mass internment of Uighurs, a mostly Muslim ethnic group. On November 30th a minor NBA player, Enes Kanter Freedom of the Boston Celtics, called for big-star support for persecuted Uighurs. "There are way bigger things than money," Mr Freedom said. "It's definitely time for athletes to stand up for the things they believe in." But tennis's act will be hard for others to follow. ■

### Sport and human rights

## Ballsy

### Women's tennis takes a stand against China. Will other sports dare follow?

**I**N THE WORLD of sport, it was a remarkable rebuke of China's ruling Communist Party. On December 1st the Florida-based Women's Tennis Association (WTA) said it would stop holding tournaments in mainland China and Hong Kong in response to the silencing of Peng Shuai, a Chinese tennis star, after she had publicly accused a former senior Chinese leader of sexual as-



Peng Shuai, star and cause célèbre

# Chaguan | Why China says it is a democracy

*Dysfunction in the West tempts the party to make risky boasts*



THE LEADERS of China's Communist Party have spent a long time waiting for liberal democracy to look as fragile as it does today. Now, filled with scorn for a dysfunctional West, they think that their moment has come. Angered, specifically, by President Joe Biden's summoning of over 100 countries to a virtual Summit for Democracy on December 9th and 10th—including Taiwan, an island that China claims as its territory—China is responding with fighting talk. Officials are seizing every chance to explain why their always-controlling, sometimes-ruthless political system is not just a good fit for a large country trying to become prosperous and strong: the party's defensive line for four decades. Increasingly, they are on the offensive. They insist that China's political model is so effective, and so responsive to the people's wishes, that it is more perfectly democratic than America's.

In the words of a Chinese foreign ministry spokesman, American democracy is in a "disastrous state", calling into doubt that country's legitimacy as host of such a summit. In a video call, China's foreign minister, Wang Yi, commiserated with his counterpart from Hungary, whose increasingly autocratic government is also not invited. Mr Wang condemned America for excluding some countries, adding that the yardstick of a democracy should be whether a government "meets the people's needs, and gives them enough of a sense of participation, satisfaction and gain".

The free world—meaning, broadly, societies in which governments can lose elections, and in which even the rich and powerful are (sometimes) held to account by independent judges, uncensored news outlets, opposition politicians and civic groups—should not underestimate this Chinese challenge.

Chinese talking points about one-party rule hold some appeal in more countries than Mr Biden may care to admit. That is not just true in states wooed with Chinese money or diplomatic backing for local despots. Lots of countries feel little nostalgia for the post-1945 era dominated by the American-led world order, and are eager for alternatives. In an online address to African leaders on November 29th, President Xi Jinping blended promises to send covid-19 vaccines and further open Chinese markets to African exports with talk of "true multilateralism" that delivers freedom, justice, democracy and development. He also criticised "interven-

tion in domestic affairs, racial discrimination and unilateral sanctions". Mr Xi's audience will have heard a coded reference to China's willingness to block or water down American-led attempts to put pressure on rights abusers or kleptocrats in such forums as the UN. In an article attacking Mr Biden's summit, co-written with Russia's ambassador to America, China's man in Washington, Qin Gang, went further. The pair called it a breach of the UN Charter for any power to interfere in other countries' affairs in the name of fighting corruption or protecting human rights.

It is not new for autocrats to co-opt benign-sounding labels. During the cold war a quick route to a labour camp was to express dissent in a country with "democratic" in its official name, from North Korea to East Germany. Contrary to Mr Qin's state-centric description of the UN Charter, tensions between state sovereignty and the protection of individual freedoms have lurked, unresolved, in that body's founding documents from the start. China's version of multilateralism ignores those tensions. But the swagger that lies behind China's claims to be "an extensive, whole-process socialist democracy", to quote Mr Qin's clunky phrase, is growing. That confident talk of Chinese-style democracy rests on some tendentious claims about the extent to which the public is consulted about new policies, and about the legitimacy that the party draws from much-vaunted successes, from controlling covid within China's borders to managing decades of economic growth.

Describing how governments earn mandates to rule, political scientists distinguish between input legitimacy (eg, an election victory), and output or performance legitimacy (ie, successful policies). China's rulers claim to enjoy input legitimacy based on public consultation, overseen by local and national "people's congresses". Yet the party does not permit elections that it could lose. Journalists who report errors hidden by state media are silenced or imprisoned, making it hard to talk of informed public consent. In Hong Kong, which formerly enjoyed many Western-style freedoms, the government is busy crushing a semi-democratic parliament and local councils with laws requiring members to be pro-government "patriots", while opposition politicians are jailed.

## When the people's democratic dictatorship doesn't work

If hypocrisy is the tribute that vice pays to virtue, rigged elections are a dictator's homage to real democracy: an admission that popular mandates offer moral authority. Bold claims for performance legitimacy are risky, too. If controlling covid gives Mr Xi a mandate, were his predecessors illegitimate when officials spent months mishandling an earlier deadly disease, SARS? If the economy slows will the party, by its own logic, still deserve to rule?

The China Public Diplomacy Association held a "dialogue on democracy" in Beijing on December 2nd about what democracy is and who defines it. "China's democracy is not for the few, it is for the whole people," Lu Yucheng, a deputy foreign minister, told attendees. Alas, the system he described practices majoritarianism, not democracy. It is a form of tyranny in which individuals are crushed for displeasing the party, whether feminists, human-rights lawyers, gay activists, creators of art deemed "unhealthy", underground Christians or Uyghurs.

China is creating a zero-sum contest between autocracy and democracy. The timing is odd, for China still needs foreign know-how to complete its rise. If countries know that Chinese success will be called proof of their decline, some may ask why they should help. Liberal democracies are in trouble. But as they ponder how to engage with an assertive China, they have a vote. ■

# Putting social equity at the centre of ocean sustainability

How a global network of interdisciplinary ocean experts is tackling systemic injustice by creating a more equitable and diverse approach for the future.

- Our oceans are in crisis:** Warming is leading to deoxygenation and sea-level rises, and by 2050, plastic will outweigh all of ocean's current fish.
- Oceans matter for everyone:** They produce oxygen and food, store carbon and heat, enable economic activities and enrich culture and inspire wellbeing.
- Ocean equity must be a priority.** There are tensions between the economic riches that oceans offer, and the need for shared benefits, and sustainability. Everyone needs a voice in balancing these equally important goals.

The evidence is clear: our world's oceans are deeply impacted by climate change. But what we often fail to acknowledge is that the effects of climate change are not experienced among people equally. More specifically, research shows that current socioeconomic trends will enhance the disparities of climate impacts on people and communities based on their geographic, economic and political positions.

When we focus solely on adapting to climate change through the lens of ocean protection, we are in fact ignoring societal contexts and histories that benefit some groups over others. The oceans are not an environmental realm 'out there' to be fixed but rather, are entangled in the daily lives of millions of people as sources of livelihood, wellbeing and cultural identity. Since the drivers of ocean change, and the effects of these changes, are moderated by institutional and societal factors, promoting equitable solutions to a changing ocean must be based on the

real conditions of what it means to live with the oceans.

The Nippon Foundation Ocean Nexus Center is a transdisciplinary international network of ocean researchers focused on bringing social equity to ocean governance, built on a 10-year partnership between the Nippon Foundation and the University of Washington.

"For decades, the state of the world's oceans has been a troubling issue for me. And now more than ever, the emerging scientific evidence around the impacts of climate change is reconfirming these concerns. As our understanding of the changing state of our oceans deepens and the risks to human existence are brought to bear, The Nippon Foundation's commitment has evolved to seek equitable solutions for the oceans and for humanity. With the Ocean Nexus,

**"Our goal is to achieve ocean equity, which will be undermined if we stay on our current path, not only due to climate change but also due to the legacy of colonialism and hegemony"**

Yoshitaka Ota, Director, Nippon Foundation Ocean Nexus Center

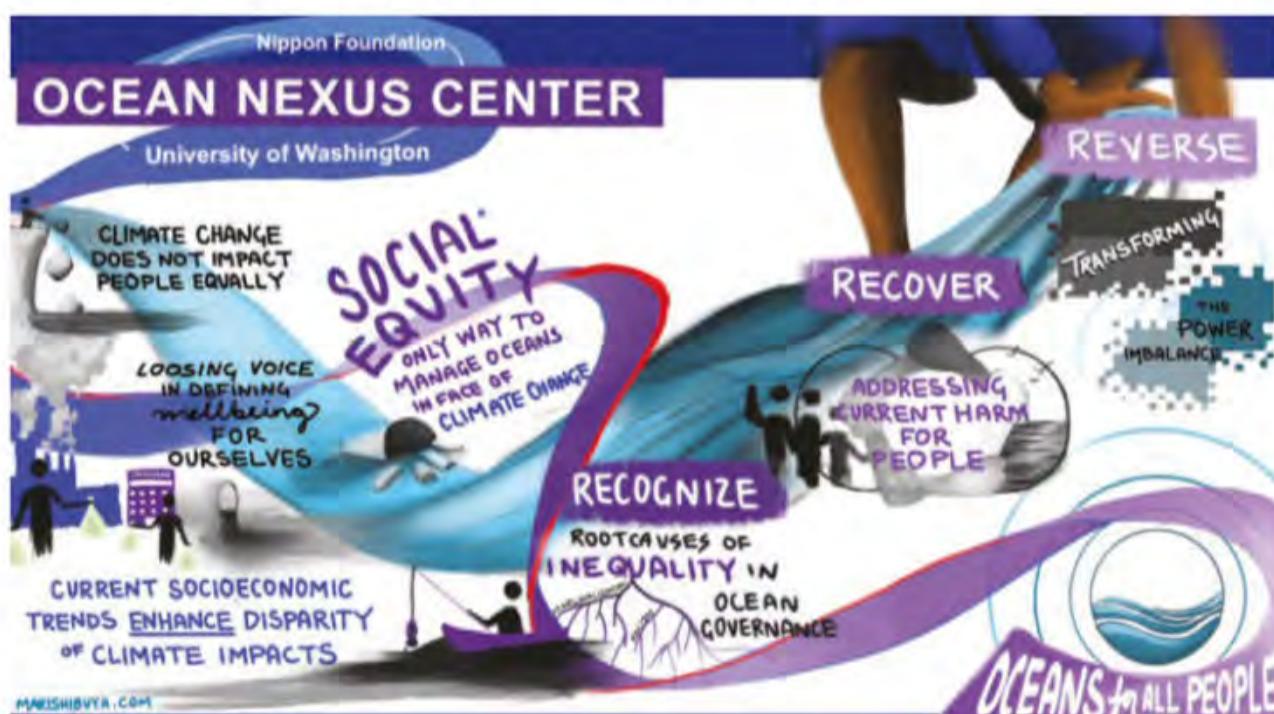
we aim to nurture and promote a global network of ocean experts with diverse perspectives, to guide us to take the necessary steps to pass on sustainable and equitable oceans 1000 years into the future" states Yohei Sasakawa, chairman of The Nippon Foundation.

"Our goal is to achieve ocean equity, which will be undermined if we stay on our current path, not only due to climate change but also due to the legacy of colonialism and hegemony," says

Yoshitaka Ota, the Center's director and a professor at the University of Washington's School of Marine and Environmental Affairs. "We propose three critical steps to transform that path. First, we must recognize how we have approached ocean issues without accounting for the burden we caused for others. Then, we can help people that are currently in harm to recover. Finally, we can reverse inequality and injustice by transforming our economic and governance systems".

The Center is also working to redress imbalances too often evident in oceans discourse, such as the tendency to neglect social issues like intersectionality, climate justice, decolonisation and human wellbeing. Through research endeavours and

## Recognize – Recover – Reverse





fellowships, it covers urgent thematic areas such as climate adaptation, transboundary fisheries management, blue economy, human rights, indigenous rights, public health and food sovereignty.

"Critical to oceans equity is the understanding of the interface of oceans and human health," says Dr Elaine Faustman, a professor at the University of Washington School of Public Health. "Too often we violate the construct that all peoples around the globe have a voice in defining wellbeing for themselves and their families, by dismissing the disproportional impacts of our actions and inactions in ocean governance on island and coastal communities". Broadening the concept of health and wellbeing beyond absence of disease, the Center's research defines the concepts of wellbeing within a context of cultural sustainability, ocean and human health supported with human rights, dignity and voice.

Another research project at the Ocean Nexus Center, led by Dr Andrés Cisneros-Montemayor, an assistant professor at Simon Fraser University's School of Resource and Environmental Management, provides a novel global framework to understand how the role of human-versus-natural capital factors in achieving sustainable blue economies.

The project, published in *Nature*, examined the extent to which equitable and sustainability benefits of oceans – known as a blue

economy – are likely to be achieved based on available resources and enabling governance conditions, including gender and group equality, corruption and national stability. The team found that socioeconomic and governance factors accounted for more of the difference in projected capacity to deliver a blue economy than available natural resources did. These differences can be seen throughout the developing world, but also within regions, including Europe and North America, currently focused more on growth than on equity and sustainability – precisely what a blue economy intends to avoid.

"The barrier to achieving equitable and sustainable development in oceans isn't in finding the resources. The gaps we found are on the human and social side and in figuring out how those sectors can bring equitable benefits to people," says Dr Cisneros-Montemayor. While the research showed a large number of countries struggling to put in place the necessary institutions and governance conditions, the power in shaping outcomes was actually a cause for optimism, as it puts agency in human hands.



#### State-and-local-tax deduction

## A tax plan for the upper, upper class

WASHINGTON, DC

### Why Democrats may spend hundreds of billions subsidising the rich

**T**RY TO STUFF a party's entire agenda into one giant piece of legislation, and a battle royal will ensue. Such is the case with the Democrats' aim to cram policy on poverty relief, child care, climate change, health care, higher education, pre-school, tax reform and more into the Build Back Better (BBB) Act, which passed the House of Representatives on November 19th.

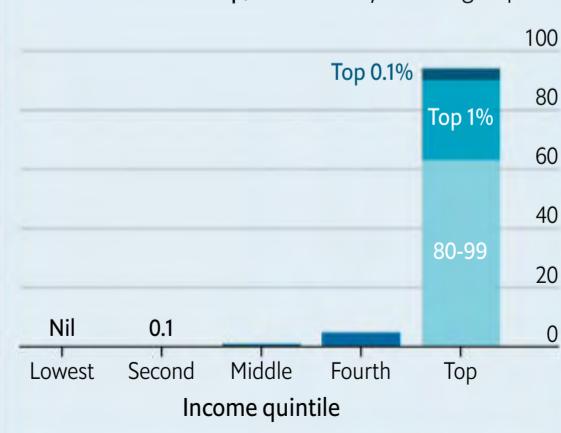
As its price tag has been slashed to \$1.7trn over a decade, half as much as first pitched, the hunger—or squid—games between progressives and moderates have turned fiercer. (Against united Republican opposition and with no votes to spare in the Senate, any Democratic defection would scupper the bill.) This has mostly been to the benefit of the moderates, as senators like Joe Manchin and Kyrsten Sinema have wielded their veto threats to weaken or kill some mooted carbon-emissions limits, a paid-family-leave programme and tax rises for rich Americans and firms. But a lesser-known faction, the SALT Caucus, may have made out best of all.

The SALT Caucus is named after the “state and local tax” deduction. The ex-

emption, which dates back more than a century, allows taxpayers to deduct property and state-income taxes when filing to the federal government. For much of its history, this exemption was limitless. That helped the well-to-do who faced big bills for their houses and incomes—and the high-income, high-tax states that received an implicit subsidy from the federal gov-

#### A lump of SALT

United States, share of benefit of raising the SALT\* deduction cap, Nov 2021, by income group, %



#### → Also in this section

- 31 Tainted water
- 32 Crime-spotting tech
- 32 Roe's last stand
- 33 Navy shipyards
- 34 Road rage rising
- 35 Lexington: Son of a slave

ernment. The subsidy cost \$369bn (1.9% of GDP) in 2017. It became less generous that year after Republicans passed legislation, signed by President Donald Trump, capping the deduction at \$10,000 a year.

For most Americans, this had little impact. According to the Internal Revenue Service, 87% of tax returns do not bother to itemise all their exemptions, which would amount to less than the standard deduction (\$12,000 for a single filer in 2018). But legislators in high-tax states such as New York and California saw the reform not as a laudable effort to tax the rich (which it did rather well), but a punitive blow.

The SALT Caucus was soon formed as a resistance movement. “This was explicitly designed to go after states that tax people to support better schools and services,” says Tom Malinowski, a Democratic congressman from New Jersey and a SALT Caucus member, who notes that in some towns in his district the average homeowner may owe \$20,000 in property tax. Days before the BBB Act’s passage in the House, the caucus secured an increase in the limit on deductible expenses from \$10,000 to \$80,000 for the next ten years.

This constitutes one of the biggest expenditures in the pending budget bill. And it is steeply regressive (see chart). It is dividing Democrats, who may yet push for significant changes in the Senate.

Over the next five years, the new SALT provision would cost the federal government an additional \$275bn relative to current law. That is much more than BBB plans

to spend on child-tax and earned-income credits that are intended to reduce poverty. Some proponents claim that the proposal is actually deficit-neutral over the next decade, though this relies on a shifty budgetary game. The Trump-era limit on SALT expires in 2026, so although a cap of \$80,000 costs a lot until then, scorekeepers book it as a tax increase (relative to full deductibility) from 2026 to 2031.

President Joe Biden has been emphatic that BBB is a plan to revitalise the middle class. So it is an irony, argues Marc Goldwein of the Committee for a Responsible Federal Budget, a think-tank, that one of the priciest components of it "is a big tax cut that middle-class people and poor people don't get at all". Almost all the benefit is concentrated among the very rich.

Modelling by the Tax Policy Centre, another think-tank, shows that the average benefit for the middle 20% of earners would be a measly \$20. But those in the top 20% would receive an average tax cut of \$2,100; the top 1% would get a cut of almost \$15,000. The majority of the benefits would go to Americans earning more than \$500,000 a year. Less than 9% would go to Americans making less than \$200,000.

This is not just "a colossal waste of money on a regressive, distortionary tax break", argues Richard Reeves of the Brookings Institution, another Washington think-tank, but "a form of fiscal self-harm, and, therefore, political self-harm". Jason Furman, a former economic adviser to Barack Obama, has called it "obscene".

The issue is inverting the usual positions on fair taxation. Mitch McConnell, the Republican leader in the Senate, is lambasting the "bonanza for blue-state millionaires and billionaires" and the fact that the bill gives "a net tax cut to 89% of people making between \$500,000 and \$1m". Some pro-deduction Democrats argue that their own "maker states" deserve a break that cadging "moocher states" do not.

Whether the change will become law is uncertain. For both the Democratic leaders in Congress, Nancy Pelosi of California and Chuck Schumer from New York (pictured on previous page), the provision would be a boon for their home constituencies. But some Democrats are incensed. Michael Bennet, a senator from Colorado, has called the idea "preposterous". Bernie Sanders, another strident objector, is pushing to limit the deduction to those making less than \$400,000 a year. He has not said whether he would be prepared to torpedo the whole bill over the measure.

The White House has been sheepish about the idea, which was not in Mr Biden's original proposal. His press secretary recently offered this ringing endorsement: "The president's excitement about this is not about the SALT deduction; it's about the other key components of the package." ■



### Tainted water

## Message in a bottle

BENTON HARBOR

### Help is on its way for Benton Harbor's lead-pipe problem, and America's

PEOPLE LIVING in Benton Harbor, Michigan, don't drink the tap water. Many drive to nearby grocery stores to buy bottles. But unlike her neighbours Lisa Williams does not have a car, so she uses what comes out of her tap, even though the community's water has tested above the federal-action limit for lead since 2018. "I have to," Ms Williams laments; the bottled water that volunteers drop off goes only so far.

After Benton Harbor—a city of nearly 10,000 people, over 80% of them black—made headlines for its water crisis this year, Michigan promised to replace all the town's lead service lines within 18 months. That did not stop its residents from filing a class-action lawsuit in November alleging deliberate government indifference. The same day a judge approved a \$626m settlement for people affected by a water crisis across the state in Flint, which caused a similar media frenzy after residents complained about tainted water in 2014. Getting national attention, it seems, pays off. Like Flint's residents, Ms Williams will soon be able to trust the tap.

Many of the 22m or so people across America served by lead service lines can look forward to doing the same. Congress has earmarked \$25bn for water repairs, between a bipartisan infrastructure bill and a yet-to-be-passed Build Back Better Act. Even so, that is about \$20bn short of what experts say is needed to replace all lead service lines in the country.

Benton Harbor exemplifies how many low-income communities have managed to obtain funding in the past: grassroots organising. The town has become America's new "lead hotspot", evoking compari-

sons with Flint and other cities that received big investments after public protests and national press coverage. In September the Benton Harbor Community Water Council petitioned the Environmental Protection Agency (EPA) for a free source of safe drinking water. "We knew that by having that press conference when we filed that petition it would get people excited," says Edward Pinkney, the council's president.

Things moved quickly. Michigan's governor, Gretchen Whitmer, has secured more than half of the \$30m needed to replace all Benton's lead lines. And she has called on the state legislature to allocate \$11.4m from the American Rescue Plan, the stimulus package passed in March.

But other cash-strapped towns must vie for limited funding. Even low levels of lead in children can result in behavioural problems, lower IQ and anaemia. In pregnant women, it can induce premature birth and reduced fetal growth, and in adults more generally it can decrease kidney function and cause reproductive problems. The EPA allocates roughly \$1bn a year to supporting water-infrastructure projects, including lead-pipe replacements, through grants and loans. Poorer places may struggle to repay even low-interest loans, however. A lack of robust testing means that several communities are likely to be unaware of the level of lead in their water.

Hence the importance of the money promised by the Biden administration. The bipartisan infrastructure bill sets aside \$15bn for lead-pipe replacements. The \$1.7trn Build Back Better bill, still stuck in the Senate, could provide nearly \$10bn on top of that, for pipe replacements and mitigation tactics such as filters aimed at schools. Though not as much as originally promised, the money will go a long way towards tackling the problem.

Because Benton Harbor does not need to depend on this money, it is luckier than many communities left hoping for federal funds. The town should have clean water before long. In the meantime, its residents will remain wary.

Every day, Mr Pinkney drives a U-Haul truck through town to pass out water bottles with some of his two dozen volunteers. Long before the state ramped up its efforts, he distrusted the water supply. "It wasn't the right colour," he grimaces. He has not drunk from his tap for nearly a decade.

Mr Pinkney blames the city and state governments for not doing more to fix the city's lead problems, citing years of mismanagement and environmental racism. The pipes should have been replaced three years ago, he says, as soon as testing showed the town to be falling foul of federal standards. That's why they had to petition, he says: "It got people moving that never would have moved before." ■

## Crime tech

# Shot spotty

CHICAGO

## Are gunshot-detecting microphones worth the money?

**W**ALK AROUND one of the poorer neighbourhoods of Chicago and look at the street-lamps. You will see that many of them have protuberances sticking several feet above the light. These are microphones operated by ShotSpotter, a firm with its headquarters in California. They are spread over a large part of Chicago, and they capture the sounds of gunshots. Algorithms pick out the sounds, which are then verified by humans listening in from a control centre in Washington, DC. Triangulating the sounds from several microphones reveals where the guns were fired. Police are alerted and rush to the scene, quicker than if they had to wait for a 911 call—especially one that may not come.

That is the idea, anyway. Over the past 25 years, ShotSpotter's technology has spread across America. It is now used in more than 100 cities. Chicago is its biggest market, with the police department paying around \$11m a year for the service, accounting for almost a fifth of the firm's revenue. In the past year Chicago has had 795 homicide victims, almost all from shootings.

The use of the sensors is increasingly controversial, in Chicago and elsewhere. In August the Chicago Office of the Inspector General (OIG), a city watchdog, produced a report questioning the usefulness of the technology. On November 12th the city council's public-safety committee held a special hearing to question the po-

lice and the firm about the concerns. On November 3rd Baltimore decided to renew its contract, but narrowly: the mayor, Brandon Scott, declared that he is the "biggest sceptic" and that evaluations would continue. Other cities, such as Charlotte, in North Carolina, have ended their contracts. Is the technology worth it?

According to the OIG, of just over 50,000 alerts generated by the system between January 2020 and May 2021, only about 2% led to the police stopping somebody. Only 0.4% of alerts resulted in arrests and even fewer the recovery of weapons. A separate study by the MacArthur Justice Centre, a civil-rights law firm affiliated with Northwestern University, found that in just 10% of cases generated by the system could police find evidence of a shooting, such as spent cartridge cases or bullet holes.

And yet each alert is treated as equivalent to a shooting in progress, says Jonathan Manes, of the MacArthur centre, which means multiple police officers rush to the scene. In Chicago police respond to roughly 60 alerts per day. Those resources, as well as the money spent on the system itself, could be used to investigate crimes that have been reported, he says. Less than half of murders in Chicago are solved.

"ShotSpotter technology does not deter crime or shootings," says Ray Kelly of the Citizens Policing Project, a group in Baltimore that presses for closer relations between the police and citizens. "So what is the benefit?" In Chicago, police-reform activists point to the trial of Michael Williams, a 65-year-old black man who was arrested last year on charges of murder. The prosecution presented evidence from the ShotSpotter system to argue that he had killed a young man in his car. The case proved flimsy, and in July Mr Williams was

released. In another case, in March, an unarmed 13-year-old boy was shot and killed by police responding to an alert.

Deborah Witzburg, who was deputy inspector-general for public safety in Chicago until November 12th, points out that the city's police department, which has a long history of abuse allegations, has a "legitimacy deficit". Sending armed cops in numbers to respond to computerised alerts seems unlikely to help build trust.

The firm defends the effectiveness of its system. It points to plenty of cases where ShotSpotter alerts resulted in arrests or the timely rescue of gunshot victims. But there is little independent evidence that it reduces crime overall. One study, published in April in the *Journal of Urban Health*, found that "implementing ShotSpotter technology has no significant impact on firearm-related homicides or arrest outcomes". Microphones on street-lights are all very well, but they are no substitute for information gathered from humans. ■

## Abortion rights

## Roe's last stand

NEW YORK

### Nearly a half-century after Roe v Wade, abortion rights are hanging by a thread

**A**MERICANS ON BOTH sides of the abortion debate have been here before. In 1992 defenders of the right to abortion braced themselves for the worst when, in *Planned Parenthood v Casey*, it seemed on the cusp of erasure. Then, to the dismay of abortion opponents, five justices forged a coalition to preserve *Roe v Wade*, the ruling in 1973 that established abortion rights. This time, in *Dobbs v Jackson Women's Health Organisation*, a surprise ending seems unlikely. In oral arguments on December 1st, the most conservative Supreme Court in a century sounded intent on rewriting—and probably abandoning—a half-century-old constitutional liberty.

*Dobbs* involves a ban by Mississippi on most abortions after 15 weeks of pregnancy. (There are exceptions in cases of danger to a woman's health or severe fetal abnormality, but not in cases of rape or incest.) The law, adopted in 2018, was blocked in lower courts as a violation of the protection *Roe* and *Casey* provide to abortion before fetal viability (about 24 weeks). When Mississippi petitioned the Supreme Court in June 2020, it made the relatively modest point that some pre-viability bans may be constitutional. But when the state filed papers a year later—after the conservative Amy Coney Barrett replaced the late, liberal Ruth Bader Ginsburg—its tune had



A triumph of triangulation, perhaps

► changed. Nothing less than overruling *Roe* and *Casey* would do.

Several justices have been open about their scepticism of *Roe*. Justice Clarence Thomas has declared it “grievously wrong”. In the 1980s, before he wore a judicial robe, Samuel Alito wrote that “the Constitution does not protect a right to an abortion.” So there was no doubt that Mississippi had at least a somewhat receptive audience for its proposition. But this week only one member of the court’s six-justice conservative bloc—Chief Justice John Roberts—seemed interested in finding a way to uphold Mississippi’s law without throwing *Roe* out.

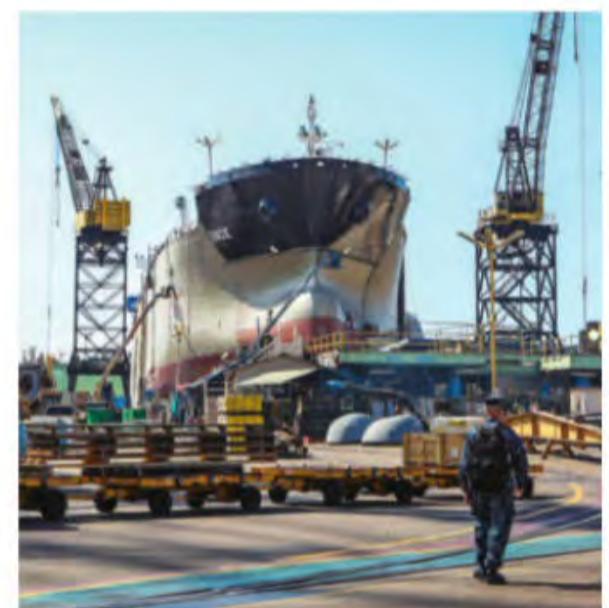
In his questioning of the lawyers arguing against Mississippi’s law, Julie Rikelman of the Centre for Reproductive Rights and Elizabeth Prelogar, solicitor-general of the United States, Chief Justice Roberts suggested that the viability line may not be essential to *Roe* or *Casey*. The right to abortion, he implied, could endure without it. Neither lawyer accepted this. The lawyer for Mississippi, Scott Stewart, was of no help to the chief, either. The only means of getting rid of a number of the problems that come with a middle way, he said, is to “overrule full scale”.

Most lawyers and justices alike seemed resigned to this all-or-nothing proposition. But they struck different tones. Justice Brett Kavanaugh recited a string of cases in which the court overruled precedent. Since the constitution is “neither pro-life nor pro-choice”, abortion law should be returned to the states or perhaps Congress to resolve. There may be “different answers in Mississippi and New York”, but that’s how democracy works. Ms Prelogar’s reply: no, “this is a fundamental right of women, and the nature of fundamental rights is that it’s not left up to state legislatures to decide whether to honour them or not.”

Justice Barrett asked both Ms Rikelman and Ms Prelogar about “safe-haven laws”—statutes in most states that allow women to drop off unwanted babies without being charged with child abandonment. Don’t these laws take pressure off women who worry that having a child will disrupt their lives or careers? There may still be a burden on “bodily autonomy” that comes with a state requirement to bring a fetus to term, she acknowledged, but this is also true “in other contexts, like vaccines”.

The impact of curtailing or renouncing *Roe* on American women, one-quarter of whom get an abortion in their lifetime, received scarce attention from the conservative justices. The lawyers did press the matter. Ms Rikelman said Mississippi’s law “would particularly hurt women with a major health or life change during the course of a pregnancy, poor women, who are twice as likely to be delayed in accessing care, and young people”. Justices Elena Kagan and Sonia Sotomayor amplified some of these points. Abortion “is part of the fabric of women’s existence in this country”, Justice Kagan said.

The justices were more keen to assess what damage might come to the court were it to walk away from *Roe* when it delivers its verdict next summer. Justice Stephen Breyer worried that observers would say, “you’re just political” if the court were to overrule *Roe*. Before taking such a step, he added, “you better be damn sure” the typical standards for overruling a decision “are really there in spades, double, triple, quadruple”. Justice Sotomayor, in what sounded like a *cri de coeur* rather than an attempt to win over justices to her right, asked: “Will this institution survive the stench that this creates in the public perception that the constitution and its reading are just political acts?” ■



### Navy shipyards

## All at sea

NEWPORT NEWS, VIRGINIA

**America wants a stronger navy to face China. Are its shipyards up to the task?**

**W**IND WHIPS the unfinished flight deck of the *USS John F. Kennedy*, scaffolding swaying as workers scramble to their stations. Derek Murphy, the ship’s construction manager at Newport News Shipyard, gazes proudly at the electromagnetic aircraft-catapult running along the ship’s length, one of 23 new technologies on board. “At launch, she’ll be the most powerful warship in the world,” he says.

The vessel, the second aircraft-carrier in a new class named after President Gerald Ford, is due to be completed in 2024, after years of delays and at a cost of \$11.9bn. The *Kennedy* is hardly the only concern for Huntington-Ingalls Industries, the shipyard’s operator. Across 550 packed acres, engineers race to assemble nuclear-powered carriers and submarines. In Washington, meanwhile, nervous planners hope that the shipyard will find room to build more.

In response to the rise of a new superpower rival, America’s shipyards are struggling to support an expanding navy. They are still suffering from the hangover of the “peace dividend” that followed the collapse of the Soviet Union, when plans for ships were scuttled, facilities were closed and skilled workers laid off. From a peak of 594 in 1987, America’s navy will have 306 ships by the end of this year; the Department of Defence estimates that China’s has 355 (increasingly capable) vessels. Congress is eager to allocate more funds for the navy, which aims to build a modern fleet of 355 ships by 2035. The shipyards will need help to make this a reality.

They are emerging from a long decline. In 1993, at a gathering known in defence



The other oral arguments

circles as “the Last Supper”, the then defence secretary, Les Aspin, warned contractors that an era of fiscal restraint had arrived. The war on terror further distracted attention from ship production and maintenance. Budget battles between President Barack Obama and a Republican-controlled Congress resulted in spending cuts. The industry shrank. Today, Newport News Shipyard has 70% fewer suppliers than it did 30 years ago.

Since 2016 the navy has reversed course, in what the brass at Huntington-Ingalls call “the surge”. In the two decades to 2036 the yard will deliver more than double the tonnage of ships compared with the previous 20 years. But according to Chris Dougherty of the Centre for a New American Security, a Washington think-tank, America’s defence establishment remains divided on its vision for the navy. Whereas some prefer a larger fleet in order to maintain presence, without fussing too much about its composition, others fear a possible war with China, which would require prioritising submarines and auxiliary ships. A third group, worried that America may lose its technological edge, favours a focus on autonomous weapons. Lacking clear direction, shipyards have little guidance as to which ships to design.

#### Not exactly shipshape

An erratic approach to funding compounds the problem. “Instability in one programme creates problems in another,” says Matt Needy, vice-president for navy programmes at Newport News Shipyard. He bitterly recalls the time when the Pentagon proposed to scrap the *USS George Washington* in 2014 midway through its normal life cycle, only for the move to be reversed after pressure from Congress. The confusion cost the yard a year of work that had been scheduled for scrapping, resulting in lost revenue and lay-offs for workers building Virginia-class submarines. “The most important thing for us is consistency of funding,” says Mr Needy.

That consistency is essential for shipyards to make long-term investments, which can be extremely large. To improve efficiency, for example, the yard has installed a towering circular suspension system capable of holding the 300-ton hull of the stern of the Columbia-class submarine, which is as heavy as 150 Ford F-150 trucks. The system will also build the successor to the Virginia-class submarine, known as the ssn(x).

But the most urgent need is for labour. “The talent pool is so small that our hiring can hurt our suppliers,” says Mr Needy. Although Huntington-Ingalls spends \$100m on training and hires thousands of people every year, the shipbuilding industry needs more.

As shipyards strain to fill orders, offi-

cials are taking only halting steps to support them. Diana Maurer of the Government Accountability Office believes the navy’s plans to refurbish the public shipyards, which conduct maintenance, are inadequate. The SHIPYARD Act, introduced in Congress in April, would dedicate \$25bn to improvements but does not tackle the issue of worker training.

All the while, the demands on America’s shipyards from geopolitical competition are growing. The proposed defence

budget, set out in the National Defence Authorisation Act, passed by the House of Representatives and stalled in the Senate, has allocated \$24bn more than the \$716bn requested by the White House, with much of the additional funds going to yet more ships. Elaine Luria, a Democratic congresswoman from Virginia and a navy veteran, is adamant that the country cannot afford to slacken the pace. “We’re easily distracted and stretched thin,” she says. “What message does that send to the Chinese?” ■

#### Guns and cars

## Beep beep, bang bang

CHICAGO

As Americans get back into their cars, road-rage shootings are spiking

**A**S TRAGEDIES GO, it was an all-American story. On November 20th Sara Nicole Morales, a 35-year-old librarian who lived in Orange City, Florida, drove her car into a 40-year-old motorcyclist, Andrew Derr. According to a statement issued by the police, Mr Derr was not injured or knocked off his bike, and followed her to an intersection to try to persuade her to stop and exchange details. Instead of stopping, she drove away to her home, with Mr Derr and two witnesses to the crash in pursuit. When they arrived Ms Morales came out of her house with a gun and pointed it at the group. Mr Derr drew his own concealed handgun and shot her dead.

She was pregnant, engaged to be married and had an 11-year-old daughter. “That girl tried to kill me,” said Mr Derr, in body-cam footage released by the police. “She pointed a gun at me. I’m so sorry.” The investigation continues and nobody has been charged. What motivated Ms Morales to drive her car at Mr Derr and then point a gun at him remains unclear. But a remarkable number of shootings begin with road rage.

According to research by Everytown

for Gun Safety, an anti-gun lobby group, 2021 is likely to see some 500 people injured or killed in road-rage shootings, more than double the number in 2016 (see chart). The researchers, Sarah Burd-Sharps and Kathryn Bistline, analysed data gathered from news and police reports to determine the number of road-rage shootings.

Why should the red mist be descending ever more frequently? It could be that driving has become more stressful. Before the pandemic stopped much of it, the number of miles driven during a year by Americans had been soaring, and congestion with it. But even when far fewer people were driving during lockdowns last year, the number of people killed in car crashes increased sharply, suggesting that people have been driving more recklessly.

In 2020 almost 38,700 Americans died in crashes, a 7% increase on the previous year. Now most cars are back on the road—the amount of driving over the Thanksgiving holiday was expected to be just 3% lower this year than it was in 2019—and the rise in recklessness seems to have continued. Changing commuting patterns mean that traffic may be worse than it was before.

However, says Ms Burd-Sharps, a more likely explanation is the availability of guns. Sales soared last year and have remained high this year. Almost 22m Americans now have concealed-carry permits, a 48% increase on 2016. Road-rage shootings are most common in southern states such as Texas and Alabama, where a lot of drivers go armed. In California, New York and Hawaii, where concealed-carry permits are hard to get, they are much rarer. Between them, guns and cars kill around 80,000 Americans a year, most of them young. Combined, they make for a particularly lethal combination.

#### Anger mismanagement

United States, road-rage incidents with a gun



# Lexington | Son of a slave

*Lessons in racial history from Daniel Smith, perhaps the last direct link to slavery*



MOST AMERICANS don't know much about slavery. In a recent survey, only half could name it as the main cause of the civil war. Yet for Daniel Smith, the "whipping and crying post", the hanging tree and other horrors of the antebellum South are not ill-taught, dusty history, but vivid family stories.

The 89-year-old retired bureaucrat heard them from his father Abram, who was born a slave in Virginia in 1863, two years before the war ended. "On Saturday evenings after dinner he and my elder siblings would gather and he would tell them what his parents had told him about slavery," recalls Mr Smith, an only slightly stooped octogenarian, at his house in Washington, DC. "I used to sneak out of bed and sit listening on the floor. I remember hearing about two slaves who were chained together at the wrist and tried to run away. They were found by some vicious dogs hiding under a tree, and hanged from it. I also remember a story about an enslaved man who was accused of lying to his owner. He was made to step out into the snow with his family and put his tongue on an icy wagon wheel until it stuck. When he tried to remove it, half his tongue came off. My father cried as he told us these things."

It is chilling to hear him—a direct link to the history America is in many ways still struggling to escape. Sana Butler, who wrote a book on the children of slaves, identified only around 40 still alive in 1999, all of whom have since died. She did not track down Mr Smith, who was known in Washington as a well-connected civil-rights activist but rarely mentioned his family history. "It was something under the surface that we were not proud of," he says. As his father's only surviving child, after the death of his brother Abe earlier this year, he may well be the last living offspring of an American slave.

His memories underline how recent many of the rawest and most formative events of the American story are, especially for those on the receiving end of them. Slavery and the last Native American land-grabs are only two lifetimes away; no wonder the politics surrounding them, on all sides, are so intense. And the effect is particularly powerful in Mr Smith's case because of how many momentous events in black history he has witnessed. Lexington got in touch to discuss his father, only to learn that Mr Smith had marched with Martin Luther King in Washington and

Selma, feuded with the Black Panthers, been chased by Ku Klux Klan-inspired night riders through rural Alabama, been asked by the CIA to spy on the ANC in South Africa—and was in the crowd, tears pouring down his cheeks, to witness the inauguration of a black president. "A friend of mine calls me the black Forrest Gump," he deadpans.

In fact his brushes with history chiefly reflect his talents and drive, which are characteristic of his black American generation. His father, a janitor aged 70 at the time of Mr Smith's birth, was killed by a hit-and-run driver when Daniel was six. Abram's death left his wife and six children almost destitute. Yet he had bred in them a fierce determination to rise. "We always said in our family, if you want to beat white people you've got to outwork them, you've got to outsmart them, you've got to stay up longer at night."

Mr Smith graduated from high school in the mainly white town of Winsted, Connecticut, while working long mornings and evenings in a veterinary surgery to earn money. After a stint with the army in Korea, he went to college under the GI Bill, became a social worker, then enrolled in veterinary school in Alabama. Three of his five siblings also went to college. "The success of the generation raised by former slaves changed my whole perspective on this country's history," says Ms Butler. "Considering what they faced, and what they achieved, they are America's greatest generation."

In New England Mr Smith's race was an everyday hurdle, but ultimately not a deal-breaker. He knew he could never make the first move on a white girl: "I don't want to have to cut you down from that tree," his mother would tell him. Yet he could rise: "America has always given me the right to work." Alabama, where he arrived at the tail end of Jim Crow, was a different story. Southern blacks marvelled at his car and confidence among whites, including white women. It irritates him still: "Women are women, black, white, Indian or Chinese," he says.

He was drawn into the civil-rights struggle, then roiling the state, and run-ins with Stokely Carmichael, a charismatic Panther who wanted to put money Mr Smith collected for anti-poverty programmes to more radical use. He preferred King's moderation. But he has more time for Malcolm X's radicalism now: "We needed both, King and the Panthers, the pull and the push," he says.

## Where slavery was, liberty can be

That reconsideration seems to reflect his downbeat view of race relations since the 1960s. Socially, he acknowledges, there has been huge progress. Many of his nieces and nephews are married to whites; his second wife is white (though it was a while before he would dare hold her hand in public, she notes). But institutionally he looks back on a history of failed promises.

He believes racist policing puts black children in greater peril today than he ever faced. He also notes that the "shining light" of Barack Obama's election provoked a militant white reaction, in the form of Donald Trump, which is not weakening. The insurrection that the former president provoked and his party has refused to investigate, during which a Confederate flag was paraded through the Capitol, "was so revolting for our constitution", he says. "There's a big question about where we go from now." And then Mr Smith, though visibly troubled, pulls himself up.

"Incidentally, we could never talk negatively about America in front of my father," he says, speaking of a poor man, born a slave, who wore a well-brushed suit and fob watch to church on Sunday and drove his children to succeed. "He did not have much but he really, really loved America. Isn't that funny?" ■



## Mexico

# Missing links

TIJUANA

**Mexico could benefit from China's exclusion from supply chains—if Andrés Manuel López Obrador doesn't hold it back**

THE CHUNKS OF metal being worked on do not look terribly special. But the factory of BAP Aerospace, a chemical-processing firm in Tijuana, hints at Mexico's importance to global supply chains. These are components, from tray tables to door parts, for aircraft made by companies including Boeing, Cessna and Lockheed Martin. BAP applies surface treatments to the pieces, from submerging them in big vats of chemicals to meticulous work done by hand, before shipping them north.

Mexico has long been a hub for manufacturing. Toyota, a Japanese carmaker, has had a plant in Tijuana since 2002. Honeywell, an American industrial giant, opened one in 2010. But increasingly the country is moving into higher-value processes. It now accounts for 3-4% of aerospace imports to the United States, up from 1.5% in 2010. By contrast China's share, which was the same as Mexico's a decade ago, is now just 1%. American sanctions on China and tariffs on Chinese goods explain much of this change, as well as rising wages in Chi-

na and the difficulty of doing business there. The trend has accelerated recently. Pandemic-induced border closures, increased freight costs, and consumers' demands for instant gratification have all nudged firms around the world to consider shortening their supply chains.

"This is a golden opportunity for Mexico," says Helen Wang, a consultant. The country has some natural advantages, not least a long land border with the United States. Mexico is party to fully 23 free-trade deals. Manufacturing wages are lower than in China. A survey this year by the American Chamber of Commerce of Shanghai found that a fifth of its members were considering moving some work out of China; more than a third of those who were thinking of moving were looking to Mexico.

### → Also in this section

37 Xiomara Castro wins in Honduras

38 Bello: Cultural mestizaje

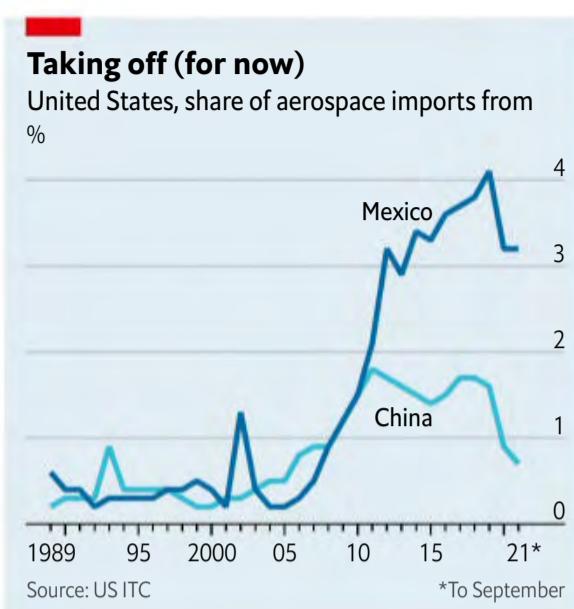
In Tijuana the mood among many Mexican businesspeople is optimistic. Several big firms have expanded recently. Panasonic, a Japanese electronics company, opened a plant in 2018 to make cables for aerospace. Other companies are diversifying into logistics and distribution. In September this year Amazon, an e-commerce giant, opened a warehouse there, though the company denied that it would use it to serve customers in the United States.

In addition to aerospace, the manufacturing of medical devices and other electronics is booming. "We are doing things [in Mexico] that once would have had to be done in Japan or Germany," boasts Eduardo Salcedo, the manager of the local operations of Össur, an Icelandic medical-devices company. "We have guys running a million-dollar machine with their right hand and another one with their left hand."

### Chain reaction

The result is that the richest part of the country, by the border, is becoming even better off. "Northern Mexico is growing at similar rates to Asia," says Luis de la Calle, a consultant who used to work at Mexico's economy ministry. Elsewhere, however, the picture is mixed. FDI fell from 3.1% of GDP in 2018 to 2.3% in 2019, compared with 3.7% in Brazil or 6.2% in Vietnam.

And despite its proximity to the United States, Mexico has its shortcomings. Business parks provide world-class facilities



▶ but the infrastructure outside—from roads to ports—is of poor quality, says Mr de la Calle. Businesses complain of problems obtaining inputs. The likes of Panasonic and Össur import many of the materials they need. Similarly Össur nearly pulled out of Tijuana because it could not find a company to apply chemical processes to its products, which include prosthetics. (BAP eventually stepped in.)

Some of the causes of Mexico's problems are outside its control. When the government of the United States talks about "near-shoring", it really means on-shoring, says Bill Reinsch of CSIS, a think-tank in Washington. It can be protectionist in negotiations with Canada and Mexico. USMCA, the revised trade deal agreed in 2020 between the three countries, is stricter than its predecessor, NAFTA—indeed it was negotiated in part to preserve manufacturing jobs in the United States.

But Andrés Manuel López Obrador, Mexico's populist president, has not helped. In 2018 his administration replaced one of the most business-friendly (if corrupt) governments in Mexico's history, that of Enrique Peña Nieto. Mr López Obrador, in contrast, seems to enjoy unnerving investors.

Soon after taking office he cancelled a new airport for Mexico City, after the diggers had been working for three years, at a cost of at least \$5bn. In 2020 he also pulled the plug on a \$1.4bn investment in a new factory by Constellation Brands, an American brewer, which was near completion. He has weakened independent regulators by absorbing them into government or slashing their budgets.

Mr López Obrador is also reversing his predecessor's opening of the energy industry to private firms and favouring inefficient state-owned outfits. Along with making electricity dirtier and less reliable, this sends forbidding signals to investors. In November the boss in Mexico of General Motors (GM), an American carmaker, said the company would not invest further in the country without laws that promote re-

newable energy. Earlier this year GM had said it would invest more than \$1bn to make electric cars in Mexico from 2023. Last year Tesla, a leading maker of such cars, considered opening a factory in Mexico but opted instead for Texas. Although Tesla did not explain its reasons, Elon Musk, its boss, has grumbled about the Mexican government's closure of some of the factories of its suppliers during covid-related lockdowns.

Mexico risks "shooting itself in the foot" by not taking advantage of shorter supply chains, says Michael Camuñez, who started a series of meetings to boost the economic relationship between Mexico and the United States during Barack Obama's administration. (Mr López Obrador and President Joe Biden relaunched this "economic dialogue" in September.) Unfortunately it is Mr López Obrador who has his finger on the trigger and, if his past treatment of foreign investors is any guide, seems likely to pull it. ■

She will have a lot to do. Mr Hernández, one of the most unpopular leaders in Latin America, is accused of having turned Honduras into a narco-state. In 2019 he was implicated in a trial in the United States that found his brother guilty of drug trafficking. (He denies any involvement.) The country is the second-poorest in the region, after Haiti. In 2019 around half the population of 10m lived on less than \$5.50 per day. The covid-19 pandemic has made matters worse. And although the murder rate has fallen by half since 2011, it remains the fifth-highest in the world.

Ms Castro talks about rebuilding democracy, creating a fairer economy and getting rid of corruption. She says her government will work for poorer people, such as teachers and farmers, rather than elites. Some promises, like selling the presidential plane, should be relatively easy to keep (although Mexico's populist president, attempting the same gimmick in 2018, could not find a buyer). But other ideas are either vague or improbable.

For example, she has promised on the first day of her presidency to organise a vote for a body to write a new constitution. Lester Ramírez of the Association for a More Just Society, an NGO, reckons she may delay these plans and focus on job creation instead. Ms Castro also says she will tackle corruption by inviting in a UN-backed commission to come into the country, along the lines of the one in Guatemala which helped prosecute two former presidents and numerous officials. Tiziano Breda of the International Crisis Group, a think-tank, suspects that donors may be loth to back such a body, after the one in Guatemala was booted out by the government in 2019.

It is also unclear how her government will be able to afford to create more generous social programmes or support small

## Honduras

### A leftward turn

#### Xiomara Castro will be Central America's first female president

HONDURANS OFTEN vote with their feet. The United States says it caught 320,000 of them trying to cross its border illicitly last year. That is equivalent to 3% of Honduras's population, though many were doubtless caught more than once.

On November 28th Hondurans voted in a presidential election. Some hope that the apparent winner, Xiomara Castro, will help them build a country they no longer wish to escape. Preliminary results suggest that Ms Castro, of the leftist Libre party, has won the presidency, ending 12 years of rule by the National Party. With her allies, she may secure a majority in Congress, too. Ms Castro, the wife of a former president, Manuel "Mel" Zelaya, rose to prominence by leading protests against his ouster in a coup in 2009. Her win is part of a backlash against organised crime in Honduras, and against incumbents across Latin America.

The poll was peaceful. At 68%, turnout was the highest for over a decade. Fears of a repeat of the fraud and violence seen in 2017 proved unfounded. Back then at least 29 people were killed when President Juan Orlando Hernández was re-elected in murky circumstances—and after the Supreme Court had changed the constitution to allow him to run for a second term. Ms Castro will be the first female Central American president.



Red and ready to rule

▶ businesses, particularly as Ms Castro has pledged to cut fuel duty and not raise other taxes. Public debt is expected to reach nearly 60% of GDP this year.

Her clout will also depend on the final make-up of Congress and her ability to build relationships with the civil service, which is stuffed with National Party allies, and the army, which ousted her husband. Both are uncertain. Mr Hernández may also use his final month in office to appoint loyalists to key positions.

But if Ms Castro can achieve some of what she has promised, it would be a wel-

come change in a region that has been plagued by democratic backsliding. Indeed, she appears slightly more pragmatic than when she first ran for president, in 2013. She toned down recent investor-spooking campaign pledges, such as to boost state-owned enterprises. She has also been less vocal about ending recognition of Taiwan in favour of China.

Concerns that Ms Castro is a front for her husband and will model Honduras on Venezuela are overblown, thinks Mr Breda. Her husband had a close relationship with Hugo Chávez and Libre is part of an alli-

ance with other regional leftist groups, including Cuba's Communist Party. But although she responded to congratulations from Nicolás Maduro, Venezuela's current despot, she ignored those from Daniel Ortega, the despot in next-door Nicaragua.

To build trust with the United States, Ms Castro will have to play up her pragmatism. President Joe Biden's administration, which has been struggling to find partners in Honduras, Guatemala and El Salvador to tackle migration, has said it hopes to work with Ms Castro. Both countries need good allies at the moment. ■

## Bello Pictures at two exhibitions

*The culture war over Latin America's colonial past*

WHEN SHE was young, Constanza de Luxán moved from Vizcaya in northern Spain to Peru, where in 1668 she married a colonial official. Later she had her portrait painted dressed in black with Spanish lace ruffs. But she is kneeling on a luxurious carpet of brightly coloured geometric design derived from pre-Columbian Peruvian culture. The painting hangs in "Tornaviaje" (Return Journey), a thought-provoking exhibition at the Prado museum in Madrid, whose subject is the art produced in Spanish America from the 16th to the 18th centuries. It argues that this art, in the words of an 18th-century Spanish friar, featured "Spanish forms dressed in American clothing" and thus formed part of a culture of *mestizaje* (mixing).

The exhibition comes as Spain's colonisation of the Americas is generating political polemic. Mexico's president, Andrés Manuel López Obrador, is still smouldering after Spain rebuffed his request in 2019 that its king should apologise for the conquest 500 years ago. Conservative Spanish politicians have stoked resentment. The conquest "brought civilisation and freedom to the American continent", said Isabel Díaz Ayuso, the Madrid regional president, in September. This overlooks the sophisticated civilisations of pre-Columbian Peru and Mexico, the fact that the conquest meant death by disease for millions of native Americans and that "freedom" would come only after independence from Spain three centuries later.

"Tornaviaje" offers a more subtle view. Its contents are the art the descendants of the conquistadors sent back home. The curators scoured convents and private collections. It illuminates a blind spot. Most Spaniards are unaware that their forebears lived with more

objects from the Americas than from Flanders or Italy, or that many of the Christs they parade behind in Easter processions or the chalices in their churches were made in America, writes Miguel Falomir, the museum's director.

Like all migrants, Spaniards wanted to tell the folks back home of their success. The show includes paintings and maps of new cities, such as Mexico and Potosí, as well as portraits of the colonial elite dressed in Spanish finery. It does not conceal the fact of racial inequality: the daughter of a viceroy pats an indigenous servant on the head. But it also celebrates the emergence of a *mestizo* (mixed-race) society and artistic culture. An 18th-century painting of a Mexican family bears the legend "qualities of the mixture of Spaniards, blacks and Indians".

The "American clothing" involved native techniques and materials, such as silver, feathers, dyes and woods, and skilled artists. Spanish America developed a visual culture that lasts to this day, featuring popular religiosity (especially the cult of the Virgin of Guadalupe, who re-

vealed herself to an indigenous shepherd), ostentatious public display and jubilation in the fiesta, and a celebration of the abundance of the land. This distinct cultural tradition eventually assumed political form in the movement for independence from Spain.

None of this obscures the subordination of the indigenous population, a cause of Latin America's chronic inequality which intensified after independence. In another, smaller, exhibition in Madrid Sandra Gamarra, a contemporary Peruvian artist, takes images from that visual tradition and turns them on their heads. Her artworks seek to show the persistence of colonial trauma and the invisibility of native cultures and *mestizo* variations in Latin America today. Nineteenth-century paintings celebrating independence are blurred by a red wash. A large triangle of triangles recalls the form of the Virgin of the silver mountain of Potosí and contains 350 smaller images of the virgin painted by artists who sell to tourists in Cusco. Copies of European academic paintings she bought in flea markets are placed face down on the floor in the form of a *chakana*, an Inca cross which symbolises the interdependence of everything.

Ms Gamarra's work highlights that the official narrative of *mestizaje* falls short by not acknowledging continuing racial discrimination, though arguably Latin American culture is ever more demotic and *mestizo*. "Tornaviaje" presents historical evidence that *mestizaje* was at the heart of colonial art and culture. But the remedy for enduring stratification by race is not politics focused on identity, but rather fairness. The historic task of Latin American democracy continues to be to give equal value to all citizens, whatever their race.





## The Omicron variant

# Omicron-aggressions

CAPE TOWN

## South Africans feel unjustly punished for their country's scientific rigour

**S**OUTH AFRICA had a rotten 2021. Corrupt politicians plundered covid-19 relief funds, deadly riots took more than 330 lives and rolling power cuts hobbled the economy. Yet South African scientists have deservedly won praise this year. It was local virologists and epidemiologists who had honed their skills studying another virus, HIV, who discovered the new Omicron variant of covid. When cases spiked unexpectedly, they studied samples, determined that it was a new and worrying variant and—most important—shared their findings immediately.

No good deed goes unpunished. Hours later Britain shut its airports to flights from South Africa and several other southern African countries. America and the European Union soon followed suit. Many South Africans felt they were being unfairly punished for their country's scientific rigour and openness. It is far from clear that Omicron originated in South Africa. And it is already spreading in the rich countries

that have isolated the region, southern Africans complain. Moreover, the travel ban may also be hampering the race to learn more about Omicron by impeding supplies of the reagents needed to study it.

South Africa continued to restrict large gatherings and make the wearing of face-masks compulsory well after many other countries had lifted such rules. Partly because of this the country was, until recently, recording less than a tenth as many daily covid cases as Britain. “It boggles the mind that people in the United Kingdom can pile into a full football stadium and in the United States it appears as though it’s

### → Also in this section

40 African data centres

41 China slows lending in Africa

41 Iran and the nuclear deal

42 Saudi Arabia reconsiders booze

business as usual, but as soon as something happens on African soil, those countries go into a hysterical tailspin,” says David Moseley, a freelance events co-ordinator based in South Africa.

The new travel restrictions will wallop the region’s tourism industry, just as hotels, game reserves and wine estates were preparing for their busiest months of the year. Over December and January millions of tourists normally escape northern winters to sip Chardonnay in the vineyards around Cape Town, sun themselves on beaches and photograph lions and elephants in game parks. Tourism contributes about 3% of South Africa’s GDP and much more to some others in the region, such as Namibia (11%) and Botswana (13%).

Last year covid and travel restrictions cut foreign visits to South Africa by 71% and threw some 300,000 people out of work. Because of the drop in tourism and the imposition of lockdowns the economy shrank by about 6%. Thousands of small businesses collapsed, including AWOL Tours, a cycle-tourism firm based in Cape Town run by Sally de Jager. She had hoped the uphill slog of rebuilding her business would get a boost from a southern summer full of bookings. But since the travel bans were imposed her inbox has instead been full of cancellations.

The ripples may spread far beyond southern Africa, to countries such as Ken-

▶ ya and Uganda that do not yet face travel restrictions. Tamsin Corcoran, the managing director of New African Territories, which takes reservations for a dozen small safari camps, said she had received only one cancellation but she was seeing "lots of hesitation" from other clients. "People are getting a bit nervous," she says. In Uganda the industry has recovered only to about 40% of its pre-pandemic level, reckons Gloria Tumwesigye, a tourism consultant in Kampala, the capital.

Even as Ms de Jager and other tour operators face a quiet Christmas, South Africa's health workers are gearing up for another December of mayhem as covid's fourth wave washes over the country. Although the number of confirmed covid cases had been rising steadily over the past few weeks in Gauteng, the province that is home to Johannesburg, epidemiologists had expected a relatively mild peak. Modelling suggested that fewer people would end up in hospital than during a vicious third wave that crested in July. In part this was because antibody tests suggested that in many parts of the country a whopping 59–69% of people had already been infected. Around a quarter of people have been fully vaccinated. Omicron is upsetting those estimates, with new cases jumping to 8,500 a day, from about 300 a month ago.

For some South Africans the most immediate concern was not the virus, but booze. In previous lockdowns the government banned the sale of alcohol to prevent drunks from occupying precious beds in hospitals. Although this did indeed reduce hospital admissions from car accidents and beer-fuelled fights, it also taught many that lockdowns divide people into two groups: the quick and the thirsty. Moments after the government announced that President Cyril Ramaphosa would address the nation on November 28th, long queues formed outside liquor stores.

As it happens, he did not impose a full lockdown or a booze ban. Instead he urged

people to get vaccinated. He also complained about the travel bans imposed on the region, arguing that they are "not informed by science". It is difficult to fault governments elsewhere for trying to slow the spread of the new variant, after they were roundly criticised for having failed to act quickly when covid first emerged. But, in turn, South Africa deserves more than just praise for having informed the world quickly about the new variant.

Incentives matter. If other countries are to be encouraged to do the same with future variants, rich countries should lift travel bans as quickly as it is safe to do so. And it may be in the interests of rich countries to go further, and compensate South Africa for taking an economic hit that may well spare the rich world a great deal of pain. ■

### African tech

## Seeding the cloud

KAMPALA

### Africa's digital revolution will be grounded in fibre, steel and concrete

**I**N THE NAMANVE industrial park on the edge of the Ugandan capital, Kampala, trucks rumble through the dust, laden with steel. Sacks of coffee pile up in warehouses. And at Raxio data centre, which opened this year, a local corner of the internet is encased in rows of gleaming racks. Reach out, and you can touch the cloud.

Most of Africa's data are currently stored elsewhere, zipping down undersea cables that often make landfall in the French city of Marseille. From the continent's southern tip it can take 180 milliseconds for a message to reach Europe and back—long enough to frustrate people trying to trade shares or play games. But a flurry of investment in data centres is now bringing the internet closer to users, laying the ground for a digital revolution.

An upheaval is overdue. Africa has more internet users than America, but only as much data-centre space as Switzerland. Demand is soaring as more people get online. Since 2016 capacity on the continent has doubled to around 250 megawatts (power usage is a common measure of capacity), according to Xalam Analytics, which tracks the industry. Such is the rate of growth that another 1,200 megawatts will be needed by 2030.

The boom is partly driven by regulation. Two dozen African countries have passed data-protection laws, or are planning to do so. They often require certain data, such as personal information, to be kept in the country. Another boost comes from competition, says Jan Hnizdo of Tera-

co, a leading data centre in South Africa, where liberalisation of the telecoms industry created space for such firms to flourish.

Capital is pouring in. Teraco is building Africa's largest stand-alone data centre in Johannesburg, with backing from foreign funds. Actis, a private-equity firm, is putting \$250m into the industry, starting with a majority stake in a Nigerian company, Rack Centre. American investors founded Raxio with an eye on less fashionable markets, from Uganda to Mozambique.

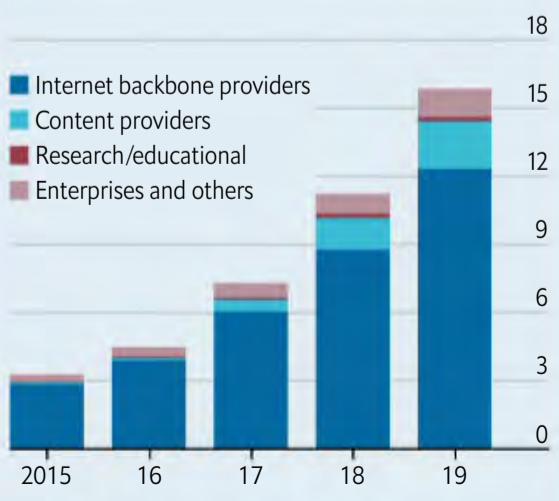
These are just some of the providers that offer "co-location" facilities, renting space to an array of clients. They hope to attract the likes of banks and phone companies, which otherwise have the headache of running their own centres. The days when a bank would just put a server "in a corner room" are gone, says Ayotunde Coker, who left a job in finance to become the boss of Rack Centre.

Data centres need power, and lots of it. Keeping their equipment cool consumes almost as much energy as running it, which is why centres are usually in chilly places such as Scandinavia or America's Pacific north-west. Most of Africa is hot and has a lot of power cuts. "Two or three percent of unavailability is an eternity," says Guy Zibi of Xalam. To keep servers running, many centres use polluting and expensive diesel generators.

Yet the potential gains from offering better connectivity and faster internet services in Africa outweigh the difficulties. Microsoft and Amazon are bringing their cloud services to the region, and have opened data centres of their own in South Africa. Huawei has helped build one for the government of Senegal. Google and Facebook are both involved in projects to lay new cables around Africa's coasts. These investments are a sign that the world's biggest companies are starting to take Africa seriously—and a reminder that the digital economy, for all its airy promise, will be grounded in fibre, steel and concrete. ■

### Internet weighting

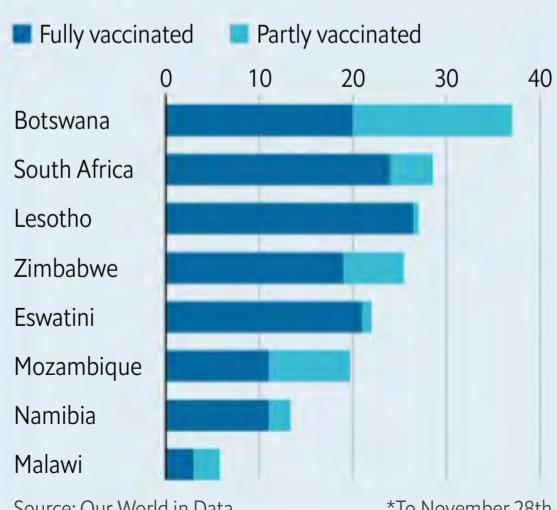
International bandwidth usage in Africa  
By source, terabits per second



Source: Oxford Business Group

### The under-jabbed

Share of people vaccinated against covid-19  
Selected countries, 2021\*, %



Source: Our World in Data

## China and Africa

# Pomp and circumspection

DAKAR

**Africa's ties to China and the West are starting to look more alike**

WHEN PRESIDENT XI JINPING of China meets African leaders, grandiose claims abound. On this count, at least, the triennial diplomatic jamboree known as the Forum on China-Africa Co-operation (FOCAC), held recently in Senegal, did not disappoint. China and Africa have “forged unbreakable fraternity”, declared Mr Xi, who spoke from China by video. Mr Xi painted a dazzling picture of Sino-African ties, saying they feature “sincere friendship and equality, win-win for mutual benefit and common development, fairness and justice, and progress with the times and openness and inclusiveness”.

In truth, relations between African countries and China are rather less sunny and far less equal. But they are deep. China has financed, developed or operates 35 big African ports and thousands of miles of roads and railways. Trade in goods between Africa and China, which reached almost \$200bn in 2019, far surpasses that with America (though is less than that with the EU). Infrastructure loans have made China Africa’s biggest bilateral creditor. For some time Africans have fretted that China is creating debt-traps by lending too much, or with conditions that may allow it to seize ports or airports if payments are not kept up. But after the latest shindig, many may now worry that, far from lending too much, China is losing interest in Africa.

The aid offered at FOCAC certainly suggests that China is stemming the flow of cash. At each of the previous meetings, in 2015 and 2018, it announced it would provide \$60bn in new financing. This time its financial pledges added up to \$40bn. These will be spread across some \$10bn of China’s new reserves (known as special drawing rights) from the IMF, \$10bn in loans to African financial institutions, \$10bn in trade finance and a target of \$10bn of investment by Chinese firms. It also promised 1bn doses of covid-19 vaccines.

The shrinking promises of future largesse match what is already happening on the ground. In 2019 Chinese lending to Africa fell to \$7bn from a peak of \$28bn in 2016, according to the China-Africa Research Initiative at Johns Hopkins University. This is partly because several African countries struggled to repay their loans and asked China for debt relief. Meanwhile Chinese construction and engineering firms’ African revenues have been sliding steadily since 2015.

Yet money is not the only thing that China has to offer to cement its links to African countries. Its policy of non-interference in domestic affairs means it is just as happy dealing with despots as it is with democrats (see Chaguan). It trumpets this by saying that its aid comes without political strings attached, though in fact it expects countries getting Chinese aid to support it in international organisations and to suppress criticism about its own abuses of human rights. Importantly, it promises to treat Africans with respect and as equals. Yet at FOCAC meetings, African leaders kowtow, lavishing praise on China and obeying its demand that they treat Taiwan as part of China, before going cap-in-hand for help. It is quite clear who is first among these equals.

Despite their grovelling, many African delegates at FOCAC were not starry-eyed about Chinese involvement in Africa. Félix Tshisekedi, the president of Congo, argued that the partnership would benefit Africa more if African countries were given better access to the Chinese market. On the sidelines of the event some delegates questioned Mr Xi’s promises. “Will it result in action on the ground?” asked one. “I’m sceptical.” Such concerns are common at Western-led Africa conferences, too—though China is generally better at actually honouring its promises, says Deborah Brautigam of Johns Hopkins University.

Even so, China’s help is now less distinctive than it was in the past, when it was more willing than other donors to finance big infrastructure projects aimed at helping Africa industrialise, laments Carlos Lopes, an economist at the University of Cape Town. These days “it’s about Africa as a consumption market,” he says.

Even as China’s involvement in Africa begins to look more like the West’s, Western countries are starting to mimic China. On a recent visit to Nigeria Antony Blinken, America’s secretary of state, sounded almost Chinese when he said America had provided vaccines against covid-19 “with no political strings attached”. This week the EU announced a \$340bn global infrastructure scheme called Global Gateway, which is billed as a rival to China’s Belt and Road Initiative, which finances ports, roads and other infrastructure (see Charlemagne). In June America spearheaded the formation of Build Back Better World, an initiative by the G7, to do the same.

China’s ties to Africa are less distinctive and less threatening than sometimes claimed. Some Western leaders may be privately crowing over China’s retrenchment, seeing it as a blow to Chinese influence. Yet it is hardly a win if Africa loses not just the roads, ports and bridges that China builds, but also the bargaining power it gets from playing off China against the West—to get a better deal for itself. ■



## Iran

# In need of water, not uranium

DUBAI

**As nuclear talks resume, Iran’s regime is rattled by protests**

THE ATMOSPHERE in Vienna is suitably grim. On November 29th diplomats gathered for yet more negotiations meant to salvage the nuclear deal that Iran signed with six world powers in 2015, known as the Joint Comprehensive Plan of Action (JCPOA). The two main parties to the talks, America and Iran, are not talking directly (at the latter’s insistence). Instead, European diplomats act as intermediaries, carrying messages back and forth along frigid city streets made empty and silent by a covid-19 lockdown.

The JCPOA set limits on Iran’s nuclear programme in exchange for the lifting of many international economic sanctions. Donald Trump pulled America out of the deal in 2018. Joe Biden was elected on a promise to revive it. This is the seventh round of talks since he took office in January. But it is the first since his new Iranian counterpart, Ebrahim Raisi, was installed in August after a farcical election that saw most would-be challengers disqualified.

If America is to blame for causing the crisis, Iran is largely at fault for prolonging it. The JCPOA allows Iran to enrich uranium to 3.67% purity. It breached that limit in 2019 and is exceeding it to an ever greater degree. Earlier this year it enriched uranium up to 60%, a level that has no civilian use and is a whisker from weapons-grade.

The UN’s International Atomic Energy Agency reported in November that Iran had stockpiled more than 2,300kg of enriched uranium, 11 times the level permitted in the deal. That includes 17.7kg at 60%

► purity (a bomb requires about 25kg of weapons-grade uranium). It has also started turning gaseous uranium into solid metal, a key step in bomb-making. On December 1st the agency reported that Iran had begun installing advanced centrifuges and spinning uranium up to 20% at Fordow, a fortified site dug into a mountain where the JCPOA forbids any enrichment.

Before this round of talks, Iran indicated it would not discuss its own violations, only America's. It wants an apology for Mr Trump's withdrawal, along with compensation and a promise that it will not happen again. Reasonable as it may seem, some of this is impossible. America cannot provide such a guarantee—nor, for that matter, can the deal's other signatories, including Iran itself.

Meanwhile, Iran's nuclear activity may soon render the JCPOA irrelevant. Even if forbidden work is halted, Iran has gained valuable know-how that cannot be forgotten. American officials say time is short to restore the deal, but refuse to say what would constitute an irreparable step on Iran's part. "We'll know it when we see it," says Rob Malley, America's lead negotiator.

Enrique Mora, the EU's top diplomat, said on November 29th that Iran had at last agreed to discuss not only sanctions but also its own activities. Such is the dire state of the deal that this qualifies as progress.

Hardliners in Tehran believe the JCPOA is not worth the effort. America, they argue, will preserve non-nuclear sanctions that hobble Iran's economy. They would rather shun the West, pursue trade with China and focus on building a so-called "resistance economy" at home.

Yet recent events back home expose the futility of this approach. Residents of Isfahan, in central Iran, have held weeks of protests in the Zayandeh Roud (pictured), a dried-up riverbed that snakes through the city. Farmers started the demonstration, angry about a long drought that has ruined their livelihoods. The government, they said, has done little to help.

Water shortages are common in Iran. The UN says that available water per person has dropped by 28% over the past three decades, to 1,675 cubic metres a year, a level it defines as "water stress". In July there were protests in Khuzestan, a south-western province, after residents went for days without running water in scorching heat.

The drought is not directly linked to sanctions: it stems from decades of mismanagement, water-intensive farming and climate change. Yet even a more attentive government would find it hard to fix such problems while under sanctions that limit access to both foreign technology and hard currency.

That will be a problem for Mr Raisi, who campaigned on a pledge to tackle Iran's myriad socioeconomic woes. He scored an

## Booze in Saudi Arabia

# Drinking and driving

### Will a car race mark the end of the kingdom's ban on alcohol?

**T**HIS YEAR the drivers of Formula 1 (F1) made a change: instead of celebrating after a race by spraying each other with champagne, they switched to sparkling wine. Not to be frugal—F1 is not that kind of sport—but because of a new sponsorship deal. Officials in Saudi Arabia face a harder decision. The kingdom, which will host a race on December 5th, bans alcohol. Some, though, think it may loosen up for the event. "Champagne is part of the ceremony," says a royal adviser. "Jeddah [the host city] will have seen nothing like it."

Saudi-watchers predict boozy parties on yachts and, perhaps, at select venues on land. That would be in keeping with the reforms of Muhammad bin Salman, the crown prince, who has ignored puritanical clerics and curbed the morality police, while breaking taboos by opening up cinemas and letting women drive. Concerts were largely prohibited not

long ago; now female DJs jive in public. The F1 race could mark the lifting of the alcohol ban, says a senior official.

The kingdom is reconsidering alcohol as it tries to lure tourists away from destinations like the United Arab Emirates (UAE), which has long allowed foreigners to partake and legalised drinking for everyone last year. Prince Muhammad has invested in cruise ships that serve alcohol offshore and carved out vast royal preserves with their own (non-Islamic) bylaws. He hosts a Red Sea festival where spirits flow. Luxury hotels are going up on the coast and near tourist sites inland. A launch party for one in October featured illicit sangria laced with whisky (which deserves to be banned for bad taste alone) and a rave on the sand.

Some of Prince Muhammad's advisers want him to enlist liberal clerics to help explain to Saudis why what was once *haram* (forbidden) may soon be *halal* (permitted). "The sin [of drinking wine] is greater than the benefit," says the Koran rather mildly. It does not prescribe a punishment for the act, though Saudi judges have been known to sentence offenders to 80 or more lashes. For centuries the early caliphs hosted parties with alcohol and let jurists argue over whether Islam banned all booze or just that from fermented grapes.

"We're opening our country up to the world," says Khalid al-Faisal, a royal overseeing the race in Jeddah. Still, there are reasons to think that the podium, at least, will be dry. Bahrain, Qatar and the UAE have all hosted car races—and used blander fizzy drinks, such as sparkling rose water, on the winner's stand. Years ago an F1 team sponsored by Saudi Arabia's state airline celebrated (in public) with orange juice. It got their clothes just as wet as champagne would have done.



A rather un-Saudi celebration

early win on the pandemic: 54% of Iranians are now fully vaccinated, up from 3% when he took office. It helped that Ali Khamenei, the supreme leader, dropped his objections to Western vaccines just around the time when Mr Raisi was inaugurated.

The new president has made a point of embarking on weekly listening tours to outlying provinces. What he has heard is frustration. The rial has lost 86% of its value in the past five years. Though inflation eased last month, it is still running at 44% a year. Prices for staple foods like milk, bread and eggs are rising even faster. In re-

cent years there have been frequent protests over living conditions, despite a sometimes brutal crackdown by the authorities.

Some interlocutors have sought to appeal to Iran's self-interest. Even if Mr Trump (or someone like him) returned to power in 2025, reviving the JCPOA now would give Iran three years of reduced sanctions and opportunities for foreign investment: better, surely, to face the next round of "maximum pressure" from a stronger position. Mr Raisi and his boss, Mr Khamenei, will have to decide whether such pragmatism trumps ideology. ■

**Spain**

## The tests of tolerance

MADRID

### The country needs immigrants. But does it still want them?

IT IS THE season of calm seas off the Sahara, and each week several hundred African migrants turn up on the shores of the Canary Islands, packed tightly into open fishing boats. Some of them, especially those from Mali, are fleeing violence. Many more are economic migrants, lured by the prospect of much higher wages in Europe, if they can somehow get there.

It is a hazardous trip: at least 900 migrants have died on this route so far this year. But most who make it to the Canaries eventually find their way to the Spanish mainland. There they find a country whose traditional welcome for immigrants is showing signs of strain.

Modern Spain acquired an immigrant population later and more suddenly than other western European countries. In 1998 there were just 1.2m foreign-born residents; by 2010 there were 6.6m (out of a total population of 47m). Many went home during the economic slump of 2008-12. Now their number is rising again, to 7.2m

last year. The first wave easily fitted in: the economy was growing, and the largest contingents were from Spanish-speaking Latin America and from Romania, which has cultural and religious similarities to Spain. There were many, too, from Morocco, where Spain was the colonial power in the north of the country.

In recent years most new arrivals have come not by sea but through the airports, as visa overstayers, many from Latin America. Growing numbers are from Africa. After a previous surge in arrivals in the Ca-

naries in 2006 Spain signed agreements with Morocco, Mauritania and Senegal under which those countries would take their migrants back in return for aid and help with patrolling the seas. But the deportations have been halted during the pandemic. Anyway, the three African governments are reluctant, especially Morocco's, which has a long-standing dispute with Spain over Western Sahara and which in May allowed some 8,000 migrants to cross into Ceuta, a Spanish enclave.

For the past two years, arrivals in the Canaries have at times overwhelmed reception facilities. Algerians are landing on Spain's Mediterranean coast and the Balearics. This year, for the first time, three of the top five nationalities seeking asylum are African. Many Africans move on to the rest of Europe. But they are increasingly visible in Spanish cities. It normally takes three years to get a work permit. Meanwhile, some work as *manteros*, street vendors who display their wares on blankets on the pavement. They face racism and police harassment, complains Malick Gueye of an association of *manteros* in Madrid.

All this grabs headlines, especially in a changed political climate. Vox, a hard-right party which now has 52 of the 350 seats in parliament, burst onto the scene in 2017 in response to the separatist threat in Catalonia. But as that has waned it has increasingly campaigned against irregular

---

#### → Also in this section

---

44 Spanish accents

45 Beefing up Ukraine's army

45 Fighting over Nord Stream 2

46 Italy's next president

47 Charlemagne: Bullshit in Brussels

► immigration. For a regional election in Madrid in May, it put up posters contrasting the cost of looking after migrants who are unaccompanied minors with pensions for older Spaniards. It is a paradox that Vox does particularly well in areas along the Mediterranean coast where farmers depend on Moroccan and other African labourers for the harvest.

"Racism isn't a monopoly of Vox," but racists feel empowered by its stance, says Mr Gueye. There has been an increase in reports of racist attacks, though they remain rare. "There's a breeding ground in favour of hatred in Europe from which Spain is not exempt," says Jesús Perea, the deputy minister for migration.

One of the first acts of Pedro Sánchez, the Socialist prime minister, when he took office in 2018 was to welcome a shipload of 630 immigrants stranded off Italy. As migration routes have moved westwards again, the government is now more cautious. "We have to strike a balance between security and solidarity," says Mr Perea. He remains optimistic. "The general day-to-day attitude in Spain is better than in other countries in Europe," he claims. Spaniards recall that many of them emigrated in the 1950s and 1960s in search of a better life. It helps, too, that immigrants are spread out across the country, rather than concentrated in ghettos. In a recent poll 56% of Spaniards saw immigration positively.

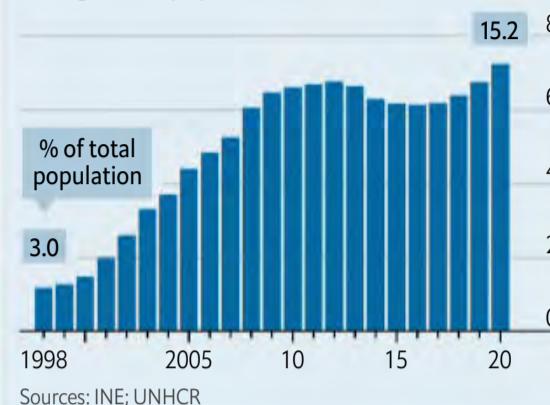
Spain faces a test and a choice. The test is to ensure that the second generation, only now growing up in numbers, integrates successfully. A warning came in 2017 with terrorist attacks in Catalonia perpetrated by a group of young men who had arrived from Morocco as small children. They were apparently well integrated. They spoke Catalan, had jobs and played in a local football team, but were recruited by a jihadist preacher. However, such cases are rare. A survey in 2014 found "no indicators of cultural rejection...among immigrants or their children". More recent studies have found a higher risk that children of immigrants drop out of school. Few senior jobs are held by African immigrants or their children, so role models are scarce.

The choice is whether to admit more immigrants. Some say Spain needs them. Even more than in most rich countries, Spain's fertility rate has tumbled, from three children per woman in 1964 to 1.2 today. So in the future fewer workers will have to support a lot more pensioners, unless Spain raises the retirement age or lets in more young immigrants, or both. The government estimates that, even if it succeeds in bringing the effective retirement age into line with the legal one, which is gradually being raised to 67, Spain will need an extra 6m-7m workers by 2040 to meet its pension bill. Some 250,000 a year will need to come from abroad.

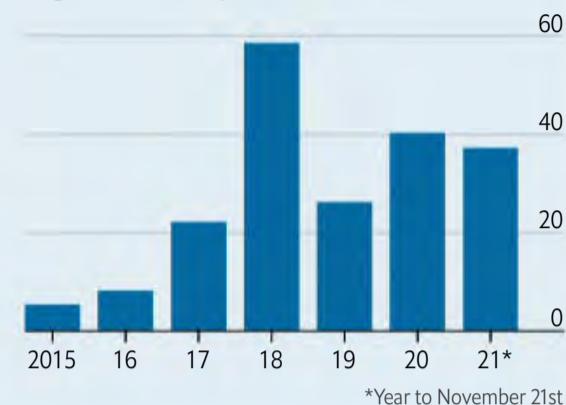
## Immigrant waves

Spain

### Foreign-born population, m



### Migrant arrivals by sea, '000



Many Spaniards remain welcoming. After a campaign by NGOs the government in October made it easier for young migrants to get work permits when they turn 18 and leave reception centres. "These youths shouldn't have to be wandering the streets for three years until they get papers," says Emilia Lozano, a retired shop-

worker who has organised beds and training for some. Small towns across the depopulating interior want immigrants to keep their schools, shops and bars open. Even as Spanish society has changed radically in a generation, the country has remained generally easygoing. That can continue, but it will take more work. ■

## Language in Spain

# Accenting the negative

MADRID

Linguistic trivia—and issues not so trivial—reignite Spain's language wars

“WITH THE stroke of a pen” is a phrase usually used metaphorically. But just a single stroke differentiates the two forms of the name of a Spanish city: “Valencia” (in Spanish) and “València” (in the regional language). A left-wing regionalist party recently kicked off a debate in Spain’s Senate by insisting on “València” as the only spelling—even in Spanish (which does not have the letter è).

Spain’s regional squabbles are often this tiny. Some Catalans detect an insult in the use of the letter ñ, which is used only in Castilian (Spanish), but not in Catalan. Barcelona’s second-biggest football club was named “Español” on its founding in 1900, to distinguish it from FC Barcelona, whose founder was Swiss. The club renamed itself Espanyol to appease local sensitivities in 1995.

In recent weeks language wars have reached high politics. The same Valencian party that insisted on València also pushed to be allowed to use “Païses Catalanes” (Catalan countries) in the Senate—a loaded phrase beloved of separatists, which includes the Valencia region, Catalonia and the Balearic Islands, all of which speak Catalan.

Meanwhile, the Socialist-led minority government needed the support of regionalist parties to pass its budget last

week. It did so in part by promising more children’s television in Basque, and by agreeing to require streaming platforms based in Spain to offer 6% of their content in Spain’s main minority languages, Basque, Catalan and Galician. (Details remain murky. Content dubbed into those languages will count; subtitles apparently won’t.)

Rather more seriously, a row over schooling now threatens a constitutional conflict. Catalonia’s immersion model has generally required all subjects to be taught in Catalan, except Spanish itself. This annoys families from elsewhere in Spain. But on November 23rd Spain’s supreme court ruled that 25% of courses must be in Spanish—and the Catalan government’s education boss immediately told schools that there should be “no change” in practice. The national government stayed calm, saying the Catalans should respect the courts. The leader of the main opposition party, Pablo Casado, said that if they did not, the Senate should revoke Catalonia’s right to set its own education policy.

Many ordinary people in Spain are happily bilingual in Spanish and a regional language. But when dealing with Spain’s identitarian politicians, whether in Madrid, Valencia or Barcelona, you must choose your accents carefully.

## Ukraine and Russia

# Waiting for the freeze

KYIV

**The Ukrainian army has got better at fighting Russian-backed separatists**

**W**HAT TO MAKE of the military analysts who calmly list the reasons why the most serious war in Europe since 1945 might begin in January? The flat, muddy terrain of south-eastern Ukraine will be frozen solid by then, allowing Russian tanks to roll in. It is in the middle of the deployment cycle for the conscripts who make up much of Russia's ground forces. And Russia may find itself with a pretext for invasion, since the new year has in the past brought front-line flare-ups in Ukraine's war against Russian-backed separatists. Besides, the 100,000 Russian troops massed near the border are more than mere theatre; Russia is setting up field hospitals and calling up its reserves.

Dima is unimpressed. A colonel in the Ukrainian army, he has watched the rapid transformation of his country's armed forces from a bad joke to something approaching a modern army. And he thinks Russia has been watching, too. "They are afraid of us, because since 2014 we have shown what we can do," says Dima, who prefers not to use his real name. "It would be a third world war, at a minimum," he says, perhaps with a touch of hyperbole. In the corner of a café in Kyiv, fidgeting with cigarettes and coffee, he remembers how far Ukraine has travelled.

In 2014 Dima was commanding a battalion near Luhansk, a city in the south-east near the Russian border. Of his 700 soldiers, only 40 were ready for active duty. His men did not bother to wear their clumsy Soviet-army vests or helmets, which offered little protection against bullets. Soldiers instead, when possible, dressed in German gear scrounged abroad from second-hand stores by volunteers. His tanks had the wrong engines installed. Few men had the training they needed to fight well. But had Ukraine enjoyed today's armed forces back in 2014 "Donetsk and Luhansk would be free today," claims Dima, with a snap of his fingers.

But they are not. Ukraine failed to stop Russia's annexation of Crimea, and the self-declared "republics" of Donetsk and Luhansk remain outside Ukraine's control (see map). That Ukraine had just 6,000 combat-ready troops at the time was a result of decades of neglect. Well-intentioned Ukrainian politicians were complacent after the signing in 1994 of the Budapest memorandum, under which Ukraine gave up its nuclear weapons in exchange

for security guarantees from America, Britain and Russia. Ill-intentioned officials sold off equipment and took their cut.

Now Ukraine is getting its act together. Military spending as a share of GDP has more than doubled, to 4%, funded in part by a "military levy" on incomes. America has given \$2.5bn-worth of equipment to Ukraine. That includes Harris radios to ensure troops can communicate, and counter-battery radars to detect the source of enemy fire. Ukraine now has 250,000 troops and a further 900,000 reserves; some 300,000 of them have experience on the front line. Ukraine has bought Bayraktar TB-2 combat-capable drones from Turkey, a NATO member. America has sent Javelin missiles, though on the condition that they are stored far from the front line.

Ukraine's president, Volodymyr Zelensky, wants more than new weapons. He covets accession to NATO. That would commit America and 29 other countries to leap to Ukraine's defence if it were attacked by Russia. But such an invitation looks highly unlikely; NATO does not want an unambiguous commitment to defend a country Russia has already attacked. However, Ukraine is preparing its forces to work with NATO's anyway. Joint exercises are increasingly common, and getting bigger. A new policy requires all Ukrainian troops to have a command of English by 2025.

Much of Ukraine's improvement has been based on the premise that Russia wants to challenge Ukraine, but does not want the cost of waging a war in its own name. This has produced the kind of disorganised ground war that Ukraine has been getting better at fighting since 2014.

But the Kremlin's thinking may now be changing in response to a version of the future it claims to find intolerable. It fears that a West-veering Ukraine will abandon its historical role as a buffer between Russia and the West, and instead play host to American firepower only a short distance from Moscow. On December 1st Mr Putin used a speech to demand that NATO commit not to station troops or missiles in UK-



rain, pledges that NATO will not be prepared to give.

Russian impatience with what it claims is threatening behaviour does not mean it wishes to gobble up swathes of Ukrainian territory for good. Fyodor Lukyanov, a foreign-policy analyst close to the Kremlin, suggests that a quick, hard incursion akin to Russia's war with Georgia in 2008 could occur, followed by merciless talks. A pretext would be easy to manufacture.

If Russian force were unleashed fully upon Ukraine's troops, it would pulverise them. Nothing in Ukraine's arsenal would be able to stop Russia's air force of modern jets, which recently proved their power in a bombing campaign over Syria. Most of Ukraine's navy vanished along with Crimea in 2014, and it has not been rebuilt since then. Russian troops are better armed, greater in number and backed by a smoother logistics set-up. No Western power looks willing to wage war against Russia for Ukraine's sake. Mr Putin is probably bluffing. If he is not, Dima's confidence will face a fearsome test. ■

## German-American relations

# High-pressure umbrage

BERLIN

**Nord Stream 2 is a headache for the new German government**

**O**LAF SCHOLZ and Joe Biden seem to be destined to have as cordial a relationship as Angela Merkel and Barack Obama did. The incoming German chancellor and the American president are both Atlanticists on the centre-left of their respective political spectrums who are committed to fighting climate change. Mr Scholz has called America "Europe's closest and most important partner". As finance minister he got on well with the Biden administration.

Even so, one geopolitical conundrum is casting a big shadow over the relationship. Nord Stream 2, a recently completed 1,230km (764-mile) undersea pipeline for natural gas from Russia to Germany, is fiercely opposed by America's Congress. Mr Biden opposes it too, but waived sanctions in May to avoid a row with a close ally. If Republican senators have their way, he may be compelled to impose them after all.

Led by Ted Cruz, a senator from Texas, Republicans in the Senate are pushing for new sanctions via an amendment to the annual National Defence Authorisation Act (NDAA). On December 1st the Senate was due to vote on 21 amendments to the NDAA, including the one involving the NS2 sanctions. But voting had been held up as *The Economist* went to press, as the Repub- ►

► licans tried to add yet more amendments. Mr Cruz and his allies are also blocking the appointment of several dozen foreign-policy officials, including the American ambassadors to Germany, Israel and Egypt, to increase the pressure on Mr Biden.

Many American lawmakers have opposed NS2 since Gazprom, Russia's state-controlled gas giant, joined forces with five European energy firms in 2015 to build it alongside an existing pipeline under the Baltic Sea, at a cost of €9.5bn (\$11bn). They fret that the new pipeline, which doubles Russia's capacity to export gas to Germany, will increase Europe's dependence on Russian energy. They worry that it will deprive Ukraine (and Poland) of transit fees of about \$2bn a year from the existing pipelines that pass through their territory, and make it easier for Russia to cut supplies of winter gas to eastern Ukraine. And they argue that the current infrastructure already provides sufficient capacity for Europe's energy needs. American opposition to NS2 is further fuelled by Russia's military build-up on its border with Ukraine (see previous article).

Germans argue that the pipeline is no threat to Ukraine so long as what is known as the "joint statement" is implemented. This is an agreement Angela Merkel, the outgoing chancellor, and Mr Biden struck in July, in which Germany vowed to take action, including imposing EU sanctions, if Russia were to use energy as a weapon against Ukraine. The statement also stipulates that Russia must honour its gas-transit agreement with Ukraine and extend it beyond 2024 by up to ten years. Germany has appointed a special envoy to help the renegotiation of the transit agreement.

Yet the pipeline has been hitting new problems. As well as the growing pressure from Congress, in mid-November Germany's energy regulator suspended the certification process of the pipeline. It said that to secure an operating licence the NS2 consortium needed first to form a German subsidiary under German company law, which will introduce a delay.

Germany's extensive coalition agreement does not directly mention NS2. It says only that European energy law "applies to energy projects in Germany". Annalena Baerbock, the co-head of the Green Party who will soon be foreign minister, is a vocal critic of the pipeline. Last month she accused Russia of trying to blackmail the German government into allowing NS2 to start pumping gas by keeping gas prices high. Yet ultimately it will probably be Mr Scholz who decides his government's stance on the pipeline. Leaders of his Social Democratic Party back the pipeline, which they say enhances Europe's energy security. The pipeline still seems likely to go ahead, but a return to the harmony of the Merkel-Obama era is a long way off. ■

## Italy's next president

# Guess who?

ROME

**Implausible though it seems, Silvio Berlusconi fancies himself for the highest job**

OPENING THEIR parliamentary mailbox last month, Italian lawmakers were surprised to find an anthology of speeches by Silvio Berlusconi. On the cover was a photograph of the former prime minister, his arms raised high to acknowledge the adulation of an unseen crowd. The booklet, modestly entitled "I am Forza Italia" ("Come on, Italy", the party that Mr Berlusconi founded and leads), was the opening gambit in the 85-year-old media mogul's undeclared campaign to crown his turbulent career with election, by a college of parliamentarians, to Italy's highest office. The term of the incumbent president, Sergio Mattarella, expires on February 3rd, and he has repeatedly ruled out an extension. The race to succeed him is now dominating Italian public life.

Why? A president spends much of his time making speeches, conferring honours and receiving dignitaries. He (there has never been a female president) has some weighty powers, including responsibility for dissolving parliament and appointing the prime minister. But those powers are few. What makes the choice of a president so important just now is that those who are thought to covet the job include the current prime minister, Mario Draghi, the guarantor to Brussels and the markets that Italy will spend productively the €200bn (\$225bn) it stands to get from the EU's pandemic recovery fund.

Whichever way the presidency goes could create a problem. If Mr Draghi is seen to fail in a bid to be chosen as the next occupant of the Quirinale palace, his standing will be diminished and thus his capacity to hold together the broad coalition of parties that support him but whose only common denominator is awe-struck respect for him. If, however, he succeeds, a replacement will need to be found who can stop the heterogeneous coalition from falling apart. And that will not be at all easy.

Either way, the odds on a snap election will shorten, and if an early vote is held, the polls currently suggest that the outcome would be a coalition government dominated by two parties with a track record of confrontation with the European Commission: the Brothers of Italy party, whose roots lie in neo-fascism, and the populist Northern League. Within Italy, the risks of that tend to be downplayed. Not so elsewhere. Teneo, a consultancy, warned recently that Mr Draghi's elevation could "plunge the country back into political turmoil, undermining efforts to enact reforms needed to secure regular instalments of recovery fund cash".

Giorgia Meloni of the Brothers and Matteo Salvini of the League are both nominally supportive of their ally, Mr Berlusconi. But it is clear their interests actually lie in ushering Mr Draghi upstairs. Whether he, and they, will get their way is another matter: a solution that allows Mr Draghi to stay on as prime minister with minimal loss of face may yet be found. Enrico Letta, the leader of the centre-left Democratic Party, which has risen to the top of the polls in recent weeks, wants Mr Draghi to stick around. And recent utterances by leading figures in the Five Star Movement, still the biggest group in parliament despite its collapse in the polls since the previous election, suggest that they do, too.

Perhaps most important of all is the instinct for self-preservation, both political and financial, of Italy's lawmakers. Because of a reform in 2019, the next parliament will have around two-thirds the number of seats of the current one. And if the next election is held before September 24th, 2022, the first-time parliamentarians among them will lose their rights to a pension. Not for nothing is Mr Berlusconi implying that, were he made president, he would ensure the legislature ran to the end of its term in 2023. ■



More mayhem to make

# Charlemagne | On bullshit: Brussels edition

*Why bullshit rules in the EU*



BULLSHIT IS A surprisingly rich seam of philosophical inquiry. “On Bullshit”, a short essay by Harry Frankfurt, an American philosopher, became a bestselling book. Since its publication in 1986, the essence of the stuff has been chewed over, with thinkers ranging from Wittgenstein to St Augustine invoked to help understand it. The field of inquiry was even given its own name: taurascatics. Examining the theory of bullshit—“indifference to how things really are” in Mr Frankfurt’s formulation—is now a well-trodden path. To see bullshit in practice, head to Brussels.

Consider the EU’s Global Gateway initiative, launched on December 1st. It is a sprawling scheme that will supposedly result in €300bn (\$340bn) of investment in infrastructure across the developing world by 2027. Diplomats compare it to the “Belt and Road Initiative”, which China uses to expand its influence. Beneath the spin lurks bullshit. It is not just the language (the scheme is based on “a Team Europe approach”) but the content. The €300bn is mainly a mixture of existing commitments, loan guarantees and heroic assumptions about the ability of the club to “crowd in” private investment, rather than actual new spending. Even the threat it is designed to counter is overdone: Japan quietly invests far more than China on infrastructure in Asia, for example. It is a perfectly good idea; but it is simply caked in bullshit.

Anywhere politicians, journalists, wonks and lobbyists gather tends to produce a surplus of bullshit. But the EU’s de facto capital is especially prone to it. It is a city of great power but little scrutiny. Media attention is still focused on national capitals. Mr Frankfurt wrote that bullshit is “unavoidable whenever circumstances require someone to talk without knowing what he is talking about”. In Brussels this happens every day. Those inside the bubble are expected to keep on top of judicial reform in Poland and coalition formation in Sweden, as well as the grand sweep of geopolitics. A deep knowledge of the domestic politics of 27 countries and an encyclopedic understanding of how the EU’s institutions work (in theory and in practice) is both necessary and impossible. Some bullshitting is inevitable.

Inhabitants of the bubble are reluctant to call it out. Brussels is a cosy place. The same people attend the same events, making the same points about topics that would be unintelligible to a passer-

by who sneaked in for the free sandwiches. Disagreements on panels are rare. A soporific consensus is the norm. Admitting that the EU’s policy in the Indo-Pacific barely matters would send its authors, and the assembled wonks who pored over it, into an existential tailspin. Ignoring how things really are, as Mr Frankfurt explains, is the essence of bullshit.

Much as all models are wrong but some are useful, there is good bullshit and bad bullshit. All bullshitters are winging it, but some get it right. At one end of the spectrum are total chancers. One EU talking head conned TV channels into putting him on air, even though the “think-tank” he ran had a spelling error in its title, stock images for staff and existed mainly in his head. At the other end are the usual array of well-funded wonks (and columnists) opining on whatever dominates the day, with a degree of intelligence if not always insight. But sometimes all that separates the two is the cash for a glossy website and proofreaders.

Bullshit lurks at the heart of the EU’s legitimacy. In other political systems, a government wields an electoral mandate. In Brussels, laws stem from the European Commission, which is not directly elected and yet must still act in the European interest. Determining this interest is often done by surveys, which can yield misleading results. (An EU-funded survey in March 2017, taken nine months after the Brexit vote, revealed that only a quarter of Britons believed that membership of the EU was a bad thing.) Strange as it may seem, when politics is absent, bullshit has free rein.

Boredom can breed bullshit. For all the late-night suspense of conclaves of the European Council, in essence they are just long meetings to argue about revisions to a document. Diplomats who offer the juiciest bits of gossip know that their views will be reflected best. The upshot is that even the blandest summit is jazzed up for the sake of hungry hacks. Likewise, crunch points rarely crunch in the EU. Deadlines are an invention of diplomats attempting to create pressure and journalists trying to create peril. In either case, they are nearly always bullshit.

## Called to ordure

It is possible to build a career on bullshit in Brussels. A young Boris Johnson made his name in the city as a Euro-bashing journalist from the *Daily Telegraph*. What is striking is that the outrageous stories—whether on condom regulation or the bendiness of bananas—were never outright fabrications. Instead, they were, often, bullshit. That made them harder to counter. A takedown of the bendy-banana myth focused on the fact that it was not “Brussels bureaucrats” who decided to regulate them, but national governments which pushed for changes to existing EU regulations. A pedantic clarification missed the wider truth: the curvature of bananas in Europe is a supranational matter. A bullshit attack was countered with a defence that was also bullshit.

If bullshit can be an opportunity in Brussels, it is also a prison. “Bullshit jobs”, as the anthropologist David Graeber called them in another addition to taurascatics, are rife within the EU. Most officials dealing with big topics in Brussels are intelligent and diligent. Stay in Brussels long enough, however, and sad souls who are overpaid and underworked reveal themselves. The perks, which range from fat pensions to an expat allowance that cancels out any tax due, are simply too good to give up. Outside the institutions, youngsters with dreams of building Europe instead find themselves lobbying for the aluminium industry or Kazakhstan. Each day is a scramble to justify a sorry existence. The result? More bullshit shovelled into a system already overflowing with it. ■



### Conversion therapy

## Missing the mark

### A proposed bill banning conversion therapy could do more harm than good

**I**N 2013 A Conservative government legalised same-sex marriage. It was the latest step in the social liberalisation of Britain that started in the 1960s, and in the Conservatives' own modernisation. Despite opposition at the time, within the party the result is now regarded as uncontroversial.

Now another Conservative government is seeking its own modernising moment. A short public consultation on banning "conversion therapy" closes on December 10th, with the aim of passing a law before an international conference on gay and trans issues in London next June. Supporters say it is needed to end a practice that harms sexual minorities; opponents, that it may worsen the harms it aims to end.

The plan is to create a criminal offence covering therapy undertaken with the intention of changing a person's sexual orientation or gender identity. It is supported by campaign groups; the chief executive of one, Stonewall, regards it as so obviously right that she opposed consulting the public at all. But critics point to three problems: its conflation of gay and trans identities; a poor evidence base; and the intro-

duction of "gender identity" into law.

Efforts to turn gay people straight by prayer, exhortation or "aversive therapy" such as electric shocks were common until the 1960s, when homosexual acts between men were still illegal. But being gay is now widely accepted as both unproblematic and innate, and such treatments as not only cruel but doomed to failure. To the extent that they still happen, it is largely in religious settings and consists of laying-on of hands and the like, rather than physical abuse (which is in any case already illegal). "There are no legitimate, registered psychotherapists now who would be part of persuading someone they are not gay," says David Bell, a psychiatrist who wrote a critical report in 2018 about GIDS, England's specialist gender clinic for children.

Trans conversion therapy (which the proposed law does not define) is a different matter—not because trans people are inherently problematic, any more than gay people are, but because unlike sexual orientation, gender identity is neither well-defined nor necessarily stable. "Conflating the two is incredibly dangerous," says

### → Also in this section

49 How MI6 sees the threat from China

50 Bagehot: The night Jordan Peterson met a lobster

— Read more at: [Economist.com/Britain](https://Economist.com/Britain)

Anna Hutchinson, a clinical psychologist who used to work at GIDS. A person may dissociate from their biological sex for a host of reasons, including autistic-spectrum disorders, depression, trauma or a history of sexual abuse. Responsible clinical practice requires investigating such possibilities. But the phrase "trans conversion therapy" is being used to mean any approach other than immediately affirming a person's stated gender, says Dr Hutchinson. "That goes against what therapy is."

The only safeguard is an acknowledgement that talking therapy may be appropriate if a patient is "questioning their LGBT status". But "lots of my patients are not questioning; they are very assertive that they are trans," says Susan Thompson (not her real name), a family doctor who insists on exploring all comorbidities with trans-identifying patients. "The way this is worded at the moment, I could end up in prison," she says. Even if there are few prosecutions, the law would make medical professionals wary of anything but unquestioning affirmation. It would also reinforce a trend for schools to go along with cross-sex identities asserted by children, sometimes without even telling parents.

The second complaint about the bill is the poor quality of the evidence upon which it is based. A government-commissioned report by researchers at Coventry University attempts to show that trans conversion therapy is similar to attempts to "pray the gay away". But that conclusion does not follow from the very limited re-

search presented. The report relies on a handful of articles and interviews, none of which establishes evidence of harm. Much is made of an online perception survey based on a six-minute fictional video clip, and a single question in a unrepresentative survey by an American transgender lobby group. The growing number of “detransitioners”—people who identify as trans, only later to change their mind—is ignored.

The third big complaint is that the proposals would introduce the nebulous concept of “gender identity” to British law for the first time. In 2020 a grass-roots campaign by feminists succeeded in forcing the government to abandon plans to allow anyone to change their legal sex at will. That would, in effect, have made self-described gender identity the deciding factor in who counted legally as a man or a woman, abolishing single-sex spaces and services at a stroke. The plans are “a smoke-screen for bringing gender-identity ideology into law,” says Maya Forstater, one of the founders of Sex Matters, an organisation campaigning for sex-based rights.

The consultation comes as an independent review of gender-identity services for children is under way, led by Hillary Cass, a former president of the Royal College of Paediatrics and Child Health. Findings are expected next year. “Why not wait until after Cass is published?” asks Dr Bell. But the government faces a dilemma. It wants to appeal to younger voters by showing it is not stodgy, while also signalling to socially conservative older and working-class voters that it is not too “woke”.

This complicates a second u-turn on trans issues in quick succession. And if the bill goes before Parliament in its current form, MPs may fear voting against it, even though many Conservatives and growing numbers on the Labour benches are uneasy. Few voters realise how much is concealed by the phrase “conversion therapy”, and MPs may fear being smeared as bigots.

Perhaps most worrying is the impact on children. Many, it seems, are interpreting the stirrings of same-sex attraction as indicating a trans identity. In an article last year in *BJPsych Bulletin*, a medical journal, Lucy Griffin, a consultant psychiatrist in Bristol, and co-authors found that, of the girls referred to GIDS in one calendar year, only 8.5% were primarily attracted to boys.

#### Collateral damage

Once such children reach 16, gender clinics will prescribe synthetic hormones. Such drugs were used to “chemically castrate” Alan Turing, Dr Griffin points out. The gay mathematician, whose code-breaking helped defeat the Nazis, accepted the drugs as an alternative to a prison sentence. “The whole thing”, says Dr Griffin, “risks becoming an exercise in damaging the people they are setting out to protect.” ■

**Spycraft**

## Open book

### China looms ever larger for British spies, says MI6's chief

FOR THE better part of a century, the main preoccupations of the head of Britain’s Secret Intelligence Service, more commonly known as MI6, have been the malfeasance of Russians or terrorists or—as in the latest James Bond movie, “No Time to Die”—some combination of both. But times are changing. On November 30th Richard Moore, the spy agency’s boss, gave his first public speech since taking charge in October 2020. Russia and terrorism featured on his list of the “big four” priorities, as did the challenge from Iran’s revolutionary regime, which is moving steadily closer to being able to develop a nuclear weapon. But despite Russia’s alarming military build-up around Ukraine (see Europe section) and a recent terrorist attack in Liverpool, China was his primary concern.

“Adapting to a world affected by the rise of China is the single greatest priority for MI6,” declared Mr Moore. Such a pronouncement would have been unthinkable a decade ago, when David Cameron and George Osborne, his chancellor, were desperate to court Chinese trade and investment, and eager to play down the threat from the Communist Party’s hackers and intelligence officers.

The political winds now blow from a different direction. A review of foreign policy in March concluded that China posed a “systemic challenge...to our security, prosperity and values”. In May Britain began ripping out Chinese-made Huawei



A spook who likes to speak

kit from its 5G mobile networks. It recently sent an aircraft-carrier to Asia, part of an eastward surge of warships. It is also increasing co-ordination on intelligence and military issues regarding China with its partners in the Five Eyes, a grouping that also includes America, Australia, Canada and New Zealand.

Mr Moore, who joined MI6 during the cold war and spent much of his career in the Middle East, said that his service was also changing tack. “We are deepening our understanding of China across the UK intelligence community, and widening the options available to the government in managing the systemic challenges that it poses,” he said. Chinese spies are, he warned, “highly capable” and conducting “large-scale espionage”. They are monitoring and coercing the Chinese diaspora in Britain and using social media to “distort public discourse”.

But Mr Moore’s most urgent warning related to science and technology. China, he said, was “expanding the web of authoritarian control around the planet” by exporting surveillance technology. That was not only a problem for recipients made vulnerable to Chinese coercion, but also for MI6 itself. “Our officers need to operate invisibly to our adversaries,” he noted. Chinese control of smartphones, apps and telecommunications networks, as well as access to vast repositories of personal information—such as data from home genetic-testing kits and biometric security at airports—have spun a “worldwide surveillance web” that makes it harder for MI6 officers to operate abroad without their names and histories being uncovered.

That Mr Moore chose to air such concerns in a public forum is itself a novelty. His agency was not officially avowed, nor were its chiefs named, until some years after he joined it in 1987. Perhaps because of the years he spent above-board as a diplomat, he is unusually communicative. He continues to operate his Twitter account, a rarity among spymasters.

Such openness also has a wider purpose, however. As threats evolve, intelligence services must work with tech companies and other outside talent to stay ahead. That requires, said Mr Moore, a “sea-change...in MI6’s culture, ethos and way of working”. The same urgency is visible in increasingly vigorous attempts to recruit a wider range of people, something it has struggled to do despite years of effort.

In 2021, MI6 even began advertising in *The Economist* for “individuals with diverse skill sets and life experiences” to take part-time and consulting roles. More surprisingly still, it welcomed applications from British and foreign nationals alike. The result is a seeming paradox. “To stay secret,” said Mr Moore, “we are going to have to become more open.” ■

# Bagehot | Jordan Peterson and the lobster

*Anatomy of a cancellation*



**T**O UNDERSTAND THE culture wars, it is worth considering what happened between Jordan Peterson and a large red lobster in Cambridge University on a recent evening. Namely, nothing. Which doesn't mean it wasn't important. On the contrary: how it came to pass that nothing was allowed to happen between Mr Peterson and a student dressed as a lobster matters a lot.

First, the lobster. For those (non-lobsters) who have been living under a rock for the past five years, a primer. Mr Peterson is a Canadian academic who, depending on your viewpoint, is either monstrous or magnificent, but who is, all agree, a phenomenon. His book, "12 Rules for Life", has sold over 5m copies and is an intriguing read. It passes briskly from the biology of lobsters to Eden, original sin, Buddhism and the suffering soul. It is peppered with admonitions to "stand up straight with your shoulders back" and "tell the truth". The effect is as if St Augustine had been reincarnated as a life coach, with added input from your mum.

For those who like this sort of stuff (mainly young men), it is wonderful: bracing; inspiring; manly. For critics (of whom there are many) Mr Peterson is propping up the patriarchy with cod biology about lobsters. (At one point he uses lobster hierarchies to explain why men should walk tall.) While the sides bickered, Mr Peterson became a sensation. He speaks in arenas, appears on talk shows and news programmes and almost always manages to annoy. His interviews (one in 2018 with Cathy Newman, a news anchor for Channel 4, was particularly excruciating) are tense, taut and watched by millions.

In 2018 Mr Peterson happened to sit opposite Douglas Hedley, a Cambridge professor of the philosophy of religion, at dinner. Mr Hedley invited him to take up a visiting fellowship. It seems likely that neither quite knew what they were getting themselves into: the invitation was prompted not by lobsters or talk shows but a shared interest in Jung and Biblical symbolism. What happened next was a textbook cancellation.

Not many complaints are needed to constitute the quorum of a controversy today. Earlier this year a podcaster criticised "Brian Wong, Who was Never, Ever Wrong", a story by David Walliams, a comedian turned children's author, for reinforcing "harmful stereotypes" about Chinese people. His publisher, HarperCollins,

said it would remove the story from reprints. Mr Walliams's series has sold 2m copies, and that book had 6,691 reviews on Amazon, almost all five-star. Yet a single complaint ended in censorship.

In Cambridge, problems began when some students complained about Mr Peterson. The faculty reneged on the invitation in an inept Twitter announcement before Mr Peterson had even been told. The pretext was that he had been photographed next to someone wearing a t-shirt reading "I'm a proud Islamophobe". When asked to clarify, the divinity faculty remained silent; a press officer for the university explained that they "don't wish to be interviewed about events that happened nearly three years ago". The department is home to students of Thomas Aquinas, original sin and early Judaism. Perhaps three years ago was just too fresh.

Little of this is surprising. British universities are, as is clear from the treatment of Kathleen Stock, hardly distinguishing themselves as bastions of free speech. Ms Stock recently resigned from a professorship in philosophy at Sussex University after a years'-long campaign of harassment by students and faculty. But in Cambridge there are signs of a pushback. In 2020 a group of academics led by Arif Ahmed, a philosophy professor, rejected an amendment to university regulations that would have restricted their free speech. They forced the university to accept that academics should not have to "respect" everyone's views, but merely "tolerate" them. More recently they kicked an attempt to set up an anonymous online-reporting tool into the long grass.

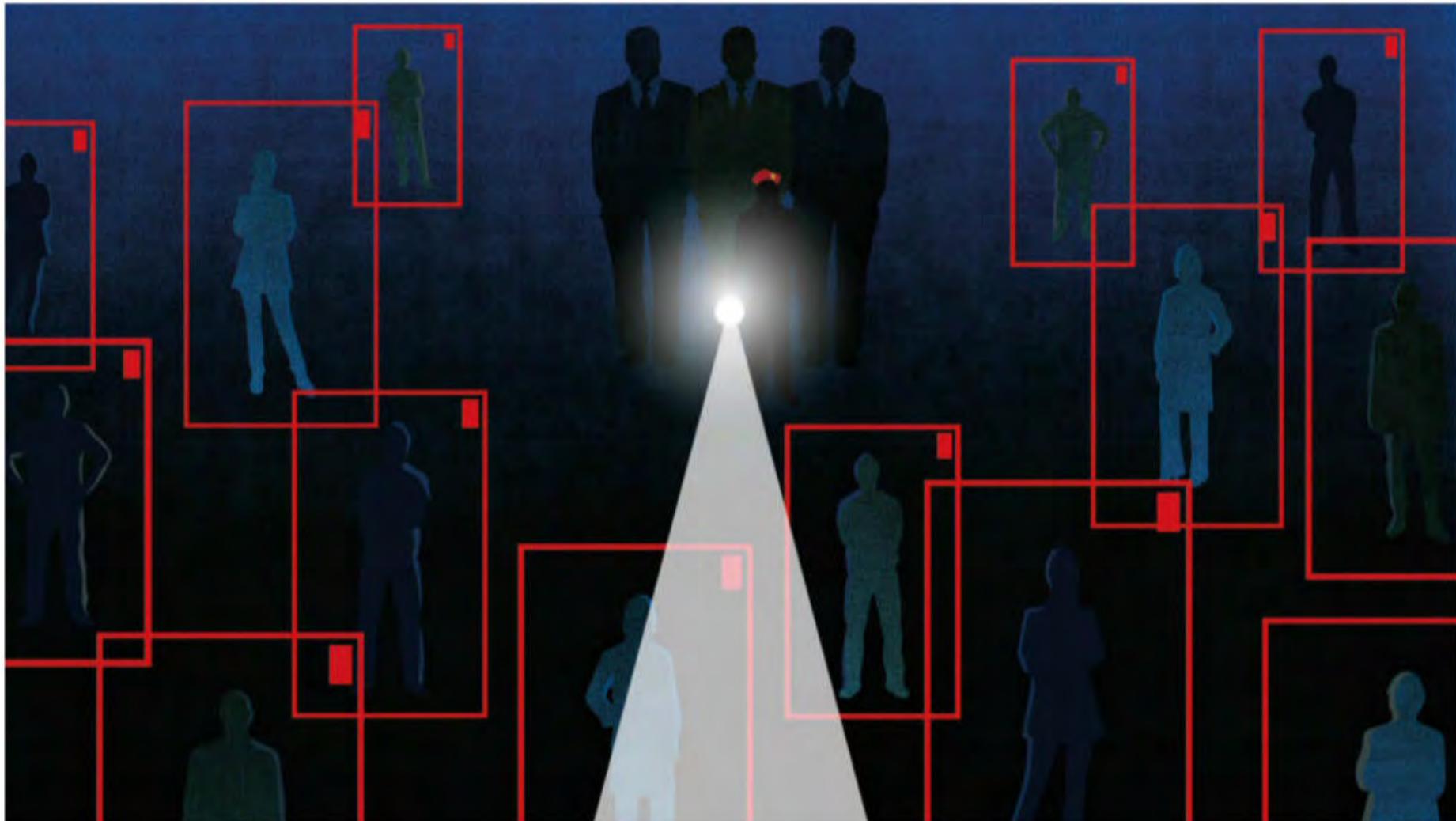
Then a handful of academics—including Mr Ahmed and James Orr, a divinity lecturer—turned their attention to Mr Peterson. Not because they are diehard fans (they aren't) but because, as Mr Ahmed says, there had been "a grotesque violation of academic freedom" and a "stain on our reputation". Bureaucratic cogs started to turn. Committees were dealt with, halls booked, security organised and invitations issued. The vote to ensure "tolerance" helped: now critics had to put up with Mr Peterson. Nonetheless, says Mr Orr, it took "an awful lot" of time.

The bloody history of the 20th century can lead to a misapprehension about free speech. It is thought to be lost suddenly, to stormtroopers in the night. In fact, freedoms are almost always first removed bureaucratically, with processes made steadily more onerous, whisper campaigns started by colleagues, a word in the boss's ear. Bertrand Russell—another academic kicked out of Cambridge, in his case for pacifism—wrote that the habit of considering morality and political opinion before offering a person a post "is the modern form of persecution, and it is likely to become quite as efficient as the Inquisition ever was".

## A timid and tremulous sound

The academics persisted. The cogs turned. And on a cold, clear Tuesday evening, a talk took place. There were trestle tables and people ticking off names. Mr Peterson, slender and brittle as a blade in a sharp blue suit, spoke for over an hour to a satisfied audience. The lobster appeared, shouted something about feminism and scuttled through a side door. No one expired from offence. The sky did not fall in. Votes of thanks followed. Mr Peterson was thanked. The audience was thanked. The lobster was thanked.

It was all quite humdrum—and that was the point. When people think of defending freedom of speech, they also turn to the dramatic: to Voltaire and defending to the death. But that is rarely necessary. Speech can be silenced by bureaucracy—or saved by it: by cogs turning; by trestle tables and people with lists; by insisting on clearly stated rights. And by votes of thanks to lobsters. ■



## Global crime

## Interpolitics

ISTANBUL, MOSCOW AND ROME

## A tussle for control of Interpol pits good cops against bad

**A**LI AHMAD, a British security guard, was arrested while on holiday in the United Arab Emirates (UAE) in 2019. He had attended a football match, and was wearing a Qatari team shirt. He had no idea that the UAE was in the midst of a blazing diplomatic row with Qatar. He was arrested, beaten, electrocuted, stabbed and deprived of sleep, he says. He was eventually released, but still suffers flashbacks.

Justice in the UAE can be both arbitrary and rough. So human-rights activists were appalled to discover, on November 25th, that an Emirati official had been elected president of Interpol, the global police agency. Ahmed Naser al-Raisi was not just inspector-general of the UAE's interior ministry at the time of Mr Ahmad's ordeal; he is accused of complicity in it and in other abuse, all of which the UAE denies. Meanwhile, Hu Binchen, an official from China's ministry of public security, was elected to Interpol's executive committee.

Interpol is the world's largest police organisation. But it has no agents of its own, nor does it conduct its own investigations. Its role is to help law-enforcement agen-

cies track down fugitives and share information. It also co-ordinates cross-border operations, such as one this year involving specialised police units in 20 countries, from Cambodia to Ireland. It targeted illegal gambling and investment fraud and achieved more than 1,000 arrests.

Interpol helps to investigate human trafficking, child sex abuse and modern slavery, and is increasingly involved in fighting terrorism, too. It runs a vast database of stolen passports, which are often used by criminals to cross borders. Its importance has grown as organised crime has become more globalised. "Police chiefs from around the world are telling me that...80% or 90% of their investigations into organised crime nowadays have an international dimension," says its secretary-general, Jürgen Stock, a former vice-president of the German federal police.

Over the past few years, however, fears have spread that Interpol has come under the influence of repressive governments. Countries like Russia, China and Turkey have sent the body "red notice" requests for the arrest of large numbers of people,

including critics and refugees. They have also managed to have their officials elected to top jobs. In 2016, Interpol chose a Chinese security official, Meng Hongwei, as its president. Two years later, after Mr Meng was detained during a trip home, Russia came close to having an ally of Vladimir Putin elected as his successor. Mr Raisi's home, the UAE, is a monarchy with a poor human-rights record whose courts submit to unelected leaders.

His elevation to the top job has revived concerns about the long arm of authoritarian regimes. Mr Raisi faces criminal complaints, based on claims of involvement in torture and arbitrary detention, in at least five countries, including France, where Interpol is based in the city of Lyon. The UAE has denied the allegations. Its media, which are tightly controlled, have carried no mention of them. In private, officials dismiss them as a "smear campaign".

## Who's your figurehead?

The Interpol president's scope for influencing the organisation is limited. His job is unpaid and part-time, and is not as important as that of the agency's secretary-general, Mr Stock. The president's most visible role is to chair the organisation's annual general assemblies. But he also chairs the three annual meetings of Interpol's executive committee, which oversees the work of its general secretariat. Insiders say the fact that a Chinese official held the presidency for two years did not affect the agency's operations. But it was not for lack

► of trying. Mr Meng sought to take on additional powers, they say, but faced push-back from bureaucrats.

The damage to Interpol's brand has real-world consequences, however. "If your reputation is bad, you will lose trust, and without trust you cannot have co-operation," says Sarka Havrankova, the agency's vice-president for Europe, who ran against Mr Raisi. The risk, she says, is that national police agencies will look for other ways to co-operate, such as through Europol, a regional grouping, undermining the international policing system. "You need to have a global network," says a former Interpol official, "because you never know where criminals will go."

Interpol's reputation was already fraying. Mr Meng, the first Chinese national to be elected president, was sentenced to 13-and-a-half years in jail in 2020 after pleading guilty to bribery. His wife says the charges against him were politically motivated. Years earlier, Jackie Selebi, a South African police commissioner and Interpol's first African leader, was convicted of taking bribes from a drug-trafficker. More recently, a Chilean official elected to the executive committee in 2019 was placed under house arrest in Santiago over claims he embezzled \$146m in public funds.

Attempts by authoritarian governments to use Interpol to hound or detain opponents abroad also cast a cloud over the agency. Russia has been the most serious offender, accounting for nearly 43% of all public red notices. (Only 7,500 of the 66,000 red notices in circulation today are made public. The rest are available only to law-enforcement officials.) Of these, many are for Russian Muslims accused of terror offences. Some are guilty of nothing more than wiring money abroad to friends or relatives whom Russia has designated as terrorists, says Alexei Obolenets, a lawyer.

Russia has also repeatedly asked Interpol to issue red notices against Kremlin critics, including Bill Browder, a British financier, and Mikhail Khodorkovsky, a former oligarch. It almost got Mr Browder extradited in 2018 when Spanish police arrested him in Madrid, but he was soon released. (Interpol says he was never issued a red notice, though in 2017 he was briefly the subject of another type of Interpol alert.) Interpol has also declined Russian requests to place Mr Khodorkovsky, who lives in exile in London, on its wanted list.

Turkey, which hosted this year's Interpol assembly, has also been trying. The country flooded Interpol with red-notice requests against exiled members of the Gulen movement, a secretive Islamic group blamed for a violent coup attempt in 2016. (Tens of thousands of Gulenists, including teachers, lawyers and charity workers, have been arrested in Turkey.) The agency recently acknowledged it had rejected al-

most 800 Turkish requests. At one point Turkish officials reportedly attempted (and failed) to upload the names of 60,000 people onto the agency's database. Undeterred, Turkish agents have turned to kidnapping Gulen sympathisers abroad and spiriting them back to Turkey. Freedom House, an American watchdog, lists at least 58 such renditions from 17 countries.

China, too, is a repeat offender. In 2006 Huseyin Celil, a Uyghur who had fled to Canada, was arrested in Uzbekistan on an Interpol warrant and delivered to China, where he remains in prison on dubious terror charges. In July Idris Hasan, a Uyghur living in Turkey, was detained in Morocco on the basis of a red notice.

Safeguard Defenders, a civil-rights group, says China's use of red notices for critics and corruption suspects appears to have increased dramatically under President Xi Jinping. In many cases Interpol has stood its ground. The red notice for Mr Hasan was suspended in August, though he continues to fight extradition. China had probably hoped that Mr Meng, who was head of Interpol at the time, would keep such red notices in place, and help reel in more dissidents. Mr Meng's failure to please his bosses in Beijing may have contributed to his own fall from grace.

The UAE has followed the same game plan. Several foreigners who helped Princess Latifa, the daughter of Dubai's ruler, try to escape house arrest imposed by her father in 2018, say they were subsequently the subject of Interpol red notices, which were later withdrawn.

Interpol has made some reforms, notably to the process of vetting red-notice requests. Such notices can no longer be issued against people whom a member-state has recognised as refugees. At its meeting in Istanbul, the organisation also beefed up eligibility criteria for candidates to its executive committee. But elections to In-

terpol's top post continue to be opaque. Candidates for the presidency are not formally announced until the start of the general assembly, which ensures they cannot be properly assessed by delegates or the wider public. Voting is by secret ballot, which makes backroom deals inevitable.

China is known to use promises of investment and aid to get its candidates elected to posts in international bodies. The UAE is suspected of having done so to drum up votes for Mr Raisi. Over the summer he toured Africa, meeting the presidents of Burkina Faso, the Gambia, Guinea, Guinea-Bissau and Senegal, and publicly promising them support.

### Underfunded, under fire

Interpol is poorly funded for an agency with such broad and complex responsibilities. Its budget for this year is a mere €145m (\$164m), of which €62m comes from statutory contributions (America, Germany and Japan give the most). In the past, Interpol entered into commercial deals to make up for a shortfall. In 2015, it was forced to suspend a €20m partnership with FIFA, the scandal-plagued global body that governs football. It was related to, of all things, fighting corruption. Three years before that, it accepted a €15m grant from Philip Morris, a tobacco company, to help fight fake cigarettes. Interpol has since weaned itself off private-sector money. Delegates in Istanbul voted to increase its budget by about 15% in real terms over the next three years.

But the funding remains inadequate, say experts, especially given the increasing workload. Interpol issued fewer than 1,500 red notices in 2001. Last year, it issued 11,000. "The numbers suggest there is not enough capacity," says Bruno Min of Fair Trials, another watchdog. The agency does not publish data on rejected red-notice requests. "We don't have any idea whether these systems of screening [requests] are actually working," says Mr Min.

The organisation is dogged by claims that authoritarian countries trade contributions for influence. In 2017, the UAE pledged €50m to Interpol's Foundation for a Safer World, one of the biggest donations in the agency's history. A report by Sir David Calvert-Smith, a retired British high-court judge, concluded that the UAE "is seeking to improperly influence Interpol through funding and other mechanisms". Interpol has rejected such claims and publicly welcomed the donation.

But similar concerns are also coming from inside the organisation. "Let us show the world that Interpol is not for sale," Ms Havrankova told the group's assembly on the day of the presidential vote, in a thinly veiled reference to the UAE's lobbying efforts. Some may have already reached a different conclusion. ■





## Asian tech firms

# Hot tropics

HONG KONG

## A new generation of Asian technology giants comes of age

**A**BIG CHANGE is under way in Asia's technology industry. As investors avert their eyes from the government-imposed nightmare engulfing China's internet champions, a cohort of South-East Asian counterparts is booming. Tot up the value ascribed by the market to just three listed and soon-to-be listed consumer-app giants with headquarters in Singapore and Jakarta, and the figure approaches a quarter of a trillion dollars. Add to that the \$70bn-or-so combined worth of a whole field of new unicorns—privately-held startups worth \$1bn or more—and South-East Asia is fulfilling hopes, long-held, that a big emerging-market consumer-tech sector would rise outside China.

On December 2nd, as *The Economist* went to press, Singapore-based Grab, a consumer-technology firm, was due to list on America's Nasdaq through a merger with a special purpose acquisition company (SPAC). The record-breaking SPAC transaction is expected to value Grab at \$40bn. Another giant, GoTo Group, formed from

the merger of Indonesia's Gojek, a ride-hailing firm, with Tokopedia, an e-commerce company, will follow in the first half of 2022. Sea, largest of the three behemoths, and parent to regional e-commerce pioneer Shopee, was the earliest to list, in 2017. Its market value has risen seven-fold since the end of 2019, to \$145bn, making it the largest listed firm in South-East Asia.

The three companies are each some combination drawn from ride-hailing and food delivery, financial services and mobile gaming. The precise blend varies from firm to firm, but the same idea runs through the core of each. It is to bring hundreds of millions of consumers together into a network of services. These may be low-margin, but the transaction volumes in question are vast. The model is often referred to as a super-app or app-cluster strategy. The firms are already giants at home. With a fleet of over 2m drivers, GoTo had transactions of \$22bn last year, equivalent to 2% of Indonesia's GDP.

The prospects for South-East Asian

## → Also in this section

- 54 Jack Dorsey leaves Twitter
- 55 Bartleby: The offsite office
- 56 Chinese cancel culture
- 56 Festive oldies
- 57 A new way to value patents
- 58 Schumpeter: A shake-up at J&J

consumer tech have been alternately hyped up and talked down over the past decade. Optimists, now in the ascendant, point to a market of 650m people poised for rapid economic growth. Mark Goodridge, an equity analyst at Morgan Stanley, a bank, notes that online retail made up 6% of retail sales in the countries of the Association of Southeast Asian Nations (ASEAN) in 2019, compared with around 15% in America and about 30% in China.

But sceptics note the region's fragmentation. South-East Asia's markets are anything but a contiguous economic bloc. Countries have widely differing income levels and infrastructure capacity. That no doubt contributes to the huge losses that are being racked up. None of the big companies is reliably profitable. In the third quarter of the year, Sea's losses widened to \$571m, a year-on-year increase of a third. The two largest companies, Grab and Sea, have made a combined \$17bn of net losses since the beginning of 2018.

The sea of red ink does not alarm investors. They wanted consolidation to make the market more investable, and, by and large, have got it. Mergers and acquisition activity in tech in South-East Asia exploded this year. By late November deal volume had already reached \$61bn, equivalent to all activity for the past decade. Those transactions helped create the super-app strategy embraced by consumers. "What customers want is deeper, faster digital sol-

utions, which are not done in a fragmented way. They don't want six wallets, they don't want five e-commerce options and three food-delivery companies," explains Patrick Cao, president of GoTo Group.

The triumph of GoTo Group, Grab and Sea came at the expense of powerful American and Chinese rivals. Alibaba still has a local presence through e-commerce firm Lazada, but, having led only two years ago, the firm has slipped into the second tier of competitors. Since Uber beat a retreat in 2018 (its operations were bought by Grab), no American company has built a significant presence in e-commerce or in ride-hailing. As local firms see it, that is ample proof were it needed that a focus on localisation has borne fruit.

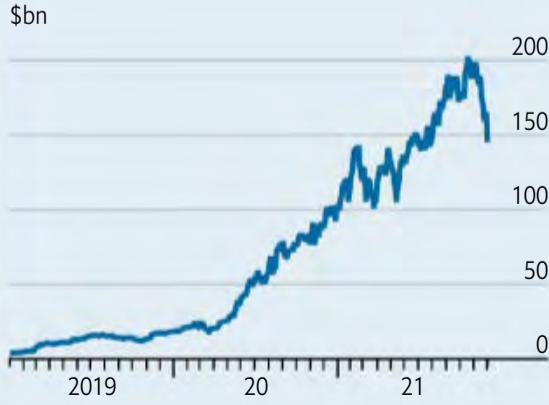
#### Act local

Consolidation and scale should in theory lead to profits. The firms can bundle services together, and different lines of business can complement one another. Ming Maa, president of Grab, notes that in the second quarter of the year, 66% of the two-wheeled drivers in Indonesia, Vietnam and Thailand were working on both delivery and transport, up from 58% in the same period in 2020. That lowers costs.

How soon will profits arrive? It is promising that Grab's take rate—revenue as a proportion of the value of rides taken or deliveries made—has risen from 9.5% in 2018 for mobility and 5.6% for deliveries in 2018 to 21.7% and 17.1% respectively in the third quarter of 2021. Grab's preferred profit measure—adjusted earnings before interest, tax and depreciation relative to gross bookings—is chosen to flatter, but at least the 12% margin it shows for mobility is more than twice as high as Uber's 5.5%. The firm's argument that lack of profits is a choice linked to expansion is not wholly unconvincing. But the three firms' ambitions to add financial services to their super apps will mean a diversion from the path to profit. Grab's financial services goals will drag on profitability, as Moody's, a credit-rating agency, recently noted.

#### Catch the wave

Sea, market capitalisation



South-East Asia's tech boom is by no means restricted to large companies. There are 35 unicorns in ASEAN countries, according to Credit Suisse, a bank. Of those, 19 reached unicorn status this year. True, America and China already have hundreds of tech firms valued in the billions of dollars. But that is a recent development, notes Nick Nash of Asia Partners, an investment firm focused on the sector. The two countries only had ten such unicorns as recently as 2013 and 2014 respectively, before the numbers began to surge.

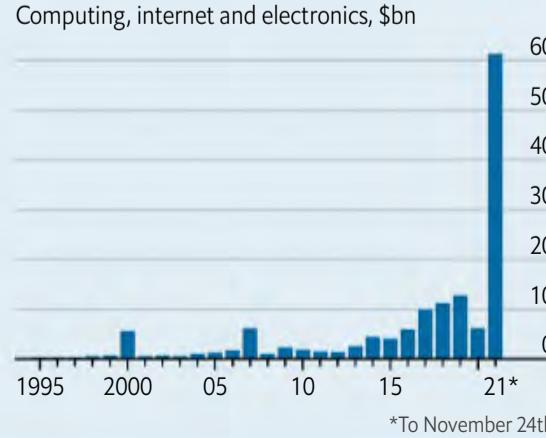
Far from the stereotype of cash-bleeding startups, some South-East Asian firms have been disciplined in fundraising. Mr Nash uses the example of SCI E-commerce, which specialises in cross-border retail and helps international brands access South-East and East Asia. It has become one of the region's fastest-growing firms, having raised less than \$70m. Its revenues have surged to over \$100m in 2020.

And although the tech firms that have emerged in South-East Asia have done so only from a few sectors—such as ride-hailing, consumer e-commerce, food delivery and online gaming—the mix is broadening. Listings by firms as varied as Singapore's Doctor Anywhere, which offers video consultations with doctors, and Malaysia's Carsome, an online marketplace for used-car sales, are in the offing.

For now, most attention is focused on South-East Asia's leading trio—Sea, GoTo and Grab. First among equals is Sea, whose recent expansion outside its home region sets it apart. Sea's highly-profitable gaming arm, Garena, is responsible for "Free Fire", a popular mobile game which gives the firm a footprint globally that the other two lack. Its move abroad in e-commerce is no small beer. According to Apptopia, a Boston-based research company, Shopee is now Latin America's most popular e-commerce app, coming from a standing start at the end of 2019. It launched in Poland and Spain this autumn, and has quietly set up shop in India, too.

South-East Asia's tech champions fol-

South-East Asia, M&A deal value



low a model flourishing elsewhere. As well as MercadoLibre in Latin America, South Korea has both Kakao and Coupang, with market capitalisations of around \$50bn apiece. Given the turmoil in China's tech sector, such firms are popular and likely to become more so. Take one leading fund, the JPMorgan Pacific Technology Fund, with \$1.5bn of assets under management. At the end of September it counted no Chinese firms among its top four holdings. Its largest single exposure, at 7%, is to the firm called Sea that is coming to epitomise Asian tech's sea change. ■

#### Social media

## Exiting the Twittersphere

SAN FRANCISCO

**Jack Dorsey leaves Twitter for a fintech firm now known as Block**

"THE COMPANY is ready to move on from its founders," explained Jack Dorsey, chief executive of Twitter, a distributor of short messages, as he announced on November 29th that he would step down and hand the reins to the firm's chief technology officer, Parag Agrawal. "About time," was the grumpy reaction of more than one stockmarket analyst, many of whom had long criticised Mr Dorsey for spreading himself too thinly by running both Twitter and Square, a fast-growing fintech company where he will continue to serve as chief executive.

Mr Dorsey's very first move, on December 1st, was to give Square a new name: Block. The firm has existing plans to expand in blockchain technologies; if it is to satisfy Mr Dorsey's interest in bitcoin, a cryptocurrency, it will have to move fast. (The chairman of *The Economist*'s parent company is a director of Block.)

For Twitter the timing of Mr Dorsey's departure makes sense. Over the past several years he has pushed through changes at the firm that only a founder could (he launched Twitter with friends in 2006, was ousted as chief executive in 2008 and took over again in 2015). He was almost shown the door again in early 2020 when Elliott Management, an activist fund, amassed a stake of 4% and pushed for his exit. After some drama a deal was struck, and Mr Dorsey took a more hands-on role.

Since then Twitter has undergone a reboot of sorts. It has ditched its custom-built technology infrastructure and moved most of its computing to big clouds such as Amazon Web Services. As a result, it can more easily introduce new product features. It has also rebuilt its advertisement platform, allowing it to target ads better. ■

The results have been noticeable. The firm, which even Mr Dorsey had called “slow” and “not innovative”, has been churning out far more new features and services in the past two years than previously.

Financial results have been improving, too, although not as fast as some investors would like (there is talk that Mr Dorsey left before activist funds waxed active again). Revenue mostly comes from ads, and in the third quarter it increased by 37% compared with a year before, reaching \$1.3bn. Profits would also have continued rising were it not for a settlement in a share-

holder lawsuit, which resulted in a posted loss of \$537m. And daily users reached 211m, up 13% year-on-year. “Progress is a process, but it’s good enough for now,” noted Mark Shmulik of Bernstein, a broker.

Mr Agrawal, an engineer, and his old boss share two long-term goals for Twitter. One is to turn it into a crypto firm, perhaps by introducing a TwitterCoin to allow users to tip the authors of good tweets. Another is to fashion it into a decentralised undertaking, or in Mr Dorsey’s words, a “standard for the public conversation layer of the internet”. Instead of remaining a

unified social-media service, it would be a platform on which other firms could, for example, compete with offerings that filter Twitter’s massive volume of content.

What if Twitter’s plans, and its new boss, underwhelm? When announcing his successor Mr Dorsey also presented a new chairman: Bret Taylor, co-chief executive of Salesforce, a business-software company, and the expected successor to Marc Benioff, Salesforce’s co-founder and its other co-chief executive. Perhaps the two companies, which in 2016 broke off merger talks, could eventually become one. ■

## Bartleby The office of the future

*Cubicles are out. Bars, neighbourhoods and sensors are in*

THE OFFICE used to be a place people went because they had to. Meetings happened in conference rooms and in person. Desks took up the bulk of the space. The kingdom of Dilbert and of David Brent is now under threat. The pandemic has exposed the office to competition from remote working, and brought up a host of questions about how it should be designed in the future.

Start with what the office is for. In the past it was a place for employees to get their work done, whatever form that took. Now other conceptions of its role jostle for attention. Some think of the office as the new offsite. Its purpose is to get people together in person so they can do the things that remote working makes harder: forging deeper relationships or collaborating in real time on specific projects. Others talk of the office as a destination, a place that has to make the idea of getting out of bed earlier, in order to mingle with people who may have covid-19, seem attractive.

In other words, a layout that is largely devoted to people working at serried desks alongside the same colleagues each day all feels very 2019. With fewer people coming in and more emphasis on collaboration, fewer desks will be assigned to individuals. Instead, there will be more shared areas, or “neighbourhoods”, where people in a team can work together flexibly. (More hot-desking will also necessitate storage space for personal possessions: lockers may soon be back in your life.)

To bridge gaps between teams, one tactic is to set aside more of the office to showcase the work of each department, so that people who never encounter each other on Zoom can see examples of what their colleagues do. Another option is to ply everyone with drink. Expect more



space to be set aside for socialising and events. Bars in offices are apparently going to be a thing. Robin Klehr Avia of Gensler, an architecture firm, says she is seeing lots of requests for places, like large auditoriums, where a company’s clients can have “experiences”.

Designs for the post-covid office must also allow for hybrid work. Meetings have to work for virtual participants as well as for in-person contributors: cameras, screens and microphones will proliferate. Gensler’s New York offices feature mini-meeting rooms that have a monitor and a half-table jutting out from the wall below it, with seating for four or five people arranged to face the screen, not each other.

Variety will be another theme. People may plan to work in groups in the morning, but need to concentrate on something in the afternoon. Ryan Anderson of Herman Miller, a furniture firm, likens the difference between the pre- and post-pandemic office to that between a hotel and a home. Hotels are largely given over to rooms for individuals. “Home is thought of as a place for a family over

years, hosting lots of different activities.”

All of which implies the need for flexibility. Laptop docking stations are simple additions, but other bits of office furniture are harder to overhaul. Desks themselves tend to be tethered to the floor through knotted bundles of cables and plugs. The office of the future may well feature desks with wheels, which ought to go well with all that extra alcohol. Meeting rooms are likely to be more flexible, too, with walls that lift and slide.

If socialising and flexibility are two of the themes of the post-pandemic office, a third is data. Property and HR managers alike will want more data in order to understand how facilities are being used, and on which days and times people are bunching in the office. Workers will demand more data on health risks: the quality of ventilation within meeting rooms, say, or proper contact-tracing if a colleague tests positive for the latest covid-19 variant.

And data will flow more copiously in response: from sensors in desks and lighting but also from desk-booking tools and visitor-management apps. The question of who owns data on office occupants and what consent mechanisms are needed to gather this information is about to become more pressing.

Put this all together and what do you get? If you are an optimist, the office of the future will be a spacious, collaborative environment that makes the commute worth it. If you are a pessimist, it will be a building full of heavily surveilled drunkards. In reality, pragmatic considerations—how much time is left on the lease, the physical constraints of a building’s layout, uncertainty about the path of the pandemic—will determine the pace of change. Whatever happens, the office won’t be what it was.



## Internet censorship

# Cancel culture, Beijing-style

HONG KONG

## The Communist Party targets internet celebrities and fan groups

FANS OF HUO ZUN were dismayed in August when images of the pop star were blurred out during a performance on "Call Me By Fire", a Chinese reality show. Mr Huo's hands were visible for some sequences. But when he came into the frame it appeared as if he was standing in a puff of smoke enveloping his body. "Fogging", as it is known, has become common on the Chinese internet. Censorship rules require actors who have committed crimes to be blurred out, or completely erased.

Mr Huo's offence was a public break-up with his girlfriend. He had violated no law. But that was enough for the government to deem him an unsavoury character. Internet users are increasingly affected by a spurt of Communist Party cancel culture targeting ever more innocuous behaviour. The broad aim of the campaign, which has been going on for the past six months, is to cleanse Chinese cyberspace of entertainment at odds with socialist values.

There appear to be two targets. The first is a business model with 4.9trn yuan (\$769bn) of annual revenues: the fan economy, that has sprung up around web celebrities, fan groups and streaming platforms. In the most recent set of rules, issued in late November, the Cyberspace Administration of China (CAC) said that brand campaigns featuring celebrities would be allowed to show ads only in designated spaces. From now on, China's huge fan groups will be monitored by the authorities.

To aid the crackdown the CAC has been increasing its powers in recent months, even investing in internet firms. Further new regulations suggest that its objective is to stop China's internet groups using highly-stimulating content to ramp up internet traffic, which is the driving force behind internet platforms' ad revenues and live-streaming e-commerce. The latter was worth 1.2trn yuan last year, an 197% increase from the year before.

The second target of the CAC's campaign is celebrity itself. The new rules create an official blacklist of celebrities that bans all mention of the names included. This will formalise the treatment that Mr Huo and others have received after committing social improprieties or wrongdoing such as tax evasion. On November 23rd the China Association of Performing Arts published a list of 88 internet celebrities who had committed some transgression. Weibo, a Twitter-like service, was forced to ban 145 celeb-

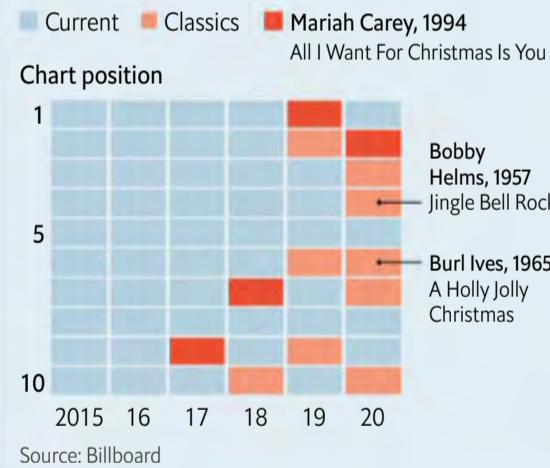
## Mariah Carey's seasonal ubiquity illustrates the new economics of streaming

THE BATTLE to be top of the charts on Christmas Day has been won in recent years by the likes of Taylor Swift, Ed Sheeran and Ariana Grande. But lately these singers have faced competition from an unexpected source: the 20th century. Despite the best efforts of today's young stars, the December charts have become dominated by musicians who are well into middle age, or dead.

On Christmas Day five years ago, every single in the top ten of the *Billboard* Hot 100, a chart of America's most popular songs, was a new release. In 2017 Mariah Carey crept in at number nine with her massive 23-year-old hit, "All I Want for Christmas Is You". Since then the oldies have shuffled relentlessly forward (see chart). Last Christmas half of America's top ten songs were more than half a century old. Indeed Ms Carey, then aged 51, was one of the younger artists: two of her fellow chart toppers were drawing a pension; three had joined the heavenly chorus.

### There's no one quite like Grandma

United States, *Billboard* Hot 100  
Christmas chart positions



riety accounts in August for infractions such as "insulting and slandering martyrs and inciting illegal gatherings".

The tightening grip is ostensibly part of President Xi Jinping's "common prosperity" initiative. It is an attempt to make the country more equitable after years of growth that created a vast digital economy dominated by several internet platforms, in particular e-commerce giant Alibaba and gaming and social-media group Tencent. Over the past year Mr Xi has made clear his plan to take control of the internet industry. The entertainment crackdown under way stems from the government's desire to cap the "absurd financial gains"

## The music business

# Ghosts of Christmas past

Old hits have been revived by new technology. *Billboard*'s charts used to be based predominantly on record sales, as well as incorporating the number of radio plays. But since 2015 its evolving formula has tended to give the greatest weight to the number of listens on streaming services like Spotify. The result is that records like "Jingle Bell Rock" (1957) by American country singer Bobby Helms, which no longer generate many physical-format sales but which still get streamed on repeat in December, have been catapulted up the rankings.

The Christmas-charts phenomenon illustrates why investors are re-evaluating musicians' back catalogues. Streamers pay rights-holders a small sum for every play of a song, so old favourites whose physical sales had long ago dwindled have returned to earning a steady income. Artists with year-round appeal have been cashing in on their newly sought-after oeuvres. Last year Bob Dylan sold his collection to Universal Music Group, the world's biggest record label, for a sum reportedly over \$300m. On November 30th BMG, another music company, said it had bought the heavy-metal collection of Mötley Crüe.

Streaming may mean a new payday for enduringly popular artists, but it saps some of the excitement from the Christmas charts. Ms Carey, who claimed second place in *Billboard*'s ranking last year and first place the year before that, has already begun her festive assault on this year's charts: at the time of writing she had reached number 12, and rising. Christmas may be "The Most Wonderful Time of the Year" (last year's number-seven hit), but it is also becoming the most musically predictable.

made by internet celebrities, says Enchi Chang, a digital marketing specialist. China's Communist Party has also grown uncomfortable with the ability of huge internet stars and their fans to communicate beyond the scope of its control.

The upending of celebrity culture will have a big impact on China's internet groups. The country's fan economy, combining entertainment and consumption, was expected to be worth about \$1trn by 2023. If the new ad rules are strictly enforced, companies such as Kuaishou and Bilibili, a video-streaming service, will be hit. Both groups enjoyed a rapid rise in their ad revenues last year, when total on-

► line ad revenues in China hit 767bn yuan.

How will the firms respond? The most outrageous internet stunts, attracting millions of viewers and generating strong e-commerce sales, have become increasingly important for groups such as Byte-Dance and Kuaishou. Now they will probably block much problematic content, says an executive. Internet traffic will fall.

A purge on programming is already under way. For example iQIYI, China's Netflix, said in August that it will no longer feature talent shows or venues where fans can vote for stars. Its New York-listed shares have tumbled by almost 60% since mid-year. Douyin, Weibo, Kuaishou and other plat-

forms have already shut down their celebrity-ranking lists, venues where fans often paid to buy products in order to support their favourite stars.

One internet executive says that the government's moves do command public support. Many parents in China agree with the party's view of online entertainment as vacuous and even dangerous for young people. Regulators around the world are grappling with how to deal with potentially harmful internet content. But Mr Xi's drive is extreme. Mr Huo's millions of fans will find few opportunities to voice their opposition to watching their favourite star disappear into a censorious mist. ■

#### Valuing patents

## Billion-dollar blueprints

NEW YORK

#### A new way of understanding the high but elusive worth of intellectual property

**I**T IS TESTAMENT to human inventiveness that 50m patents are estimated to have been granted globally. But in aggregate much of the collection resembles an intellectual junkyard. Included are plausible ideas that no firm ever wanted to pay for, plausible ideas that fell short, and absurdities. A patent on the crust-less peanut-butter-and-jelly sandwich, for example, failed to be renewed in 2007.

Pare the list to those that are both sensible and in force legally, meaning a fee is paid to a patent office to keep them alive, and there are 16m patents that count. Last year, 1.6m were granted.

Most are the property of companies, but balance-sheets and conventional accounting are ill-suited to capturing their worth. Using acquisition cost, then depreciating it, does not work. Instead, lawyers provide subjective numbers based on factors such as a patent's likely validity, royalties and litigation history. Many firms reckon it is not worth paying the tens of thousands of dollars that it costs for a valuation.

In 2008 an intellectual-property exchange opened in Chicago to do for patents what other bourses did for stocks, bonds and commodities. Its backers were blue-chip firms like Hewlett Packard and Sony, but it closed in 2015. Patents cannot be treated like commodities, said the *Cornell Law Review*. A subsequent effort to value them used software to read and evaluate the documents. So far, however, not even machine-learning techniques have allowed code to penetrate the opaque legal language in which patents are couched.

Now a startup called PatentVector, founded by a law professor, an informa-

tion science professor and a software engineer, is trying something new. It uses a variation of a method started in the 1960s which evolved into tallying up how frequently individual patents are cited (a similar process based on citations is used to evaluate academic research).

Rather than attempting to understand the patent, PatentVector employs artificial intelligence to comb through 132m patent documents kept by the European Patent Office in Munich (the world's biggest collection). Then it evaluates, first, how frequently a patent is cited and, second, how frequently it is cited by patents that are themselves cited frequently. That provides an indication of importance which is then multiplied by a mean value of patents based on an estimate by James Bessen, an



Fred and his 1701th invention

economist at Boston University, which has become a reference point. A number of companies, legal firms and institutions (including the Canadian Patent Office) are buying PatentVector's product.

The results contain interesting insights into inventing. Frederick Shelton IV (pictured) does not feature among prominent innovators of the 20th century but he probably should. He works at Ethicon, a medical-devices subsidiary of Johnson & Johnson, and PatentVector values his inventions at a cool \$14bn, placing him aeons ahead of anyone else. His top three are for a mechanical surgical instrument, surgical staples and the cartridge for the staples; in short, tools to cut tissue and bind it up.

Ethicon itself, a medical-device maker, holds 95 of the world's 200 most valuable patents, PatentVector finds. The firm also employs Jerome Morgan, who is listed in second place with \$5bn worth of patents (many overlapping with Mr Shelton's). Only one other person is in the \$5bn club: Shunpei Yamazaki, president of Semiconductor Energy Laboratory, a Japanese research-and-development firm. Mr Yamazaki's most important patent covers the displays on computers, cameras and other semiconductor devices.

PatentVector found 65 other people each responsible for patents worth in excess of \$1bn. Only 14 of the top 650 tinkerers are women. The highest ranked is Marta Karczewicz, who works for Qualcomm, an American chip designer, and played a vital role in inventing the video-compression technology that makes Zoom and other video services function.

Almost all valuable patents can be found in a few broad industry groups: biopharma, software, computer hardware, medical devices and mechanical equipment. Over the past 40 years the importance of specific categories has marginally expanded and contracted, but biopharma and information technology (IT) have dominated and their significance has grown. The companies with the largest aggregate value of patents are in IT, topped by IBM, Samsung and Microsoft.

PatentVector's figures on the patent holdings of countries are revealing, too. America has the most active patents of any country, at 3.3m, followed closely by China with 3.1m. But there is a world of difference in how frequently they are cited and their imputed value. America's library is calculated to be worth \$2.9trn, compared with China's collection at \$392bn.

Of course, PatentVector's methodology will face scrutiny. Naturally, the startup has patented its own technique. Information about patents, which are critical components of invention, has never been more important. Perhaps it was inevitable that innovation would be applied not only by means of patents, but to them as well. ■

## Schumpeter | No more tears

*Can Johnson & Johnson put the taint of scandal behind it?*



LONG BEFORE the invention of stakeholder capitalism, a core principle—that the interests of customers, employees and society should be as high or higher than those of shareholders—was carved into the plaster at Johnson & Johnson's head office in New Brunswick, NJ. “Our Credo” as J&J calls its mission statement, dates back to 1943, when it was penned by Robert Wood Johnson II, a former boss of the pharmaceutical firm.

J&J says the Credo has helped construct a corporation built to last. Worth \$420bn, it is the world's biggest drugs firm by value. It is one of only two companies in America with a triple-A credit rating (the other is Microsoft). Of its \$82.6bn of sales last year, pharmaceuticals accounted for 55%, medical devices 28% and consumer health 17%. It produces everything from blockbuster cancer drugs to band-aids and baby powder.

Some argue that for all its pieties, J&J has let down both society and shareholders. In recent years it has faced multiple lawsuits against products ranging from prescription opioids to talcum powder to Risperdal, an antipsychotic medicine. It denies all wrongdoing, but the succession of controversies has tarnished its image and loaded it with legal liabilities.

Moreover, since 2012 J&J's total returns to shareholders have lagged behind the S&P pharmaceutical benchmark by about a third. Investors say the legal maelstrom is partly to blame. Another factor is lopsided performance. Buoyancy at J&J's pharmaceuticals business, where sales rose by 8% last year, is overlooked because of low single-digit growth and, at times, declines in the medical devices and consumer-health divisions.

Now J&J is taking steps—radical by its own standards—to reform on both counts. Alex Gorsky, its outgoing chief executive and soon-to-be executive chairman, is trying to draw a line under the legal troubles. He is also overhauling the firm's structure. His methods have not yet had the desired effect. But they could restore the firm's standing with investors and society.

The first sign of progress has been in the legal realm. In August 2019 an Oklahoma court ruled that J&J's promotional campaigns downplayed the risks of opioids and meant the firm bore a wide responsibility for the deadly epidemic. It was ordered to pay \$465m. But on November 9th the state's Supreme Court over-

turned the ruling, saying it was based on a wrong interpretation of public-nuisance law. The previous week, a California court threw out a similar case against J&J and other defendants.

Such wins for J&J coincide with what Carl Tobias of the University of Richmond School of Law, calls a new legal approach. The firm has a history of litigating cases “to the bitter end”, he says. Lately, he points out, it has shown more willingness to settle. This summer it finalised an opioid settlement of up to \$5bn with numerous American states, cities and counties which it hopes will lay the claims against it to rest. In October it said it had set aside \$800m to settle most of its Risperdal cases.

The company is still walking a legal tightrope when it comes to claims related to talcum powder. In October it deployed what is known disparagingly as the “Texas two step”, a manoeuvre in which it set out to ring-fence liabilities on 30,000 or more talc-related litigation claims by creating a Texan subsidiary, LTL Management, that promptly filed for Chapter 11 bankruptcy in North Carolina. It went down poorly. The North Carolina judge shunted the bankruptcy case to New Jersey, where many of the talc claims are filed. Some Congressional Democrats accused the firm of trying to manipulate bankruptcy law to deny claimants their day in court. J&J argues that it has established a \$2bn trust attached to LTL to help cover talc-related liabilities under Chapter 11. Investors hope it could mark the beginning of the end of the saga.

Mr Gorsky's second sweeping change is structural. J&J said in November that over the course of 18-24 months it would split into two firms, one focused on consumer health, the other combining pharmaceuticals and medical devices. The consumer-health business badly needs a nip and tuck. It is no longer enough to boast that nine out of ten dermatologists recommend a skin product. Shoppers require Kim Kardashian-style razzmatazz. J&J hopes the consumer-health business will fare better with more focus. The break-up will also crystallise value lost in the conglomerate structure. It is a path trodden by GSK, a British drugs firm, which is spinning off its consumer-health joint venture with Pfizer. But a lot remains unknown about the split. Investors greeted it with a shrug.

What shareholders are excited about is the pharma business. They take seriously J&J's pledge to ramp up annual drugs sales from \$45.6bn last year to \$50bn by 2023 and \$60bn by 2025. It reckons it can outstrip average growth in the drugs market even though one of its best selling medicines will lose patent protection. It promises new treatments, such as cell and gene therapies. Its oncology pipeline is strong. It will not be all smooth sailing, however. The pharma firm will still be tied to the sluggish medical-devices business. And if the talc-related bankruptcy manoeuvre fails, liabilities could fall onto the pharma business.

### Time for a booster jab

These are exciting times in life sciences. Pfizer is adding a fortune to sales thanks to its covid-19 breakthroughs. Eli Lilly is attracting investors because of an experimental Alzheimer's drug. Against such competition, J&J urgently needs to move beyond the legal controversies weighing upon it and its share price.

The biggest question is whether the company can become more dynamic overall. Partly owing to its mission statement, J&J carries a lot of history on its back. It makes decisions cautiously. Mr Gorsky has taken years to recommend a break-up, though investors have wanted one since he took over in 2012. Listening properly to shareholders would have meant earlier, possibly preventive, ingestion of the correct medicine. ■



## China's slowdown

# Omicronomics

HONG KONG

### How invariant is China's economic policy?

JACK MA, THE founder of China's giant e-commerce platform, Alibaba, started his first web company after a visit to America in 1995. Cao Dewang, the boss of Fuyao Glass, a Chinese company made famous by the documentary "American Factory", ventured into manufacturing after a trip to the Ford Motor Museum in Michigan. (The museum's significance struck him only on the plane home, he told an interviewer, so he immediately booked a return flight to make a second visit.)

Travel is vital to innovation. Unfortunately what is true of business is also true of viruses. At some point on its journey around the globe the covid-19 virus reinvented itself. The new Omicron variant will further entrench China's tight restrictions on business travel. Indeed it may cause more disruption to China's economy than to other GDP heavyweights. That is not because the virus will spread more widely in China. On the contrary. It is because the government will try so hard to stop it from doing so.

Since the end of May, China has recorded 7,728 covid-19 infections. America has

recorded 15.2m. And yet China's curbs on movement and gathering have been tighter, especially near outbreaks (see chart 1). Its policy of "zero tolerance" towards covid-19 also entails limited tolerance for international travel. It requires visitors to endure a quarantine of at least 14 days in an assigned hotel. The number of mainlanders crossing the border has dropped by



## → Also in this section

- 60 Three hazards for emerging markets
- 63 The perverse effects of carbon pricing
- 63 India opens up—a bit
- 64 Buttonwood: Cleaning up SPACs
- 65 Dilemmas for Norway's oil fund
- 66 Free exchange: Policing stablecoins

99%, according to Wind, a data provider.

These restrictions have stopped previous variants from spreading. But periodic local lockdowns have also depressed consumption, especially of services like catering. And the restrictions on cross-border travel will inflict unseen damage on innovation. Cutting business-travel spending in half is as bad for a country's productivity as cutting R&D spending by a quarter, according to one study by Mariacristina Piva of the Università Cattolica del Sacro Cuore in Milan and her co-authors.

If the Omicron variant is more infectious than other strains, it will increase the likelihood of covid-19 outbreaks in China, leading to more frequent lockdowns. If the restrictions were as severe as those China briefly imposed in mid-August, when it was fighting an outbreak that began in the city of Nanjing, the toll on growth could be considerable. If imposed for an entire quarter, the curbs could subtract almost \$130bn from China's GDP, according to our calculations based on a model of lockdowns by Goldman Sachs, a bank—equivalent to around 3% of quarterly output.

Omicron is not the only threat to China's economy. Even before its emergence, most forecasters thought that China's growth would slow to 4.5-5.5% next year, as a crackdown on private business and a property slowdown bite.

Worse scenarios are imaginable. If China suffers a property slump as bad as the one it endured in 2014-15, GDP growth could fall to 3% in the fourth quarter of

► 2022, compared with a year earlier, according to Oxford Economics, a consultancy. That would drag growth for the whole year down to 3.8%. If housing investment instead crashed as badly as it did in America or Spain in the second half of the 2000s, growth in China could fall to 1% in the final quarter of 2022 (see chart 2). That would take growth for the year down to 2.1%. Losses would leave "numerous" smaller banks with less capital than the regulatory minimum of 10.5%, the firm says.

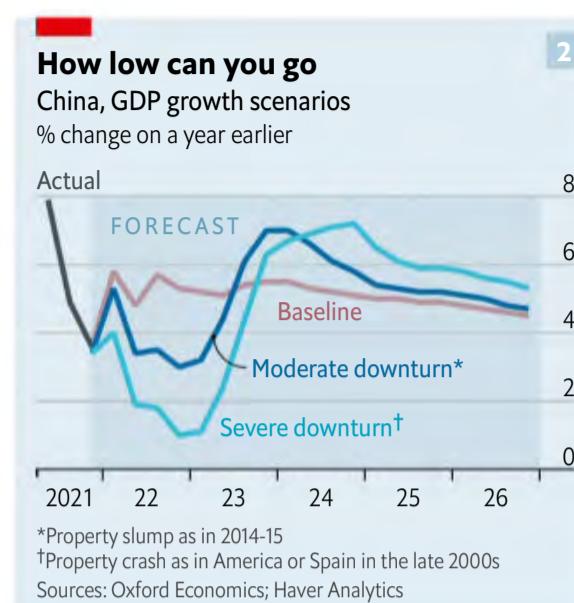
Neither of these scenarios is inevitable. Oxford Economics rates the probability of a repeat of 2014-15 as "medium" not high. (China's inventory of unsold properties, it points out, is lower now than it was seven years ago.) It thinks the chances of a repeat of an American or a Spanish-style disaster are low. Both the scenarios assume that China's policymakers would respond only by easing monetary policy. But a more forceful reaction seems likely. Although the authorities' "pain threshold" has increased, meaning they do not intervene as quickly to shore up growth, they still have their limits. "I don't think the Chinese government is dogmatic. It is quite pragmatic," says Tao Wang of UBS, a bank.

Thus far, the property sector's pain has been masked by the strength of other parts of the economy. Exports have contributed about 40% of China's growth so far this year, points out Ting Lu of Nomura, another bank, as China provided the stay-at-home goods the world craved. If the new variant sends people back into their bunkers, China's exporters may enjoy a second wind. More likely, export growth will slow, perhaps sharply. Mr Lu thinks exports will be flat, in price-adjusted terms, next year, contributing nothing to China's growth. The economy will therefore need other sources of help.

The most attractive stimulus options bypass the bloated property sector, which already commands too big a share of China's GDP. The government could, for example, cut taxes on households, improve the social safety-net and even hand out consumption vouchers. The problem is that consumers may be slow to respond, especially if their homes are losing value. Not even China's government can force households to spend.

A more reliable option is public investment in decarbonisation and so-called "new" infrastructure, such as charging stations for electric vehicles and 5G networks. The difficulty, however, is that these sectors are too small to offset a serious downturn in the property market, as Goldman Sachs points out.

**Correction** In last week's story on venture capital ("The next stage") we said that the average valuation for an American seed-stage startup is \$3.3m. In fact that is the average amount of funding raised in a seed round. Sorry.



The government will thus try to stop the property downturn becoming too serious. Analysts at Citigroup, another bank, expect that China's policymakers will prevent the level of property investment from falling in 2022. That will allow GDP to expand by 4.7%. To accomplish this, the analysts reckon, China's central bank will have to cut banks' reserve requirements by half a percentage point and interest rates by a quarter-point early next year. The central government will need to ease its fiscal stance and allow local governments to issue more "special" bonds, which are repaid through project revenues.

It will also require more direct efforts to "stabilise", if not "stimulate", the property market. The government will need to make it easier for homebuyers to obtain mortgages and ease limits on the share of property loans permitted in banks' loan books. Citi's economists think the authorities may even show some "temporary forbearance" in enforcing their formidable "three red lines", the most prominent set of limits on borrowing by property developers, which cap developers' liabilities relative to their equity, assets and cash.

The one set of curbs China seems quite unwilling to ease are the covid-19 restrictions on international travel. They will probably remain in place until after the Winter Olympics in February and the Communist Party's national congress later next year. They may remain until China's population is vaccinated with a more effective jab, perhaps one of the country's own invention. (The authorities have been unconscionably slow in approving the vaccine developed by BioNTech and Pfizer.) The government may also want to build more hospitals to cope with severe cases. Before covid-19 the country had only 3.6 critical-care beds per 100,000 people. Singapore has three times as many.

Businesspeople in Shanghai have started talking about travel restrictions persisting until 2024. The virus is highly mutable. China's policy towards it, however, is strikingly invariant. ■

## Emerging markets

# Hazards ahead

WASHINGTON, DC

## Three threats to the economic recovery

THE NEWS, as the second anniversary of the pandemic nears, could be better. The emergence of a covid-19 variant, labelled Omicron, has sparked a wave of selling on financial markets, seemingly on concern that a new highly transmissible strain of the virus could set back economic recoveries worldwide. With luck, Omicron may prove manageable. But continued disruptions from various variants of covid-19 represent just one of three formidable forces that will squeeze emerging markets in 2022, alongside tighter American monetary policy and slower growth in China.

Start with American policy. Markets knocked for a loop by Omicron sagged further on November 30th, after Jerome Powell, the chairman of the Federal Reserve, suggested that the central bank might accelerate its plan to taper its asset purchases. Thanks to the critical role of the dollar and Treasury bonds in the global financial system, a more hawkish Fed is often associated with declining global risk appetite. Capital flows towards emerging markets tend to ebb; the dollar strengthens, which, because of the greenback's role in invoicing, reduces trade flows.

In order to assess which places face the biggest squeeze from a tightening Fed, *The Economist* has gathered data on a few key macroeconomic variables for 40 large emerging economies (see chart 1 on next page). Large current-account deficits, high levels of debt (and of that owed to foreigners especially), rampant inflation and insufficient foreign-exchange reserves are all indicators that can spell trouble for countries facing fickle capital flows as American monetary policy tightens.

Combining countries' performance on these measures yields a "vulnerability index", on which higher scores translate into greater fragility. Some places are already in serious trouble. Argentina, which tops the list, faces an inflation rate above 50% and a deepening economic crisis. Turkey's fundamentals look a little better, but its woes are compounded by the government's stubborn desire to lower interest rates in the face of soaring prices. The lira has been hammered, losing 45% against the dollar in 2021, diminishing the purchasing power of Turks' wages and pensions.

The second element of danger comes from China's slowing economy (see previous story). When China falters, exporters around the world feel the pain. It is, by a

ARE YOU TO  
AFRAID TO  
AWAKE A  
BOLD MOVE?

**NEITHER ARE WE.**

A Booth MBA is for  
people who see challenges  
as opportunities.



Learn more at  
[ChicagoBooth.edu/be-bold](http://ChicagoBooth.edu/be-bold)

**CHICAGO BOOTH** 

The University of Chicago Booth School of Business

CHICAGO LONDON HONG KONG

► large margin, the world's biggest consumer of aluminium, coal, cotton and soyabeans, among other commodities, and a major importer of goods ranging from capital equipment to wine.

Ranking the same 40 economies by their exports to China, as a share of their own GDP, yields an index of vulnerability to the country. Many of the biggest exporters to China, like Vietnam, are critical links in manufacturing supply chains, which should be untroubled as China's domestic economy slows, as long as Americans keep shopping and Sino-American trade relations stay stable. At greater risk are the poorer commodities exporters that have helped feed China's population and provide for its building boom.

This gauge of exposure to China can then be compared with our measure of vulnerability to American monetary-policy tightening (see chart 2). Some countries' fates are more linked to one of the giants than the other. An unlucky bunch, such as Brazil and Chile, appear most likely to suffer from a double whammy. Despite high levels of debt and soaring inflation, high commodity prices have enabled Brazil to just about maintain investors' confidence. A softening Chinese economy could deprive Brazil of that benefit, leading to a tumbling currency, even higher inflation and the possibility of economic crisis.

The world has faced the combined pressure of hawkish American policy and a stumbling China before. In the mid-2010s fragile emerging markets were squeezed by a rising dollar, as the Fed withdrew the monetary support provided during the global financial crisis, while a badly managed round of financial-market liberalisation and credit tightening triggered a slump in China. Growth across emerging markets, excluding China, sagged from 5.3% in 2011 to just 3.2% in 2015.

The squeeze this time is almost certain to be worse. That is in part because the Fed is expected to tighten policy more quickly than it did in the 2010s, when a weak recovery and stubbornly low inflation forced it to go slow. Then more than two-and-a-half years elapsed between the Fed's announcement of its intention to reduce its asset purchases and the first rise in its policy rate. This time, by contrast, the 12 months following the Fed's announcement of its plan to begin tapering in November are likely to involve a complete halt to bond-buying and, according to market pricing, at least two interest-rate rises.

China, for its part, also seems at greater risk of a hard landing today than it was a half-decade ago. Most economists thought growth would slow to 4.5-5.5% even before the emergence of Omicron. That would, with the exception of 2020, be the lowest

## Spheres of influence

Vulnerability indices, 2021 or latest  
Selected economies, 40=most vulnerable



\*Ranking of 40 countries based on exports to China as % of GDP  
†Ranking of 40 countries based on five indicators including inflation and debt to GDP  
Sources: IMF; World Bank; BIS; *The Economist*

growth rate since 1990.

Another reason for the pain this time around is the addition of a third hazard to emerging markets: the spread of Omicron and the risk of future variants. Little is yet known about the danger posed by Omicron. But the emerging world remains particularly vulnerable to nasty outbreaks of the virus. With a few exceptions, vaccination rates in poorer countries lag behind those in rich ones. Just a tenth of Africa's population has received even one jab, less than the share of Americans that has received a third shot. Of our group of 40 countries, vaccination rates are particularly low in Egypt and Pakistan, two countries that are also especially vulnerable to American monetary tightening.

The spread of a new variant against which existing vaccines may be less effective could prove back-breaking to tourism-dependent economies. And public purses in the emerging world more broadly are in no fit state to extend or reintroduce pandemic relief measures.

Working out how the three threats might interact with each other is tricky. But it is possible that their coincidence could lead to still more economic pain for poorer countries. Unforgiving capital markets as the Fed tightens could leave emerging-market governments fiscally hamstrung in the face of new outbreaks. Omicron-induced local lockdowns in China could deal emerging-market exporters another blow. The tourist-dependent countries of South-East Asia, once popular destinations for Chinese visitors, are likely to remain deserted for a while longer.

The pandemic's third year was already destined to be a rocky one for emerging markets, stuck as they are between the two poles of a tightening America and a slowing China. New variants could make the journey still more perilous. ■

## Weak spots

Selected economies, vulnerability to American monetary policy  
2021 or latest

|   | Current-account balance* | Gross public debt* | Foreign-exchange reserves* | Consumer prices† | External debt‡ | Vulnerability index score<br>Average of five indicators |
|---|--------------------------|--------------------|----------------------------|------------------|----------------|---|
| <b>Country rank, 40=most vulnerable</b> |                          |                    |                            |                  |                |   |
| Argentina                               | 12                       | 37                 | 39                         | 40               | 36             | 33  |
| Sri Lanka                               | 33                       | 39                 | 21                         | 24               | 38             | 31  |
| Egypt                                   | 36                       | 36                 | 28                         | 21               | 20             | 28  |
| Pakistan                                | 21                       | 32                 | 22                         | 33               | 25             | 27  |
| Brazil                                  | 20                       | 34                 | 26                         | 31               | 10             | 24  |
| Turkey                                  | 29                       | 9                  | 4                          | 37               | 37             | 23  |
| Chile                                   | 30                       | 6                  | 32                         | 16               | 28             | 22  |
| India                                   | 25                       | 35                 | 10                         | 26               | 8              | 21  |
| Nigeria                                 | 34                       | 8                  | 17                         | 36               | 1              | 19  |
| Malaysia                                | 6                        | 29                 | 15                         | 10               | 35             | 19  |
| South Africa                            | 7                        | 27                 | 8                          | 19               | 32             | 19  |
| Mexico                                  | 17                       | 22                 | 11                         | 25               | 17             | 18  |
| Poland                                  | 8                        | 18                 | 7                          | 20               | 24             | 15  |
| Indonesia                               | 18                       | 12                 | 20                         | 5                | 22             | 15  |
| Philippines                             | 16                       | 21                 | 12                         | 17               | 5              | 14  |
| South Korea                             | 3                        | 16                 | 9                          | 8                | 26             | 12  |
| Thailand                                | 19                       | 20                 | 2                          | 3                | 14             | 12  |
| Vietnam                                 | 9                        | 14                 | 1                          | 6                | 19             | 10  |
| Russia                                  | 2                        | 1                  | 5                          | 28               | 4              | 8   |
| Saudi Arabia                            | 5                        | 4                  | 3                          | 14               | 3              | 6   |

Sources: IMF; World Bank; BIS; *The Economist*

\*As % of GDP †% change on a year earlier ‡As % of reserves

## Climate finance

# Squeezing the balloon

NEW YORK

## The unintended financial effects of piecemeal carbon pricing

**I**N JUNE THE IMF made the latest of many calls from economists for a market-oriented policy to tackle climate change. "Carbon pricing...is the least-cost option to deliver deep emission cuts," it argued in a paper written ahead of a meeting of the leaders of the G20 group of large economies. Carbon taxes, as this newspaper has long argued, can be a powerful way to force polluters to pay for the harm they do to the environment by burning fossil fuels.

With the political will for a global tax lacking, many places are going it alone. The World Bank reckons that 45 countries and 34 subnational jurisdictions have adopted some form of carbon pricing, ranging from taxes to emissions-trading systems. But these schemes cover only about a fifth of global greenhouse-gas emissions. New research shows that such piecemeal progress can have unintended consequences.

A recent paper by Luc Laeven and Alexander Popov of the European Central Bank, published by the Centre for Economic Policy Research (CEPR), analyses data on more than 2m loan tranches involving banks doing cross-border lending between 1988 and 2021, during which time many countries imposed carbon pricing. The authors find that carbon taxes at home led banks to reduce lending to coal, oil and gas companies domestically, but also had the perverse consequence of causing them to increase such lending abroad. The effect, they write, is "immediate" and "economically meaningful". The shift was most pronounced for banks with big fossil-fuel-lending portfolios, and loans were most likely to be directed towards countries lacking a carbon tax.

This conclusion comes on the heels of a related CEPR paper which found that banks increase cross-border lending in response to stricter climate policies at home, with the effect more evident for banks with previous experience of international lending. Steven Ongena of the University of Zurich, one of its authors, argues that banks "use cross-border lending as a regulatory-arbitrage tool" by shifting dirty loans to countries with laxer climate policies.

The findings suggest that cracking down on carbon is a bit like squeezing a balloon. Press too hard all at once and it may pop, but squeeze only in one corner and the air will simply flow to where there is less pressure. Such effects also mirror

concerns about leakages in industrial markets. The EU's carbon-pricing scheme used to grant exemptions to heavy emitters, for fear that they would otherwise move production abroad. Now, as the EU looks to close those loopholes, it is considering a carbon border-adjustment mechanism to level the playing-field.

Yet domestic carbon pricing is still a policy worth pursuing, says Tara Laan of the International Institute for Sustainable Development, a think-tank. Messrs Laeven and Popov conclude that, even after accounting for their efforts to shift dirty lending overseas, carbon taxes do somewhat reduce net fossil-fuel lending by the banks studied, because they lower domestic lending by more. Uday Varadarajan of RMI, another think-tank, agrees, but points out that supplementing domestic carbon-pricing policies with measures to discourage leakage, say by urging greater transparency, could boost the impact of carbon-pricing schemes.

The best solution, of course, would be worldwide adoption. The IMF suggests that high-emitting countries start by embracing a modest carbon "floor", in order to provide a stepping stone to a global price. As the evidence of perverse consequences arising from localised pricing schemes mounts, the main task for policymakers is to orchestrate a global squeeze. ■

## Investment in India

# Over flows

HONG KONG

## A wary welcome for foreign bond investors

**A** WAVE OF passive capital flows is the handsome prize for countries that secure a place in major bond indices. That prospect seems to be on the horizon for India. Many analysts expect part of its government-bond market to enter indices compiled by Bloomberg, a data provider, and JPMorgan Chase, a bank, as early as next year, or perhaps 2023. The government has been keen on inclusion even as it has been ambivalent about other types of capital flows. Its cautious approach is increasingly in line with economists' shifting attitudes.

The flows that inclusion in major bond indices tend to generate are one of the least objectionable forms of international investment. They tend to come from massive, slow-moving funds—the opposite of the flighty hot-money flows that emerging-market policymakers fear. That might be why index inclusion has been a priority for India's finance ministry. Until last year



a cap of 6% on the foreign ownership of government bonds had been the main factor preventing India's inclusion in the big bond indices. Then officials introduced a "fully accessible route" for overseas investors, which lifts the foreign-ownership limit on some bonds.

Analysis by big investment banks suggests that re-weighting by global investors would prompt flows of \$30bn-\$40bn into India's bond market. That would exceed the current stock of foreign investors' holdings, which amounts to a mere 2% of the more than \$1tn in outstanding Indian government securities. Reliable and regular inflows of foreign capital could help suppress public-borrowing costs. Corporate borrowers could also benefit from lower benchmark rates. And the rupee would be bolstered, according to analysts at Morgan Stanley, a bank.

The hope for India, and many other emerging-market governments, would be to mimic China's experience. Foreign ownership of its central-government bonds has more than doubled from 4.5% to 10.6% in the past four years, without any noticeable hiccups, and without jeopardising China's broader capital controls. But other countries' experiences show just how unusually benign that is.

India's own recent relationship with portfolio-investment flows explains the government's hesitation in opening up fully (ownership caps will remain on other bonds and assets). Sizeable outflows from foreign-bond investors occurred in 2013, 2016 and 2018, all driven by expectations of tighter policy from the Federal Reserve. The 2013 sell-off in particular was combined with a sharp drop in the rupee. Foreign bondholders likewise rushed for the door at the onset of the pandemic last year.

Even the IMF, once a stalwart opponent of capital controls, is more equivocal these days.

days. Last year the fund's Independent Evaluation Office noted that the views of India's authorities and the IMF on capital controls had become more aligned (although the fund is still happier with allowing large exchange-rate movements in response to external shocks than is the typical Indian policymaker).

Nor is the capital that comes with index inclusion entirely stable. Although inflows triggered by inclusion are far less sensitive to the domestic economic environment, they are between three and five times more sensitive to global financial conditions,

suggests IMF research published last year. Investors often trim their allocations to riskier emerging markets and retreat to safer assets like cash and American Treasuries during times of market stress. The fact that Indonesia was part of indices constructed by Bloomberg and JPMorgan, for instance, did not stop foreigners selling off its government bonds in the panic of spring 2020. Foreign ownership of the country's bonds had declined to 21% in October this year, from 39% in December 2019. Research by the Asian Development Bank also finds that foreign ownership of

local-currency bonds can increase the volatility of capital flows, particularly in the least developed markets.

Still, international institutions are hardly advocating stopping inflows altogether. In a report earlier this year the Bank for International Settlements, a club of central bankers, argued that deep and liquid financial markets, prudent monetary and fiscal policy and strong company balance-sheets could act as buffers against the sometimes volatile ebb and flow of capital. If India is to realise the full benefits of inclusion, it will have to heed that counsel. ■

## Buttonwood After the flood

*The frenzy for SPACs has waxed and waned. Has that changed how they work?*

**G**REAT FLOODS are supposed to wash away the world's ills. Facing a divine deluge, Noah built an ark in which to escape. In "Metamorphoses" Ovid, a Roman poet, describes how Jove, king of the gods, unleashes a flood to wipe out a degenerate humanity: "now seas and Earth were in confusion, lost; a world of waters, and without a coast."

Whether a flood has wiped out the unworthy is a critical question for investors in special purpose acquisition companies (SPACs). These are blank-cheque vehicles that raise capital through initial public offerings, after which their sponsors hunt for private firms to take public via mergers. Although SPACs have been around for decades, they were once niche affairs. Their structure was costly for investors, and companies mostly avoided them.

Their popularity surged in 2020. Between June 2020 and November 2021 more than 700 SPACs were created, almost eight times as many as in the preceding 16 months. SPACs have raised \$235bn since the start of 2020, a staggering \$97bn of it in the first quarter of 2021 alone. Everyone who's anyone has sponsored a SPAC, from Shaquille O'Neal, a former basketball player, and Serena Williams, a tennis player, to Gary Cohn, a former banker at Goldman Sachs, and Bob Diamond, erstwhile boss of Barclays. Because they are listed pots of cash, shares in pre-merger SPACs tend to trade near their IPO price, usually \$10. But prices climbed late last year, peaking at a premium of 15% this spring.

The hysteria ended in April after regulators began to grumble. Prices of pre-merger SPACs tumbled and the pace of SPAC creation slowed. Mr Diamond posits that this helped clear out the muck. "Oh my goodness, has there been a

washout. The days of the celebrity SPAC are gone," he says. The next phase, he argues, will be about sponsors who have proven track records and who can attract extra capital from institutional investors keen to gain exposure to newly listed firms. The idea that SPACs have been cleaned up is widely held. But do the data support it?

The phase immediately preceding the frenzy seems to have proved a poor bet for investors. In October 2020 Michael Klausner and Emily Ruan of Stanford and Michael Ohlrogge of New York University published a draft paper evaluating investors' returns. For SPACs that merged between January 2019 and June 2020, these were dismal. The problems were structural. Investors who buy a SPAC's shares during its IPO are often given free "warrants", the right to buy more stock in the future. Around 5.5% of investors' money is eaten up in underwriting fees. Punters can claim their stake back at any time, but that leaves the costs to be borne by the rest. And when a deal is struck, the sponsor typically takes 20% of the shares issued. From every \$10 raised, a median of

only \$5.70 was available for the merged entity to spend.

As sponsors are only paid if they arrange a merger, their incentive is to do a deal, even at a high price. The fatter the slice taken by sponsors and early investors, the worse the stock performance of the merged company. Firms that went public via a SPAC between January 2019 and June 2020 underperformed the Nasdaq composite, an index of American stocks, by 64.1 percentage points in the period to November 1st 2021.

The paper caused much consternation among SPAC fans. "We have received countless responses to our research," the authors noted in a postscript published online on November 15th. "Most of which amounted to 'your study is out of date.'" So they reran their analysis.

The authors found that there were indeed some differences between the original cohort and SPACs created in the six months after September 2020. The second group experienced far fewer redemptions, tended to issue fewer warrants and attracted more capital from institutional investors. As a result, cash available for merged firms rose to \$6.60, per each \$10 share. Still, SPACs that closed deals in the six months from October 2020 have underperformed the Nasdaq by around 20 percentage points: an improvement, but hardly stellar.

Crucially, there is little evidence of lasting change. "It's remarkable how little innovation in structure there's been," says Mr Klausner. Sponsor shares, warrants and underwriting fees are still present in much the same form. Redemptions and warrants offered are on the up again, and institutional investment has begun to fall. The havoc of 2021 has not wiped away all of SPACs' ills. If anything, it has left a lot of muck behind.



## Norges Bank Investment Management

# Point of low returns?

OSLO

**Managing Norway's vast oil fund is about to get complicated**

**N**ICOLAI TANGEN brings an unusual set of skills to the task of leading the world's largest sovereign-wealth fund. In addition to a career in finance, the head of Norges Bank Investment Management (NBIM), which oversees Norway's oil fund of \$1.4trn, holds degrees in art history, economics and social psychology. Mr Tangen's public profile and his musings on leadership, decision-making and cross-disciplinary learning have been admired by many Norwegians in his first year on the job. But the task of running Norway's gargantuan piggy-bank is likely to become only more difficult in coming years.

A fraught appointment process first thrust Mr Tangen into the limelight. The controversy centred on his potential conflicts of interest with AKO Capital, the \$20bn hedge fund he founded. After months of heated public debate he transferred his stake in the firm to charity before taking the helm at NBIM.

Having paid a hefty price for his job, Mr Tangen is determined to make his mark on the fund. Early in his tenure he announced three priorities: communication, talent development and returns. Mr Tangen communicates far more often with the public and the media than his predecessors, in an effort to make the workings of the fund more transparent. In January NBIM began publishing how it would vote at annual shareholder meetings five days ahead of the proceedings. Meanwhile, the publicity generated by his appointment has resulted in a surge in job applications to the fund, says Mr Tangen. He has also hired a sports psychologist in order to bolster his employees' emotional resilience to the ups and downs of markets.

It is the performance of the fund, however, that matters most. NBIM is given an investment mandate and an equities-bonds split by the ministry of finance. Over time the allocation towards stocks has risen to around 70% today (see chart). In return, income streams from the oil fund finance about a quarter of Norway's annual budget. Performance has held up so far: the fund posted an annual return of 9.4% in the first half of this year (though in the third quarter it gained only 0.1% compared with the previous three months). Since it was established in 1996 the investment pot has delivered, on average, 0.25% of excess returns a year over a benchmark index of global equities and bonds.

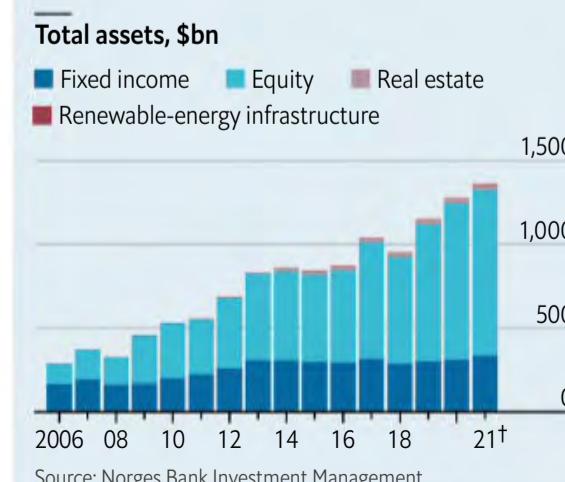


**From hedge fund to oil fund**

Mr Tangen has wriggle room within the confines of his mandate. The sheer size of the fund means that even small tweaks can make a big difference to returns, in cash terms. For a long time the investment pot was run much like an index fund owning, on average, 1.4% of every listed company in the world. But in April Mr Tangen announced a greater emphasis on a more active strategy called "negative selection", which involves selling stakes in companies that look especially risky. He wants to strengthen the fund's forensic-accounting team to root out fraud. (Even before Mr Tangen took over, the fund had cannily reduced its exposure to Wirecard, a German payments firm that imploded after a hole in its finances was exposed.)

### Piggy-bank performance

Norway, Government Pension Fund Global

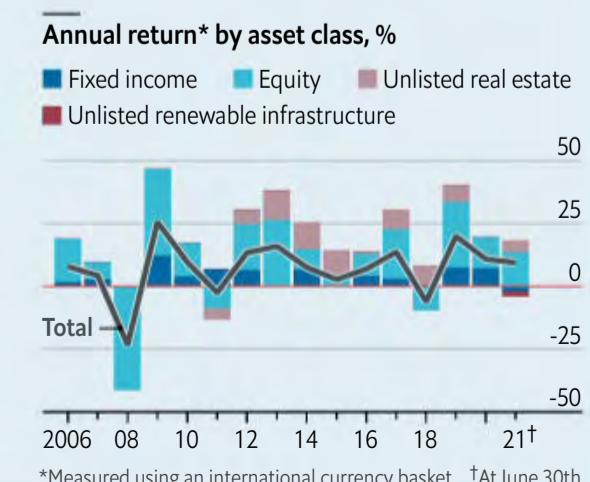


Mr Tangen, who says he plans his life in discrete chunks like a Communist apparatchik, expects to stay in his job for five years. The rest of his tenure is likely to hold several challenges. The biggest worry by far is inflation, which could hit the value of both the fixed-income and the equities portions of the fund's portfolio. A period of low real returns looms, especially as politicians have little appetite for the fund to invest in opaque private assets, which may fare better in inflationary times.

Lower returns as well as a more active approach could complicate the communications challenge. Espen Henriksen of the Norwegian Business School in Oslo worries that frequent hobnobbing with the public distracts Mr Tangen from "deep, principled thinking about asset management". NBIM was such a political and financial success, Mr Henriksen reckons, because it oversaw a de facto index fund for so long. A more active strategy could leave the sovereign-wealth fund more open to criticism.

Another concern is political interference, says Karin Thorburn of the Norwegian School of Economics. Politicians have previously been content to leave the fund to get on with making money. But Norway's centre-left government, which came to power in September, seems to take a different view. In his first interview since the election Jonas Gahr Store, the prime minister, said that the fund was "political", as it belonged to the Norwegian people and its mandate was set by parliament.

The ruling party has made clear its intention to encourage NBIM to do more to reduce its portfolio companies' greenhouse-gas emissions. This happily dovetails with Mr Tangen's desire to be a responsible investor and, he says, need not jeopardise the fund's returns. The danger, however, is that political influence does not stop there, and that it begins to hurt performance. Those lessons in psychological resilience could well prove handy in the years to come. ■



## Free exchange | Taming wildcats

*The explosion in stablecoins revives a debate around “free banking”*



THE FAST-MOVING frontier of financial innovation can seem an intimidating place. Concepts such as decentralisation, distributed ledgers and symmetric encryption can befuddle the outsider. Scholars and regulators may therefore have been relieved to spot parallels between the burgeoning world of stablecoins—digital tokens that are pegged to an existing currency or commodity—and America’s free-banking era of the 19th century. Indeed, recent discussions about stablecoins have sparked a lively debate around the history of privately issued money.

Together the dozens of stablecoins in existence, which include Dai, Tether and USD coin, have a market capitalisation of close to \$150bn. As they have exploded in value, their similarity to banks has begun to exercise regulators. Like banks, they in effect take deposits and promise immediate redemption; if many holders want to withdraw their money at the same time, and the issuer holds risky assets, then the digital coins could be in danger of collapsing. On November 30th Janet Yellen, America’s treasury secretary, said that the tokens presented “significant risks” and pressed for more regulation.

Before America instituted a national currency in 1863, banks issued their own banknotes, backed by assets and redeemable for gold or silver. Critics of stablecoins often point to this period of free banking, and the example of unstable “wildcat” banks in particular, as a cautionary tale. Gary Gensler, the chairman of the Securities and Exchange Commission, America’s main markets watchdog, and Elizabeth Warren, a Democratic senator, have both compared stablecoins to wildcats, as has a recent paper by Gary Gorton of Yale University and Jeffery Zhang of the Federal Reserve. The comparison is not so clear-cut, however.

The lack of a national currency before 1863 created obvious economic inefficiencies. Dollars issued by unfamiliar banks a long way from home traded at a discount, due to the lack of information about the financial health of their issuers. For the issuing bank, having notes circulate far away was an advantage, since the holders were very unlikely to turn up to redeem them. This arrangement led to the appearance of scam artists like Andrew Dexter, who bought up banks across north-eastern America and issued huge volumes of fraudulent notes. One bank was found to

have issued around \$580,000—around \$13m in today’s money—while holding all of \$86.48 in precious-metal specie. In another case in 1838, state officials in Michigan found that the boxes which should have contained the coins for which depositors could redeem their notes were bulked up with lead and broken glass.

Critics argue that the comparisons with stablecoins are clear. Tether, the largest single stablecoin issuer, with \$74bn in tokens in circulation, was fined \$41m by the Commodity Futures Trading Commission in October for misrepresenting itself as fully backed by assets between 2016 and 2019. (Tether responded with a statement saying that “There is no finding that Tether tokens were not fully backed at all times—simply that the reserves were not all in cash and all in a bank account titled in Tether’s name, at all times,” and that it had never failed to satisfy redemption requests.)

Yet there are also differences between stablecoins and the private money of antebellum America. Back then, anyone who needed banking services or currency had to place their financial fate in the hands of opaque and risky institutions. By contrast, no one in the rich world is obliged to hold stablecoins; safer alternatives, such as insured bank deposits and cash, are readily available.

Nor is it clear that wildcat banks are the summation of all historical experience of privately issued money. George Selgin of the Cato Institute, a libertarian think-tank, has likened the use of wildcat banking by critics of private-money issuance to the use of Germany’s interwar hyperinflation by critics of central-bank money issuance: both are extreme and negative examples, rather than representative. Scotland’s free-banking system between 1716 and 1844, for instance, is often cited as a period of stability. Three large banks and several smaller lenders all issued currency and redeemed each other’s notes at their full value.

Furthermore, at least some of the problems with American free banking may have reflected poor regulation rather than a total absence of it. Banks were often not allowed to have networks of branches and interstate banking was near-impossible, which limited the expansion of successful and trusted institutions. Many were also made to hold volatile state bonds as collateral. Slumps in the value of these could—and did—spark local banking crises.

### Policing the frontier

History alone, littered as it is with both scam artists from 19th-century America and upstanding financiers from Georgian-era Scotland, cannot settle the question of how dangerous stablecoins are. But perhaps one less-appreciated lesson from American free banking is that, if innovation is not to be smothered, the quality of regulation matters. A report published by America’s President’s Working Group on Financial Markets last month recommended treating stablecoin issuers like deposit-taking institutions. Providers say that this degree of supervision is stifling. Such regulation would offer them a prize, however: accounts at the Federal Reserve, which would allow them to settle payments directly, rather than piggybacking on commercial banks.

One idea, detailed by Messrs Gorton and Zhang and supported by Mr Selgin and Dan Awrey of Cornell University, would be to make reserve accounts easily available to any stablecoin provider, on the condition that they hold all their assets in such an account. That would mean that the coin is fully backed with the safest possible asset: central-bank reserves that carry no risks in terms of liquidity, maturity or credit. Scholars may be divided over whether too much or too little regulation led to the wildcats’ demise. But stablecoins could still avoid their fate. ■



#### Random numbers

## Flipping heck!

**How to generate better, cheaper, more abundant random numbers. And why that is a useful thing to do**

RANDOMNESS IS A valuable commodity. Computer models of complex systems ranging from the weather to the stock-market are voracious consumers of random numbers. Cryptography, too, relies heavily on random numbers for the generation of unbreakable keys. Better, cheaper ways of generating and handling such numbers are therefore always welcome. And doing just that is the goal of a project with the slightly tongue-in-cheek name of COINFLIPS, which allegedly stands for Co-designed Improved Neural Foundations Leveraging Inherent Physics Stochasticity.

COINFLIPS operates under the aegis of Brad Aimone, a theoretical neuroscientist at Sandia National Laboratories (originally one of America's nuclear-weapons laboratories, but which has now branched out into other areas, too). Dr Aimone's starting-point is the observation that, unlike the circuits of digital computers, which will, if fed a given input, respond with a precise and predictable output, the link between input to and output from a nerve cell is more haphazard—or, in the jargon, "sto-

chastic". He wants to imitate this stochastic behaviour in something less squishy than a nerve cell. By doing so, he thinks he might be able to tune the distribution of digits that a random-number generator spits out, without affecting their underlying randomness.

#### Random doodlings

That would be useful. Existing random-number generators produce uniform distributions. (A "3", say, is exactly as likely to appear as a "7".) But, as Dr Aimone's colleague Darby Smith notes, the real world that computer modellers are trying to model does not work like this. For example, the temperature in London in Decem-

ber may vary between -7°C and 17°C, but is most likely to be in the range 3°C to 8°C. Similarly, vessels are more likely to be in trouble close to a busy shipping route than in a remote backwater. Distorting uniform distributions of random numbers to take account of these realities is tedious and unsatisfactory. As Dr Smith observes, it would be more efficient if the random numbers used corresponded to the natural distribution in the first place.

There is also an abundance problem. Finding random phenomena in nature that can be transformed into computer bits is not easy. Often the source is computing itself—for example, by gathering the last digits in the numbers of milliseconds between keystrokes made by zillions of users. Otherwise, specialist, expensive hardware needs to be used to do things such as measuring heat flux through a silicon chip.

To eke out these scarce supplies, such truly random numbers are often then employed to seed programs called pseudo-random-number generators. The algorithms behind those generate sequences of numbers that have the statistical properties of randomness. But this is not the same as the real thing. As John von Neumann, one of computing's pioneers, observed: "Anyone who considers arithmetical methods of producing random digits is, of course, in a state of sin." Moreover, if the purpose is cryptography, this method is particularly risky. The opposition might be able to work out the algorithm involved.

#### → Also in this section

68 How water arrived on Earth

69 Perovskite phone screens

69 Hybrid helicopters

70 Trypanosomes and honeybees

► Another member of the project, Shashank Misra, says COINFLIPS' researchers have identified two hardware-based approaches for the production of tuneable, abundant random numbers. One relies on the patterns magnetic films make when disturbed, the other on how electrons travel through the barrier of a quantum-tunnelling diode. Both of these things are truly random. And both can be tuned to provide the sort of random-number distributions COINFLIPS requires.

In a quantum-tunnelling diode, electrons randomly leap (or fail to leap) across a gap, and the distribution of success or failure can be changed (and therefore tuned) by altering the voltage. A magnetic film, meanwhile, is composed of many tiny magnets jostling with each other. Flip the polarity of one of these and others around it flip in response, creating a random pattern. In this case the plan is to build tuneability into the magnetic medium itself, by tinkering with its composition, and also applying strain to it.

Random-number-generating hardware based on either of these approaches could be built directly into chips. Alternatively, a random-number-generating unit might be added to existing devices to yield an endless supply of high-speed randomness in the way that graphics-processing units are added to machines that have to handle a lot of graphical material. Crucially, unlike the heat-flux method, which requires intermediate hardware involving thousands of transistors to translate the signal into digital bits, the results of the diode and film methods can be read off as bits directly, using only one or two transistors to do so.

The efficiency offered by COINFLIPS means some tasks which currently require a supercomputer might be carried out with desktop hardware, depending on how much of the load involves generating and manipulating random numbers. Dr Aimone says the current approach tends to be simply to build bigger computers where needed. But even then some large-scale tasks may be too costly in money and time lost to conduct. You can, for example, run a model of a hurricane's path only so many times before the real thing makes landfall.

#### The heart of the matter

Despite its peregrinations elsewhere, though, Sandia is ultimately in the nuclear business, and one early application of whatever COINFLIPS comes up with is likely to involve interpreting the results of collisions in particle accelerators—something the team have been exploring in collaboration with Temple University, in Philadelphia. The idea is to build a device which incorporates COINFLIPS hardware into the sensor itself. This will allow results from collisions, which will be randomly distributed, but in particular ways,

to be compared with artificial random distributions, to see if they match. To be able to do this in real time is useful, because it allows an immediate decision to be made about whether or not to store a particular result. Modern colliders generate so many collisions that such immediacy in decision-making is important.

That is one, rather specific, application. But in the longer run, says Dr Aimone, COINFLIPS should enable many types of calculation that are currently impossible because of the volume of random numbers needed—for example, artificial-intelligence systems that capture the uncertainty of the world. This might be done in the form of neural networks which, like the human brain, have randomness available at each synapse. And that, in turn, may lead to COINFLIPS, a project inspired by biology, returning the compliment by providing a better way of understanding of how brains themselves work. ■

#### Planetology

## The memory of water

#### To find the origin of the oceans, look in outer space

EARTH—the quintessential blue planet—has not always been covered by water. Around 4.6bn years ago, in the solar system's early years, the energetic young sun's radiation meant the zone immediately surrounding it was hot and dry. Earth, then coalescing from dust and gas in this region, thus began as a desiccated rock. How it subsequently acquired its oceans has long puzzled planetary scientists.

One possible source of Earth's water is



A cosmic reservoir

carbonaceous (c-type) asteroids, the most common variety. But it cannot be the sole source, because water in chunks of these that have landed as meteorites does not match the isotopic fingerprint of terrestrial water. This fingerprint is the ratio of normal water ( $H_2O$ , made from hydrogen and oxygen) to heavy water ( $D_2O$  and  $HDO$ ), which both include deuterium, an isotope of hydrogen that has a neutron in its nucleus alongside the proton characteristic of every hydrogen atom). Water from c-type asteroids has more deuterium in it than does terrestrial water.

Another possibility is comets, which are basically dirty snowballs that arrive from the outer solar system. A barrage of these a few hundred million years after Earth's formation would have done the job nicely. But samples returned from comets by spacecraft suggest their isotopic fingerprint is even less Earthlike than that of c-type asteroids. So, as Luke Daly, a planetary geoscientist at the University of Glasgow, in Britain, observes: "It basically means we need something else in our solar system, some other reservoir of water to be on the lighter side to balance the books."

In their search for this reservoir, Dr Daly's team recently studied grains of silicate dust from another sample-return mission, to an asteroid called Itokawa (pictured). This is an s-type (stony) body, with a composition different from that of c-types. The grains had been brought back by Hayabusa, a Japanese craft, in 2011.

Grains of this sort formed at the same time as Earth, and then spent the intervening billions of years orbiting the sun, occasionally gathering into tiny rocks or falling onto the surfaces of asteroids, such as Itokawa, to create a fine-grained regolith. Most, though, have remained free-floating. Indeed, they are collectively visible at sunrise and sunset, in clear, dark skies, as a faint glow known as the Zodiacal light.

Using a technique called atom-probe tomography, Dr Daly was able to examine the composition of the grains in his possession one atom at a time. He found, as he describes in this week's *Nature Astronomy*, that they contained a significant amount of water just below their surfaces. That surprised him. What was intriguing, though, was his discovery's lack of deuterium.

Dr Daly reckons this water's existence can be explained by weathering of the space dust over billions of years by the solar wind, a stream of charged particles—mostly protons—that flows out into space from the sun. When they hit a particle of space dust, these protons penetrate a few nanometres below the surface and change its chemical composition. In particular, if a proton knocks out one of the metal atoms in a silicate's crystal lattice, it is then likely to bond with an adjacent oxygen atom to form a hydroxide ion ( $OH^-$ ). Add a second

► proton, possibly billions of years later, and you have deuterium-free water. The result, in these samples, at least, was the equivalent of 20 litres of water for every cubic metre of rock.

Doing the sums, Dr Daly thinks about half of Earth's water derives from c-type asteroids, with an admixture of comets. The rest, which dilutes the deuterium in this, is the result of grains of weathered space dust falling through Earth's atmosphere throughout the planet's history, burning up as they did so and freeing their microscopic aqueous payloads to rain down, literally, on the planet's surface.

This finding, moreover, also hints that water could accumulate anywhere in the solar system which the solar wind can reach—the surface of the Moon, for example, as well as asteroids. That is good news for space explorers. In such places, the weathered dust could be a source of water for astronauts. ■

#### Mobile phones

## Through a glass, brightly

#### Toughening up phone screens with perovskites

SINCE 2006, when Corning, an American glassmaker, developed Gorilla Glass to give Apple's first iPhone a scratch-resistance screen, many other types of toughened glass have appeared for use in handsets. But as rugged as they are, people keep cracking and breaking them. Jingwei Hou thinks he has found a way to prevent that.

Dr Hou and his colleagues at the University of Queensland, in Australia, are among a number of researchers working

on a group of materials called perovskites. The original perovskite, calcium titanium oxide, is a mineral (see picture) discovered in the Ural mountains in 1839 and named after Count Lev Perovski, a Russian mineralogist. Since then, the name has come to be used for a number of materials that share a similar crystal structure.

Much of the interest in perovskites comes because those which combine metal atoms with chlorine, bromine or iodine (members of a group of elements called halogens) are semiconductors. This makes them potentially useful in a variety of electronics. In particular, one promising feature of metal halides is that they can be used to make new types of solar cells which are more efficient at converting sunlight into electricity than the silicon-based cells currently employed. Oxford PV, a British company, is bringing some of the first perovskite solar cells to market.

However, what works in one direction will often work in the other, and so it is with perovskites. This means that instead of converting sunlight into electricity, metal-halide perovskites can operate in reverse, by emitting light in response to an electric current. An array of tiny specks of perovskites could therefore work like a grid of LEDs in a display screen.

To produce such screens, Dr Hou and his team developed a way to bind tiny "nanocrystals" of lead-halide perovskites into a specially treated synthetic glass composite. As these nanocrystals are extremely sensitive, and decay rapidly if exposed to moisture in the air, being bound up in the glass protects them. It also prevents lead ions, which are toxic, leaching out of the material. At the end of their lives, the screens would be recyclable.

A study Dr Hou carried out in collaboration with teams from Britain and France, which was published recently in *Science*, showed that perovskite screens made in

this way were efficient light emitters able to produce sharp, bright images. The light could also be tuned to different colours by altering the nanocrystals' characteristics.

An added bonus was that the screens were extremely tough, because of the way the nanocrystals bonded with the glass. That was helped by the mechanical structure of the glass (known technically as a zeolitic imidazolate framework) having a spongelike atomic arrangement. This provides a degree of flexibility, thus avoiding breakage problems caused by brittleness.

In as much as anything can be considered unbreakable, perovskite screens just might be that, reckons Dr Hou—and they might be used not just for phones, but also for products ranging from televisions and computers to lighting. But he does think it could take five to ten years of development before this will happen. In the meantime, people should take a bit more care with the screens on their devices. ■

#### Electric flight

## Whirly birds are go

#### Hybrid power makes helicopters safer and more productive

**S**CAL take-off and landing (eVTOL) aircraft are under development, heralding a future where air-taxis whisk people from one place to another. Provided their batteries are charged up using renewable power, these new flying machines will also travel in a green, planet-saving way. They therefore appear to be the nemeses of noisy, fossil-fuel guzzling helicopters. But not quite yet. As with all forms of electrically propelled flight, weight—and therefore range—are issues. In the interim, however, a touch of electrification looks likely to make conventional choppers not only safer but also more useful.

The idea is to turn them into hybrids so that, like hybrid cars, they are powered by a combination of an electric motor and a combustion engine (a jet turbine, in the case of most commercial helicopters). This will make them a bit greener, by improving fuel economy and thus reducing emissions, as happens in a hybrid car. But helicopter hybridisation brings other benefits too, especially when it comes to safety.

To test this out, Airbus Helicopters, part of the eponymous European aerospace group, has fitted a helicopter that it uses as a flying laboratory with an electrically powered engine-backup system. This consists of a battery and an electric motor connected to the helicopter's main gearbox. In



Coming soon, to a screen near you

► a recent series of test flights in partnership with the French Civil Aviation Authority, it was found that during simulated engine failures this set-up could provide the pilot with 30 seconds of electric-only power.

That might not seem much to shout about, but it is enough to give the pilot of a single-engine helicopter a much better chance of coping with an engine failure, by executing a tricky emergency-landing procedure known as autorotate. This involves maintaining a steady rate of descent, so that the air passing up through the rotors is sufficient to keep them spinning in a way that provides enough lift for the helicopter to "glide" to a safe landing—much as a sycamore seed gently windmills down to the ground. After further development work, Airbus plans to add the hybrid backup system to new helicopters.

The problem with adding bits of kit to an aircraft, however, is that it can reduce flying efficiency by increasing weight, thus requiring more fuel to be burned. But in this case the hybrid system can also be employed to boost a helicopter's performance, and to do so by an amount that will more than overcome the weight penalty, says Tomasz Krysinski, Airbus Helicopter's head of research and innovation.

The performance gain comes about in two ways. First, the electric motor can, in normal flight, provide the rotor with additional torque when a bit of extra power is required. Torque is a twisting force which electric motors are particularly good at delivering, and they deliver it much more rapidly than combustion engines can manage. It is this occasional boost from the electric system that helps reduce emissions. Once it delivered, the battery would then be topped up again in flight, using power from the engine.

The torque boost also enables the second important benefit. This comes about because performance and safety affect an aircraft's certified maximum take-off weight. By improving both, the hybrid backup system will allow a helicopter to carry heavier loads. The increase should amount to an additional passenger, says Mr Krysinski, which would greatly increase a helicopter's earnings potential.

To improve the system yet further, Airbus is working on extending the electric-only flight time to several minutes. This would still be a long way from what eVTOLs can manage, at least with existing battery technology. Helicopters can, though, fly much longer missions than eVTOLs, and are more versatile. They can carry heavier loads and are often required to operate in extreme weather conditions—as when undertaking air-sea rescues—and in hazardous circumstances such as firefighting. Hybrid technology can help with all that, too, and so should keep choppers airborne for a few more years to come. ■

### Trypanosomes

## A nasty sting

### Bees may be a missing link in the chain leading to three nasty diseases

AS RECENT EVENTS have made abundantly clear, new viral diseases in people often start as spillovers from infections affecting other species. But viruses are not the only pathogens to do so. Leishmaniasis, sleeping sickness and Chagas' disease, three potentially lethal illnesses caused by single-celled creatures called trypanosomes, are probably in this category, too. Not only are they spread by insects (sand flies, tsetse flies and kissing bugs respectively), they presumably originated in insects, too (though not necessarily their current vectors)—for most known trypanosomes are insect parasites. That raises the question of how they leapt the species barrier. A study just published in the *Proceedings of the Royal Society*, by Evan Palmer-Young of America's Department of Agriculture, suggests the answer may be "bees".

Dr Palmer-Young's starting-point was the observation, made a few years ago, that *Critidilia melliferae*, a trypanosome once thought exclusive to honeybees, was turning up in mammals. Marmosets (a type of New World monkey), coatis (small carnivores related to raccoons), fruit bats, crab-eating foxes and ocelots are all now known to host it. He therefore wondered if there was something special about this particular trypanosome that allowed these leaps into mammals to happen—and whether, if there was, its adaptation to honeybees might be that something.

Two thoughts occurred to him. One was that, though most insects are ectothermic

(meaning their body temperatures vary with their surroundings), bees, like mammals, often generate extra heat, and also benefit from the proximity, in their hives, of their neighbours. This keeps their body temperatures at mammal-like levels in the mid-to-upper thirties.

Dr Palmer-Young's other thought was that honeybee guts are more acidic than those of most insects (this helps them to digest nectar and pollen). Indeed, they have pHs which match those of mammalian digestive tracts. He therefore speculated that mammalian heat, or acidity, or both, may create a barrier to trypanosome infection of mammals which parasites adapted to bees can easily overcome.

To test this idea, he and his colleagues looked at *C. melliferae*, and also at a second honeybee trypanosome parasite, *Lotmaria passim*. For comparison, they studied two strains of *Critidilia fasciculata*, a trypanosome common in mosquitoes that is closely related to *C. melliferae*.

They cultured all four types of trypanosome in flasks, and then exposed samples of each either to a range of temperatures from 20–41°C at constant acidity, or to a range of acidities from pH 2.1 (very acidic) to pH 11.3 (very alkaline) at constant temperature. While doing so they monitored the parasites' population-growth rates.

As Dr Palmer-Young had theorised, both of the honeybee parasites tolerated the sorts of temperatures common in hives. But they did not tolerate them equally well. The growth rate of *C. melliferae*, a species well established in bees, peaked at 35.4°C. That of *L. passim*, which was not reported in bees until 2014 and is thought to be a recent arrival, peaked at 33.4°C. Both strains of *C. fasciculata*, however, could cope only with lower temperatures. Their growth rates peaked near 31°C. The acidity experiments similarly revealed that both bee parasites thrived at pH 5.2, the level of acidity in honeybee digestive tracts, whereas the mosquito parasites needed a more alkaline pH of around 7.5 to grow well.

All told, both honeybee gut-acidity and hive temperature create a barrier to trypanosomes that *C. melliferae* has largely overcome, that *L. passim* is just about coping with, and which the mosquito parasites cannot endure. How this happened is unclear. What is clear, though, from the mammalian spillovers of *C. melliferae*, is that it can lead to a parasite also able to thrive in mammals.

Whether that was a path once taken by the trypanosomes which cause leishmaniasis, Chagas' and sleeping sickness remains to be seen—as does how their respective modern vectors fit into the picture. Dr Palmer-Young's finding suggests, though, that monitoring hives for diseases which could spill over into humans would be an endeavour worth pursuing. ■



Disease incubators?



**The politics of history**

## The rice bowl's tale

CHENNAI

**Archaeological finds in Tamil Nadu complicate the story of civilisation in India**

RARELY CAN a spoonful of rice have caused such a stir. When M.K. Stalin, chief minister of Tamil Nadu, addressed the south Indian state's legislature on September 9th, he celebrated a musty sample of the country's humble staple. Carbon dating by an American laboratory, he said, had just proved that the rice, found in a small clay offering bowl—itself tucked inside a burial urn outside the village of Sivakalai, near the southernmost tip of India—was some 3,200 years old. This made it the earliest evidence yet found of civilisation in Tamil Nadu. The top duty of his government, the chief minister triumphantly declared, was to establish that the history of India “begins from the landscape of the Tamils”.

The received wisdom about India's early history has been that civilisation generally flowed the other way, from north to south. So why is a provincial politician so keen to turn this narrative upside down? The answer lies in modern identity politics as much as archaeology.

Mr Stalin's party, which returned to power in Tamil Nadu in May after a decade

in the wilderness, has secular roots and is sworn to defend south India, and particularly its Dravidian languages, from perceived cultural dominance by the far more populous north. This threat has grown since 2014, when the Hindu-nationalist Bharatiya Janata Party (BJP) won control of the national government. With its stronghold in the conservative north, the BJP tends to see not strength, but weakness in diversity. It also tends to view the past as a simple story of the rise of a Sanskrit civilisation—Sanskrit being the language of Hindu texts, and ancestor of most Indo-European languages spoken across north India—which peaked in a pan-Indian golden age, followed by sad decline during a millennium of Muslim and Christian rule.

### → Also in this section

**72 Christians in the Middle East**

**73 Sir Paul McCartney's memoir**

**73 A forgotten 18th-century war**

**74 Greta Garbo's mystique**

Sustaining a Tamil counter-narrative requires evidence—which is why archaeology matters. Aside from the rich and sophisticated ancient Tamil poetry known as Sangam literature, until now proof of the south's claim to equal antiquity has been thin on the ground. Tamil Nadu's two annual monsoons and long seasons of extreme heat are destructive to brick or wooden remains. Ethnic nationalists also accuse authorities in far-off Delhi, India's capital, of devoting far more resources to archaeology in the north than in the south.

But the balance of discoveries has been changing; Mr Stalin's rice pot was not the first startling recent find in Tamil Nadu. Over the past decade estimates of when urban settlement began in the state have been pushed steadily back, from around 300BC to the 1155BC carbon date of the Sivakalai rice offering. The biggest breakthrough came in 2014 near a village called Keeladi, outside the city of Madurai. It is said that a local lorry driver overheard archaeologists chatting at a roadside tea stall. He took them to a palm grove where he confessed to stealing coconuts. It was littered with sherds of ancient pottery.

Now in its seventh excavation season, the 110-acre site (pictured) has not turned up big monuments or rich treasures. The grid of deep trenches, cut into six acres so far, has instead produced abundant evidence of continued urban settlement from as long ago as the early sixth century BC, as well as of industries such as weaving and pottery and extensive trade. The older stra-

ta at Keeladi reveal no signs of Hindu influence, and indeed no indications of religious worship at all. But a wealth of writing shows clear links to later Tamil script and, tantalisingly, similarities to the pre-Sanskrit graffiti of the very oldest urban settlements in the subcontinent: those of the Indus Valley Civilisation (IVC), which flourished in the far north-west from around 3000-2000BC.

### Dig for victory

No one disputes that Tamils, who are roughly the same in number as Germans (not including 3m in Sri Lanka and a 5m-strong diaspora spread from South Africa to Singapore to Silicon Valley), have a long and illustrious past. The Sangam literature, a corpus of some 2,381 love poems by 473 poets, dates back to a courtly age when south Indian kingdoms traded with the Roman Empire. Seafaring Tamils later carried Hinduism and Buddhism to South-East Asia; the giant temples of Borobudur in Java of the seventh century AD, and those of Angkor Wat in Cambodia from the 12th century, emblazon that legacy.

Less certain is Mr Stalin's suggestion that Tamils represent the oldest thread in the Indian subcontinent's complex tapestry of cultures. The evidence points firmly elsewhere and earlier. The IVC thrived at a time when Egyptians were building pyramids and the first city-states arose in Mesopotamia. Its most impressive site is Mohenjo-daro, a city that may have housed 40,000 souls, in what is now Pakistan. This thoroughly documented civilisation collapsed and disappeared before 1900BC—at least 700 years before someone popped an offering of rice into a clay pot in Sivakalai, around 2,300km to the south.

Further digging in Tamil Nadu will surely turn up more finds, but it is highly doubtful that they will outdate the IVC. Instead, what may become clear is that urban settlement emerged quite independently in India's far south at more or less the same time as it re-emerged in the north: a lesser historical boast for Tamil nationalists, but still a prize worth having.

Partly because no Rosetta Stone has yet been found to help decipher IVC scripts, the biggest mysteries of Indian history are why it died and what happened next. Archaeology, genetics and linguistics all suggest that what followed in north India was a prolonged interregnum. Then, possibly not long before a Tamil mourner made their funeral offering, an influx of horse-riding, Indo-European-tongued Central Asian peoples seems to have brought in a new pastoral culture and what eventually became a new religion—Hinduism.

Historians believe that the first Vedas, the early oral traditions of Hinduism, may have emerged around 1500BC. The mighty Hindu epics, the Mahabharata and

Ramayana, took form over a millennium later. A few centuries after that, around the time Alexander the Great marched a Greek army across the Hindu Kush, written history arrived. And as Indian schoolchildren learn, the first ruler to unite the country's scattered and warring kingdoms was Ashoka the Great, in about 250BC.

But vast as it was, Ashoka's short-lived empire never reached the Tamil south. Over time Tamils culturally assimilated with the rest of India, adopting a rigid caste system topped by a Sanskritised priesthood; but it was not until the British Raj that the far south was brought into the same polity as India's north. The Tamil experience was

unusual in other ways: whereas Muslim dynasties conquered and ruled much of the north for 800 years, in the south Muslims arrived by sea as traders, which they remained, mostly peaceably.

Tamils for the most part fit happily into today's Indian mosaic of some 22 major language groups and hundreds of smaller ones. But they do feel a bit different, and a bit special. "They portray us as little states and want to make the history of the south a small event," says Kanimozhi Mathi, a lawyer in Chennai who in 2018 sued the government when it threatened to close the Keeladi dig. "But we are not just one state among many. We are a nation." ■

### Embattled minorities

## Stations of the cross

A war correspondent's intimate portrait of the Christians of the Middle East

**The Vanishing.** By Janine di Giovanni. *Public Affairs*; 272 pages; \$17.99. *Bloomsbury*; £20

After a strict convent education, Janine di Giovanni, an American war correspondent, drifted from religion. Yet as she travelled the world, reporting from Bosnia, Kosovo and Rwanda, her faith returned. Wherever she went, she writes in "The Vanishing", she would find a church, seeking "ritual and a sense of belonging". Her book is the culmination of two decades of fieldwork in the Middle East, its four sections reflecting her stints in Egypt, Gaza, Iraq and Syria. As the title suggests, it is a portrait of a disappearing people.

Christians are an embattled minority in many countries, including North Korea,

where tens of thousands are believed to be held in concentration camps, and Sri Lanka, where around 250 people died in the Easter bombings of 2019. In the Middle East, Islamic extremists depict Christians as Westernised interlopers, yet the region was the birthplace of the religion, which flourished until the Muslim Arab conquest of the seventh century. Christians have since faced discrimination in varying degrees, precipitating waves of emigration. Today 93% of the population of the Middle East and north Africa are Muslim.

Ms di Giovanni brings a compassionate perspective to her narrative, interweaving complex, sometimes dense history with evocative vignettes and interviews. Her interlocutors range from nuns to imams, from the last vestiges of Gaza's Christian elite to Cairo's impoverished Zabbaleen, who sort rubbish in "Garbage City". These "dying communities" of various Christian denominations, some claiming direct descent from Jesus's disciples, share a stark choice: to abandon ancestral roots in search of a better life elsewhere, or cling on for a precarious future. Most keep their heads down, but the allegiance of some to dictators—seen as bulwarks against extremism—has antagonised Islamists.

In Iraq and Syria (pictured), minorities were once protected by the Baathist regimes of Saddam Hussein and the Assads, whose Alawite offshoot of Shia Islam had itself experienced persecution. After the American-led invasion of Iraq overthrew Hussein in 2003, a cleansing of Christians by Islamic State (IS), who burned churches and destroyed homes, prompted an exodus. Most Syrian Christians, meanwhile, believed Bashar Assad alone could maintain interfaith harmony. After war broke



The long perspective

out in 2011, IS and Jabhat al-Nusra, another jihadist group, razed over 80 churches, kidnapped clerics and sold Christian and Yazidi women into sex slavery. In Aleppo, home to more Christians than any other Syrian city, many were affected by indiscriminate government bombing. Economic woe has left little incentive to stay.

In the fourth century Gaza was wholly Christian. By the 21st century the community had shrunk to under 1,000, and the consequences of the election of Hamas in 2006 imperilled its members further. They endure the same hardships and dearth of opportunity as other Gazans and receive scant government protection; unemployment among young Christians stands at 70%. Egypt's Christian population, chiefly Copts, is the region's largest, but still suffers legal and social discrimination, even if some families are insulated by privilege. "The underlying sense of inferiority is our greatest persecution," says one woman. "I've had Muslim men grab me by the hair and try to drag me because I don't have a headscarf on."

"The Vanishing" skates over past abuses by Christians, such as the Crusades. Nonetheless, it is both a heartfelt lament for the Middle East and a poignant tribute to hope and tolerance in the face of adversity—tenacious worshippers in bombed-out churches, the openness of Yazidi rape victims. Whatever your beliefs, its evocation of fractured lives sustained by faith is deeply affecting. ■

#### The Beatles

## A long and winding ode

**The Lyrics.** By Paul McCartney. Edited by Paul Muldoon. Liveright; 960 pages; \$100. Allen Lane; £75

THE LIVES of distinguished people often take a lot of telling. Yet even devotees might raise an eyebrow at the heft of Sir Paul McCartney's memoir: two volumes totalling 960 pages. Casual Beatles fans may be surprised by the title, too. Though most would consider Sir Paul the band's best musician (with an honourable mention for George Harrison), John Lennon typically gets the plaudits for writing. In a poll by the BBC in 2001 to rank the greatest lyricists, Lennon received more than twice as many votes as McCartney.

Superficially, "The Lyrics" is a coffee-table book. Sir Paul has arranged 154 favourite compositions alphabetically, with lots of glossy photos. But in the essays that



A little help from his friend

accompany each song, his underlying purpose is to affirm his status as a writer. They are based on 50 hours of conversation with Paul Muldoon, a prizewinning poet, in which Sir Paul reflected on his life, his lyrics and the relationship between them. Mr Muldoon calls Sir Paul a "great writer" who has learned from "an impressive array of literary masters: Dickens, Shakespeare, Robert Louis Stevenson, Lewis Carroll".

Sir Paul flaunts his bookish side. He fondly recalls his favourite bookshop in Liverpool and an inspirational English teacher. The autobiographical snippets include many encounters with writers. As a young Beatle, he found himself talking to Bertrand Russell about imperialism, listening to Allen Ginsberg praise "Eleanor Rigby" and stumbling across Harold Pinter's bathtub of champagne bottles.

His songs are full of allusions. The index includes authors ranging from Edward Lear (mentioned in "Paperback Writer") to Rabindranath Tagore (who inspired "Pipes of Peace"). Echoes of Shakespeare recur. "Lend me your ears" in "With a Little Help from My Friends" is pinched from "Julius Caesar". Sir Paul says the girl who is "way beyond compare" in "I Saw Her Standing There" harks back to the sonnet about a summer's day. His link to Hamlet's near-dying words—"but let it be"—seems more of a stretch.

The melody usually comes first, Sir Paul says of his writing process. The tune of "Yesterday" arrived in a dream; its working title was "Scrambled Eggs". Next he looks for characters to sketch: "Once you get into creating a narrative and storytelling, it is so much more entertaining."

Some songs are ensembles of voices, such as "Band on the Run" and "Penny Lane" (written partly in free indirect speech). Others are portraits, such as the solitary woman in "Another Day", or Maharishi Mahesh Yogi, the Beatles' spiritual

adviser, in "The Fool on the Hill". Even when Sir Paul uses the first person, he often inhabits another persona. For "The Long and Winding Road" he pretended to be Ray Charles; mimicking other writers is a habitual "disappearing trick". Of "Maybe I'm Amazed", usually interpreted as an ode to Linda, his first wife, he insists that: "Starting with myself, the characters who appear in my songs are imagined."

Overall he makes a strong case for treating his work as poetry. Lennon, he says, "never had anything like my interest in literature". It was cynicism that secured his bandmate's acclaim: "It's easier to get critical approval if you rail against things and swear a lot." Frequently he contrasts Lennon's tough childhood, in which guardians absconded or died, with the jolly, loving family who gave Sir Paul an optimistic outlook. That is why his songs are often about the happiness of ordinary folk.

Lennon is arguably the main character in "The Lyrics", memories of Sir Paul's best friend and fiercest rival popping up in songs written long after his death. Harrison and Ringo Starr rarely intrude. All the same, this is an enlightening account of how some of the greatest-ever songs came about. It also illuminates Sir Paul's attachment to his Liverpudlian and Irish heritage, the challenges of going solo and his musical ambitions today. If at times it is rambling and repetitive, what fan will not enjoy a meander that feels like a long private audience with one of the Fab Four? ■

#### Forgotten wars

## Message in a bottle

**The War of Jenkins' Ear.** By Robert Gaudi. Pegasus Books; 408 pages; \$29.95 and £22

IT SOUNDS MORE like a bad visit to the otolaryngologist than an important conflict between empires. The incident that gave the War of Jenkins' Ear its name occurred in 1731, when a Spanish coastguard commander mutilated the captain of a British privateer suspected of smuggling in the Caribbean. Jenkins' severed appendage was preserved in a bottle and presented to King George II of Britain as proof of Spanish barbarity. The ensuing conflict lasted from 1739 to 1742.

Yet as Robert Gaudi writes in his new history, the war's causes went beyond a single outrage. Tension had simmered over a dispute about fees for Britain's contract to provide slaves to the Spanish colonies. British ships ran contraband to and from

► the West Indies in defiance of bilateral agreements. And then there was the strange case of the Italian castrato opera star, whom King Felipe V of Spain whisked from London and made his personal divo in Madrid. One journal summed up the sentiment in Britain: "What are the taking of a few Ships, and the cutting off the Ears of the Masters of our Merchantmen, to the loss of our dear, dear Farinello?"

The war proved disastrous for Britain. It assembled an armada and intended to invade the Spanish ports at Cartagena (now in Colombia), and Santiago, Cuba. The Cartagena operation was a fiasco, bogged down by tropical weather, mosquito-borne disease and indecisive leadership. Bad planning and squabbling commanders meant that the Santiago campaign was over before it could even begin. Spain suffered defeats of its own, failing to take Georgia in the North American colonies. Led by James Oglethorpe, the British joined Native Americans and used ambushes to repel the larger Spanish force.

Among the engagements at sea was an action at Porto Bello, Panama, which yielded one of Britain's few victories. Mr Gaudi, though, is less interested in the detailed narration of naval fracases than in sketching some of the vivid characters who fought them. The British succeeded at Porto Bello largely because of Admiral Edward Vernon, "boisterous and bellicose", who became an instant national hero. (The song "Rule, Britannia!" was written in the afterglow of his achievement.) On the Spanish side was the pugnacious Don Blas, famous after an earlier incident in which, when he was only 15, his leg was amputated in the heat of battle.

Why does this forgotten war matter now? For two reasons, suggests Mr Gaudi. First, a different result could have changed the fate of North America. Had the Spanish invasion of Georgia succeeded, he speculates, Spain and not Britain might have become the dominant imperial force on the continent. Second, the war nurtured the resentment of Britain that ultimately led to the American revolution. The British recruited 3,000 Americans to fight in the Cartagena campaign, but held them back from the vanguard out of mistrust and fear of desertion.

The most heroic moment in the war came at the end, and softened the sting of Britain's dismal showing. In an effort to attack Spanish possessions from the west, Britain had sent a fleet across the Pacific in 1740. Of the 1,600 men who set out, only 188 survived. But the flagship, *Centurion*, engaged and captured one of the fabled "Manila galleons" near the Philippines in June 1743. The prize was said to be so loaded with gold and gems that it took 32 wagons to unload it on the docks of London. That was some consolation for the king. ■

### Cinema royalty

## Two faces of a star

**Garbo.** By Robert Gottlieb. *Farrar, Straus and Giroux*; 448 pages; \$40. To be released in Britain in January; £32

**S**HE WAS everything on screen and not much off it. That is the conclusion to be drawn from Robert Gottlieb's biography of Greta Garbo, the legendary film star of the 1920s and 1930s. "Was she even an actress, or was she merely a glorious presence?" he asks. Readers' assessments of her glory may depend on their view of how much personal morality matters. A millionaire many times over, on her death in 1990 Garbo bequeathed a pittance to her live-in maid; she failed to increase her annual tip to the doorman of her building in Manhattan for 37 years.

Luxuriously attired as Anna Karenina or Mata Hari, Garbo shone for the camera. She swooned, she wept, she ravishingly died, a vision of unknowable Swedish beauty. The costumier at MGM remarked that no one else wore gowns with such ease. Her grey-blue eyes were her best feature and dazzled even in black and white. As a teenager she beguiled the director Mauritz Stiller, who helped make her famous. "There is something quite extraordinary about that girl," he said. "I must discover what it is."

Mr Gottlieb, a former editor of the *New Yorker* and a distinguished book publisher, is a trenchant critic and not easily impressed. He listened to surreptitious recordings of Garbo's phone calls "until I was so bored I couldn't bear to go on". Yet

Garbo herself makes him giddy. She reminds him "that life is not only difficult and painful but also worth living". That is high praise from the editor of Toni Morrison's novels and the biographer of Balanchine, a choreographer of genius.

A paradox runs through this astute and entertaining book. It is a portrait of a celebrated actor whose films are mostly terrible. "Susan Lenox" is a "hodgepodge of nonsense", says Mr Gottlieb; "Two-Faced Woman" is "a ghastly mess". Only "Camille" and "Ninotchka" receive enthusiastic praise—but even Garbo's best films now come across as gauzy melodramas at best, camp spectacles at worst. She is the main reason to watch any of them.

Even in an account as engaging as this, though, she appears vapid in her private life. She lacked intellectual curiosity, the author reports, and was not especially witty. She collected Renoirs but kept them wrapped in cheesecloth. Her friends and lovers (reputedly of both sexes) were tossed away like handkerchiefs. Mr Gottlieb's judgment is questionable in its generosity: "Certainly she used people ruthlessly, but people wanted to be used by her." After professing an interest in the UN she was given a private tour, during which she opined on the colour of the carpets.

Tellingly, Mr Gottlieb compares Garbo to two other movie stars: Marilyn Monroe and Meryl Streep. Although he praises Garbo's acting, today anyone watching her embrace a bouquet of flowers in "A Woman of Affairs" may think she was overdoing it. She seems better paired with Monroe, remembered most for her allure and mystique, than with Ms Streep, a masterful thespian with chameleonic powers.

Garbo was an icon rather than an artist, famous for who she was rather than what she did. "Maybe she wasn't really very interesting," Mr Gottlieb concludes of his elusive subject. "Who could tell?" ■



The eyes of the beholder

# THE SKY IS THE LIMIT

The SDA Bocconi Full-Time MBA flies to the **6<sup>th</sup> place worldwide** in the Economist Education Full-Time MBA Ranking 2021.

This achievement is the testimony of our ambition, the same ambition that will drive you to join a dynamic, impactful learning experience and become a better version of yourself.



## 1-YEAR FULL-TIME **MBA** FOR PEOPLE WHO JUST WON'T STOP

[WWW.SDABOCCONI.IT/MBA](http://WWW.SDABOCCONI.IT/MBA)

**SDA Bocconi** 50  
SCHOOL OF MANAGEMENT

1971  
2021

### Your Future is BRIGHT, Makers Learn by DOING

OSTİMTECH is the industrial university of the world enjoying the benefits of strong cooperation with global business, industry and society. Now, OSTİMTECH is offering graduate programs with scholarship\* opportunities in:

- Industrial Policy and Technology Management
- International Business Management
- Software Engineering
- Computer Engineering
- Electrical and Electronics Engineering
- Mechanical Engineering

Dates of Applications: 01 December 2021 – 14 February 2022

\*Scholarships granted up to 50%

For inquiries email to: [gradschool@ostimteknik.edu.tr](mailto:gradschool@ostimteknik.edu.tr)

[www.ostimteknik.edu.tr](http://www.ostimteknik.edu.tr)



### Online programmes

## Prepare for an ever-changing and uncertain future with Saïd Business School

It has never been more important to understand and respond to the issues shaping the future. Recognising the increasing complexity of our global landscape and often inevitable choices for sectors which operate within competitive environments.

Our online programmes fall into five categories



DISRUPTIVE



LEADERSHIP



ENTREPRENEURSHIP



STRATEGY & INNOVATION



FINANCE

If you would like to discuss our online programmes further, please get in touch with our team.

[OnlineExecEd@sbs.ox.ac.uk](mailto:OnlineExecEd@sbs.ox.ac.uk)  
Or call +44 (0)7701 305954

### The Economist

To advertise within the classified section, contact:

#### UK/Europe

Agne Zurauskaite  
Tel: +44 20 7576 8152

[agnezurauskaite@economist.com](mailto:agnezurauskaite@economist.com)

#### North America

Richard Dexter  
Tel: +1 212 554 0662  
[richarddexter@economist.com](mailto:richarddexter@economist.com)

#### Asia

Connie Tsui  
Tel: +852 2585 3211  
[connietsui@economist.com](mailto:connietsui@economist.com)

#### Middle East & Africa

Philip Wrigley  
Tel: +44 20 7576 8091  
[philipwrigley@economist.com](mailto:philipwrigley@economist.com)

## Economic data

|                | Gross domestic product      |          |       | Consumer prices             |       | Unemployment rate |      | Current-account balance |      | Budget balance  |          | Interest rates             |                        | Currency units |                      |
|----------------|-----------------------------|----------|-------|-----------------------------|-------|-------------------|------|-------------------------|------|-----------------|----------|----------------------------|------------------------|----------------|----------------------|
|                | % change on year ago latest | quarter* | 2021† | % change on year ago latest | 2021† | %                 |      | % of GDP, 2021†         |      | % of GDP, 2021† |          | 10-yr gov't bonds latest,% | change on year ago, bp | per \$ Dec 1st | % change on year ago |
| United States  | 4.9                         | Q3       | 2.1   | 5.5                         | 6.2   | Oct               | 4.4  | 4.6 Oct                 | -3.4 | -12.4           | 1.4      | 51.0                       | -                      | -              |                      |
| China          | 4.9                         | Q3       | 0.8   | 7.9                         | 1.5   | Oct               | 0.8  | 4.9 Oct‡                | 2.8  | -4.9            | 2.7 §§   | -41.0                      | 6.37                   | 3.1            |                      |
| Japan          | 1.4                         | Q3       | -3.0  | 2.1                         | 0.1   | Oct               | -0.2 | 2.7 Oct                 | 3.3  | -8.9            | nil      | -8.0                       | 113                    | -7.5           |                      |
| Britain        | 6.6                         | Q3       | 5.1   | 6.7                         | 4.2   | Oct               | 2.4  | 4.3 Aug††               | -2.9 | -10.9           | 0.9      | 49.0                       | 0.75                   | nil            |                      |
| Canada         | 4.0                         | Q3       | 5.4   | 5.0                         | 4.7   | Oct               | 3.2  | 6.7 Oct                 | 0.8  | -9.5            | 1.5      | 75.0                       | 1.27                   | 2.4            |                      |
| Euro area      | 3.7                         | Q3       | 9.3   | 5.0                         | 4.9   | Nov               | 2.3  | 7.4 Sep                 | 3.2  | -7.3            | -0.3     | 17.0                       | 0.88                   | -5.7           |                      |
| Austria        | 12.8                        | Q2       | 24.6  | 4.7                         | 4.3   | Nov               | 2.7  | 5.2 Sep                 | 2.0  | -5.8            | -0.1     | 28.0                       | 0.88                   | -5.7           |                      |
| Belgium        | 4.9                         | Q3       | 8.4   | 5.2                         | 5.6   | Nov               | 2.8  | 6.3 Sep                 | 1.7  | -6.6            | nil      | 37.0                       | 0.88                   | -5.7           |                      |
| France         | 3.3                         | Q3       | 12.6  | 6.7                         | 2.8   | Nov               | 2.1  | 7.7 Sep                 | -1.3 | -8.9            | nil      | 38.0                       | 0.88                   | -5.7           |                      |
| Germany        | 2.6                         | Q3       | 6.9   | 2.8                         | 5.2   | Nov               | 3.0  | 3.4 Sep                 | 7.0  | -6.2            | -0.3     | 17.0                       | 0.88                   | -5.7           |                      |
| Greece         | 16.4                        | Q2       | 14.5  | 6.5                         | 3.4   | Oct               | 0.1  | 13.3 Sep                | -4.4 | -9.6            | 1.2      | 56.0                       | 0.88                   | -5.7           |                      |
| Italy          | 3.9                         | Q3       | 11.0  | 6.3                         | 3.8   | Nov               | 1.8  | 9.2 Sep                 | 3.9  | -9.6            | 1.0      | 37.0                       | 0.88                   | -5.7           |                      |
| Netherlands    | 5.0                         | Q3       | 8.0   | 3.7                         | 3.4   | Oct               | 2.3  | 2.9 Oct                 | 8.5  | -5.2            | -0.1     | 49.0                       | 0.88                   | -5.7           |                      |
| Spain          | 2.7                         | Q3       | 8.3   | 5.5                         | 5.6   | Nov               | 2.5  | 14.6 Sep                | 0.9  | -8.9            | 0.4      | 39.0                       | 0.88                   | -5.7           |                      |
| Czech Republic | 2.8                         | Q3       | 6.1   | 3.0                         | 5.8   | Oct               | 3.8  | 2.7 Sep‡                | 3.2  | -8.3            | 2.6      | 132                        | 22.5                   | -2.9           |                      |
| Denmark        | 3.6                         | Q3       | 3.5   | 3.2                         | 3.0   | Oct               | 1.7  | 3.1 Oct                 | 7.5  | -0.3            | -0.1     | 34.0                       | 6.56                   | -5.6           |                      |
| Norway         | 5.1                         | Q3       | 16.1  | 3.0                         | 3.5   | Oct               | 3.0  | 3.6 Sep‡‡               | 6.9  | -3.0            | 1.4      | 76.0                       | 9.03                   | -2.1           |                      |
| Poland         | 5.5                         | Q3       | 9.5   | 5.1                         | 7.7   | Nov               | 4.9  | 5.5 Oct§                | 1.1  | -5.8            | 3.2      | 196                        | 4.07                   | -9.1           |                      |
| Russia         | 4.3                         | Q3       | na    | 4.2                         | 8.1   | Oct               | 6.6  | 4.3 Oct§                | 5.2  | -0.7            | 8.3      | 219                        | 73.8                   | 2.4            |                      |
| Sweden         | 4.5                         | Q3       | 8.2   | 4.1                         | 2.8   | Oct               | 2.2  | 7.6 Oct§                | 4.9  | -1.9            | 0.1      | 12.0                       | 9.04                   | -5.9           |                      |
| Switzerland    | 4.1                         | Q3       | 6.8   | 3.5                         | 1.5   | Nov               | 0.5  | 2.7 Oct                 | 5.2  | -3.8            | -0.2     | 30.0                       | 0.92                   | -2.2           |                      |
| Turkey         | 7.4                         | Q3       | na    | 8.0                         | 19.9  | Oct               | 18.1 | 11.1 Sep§               | -2.8 | -3.1            | 20.2     | 819                        | 13.1                   | -40.1          |                      |
| Australia      | 3.9                         | Q3       | -7.5  | 3.8                         | 3.0   | Q3                | 2.7  | 5.2 Oct                 | 4.1  | -5.8            | 1.7      | 81.0                       | 1.40                   | -2.9           |                      |
| Hong Kong      | 5.4                         | Q3       | 0.5   | 6.2                         | 1.8   | Oct               | 1.6  | 4.3 Oct‡‡               | 3.0  | -4.5            | 1.5      | 86.0                       | 7.79                   | -0.5           |                      |
| India          | 8.4                         | Q3       | 54.1  | 8.2                         | 4.5   | Oct               | 5.0  | 7.0 Nov                 | -0.9 | -7.0            | 6.3      | 42.0                       | 74.9                   | -1.7           |                      |
| Indonesia      | 3.5                         | Q3       | na    | 3.1                         | 1.7   | Nov               | 1.6  | 6.5 Q3§                 | -0.1 | -6.0            | 6.3      | 18.0                       | 14,343                 | -1.5           |                      |
| Malaysia       | -4.5                        | Q3       | na    | 3.8                         | 2.9   | Oct               | 2.4  | 4.5 Sep§                | 2.7  | -6.0            | 3.5      | 80.0                       | 4.22                   | -3.3           |                      |
| Pakistan       | 4.7                         | 2021**   | na    | 3.8                         | 11.5  | Nov               | 9.2  | 6.9 2019                | -4.5 | -6.9            | 11.7 ††† | 182                        | 175                    | -9.0           |                      |
| Philippines    | 7.1                         | Q3       | 16.1  | 4.8                         | 4.6   | Oct               | 4.5  | 6.9 Q3§                 | -1.9 | -7.5            | 4.9      | 191                        | 50.4                   | -4.6           |                      |
| Singapore      | 7.1                         | Q3       | 5.2   | 6.1                         | 3.2   | Oct               | 1.9  | 2.6 Q3                  | 18.1 | -4.2            | 1.7      | 88.0                       | 1.36                   | -1.5           |                      |
| South Korea    | 4.0                         | Q3       | 1.3   | 4.1                         | 3.7   | Nov               | 2.2  | 2.8 Oct§                | 4.6  | -4.4            | 2.2      | 53.0                       | 1,179                  | -6.2           |                      |
| Taiwan         | 3.7                         | Q3       | 1.1   | 5.7                         | 2.6   | Oct               | 2.0  | 3.8 Oct                 | 15.1 | -1.2            | 0.6      | 31.0                       | 27.8                   | 2.8            |                      |
| Thailand       | -0.3                        | Q3       | -4.2  | 1.4                         | 2.4   | Oct               | 1.0  | 1.5 Dec§                | -1.4 | -7.8            | 1.7      | 39.0                       | 33.7                   | -10.3          |                      |
| Argentina      | 17.9                        | Q2       | -5.5  | 8.7                         | 52.1  | Oct               | 48.3 | 9.6 Q2§                 | 1.7  | -4.6            | na       | na                         | 101                    | -19.4          |                      |
| Brazil         | 12.4                        | Q2       | -0.2  | 5.0                         | 10.7  | Oct               | 8.2  | 12.6 Sep‡‡              | 0.5  | -6.1            | 11.5     | 397                        | 5.62                   | -6.6           |                      |
| Chile          | 17.2                        | Q3       | 21.0  | 11.0                        | 6.0   | Oct               | 4.3  | 8.1 Oct‡‡               | -1.8 | -7.1            | 5.7      | 295                        | 832                    | -8.7           |                      |
| Colombia       | 12.9                        | Q3       | 24.9  | 9.8                         | 4.6   | Oct               | 3.4  | 11.8 Oct§               | -5.3 | -8.5            | 8.2      | 321                        | 3,949                  | -10.1          |                      |
| Mexico         | 4.5                         | Q3       | -1.7  | 6.1                         | 6.2   | Oct               | 5.6  | 3.9 Oct                 | 1.7  | -3.3            | 7.5      | 196                        | 21.3                   | -5.6           |                      |
| Peru           | 11.4                        | Q3       | 15.0  | 13.2                        | 5.7   | Nov               | 4.0  | 8.6 Oct§                | -2.6 | -4.4            | 5.9      | 202                        | 4.07                   | -11.6          |                      |
| Egypt          | 7.7                         | Q2       | na    | 3.3                         | 6.3   | Oct               | 5.7  | 7.5 Q3§                 | -4.3 | -8.0            | na       | na                         | 15.7                   | -0.2           |                      |
| Israel         | 4.1                         | Q3       | 2.4   | 6.1                         | 2.3   | Oct               | 1.6  | 5.0 Oct                 | 5.1  | -5.5            | 0.9      | 11.0                       | 3.15                   | 4.4            |                      |
| Saudi Arabia   | -4.1                        | 2020     | na    | 2.2                         | 0.8   | Oct               | 3.1  | 6.6 Q2                  | 4.6  | -2.0            | na       | na                         | 3.75                   | nil            |                      |
| South Africa   | 19.3                        | Q2       | 4.7   | 4.9                         | 5.1   | Oct               | 4.4  | 34.9 Q3§                | 2.8  | -8.0            | 9.8      | 75.0                       | 15.8                   | -3.7           |                      |

Source: Haver Analytics. \*% change on previous quarter, annual rate. †The Economist Intelligence Unit estimate/forecast. §Not seasonally adjusted. ‡New series. \*\*Year ending June. ††Latest 3 months. #3-month moving average. §§5-year yield. †††Dollar-denominated bonds.

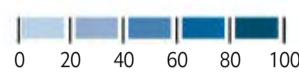
## Markets

| In local currency       | Index Dec 1st | % change on: |               |          | index Dec 1st     | one week   | Dec 31st 2020 | % change on: |               |       | index Dec 1st | one week | Dec 31st 2020 | % change on: |      |  |
|-------------------------|---------------|--------------|---------------|----------|-------------------|------------|---------------|--------------|---------------|-------|---------------|----------|---------------|--------------|------|--|
|                         |               | one week     | Dec 31st 2020 | Dec 31st |                   |            |               | one week     | Dec 31st 2020 | month |               |          |               | month        | year |  |
| United States S&P 500   | 4,513.0       | -4.0         | 20.2          |          | Pakistan KSE      | 45,369.1   | 2.3           | 3.7          |               |       |               |          |               |              |      |  |
| United States NAScomp   | 15,254.1      | -3.7         | 18.4          |          | Singapore STI     | 3,098.3    | -4.0          | 8.9          |               |       |               |          |               |              |      |  |
| China Shanghai Comp     | 3,576.9       | -0.4         | 3.0           |          | South Korea KOSPI | 2,899.7    | -3.2          | 0.9          |               |       |               |          |               |              |      |  |
| China Shenzhen Comp     | 2,524.1       | 0.1          | 8.4           |          | Taiwan TWI        | 17,586.0   | -0.3          | 19.4         |               |       |               |          |               |              |      |  |
| Japan Nikkei 225        | 27,935.6      | -4.7         | 1.8           |          | Thailand SET      | 1,590.8    | -3.6          | 9.8          |               |       |               |          |               |              |      |  |
| Japan Topix             | 1,936.7       | -4.1         | 7.3           |          | Argentina MERV    | 85,164.8   | 2.0           | 66.3         |               |       |               |          |               |              |      |  |
| Britain FTSE 100        | 7,168.7       | -1.6         | 11.0          |          | Brazil BVP        | 100,774.6  | -3.6          | -15.3        |               |       |               |          |               |              |      |  |
| Canada S&P TSX          | 20,464.6      | -5.0         | 17.4          |          | Mexico IPC        | 50,007.2   | -1.7          | 13.5         |               |       |               |          |               |              |      |  |
| Euro area EURO STOXX 50 | 4,179.2       | -2.3         | 17.6          |          | Egypt EGX 30      | 11,420.0</ |               |              |               |       |               |          |               |              |      |  |

→ Areas near camps that imprisoned lots of educated “enemies of the people” are now unusually rich

### Prison camps in the Soviet Union, 1952

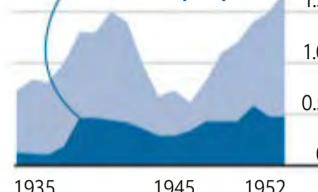
“Enemies of the people” as share of prisoners, %



Prisoner population, '000

### Total prisoners, m

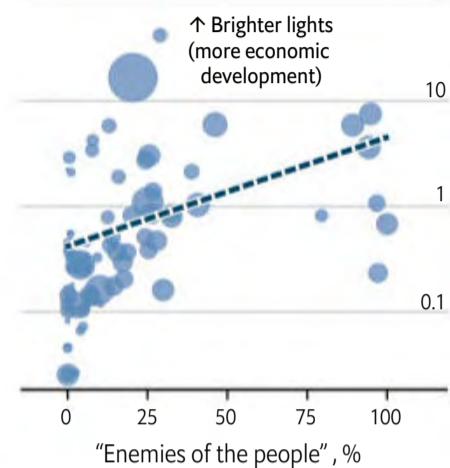
“Enemies of the people”



### Night-time illumination per person in 2015\* v “enemies of the people” as share of prisoners in 1952

Size = total prisoners

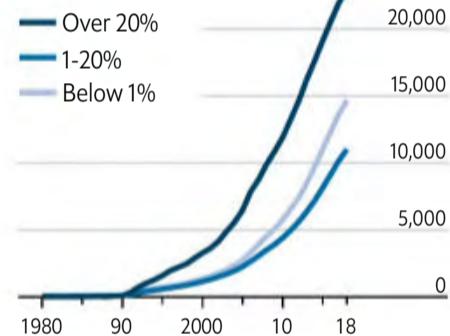
log scale 100



### Firms registered\*, 1990=100

Excluding Moscow

“Enemies of the people” as share of prisoners in 1952



\*Within 30km of camp locations

Source: “Enemies of the people”, by Gerhard Toews and Pierre-Louis Vézina, working paper, 2021

## “Levelling up” at gunpoint

### How regions near Stalin’s prisons benefit today from his victims

THE BEDBUGS infested the board bunks like locusts...in autumn the typhus arrived...We crawled to the fence and begged: ‘Give us medicine.’ And the guards fired a volley from the watchtowers.” In “The Gulag Archipelago” Alexander Solzhenitsyn chronicled the soul-crushing torment of Soviet prisoners. Jailed for criticising the government, Solzhenitsyn was one of the 2.65m people in 1921–59 arrested for “counter-revolutionary activities” and labelled “enemies of the people” (EOTP).

Not all EOTP were dissidents: simply belonging to the petite bourgeoisie often led to a trip to the gulag. As a result, EOTP tended to be well-educated. In 1939, 1% of census respondents and 2% of gulag inmates had university degrees. Among EOTP in 1927–53, the rate was 15%. Incarcerating EOTP thus entailed relocating much of the

Soviet intelligentsia. And a new paper by Gerhard Toews of the New Economic School in Moscow and Pierre-Louis Vézina of King’s College London shows that regions where EOTP were jailed still reap economic benefits from this forced migration.

The study began with data on the share of inmates in each of 79 prisons in 1952 who were EOTP. Save for nine special EOTP camps, political prisoners were mixed in with common criminals. Aside from a few patterns—EOTP tended to cluster in big prisons in thinly populated areas with weak transport links—the choice of camps where they were sent appeared random.

Next, the paper measured current levels of economic development within 30km of prison sites. It found that the greater a camp’s share of EOTP in 1952, the richer and better-educated people living nearby are today—even after accounting for regional differences and factors that affected where EOTP were sent. A ten-percentage-point increase in the share of inmates who were EOTP corresponded to gains of 8% in wages; 23% in profits per worker; 23 percentage points in the share of firms at which the average worker went to university; and 21% in the strength of light emitted at night per

person, a measure of economic output. After the Soviet Union broke up, the number of registered firms also grew unusually fast near former camps with lots of EOTP.

To explain this trend, the authors studied where EOTP went after being freed. Until 1959 EOTP were not allowed to go home. Their “wolves’ passports” stopped them from living in big cities. As prisons became company towns, managers at state enterprises recruited ex-cons, who often stayed where they had new friends or families.

No data were available on the post-prison locations of EOTP. But a poll in 2016 found that people living near the sites of camps with high shares of EOTP were especially likely to have relatives who were political prisoners. Moreover, 42% of respondents whose grandparents were EOTP had attended university, compared with 31% for everyone else. These data imply a cause behind the correlation. Lots of EOTP settled near their jails and had well-educated kids, who stayed in the same areas and spawned another educated, rich generation.

Joseph Stalin did his best to wipe out perceived enemies. It might have comforted EOTP to know that their human capital has outlived the gulag by six decades. ■



## Keep moving on

**Stephen Sondheim, revolutioniser of musical theatre, died on November 26th, aged 91**

**I**N A TOWNHOUSE in central Manhattan, in a room with a grand piano, lights would often burn all night. The man who sat there had an air of intense and nervous preoccupation. He would throw himself back in his chair, twist his neck to interrogate the ceiling, lean dangerously sideways, arch his arm over his head, as he strove to link his words to music and his music to words.

To do both things, write lyrics and compose, was rare and tricky. Music was fun, abstract and inside him; lyrics were a sweat, though he thought of himself as a playwright first. Combining them required not inspiration, like some girl twittering on his shoulder, but patient craft. He had to let the lyrics sit lightly on the melodic line, bubble and rise, while ensuring that the music made them shine and sometimes explode. As he worked he was painfully aware of his mistake in "West Side Story" (in 1957, when he was starting out, and the music was Lenny Bernstein's, not his), of putting the indefinite article on the highest note of a phrase in "Somewhere", or failing to notice how long a purple line might embarrass him afterwards. (For ever, in fact.) Less is more, keep it simple, he kept reminding himself. Clever rhymes and puns were his forte, but why were "love" and "life" so near-impossible to rhyme with anything? For Stephen Sondheim, working with the English language he adored was very, very hard.

Nor was it his nature. He was instinctively a mathematician, sidetracked while still at school by the great lyricist Oscar Hammerstein, the father of his best friend, who taught him almost all he knew. Maths was kept for the puzzles and cryptic crosswords he invented where slowly, link by link, the solution gleamed into view. By contrast, the 15 musicals he wrote for the American stage, works that propelled him into the company of Irving Berlin, Cole Porter and Noël Coward, were studies in disconnection. Though he might place his characters in ostensibly jovial parties or reunions, deep emotional fissures soon appeared again.

In both "Company" (his breakthrough work, in 1970) and "Follies" (1971), marriages were foundering, but new commitments were too difficult. "Into the Woods", a revisiting of classic fairy tales, delved into the love-hate relationship between parents and children, one he had vividly known himself. "Sunday in the Park with George" (1984) explored the competing claims, on the painter Georges Seurat and George, his struggling-artist great-grandson, of the human love each wanted and the art they had to do.

These conflicts meant that the twin Sondheim roles, lyricist and composer, often sparked against each other. Despair could be hidden under banter, and malice under gentleness. In "Follies" he wrote the bitterly witty "Could I leave you?" ("Could I bury my rage/with a boy half your age/in the grass?/Bet your arse!") as a grand waltz; in his cartoonish semi-opera "Sweeney Todd" (1979), the demon barber crooned the soft, blithe "Pretty Women" as he prepared to cut a customer's throat. Often, too, a Sondheim musical would fracture time itself, punctuating the action with flashbacks, as in "Company", or reversing chronology entirely ("Merrily We Roll Along", a disaster). The linear musicals American audiences had come to expect, ending with a grand chorus number and guy and girl dazzlingly together, became in his hands messy slices of life in which nothing had been resolved, nor ever could be.

Audiences therefore tended to leave the theatre baffled. Plenty walked out. They found him too intellectual, the subjects uncomfortable and nothing hummable in the flowing, conversational scores. With the exception of "A Funny Thing Happened on the Way to the Forum" (1962), his first foray into Broadway in both hats, his runs were short. His name could be twisted into the pleasing anagram, "He penned demon hits". But his only one (big though it was) was "Send in the Clowns" from "A Little Night Music", a song written mostly as simple questions and again about disconnection. ("Isn't it rich?/ Are we a pair? Me here at last on the ground/You in mid-air?") He treated the 32-bar torch songs, again really hard to write, as commentaries or little one-act plays to move the plot along. If there was a plot.

Lack of popularity did not bother him. He had never set out to be corporate or commercial; he loathed all that. His only desire was to experiment, to make himself nervous in new territory and not do the same thing twice. Among the subjects he threw himself into were the emergence of Japan (in "Pacific Overtures", done as a piece of *kabuki* theatre) and the killing or attempted killing of America's presidents in "Assassins", staged in a fairground. Vaudeville and pastiche were strewn around, spiking his work with irony, and he wrote in unfriendly sharp keys just to challenge himself. "Maverick" was a word he feasted on.

He also saw himself as an outsider: an only child who got the best marks at school, Jewish, gay, shy. His first experience of musicals was Rodgers's and Hammerstein's "Carousel" at 15, when the sight of the villain-outcast Jigger ostracised by the townsfolk reduced him to tears. He loved collaborating on musicals, notably with the producer Hal Prince and the writer James Lapine, because he had found such family feeling nowhere else. Until he was 61, he lived alone. The work was all-consuming to the end, and his prime concern was that it should go on being done, in schools, communities, anywhere. Done and done and done.

His only attempt at memoir was a two-volume analysis of all his musicals. People therefore wondered which of them contained the key to him. "Company", perhaps, where the outsider Bobby moodily observes his friends' marriages in an effort to find happiness himself? Or "Into the Woods", with its strong echoes of the analysts' couches on which he had spent so many hours? Or "Sunday in the Park with George", where in the last act George is counselled in the night park by his great-grandmother's ghost:

Stop worrying where you're going/Move on  
If you can know where you're going/You've gone  
Just keep moving on... ■



# We're here, for all the ways you work

Whenever, wherever your business works best, our flexible terms are designed to fit your workspace needs. Be productive in offices closer to home or access 700+ locations worldwide.

**wework**



#### TAMBOUR CURVE GMT FLYING TOURBILLON

LV 82 calibre developed and assembled by La Fabrique du Temps Louis Vuitton in Geneva.  
Automatic mechanical movement and a GMT function with a quick-set adjustment.  
Titanium case, meteorite dial and baguette-cut diamonds hour markers.

**LOUIS VUITTON**