

The Economist

After AUKUS: Asia's new geopolitics

Lessons of the gas-price surge

Inside the chip industry's brain trust

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SEPTEMBER 25TH–OCTOBER 1ST 2021

The mess Merkel leaves behind



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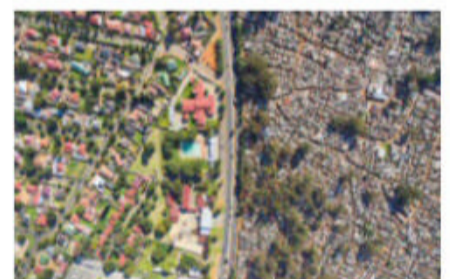
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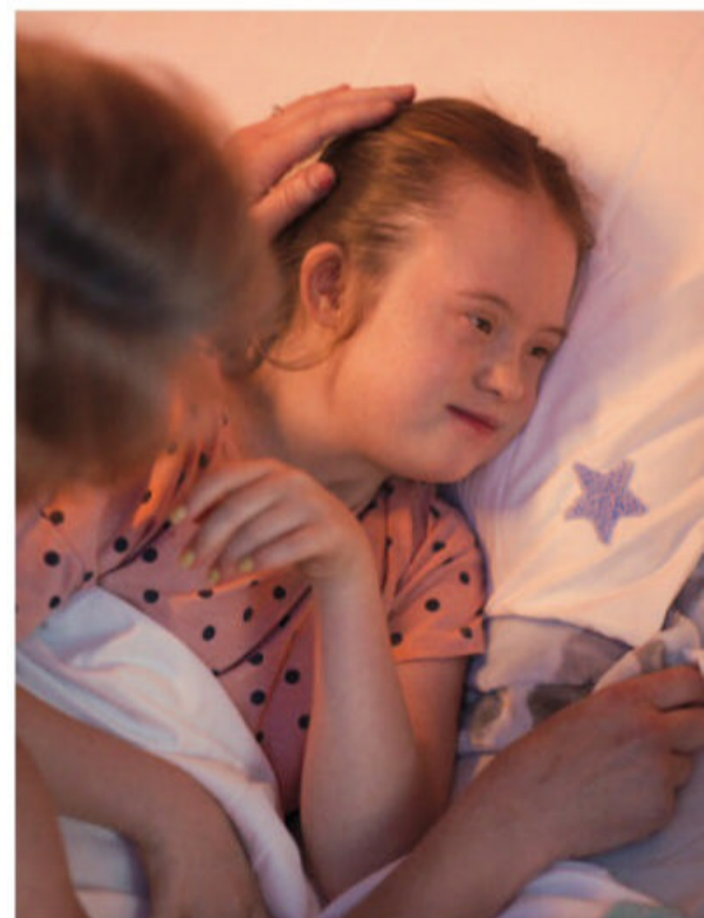
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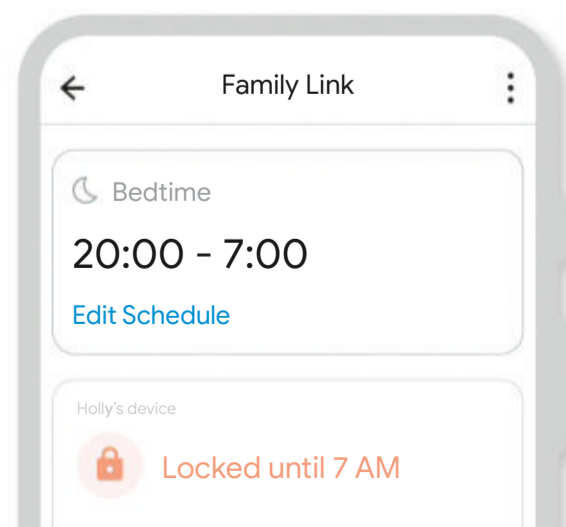
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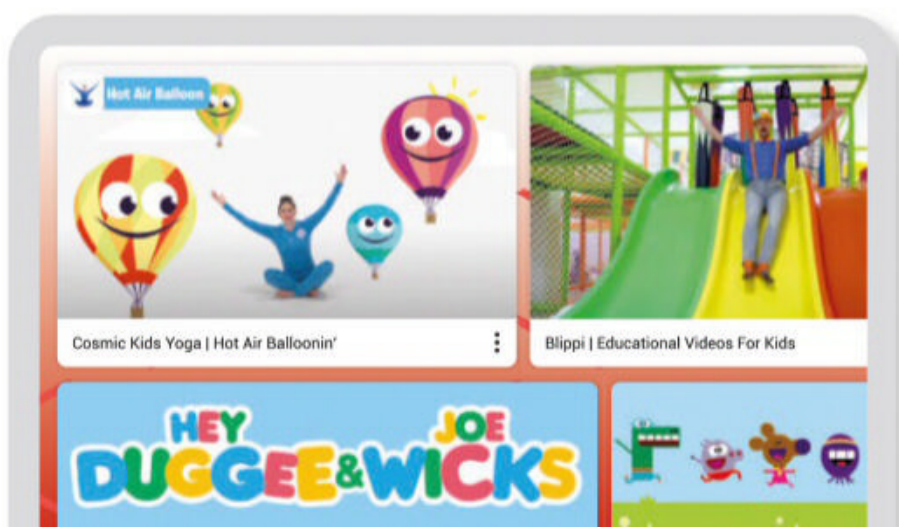
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France reacted with fury to American, Australian and British plans to form a **new defence pact** in the Pacific. France was not invited to join. Australia is also cancelling a contract for French diesel-powered submarines in favour of American (or just possibly British) nuclear-powered ones. Jean-Yves Le Drian, the French foreign minister, called it a “stab in the back”, and withdrew his ambassadors from Washington and Canberra, though they are now being sent back following a make-up call between presidents Joe Biden and Emmanuel Macron.

Germans got ready to vote in a general election on September 26th that will mark the end of Angela Merkel’s 16 years in power, as she is standing down. The polls have narrowed slightly, but the Social Democrats are still running ahead of Mrs Merkel’s Christian Democrats.

In **Russia**, elections to the Duma produced another supermajority for United Russia, the pro-Putin party through which the Kremlin wields legislative power. The election was widely seen as rigged. But few Russians took to the streets to protest, unlike in 2011, when thousands did.

China’s president, Xi Jinping, said that he would stop supporting new coal-power projects overseas. By some estimates, 70% of all coal plants being built today involve Chinese state finance, but China’s interest in dirty power has cooled as the price of the renewable sort has fallen.

China applied to join an 11-country Asia-Pacific **trade deal**

known as the Comprehensive and Progressive Agreement for Trans-Pacific Partnership. Taiwan also asked to join.

Hong Kong held a vote for a new 1,500-member Election Committee, which will choose the city’s next leader. It was the first after reforms that require candidates to be “patriotic”: ie, friendly to China’s Communist Party. The electorate was limited to fewer than 5,000 people. Only one government critic gained a seat.

The results of a snap election in **Canada** were disappointing for Justin Trudeau, the prime minister. Although Mr Trudeau gained enough votes to govern for a third term, he remains the head of a minority government, with about the same number of seats as when he called the election.

Another Trumpian turn

Speaking at the UN General Assembly Jair Bolsonaro, Brazil’s president, claimed to represent “a new **Brazil**, with its credibility recovered before the world”. He also spent part of the speech touting unproven remedies for covid-19 and denouncing lockdown measures.

America’s border patrol began removing the 15,000 **Haitian migrants** who had gathered at a bridge in Texas after crossing the border from Mexico. Hundreds were deported to Haiti immediately. The migrants had travelled up from South America.

The State Department said that the annual cap on **refugees** allowed into America will rise from 62,500 to 125,000, fulfilling a campaign promise by President Joe Biden.

Mr Biden doubled the number of covid-19 **vaccines** that America is donating to developing countries to 1bn, which Pfizer is providing for no profit. Before the announcement António Guterres, the UN secretary-general, called the unequal distribution of vac-

cines between rich and poor countries an “obscurity”. America’s drug regulator approved **booster shots** of the Pfizer vaccine for the over-65s.

India said it would resume exporting vaccines. The Serum Institute of India is a big manufacturer of the Astra-Zeneca shot that is used in many poor countries. India had halted exports when it was hit by a devastating surge of infections in April.

Rodrigo Duterte, the president of the **Philippines**, said people would be held accountable for any unlawful killings in the country’s drug war. His critics say he has encouraged such killings. The International Criminal Court has opened an investigation into his anti-drug campaign. Mr Duterte did not mention the ICC by name, but he appeared to reject its jurisdiction over his country.

Paul Rusesabagina, whose bravery in saving more than 1,200 people during the genocide in **Rwanda** inspired the film “Hotel Rwanda”, was sentenced to 25 years in jail for terrorism. Observers called the trial a sham. Mr Rusesabagina is a critic of Paul Kagame, Rwanda’s president.

The authorities in **Sudan** thwarted an attempted coup against a transitional government that was itself installed in a coup in 2019. Forces loyal to Sudan’s toppled dictator, Omar al-Bashir, were blamed.

Abdelaziz Bouteflika, the president of Algeria from 1999 to 2019, died, aged 84. He led the country out of a ruinous civil war, but was ousted in 2019 amid mass protests against his decision to seek a fifth term.

Putting out the welcome mat

The White House said restrictions on **travellers** entering the United States that were introduced at the start of the pandemic would be lifted in November, for people who are fully vaccinated. The restric-

Coronavirus data

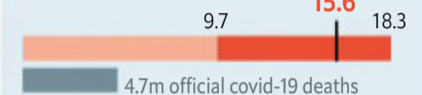
To 6am GMT September 23rd 2021

Weekly confirmed cases by area, m



Estimated global excess deaths, m

With 95% confidence interval



Vaccine doses given per 100 people

By country-income group



Sources: Johns Hopkins University CSSE; Our World in Data; UN; World Bank; The Economist’s excess-deaths model

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tions, which in effect barred most passengers from Europe, China, India and a handful of other countries, had been criticised as irrational. A negative covid test will still be required, as is the norm nearly everywhere.

Australia is also ready to reopen its international frontiers in December, if its national vaccination rate reaches 80%. It sealed its border 18 months ago, more tightly than nearly any other country. Australians will once again be allowed to leave without special permission, and visitors will be allowed in. **Thailand**, which has been re-opening tourist hotspots, is aiming to reopen Bangkok and other cities in November.

Protests against vaccine mandates morphed into three days of rioting in **Melbourne**. The Australian city has been under various degrees of lockdown since the outbreak began, and subject to labyrinthine rules. It also endured an earthquake this week.



A global shortage of **natural-gas supplies** continued to convulse markets. Prices have soared in recent weeks, especially in Europe, following a convergence of adverse factors, such as booming demand in Asia coinciding with tight stocks of liquefied natural gas. In Europe some governments are stepping in to alleviate the pressure on spiralling household bills. The International Energy Agency pointed out that Russia's gas exports to Europe are below their level of 2019, and urged it to "do more to increase gas availability".

A fowl situation

One of the many knock-on effects of the turmoil in gas markets was a shortage of **carbon dioxide** as an industrial gas in Britain. A big producer of carbon dioxide had to close its factories because of soaring natural-gas prices, which in turn led to warnings from the chicken industry about a possible paucity of poultry. Carbon dioxide is used to stun hens for slaughter.

Evergrande, one of China's biggest property developers, said it had "resolved" the payment of interest on a domestic bond amid a liquidity crisis. The highly indebted company has warned of a default and has reportedly missed interest payments to bank creditors. Investors are watching nervously. The central bank has been pumping liquidity into the financial system to shore up confidence.

The official statement from the **Federal Reserve's** meeting this week prepared markets for the strong possibility that it will start to taper its pandemic-

programme asset purchases in November. The central bank also hinted at an interest rate rise next year.

The OECD raised its forecast for **inflation** in the G20 countries, in part because of higher shipping costs and energy prices. The average annual inflation rate for the group is now expected to be 3.7% this year and 3.9% in 2022. Battling inflation that is nearing 10%, **Brazil's** central bank raised its main interest rate for the fifth consecutive month.

America's House of Representatives passed a bill that would extend the federal **debt ceiling** until December next year in order to avoid a government shutdown on October 1st this year. Democrats supported the bill and Republicans opposed it. The Senate will now have its say, amid warnings that markets will run out of patience the longer a resolution is delayed.

Douyin, a Chinese video-sharing app that has an international version called **TikTok**, said children under 14 in China would be limited to using it for 40 minutes a day. It is the latest move in China to tighten controls over children's online behaviour.

Shell struck an agreement to sell its energy assets in America's Permian Basin to **ConocoPhillips** for \$9.5bn. The Anglo-Dutch energy giant is under pressure to quicken the pace of carbon-emission cuts. In May a Dutch court ordered the company to hit a specific carbon-reduction target by 2030 (it is appealing against the ruling). Shell described the sale of its Permian business as "disciplined stewardship of capital". Some \$7bn in proceeds have been earmarked for "shareholder distributions".

Universal Music made a successful stockmarket debut on the Euronext exchange in Amsterdam. Its share price jumped by a third on the first day of trading, in Europe's biggest listing this year. The music company, which counts EMI and Motown among its record labels, was spun off by Vivendi, though the French media conglomerate's controlling shareholder, Vincent Bolloré, retains an 18% stake.

Entain, a British gambling company and owner of the Ladbrokes and Coral brands, said it had received a takeover approach, reportedly worth \$25bn, from **DraftKings**, an American fantasy-sports and betting operator.

Mitsubishi UFJ Financial Group, Japan's biggest lender, is to sell its consumer-banking operations in America to **US Bancorp** in an \$8bn deal. MUFG expanded into American retail banking when it took full control of Union Bank during the financial crisis in 2008. It will hold on to its corporate- and investment-banking businesses in America, important providers of income.

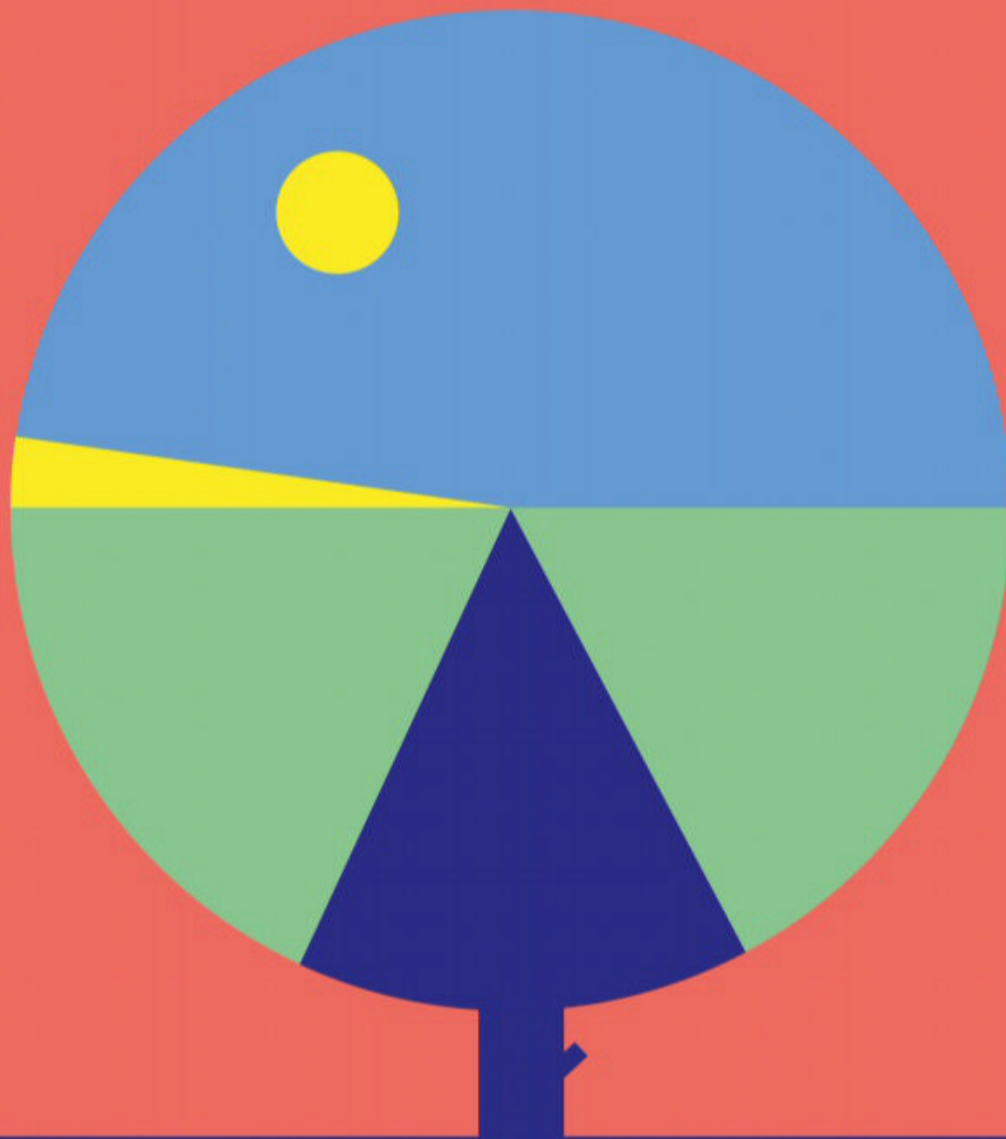
In a vote of confidence for the future of office working, **Google** announced that it would buy the building that serves as its hub in New York for \$2.1bn, even though it expects some employees will continue to work remotely.

Return of the salad days

In Britain a different indicator—the financial health of **Pret A Manger**—also suggested a rosy future for the office. The coffee-and-light-meal chain, a favourite of the lunch-time crowd, has seen its sales rebound in London's financial district. During the pandemic it closed stores across Britain, but now expects to open 200 new ones by the end of 2023. However, most of those will not be in city centres, Pret's traditional habitat, but in suburbs and regional towns.



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The mess Merkel leaves behind

As a much-admired chancellor bows out, her successor will face big unresolved problems

ONLY OTTO VON BISMARCK and Helmut Kohl served longer as Germany's chancellor than Angela Merkel has. Bismarck forged an empire, and invented Europe's first public-pension and health-care systems along the way. Kohl oversaw the reunification of East and West Germany and agreed to the replacement of the beloved Deutschmark with the euro.

Mrs Merkel's achievements are more modest. In her 16 years in the chancellery she has weathered a string of crises, from economic to pandemic. Her abilities as a consensus-forger have served her country and Europe well. But her government has neglected too much, nationally and internationally. Germany has got away with it, for now; the country is prosperous and stable. Yet trouble is brewing. And as Mrs Merkel prepares to leave office when a new government forms after an election this weekend, admiration for her steady leadership should be mixed with frustration at the complacency she has bred.

The list of neglected issues is long (see our Special report). Germany looks like a purring luxury car; pop the bonnet, though, and the signs of neglect are plain to see. The public sector has failed to invest adequately or wisely, falling behind its peers in building infrastructure, especially the digital sort. This hampers not just whizzy new tech firms, but every other company, too. It also makes government less effective, a problem exacerbated by a failure to hire enough staff. Penny-pinching is hard-wired into the state. In 2009, on Mrs Merkel's watch, Germany hobbled itself with a constitutional amendment that makes it illegal to run more than a minute deficit. With interest rates so low, sensible governments ought to have been borrowing for investment, not fainting at the first spot of red ink.

Germany's most severe domestic problem is a failure to reform its pension system. Germans are ageing fast, and the baby-boomers will place an even heavier burden on the budget later this decade as they retire. On climate change, Germany has also been sluggish, and still emits more carbon per head than any other big EU country, not helped by Mrs Merkel's shutdown of Germany's nuclear industry after the Fukushima disaster in Japan in 2011.

In Europe, where German influence matters most, Mrs Merkel's reluctance to wield it has been especially disappointing. The EU has not grappled sufficiently with the weakness of its indebted southern members. Only during the pandemic did it create a financial instrument that lets the EU issue jointly guaranteed debt, and dispense some of the cash as grants, rather than yet more loans. But this was designed as a one-off. Worse, the "stability" rules that will force countries back into austerity to shrink their stocks of debt are ready to revive, unless amended. Germany, always the most powerful voice at the EU table, should have argued harder for a more sensible approach.

In EU foreign policy, Germany could and should have been doing more to force a quicker adjustment to a less comfortable new world. China is an increasingly challenging economic and strategic rival, Russia an unpredictable threat and America a distracted and uncertain ally. Yet Germany has dithered. Despite re-

cent increases, it spends too little on defence. It cosies up to Beijing in the hope of better trading terms. It is giving Vladimir Putin, Russia's president, a chokehold over European energy supplies by backing the new Nord Stream 2 gas pipeline which, as it happens, makes landfall in Mrs Merkel's own constituency. It has fallen to others, principally France's president, Emmanuel Macron, to make the case for Europe to do more.

Which German candidate, though, could do better than Mrs Merkel? The polls suggest that Germany is set for a messy new parliament, with no single party, or even two, able to form a government. Instead, some sort of ideologically incoherent three-way coalition is on the cards—one that, by combining high-spending greens and pro-business liberals, may struggle to agree on anything ambitious.

This is another symptom of Merkelian complacency. Comfortable, cautious Germans seem uninterested in serious debate about the future. Crisis-management has become a substitute for initiative. Candidates have no incentive to highlight their country's looming problems. The result has been one of the least substantive campaigns for decades: all about the horse-race and not about the issues.

Of the possible outcomes, two seem most likely (see Europe section). One is a coalition headed by Mrs Merkel's party, the Christian Democrats and their Bavarian sister-party (the CDU/CSU), led by Armin Laschet. The other is a coalition led by Olaf Scholz, of the Social Democrats (SPD), who is Germany's finance minister. In either case, the coalition would be joined by the Greens and by the pro-business Free Democrats. Both outcomes will have serious shortcomings, but of the two, *The Economist* narrowly prefers the second: a "traffic-light" coalition, headed by Mr Scholz.

That is because the CDU/CSU, frankly, has blown it. Sixteen years in power has been enough. The party has run out of ideas and drive, as its decision to choose the gaffe-prone and uninspiring Mr Laschet for chancellor makes clear. An affable lightweight, he has run a dismal campaign, and is predicted to lead his team to its worst result since the second world war. The polls say that Mr Scholz is preferred by twice as many voters.

The tug from the left

Are they right, though? There are reasons to hope so, but also plenty to fear. Mr Scholz has been an effective finance minister. The German people trust him. He is better placed than a CDU chancellor would be to work with the Greens on climate change. The problem is that although he belongs to the business-friendly wing of his party, the SPD is stuffed with left-wingers. They may try to drag him further in their direction than the Free Democrats will wear and enterprise can comfortably bear.

The world should expect the coalition talks to last for months, poleaxing European politics while they drag on. And at the end of it all, Germany may well end up with a government that fails to get much done. That is the mess that Mrs Merkel has left behind. ■



America in Asia

Resurfacing

America is at last acting to counter China in Asia. But strengthening military ties is just the start

ALMOST TEN years ago President Barack Obama visited Australia's parliament to announce a pivot to Asia. "The United States is a Pacific power and we are here to stay," he declared. This week the White House will echo with similar sentiments, as the leaders of the Quad countries—America, Australia, India and Japan—gather in person for the first time. There will be talk of a "free and open Indo-Pacific", code for facing down an assertive China. The rhetoric will be familiar, but the reaction may not be: this time both friend and foe may actually believe it.

The reason is AUKUS, an agreement announced last week for America and Britain to supply Australia with at least eight nuclear-powered submarines. The deal has caused waves because of its huge size and because it caused an unseemly row with France, which had a submarine contract of its own with Australia that has now been abandoned (see Charlemagne).

This belies AUKUS's true significance, which is as a step towards a new balance of power in the Pacific (see Briefing). In a region where alliances have sometimes seemed fragile, especially during the presidency of Donald Trump, AUKUS marks a hardening of American attitudes. It is a decades-long commitment and a deep one: America and Britain are transferring some of their most sensitive technology. The three countries' co-operation promises to embrace cyber capabilities, artificial intelligence, quantum computing and more besides.

For this the Biden administration deserves credit. And yet the deal still amounts to only half a strategy. America's relations with China involve more than a military stand-off. In the search for coexistence, America also needs to combine collaboration over issues like climate change with rules-based economic competition. The missing parts involve all of South-East Asia, home to some of the countries most vulnerable to Chinese pressure. And here American policy is still struggling.

Lest that seem grudging, first consider AUKUS's merits. After Mr Obama's pivot, America's friends in Asia suffered a decade of disappointment. China seized and fortified rocks and reefs in the South China Sea, despite competing claims from countries like the Philippines and Vietnam. Last year its soldiers brawled with India's on the border. Its warplanes and battleships are constantly ratcheting up pressure on Taiwan, which it routinely hints it might invade. China has punished South Korea for perceived affronts with ruinous commercial boycotts. Many Asian countries were beginning to fear that America was too inconsistent and half-hearted to provide a counterweight.

AUKUS offers a rebuttal. One dimension is military. Amid the sea-lanes and islands that are flashpoints with China, nuclear submarines are more versatile than diesel-electric ones. They can gather intelligence, deploy special forces and lurk for months in deep water in the Pacific or the Indian Ocean, a threat that Chinese planners will have to factor in. In addition, AUKUS sets the stage for American forces to operate around Australia, which could serve as a haven from China's increasingly threatening missiles. The fact that Australia ditched the French deal for the Anglo-American one is evidence of strategic seriousness.

AUKUS's other dimension is diplomatic. In recent times Australia has borne the brunt of aggressive Chinese tactics, especially after it called for an investigation into the possibility that covid-19 escaped from a Chinese laboratory. As punishment for this and other grievances, China imposed an unofficial embargo on a series of Australian exports. China's belligerence is typical of the "wolf warrior" diplomacy that has caused consternation across South-East Asia and beyond. By reinforcing Australia, AUKUS sends a signal to the region that America has no qualms about backing allies that are resisting Chinese bullying.

The question is how America should complement the hard power of AUKUS with the engagement needed to trade with China and to work with it. President Joe Biden signalled his aspirations this week in his speech to the UN General Assembly in New York. Making clear that he did not want a cold war with China (although he did not refer to it by name), the president called for "relentless diplomacy" to solve the world's problems.

On the face of it AUKUS threatens this aim. And yet in the long run China will join global efforts to fight global warming not as a sop to America, but because it judges them to be in its interest. Just this week China said it will stop financing coal-fired power plants abroad (see China section). That was an easy promise, because such financing had already dwindled—but it was one China could have withheld to signal its anger.

Harder will be to strike the balance over commercial competition. Mr Biden's economic policy towards China sets out to increase national security by creating jobs at home, with a Maginot line of industrial aims, regulation and government intervention. His Build Back Better World, a mechanism for financing development, (which he did name-check at the UN) is a

pale imitation of China's Belt and Road Initiative.

Meanwhile China, already the biggest trading partner of most countries in the region, is strengthening its ability to shape the world's economic and commercial architecture. It is getting its people into important jobs in international institutions. It is exporting its domestic regulatory norms, as with, say, its claim to jurisdiction over international legal disputes. This week it applied to join the successor to the Trans-Pacific Partnership (TPP), a trade pact America championed to counter China and then withdrew from under Donald Trump (see Finance section).

South-East Asia looks to China for its prosperity, so for America to act as a counterbalance calls for deftness and imagination. One sign of how far America falls short is that even the most obvious path—joining the successor to the TPP—is seen in Washington as hopelessly ambitious. Almost as worrying, when America is attempting a ferociously complex balancing act, Mr Biden's diplomacy with France over AUKUS and his European allies over the pull-out from Afghanistan has been inept.

Celebrate AUKUS therefore. By signalling to China that its assertiveness has consequences, the pact stands to make South-East Asia safer. But remember that a deal over nuclear-powered submarines is just a down-payment on a broader China strategy that from here on will become increasingly hard to pull off. ■





New innings

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Energy shortages

Gas puzzlers

The first energy squeeze of the green era has important lessons for governments

YET ANOTHER crucial global market has gone from glut to shortage at breakneck speed. Last September in Europe it cost €119 (\$139) to buy enough gas to heat the average home for a year and the continent's gas-storage facilities were brimming. Today it costs €738 and stocks are scarce. Even America, which has an abundance of shale gas, has seen prices more than double—albeit from a much lower level—and could see further increases if its winter is a cold one.

The shortage has many causes (see Finance section). A cold European spring and a hot Asian summer boosted energy demand. Rebounding industrial production has lifted the global appetite for liquefied natural gas (LNG). Russia has been piping less gas into European stockpiles. Hawks suspect it of trying to spook the market and ensure its new Nord Stream 2 pipeline is approved. But it has also faced disruptions, including a fire at a processing plant in Siberia.

Gas has been plugging gaps in power production from other sources. The wind did not blow much in Europe this summer, while droughts interfered with hydropower output. The rising price of the permits needed to emit carbon in the EU has made coal expensive. So there is little alternative to burning gas for electricity as well as for heating homes.

Whereas the world economy's other bottlenecks—for container ships and microchips—have unleashed a capital-expenditure boom, investment in fossil fuels is in long-term decline. American shale can help only so much, because gas markets are imperfectly linked via LNG. High prices, when they strike, will serve mainly to ration limited supply. But it takes big price movements to curb demand. If the coming months are chilly, Europe's energy may have to become extremely expensive to persuade firms and households to use less.

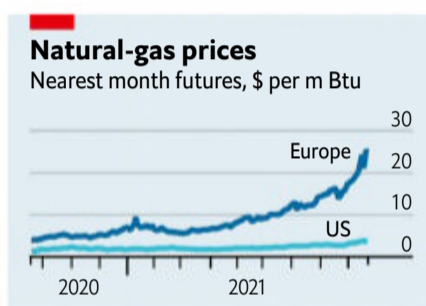
Sorting this out requires accurately diagnosing what has gone wrong. Governments have not made enough allowance for the intermittency of renewable energy. The world has too little nuclear power—a low-carbon energy source that is always on. Interventions and subsidies for gas will only make things worse. Expensive energy angers voters and hurts the poor. But subsidising energy in a squeeze, as Italy is doing, or capping prices, as Britain does, will exacerbate shortages and make politicians' commitment to greenery look empty. Governments should use the welfare system to support household incomes if they must, while helping energy markets work efficiently.

The long-term challenge is to smooth out volatility as the switch to renewables continues. Eventually cheap battery storage might solve the intermittency problem; right now, more gas storage would help too. In the meantime tweaks to the market could improve things.

In Britain many small energy suppliers which offer, say, one-year fixed-priced contracts to consumers, but buy energy at floating rates will soon fail (see Britain section). Getting

firms selling at fixed rates to hedge against wholesale price increases should encourage more physical storage of gas. Another idea is to invest more in connecting grids (a link between those of Britain and France recently failed) and in LNG infrastructure, so that arbitrage trades can even out disparities in the global supply of energy.

Dirty sources of energy should be expensive. But without reliable alternatives, price increases boost inflation, lower living standards and make environmentalism unpopular (see Bagehot). If governments do not manage the energy transition more carefully, then today's crisis will be the first of many that threaten the vital move to a stable climate. ■



The Evergrande crisis

Bail-outs and bedlam

Can “common prosperity” lead to financial stability in China?

CHINA'S VAST and opaque financial system has long posed a threat to its economy and the world. The agonies of Evergrande, a property firm with towering debts, are a reminder of how hard it is to manage the risks. The government is attempting to impose an orderly default on some of its creditors but faces the risk of contagion. The episode also highlights a bigger question of whether President Xi Jinping's crackdown on business will make it even harder to create a reformed financial system that is safer, more open and more efficient.

Part of what makes China's financial industry daunting is its size. Banking assets have ballooned to about \$50trn and they sit alongside a large, Byzantine system of shadow finance. Total credit extended to firms and households has soared from 178%

of GDP a decade ago to 287% today. The industry suffers from opacity, a lack of market signals and the erratic application of rules. Property is part of the problem. Families funnel their savings into apartments rather than casino stockmarkets or state-run banks. Real-estate developers raise debts in the shadow-banking system in order to finance epic construction booms.

As well as being big, the system is inefficient at allocating capital, dragging down growth. Nor is this a problem the world can ignore. Chinese firms have issued roughly \$1trn of dollar bonds, many of them snapped up by foreign investors. A liquidity crunch in China's economy would hurt global activity, from commodity markets to the sales of luxury goods.

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▶ \$300bn of liabilities, 80% of them short-term, Evergrande has a huge liquidity mismatch. It has struggled to cope with new government rules designed to curb excessive borrowing in the real-estate industry but which may now have backfired.

Bailing out financial firms can be distasteful but necessary—just ask the officials who rescued AIG and Citigroup. China's government is worried that a default could cause contagion in the bond market and shadow-banking industry and lead to job losses and stalled projects in the property sector, which underpins a fifth or so of GDP. As we went to press, it was unclear whether the government would blink and rescue the firm.

While the dilemma of “too-big-to-fail” is common, many elements of the Evergrande saga highlight China's shortcomings. Evergrande's statements about whether it has missed interest payments have been confusing, leaving investors in the dark. It is unclear if the formal hierarchy of creditors matters or whether the Communist Party's view of who counts will override it. The sense of opacity and political machination is part of a pattern. Huarong, a state-owned financial firm suffering from fraud, hid a \$16bn loss for months. It was eventually bailed out in August.

Evergrande shows the importance of deeper financial reforms. But what might they look like? Liberal reformers have longed for a clean-up of bad debts, a loosening of controls over prices (including the exchange rate), transparency and independent courts that can enforce property rights. Such a system would allocate capital better and be less prey to moral hazard.

Mr Xi's authoritarian regime helps financial stability in some ways: he sees excessive borrowing as a security risk and may terrify debt-hungry tycoons into being more cautious. The centralisation of power may make it easier to control crises at sprawling organisations such as Evergrande.

But his broad agenda to reassert control over the economy, information flows, courts and regulators cuts against the thrust of financial reform. Why would he want a more open capital account, which would raise the risk of capital flight following political purges, or private creditors to have stronger rights, or to delegate the role of picking tomorrow's industries to investors? Even if Evergrande escapes calamity, the consequences of Mr Xi's policies for the long-term health of the financial system are only just starting to sink in. ■

Multilateral institutions and China

Why Georgieva should go

A scandal over data and China has undermined the credibility of the IMF's boss

IN 2003 THE WORLD BANK launched a league table that assessed the ease of doing business in different countries around the world. By 2017 Li Keqiang, China's prime minister, grumbled that his country was lagging behind its peers. At his urging, officials began freeing entrepreneurs from red tape—and crimson ink. They cut fees, streamlined approvals, and began to use electronic seals instead of the traditional ink stamp on many documents.

China's progress illustrates the power of the bank's Doing Business rankings. Leaders have used them to motivate and monitor regulatory reforms, and like to boast about their country's progress. The IMF cited the rankings last year in arguing for lending to Jordan. The data help guide investors. And they have informed 676 of the World Bank's own projects (worth \$15.5bn) in the past decade, according to an as-yet-unpublished internal evaluation.

But with that profile came pressure. A new investigation has found that bank staff improperly altered the scores of China and three other countries. They wanted to spare China an embarrassing fall in the rankings in 2017, just as its reforms were gathering steam. According to the investigation, the China tweaks were carried out at the behest of the bank's then president, Jim Yong Kim, and his second-in-command, Kristalina Georgieva, who is now head of the IMF.

In a statement, Ms Georgieva has said she disagrees “fundamentally” with the findings and interpretation. In a meeting with IMF staff, she said she only asked bank researchers to triple-check the data. But the investigators found that she and the team explored a change in the bank's method (ie, including only one city per country) to engineer a better result. And, according to the bank's own review, the tweaks that were finally implemented introduced errors rather than removing them.

In her defence, it was her boss who initiated the extra tyre-

kicking. She had the higher motive of strengthening multilateralism. Scope for discretion had crept into the Doing Business indicators as they grew more elaborate over time. And a senior researcher assured her he could “live” with the revised report, although it is likely that neither he nor she knew exactly what tweaks had been made.

It is also true that institutions like the bank suffer from an inherent tension between their diplomatic duties and their scientific aspirations, as Paul Romer, a former chief economist of the bank, has pointed out. Reconciling the two is always difficult. Once the Doing Business rankings became so politically important to the bank's member countries, it should have brought in outside institutions, like think-tanks or universities, to help oversee them.

But although Ms Georgieva deserves sympathy, the episode does not sit easily with her present role at the IMF. The fund has an influential research department of its own. It is also the custodian of data standards for the world's macroeconomic statistics. The head of the IMF must hold the ring while two of its biggest shareholders, America and China, confront each other in a new era of geopolitical rivalry. Critics of multilateralism are already citing this affair as evidence that international bodies cannot stand up to China. The next time the IMF tries to referee a currency dispute, or helps reschedule the debt of a country that has borrowed from China, the fund's critics are sure to cite this investigation to undermine the institution's credibility.

That is why Ms Georgieva, an esteemed servant of several international institutions, should resign. After China's embarrassment was averted, she thanked a senior researcher for “doing his bit for multilateralism”. Now she too should do her bit for multilateralism by falling on her sword. ■





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When is it a war?

Members of Congress may “regret their votes” on the second Gulf war, but faulty intelligence was not to blame (“Wauthorisation”, September 4th). The admittedly flawed estimate on weapons of mass destruction in Iraq influenced few votes. The Senate voted 77-23 to authorise the use of force. Only six senators actually read the estimate and another dozen were briefed. The key factor was Democrats who did not want to vote against an ultimately successful war, as they had in 1990.

MARK LOWENTHAL

Assistant director of central intelligence for analysis, 2002-05
Reston, Virginia

You correctly concluded that there should be greater congressional oversight over the conduct of war. In fact it is not as difficult to “undeclare war” as you think. The “wars” against al-Qaeda and Iraq were never actually declared by Congress; it merely authorised the use of force. As Oona Hathaway has recently argued, the solution should be for Congress to include sunset clauses in any future authorisation, which ought also to comply with international law.

All use of force should be brought within the rule of law. War powers are assumed by the American president and other powerful executive branches around the world with timid or no oversight from legislative or judicial branches. We should be asking more questions when politicians claim to be “at war”.

ANDREW CLAPHAM

Professor of international law Graduate Institute of International and Development Studies (IHEID) Geneva

Speed dial number 3

Joe Biden’s first telephone call as president to a foreign leader was to Justin Trudeau, not Boris Johnson (“Yet another squabble”, August 28th). Indeed, Mr Johnson was not even

number two. That honour went to Andrés Manuel López Obrador.

NICHOLAS COGHLAN

Salt Spring Island, Canada

Pakistan and the Taliban

Maleeha Lodhi cherry-picked her facts when lecturing America on how to deal with the Taliban (By invitation, digital editions, September 9th). We may not expect a former Pakistani diplomat to discuss the role of her country’s intelligence services in grooming the Taliban or in harbouring Osama bin Laden. Yet since Ms Lodhi mentioned how furious Pakistanis were over the American operation that took bin Laden out, she might also have shown some empathy with the American people, who received a measure of closure (and not only Pakistani officials, who “were privately relieved”).

Perhaps American involvement in Afghanistan made Pakistani officials nervous, not only because it hampered their own designs on their unfortunate neighbour, but also because they feared they might be next to be targeted by American military might. Pakistan is suspected of supplying nuclear secrets (or worse) to regimes nobody would want to see with atom bombs.

AVEDIS HADJIAN

Venice

Legislate, don’t adjudicate

Regarding the anti-abortion law in Texas, you quoted Justice Sonia Sotomayor on the Supreme Court, who decried the Texas state legislature for undermining abortion-rights rulings (“Roe on the ropes”, September 4th). But the core problem is with *Roe v Wade*, the court’s ruling from 1973. By stepping in to legalise abortion, that decision warps the checks and balances at the constitution’s very heart, shifting policymaking authority from the most politically accountable branch of government, Congress, to the least, the Supreme Court. Remember Thomas Sowell’s

more general caution in “Knowledge and Decisions”, all the more looming 40 years on: the Supreme Court “neither obeyed a constitutional compulsion nor filled an institutional vacuum; it has chosen to supersede other decision-making processes.”

So when you say in a follow-on article that the court’s decision not to intervene in Texas is “bad...for the rule of law” (“Courting trouble”, September 11th), I’d respond that the court, precisely in *Roe*, long beat Texas to the punch.

DAN BRENDEL

Alexandria, Virginia

Fake/not fake

Social-media companies can help prevent the viral spread of conspiracy theories, you argue (“It’s all connected, man”, September 4th). Recall that Facebook spent months tagging discussion of the covid-19-origin lab-leak hypothesis as “false” and “debunked”; it is now taken seriously and could be correct. YouTube and Twitter have similar egregious examples.

CARL SCHWAB

Arlington, Virginia

Animal philosopher

More needs to be said about Aristotle’s contribution to the science of life (Biology brief, “On the origin of ‘species’”, August 28th). Around a quarter of the extant Aristotelian corpus is devoted to the first systematic, scientific investigation of the animal kingdom. Many of the 18th- and 19th-century biologists discussed in your essay were astounded at his accomplishments.

On Aristotle’s “History of Animals”, Georges Cuvier wrote that “it is difficult to understand how the author could have obtained, from personal observations, so many generalisations and aphorisms whose accuracy is perfect.” In a letter to William Ogle, Charles Darwin noted that “Linnaeus and Cuvier have been my two gods, though in very different ways, but they were mere schoolboys to old

Aristotle”. And Richard Owen, perhaps the greatest comparative anatomist of the 19th century, declared in 1837 that zoological science sprang from Aristotle’s labours: “we may almost say, like Minerva from the head of Jove, in a state of noble and splendid maturity.”

As someone who has spent decades translating these works, I can attest that none of the praise of Aristotle as a zoologist is overstated.

JAMES LENNOX

Emeritus professor of history and philosophy of science University of Pittsburgh

Art detectives

Ernst van de Wetering had a brilliant precursor who could also spot a Rembrandt (Obituary, August 28th). Hubert von Sonnenburg, a paintings conservator at the New York Metropolitan Museum of Art, carefully examined all the works attributed to Rembrandt in museums around the world. It took him 45 minutes to assess a painting. He came to similar conclusions to those of Van de Wetering and wrote a book about his findings, but lost the manuscript in a New York cab. He later published another book on the subject, “Rembrandt/Not Rembrandt”.

LUCIEN KARHAUSEN

Brussels

Muddled thinking

In considering whether to expect their employees to work while on holiday (Bartleby, August 21st), bosses might also like to reflect on the probable effects of 30-degree-plus heat, several beers at lunchtime and general “holiday brain” on people’s decision-making abilities. I know mine would not have been very trustworthy.

SYLVIA ROSE

Totnes, Devon

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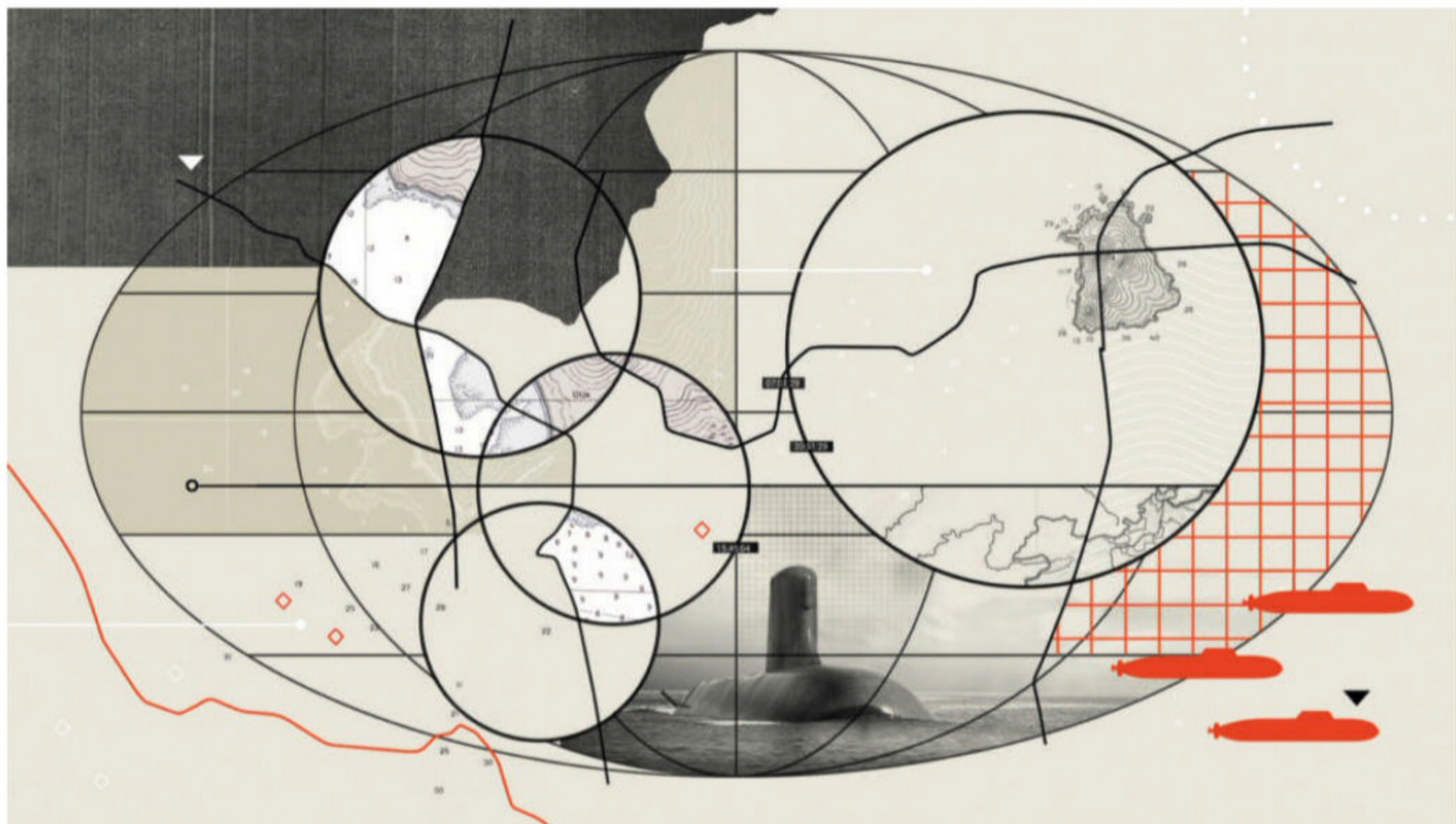
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Enter AUKUS

HONG KONG, PARIS AND WASHINGTON, DC

A major submarine deal underscores how the new theatre for great-power competition is maritime, playing out across the Indo-Pacific

IN THE EARLY 19th century, Chinese and Indian labourers in what is now Western Australia noted that the sweet-smelling logs being burned in the colony's fires were sandalwood—a valuable commodity in their native lands. By the 1870s Australian sandalwood was one of the colony's major exports, shipped from Perth to Bombay, Singapore, Hong Kong and Shanghai, where it was particularly prized.

Trade between the nations continued from then on, with Australia providing a range of raw materials, but never at a particularly impressive rate. Then China's market reforms took off in the 1990s, and with them an unprecedented appetite for coal and ores of all sorts. By the 2010s China was Australia's biggest trading partner, a hungry buyer not just of bulk materials but of high-end seafood and beefy shiraz.

For a long time Australia's political establishment ducked the need for a proper debate on the risks of basing the country's prosperity on trade with autocratic China and its security on an alliance with America. In the past couple of years Chinese high-handedness has made that contradic-

tion harder to ignore or to tolerate.

Late last year China laid out a set of 14 grievances that was striking in its scope, animosity and hypocrisy. It included Australia passing a law against foreign interference in domestic politics, blaming China for cyber-attacks and suggesting that Chinese journalists might be state agents. Australian lobster, wine, barley, coal, sugar and timber suddenly faced an unofficial Chinese trade embargo and piled up unsold. The case for viewing China as a long-term challenge to national interests was rested.

One result of this is a strong possibility that in the 2030s there will be new boats plying the old sandalwood routes north from Perth: a fleet of at least eight Australian nuclear submarines based on either America's Virginia class or Britain's Astute class, built with technology from some combination of the two countries' defence contractors. These submarines are the most dramatic component of an agreement between America, Australia and Britain called AUKUS which the three nations announced on September 15th. Negotiated

in the strictest of secrecy over a period of months, it envisages a wide range of diplomatic and technological collaboration, from cyber-security to artificial intelligence. But given that the three countries already collaborate closely in many areas—they make up, with Canada and New Zealand, the “Five Eyes” intelligence-sharing pact—it is the novelty of Australia's nuclear submarines that has garnered the most attention. And quite rightly.

As an arms deal it is big; at least eight nuclear submarines suggests a contract value in the tens of billions of dollars. As a strategic shift it is bigger. The pact is America's most dramatic and determined move yet to counter what it and others in the Indo-Pacific region see as a growing threat from China. As Stephen Walt of Harvard University writes, “it is a move designed to discourage or thwart any future Chinese bid for regional hegemony.”

The greatest immediate outrage, though, came not from China (see Chaguan) but from the opposite end of Eurasia. Although President Joe Biden stressed that AUKUS was about “investing in our greatest source of strength—our alliances”, America's oldest ally and Britain's physically closest one, France, had been stabbed in the back, as Jean-Yves Le Drian, its foreign minister, put it (see Charlemagne).

In 2016 Australia signed a contract for 12 diesel-electric “Shortfin Barracuda” submarines with Naval Group, a company in which the French state has a majority stake. On the very day of the AUKUS an-

► nouncement, according to the French defence ministry, Australia notified France that it was satisfied with the progress that the programme was making. After the announcement the Barracuda was dead in the water. On September 17th President Emmanuel Macron took the extreme measure of withdrawing France's ambassadors from Washington and Canberra (though not London, a sleight within a sleight conveying France's belief that Britain, as a tag-along in the troika, was beneath disdain).

France, the European Union's leading military power, will see its suspicion that the English-speaking allies are never really to be trusted as vindicated. The arguments for strategic autonomy engendered by that suspicion will now be made again, and perhaps acted on, both with respect to policy in the Indo-Pacific—where France has numerous territories, nearly 2m citizens and 7,000 troops—and elsewhere. Placating the French will in part be a matter of accommodating those arguments. In a phone call on September 22nd during which Mr Biden and Mr Macron “agreed that the situation would have benefited from open consultations among allies”, America recognised “the importance of a stronger and more capable European de-

fence, that contributes positively to transatlantic and global security and is complementary to NATO”. France's ambassador will return to Washington next week, but the lessons it has drawn will linger.

And as one door closes another opens. France and India joined again in a three-day naval exercise earlier this year; Mr Macron and Narendra Modi, India's prime minister, spoke this week. India will be delighted by the focused attention of a big arms supplier which is sympathetic to its notion of non-alignment. It would love some help with nuclear submarines, whether from France or AUKUS.

HMAS *Perfidious Albion*

The importance of nuclear submarines lies in the projection of force. Diesel-electric submarines like the Shortfin Barracuda can be very quiet indeed when in electric mode. As such they would be well suited to protecting Australia's coastal waters—better in some ways than nuclear-powered boats, which can never completely silence the hum of their reactors' plumbing. In deeper seas and when travelling greater distances, though, nuclear subs can hide between sound-muffling layers of warm and cold water and make use of their far

greater range and sustained speed.

A conventional sub dispatched to patrol the contested waters of the South China Sea from HMAS Stirling, the naval base in Perth which is home to Australia's submarine fleet, would be able to stay on station for just two weeks before returning for refuelling and upkeep, according to calculations by the Centre for Strategic and Budgetary Assessments, an American think-tank. A nuclear sub could lurk for as long as its crew could be fed (see map). Its missions there could include intelligence-gathering and disgorging special forces as well as holding Chinese surface ships and submarines at risk.

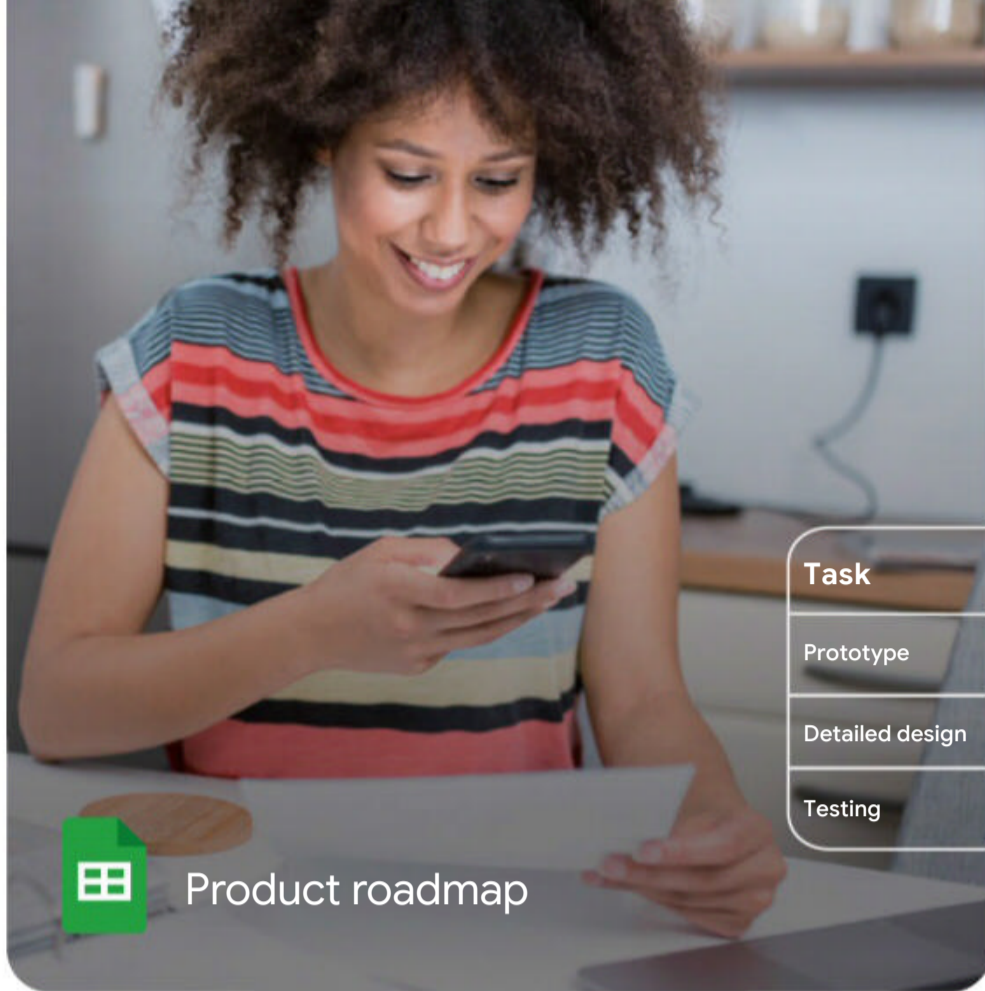
To go from a diesel-electric fleet to a nuclear fleet is thus a change of strategy, not just of propulsion. It provides a way to project power from the shipping lanes which feed the all-important Malacca Strait to the waters off Taiwan. Add on the capacity to launch much longer-range missiles—a submarine could deliver missiles to China's mainland while sitting to the east of the Philippines—and the country has a greatly expanded offensive capacity.

The new boats' specifications and exact provenance are to be defined during an 18-month scoping period. If, over the years that it takes for them to arrive, Australia does in fact lease one or two American Virginia-class subs to train crews and fill the gap, that would further strengthen its ties with America's navy. It would also spur the development of relevant infrastructure at HMAS Stirling and possibly also at Darwin on the north coast and Brisbane on the east, infrastructure visiting American boats could use too. A day after the AUKUS news came the announcement of a substantial increase in America's military presence in and around Australia.

Responding to the AUKUS announcement on September 16th, China's “wolf-warrior” government spokesman, Zhao Lijian, said the submarine co-operation “seriously undermined regional peace and stability, intensified an arms race and undermined international non-proliferation efforts”. While the source needs to be taken into account, the deal does raise potential proliferation issues.

The fact that a submarine is nuclear-powered does not mean that it must carry nuclear missiles (and Mr Biden stressed that Australia's would not). There are currently no American nuclear warheads capable of sitting on the sort of missiles that can be fired from the Virginia or Astute boats and thus, probably, the new Australian class. But if the new submarines use reactors like America's and Britain's, Australia will need the fuel those reactors use: highly enriched uranium (HEU) of the sort that is used to make bombs. Australia would not necessarily need to develop enrichment technology itself. Its possession of HEU provid-





Task	Owner	Deadline
Prototype	Susan	21/07/21
Detailed design	Susan + Tyrone	15/07/21
Testing	Rajan	10/11/21

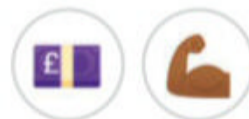


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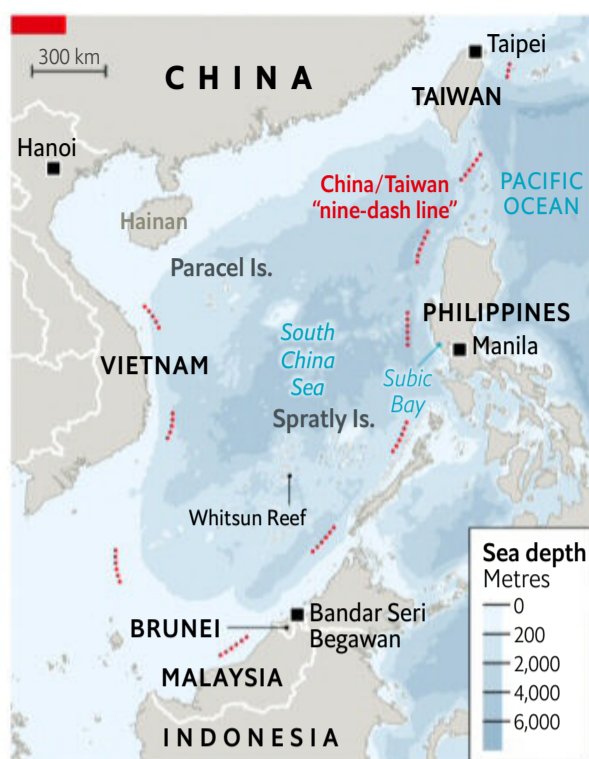


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ed by others would still make it unique among the non-nuclear-weapons states signatory to the Nuclear Non-Proliferation Treaty (NPT).

Unique, but not in breach: the NPT allows such uses. If Australia and the International Atomic Energy Agency, which polices the NPT, found a way for the HEU to be used on submarines and still kept under IAEA safeguards, they would be setting a precedent which might strengthen the treaty a bit. If they do not, the precedent could point the other way: if safeguards are not the norm, exploiting HEU for submarine propulsion might become cover for making bombs. South Korea recently showed it can launch a ballistic missile from a submarine—a capability most of the nuclear-weapons states have, but which no other non-nuclear-weapon state has ever seen a need for. Were it to start developing nuclear power for its submarines without IAEA safeguards, its motives would come under very close scrutiny.

If Australia's strategic stance is changed by the deal, so is America's. Since the second world war it has projected power across the region via what Bruce Cumings, a historian, calls an "archipelago of empire"—island bases from Hawaii in the east to Guam, Okinawa in Japan and, in the Indian Ocean, Diego Garcia, leased from Britain without the consent of its natives. In Australia, America has now, in effect, a beefed-up continent-sized base for its own operations as well as a reinvigorated ally.

This should slow—but not yet reverse—the shift in the maritime balance of power between America and China, which is sustaining spectacular levels of shipbuilding and missile-making. It also points to an emerging facet of security co-operation under Mr Biden; coalitions of the willing defined by what the counterparts want and are able to offer. Strong doses of pragmatism are likely to be features of the new, of-

ten transactional, arrangements.

One area where this should be seen is the Quad, a 14-year-old diplomatic grouping of America, Australia, India and Japan. The idea of a "free and open Indo-Pacific" originated with Japan, but has been taken up with gusto by the Quad's members. The Quad is broadly welcome in the region, because it gives smaller Asian states options other than Chinese ones. Beyond phrasemaking, though, it has not really achieved all that much. It has certainly not stopped China from threatening its members.

Japan faces daily challenges from Chinese aircraft and vessels around its uninhabited Senkaku Islands, which China claims as its own Diaoyu Islands. Not long ago, a high-altitude brawl between Indian and Chinese troops in the Himalayas turned deadly. In order to deal with overland threats, C. Raja Mohan of the National University of Singapore recently wrote in *Foreign Policy*, a magazine, India feels the need to protect its maritime flank. Having been shaken by America's precipitous withdrawal from Afghanistan, it sees in AUKUS welcome evidence of long-term American commitment.

On September 24th the Quad's four heads of government will meet for the first time in person, in Washington, DC—a token of revived intent and energy. There has been talk of India joining the other three members' "Blue Dot" initiative, which sets standards for transparency and environmental impact in infrastructure projects, and is intended to provide developing countries with an alluring alternative to China's Belt and Road Initiative. A vaccination programme unveiled at a virtual summit of the Quad in March aimed to get jabs into Asian arms, though not as yet to much effect.

How the Quad will work with AUKUS remains to be seen. It is possible that Japan,

which gave swift endorsement to the pact, might seek to join it; it is America's most important East Asian ally, it has done much to upgrade its security relationship with Australia and it has submarine expertise (though not of the nuclear sort). Perhaps more likely would be a "Quad+2" dialogue which, by bringing in Britain and France, allowed AUKUS, the Quad and the French to align their activities.

On a strait path

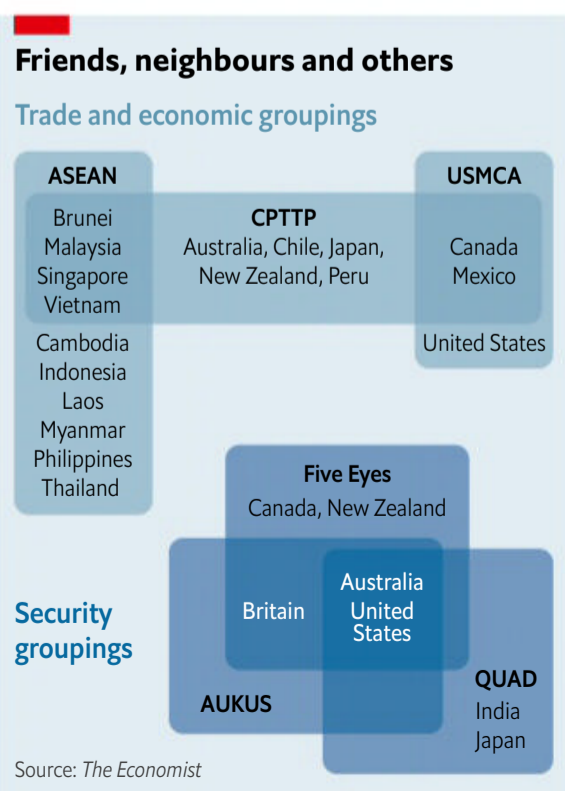
Another country which was quick to endorse AUKUS was Taiwan, which faces near-constant bullying from China—in one operation in early September, China sent 19 military aircraft, including nuclear-capable bombers, into Taiwan's "air defence identification zone". Sam Roggeveen of the Lowy Institute, a think-tank in Sydney, argues that Australia's new capabilities must surely lead to "heightened expectations that [it] will take America's side in any dispute with China [over Taiwan]".

The other major grouping in the region is ASEAN, a ten-member organisation which includes all the countries with coasts on the South China Sea other than China and Taiwan. It is in that sea that China's maritime expansionism is most sharply felt. Some four years ago it completed a massive terraforming programme there, destroying coral reefs to make way for huge artificial islands housing runways and fortifications.

That gave China forward bases from which to apply force to all the parts of the sea within the "nine-dash line" it asserts as the edge of its domain (see map). That such staging posts are necessary is a telling indication of just how far from China, and international norms, the line sits. Gregory Poling of the Centre of Strategic and International Studies, another think-tank in Washington, thinks China hopes they would prove strong enough to deny American air and surface forces access to the South China Sea in the event of conflict. It is worth noting that such denial, even if achieved, would not necessarily apply to submarines, which could still gain access to the sea's surprisingly deep core.

China's intimidation of other countries which claim parts of the sea, including Brunei, Malaysia, the Philippines and Vietnam, has largely been carried out through "grey zone" activities by the coastguard, survey vessels and fleets of Chinese fishing vessels forming "maritime militias". These activities can be highly effective. They had brought exploration for oil and gas in the waters of Vietnam and the Philippines to a halt—China demands joint exploration both out of resource hunger and as a way to force acknowledgment of its claims.

Bill Hayton, the author of "The South China Sea: The Struggle for Power in Asia", argues that China's aim is to establish a Si-



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▶ no-centric world in which client or satellite states in an expanding sphere of influence become compliant. But a penchant for the bully's stick and a sparing approach to the ingratiation's carrot has undercut its strategy.

When, in 2016, a tribunal in The Hague ruled that China's claims in the South China Sea were without merit, the new president of the Philippines, Rodrigo Duterte, made it clear he would ignore the ruling—despite the fact that it was a finding in his country's favour in a case his country had brought to the court. He expected an investment bonanza in return.

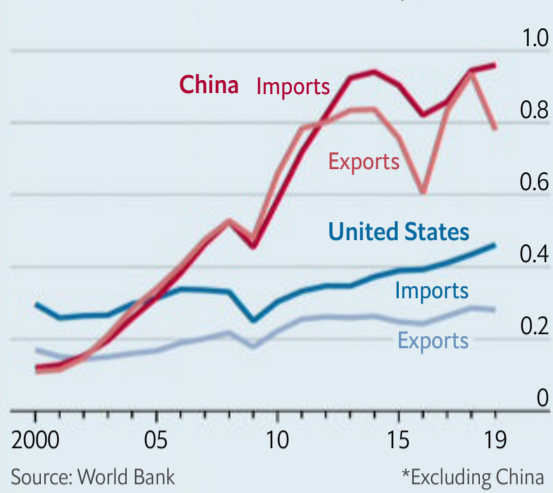
It did not transpire. Now Mr Duterte has tilted back towards America on the promise of covid-19 vaccines (Filipinos do not trust Chinese-made ones). The Philippines has renewed its protests over China's claims in the sea. Last March 220 Chinese fishing vessels showed up at the Whitsun Reef, which is within both the nine-dash line and the Philippines' 200-nautical-mile "exclusive economic zone". In response the country's foreign secretary, Teodoro "Teddy Boy" Locsin, tweeted: "China, my friend, how politely can I put it? Let me see...O...GET THE FUCK OUT."

Vietnam and Malaysia have now followed the Philippines in lodging objections to China's territorial claims with the UN. Mr Hayton contends that, overall, China's insular terraforming and flagrant bullying have left it with less influence than it had to begin with.

The Biden administration senses an opening through which it can simultaneously appeal to ASEAN's members and reshape the role some countries in the group play in regional security. In their visits to the region Anthony Blinken, the secretary of state, and Lloyd Austin, the defence secretary, have not demanded that ASEAN side with America against China

Commercial power

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while spouting bombast about democracy and freedom in the manner of Mike Pompeo, Mr Blinken's predecessor under President Donald Trump. They place new emphasis on practical, as opposed to geopolitical, beefs with China: the damage Chinese coercion is inflicting on the rights of Vietnamese gas drillers or livelihoods of Filipino fishers. They do not explicitly ask ASEAN countries to take sides and, as Derek Grossman of the RAND Corporation, an American think-tank, notes, American officials speak reassuringly of "guardrails" around America's fierce competition with China which will keep bystanders safe should things turn ugly.

Some members of ASEAN, such as the Philippines and Singapore, openly welcomed the advent of AUKUS. As one hard-nosed Singaporean strategist puts it, anything that maintains a balance of power in the region is desirable. Vietnam is likely to approve, too, if more quietly.

Others are more reticent. They realise that AUKUS is a challenge to the hallowed notion of "ASEAN centrality", a totemic rhetorical device which seeks to have others acknowledge its relevance and to keep great-power struggles away from its turf. The office of the new Malaysian prime minister, Ismail Sabri Yaakob, said AUKUS would "provoke other powers to act more aggressively in the region". (Given that China recently flew 16 military aircraft through Malaysian air space the base level of aggression is already pretty high.) It called, not for the first time, for ASEAN to be a "zone of peace, freedom and neutrality" or ZOPFAN, a call that the hard-nosed Singaporean strategist says is both backward-looking and bordering on the delusional.

In general, Mr Biden is making good use of the fact that, where China has only one proper ally (Pakistan) and few real friends, America still boasts formidable convening powers in the region. There is one signal way, though, in which America is failing to use its power: trade.

America's abdication of economic leadership was announced on Mr Trump's first

day in office, when he pulled America out of negotiations to establish the Trans-Pacific Partnership (TPP), at the time an ambitious 12-country free-trade initiative with detailed provisions and standards covering tricky issues such as intellectual property and state support for industry. The negotiations, which included four ASEAN nations, had been the central non-military pillar of President Barack Obama's "pivot to Asia"; as his vice-president, Mr Biden was a cheerleader for it. But congressional antipathy rules out any chance of him re-engaging with the idea.

This highlights two deep problems for America. One is that Mr Trump's term in office undercut old assumptions about America's reliability as an ally. Mr Biden is about as well known a quantity as it is possible to imagine in foreign-policy circles. But there is truly no way of knowing what might follow him. The other is that when it comes to trade, especially in Asia, where China has grown to great dominance (see chart), America is fighting with its hands behind its back.

On tech America can do things. You can imagine America finding ways to encourage Japan and India to work more closely with AUKUS on AI, quantum computing and other facets of modern security. Add South Korea and Taiwan, and you have an array of tech nations which would be in a powerful position to set open standards for next-generation technologies, offering countries an alternative to Chinese standards and thereby possibly marginalising it. Not so on trade more broadly.

A hole in the strategy

Though America's withdrawal from TPP was a huge blow to the others involved in the process, in 2018 efforts led by Australia and Japan helped bring a new version of the deal, known as the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), into being.

On September 16th, a day after the AUKUS announcement, China, which has struck bilateral agreements with many of its neighbours, asked to join the CPTPP (see Finance section). This may be intended more as a way of making mischief than as a serious attempt to join. (Taiwan responded by applying, too.) The reason that China pushed negotiations for a much less stringent 15-country trade deal, the Regional Comprehensive Economic Partnership, is that it has none of the CPTPP's requirements on labour laws and checks on state-owned enterprises, strictures that China would be hard put to live within.

But China's gambit makes stark the fact that America is unable to match it. And its lack of economic leadership remains, in the words of Bilahari Kausikan, Singapore's former top diplomat, "the big hole in American strategy". ■





Energy prices

Flaring up

Soaring energy bills are a problem for firms, households and the government

“THE HISTORY book on the shelf/Is always repeating itself.” So sang ABBA in the 1974 Eurovision Song Contest, in the song that catapulted the Swedish band to global fame: “Waterloo”. Half a century later those words seem apt. The band has reunited, with a new album due in November. Its members are going on a virtual tour, performing as CGI avatars that look like their younger selves. And in Britain, where ABBA dominated the charts for more than a decade after that Eurovision victory, echoes of the 1970s are growing louder, too.

Back then, Britain was struggling with energy shortages and industrial disruption. In 1974 the government limited many manufacturers to a three-day week. Today, Britain once again faces interrupted energy supply, empty supermarket shelves and government bail-outs. On September 20th Kwasi Kwarteng, the business secretary, promised Parliament that “there’ll be no three-day working weeks, no throwback to the 1970s”. As always with such political reassurances, the words mattered less than that they were considered necessary.

The backdrop is fast-rising global energy prices, especially for natural gas (see Finance section). They are painful for many countries, but particularly so for Britain. Since oil and gas were discovered off its north-east coast half a century ago, gas has generated much of its electricity and heated almost all its homes. But North Sea gas is running out; and as Britain has replaced coal-fired plants with wind power in order to reduce carbon emissions, it has become painfully dependent on natural-gas imports, especially in calm weather.

Compounding the problem, during the past decade the government has allowed upstart suppliers to capture a significant slice of the retail energy market with business models that left them ill-prepared to weather market turbulence. Now, in the run-up to the COP26 climate conference in November in Glasgow, Britain must choose between letting its energy market collapse and offering vast subsidies for fossil fuels.

The origins of the mess lie in the 1980s and 1990s, when privatisation created an oligopolistic energy market dominated by

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the “Big Six”, which paid their shareholders juicy dividends and their bosses fat salaries. The government responded to anger over high energy bills with further liberalisation, which created a fragmented market (see chart on next page). Some of the new entrants were innovative, such as Bulb, which offers consumption-tracking apps, and Octopus, which discourages consumption when demand is high with dynamic pricing. But most were thinly capitalised and produced no energy, merely buying it on global wholesale markets and selling it on. Some paid little attention to ensuring continuity of supply or hedging against price fluctuations.

Such me-too operations were always vulnerable to a demand squeeze. But the risks rose in 2017 with the closure of a big gas-storage facility, which left Britain able to store just 2% of its annual demand. Other big gas importers, by contrast, can store 20-30%. And the risks rose further in 2019, when the government capped consumer prices in response to continued grumbles about high energy bills.

The perfect storm came this summer. As pandemic restrictions eased, global demand for energy rose. Gas supply in Russia, a big producer, was disrupted, and unusually calm weather stilled British wind turbines. In August Ofgem, the industry regulator, said that from October the price cap would rise by 12%. But since then the wholesale price of gas paid by British energy firms has risen by more than ▶▶

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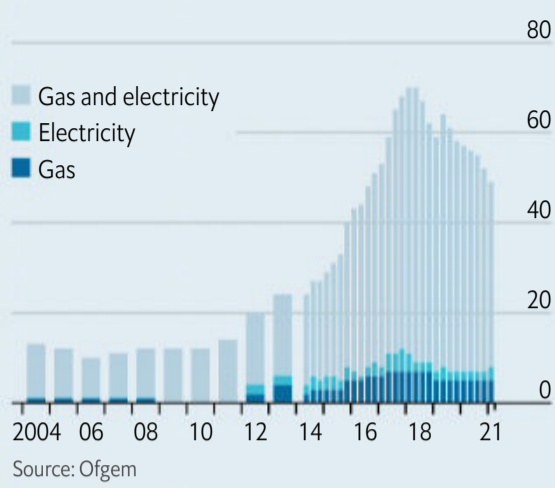
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Fuel gauge

Britain, number of domestic fuel suppliers



▶ 70%. The result is that British energy firms are tied into contracts to supply gas to households at far less than they must pay to get it. Seven have failed since August, and industry insiders say that without government intervention, dozens more will. Ofgem, says the boss of one of the bigger firms, has been “asleep at the wheel”.

Some energy-intensive businesses found themselves thrust into a no-day week. CF Industries, an American-owned fertiliser company, ceased production at its two British sites, saying it was no longer economic. The effects rippled through the food-supply chain. Commercial carbon dioxide (CO₂), a by-product of fertiliser production, is used to stun animals before slaughter, package fresh food and keep food cool during transport. In normal times, CF Industries accounts for more than half of Britain’s supply. The British Meat Processors Association, a trade body, warned of imminent meat shortages.

On September 21st the government announced that following talks, CF Industries would be restarting CO₂ production. Subsidising its energy prices would, admitted George Eustice, the environment secretary, cost “many millions”.

The government can expect to have to fork out much, much more. When a retail energy firm fails, Ofgem transfers its customers to another provider. This year, however, the survivors are reluctant to take on what may add up to millions of loss-making accounts. Ofgem is likely to raise the energy-price cap again next spring, but not by enough to bring bills in line with global prices. So the government is considering underwriting losses from transferred customers, or forming a temporary, publicly owned and loss-making firm to supply them over the winter.

Either option will be expensive. Precisely how expensive depends on how many firms fail, how soon and how high gas prices go. Officials say they hope that the cost to taxpayers can be kept “in the billions”. After a decade of neglecting energy security, the bill is coming due. ■

Class

Baron net

Debrett’s, a guide to toffs, goes digital

DROPDOWN MENUS can be telling. Buy a subscription to the *Times*, a conservative paper, and under the “Titles” option it offers you a duly conservative selection: “Mr”, “Mrs”, “Miss”, “Ms” and “other”. The left-leaning *Guardian* offers no titles at all. Debrett’s is different. It offers not merely “Mr” and “Mrs” but also “Lord”, “Lady”, “Sir”, “Hon.”, “Capt.”, “Col.” and “Rev.” Signing up is less like online shopping than assuming a part in a Jane Austen adaptation.

Dropdowns are needed because the publication has just gone digital. This is in many ways disappointing. Debrett’s Peerage & Baronetage, a snob’s guide to Britain’s aristocracy, feels as though it ought to be written on vellum and served by butlers, rather than hosted on internet servers. Austen’s “*Persuasion*” opens with Sir Walter Elliot thumbing the Baronetage’s much-loved pages. Nancy Mitford mocked its chronicles of “ancestors with P.G. Wodehouse names” and “Walter Scott fates”. In Evelyn Waugh’s “*Brideshead Revisited*”, when Sebastian Flyte is asked about his family, he says crisply: “There are lots of us. Look them up in Debrett.”

Its tissue-fine pages used to whisper discreetly of a forgotten world, one of silver spoons and iron conventions that covered the correct way to address a duke (“Your Grace”); a duke’s daughter (“Your Ladyship”) and “*Divorced Ladies*” (however you like). But as times change, so must formats. When the queen has a Twitter account (@RoyalFamily) and 4.6m followers, it was perhaps inevitable that Debrett’s

would move online.

It has also branched out, not quite selling the family silver but allowing the lower classes to gaze on it, like an aristocrat opening the country seat for afternoon teas. It offers advice on etiquette, including table manners (“it is vulgar to bite into bread”); Zoom (“never eat on-screen”); and social kissing (“under no circumstances should there be a suggestion of saliva”).

Keeping it perfectly up to date is, says Wendy Bosberry-Scott, its editor, all but impossible, since “people are born, get married and die every day”. Here, being digital is an advantage. One year a particularly important duke died the day it went to press: Debrett’s had to call the printer and replace the page. “It cost a fortune.”

The entire database, dating back to 1769, is now searchable: 2,000 hereditary titles, more than 700 life peers and around 150,000 assorted relatives—or, as Debrett’s calls them, “collateral” (aristocrats, like accidents, cause fallout). Even including collateral, it covers little more than 0.2% of the British population. It is an influential 0.2%, including many prominent politicians, among them David Cameron, the former prime minister whose rash decision to hold a referendum unexpectedly took Britain out of the European Union (motto: “Prudently and Constantly”).

But Britain, though still class-ridden, is less dominated by titled toffs today. In the 1860s, three-quarters of MPs were from patrician backgrounds; now they are exceptions, not the rule. This is good for Britain, but bad for Debrett’s. Walk into a library in 1900 and you would have found shelves of such volumes: Debrett’s, “*Burke’s Peerage*” and “*Kelly’s Handbook*”: class bound in red cloth. Now Kelly’s has gone; Burke’s was last printed in 2003; and the most recent print edition of Debrett’s, in 2019, had a run of just 700. It was almost certainly the last. As few know better, things are born, and die, every day. ■



Nan to her friends

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Reviving Labour

North-south divide

EDINBURGH

Recovery in Westminster requires making headway in Holyrood

AS LABOUR MEMBERS prepared for the party's conference in Brighton, starting on September 25th, their leader, Sir Keir Starmer, guaranteed fireworks by proposing a change to how his successors would be selected. If he gets his way, out goes the one-member-one-vote system introduced in 2014 and back comes an electoral college, with votes split between MPs, party members and unions. It is an attempt to sideline the left-wingers who led Labour to electoral disaster under Sir Keir's far-left predecessor, Jeremy Corbyn.

Sir Keir has a fight on his hands. "Deeply undemocratic," fumed Mr Corbyn. A prominent member of Momentum, the radical faction around Mr Corbyn, threatened "civil war". And even if he succeeds in pushing through his proposals, he must then focus on winning back the "red wall" seats lost to the Tories in the English Midlands and north, and to the Scottish National Party north of the border.

In 2015 Scottish Labour returned a single MP to Westminster. It picked up a handful of seats in the snap election of 2017 but lost them again two years later. It has also shrivelled in the devolved administration, with 22 seats, behind not just the governing Scottish National Party (SNP), but the Tories, who have 33. "Scotland was the first red wall to fall," says Anas Sarwar, a former dentist who became Scottish Labour's leader earlier this year. "And unless we build it back, the party will keep losing."

How hard that will be has been highlighted by recent research from the Scottish Election Study (SES), a group of academics. It showed that almost all Scottish voters (92%) take a position on whether to break away from the United Kingdom, and that of those, 91% align their vote for the Scottish parliament with that position. Furthermore, says Ailsa Henderson of Edinburgh University, who runs the SES, in recent years Scottish votes for seats in Westminster have come into line with those cast for the Scottish Parliament. "There's now very little proper split-level partisanship, with people consistently backing one party at Holyrood and another at Westminster."

The SNP thus scoops up the votes of the almost half of Scots who support independence, leaving the three main national parties to fight over the rest. Unless Sir Keir and Mr Sarwar can break that link between pro- and anti-independence positions, on

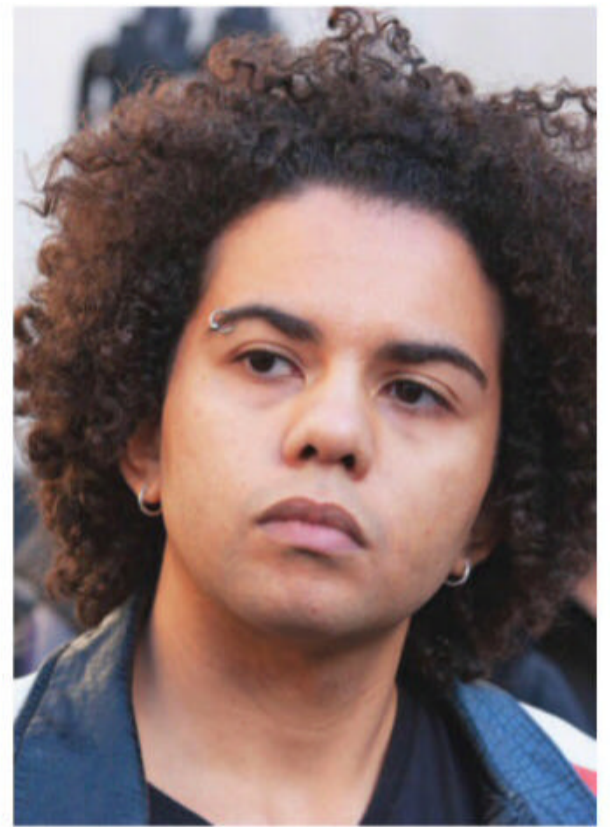
the one hand, and party loyalty on the other, the prospect is therefore not just endless nationalist government in Holyrood, but at most a handful of Labour MPs—and probably permanent opposition for Sir Keir's party—in Westminster.

Until voters think Labour capable of forming a government in Westminster, says Mr Sarwar, they will be reluctant to vote for it in Scotland. He is seeking to link the "twin nationalisms" of the Tories and the SNP in Scottish minds, and to offer a positive vision of a united Britain. Labour needs to wrest the task of defining Britishness back from the hands of the prime minister, Boris Johnson, he says, and that of defining Englishness from Nigel Farage, a long-time foe of the European Union, and—a rather less glowing version—from Nicola Sturgeon, the SNP's leader.

It was Scottish Labour that led the party back to power nationally in 1997, points out Sir Alistair Darling, who won an Edinburgh seat a decade earlier and went on to serve as chancellor of the exchequer. "We won seats in areas Labour never had before. We were ten years ahead of the UK party." On the doorstep he would hear how much voters disliked the hard-left administrations running London and Liverpool, but that when it came to general elections, they were willing to cast their vote for "our kind of Labour". ■



Mr Sarwar needs a Pied Piper



Gender medicine

Kicking it back downstairs

A court puts decisions about gender medicine back in doctors' hands

DECISIONS ABOUT medical treatments are usually made in doctors' offices, not the Victorian splendour of the High Court in London. But in 2020, three judges ruled that children under 16 would be unlikely to be able to consent to one particular medical treatment—the administration of puberty-blocking drugs to those suffering from gender dysphoria, a deep discomfort with one's sex.

On September 17th the Court of Appeal overturned that ruling, saying that decisions about whether to prescribe puberty-blockers should be left to doctors. The ruling might seem of interest only to specialist medical lawyers. But the legal saga has been watched around the world, for gender dysphoria is a fast-growing diagnosis and the treatments prescribed for it are controversial. Referrals to the Gender Identity Development Service (GIDS), England's only dedicated youth clinic, have risen from 77 in 2009-10 to 2,383 in 2020-21. Other rich countries have seen similarly sharp rises.

Proponents describe the treatments as life-saving. Sceptics point to the lack of clinical evidence showing that they work, and to worries about severe side-effects later in life. After the original ruling, GIDS suspended puberty-blocker treatments for new patients.

The original case had been brought by Mrs A, the unnamed mother of a child with gender dysphoria, and Keira Bell, a 24-▶

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► year-old who had been prescribed puberty blockers at GIDS at the age of 16. Ms Bell went on to take cross-sex hormones and to have her breasts surgically removed, only later to regret both decisions. The original ruling referred to the lack of evidence regarding whether puberty blockers actually help alleviate gender dysphoria, and noted that almost all patients prescribed them go on to take cross-sex hormones. These lead to irreversible changes, including the development of cross-sex characteristics such as breasts and beards, and raise the risk of infertility. With all that in mind, the judges ruled that under-16s were unlikely to be able to understand and weigh up the lifelong consequences sufficiently well to consent to taking them.

The Court of Appeal however, decided that the lower court had, in thus venturing into clinical waters, gone beyond its proper remit. Previous case law, it said, had established that decisions about the wisdom or otherwise of medical treatments—even controversial or disputed ones—were best left to doctors. It noted that the original judgment had not found that the Tavistock and Portman NHS Trust (which runs GIDS) had broken the law, and ruled that the case should have been dismissed as soon as that had been established.

Ms Bell's supporters hope to appeal to the Supreme Court. But most lawyers seem to think a further appeal would have little chance of success. "I found the Court of Appeal's judgment a very compelling read," says one who has followed the case closely. It is unlikely, says another, that the Supreme Court would want to revisit what is widely seen as a settled area of law.

But kicking decisions back to doctors does not mean that the wider argument about puberty blockers is over. Medical opinion in several countries is becoming more cautious. The National Institute for Health and Care Excellence reviews the scientific underpinning of medical treatments in Britain. In March it said that the standard of evidence for puberty blockers, and for cross-sex hormones prescribed to teenagers, was "very low". In the same month the prestigious Karolinska Hospital in Sweden cited lack of evidence in its decision to stop prescribing puberty blockers or cross-sex hormones to teenagers, except in clinical trials. Finland recently revised its guidelines to prioritise talking therapies over drugs. An NHS review of gender medicine is due to report later this year.

And the Court of Appeal noted that, although medicine is generally best left to doctors, there are limits to their discretion. "Clinicians", it wrote, "would be alive to the possibility of regulatory or civil action which allows the issue of whether consent has been properly obtained to be tested in individual cases." The arguments are far from over. ■



Liberal Democrats

Yellow Tories

Liberal Democrats are courting Conservative voters

“THE TRUTH is, this government is picking on a whole set of British people playing to the worst common denominator, which is disgusting.” Boris Johnson “is not a decent prime minister”, but a “bully”. Having wrapped up the Liberal Democrats’ conference on September 20th, Sir Ed Davey, their leader, is not pulling his punches. His criticisms of Mr Johnson are part of an effort to peel off Tories in marginal seats who, he hopes, are repelled by the government’s stance on culture-war issues and angry at its incompetence.

In 2020 Sir Ed became the Lib Dems’ fourth leader in five years. Since their electoral collapse in 2015, the party has been in turmoil. An attempt to regroup by consolidating anti-Brexit voters behind it in 2019 failed. Nine of its 12 MPs have served less than five years. Sir Ed hangs his hopes on two voter groups: liberal Tories turned off by Mr Johnson’s populism and centre-left liberals. These voters are likely to be young graduates, and to say they value diversity and donate to human-rights charities.

Taken together, the two groups could conceivably enable the Liberal Democrats to chip away at the “blue wall”: seats in the south and south-east metropolitan fringe. Their voters are keener on moderate, centrist Toryism, and growing numbers of graduates have moved to such places in the past decade. Lib Dem leaders make much of their party’s surprise by-election victory

in June in the formerly safe Tory seat of Chesham and Amersham, two market towns connected to the capital by the last two stops on the Metropolitan tube line.

According to a paper by UK in a Changing Europe, a think-tank, another 33 seats could be within reach. They would require heroic levels of tactical voting, with pretty much all Labour and Green voters consolidating behind the Lib Dems in seats where it is the Tories’ main challenger. Some would also require a swing from the Tories to the Lib Dems of the order of 5%. But the Chesham and Amersham victory gives the party leadership hope.

Sir Ed’s criticisms of Mr Johnson are thus aimed at the ears of “soft Tories” whom he hopes to persuade to defect—as are several of the party’s recent policy decisions. On some subjects, they make Lib Dems sound remarkably like Tory backbenchers. These include housebuilding and vaccine passports (against and against). Sir Ed does his best to describe both stances as consistent with Liberal Democrat traditions of devolved decision-making and opposition to government overreach (they have long opposed identity cards). But the fact that homeowners in leafy shires rarely welcome housing development, and that small businesses oppose vaccine passports, is no coincidence.

Such political cross-dressing brings with it a big risk, however: alienating everyone else who might vote for the party. Most Britons support vaccine passports, and most young people regard building lots more houses as essential if they are ever to be able to afford to own a home. Even trickier may be navigating the culture wars. The party’s new president, Mark Pack, wants to appeal to young liberals by signalling that the party shares their progressive values.

On topics such as Black Lives Matter, where much of the country ended up supporting the English football team’s decision to kneel during the national anthem before matches—and some Conservative culture warriors did not—this is probably good positioning. Trans and gender-identity issues are less clear-cut. Tory voters are on average pretty sceptical. Young Lib Dem activists may have applauded Sir Ed’s insistence during interviews in the run-up to conference that no public spaces should be allowed to remain female-only, not even rape-crisis centres or sporting competitions. But it is unlikely to have done much to persuade potential Tory switchers.

Sir Ed brushes off further questions on the matter. “It seems to be the media that is obsessed with this issue,” he says. Still, says an activist hoping to be selected as a Lib Dem candidate in the next election, it is unlikely to make it into the party’s election materials alongside pledges to improve social care or to reform planning. ■

Hong Kongers

The YouTube migrants

SUTTON

Britain's newest immigrant group is unlike any previous one

ON A SUNNY afternoon hundreds of Hong Kongers, many so new to Britain that they have not lost the habit of outdoor mask-wearing, have gathered in Beddington Park in the south London borough of Sutton. Trish Fivey, the mayor, gives a short speech welcoming them. Sutton is already multicultural, she says. She looks forward to another group joining the mix.

It is a fine sentiment. But the Hong Kongers are quite different from other immigrants, including other ethnic Chinese. Many have a distinct legal status and are socially atypical. They live in specific places, which they chose in a novel way. They have created distinctive self-help groups. In just a few months, they have begun to rewrite Britain's immigrant story.

Cantonese speakers have settled in Britain for decades, though not in great numbers. Some early migrants ran Chinese restaurants, which were ubiquitous enough by 1945 to let George Orwell describe them as standard destinations for natives seeking good cheap meals. But the latest rush began recently. In June 2020 Beijing passed a national-security law that criminalised much political activity in Hong Kong. Seven months later the British government created a new visa that enabled many Hong Kongers to settle. By the end of June this year 65,000 people had applied.

Most new migrants globally are young and unencumbered. In 2019 more than two-thirds of immigrants to Britain were aged between 15 and 29, according to the International Passenger Survey. A survey

by Hongkongers in Britain, a self-help group, however, found that the average age of Hong Kong residents intending to come to Britain was 37. More than two-thirds are university-educated, and the majority have children.

One reason for the odd demographic is that the new visas are designed for people born before 1997, when Britain relinquished control of Hong Kong, and their dependents. Another is that parents are especially keen to flee. In February Hong Kong's government ordered schools to curtail "political or other illegal activities" and cultivate "a sense of national identity" and "law-abiding awareness"—all code for obedience to the Communist Party.

Middle-class Hong Kongers' anxieties about the suppression of democracy and civil liberties are mixed with a desire to give their children more options in life. British citizenship, which they can obtain after six years, will provide that. One recently arrived Hong Konger in Bristol, who wishes to remain anonymous, says that she began to think about living abroad several years ago, when her daughter was born. She left in a hurry as the political situation in Hong Kong deteriorated.

The 2011 census of England and Wales found 102,000 people who had been born in Hong Kong. They were concentrated in cities such as Manchester and in inner-London boroughs like Camden and Westminster (which includes Chinatown). The new arrivals, by contrast, are heading straight for suburbia. They favour unexcit-

ing London boroughs such as Kingston upon Thames and Sutton.

They flock to such places because they rely on the same advice as each other. Richard Choi of the Sutton Hongkongers Group says that many listen to online influencers known in Hong Kong as "key opinion leaders", or KOLs. In Cantonese-language YouTube videos, KOLs discuss the relative merits of British cities and districts, as well as school-inspection reports, rail fares and how to find reliable builders.

They can be frank. One YouTuber, Ophelia Chan, recommends Milton Keynes partly because it is modern (which, along with its suburban character, is what some Britons find objectionable about it) and points out that you can take a bus directly to Bicester Village, a shopping outlet. She calls Birmingham crime-ridden, underlining her point with a graphic of a masked bandit. Like others, she is keen on Sutton.

Perhaps the most extraordinary thing about the Hong Kongers is the speed with which they have organised themselves. In little more than a year, several well-run groups have sprung up to help migrants settle in and to lobby on their behalf. They have conducted surveys, arranged housing, legal advice and English courses, organised walking tours, testified in Parliament and much more besides.

Sadly, this self-reliance is not a choice, but a necessity. Newly arrived Hong Kongers often fear recently established Chinese community groups that are aligned with the government in Beijing. Jabez Lam, a veteran organiser at the Hackney Chinese Community Service, says that most Hong Kongers who ask him for help will not give their names. They are right to worry about hostility from other Chinese people, he says. He was roughed up in Chinatown after defending pro-democracy protesters in Hong Kong.

Hong Kongers' groups have two ambitions. First, they want migrants to integrate rapidly. Hence the English lessons, an enthusiasm for working with churches and gatherings like the one in Sutton, which brought Hong Kongers together with locals. "If Hong Kongers just get together with Hong Kongers, it doesn't help—it's another Chinatown," explains Mr Choi. The groups stress that the migrants' values, such as a belief in freedom and democracy, are also British ones.

Second, they want Hong Kongers to think of themselves as a community in exile. "Hong Kong is not only a place any more. It's a diaspora, sharing values," says Simon Cheng of Hongkongers in Britain. However comfortable and integrated they become, he thinks, Hong Kongers must remember why they had to flee. Asked if he has a model in mind, he points to British Jews. The newest group to arrive in Britain wants to emulate one of the oldest. ■



On the road to Milton Keynes

Bagehot | Dirty politics

An anti-green backlash could reshape British politics as radically as Brexit did



WHATEVER A BRITISH voter's natural political hue—Tory blue, Labour red or Liberal Democrat orange—these days it ends up green-tinged. The Tory government talks effusively about “building back greener”. Labour wants a “green industrial revolution”. Liberal Democrats have used their position as the third party to argue for everybody to go further and faster. And then there are all the people who want to raze the carbon economy to the ground the day after tomorrow: not just the Green Party but also extremist groupuscules such as Extinction Rebellion and Insulate Britain.

Which leaves a gap in the market for something different: anti-green politics. Brexit transformed Britain by tapping into ordinary people's resentment of distant elites, and anti-greenery could do the same. Environmentalism is driven by populists' two big bogeymen, scientific experts and multilateral institutions. Green campaigners vie to befuddle the public with acronyms and jargon. Multilateral institutions override democratic legislatures in order to co-ordinate global action. In the public mind, greenery is coming to mean global confabs that produce yet more directives, and protesters who block city centres and motorways.

Greenery suffers from the classic problems of technocratic policymaking, namely offering distant rewards in return for immediate sacrifices and imposing uneven costs. Over-50s, the most reliable voters, won't be around to see the world boil. Poorer people are likely to suffer more than richer ones from the green transition, not just because they have less disposable income but also because they are more likely to work in the dirty economy. The impression of injustice is reinforced by the fact that many of the most vocal green activists have a material interest in the green economy as bureaucrats, lobbyists and entrepreneurs.

A fuel-price rise in 2018 inspired France's *gilets jaunes*; Germany's Alternative für Deutschland and Finland's Finns Party have lambasted green hysteria. In Britain, by contrast, anti-greenery is still nascent. Some on the Tory right have complained that their party is in the grip of the green lobby. A few MPs in the “red wall”—once-safe Labour seats in northern England that turned Tory over Brexit—have warned that green levies on driving could see those voters switch back again. The closure of some London streets to through-traffic has sparked protests.

But such rows are about to get a lot louder. Turbulence on the global energy market is drawing unflattering attention to British energy suppliers, which are struggling with the transition from coal- and gas-fired plants to renewables. The more the business secretary, Kwasi Kwarteng, says about there being “absolutely no question of the lights going out”, the more consumers will worry. And other environmental policies on the horizon will also hit them hard. From 2030 the sale of new petrol and diesel cars will be banned. The electric cars that will replace them are rapidly improving, but not yet as cheap or as convenient. For city-dwellers it is hard enough to find parking without having to look for a charging-point too, and long journeys require planning.

Since the discovery of gas in the North Sea in 1965, most British homes have used the fuel to heat their homes. But the government plans to take gas-fired boilers off the market in the coming years, to be replaced by hydrogen boilers or heat pumps. The date for the switchover is slipping, since neither technology is ready for mass roll-out. Air-source heat pumps are larger than gas boilers, produce lower temperatures and cost much more. People's enthusiasm for greenery may reach its limits if familiar, well-functioning products are replaced by more expensive, inferior ones.

In the past decade climate-change denialism has given way to something cannier and harder to pin down. Nigel Farage, the former leader of the UK Independence Party and a major force behind Brexit, claims that he is as green as the next man—indeed that he voted for the Green Party back in the 1980s—but that he's in favour of “sensible environmentalism” rather than the establishment kind that taxes “poor people to give money to rich people and big corporations while China's going to ignore it all”.

Anti-greens are also seeking to reshape politics indirectly: not just by creating new parties, but by changing the hue of the established ones from inside. For neither of Britain's biggest parties is as deep-dyed green as it appears to onlookers. The Conservative Party certainly has big names who preach environmentalism, like Zac Goldsmith, a posh Brexiteer. But it has always also been the party of homeowners who care about their energy bills, motorists who want to get the last mile from every gallon and older people who don't want to change their ways. More recently, they have been joined by red wall voters with little spare cash. Labour, for its part, is an uneasy coalition of graduates, who cheer every green initiative, and lower-paid workers, who are nostalgic for the days of well-paid jobs in heavy industry and primarily concerned with making ends meet.

Hot air emissions

How to avert an anti-green backlash? Politicians need to avoid unforced errors, such as switching over from gas boilers before reliable replacements are ready. They need to shield vulnerable groups from the costs of the energy transition, remembering how the mood turned against globalisation when politicians failed to honour promises to compensate the losers. They need to see the world through the eyes of people who accept that climate change is a problem but must ceaselessly struggle to get by in the here and now. The prime minister, Boris Johnson, won easy applause at a UN round table on climate action this week by expressing frustration that the “something” the world is doing to limit global warming is “not enough”. The audience he really needs to convince is the one that laughed along to his provocations before he re-entered Parliament in 2015, such as mocking wind power as too weak to pull the skin off a rice pudding. ■



Germany's election

The hunt for the Merkel middle

BERLIN, CELLE, FRANKFURT AND MUNICH

None of the politicians vying to succeed Germany's outgoing chancellor has her knack for appealing to a centrist electorate

THE MOOD among her comrades is “euphoric”, says Sonja Hergarten, a volunteer for Germany's Social Democratic Party (SPD) at a campaign stand in Munich's university district. At the last election, in 2017, she had the unenviable task of persuading Germans to vote for Martin Schulz, a little-known politician who had returned from a career in Brussels to lead the SPD's campaign. This time the candidate is Olaf Scholz, a familiar face to most Germans as the finance minister and vice-chancellor, and a much easier sell. As if to prove the point, a grinning passer-by exclaims “Toll, toll, toll!” (“Great, great, great!”).

A few hours later Mr Scholz himself arrives in town. Speaking below the impressive façade of Munich's neo-Gothic Neues Rathaus (town hall), he presents a list of modest social-democratic priorities, including affordable housing (an important local issue), pension security and the preservation of jobs during Germany's climate transition. Then comes his leitmotif: “respect” for the labour of “the craftsman or the logistics worker”, which implies lifting the minimum hourly wage to €12 (\$14), a

signature policy. Mr Scholz hammers the governing Christian Democrats (CDU), the senior partner in the “grand” coalition with his SPD, for pushing tax cuts when the state has incurred €400bn in pandemic debt. Afterwards, Mr Scholz receives the adoration of autograph-hunting fans with the reserve customary to his home town of Hamburg. His famous Smurf-like grin turns rictus after the seventh selfie.

Until this summer the SPD had been in the doldrums for years, haemorrhaging members, money and support. If the extraordinary comeback suggested by opinion polls (see chart 1, next page) is confirmed on September 26th, the victory will belong to Mr Scholz. An experienced politician who sits on his party's right, he is by

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far the most popular of the candidates seeking to replace Angela Merkel as chancellor, and the SPD's campaign has been organised accordingly. Mr Scholz's visage dominates the stylish red posters that festoon the Munich stand, along with reassuring phrases like “Kompetenz für Deutschland”. They have been a huge hit with voters, says Ms Hergarten, sporting a “#TeamOlaf” face-mask.

Yet the real story of the campaign has been the weakness of Mr Scholz's rivals, chief among them Armin Laschet, candidate for the centre-right CDU and its Bavarian sister, the Christian Social Union (CSU). In April Mr Laschet prevailed over the more popular (and populist) Markus Söder, the CSU leader, for the parties' joint candidacy only because CDU grandees feared yielding to the Bavarians would doom their party for a generation. Mr Laschet's dire approval ratings have dragged his party down with him. “People dread the idea of seeing him on the evening news for four years,” says Frank Stauss, a campaign strategist. A faint air of the ludicrous has attached to Mr Laschet throughout the campaign.

This feeling is not entirely dispelled at a recent campaign stop in a beer garden in Celle, a small town in the northern state of Lower Saxony. The 5'8” bespectacled Mr Laschet, with a slow-moving entourage and security detail, is welcomed onstage to the strains of “Eye of the Tiger”, a macho boxing anthem. A local official introduces him as if he were Rocky Balboa.

Yet Mr Laschet is a strong speechmaker ▶▶

once he finds his stride. He aims his pitch at Germany's "normal people," who rise at seven and drive to work each day; the sorts, in fact, that fill the Celle beer garden. Like Mr Scholz, he pledges to combine climate protection and support for industry, while weaving in foreign-policy and security themes that CDU strategists reckon are their comparative advantage over the SPD. Mr Laschet also finds time to wage a bit of a culture war against Germany's hyperactive language police—a job mostly at the Greens. Several attendees say Mr Laschet's performance has dispelled their original scepticism. "He's obviously not a person who opens hearts immediately," says Sabine Rudnick, a party foot-soldier. But the media exaggerate his foibles, she reckons.

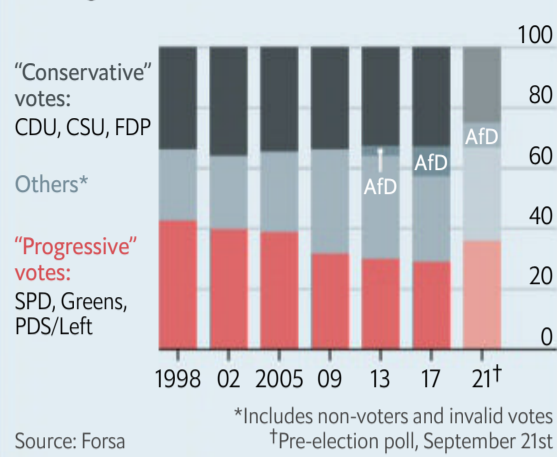
Touching the void

In 2001, four years before she took office, Mrs Merkel outlined her electoral strategy to *Der Spiegel*, a weekly. "Think of the [political] middle as a point," she said. "Divide the scale into three sections to the right and left of this point, and we have to get the larger part of the middle third of the voters." A majority of German voters indeed place themselves in the centre of the political spectrum, and more of them lean left than right. Mrs Merkel, who will leave office after 16 years with approval ratings of over 80%, was able to extend the reach of the CDU/CSU to groups like older women and ethnic minorities while defusing conflicts that might rouse opponents (a trick known to electoral strategists as "asymmetric demobilisation"). Some of her deeds in office, such as keeping Germany's borders open to over 1m migrants in 2015-16, earned her lasting support from Green and other progressive voters.

This is the first time in modern German history that a sitting chancellor has not sought re-election. The void left by Mrs

The left leaps back

Germany, "camp" vote shares in federal elections
% of eligible voters



Merkel's departure has led to what Kajo Wasserhövel, an SPD politician-turned-consultant, says is the most extraordinary campaign he has witnessed in four decades. Within four months the lead has bounced between the Greens, the CDU/CSU and now the SPD. Yet voters' basic preferences have been broadly stable, says Peter Matuschek at Forsa, a pollster. Instead, the parties—and especially, in what has been a highly personalised campaign, their lead candidates—have stumbled in their bids to appeal to the *Merkel Mitte* (middle).

As the candidate of Mrs Merkel's party, Mr Laschet, the premier of North Rhine-Westphalia, Germany's largest state, had the easiest task. A centrist who saw off a threat from the CDU's conservative wing to win the party leadership in January, he had hoped that simply aspiring to the moderate course of Mrs Merkel's two grand coalitions would allow him to coast to victory. Two-thirds of Germans feel personally well-off; the party assumed few voters would see much reason for rupture. The CDU/CSU manifesto is strikingly thin, even by the standards of a party that has always

been more interested in power than ideas.

But voters have long noticed that Mrs Merkel's party has been struggling to articulate an identity that will outlast her. Before covid-19 struck, the CDU/CSU had slumped to around 26% nationally and suffered a string of reverses in state elections. Yet the incumbency effect of the pandemic, which saw the party briefly soar to 40%, bred complacency. Mr Laschet sometimes acted as if the chancellorship was a bequest from Mrs Merkel rather than an office to be fought for. Playing it safe looked risky even when the Greens, the most radical of the leading parties, were expected to be the progressive challenger. In July Mr Laschet, touring the flood-hit regions of his state, was caught chuckling on film. Many voters saw confirmation of a fundamental unseriousness.

But when Mr Scholz, who represented a more credible brand of continuity than Mr Laschet, unexpectedly rose from the dead, the CDU/CSU was left flat-footed. Its campaign has floundered ever since. The party's tone veers from statesmanlike one day to blindly partisan the next, pushing an implausible argument that the impeccably moderate Mr Scholz wants to invite the hard left into coalition. Mr Söder, still smarting from his defeat, sounds more antagonist than ally. The CDU/CSU has lost the support of perhaps 7m voters since the start of the year, and fewer than half those who remain prefer Mr Laschet as chancellor. If he had drawn the lesson of complacency from Mrs Merkel's reign, he forgot about her competence.

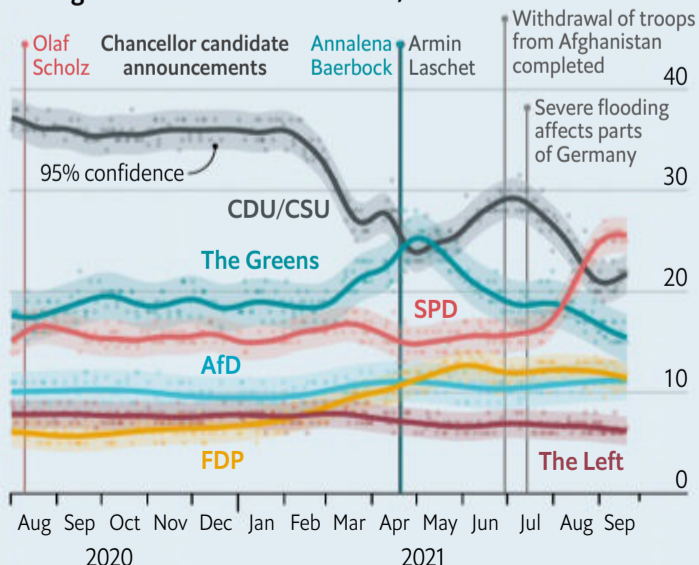
The Greens placed a different bet. Germany's *Mitte* had shifted, they argued; voters wanted something more imaginative than the clapped-out grand coalition they had been lumbered with for eight years. The shift was subtle, but important: the Greens no longer presented themselves as a vanguard but as a vessel for voters' ambitions. The party's co-leaders, Annalena Baerbock and Robert Habeck, are found delivering this message on a warm late summer evening in Frankfurt's Römerberg square. Mr Habeck, who cultivates the image of a rugged philosopher-statesman, delivers a disquisition on the nature of freedom, while Ms Baerbock, the Greens' first ever chancellor-candidate, offers down-to-earth details on party policy. She presents her inexperience—she has done little more than hold a Bundestag seat—as a virtue when set against the failures of Germany's establishment. The speeches make a neat pairing. "These two have brought our party to heaven," beams Omid Nouripour, the local Green MP.

The pitch indeed proved effective, for a time. When the Greens chose Ms Baerbock in April, at the height of the CDU/CSU infighting, the party briefly topped the polls. They still hope to perhaps double their 2017

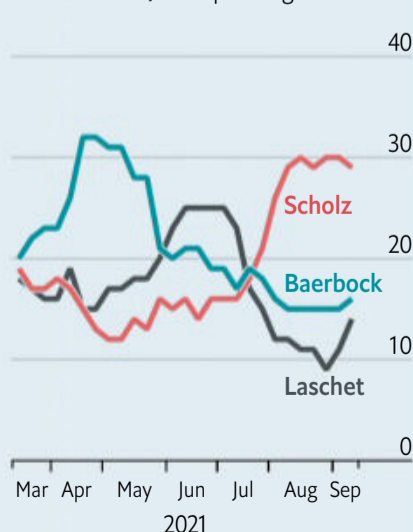
Not what Merkel wanted

Germany

Voting intention in federal election, %



"Who would you prefer as chancellor?", % responding



score, but if the dream of capturing the chancellery has evaporated it is because the party believed too strongly in the power of its own myth. “I admire Annalena Baerbock, but how will the Greens pay for it all?” asks Vanessa Erb, a 19-year-old watching the speeches. The Greens have an answer to this and most other questions, but they fail to cut through to an electorate that remains concerned about climate change but wary of anything that reeks of radicalism. Nor has the party’s deep bench, with expertise that extends to security, fiscal policy and migration, pulled the Greens out of their single-issue ghetto.

This leaves Mr Scholz out in front. His claim to Mrs Merkel’s job lies in his experi-

ence, which includes stints as federal labour and finance minister, and seven years running Hamburg; an air of just-the-facts competence; and a demeanour so unruffled that mini-scandals around financial supervision fail to stick. “A Merkel voter in 2017 does not have to travel a long way to become a Scholz voter in 2021,” says Mr Stauss. Yet his success has rested on two conditions. One is his luck in his opponents. Had Mr Habeck or, especially, Mr Söder led their parties’ campaigns, the race would have looked very different.

The other is the acquiescence of the SPD’s left wing—including the two co-leaders of the party—which has been surprisingly complete for an outfit with a habit of

vicious public rows. Mr Scholz’s personal popularity belies his party’s struggle to regain voters’ trust. Just 14% of Germans say the SPD is best placed to manage Germany’s problems, a number that has barely shifted even as the CDU/CSU’s has plummeted. But Mr Scholz’s anointment over a year ago gave time for the party’s wings to come to terms. “I’m very grateful that the top of the SPD is working closely together,” says Lars Klingbeil, the party’s secretary-general and an architect of its internal harmony. Mr Scholz’s platform has enough red meat to satisfy the leftists, and they are hungry for the power that is now within grasp.

As Germany’s politics have fragmented, its voters have become more promiscuous. Parties have been able to fish for votes from across as well as within their respective progressive or conservative camps: in the 2019 European elections, for example, the Greens attracted over 1m voters who had backed the CDU/CSU in the 2017 national vote. Their growth means this year is likely to reverse a decades-long shrinkage of Germany’s “progressive” block of voters (see chart 2). In July a study by the Konrad Adenauer Foundation, which is linked to the CDU, found that only a quarter of Germans had an unbreakable link to a single party. (Supporters of the hard-right AfD, whose views place them out of reach for other parties, are the exception.) Voters are open to new governing arrangements, and indeed have elected them: there are 14 flavours of coalition in Germany’s 16 states.

Send for plenty of coffee

So it is fitting that the election outcome remains highly uncertain. The SPD’s lead over the CDU/CSU is small, and there are several unknowns. Turnout is hard to predict; an unusually high share of postal ballots is expected; and the state of the polls may create its own dynamic. Some CDU/CSU waverers could make a late return to the flock if spooked by the prospect of an SPD-led government, for example.

But the difficulty of the coalition negotiations that will follow can be safely predicted. Germany is probably headed for its first three-way national coalition in decades; an ominous prospect given the array of domestic and international challenges that will confront it (see Special Report). Either of the two likeliest results—a “Jamaica” government led by Mr Laschet, or a more left-leaning “traffic-light” arrangement under Mr Scholz, with the Greens and the liberal Free Democrats as junior partners in each case—will unite parties that disagree on much. That risks entrenching gridlock at just the moment Germany’s partners will have hoped for resolve. If so, this will not be the outcome Germany’s resolutely centrist voters might have sought. But it is one that they will have earned. ■

Germany

A dash of yellow

BERLIN

The Free Democrats may be essential to forming a government

CHRISTIAN LINDNER, the leader of Germany’s pro-business Free Democratic Party (FDP), is likely to emerge as a crucial figure after the election. Polling suggests it will be hard to form a coalition without the FDP. The 42-year-old Mr Lindner will relish the chance to cap his rapid political ascent with a job inside Germany’s next government—ideally as finance minister. His enemies would see that as their worst nightmare.

The FDP advocates tax cuts, slashing red tape, pension reform and limits to European fiscal integration. More recently it has urged a faster easing of lockdown rules. The party has doubled its support in the past year, thanks in part to the collapse of the conservative CDU/CSU. A snappy dresser and charismatic performer who regularly tops “Germany’s hottest politician” lists, Mr Lindner dominates his party to the exclusion of its other talents. At a recent campaign event in Berlin he was swarmed by admirers after delivering a fiery speech in which he sniped viciously at the Greens’ plans for debt-funded investment.

For decades the FDP was the king-maker of German politics, propping up coalitions led by the CDU/CSU or the SPD. But the next government will probably need three parties to make up the numbers. That could mean a choice between a right-leaning “Jamaica” coalition, with Armin Laschet as chancellor, or an SPD-run “traffic-light” grouping, led by Olaf Scholz. Both would include the FDP and the Greens as junior partners. In 2017 Mr Lindner aborted Angela Merkel’s attempts to form a Jamaica coalition, declaring it better not to govern at all than to govern badly. “The FDP didn’t



give us a millimetre,” says Lisa Paus, a Green MP involved in the talks.

This year Mr Lindner will hope to give Jamaica another try. He gets on well with Mr Laschet, with whom he built a CDU-FDP coalition in North Rhine-Westphalia in 2017. But as the SPD’s prospects have grown, Mr Lindner has opened the door to Mr Scholz by quietly softening his stance on fiscal issues. His price for making possible a traffic-light government would be the finance ministry, a perch from which he would seek to rein in the spending plans of the SPD and Greens (and France’s aspirations to deepen euro-zone integration). Many Greens and Social Democrats detest Mr Lindner’s brand of politics, and the feelings are mutual. From this witches’ brew of resentment and mistrust, a government may somehow emerge.

Russia's election

The conjuror in the Kremlin

MOSCOW

As if by magic the president creates a parliament to his liking

IN MIKHAIL BULGAKOV'S great novel "The Master and Margarita", set in Stalin's Moscow in the 1930s, Satan's mischievous company performs magic tricks in a comedy theatre. It showers the audience with banknotes. People leap and scramble to catch them as they flutter down. Next day, needless to say, they are all worthless.

Russia's general election, theatrically staged by the Kremlin between September 17th and 19th, had a touch of Bulgakov about it. Even so, United Russia, the party that supports President Vladimir Putin, had seen its popularity fall to less than 30% in polls taken ahead of the vote. Turnout was as low as ever. But as if by magic the ballot papers gave the Kremlin more than two-thirds of the seats—and a supermajority—in the Duma, Russia's parliament.

In the run-up to the show, the Kremlin had banned opposition politics, barred independent observers, muzzled independent media and blocked every internet site tied to Alexei Navalny, the jailed opposition leader. It built an electronic platform that let people vote online, allowing the security service to snoop and bully without recourse to old-fashioned physical ballot-stuffing.

In Moscow alone, 2m people out of 7.5m eligible voters registered to vote online. Many had no choice. An IT specialist at VTB Bank, Russia's second-largest owned by the state, explained to your correspondent that the bank's bosses ordered all its staff to vote online and tracked down anyone who did not, threatening them with dismissal.

The three-day voting show began with thousands of military and state workers, ferried in by their bosses, lining up in orderly queues to perform their duty. But millions of Russians opposed to the Kremlin waited until the last day, many hoping to minimise the chances of fraud.

Guided by Mr Navalny's smart-voting system, they aimed to consolidate their protest vote by plumping for any party other than United Russia and for any first-post-the-post candidate with the best chance of beating the Kremlin nominee in whichever constituency.

In a few regions, particularly in the Urals and in Siberia, where the Kremlin has found it hardest to rig, United Russia got around 35% of the vote on a turnout of under 40%, barely beating the Communist Party, which won the most protest votes. In some areas, such as Khabarovsk in the far

east, the Communists actually won. But the national result was officially recorded as a triumph for Mr Putin, thanks to electronic voting and old-fashioned fakery in "electoral sultanates", such as Chechnya, where United Russia claimed 96% of the vote.

Moscow and St Petersburg, where anti-Kremlin sentiment is strongest, set an example. In St Petersburg, observers were dragged out of polling stations. In Moscow the cheating was more high-tech. As polling stations closed, United Russia was clearly heading for defeat in most of the capital's constituencies. One station after another publicised results that put smart-vote candidates in the lead. But at 4am the picture magically changed and every seat

there was marked down to United Russia.

That was after 2m online votes had been dumped into the system, showing 45% support for United Russia. Even so, there was a 15-hour delay in publishing the result of the electronic vote. "The robot decided to have a think and a smoke," quipped Mr Navalny via his lawyers on Instagram.

Using the electoral commission's open data, Sergei Shpilkin, a respected analyst who has long tracked Russian elections, reckons that in reality only 14m people voted for United Russia in an electorate of around 110m. Another 14m votes were acquired through falsification, he calculates. So the true result was the worst the Kremlin has had in a federal poll since Mr Putin first became president 21 years ago. ■

The Church of Sweden

Chosen ones

An election showcases Christian democracy

UNLIKE ENGLAND, Thailand or Iran, Sweden no longer has a state religion. The Church of Sweden, Europe's biggest Lutheran denomination, was formally severed from government back in 2000. But its roots are deep: it traces its history to a 16th-century squabble between King Gustav Vasa and the Pope. About half of Swedes still belong to it. And true to the country's democratic spirit they get to vote on who runs it. On September 19th some 17% of the church's 5.7m members cast ballots for its governing synod.

Some issues in the election were religious, such as a proposed ban on new confessional schools. But others were more secular, including climate change, immigration and gay marriage. That is

partly because most of the "nomination groups" that put up candidates for the synod are linked to political parties. The left seems to do better in church elections. The Social Democrats got 28% of the votes and 70 of the synod's 251 seats, similar to their share in parliament. But the right-wing Sweden Democrats took just 8% in the church election, about half their result in the national election.

One subject of contention is whether political parties should be involved at all. The synod's second-biggest group is POSK, a non-partisan outfit. "We have become more of an opinion communion instead of a communion of faith," argues Amanda Carlshamre, POSK's chairwoman. This year the archbishop came out against a language-test requirement for Swedish citizenship. Olle Reichenberg, the chairman of Borgerligt Alternativ ("Bourgeois Alternative"), the biggest centre-right nomination group, thinks that should be left to parliament. Others counter that worldly engagement is part of church tradition. As one of Sweden's biggest owners of farmland and forest the church can hardly ignore climate change, notes Jesper Eneroth, chairman of the synod's Social Democrats.

It is not clear how much the synod can do about the church's biggest problem, declining interest. Just 3% of Swedes attend services regularly. Most of the big doctrinal disputes are over. The church has performed same-sex marriages since 2009. Conservatives want to continue to let a few old-fashioned priests opt out. Progressives do not. It seems a small point, but churches have split over less.



At Facebook, we're collaborating with UK partners to reduce COVID-19 misinformation.

The pandemic has reinforced the importance of collaboration. We're continuing our work with governments, not-for-profit organisations, and researchers globally to support the pandemic response and reduce the spread of COVID-19 misinformation, including:

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FACEBOOK



Charlemagne | The great sub snub

Humiliation by America will reaffirm France's desire to build up European autonomy



THE TIDE was pleasingly high, the seaweed on the white sands of the Cornish beach carefully combed out of sight. Seven world leaders sauntered back from their seafront photo for talks. As they walked, only one was treated to the American presidential arm, a full across-the-back hold, and for a total of 37 seconds: the French president, Emmanuel Macron. The high art of diplomatic choreography renders such fleeting gestures priceless. Was it not a kind of consecration? Britain's Boris Johnson may have hosted the G7 meeting in June. But France's president got the honours.

When Joe Biden was elected, France saw a rare chance to establish itself as America's favourite European interlocutor. Brexit, went the argument, had relegated Britain's usefulness in its transatlantic ally's eyes. Germany was about to lose to retirement Angela Merkel, the continent's *de facto* leader and Americans' European of choice. Who better to step in than Mr Macron, an English-speaker who had once been selected as a French-American "young leader"? None other than Barack Obama, Mr Biden's old boss, had called the French candidate in 2017 to wish him good luck. "Is this Emmanuel?" Mr Obama's voice boomed through on speakerphone in the campaign office in Paris, urging Mr Macron to keep campaigning hard right to the end.

Moreover, France, a fellow child of revolution and America's oldest ally, seemed to have unusually good links to the new administration. Antony Blinken, the secretary of state, was educated at a *lycée* in Paris, as was Robert Malley, the special envoy for Iran. America supplies intelligence and logistics to French-led counterterrorist operations in the Sahel. French and American navies train together, including in the Indo-Pacific, where France keeps over 7,000 troops (and has nearly 2m citizens). France's pursuit of its own strategy in building up a geopolitical presence in the region in the face of an assertive China was "good for America", notes Michael Shurkin, an American security analyst.

So it was with a mix of consternation, anger and pique that the French learned—just hours beforehand—of America's new defence pact with Australia and Britain, which torpedoed an existing French contract to sell submarines to Australia. To lose a big defence deal was one thing. To be kept in the dark for months by three close friends, who evidently saw no place for you, was quite

another. "Allies don't do this to each other," snapped Jean-Yves Le Drian, Mr Macron's foreign minister, calling it a "stab in the back" and accusing the trio of "lying, duplicity, a major breach of trust and contempt". France recalled its ambassador to America (as well as its one to Australia) for the first time since 1793. This week it was Boris Johnson who jetted off triumphantly to the White House, while Mr Macron sat nursing his wounds in the Elysée.

It is as hard to overstate the depth of the *colère* in Paris as it is to fathom America's failure to anticipate it. France is as capable as anybody of acting with ruthless self-interest and disregard for others. A prickly, proud nation, it does not hesitate to say out loud what others keep to themselves. But the secret pact was as brutal a blow as any Western ally has landed on another in recent times. Trust is the first casualty. It took seven days for Mr Macron to accept Mr Biden's call. Mr Biden agreed that there ought to have been "open consultations among allies". Mr Macron agreed to send his ambassador back to Washington. Confidence-building talks will be launched. But the scars will remain.

What might be the consequences of all this? In the short run, a slighted France will be a more distrustful, irascible partner on other matters, less willing to compromise or give ground on trade, say, or over regulatory disputes. France cannot dictate what the European Union does; public European sympathy for France has so far been notably scant. But it can shape and block positions. Postponed meetings and summits may feel like poor tools of retaliation, but the cumulative effect can be corrosive.

The episode will also force the French, if not to rethink their ability to pursue their own Indo-Pacific strategy, then at least to confront the limits of it when measured against an Anglophone alliance. Some voices outside government, especially on the political right, are calling for a more dramatic, *de Gaulle*-like flourish. In 1966 the general distanced France from NATO and went off to sweet-talk the Russians. Ahead of the French presidential election next April, rival candidates are calling for some sort of replay. Gérard Araud, a French ex-ambassador to America, warns of "a Gaullist temptation".

The ghost of de Gaulle

Mr Macron has indeed argued that France should act as a "balancing power". Following America's shambolic retreat from Kabul, the submarine episode has weakened the voice of French Atlantacists. But Mr Macron is no anti-American. He may not seek full-on confrontation with China, but he has long urged Europeans to consider it a strategic rival on industrial and security matters.

The geopolitical conclusion that he will probably draw from all this, rather, is that he was right. That America is an unreliable ally for continental Europeans at a time of a rising China; that this is not a fleeting trend; and that Europe needs greater self-reliance. Which brings France back to its persistent but generally thankless efforts to build European "strategic autonomy".

During their call, Mr Biden acknowledged that European defence "is complementary to NATO", as Mr Macron has always argued. But the concept still unnerves fellow Europeans. Most of them, especially those near the Russian border, are happy to rely on America's security guarantee. Few share France's willingness to splurge on defence, or its expeditionary military culture. (Germany, especially, does not.) Nobody agrees what "strategic autonomy" actually means. Low odds, however, seldom deter Mr Macron. After the latest snub, the unhugged French president will doubtless conclude that he has little choice but to keep trying. ■



Housing

Build, baby, build

BERKELEY

Ending single-family zoning is an important step towards mending California

THE GOLDEN mean in California's one-party politics can be caricatured, only a little unfairly, as the art of sounding progressive while acting conservative. Take housing. Homeowners may recognise that housing affordability and homelessness are acute social problems. But the obvious remedy—more construction—seems unappealing, because it might hurt property values and spoil neighbourhoods. Thus the progressive-conservative position is to insist on building housing at below-market rates, which sounds compassionate but, in practice, means that little new housing actually gets built. This is why it is so encouraging that two days after Gavin Newsom handily defeated a Republican attempt to boot him from office, the governor signed two contentious measures, SB9 and SB10, aimed at increasing housing supply.

In the past decade median home values have surged 165% in both Los Angeles and San Francisco Counties to \$830,000 and \$1.85m, respectively. Median home prices nationwide increased by 64% to about

\$375,000. Before covid-19, San Francisco was the costliest city for renters; New York now barely claims the top spot. Californians make up 12% of America's population, but 28% of its homeless.

The more controversial law of the two is SB9, which ends single-family zoning in the state. This means Californians will now be able to convert their houses into up to four units, depending on the size of their plot. California isn't the first place to eliminate single-family zoning. Minneapolis and Oregon did so in 2019. As for SB10, that

will make it easier for cities to build up to ten apartments on land currently set aside for single-family homes near busy public-transport corridors.

California has built fewer than 100,000 homes a year, on average, in the past decade. Permits issued for new construction plummeted in 2007 when the housing bubble burst, and have not yet returned to their previous level. Estimates for the number of homes the state needs to build just to keep up with population growth vary wildly. The state thinks it needs to build 1.8m homes by 2025; McKinsey, a consultancy, reckons it will need 3.5m. Ben Metcalf of the Turner Centre for Housing Innovation at the University of California, Berkeley, says the magic number is probably somewhere between the two.

If California so badly needs more housing, why is ending single-family zoning controversial? For a long time, making it in America meant having a house in the suburbs with the white picket fence, says Yonah Freemark, a researcher at the Urban Institute, a think-tank. Single-family homes are also ubiquitous. As of 2019, they made up 61% of all housing units in the country. San Francisco is America's second-densest city after New York. Yet 51% of residential land in the county is zoned for single-family homes (see map overleaf).

Although single-family homes are everywhere, they were not initially meant for everyone. Today the Bay Area is a lab-▶

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▶ oratory for some of the country's most progressive policies. Yet in 1916, Berkeley was among the first places to enact single-family zoning. Banning apartments and commercial buildings was a way to exclude poor Americans from desirable neighbourhoods. At best, the practice was snobbish. At worst, it helped segregate cities by class and race. After the Supreme Court struck down explicitly racial zoning ordinances in 1917, zoning by land-use became widespread. Metal gates still ring Berkeley's up-market Claremont neighbourhood today; it was one of the first places zoned for single-family homes.

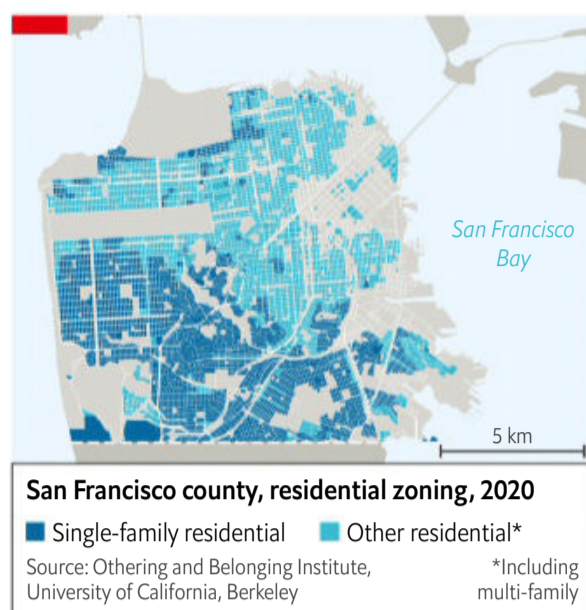
The new laws will bring incremental change rather than revolution. An analysis from the Turner Centre found that SB9 could make new development possible on 5.4% of existing single-family lots. That may sound very little, but it would still create about 700,000 new units, 40% more than would otherwise have been developed. The units will also probably be built slowly, since the law depends on Californians voluntarily renovating their homes.

Even so, SB9 and SB10 have incensed the state's vocal NIMBY constituency. NIMBYS and their YIMBY nemeses have become tribal factions in California politics. Groups seemingly removed from housing policy scream their opinions. The AIDS Healthcare Foundation runs a housing advocacy outfit that took out a full-page ad in the *Sacramento Bee* beseeching Mr Newsom not to sign the bills.

Among the staunchest opponents of SB9 are those who liken the law to a power grab by the state that takes planning decisions away from cities. Some local officials in southern California talk about Sacramento, the state capital, with a prickly disdain usually reserved for faraway Washington, DC. Bill Brand, the mayor of Redondo Beach, a small city south of Los Angeles, has proposed an amendment to California's constitution that would reassert local control over land-use decisions.

Opponents also argue that the law will hasten gentrification by allowing firms to buy up single-family homes, renovate them and sell them at higher cost. A requirement for property owners to live in one of their redeveloped units for three years should help assuage fears of rampant speculation. Some gentrification will probably still happen as neighbourhoods change, says Mr Metcalf. But it would come from homeowners being enticed to sell, rather than tenants being forced out because they can no longer afford the rent.

The biggest criticism levelled at SB9 is that it does nothing to create affordable housing. The new duplexes will be cheaper than the single-family homes that predated them, but may still be too pricey. Yet market-rate housing is also badly needed. "You're criticised for having too many af-



fordability requirements, or not enough affordability requirements", says Scott Wiener, a state senator and the perennial author of California housing bills. "No matter what you do, people are going to nitpick at the bill. Frankly that is one explanation for why we have a housing crisis."

To turbo-charge homebuilding, California might take a lesson from improv comedy and adopt a "yes, and" approach to housing. Yes, end single-family zoning—and build affordable housing, streamline the permit process, help cities navigate tricky policy and crack down on municipalities that are not building. These laws alone "are not going to end the affordability crisis in California," says Jason Elliott, Mr Newsom's housing tsar. "No one is suggesting they are." But it's a start. ■

Booster jobs

Ahead of the science

WASHINGTON, DC

Biden's booster plan has created confusion and concern

THE BIDEN administration was supposed to just "follow the science", a welcome contrast to the previous regime. But one month after it announced covid-19 boosters would be available for everyone, Americans are still left wondering who will get boosters and when.

On August 12th, amid the Delta surge, the Food and Drug Administration (FDA) approved boosters for some immunocompromised people who had received the Moderna or the Pfizer-BioNTech vaccine. One week later, the Department of Health and Human Services (HHS) announced that every American could receive a shot eight months after their second dose of the Moderna or Pfizer vaccine, starting on September 20th. Many vaccinated Americans were eager for the extra protection.

Since then, two leading FDA scientists have announced their intention to leave or retire. Many have speculated on the reason. But shortly after announcing their intentions, they released a paper in *The Lancet*, a medical journal, written with several other researchers, concluding that booster doses are not needed for the general public. A few days later, on September 17th, an advisory panel to the FDA, consisting of independent experts, recommended boosters only for high-risk individuals, people over 65 and health-care workers who had received the Pfizer vaccine at least six months previously. Although the FDA does not always follow the recommendations of their advisory panels, it usually does.

The recommendation still needs FDA approval and CDC support before this group of people can get their jobs. And depending on how both organisations interpret "high-risk," as many as 129m non-elderly Americans with pre-existing conditions could qualify, explains Howard Koh, former assistant secretary for health in the Obama administration. But the statement by the advisory panel contradicts President Joe Biden's wider-reaching booster plan.

This back-and-forth between the administration and scientists has consequences. By announcing the need for booster shots before the FDA approved them, the administration signalled, probably unintentionally, that the current regimen is no longer effective for everyone. Boosters are common for vaccines to ensure protection from disease. Sometimes multiple doses are needed to achieve lifetime immunity. Some vaccines require an extra dose after a period of time to keep being effective. Others require additional doses to counter different strains.

Since the covid-19 virus is new, further analysis is needed to determine if additional doses are necessary. A needless booster could be harmful, as well as being a waste given that worldwide only 32% of adults are fully vaccinated. The administration's original statement said that boosters were contingent on recommendations by the FDA and CDC, but that nuance was lost on many.

Partly as a result of the confusion, many immunised Americans are now questioning their current defence against the Delta variant, despite the HHS announcement stating that, "vaccines...continue to be remarkably effective". Some patients are getting additional doses without approval. By mid-August, before the announcements, about 1m Americans had helped themselves to a third dose, according to the CDC. That number will probably grow. (2.2m people have received an additional dose since the CDC recommended boosters for the immuno-compromised, but it is unclear how many qualified.)

Some state governors are adding to the ▶▶

► confusion. Several are encouraging their residents, particularly the elderly, to get boosters despite the lack of FDA approval. Governor Larry Hogan of Maryland, a Republican, signed an executive order on September 8th authorising boosters for pensioners living in communal settings, like retirement homes. Mr Hogan has repeatedly criticised the administration for its inconsistent messages.

Several other governments have done a better job of keeping their recommendations in line with the research. Britain's and Italy's are recommending boosters for older people, front-line health-care workers and the vulnerable. Germany's and Greece's governments are offering boosters for the immuno-compromised and elderly only. The booster confusion might have been prevented if the administration had stuck to its science-first pitch. ■

Covid-19 in schools

Safety in numbers

Case numbers have risen. How much of that is because of schools reopening?

THE BEGINNING of the school year normally brings a sense of relief for most parents. But with covid-19 cases in America reaching levels last seen in February, and the highly infectious Delta-variant sweeping across the nation, the start of term was instead met with fear. Though the benefits of in-person schooling are clear—children learn better at their desks, the vulnerable are less likely to be left behind, and parents are able to get on with their own work—there were concerns that mixing in packed playgrounds and classrooms would increase the spread of the virus.

Across the country there is huge varia-

bility in back-to-school dates. Children in some Texas school districts returned to the classroom in the middle of July, whereas New York City's 1m pupils went back only last week. This variation creates an opportunity to test how the start of term has influenced covid-19 cases. So *The Economist* built a statistical model to do just that.

First, we calculated the average case-rates for each county for each week from the middle of June, before any schools returned, to now. We compared the case-rate in each county with the average within the state. This allows the model to control for overall trends in case numbers as well as other factors, like mask mandates or superspreader events, which might make the virus more or less prevalent within a state. We then examined the effect of the different return-to-school dates, to see if counties that went back earlier had higher case-rates than the rest of the state.

The results are clear. In the weeks after the beginning of term, covid-19 cases in a given county were greater than would be otherwise expected. Even when controlling for demographic factors like age, race, income, education and politics, going back to school drove up the case-rates (see chart). On average, for every extra week of term the increase in cases was about the same as the effect of a percentage point increase in Donald Trump's 2020 vote share (pro-Trump counties tend to have higher covid-19 rates).

The effect was not the same everywhere, however. According to our model, as well as reducing the overall number of cases, the county's vaccination rate played a big role in influencing what happened after schools returned. In counties where many people were jabbed, the start of term had little effect on the spread of the virus. In counties with the lowest vaccine take-up, cases surged after schools returned.

It is worth noting that across America very few children have been vaccinated, so jabs themselves probably have little im-



Playground tactics

act on preventing spread within classrooms. In counties where more people are vaccinated, infections originating inside the school gates may not escape into the community as easily. Additionally, it may be that schools in the most jabbed regions also take more precautions. They might enforce mask wearing or social distancing more strictly, for example.

States set their own rules when it comes to controlling covid-19 in schools. More than a dozen states mandate face coverings in public schools, and nine require teachers and staff to be vaccinated or to undergo weekly testing, including Washington state and Oregon which have made vaccination obligatory for teachers. On September 9th the Los Angeles school board voted unanimously to require vaccines for students aged 12-years and over. At the other end of the spectrum, several conservative states have tried to ban schools from enforcing mask wearing.

Our model cannot pick out the effects of these state-level interventions. However, a slew of other research studies from across Europe and America have found that mask-wearing and social-distancing work to prevent the spread of covid-19 in schools. With these measures in place, schools were not the most likely sources of infections for children. And if a child did catch the virus it tended not to spread to classmates. However, the situation looks quite different when these measures are relaxed while the virus is spreading, as has been the case in much of the country.

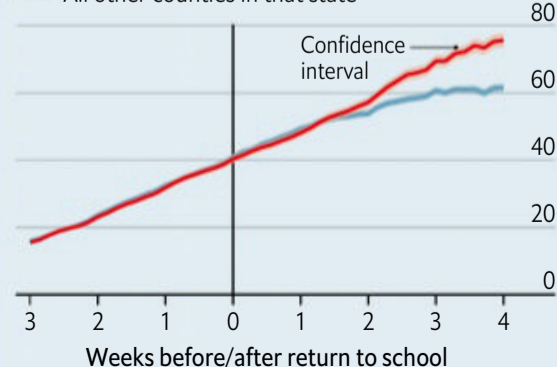
With appropriate precautions in the classroom and high levels of community vaccination, the beginning of the new term need not have been so scary. Our findings add to the growing consensus that in-person schooling doesn't have to be accompanied by growing covid-19 cases. But while some states continue to put politics before public safety, it probably will. ■

Biology lessons

United States, covid-19 case rates before/after return to school

Average daily cases per 100,000 people

— Counties that returned to school in given week
— All other counties in that state

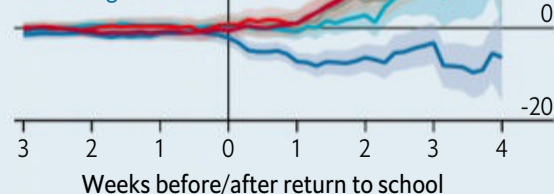


Sources: *The New York Times*; CDC; publicholidays.us

Difference in case rates between counties that did or did not return to school

By vaccination quintiles

— 1 Lowest 20%
— 2
— 3
— 4
— 5 Highest 20%



Academic freedom

Free now to speak

A professor's resignation highlights pressures to conform

PETER BOGHOSIAN, an untenured assistant professor of philosophy at Portland State University (PSU), was one of the most vocal critics of post-modern ideology in the academy, until he resigned from his university on September 8th. In 2018 he and two authors tried to publish 20 fake papers, in order to expose what they saw as a willingness to publish anything that used the right jargon. Seven were published, including one on “queer performativity” in urban dog parks, and one calling astronomy imperialist and suggesting physics departments study interpretative dance.

This is a loss to satire, but is it also representative of anything larger? In his resignation letter, Mr Boghossian wrote that the university had been changed from “a bastion of free inquiry into a Social Justice factory whose only inputs were race, gender and victimhood and whose only outputs were grievance and division”. Students at PSU are “being trained to mimic the moral certainty of ideologues,” he wrote. A spokeswoman for the college retorted that, “Portland State has always been and will continue to be a welcoming home for free speech and academic freedom.”

Other scholars have found themselves in similar situations. Those conservatives who remain in the academy may be used to this. But increasingly it is affecting liberals. A report published in August by the Foundation for Individual Rights in Education (FIRE), a campaign group, has found that since 2015 the number of scholars targeted with demands for investigation, demotion, censorship, or termination reached 113 in 2020, or a total of 426 cases in five years. Some of these cases may stretch the casual observer's sympathies. The majority, though, are “academics on the left being attacked from further left”, says Sean Stevens, one of the authors.

The censoring is not just in the humanities. In 2020 Norman Wang, a cardiologist at the University of Pittsburgh, was demoted for publishing a paper in the *Journal of the American Heart Association* that analysed and criticised diversity initiatives. The journal issued an apology and retracted it. A professor at a University of California medical school was recently recorded apologising in an endocrinology lecture for using the term ‘pregnant women’.

Some on the left claim that illiberalism on campus is overblown. In an article in *Liberal Currents*, Adam Gurri wrote of the

FIRE report that, “if any other problem in social life was occurring at this frequency and at this scale, we would consider it effectively solved.” That is doubtful. According to Mapping Police Violence, a website, police have killed 381 unarmed African-Americans since 2013. This is (rightly) considered a problem and a global movement exists to draw attention to it.

Part of the problem, says Bruce Gilley, one of Mr Boghossian's supporters at PSU, is the “diversity industrial complex” within college administrations, that need to justify their existence. Diversity vice-presidents at Oregon's three public universities have an average compensation of \$262,000. In 2018, Mark Perry of the University of Michigan revealed that his university had nearly 80 diversity officers at a total annual payroll cost of \$10.6m.

This makes it hard for anyone who wants to challenge prevailing views, especially on issues such as race and gender, Mr Boghossian argues. “Just the threat of being called in by the diversity and inclusion office is enough to silence people.” ■

Policing

The Floyd effect

As shootings rose, 911 calls fell in the aftermath of George Floyd's murder

CONVENTIONAL WISDOM says that when a police shooting captures public attention, sparking outrage over police violence, officers respond by pulling back, in a phenomenon known as the “Ferguson effect” (named for a city that saw widespread protests against police misconduct in 2014). Common sense also suggests that when people mistrust the police they are less likely to call them. Criminologists are

divided over whether the Ferguson effect actually exists. But a new working paper from Desmond Ang, an economist at Harvard's Kennedy School of Government, and his colleagues shows that the latter phenomenon is real: after George Floyd's murder, calls to the police plummeted.

The authors combined police-related 911 calls with data from ShotSpotter, which uses audio sensors placed around American cities to detect and alert police to gunshots. They then calculated the ratio of 911 calls to ShotSpotter-detected gunshots in the eight cities for which data were available for 2020. You might expect that, under normal circumstances, higher crime would lead to more 911 calls, lower crime would lead to fewer calls, and this ratio would remain relatively steady.

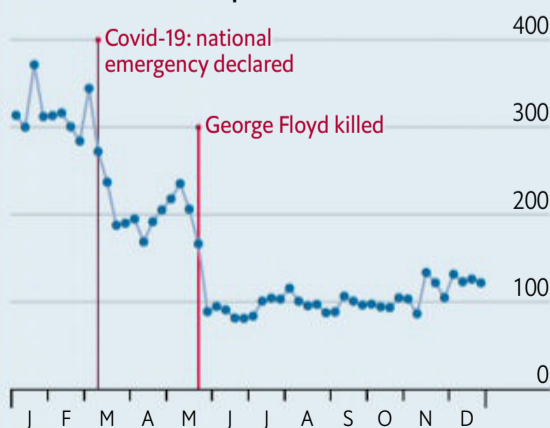
Mr Ang and his colleagues found that in the week before Mr Floyd's death, there were around 200 calls to 911 made for every shot detected by ShotSpotter. After the 25th there were only around 90 (see chart). This drop in the call-to-shot ratio was driven by both an increase in the number of shots detected and a decrease in the volume of 911 calls. The former may raise doubts about the accuracy of the data: the protests sparked by Mr Floyd's death made cities much noisier places than usual. But when the authors used gun deaths and injuries in their analysis, rather than gunshots, they arrived at the same conclusion. After May 25th the number of 911 calls for every gun death or injury fell by almost half.

The findings may reshape social scientists' understanding of the Ferguson effect. Calls from the public are an important source of information for police, says Mr Ang. “Civilian and community engagement are needed for the police to do a good job, to identify and solve crimes and to ensure public safety.” Events that harm the public's trust in law enforcement, such as unlawful police killings hinder such engagement, putting the lives of both civilians and officers at risk. ■

Trust fall

United States*, 2020

Number of 911 calls per shot detected



% change on week prior to George Floyd's death



*Baltimore, Cincinnati, Washington DC, Milwaukee, Minneapolis, New York, Richmond (California) and San Diego

Source: “Police violence reduces civilian cooperation and engagement with law enforcement”. by D. Ang et al.. September 2021



Mississippi's last abortion clinic

Legal and rare

JACKSON

Mississippi offers a glimpse of what would happen if the Supreme Court overturned *Roe v Wade*

A SMILING WOMAN stands in the driveway leading to Jackson Women's Health Organisation, the only abortion clinic in Mississippi. Beside her, a large sign reads: "Bags for clinic patients here". Though volunteers dressed in "clinic escort" vests gesticulate to drivers that they should ignore her, most stop and are handed a gift bag. Inside are images showing a fetus as it develops and a note assuring women: "You can be a great mama!"

As women get out of their cars, the protesters step it up. "Ma'am, this is your grandchild!" one woman calls to another who is hurrying her teenage daughter inside. "Don't lead it to the slaughter!" A man in a red baseball cap embroidered with a cross yells through a fence to patients inside. An escort wearing a "Pro abortion witch" face mask turns up a stereo blasting rock music to drown out his noisy exhortations to follow the Lord and refrain from committing murder.

The pressure women endure on their way into this small building in Mississippi's capital is one part of a larger effort to prevent them from having abortions. That they should nonetheless continue to travel, often many miles, to do so, seems to contradict the state of Mississippi's recent claim that *Roe v Wade* can safely be ditched. In a recent request that the Supreme Court overturn its half-century-old ruling, the state argued women's attainment of "both professional success and a

rich family life" and improved access to contraception, among other factors, meant *Roe* was "decades out of date".

The clinic tells a different story. Many of its patients are poor. More than 70% are black, though only 38% of Mississippi's population is. (In contrast, on the day your correspondent visited, all the protesters were white.) Posters inside, meanwhile, contrasting the efficacy of contraception methods, offer a reminder that Mississippi's schools have promoted "abstinence" over sex education. In a filing to the Supreme Court last week, the clinic's lawyers pointed out that women's ability to get on in life still depends on them having control over their reproductive health.

The filings were made ahead of the most important Supreme Court hearings on abortion in decades. On December 1st the court will hear arguments in *Dobbs v Jackson Women's Health Organisation*, which concerns Mississippi's ban on most abortions after 15 weeks. In 2018 a court blocked the law because it violates rulings that abortion on demand is a right until a fetus becomes viable. Speculation that the court will use the case to weaken *Roe* or overturn it altogether has been intensified by its refusal to prevent an abortion ban in Texas from going into effect.

No one, except perhaps the justices, knows whether the court will overturn the 50-year-old ruling next year. "If it upholds Mississippi's law, it will have overturne-

d *Roe*, regardless of whether it says those words," says Elizabeth Sepper of the University of Texas at Austin. Even if it sets a lower gestational limit, "total bans would be around the corner," she reckons.

Mississippi is one of 12 states with a "trigger ban" that would click into effect, eliminating most abortions, if *Roe* were overturned. Yet here, as in other conservative states, *Roe* has already been hollowed-out by laws that make it hard for clinics to operate. Six states have only one clinic left.

Curbing abortion in this way creates two big problems. The first is more abortions later in pregnancy. In Mississippi the impracticality of having one clinic covering 48,430 square miles, much of it poor and rural, is exacerbated by pernicky regulations. One, mandating that patients see a doctor on two occasions at least 24 hours apart, is especially onerous. Shannon Brewer, the director of Jackson Women's Health, says it is not unusual for women, struggling to organise time off work, child care, travel and funding—America prohibits the use of federal money for abortions—to postpone a scheduled appointment "from next week to next month".

Most weeks, says Ms Brewer, who is a sonographer, the clinic sees a woman whose pregnancy has passed "17, 18, 19" weeks. Because the doctors (who come in from other states because locals were targeted) do abortions until 16 weeks (one refuses to do so after 12) the clinic refers such women elsewhere. Yet it can be hard to find doctors who perform abortions much into the second trimester, which contributes to the second big problem: some women's failure to secure an abortion altogether.

Life and liberty

No one knows how many women fall into this group, but research suggests policymakers should strive to limit the number. Using data from a nationwide longitudinal study that investigated the effects of either having an abortion or being turned away, researchers found that women who were denied abortions experienced a sharp spike in financial hardship, including debt, bankruptcies and evictions. Their children, unsurprisingly, fared poorly too. Some obstetrician-gynecologists worry that overturning *Roe* could push up America's maternal or infant mortality rates.

Women who seek an abortion know very well what is at stake. But that may not make the harassment many face any less upsetting. In Mississippi, a still deeply religious state in which more than 80% of adults say they are Christian, protesters' repeated, angry allusions to Jesus and the Bible seem particularly cruel. Ms Brewer says that by the time they get through the clinic door many patients are in tears. One question, she says, she is asked repeatedly. "Do you think I'm going to hell?" ■

Lexington | Chuck's modest leadership

On the risks and rewards of the Democratic Senate leader's relentlessly clubbable style



AS A SELF-DESCRIBED “angry centrist”, Chuck Schumer used to relish fighting his party’s radical fringe. In a centre-left manifesto he published in 2007, entitled “Positively American”, the Senate majority leader shuddered to remember the left-wing activists he had encountered at Harvard in the 1960s who “seemed to want to tear down every part of the American system”. He was even more contemptuous of his party’s unwillingness to repudiate them. “In politics, you have to either defend or denounce what your friends say,” wrote Mr Schumer. “If you don’t, people start to wonder what you really believe.”

The activist group he recalled has morphed into the Democratic Socialists of America, whose best-known member is Representative Alexandria Ocasio-Cortez. She is widely believed to be mulling a primary challenge to Mr Schumer. Yet far from defining himself against her radicalism, he, the least well-known of the veteran Democratic trio running the government, has embraced it. He often appears alongside Ms Ocasio-Cortez in New York. And he has adopted a couple of her causes, student debt forgiveness and legal pot. For the many conservatives who detect AOC’s socialist hand in everything the Democrats do, Mr Schumer is Exhibit A.

The Democrats have indeed shifted to the left, albeit more modestly than their opponents claim. And as he has always swum in the party’s mainstream—much like Joe Biden and Nancy Pelosi, the triumvirate’s other members—he has naturally shifted with it. Yet his benevolence towards the fire-starter from Queens is not only about protecting his left flank. It reflects Mr Schumer’s general approach to sustaining the slimmest possible Senate majority.

With just 50 votes plus that of Kamala Harris, the vice-president, and no prospect of Republican support on almost any of the major bills Mr Biden wants to get passed, Mr Schumer cannot afford to lose a single Democrat. Even with a bigger majority and less ambition, his Republican predecessor showed how hard that will be. Mitch McConnell passed a tax cut, failed to scrap Obamacare and left it at that. And the left—a tribe spanning Joe Manchin and Bernie Sanders—is more quarrelsome than the right. Mr Schumer’s response has essentially been to encourage his colleagues to push for whatever in Mr Biden’s agenda, loosely defined, they like best. And he has done so persistently, coaxing the party to hang to-

gether, in the hope that the longer a falling-out can be prevented the less likely it will be.

Where Mr McConnell and Harry Reid, the previous Democrat in his office, maintained an aura of immense power, Mr Schumer, the first New Yorker and Jew to occupy it, has a more relaxed style. He has tripled the size of Mr Reid’s kitchen cabinet, making it less a coterie of feared lieutenants than a team-building exercise, which includes Mr Sanders and Mr Manchin. With his signature flip-phone always to hand, he spends much of each day calling around his caucus, congratulating, cajoling or just checking in. The results of his more modest approach are better than many Democrats had expected.

A former attention-seeking legislator (“the most dangerous place is between him and a camera,” Bob Dole quipped) and campaign strategist, Mr Schumer was said to lack the grip of Mrs Pelosi, his counterpart in the House. Yet among Democrats he is now universally praised. “It’s literally impossible to imagine anyone else doing the job,” says Chris Coons of Delaware.

Unheralded success will do that. Mr Schumer has been credited with coaxing Mr Manchin into line on the \$1.9trn stimulus the Democrats passed in March. He is also the architect of a so-far successful bifurcation of infrastructure spending—which some Republicans support—and the rattle-bag of safety net and climate measures that Democrats hope to pass on a partisan basis. Even as this “two-track” process enters what promises to be a stormy last phase of negotiation (which a customary autumnal row over funding the government threatens to make even harder), a large majority of Democrats are firmly behind it.

No one should confuse this with a good way to govern America. Much like Mr Schumer’s something-for-everyone leadership style, the Democrats’ effort to jam a presidential term’s worth of new programmes and reforms into a budget bill is illustrative of their weakness and a broken system. A decade of gridlock suggests there is no other way to make progress on climate change, inequality and other big issues. Yet their approach is nonetheless riddled with shortcomings.

The old saw that bipartisan dealmaking, conducted in good faith, produces better laws still holds. The excesses of the stimulus package compared with the sleeker-looking infrastructure deal illustrate that truth. And Mr Schumer’s light-touch steerage looks like the particular enemy of hard choices. If and when Mr Manchin digs in for a steep reduction in the \$3.5trn cost of the draft budget bill, Democrats should drop some of their more expendable schemes—such as free community college—in order to preserve climate and other must-haves. Yet a general hair-cut, which everyone might grudgingly live with, may be more consistent with Mr Schumer’s approach.

It might not get that far. His effort to prolong the negotiation could be storing up an ever more dramatic and damaging blow-out. For that matter, even if the Democrats pass some semblance of their plans, it is not clear that voters would reward them for it.

Virtue’s uncertain reward

Their baggy monster of a budget bill, to borrow Henry James’s phrase, looks too sprawling to be reduced to an effective slogan. The Republican attack on it as socialism would be easier to execute. When working on campaign strategy, Mr Schumer would have had that flaw uppermost in mind. Now consumed by the improbable task of passing laws, he seems unable to. Whatever he may be telling his colleagues, his party cannot have it all. ■

**SPECIAL
REPORT:**

Germany

→ September 25th 2021

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After Angela

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After Merkel

Angela Merkel's departure will leave a big hole in Germany—and much for her successor to do, says Tom Nuttall

IN JUNE A newly surfaced segment of a German talk show from 1997 set the internet alight. The clip shows Angela Merkel, a fresh-faced environment minister in Helmut Kohl's government, explaining the urgency of action on climate change. Her fellow panellists listening closely, Germany's future chancellor says delay will only incur higher costs. The dangers of failure, she warns, include hunger, drought and the mass movement of refugees.

The clip highlights a contradiction familiar to observers of Mrs Merkel's 16-year reign, which will end once a new coalition is formed after the election on September 26th. On one hand is the diligent scientist-stateswoman, blessed with the ability to understand complex issues and explain their consequences. On the other is the hesitant politician who struggles to convert analysis into action. A quarter of a century on, Germany emits more carbon dioxide per head than most other EU countries, and relies on fossil fuels for 44% of its electricity. After the clip emerged Mrs Merkel, at her final annual press conference as chancellor, conceded that she had failed to act decisively on climate change.

The pattern keeps recurring. Campaigning for the chancellery in 2005 Mrs Merkel promised to slash bureaucracy and promote innovation, pledges that still appear in the manifesto of her Christian Democratic Union (CDU). Her biennial speeches at the Munich Security Conference were compelling *tours d'horizon* of the global security landscape but rarely heralded meaningful changes in German foreign policy. During the covid-19 pandemic the chancellor was a solid, reassuring presence, but she struggled to impose her will on the restive premiers of Germany's states.

Mrs Merkel has at times seemed more monarch than chancellor. She will leave office with sky-high approval ratings. Three of the four coalitions she led were "grand" ones with the Social Democratic Party (SPD), which suited her centrism but tranquilised politics. She has so dominated the centre that outright criticism of her has come to seem almost *lèse-majesté*. That has inspired a wave of free-speech martyrs on the conservative fringes, the closest Germany gets to a culture war. In Europe Mrs Merkel has been the indispensable leader. Beyond it, her stout defence of liberal values and her modest demeanour have been reassuring in an age of noisy populism and nationalist showmen.

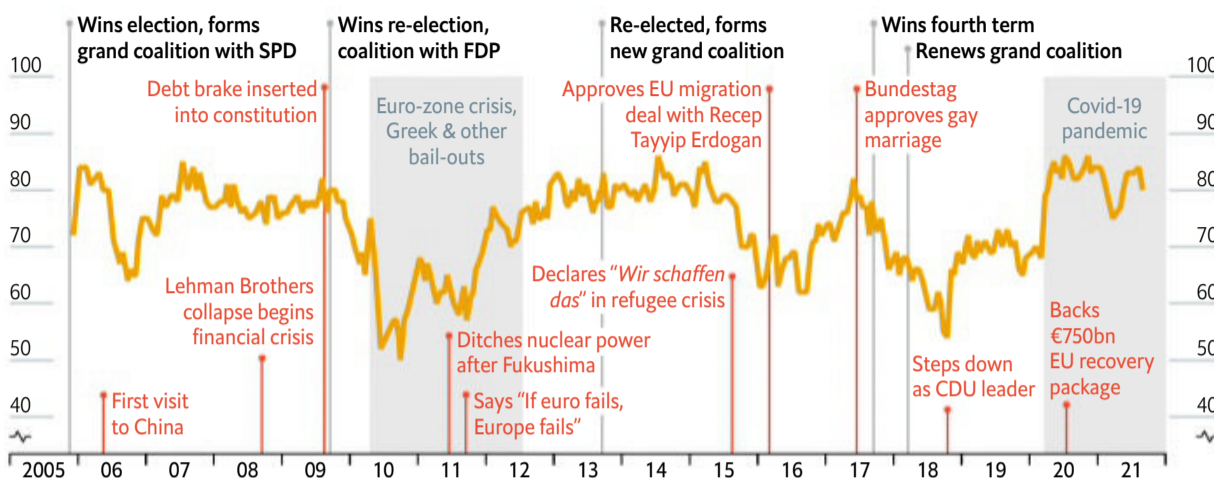
As Mrs Merkel prepares to leave office some have wondered if a *Wechselstimmung* (mood for change) is taking hold in her country. The ascent since the 2017 election of the Green Party, which wants to upend strict public-debt rules and rethink foreign policy, seems to offer evidence for this. In May the Bertelsmann Foundation found that a record two-thirds of voters wanted significant political change, and almost as many wanted a new government.

Some recent events have shaken the faith of voters in their state and its institutions. One was the chaotic management of the second wave of covid-19, which undercut a narrative of success during the first in 2020. Then came catastrophic floods in parts of western Germany in July, where the apparent negligence of a few local politicians may have contributed to a death toll of almost 200. The debacle in Afghanistan, where 150,000 Bundeswehr troops had served since 2002, was also hard to swallow.

Yet for all this, a *Wechselstimmung* is not evident. Germany has ►►

A chancellor's progress

Germans who think Angela Merkel is doing a good job, % polled



France: presidents

Jacques Chirac | Nicolas Sarkozy | François Hollande | Emmanuel Macron

United States: presidents

George W. Bush | Barack Obama | Donald Trump | Joe Biden

Britain: prime ministers

Tony Blair | Gordon Brown | David Cameron | Theresa May | Boris Johnson

Sources: Forschungsgruppe Wahlen; The Economist

► weathered the pandemic better than most. The death rate was low and the government's fiscal response, including policies like the much-imitated *Kurzarbeitergeld* furlough scheme, cushioned the economic impact. The economy is set for one of Europe's more robust recoveries. More than two-thirds of Germans say their economic situation is good. Nor did the floods mark an inflection point. Rather, a lacklustre campaign punctuated by trivial rows suggests that none of the parties, including the increasingly cautious Greens, sees much mileage in promising rupture.

Just as German companies excel at incremental innovation but struggle with the disruptive sort, change in public opinion is slow and hard to detect. Spotting this is one of Mrs Merkel's strengths, aided by her office's relentless polling and focus-grouping. Her policy shifts, when they came, were usually subtle but on occasion decisive: nuclear power, gay marriage and, most recently, common European Union debt.

Her riskiest step was her decision not to close German borders to over 1m asylum-seekers and other migrants in 2015-16. Even this was an improvised response to an unexpected crisis. Tellingly, this short-term fix entrenched long-term difficulties: it opened the door to the far-right Alternative for Germany (AfD) and, by toxifying the migration debate, made it harder to liberalise skilled-labour laws. Five years on, a bitterly divided EU is still unable to reform its asylum rules, leaving it exposed to another crisis.

Fear of the unknown

There is a palpable nervousness about Mrs Merkel's imminent departure. This is the country's first post-war poll in which the sitting chancellor is not seeking re-election. The campaign has been volatile, with the lead bouncing between the Greens, the CDU and its Christian Social Union (CSU) Bavarian ally, and the SPD. A fragmented vote looks likely to make a two-party coalition impossible for the first time since the founding of the republic. Rarely has the identity of the next chancellor and the make-up of any coalition been so uncertain. That may mean long post-election negotiations and an ideologically incoherent government that finds it hard to get anything done.

The rest of the EU is even more apprehensive. Mrs Merkel has shaped its response to crises, from euro-zone bail-outs through Russia's invasion of Ukraine to Brexit. Germany sits at the cont-

inent's heart, and one of the chancellor's priorities has been to resist forces driving its governments apart. She has forged useful relationships with figures as disparate as Alexis Tsipras, the far-left prime minister who nearly took Greece out of the euro, and Viktor Orban, the autocratic leader of Hungary (who will take over Mrs Merkel's mantle as longest-serving EU leader).

Politically, Germany seems an island of stability in a jumpy world. Although this election may be the most open for a generation, none of the parties likely to enter government disagrees over such fundamentals as the social-market economy or the commitment to the EU. Contrast this with France, which may again flirt with Marine Le Pen in next year's presidential election; perennially unstable Italy, where populist parties command near-majority support; or Poland, a deeply polarised country led by a government undermining the rule of law.

Few of Europe's crises have upset Germans' security or given them reason to push for change. Political chaos, overspending or trade deficits are others' problems. Growth in the Merkel era was solid, if rarely spectacular, and when challenged German institutions have been robust. Five years on, there are even grounds for optimism over the integration of migrants from 2015-16. And it is not modern Germany's habit to engage in military adventurism abroad.

Critics are wary of handing too much credit to Mrs Merkel. "Germany's economic success was more luck than policy," says Marcel Fratzscher, who leads the German Institute for Economic Research (DIW) in Berlin. Conditions were propitious. China's accession to the World Trade Organisation in 2001 opened a vast market for mighty German exporters. The EU's eastward expansion a few years later created a pool of cheap labour and extended supply chains, and a source of skilled, working-age immigrants. Controversial labour-market reforms pushed by Gerhard Schröder, Mrs Merkel's predecessor, kept unemployment down. American power has held the peace that was a condition for German trading success. Transatlantic spats over nugatory German defence spending have had few serious consequences.

Yet a strong economy and Germany's heft in Europe have concealed a darker side at home: a swelling low-wage sector, growing income inequality, ragged housing markets and persistent child poverty. A misjudged energy policy has given Germans the highest electricity bills in the EU. A strict approach to the public finances, expressed since 2009 by a deficit-limiting debt brake in the constitution, has created vast fiscal surpluses even as public infrastructure decays. Covid-19 has revealed other weaknesses in the public sector, especially its slow digitalisation. There are reasons to fear that the next decade could expose deeper failings.

For if Mrs Merkel was a steady hand during crises, she has been less successful in setting a longer-term course. Astonishingly, it is hard to find a single far-reaching reform passed by any of the four governments that she has led. This brings to mind a second German term that ought to preoccupy the next government: *Zukunftsfähigkeit*, or the ability to face the future. For many, it is something they sorely miss in the country that Mrs Merkel will bequeath. ►►

Rarely has the identity of the next chancellor and the make-up of any coalition been so uncertain

Weaknesses in the German model are starting to show. Dependence on trade means vulnerabilities to deglobalisation. Growing tensions between America and China leave Mrs Merkel's engagement-first policy increasingly threadbare. The mighty car industry is highly exposed to technological disruption. Germany's skills shortage will worsen as a demographic crunch looms in the mid-2020s. New climate targets will require deep-rooted changes to industry, buildings and the power industry. Perhaps most worrying, the political class seems to have learned from Mrs Merkel that it is better not to scare voters with too much talk of transformation, leaving only a limited mandate for change.

Germany is a strong, rich, democratic country that should have a bright future. This special report will act as a stress-test, prodding its industrial, bureaucratic, demographic and security policies at their most vulnerable points to assess where change is most urgently needed. It begins with a look at the country's perennially low public investment. ■

Public investment

An infrastructure hole

Infrastructure suffers from the dearth of public investment

“WE’RE WORKING at the limit,” says Apostolos Tsalas, treasurer of Oberhausen, a town in the Ruhr valley. Like many places in this region, Oberhausen sits on a vast debt pile, mostly accrued when the mines closed and the steel jobs went. Unemployment stands at 10.6%, almost twice the national rate. Last year Olaf Scholz, the SPD finance minister (and its chancellor-candidate), sought to relieve municipalities like Oberhausen of their old liabilities, but was thwarted by his CDU coalition partner. “It’s time for a fresh start,” pleads Mr Tsalas. His town is locked in a vicious circle of declining investment, slumping tax revenue and a shrinking population.

A federal bail-out meant most municipalities avoided disaster last year. But by 2023 many will face a fiscal crunch, says Jens Südekum, economics professor at the University of Düsseldorf. The commercial taxes that are their main independent source of income are volatile, and covid-19 creates new demands. National laws limit their ability to cut current spending, one of Mr Tsalas's bugbears. That puts capital investment in the firing line.

The country's 11,000-odd municipalities are responsible for a big chunk of public investment. The KfW, a state-backed development bank, puts the municipal-investment backlog at €149bn (\$172bn), a number that has risen even as tax revenues pour in. School buildings account for nearly a third of the shortfall; roads just under a quarter. Endlessly delayed mega-projects like Berlin's airport may have made the country a laughing stock, but it is rusting bridges, shaky phone signals and decrepit school toilets that are the staple of daily conversation.

Ask anyone in local government what the problem is, and the answer is always people. A report by the Friedrich Ebert Foundation, which is linked to the SPD, finds a huge decrease in municipal staff over 30 years. Immigration has helped, but a quarter of posts remain unfilled, says Henrik Scheller, one of the authors. Planning and engineering are especially affected, and local governments struggle to compete with private firms. Two-thirds of municipalities expect it to get even harder to find town planners. Surveys find construction companies working at capacity. With

such supply constraints, spending more without proper planning merely risks stoking inflation.

Bureaucracy and nimbyism play a role. Companies struggle with a patchwork of planning and building rules. Opponents delay public-infrastructure projects with endless litigation. The number of projects blocked by citizens' initiatives has doubled since 2000. This is problematic for roads, railways and bridges. But it is a “real hurdle” to climate transformation, says Mr Scheller. The recently revised climate law mandates a reduction in carbon emissions of 65% from 1990 levels by 2030, and their net elimination 15 years later. The share of renewables in electricity production must also reach 65%. And overall demand for electricity for batteries to power electric cars, for heat pumps in buildings, and for “green” hydrogen to help decarbonise industry may rise by a quarter.

Agora Energiewende, a think-tank, estimates that Germany will have to install an extra 5GW of onshore wind power every year until 2030, and 7GW a year after that. In 2020 it managed just 1.4GW. A visit to Schleswig-Holstein shows how hard it will be. As far back as the early 1990s, wind power in this northern state began to revitalise what had been some of the poorest communities in western Germany. Today turbines dot the landscape. Schleswig-Holstein has 8.5GW of installed wind-power capacity, and produces 160% of the electricity it consumes from renewables. It can export the excess via new power lines, including to Scandinavia.

In December the state government published new rules for wind-farm construction, after a five-year moratorium imposed amid growing local tensions. The new rules set aside 2% of land for wind energy, but this may not be enough to meet wind-power targets. Add long waiting times for permits and other restrictions and these targets seem unattainable, says Marcus Hrach of the Kiel branch of Germany's Wind Energy Association. Industry insiders despair at all the hoops they must jump through. “Few people here oppose wind power, but those who do have loud voices,” says Anton Rahlf, a frustrated wind-farm owner on Fehmarn, an island in Schleswig-Holstein.

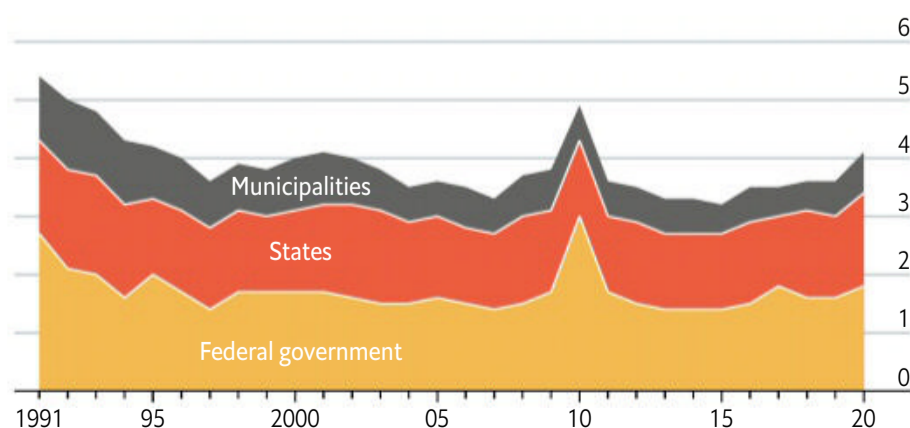
Other states are even more restrictive. Rules to protect endangered species vary from state to state. A few years ago litigation, regulation and complex tendering slowed the construction of wind farms to a crawl, although 2021 has offered flickering hints at a revival. The mismatch between the federal government's ambitions and the reality of local regulation, says Mr Hrach, will make it impossible for Germany to reach its commitments under the Paris climate agreement.

Another difficulty, says Alexander Reitzenstein from Das Progressive Zentrum think-tank, is constructing the power lines needed to transport electricity from the windy north to southern ▶▶

Not enough

Germany, public investment, % of GDP

Gross fixed capital formation plus transfers to public companies



Source: Destatis

► industrial states like Baden-Württemberg and Bavaria. Local communities can be given a financial stake in wind farms, but that is harder to do for power lines simply transporting electricity. And under Germany's federal system, states cannot be bossed around by the government in Berlin. "Lots of politicians who agree on climate in Berlin act differently when a line comes to their local community," says Tim Meyerjürgens, chief operating officer of TenneT, an electricity-transmission operator, adding that the "salami-tactics" of regular legislative changes harm trust.

There is a near-consensus that the next government must do more to satisfy vast public-investment needs. The debate is over how. For some, tackling the country's austerity bias is a priority. The debt brake now in the constitution limits opportunities for deficit spending. Critics of German tightfistedness are legion. The European Central Bank has long urged countries with "fiscal space" to exploit it. But all such suggestions have tended to run into an austere wall of fiscal orthodoxy.

Austerity excesses

Since 2013 the annual public-investment budget has risen from around €93bn to €137bn. This, argues Jens Weidmann, head of the Bundesbank, suggests the debt brake is "a bit of a straw man". Better to tackle bureaucracy, capacity constraints and municipalities' volatile revenues by changing the federal structure. But Sebastian Dullien at the IMK, a union-linked research group in Düsseldorf, counters that a guaranteed, long-term income stream of just the sort the debt brake inhibits might give municipal authorities, construction firms and engineers the planning certainty they need to reduce bottlenecks and increase staff.

Last year the government invoked an escape clause in the debt brake to finance corporate-support, furlough and other schemes during the pandemic, running up a deficit worth 4.2% of GDP. It will be bigger this year. The CDU/CSU wants to reimpose the debt brake once circumstances allow, probably in 2023. So does Mr Scholz, who presents himself as a safe pair of hands (plenty in his SPD would like a more expansive approach). The most interesting proposals come from the Greens, who want to add a "golden rule" allowing a debt-funded ten-year €500bn investment programme, focused on climate and digital infrastructure.

Yet the two-thirds parliamentary majority needed to change the constitution is a formidable hurdle. A more likely prospect is the establishment of public-investment companies, essentially off-budget special-purpose vehicles (SPVs), devoted to capital spending on, say, broadband provision in schools or upgrading railways. SPVs are legally complicated and democratically iffy, frets Mr Südekum. They would incur borrowing costs at a time when investors actually pay to lend to the federal government. But by not adding to the public-debt stock they offer a way of getting round the debt brake. The CDU/CSU chancellor-candidate, Armin Laschet, has flirted with what he calls *Deutschlandfonds*.

More radical ideas are afoot, notably a proposal by Dezernat Zukunft, a think-tank led by Philippa Sigl-Glöckner, a former finance-ministry official who calls SPVs "a declaration of defeat to silly fiscal rules". Dezernat Zukunft wants to shift the fiscal debate away from arbitrary debt limits towards the goal of full employment. Low headline unemployment, the group notes, masks low labour-force participation rates among women and part-time workers seeking more hours.

Although the debt brake limits deficits to 0.35% of GDP, the calculations rely on a complex estimate of "potential" output. In the short run, Dezernat Zukunft reckons tweaks that require legal but not constitutional tampering could allow more deficit spending worth €50bn-60bn a year. In the long run Ms Sigl-Glöckner hopes to see off the debt brake for good. That such ideas now get a serious hearing suggests the fiscal debate has at last begun to shift. ■

The car industry

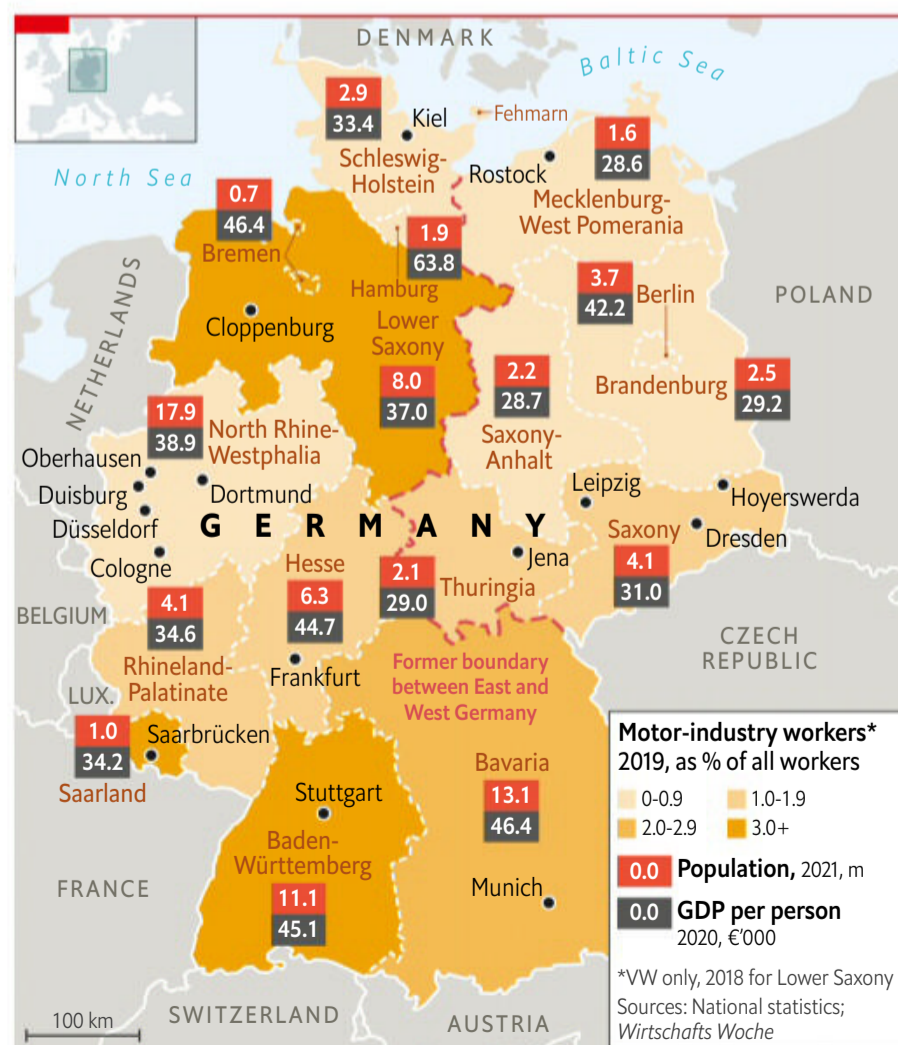
A troubled road lies ahead

The all-powerful automotive sector faces a challenging future

SAARLAND IS NO stranger to transition, jokes Thorben Albrecht, policy director for the IG Metall trade union. The second-smallest of the 16 states, for a century Saarland bounced back and forth between Germany and France, establishing itself inside the federal republic only in 1957. Coal deposits and steel made it rich, but also left it exposed to job losses when globalisation came knocking in the 1970s. A booming car-parts industry provided a cushion, but Saarland now faces a third shift, as industrial transformation and climate policy come after its two big sources of jobs: cars and what remains of steel.

The government wants 14m electric vehicles (EVs) on German roads by 2030, up from 1m today. But the slow death of the internal combustion engine undercuts the business model of gearbox, cooling-system or fuel-injection pump makers—suppliers that dot Saarland and other states. Almost 20,000 people work in Saarland's car industry, mostly in small and medium-sized firms. The state has neither a large company headquarters nor a big city with a thriving service sector. "A huge reduction in car-sector jobs will mean social problems of a very large order," says Hans-Christian Herrmann, who charted previous waves of deindustrialisation as the chief archivist in Saarbrücken, the state capital. An IG Metall survey found that 42% of German car workers fear for their future.

Workers at steel plants, which account for around 6% of German carbon emissions, are as worried. "You can see my grey ▶▶





► hairs”, chuckles Stephan Ahr, who chairs the works council at Saartahl, a steelmaker in Völklingen. The plant has already lost tens of thousands of jobs. The main decarbonisation plan, in which polluting coke is ditched in favour of hydrogen obtained from renewables, will require far fewer workers. Other developments, including uncertainty over the carbon price and EU policy on steel imports, add to Mr Ahr’s worries. “Everything affects us without us having any influence,” he says. “It’s take it or die.”

Germany’s industrial model rests on the full employment that buys consensus between firms, workers and government. Labour relations are harmonious. But the impulses to create what unions call a “just” transition can lead to ruinously expensive deals like the “coal exit” agreed in 2019: a €40bn programme to manage the slow elimination by 2038 of the final coal mines, which employ 20,000 people, slightly fewer than the country’s yoga teachers.

The transition is also a challenge to big companies. If carmakers were late to the electric game, Volkswagen, which has almost 300,000 employees in Germany, is scrambling to make up for lost time (and perhaps to repair the damage to its reputation from the diesel-emissions scandal in 2015). Under its charismatic boss, Herbert Diess, and with an eye on Tesla, soon to open a battery gigafactory outside Berlin, vw has gone all-in on electric. It says EVs will account for half its vehicle sales by 2030. By 2035 vw, which reckons to account for 2% of global carbon emissions, will cease selling petrol-powered cars in Europe.

EU rules and climate targets are forcing tough decisions. But talk to vw insiders and you see how deep the shift has gone. To power the next generation of cars, vw plans by 2030 to build six lithium-ion battery plants in Europe. Entire plants are given over to EV production. The “MEB” chassis (or platform) will be spread across models, ensuring cars are built around batteries rather than vice versa, and may be licensed to other manufacturers. “Think of this as a system, with suppliers, batteries, services and infrastructure,” says Andreas Walingen, vw’s chief strategy officer. “Only then will customers go electric”. Mr Diess has also linked executives’ bonus payments to vw’s share price, a decision one employee says “changed the DNA of the governance.” vw’s profits surged in the first quarter of 2021, and investors seem satisfied.

The car industry faces the biggest disruption in its history, says Ferdinand Dudenhöffer, head of the Centre Automotive Research in Duisburg. Electrification is just a start. Audi, a vw brand, is try-

ing a car-subscription model aimed at younger drivers, a growing market that could upend revenue models. Software systems require digital skills and fresh ways of working. “We are strong on the hardware side of cars, not so good on data and AI,” says Danyal Bayaz, the Green finance minister of Baden-Württemberg, another big car state. Some fear vw will never catch up with Tesla—or the Chinese firms muscling in. Fully autonomous vehicles, should they arrive, may bring the biggest change yet.

As for the jobs, the scares are overblown, insists Mr Diess (who faces powerful unions and workers’ councils). “Seats remain seats, steel remains steel, wheels remain wheels, brakes remain brakes,” he recently told the German Press Agency. A study by the Boston Consulting Group and the German think-tank Agora Verkehrswende projects no net loss of jobs by 2030, although other surveys are less sanguine. But the headline figure conceals massive churn, as component making gives way to battery production and coding. Almost half the country’s 1.7m car workers will need reskilling, especially the SME suppliers. This, warns the study, will mean “considerable expense” for firms and workers.

And for the state, too. Carmakers rely on the government to set carbon targets, roll out EV charging infrastructure and tweak regulations to make it easier to harmonise refuelling payment systems across the country. Until 2025 the federal government will subsidise EV buyers to the tune of €6,000 per car. The incentives have lifted the share of EVs and hybrids to over a fifth of all new sales, but they are regressive and expensive. Deutsche Bank calculates that each EV could over its lifespan cost the state €20,000 in subsidies and taxes forgone.

Beyond the jobs churn, Saarland looks hopefully to new industries spawned by industrial transformation, rather as cars provided a safety net during the previous wave of deindustrialisation. svolt, a Chinese battery maker, plans two plants in the state which it says could create 2,000 jobs, although locals are sceptical. Hydrogen, an untested fuel central to the government’s climate plans, is another hope. One thing everyone agrees on is that the transition needs to be oiled with public money. The industry reckons some €30bn will be required to make the full transition to decarbonisation. Some politicians pledge that climate protection will be the next engine of prosperity. At least in Saarland, many are unconvinced. “We have just eight years to change a region,” says Ralf Reinsteadtler at IG Metall. “That’s tomorrow.” ■

The demographic challenge

Desperately seeking people

The task of coping with ageing and shrinking populations is hardest in the east

ON THE FACE of it there is little to separate the two towns. Cloppenburg, near the Dutch border, and Hoyerswerda, 40km from Poland, each has a population of 30,000-40,000. Both, say local officials, offer respite from the strains of urban life: cheap housing and plenty of kindergarten places, the shortage of which is a huge source of stress for metropolitan parents. Neither is near a big city; both offer visitors a friendly, somewhat sedate, face.

But the similarities end there. With one of Germany's highest birth rates, Cloppenburg is growing at a steady clip, whereas Hoyerswerda has moved in the opposite direction. "This is a family-friendly region," beams Johann Wimberg, Cloppenburg's district administrator. "You can build a home here." Hoyerswerda, a former coal-mining hub, lost half its population after reunification in 1990, largely to westward emigration. The district of Cloppenburg has grown by nearly 50%. Hoyerswerda's "new" town (built during the communist era) is pockmarked by vacant plots on which GDR housing blocks once stood. Industrial parks on the outskirts of the town are half-empty.

Until a small, covid-induced decline last year, the German population rose steadily over the 2010s, reaching a record 83.2m in 2019. This was the result of high net immigration, running at an annual average of 400,000, mainly from southern and eastern Europe. Even the birth rate, long one of the lowest in the world, ticked up. But now a crunch looms. The birth rate peaked in 1964, and the baby-boomers are preparing to retire. In 2000 there were 26.5 over-60s for every 100 aged between 20 and 65. By 2025 this ratio will have shot up to 41.4. Immigration and labour-force participation rates aside, the working-age population will shrink by over 4m in the coming decade. Within the OECD club of mostly rich countries, only Italy and Japan have older populations.

Some parts of the country will do worse than others. Germany is no stranger to the town-and-country divide, but in some regions its economic structure mitigates against rural decline. Cloppenburg, like many small places, benefits from the success of "hidden champions": the profusion of SMEs, often based in the middle of nowhere, that keep well-educated locals close to home. These *Mit-*



telstand firms, which often operate in specific niches, are a peculiar feature of the industrial landscape. The area round Cloppenburg also offers less salubrious work in the form of meat-processing plants, which attract transient eastern European workers.

Hoyerswerda has no such luck. This correspondent's visit coincided with one from the Dresden branch of the Helmholtz Centre, which was considering where in the Lausitz region to locate a new research centre. Torsten Ruban-Zeh, the mayor and irrepressible cheerleader for his city, presented his vision of a vibrant, future-minded place ripe with opportunities for medical research and tourism. He noted that Hoyerswerda could not hope to hold on to the 200 or so students who leave its high-end *Gymnasium* for university each year, but needed prospects for the next tier of school-leavers, largely in technical work. The experts were not convinced; Hoyerswerda dropped out of the reckoning.

Parts of formerly communist East Germany face almost insurmountable demographic hurdles. Although people are no longer leaving for the west, so many of them did so after reunification (a net 1.74m by 2006), especially the educated young, that the demographic damage is now baked in. All five eastern states are older than all 11 western ones. If some "lighthouse" cities like Leipzig or Jena, on which state governments have showered attention, are muddling through, or better, it is a bleaker picture for smaller towns and the countryside.

Yet few regions are immune. By 2035 only 31 of Germany's 401 *Kreise* (districts) will have a working-age population comparable to today's, according to projections from the Berlin Institute for Population and Development. (The east will suffer disproportionately: 23 of its regions will lose one-fifth of their people.) The public sector is highly vulnerable: almost a third of government employees are due to retire in the next decade, according to Gerhard Hammerschmid at the Hertie School in Berlin.

Help from abroad

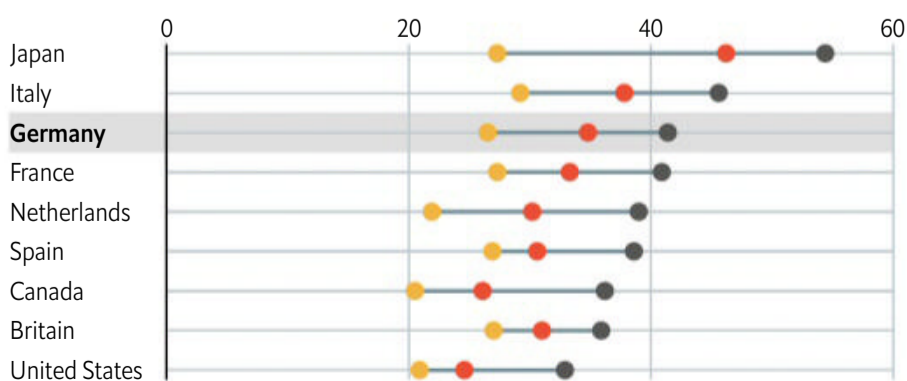
Immigration can help only so much. It has already slowed inside the EU, as eastern countries have their own demographic woes. In 2020 Germany modestly relaxed entry requirements for skilled workers from outside the EU. But as Johannes Vogel, a Free Democratic Party (FDP) MP, notes: "Every expert knows it won't be ▶▶

Demographic difficulties

Old-age dependency ratio

Population aged 65 and over per 100 working age* population

● 2000 ● 2015 ● 2025 forecast



Source: OECD

*Aged 20-64

► enough.” The Federal Employment Agency reckons the country needs 400,000 immigrants a year to plug its skilled-labour gap.

The public-pension scheme is also threatened. Since 2007 the number of recipients has risen by more than 1m to above 21m, over a quarter of the population. The system sucks around €100bn a year from the federal budget, over 30% of total spending. A strong labour market and earlier incremental reforms, including a slow rise in the retirement age to 67 by 2031, have somewhat eased the situation. Uncertainty over growth and immigration make long-term predictions hazy. But the coming crunch is as clear as day.

What to do? The IMF calls for indexing the retirement age to life expectancy, as Denmark does. More likely are smaller tweaks, including increases in the contribution rate from today’s 18.6% of gross wages. Payments may have to fall, too: last year a pension committee suggested the ratio of average pensions to income would probably have to drop from 48% to 44% after 2025. Jens Weidmann, head of the Bundesbank, adds: “It doesn’t seem very convincing to rule out changes to the retirement age while life expectancy continues to increase.” Failure to reform will only increase the burden on the federal budget, exposing the system to recessionary risks, notes Christian Dudel at the Max Planck Institute for Demographic Research in Rostock.

Yet change will not be simple. Pension reforms do not, as a rule, inspire France-style mass protests. But an ageing electorate will not roll over easily, and in consensus-oriented Germany the government will need to prepare the ground carefully. In June politicians howled when advisers to the economy ministry warned that the state pension system could face serious financing problems as early as 2025. “My hope is that we start reform before it becomes a political battle in which many participants will be wounded,” says Steffen Kampeter, general manager of the BDA employers’ association. Four in five Germans think their state pensions will not be enough to live on in old age. It will fall to the next government to ease their fears. ■

The European Union

Missing Angela already

There is no obvious replacement for the chancellor in Europe

ANGELA MERKEL’S first EU summit, in December 2005, was a sign of things to come. Tony Blair and Jacques Chirac were locked in combat over the seven-year budget. The chancellor, in office for three weeks, took stock of others’ red lines, schooled Mr Blair and Mr Chirac in the finer details and, after negotiating for hours (and oiling the wheels with German money), brokered a compromise. If the rest of Europe is nervous over Mrs Merkel’s departure, it is because she has made herself the indispensable European: brilliantly briefed, invested in personal relationships, and possessing almost superhuman negotiating stamina.

Mrs Merkel has held Europe together when it counts: leading the charge against Russia after its attack on Ukraine, holding the line on Brexit and now assenting to joint EU borrowing for its post-pandemic recovery fund. But a fair accounting would also find much to criticise. In the euro-zone crisis she forced countries like Greece into punishing austerity and entrenched a narrative of fiscal indiscipline that deepened and lengthened Europe’s recession. In 2015-16 her unilateralism on border policy and negotiations with Turkey infuriated her partners, deepening an east-west split. Many also believe she could have done more to resist the authoritarian drift in Poland and Hungary.

Mrs Merkel is no starry-eyed European. Campaigning in 2005, she said the EU ought to think about returning some powers to governments. Five years later, in a speech to the College of Europe ►►

The young’s attitudes

New German voters have no memory of life before Mrs Merkel

THE LITANY of foreign leaders Angela Merkel has outlasted is impressive. Since she took office in 2005, America and France have been through four presidents each, Britain has seen five prime ministers and Italy no fewer than eight. But at home an entire generation has grown up with no memory of another leader. In September 2.8m of these *Merkelkinder*, making up nearly 5% of the electorate, will be eligible to vote for the first time in a federal election. *The Economist* met a few at the Sophienschule, a *Gymnasium* (grammar school) in Hanover. All are near or have just finished their final year of schooling.

For some, the experience of covid-19 was a harsh reminder of political reality in a country where the over-60s make up well over a third of eligible voters. “The pandemic showed how unimportant younger voters really are,” says Marie

Sophie Scholz. “Apart from our teachers, no one cared.” All the students have harrowing accounts of failed technology, disrupted home lives, lost motivation and loneliness. Some say their pandemic experiences will influence their vote.

Climate concern looms large. Many students have participated in Fridays for Future climate marches. “The average voter is in their 50s, so for us it’s not enough to vote,” says Julian Köppen. “But we can demonstrate.” Marie is infuriated by condescending politicians who dismiss such actions as excuses for truancy: “If they don’t act now, politics will become a very dark place.” Hannah Sprengel grumbles: “They see what we do, but don’t act.”

Julian is excited by a court ruling that partly struck down the climate law for not taking sufficiently into account the rights of future generations. This approach to sustainability, he reckons, must extend

beyond climate to areas like the digitalisation of schools. Max Brinkmann wants more focus on inequality and pensions—and thinks change comes from collective movements (he has joined the SPD). For Julian, a big issue is “security”, by which he means “avoiding international conflicts and not provoking other leaders.”

Mrs Merkel was good at that, he reckons. All students appreciate the chancellor’s calm, rational approach to politics, in contrast to what Max fears has become an “emotional and populist” campaign. “We will miss her,” he says, while conceding that the chancellor “pushed away problems” that seemed too hard to solve. There is some scepticism about assuming Mrs Merkel’s departure will mean rupture. “We don’t have to be nervous,” says Hannah. “No one person will make or break a system.” Still, adds Marie, life after Merkel is “looking into the unknown”.

▶ in Bruges, the chancellor expressed scepticism about the “community method”, in which EU institutions like the European Commission and European Parliament (which she is said to dislike) drove integration. As the EU bounced from crisis to crisis, she backed the alternative “union method”, with power shifting back to national governments—none more important than her own.

The European Council, where leaders thrash out deals often shaped by domestic political currents, has become the EU’s central decision-making institution. Presidents of the commission, like José Manuel Barroso and Jean-Claude Juncker, have often had to take a back seat (although the current one, Ursula von der Leyen, a former German defence minister, has quietly strengthened her institution). Mrs Merkel’s approach has not been to everyone’s taste. “She hasn’t been a neutral crisis manager; she’s actively worked against Europe,” complains Alexander Graf Lambsdorff, an FDP MP and former MEP.

Yet the EU and the euro have worked for Germany—so well that it is not obvious why any chancellor should push for radical change. If joining the European project was the condition for re-admission to the club of civilised nations after the war, more recently it has been the engine for German prosperity. The trading freedoms of the single market; skilled migrants from, and low-wage labour in, central Europe; and the cheap euro have all been a boon. EU countries account for over half of German exports, even after Brexit. And its economic strength has made the country the most important partner for almost all other EU members.

The next chancellor will face a big test when the commission reviews the EU’s Stability and Growth Pact, which limits fiscal deficits and public-debt stocks. Demand for change will meet fierce resistance from German conservatives. (The subject is sufficiently touchy that officials in Brussels are under instruction to keep their thoughts to themselves until after the German election.) But many governments, including France’s, believe the old rules are ill-suited to an era of low long-term interest rates and pressing investment demands. Some foresee a grand bargain, in which Germany accepts longer-term joint borrowing for the EU in exchange for a return to something closer to the pact’s existing rules.

A bigger question is whether the next government will sign up to ideas associated with Emmanuel Macron’s “strategic autonomy” agenda. In a recent paper Jana Puglierin and Mark Leonard of the European Council on Foreign Relations draw on opinion polling to conclude that Germany “may be on the cusp of a nationalist turn”. The remedy, they argue, is for the next government to make a patriotic case for investment in European sovereignty on matters like screening foreign investments, the international role of the euro and competition policy. Boosting European resilience as a hedge against American unpredictability and Chinese aggression, they argue, may become a condition for ensuring voters’ continuing support for the EU.

Many will take some persuading. And yet as it becomes clearer that the global circumstances that allowed Germany to thrive are disappearing, parts of the establishment are embracing European ideas that would not previously have earned a hearing. Take industrial policy. In 2019 Germany joined France in seeking unsuccessfully to persuade Margrethe Vestager, the EU’s competition supremo, to allow a merger of Alstom and Siemens, two industrial giants, so that it could compete against the Chinese.

Germany has also backed the EU’s “important projects of common European interest”, subsidies for “strategic” investments in hydrogen projects, battery production and the like. It is inching slowly towards translating abstract support for common European defence into reality via joint weapons projects. These developments and others hint at a dawning awareness that economic policy has a geopolitical dimension. And that may suggest the country’s foreign and security policy needs a complete reboot. ■

Foreign and security policy

More assertiveness wanted

A passive (and pacifist) country considers a more active role

ON AUGUST 2ND the *Bayern*, a Brandenburg-class frigate, set sail from the North Sea coast with over 200 troops aboard and a novel mission. Over seven months the warship would traverse the Suez canal and Red Sea, dropping anchor in places like Mumbai before reaching the South China Sea, where an assertive China is intimidating neighbours with unfounded territorial claims.

“Germany has a strong interest in stability, security, and rules-based politics in the region,” says Annegret Kramp-Karrenbauer, the defence minister. “We are not a regional power, but we support our partners.” This is unusual talk from a German politician. The frigate’s dispatch was a signal of intent to China and reassurance to allies. It also tells a story of a political class struggling to make sense of Germany’s role in a changing world.

Ms Kramp-Karrenbauer, once considered a successor to Mrs Merkel, suggested sending a frigate in 2019. But peacenik SPD MPs objected. Wary of upsetting her grand coalition’s balance and ill-disposed to provocations, Mrs Merkel leaned on her former protégée to compromise. True to form, the internal problem was externalised: the *Bayern* would steer clear of disputed territories in the South China Sea and seek permission to dock in Shanghai. The decision confused Germany’s allies, including America. What exactly was Germany trying to achieve?

The biggest strategic challenge will be the recalibration of relations with China

The next government will face serious foreign-policy challenges. Some are familiar: a Russian menace, an underfunded Bundeswehr, cyber threats, the risk of a fresh migrant crisis, perhaps from Afghan refugees. The first test for the next chancellor, speculates one official, may come from a French request to shore up Germany’s presence in Mali, already its largest overseas military deployment.

The biggest strategic issue will be the recalibration of relations with China. Over the years Mrs Merkel fostered an agreeable coupling between the growing Chinese market and German exporters. China has been the country’s biggest trading partner since 2016. But this was not glorified mercantilism. Spotting China’s potential earlier than most, and fearing European decline, Mrs Merkel has sought to manage China’s rise, not contain it.

But the relationship has started to sour. The trophy of Mrs Merkel’s engagement, an EU-China investment treaty she pushed last year, is in the deep freeze because the European Parliament will not ratify it. The Greens, likely to join the next government, are human-rights hawks on China. Even the CDU manifesto is tougher than previous iterations. There is a sense that, as Mikko Huotari, head of the MERICS think-tank, puts it, “Germany’s China policy will have to be recalibrated on most fronts.”

Big industries like cars and chemicals have not withdrawn their long-term bets on Chinese growth. But other sectors have grown tired of the costs of doing business with China. In 2019 the Federation of German Industries (BDI) issued a paper calling China a “systemic competitor” and urging policy changes. Such developments have inspired German support for a bolder EU industrial policy. “We see China as a partner, a rival and a competitor,” says Jens Spahn, the CDU health minister, describing the EU’s taxon-▶



► omy of relations. “None of this includes dependence—and this worries me.”

Mrs Merkel’s attempts to bring China into the multilateral fold were grounded in a conviction that globalisation could work only if the biggest economies signed up to its rules. But the emerging competition between America and China, which extends far beyond the military sphere, makes this harder. Some firms have started to hedge. Carmakers are ramping up battery production in Europe. Companies will have to think how to navigate patchwork rules, where to locate R&D centres and how much distance to keep between head office and Chinese subsidiaries. Even the semiconductor shortage—a product not of trade wars but of supply-chain hiccups—is a reminder of latent vulnerabilities. All this, says Mr Huotari, shows that “China is no longer an all-in bet”. And some officials fret about Chinese economic and diplomatic pressure.

Belts and roads

Take Duisburg, a debt-ridden former industrial hub fallen on hard times. Home to Europe’s largest inland port and part of one of its most densely populated states, Duisburg is seeking redemption through China’s Belt and Road Initiative, an infrastructure-and-influence programme for which it is the European terminus. Some 70 trains make the 17- to 22-day journey between China and Duisburg every week, bearing electronics, vehicles and other goods for European consumers (and returning with machine tools, car parts and food). “Duisburg has become very famous in China,” says Jinheng Feng, who gave up an academic job in 2017 to set up a consultancy for Chinese firms interested in doing business in the city.

“The New Silk Road is a big chance for Duisburg to build a new economy,” says Rasmus Beck of the city’s economic-development agency. If the results beyond container trade have been limited, officials speak brightly of building “bridges of knowledge”, with China offering tech expertise while learning from Duisburg’s ex-

perience of post-industrial transformation. Having found a model that holds promise for Duisburg’s reinvention, few are interested in having it tested by shifts in geopolitics. They point out that, unlike Greece and Italy, Duisburg has been careful to avoid selling big stakes in infrastructure to Chinese investors.

A forthcoming paper by Roderick Keferpütz, also at MERICS, says China has become adept at leaning on officials in decentralised Germany. In North Rhine-Westphalia, home to Duisburg, America and Britain have given quiet warnings of Chinese economic influence. In 2018 critics howled when the city signed a deal with Huawei—a now-ailing Chinese tech giant with its European headquarters in nearby Düsseldorf. Elsewhere, cities that fly Tibetan flags or allow Falun Gong protests have been criticised by the Chinese embassy. Andree Haack, head of Duisburg’s economic department, sums up China’s insertion into multiple dimensions of governance. “You can see big politics is coming to the local level. But we have been given no European answer to the digital transformation.”

Germany has grown rich on the back of a benign global order it did little to support. If challenged, it could sprinkle on its trade policy a dash of *Wandel durch Handel* (“change through trade”, the notion that

growth will liberalise autocratic states), a hypocritical idea it suited everyone to pretend to believe. Leaders agonised endlessly over foreign deployments or giving the Bundeswehr armed drones. An idealistic worldview “prevented them from acknowledging that some powerful players do act in amoral, cynical and militaristic ways,” argues Maximilian Terhalle at King’s College London.

Under pressure from allies, this picture has slowly changed. The defence budget, though short of the NATO target of 2% of GDP, has risen since 2015. Germany spearheaded the EU’s diplomatic response to Russia’s attack on Ukraine, and its troops head a NATO “tripwire” force in Lithuania. Some 2,500 soldiers contribute to 11 multilateral missions abroad, and Germany is a partner in joint European defence ventures like the Future Combat Air System.

Yet this hardly adds up to a strategic outlook grounded in a sense of the national interest. It is not hard to conjure scenarios that would send officials into a tailspin, says Claudia Major, who works at the German Institute for International and Security Affairs. What if America withdraws its nuclear weapons? What if dithering over arms-export rules or new technologies hinders the development of European defence schemes? What if tensions over Taiwan threaten global free trade? The recent Afghanistan debacle, fears Ms Major, may make the country even more inward-looking by strengthening those who argue that interventions never work.

After the *Bayern*’s departure, the Chinese government issued a hostile statement asking Germany to clarify its intentions before it extended an invitation to Shanghai. Officials in Berlin who had struggled to resolve the ambiguity of the mission were relieved: Beijing had, in a sense, done the job for them. But the country cannot rely on others to fix its problems for ever. “More and more Germans realise that their prosperity, freedom and security require more strategic thinking and acting,” says Ms Kramp-Karrenbauer. “Most important, they realise that doing nothing and being the good guy are not always the same thing.” ■

The future

Reforms, reforms

Unfortunately, politics may not allow them

ANGELA MERKEL has steered Germany and Europe through difficult years. Although it may come as news to some, she will leave a country more at ease with itself than at any time since the republic was set up in 1949. Germany rests on solid foundations, from its universities and basic research, to its world-beating *Mittelstand* and undisputed engineering prowess. Its researchers invented the first diagnostic test for covid-19 and the first vaccine to use the messenger-RNA technology. Its democracy is robust, it sits at the hub of a strong network of alliances, and its European and global brands are stronger than ever. Few of the deficiencies this special report has sought to highlight seem irremediable.

For all that, suggests Thorsten Benner of Berlin's Global Public Policy Institute, "We may see the Merkel years as the last hurrah of the German model." If its foundations are strong, parts of the interior have started to show their age. For many voters, the old verities on debt, industry and Germany's place in the world retain a vintage charm. But they are increasingly out of step with a decidedly contemporary set of challenges.

Take covid-19. Although Germany suffered a lower death rate and a gentler economic blow from the pandemic than many other countries, the experience also exposed Germans to failings in the operation of their state. Many were shocked to see how schools failed to get to grips with online learning, or the endless bickering between federal and state politicians. The fax machines used by health offices to communicate test results became emblematic of a primitive public sector. Aggregating timely, consistent data proved elusive. Without the ability to impose common IT standards, the federal government was left to watch what Mr Spahn calls "400 digital islands" manage fragmented and incompatible systems.

The weaknesses of a tripartite governing system—federal, state and municipal—partly explain such woes. A €3bn fund approved by the federal government to help states observe an online-access law in 2020 took over a year to divide up. By the end of last year less than €500m of the government's €6.5bn "digital pact for schools" fund, approved in 2019, had been disbursed. Even less had been spent, as understaffed local governments struggled to understand the rules. One difficulty is a constitutional bar on the federal government directly funding municipalities in most circumstances. Workarounds muddy lines of responsibility and accountability. "Everyone knows that we need a federalism reform, and everyone knows that we won't get one," says Steffen Kampeter of the BDA.

Another problem is the quality of administration. If all bureaucracies battle with complacency and dead wood, Germany's is worse than most. "All that German officials want to do is develop tactics of risk avoidance," says one consultant, a claim borne out in international comparisons. Recruitment practices are stodgy, strict silos mean functions are duplicated, and lawyers dominate everything. Bureaucratic jobs have mushroomed; the price of unhappy grand coalitions where places must be found for everyone. One mid-level official says he marvels at the ability of his colleagues to bounce the simplest external request around for days.

The aspirants to replace Mrs Merkel all pledge to make the country more *zukunftsfähig*, as is customary before all elections. The climate imperative in particular will force them to think more seriously about such arcane matters as planning procedures and municipal staffing. But René Geissler, professor of public administration at the Technical University of Applied Sciences in Wildau, is sceptical. "We've been having the same debates for years," he says. "I really don't see change coming." Once governments are in place, serious reform of the public administration often falls prey to more pressing matters.

Germany's increasingly fragmented politics will not help. The next government could see growing tensions between the usual emphasis on consensus and the pressing need for action. In theory, once it is in place—which may not be until early 2022—a three-party coalition, an unfamiliar experience at federal level but the likeliest election outcome, could unite the best aspects of each party's programme: Green zeal on climate and investment; a liberal focus on digitalisation, innovation and bureaucracy; and so forth. But at least as likely is internecine bickering and political gridlock, especially in the absence of a chancellor with Mrs Merkel's clout.

Beyond Berlin

Should it turn out that way, Germany will not be the only casualty. Emmanuel Macron, if he survives his own re-election bid next spring, will at least for a time emerge as the EU's central figure. But as the French president has always recognised, his country is too weak, and in some quarters too mistrusted, to lead Europe alone; it needs a strong German partner committed to domestic reform and a more assertive posture abroad. And as American attention continues its long shift to China and the Pacific, the pressure on Germany to play a more active role in the EU's troubled neighbourhood, beyond its (relative) comfort zone of providing deterrence inside Europe, can only increase.

What are the prospects for success? To judge by the election campaign, which has been dominated by trivial scraps, personal peccadillos and arcane discussions about coalition configurations, they look slim. Debate on foreign policy has been especially thin; Europe has been almost entirely absent. Renewal in Germany rarely follows arrow-like from a new government; and even less so from the promises politicians make to an electorate that is hardly enthused by the prospect of disruptive change.

The optimist might claim that the challenges for Germany have become impossible to ignore. Those voices advocating reform, from a more realistic fiscal approach to a grown-up security policy, have started to earn a hearing inside government; some of them may even join the next one. Yet as Germans prepare for a new chancellor for the first time in 16 years, the danger of the complacency for which Mrs Merkel will surely be remembered has become starkly clear. Overcoming it will be the biggest task for whoever takes her place. ■

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Canada

A pointless election

TORONTO

Justin Trudeau keeps his job, but loses some lustre

BY CANADIAN STANDARDS the election campaign was ugly. Protests dogged the candidates of the main parties. Loutishness went “beyond the typical uptick” for federal elections, said the Royal Canadian Mounted Police. It came especially from anti-vaccine activists. This month someone threw gravel at Justin Trudeau, the Liberal prime minister, who says that vaccinations should be mandatory for federal employees and on aeroplanes and trains.

Yet the melodrama changed almost nothing. Mr Trudeau, who had called a snap election for September 20th in the hope of gaining a majority in the House of Commons, will instead continue to lead a minority government. The arithmetic in the 338-seat Parliament has changed little (see chart on next page). Mr Trudeau will continue to depend on smaller parties, especially the left-leaning New Democrats (NDP), to enact his programme. The opposition Conservatives, who had 121 seats in the outgoing Parliament, will have roughly the same number in the incoming one.

None of Canada’s main political leaders will come out of the election with his

standing much enhanced. Mr Trudeau has no good answer to the question of why it was necessary to hold an election during a fourth wave of the pandemic. The Liberals appear to have come second in the popular vote. Their lacklustre performance may prompt speculation that this election will be Mr Trudeau’s last. The NDP’s leader, Jagmeet Singh, failed to strengthen significantly his party as a challenger for votes of left-leaning types. He will try to nudge the government to spend more money on health care and raise taxes on the rich.

Erin O’Toole, the Conservatives’ leader since August 2020, may face the most painful questions. He campaigned as a reassuring centrist, offering voters a down-to-earth leadership style while proposing policies on climate change, child care and “reconciliation” with indigenous people that, at first glance at least, did not seem vastly different from the Liberals’. Yet Mr O’Toole could not ignore his party’s obstreperous right wing. He flip-flopped on gun control, which hurt his credibility.

Many Canadians who pugnaciously oppose what they see as Mr Trudeau’s smug

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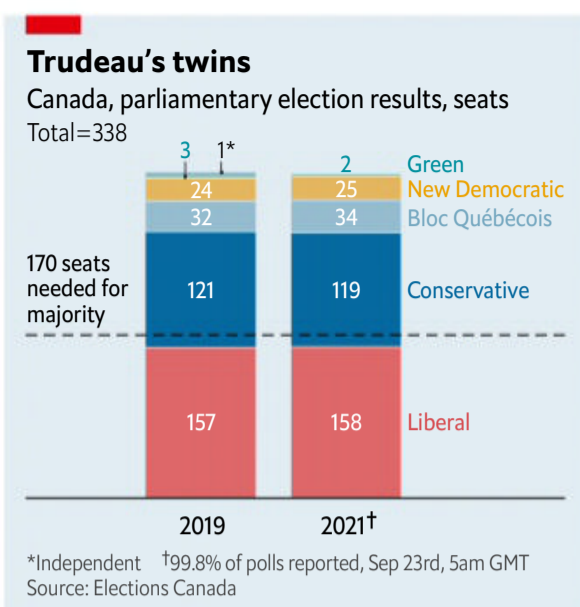
50 Bello: The pen v the paramilitaries

progressivism opted for the populist People’s Party. It tripled its share of the vote, to 5%, though it failed to win any seats. If Mr O’Toole stays on as the Conservatives’ leader, as he hopes to do, he will have to work out how to win back voters who hate vaccines and political correctness, without alienating centrists.

Mr Trudeau reads the result as encouragement to carry on a fight against the pandemic that, despite the fourth wave, has been relatively successful, and to “move Canada forward”, as the Liberals’ campaign slogan has it. Canada has had 49 excess deaths per 100,000 people, compared with America’s 241, according to calculations by *The Economist*. In his victory speech Mr Trudeau claimed “a clear mandate to get Canada through this pandemic and to the brighter days ahead”.

Those bright days may be far off. Canada’s economy, the world’s ninth-largest, remains fragile. It shrank unexpectedly in the second quarter of this year, largely because of the pandemic and global shortages of computer chips. The Bank of Canada expects growth to resume in the second half of 2021, but says the recovery is “choppy”. Mr Trudeau’s re-elected government will continue some pandemic-related measures to shore up businesses and incomes; the Canada Recovery Hiring Program, a wage subsidy, is to be extended to March 31st.

The government will continue with plans to make child care available to families for C\$10 (\$8) a day within five years ▶▶



▶ and to reduce Canada's greenhouse-gas emissions in 2030 by 40-45% from levels in 2005. The Conservatives would have scaled both policies back.

In making the case for re-election Mr Trudeau promised extra spending over five years of C\$78bn, roughly 3.5% of this year's GDP. It includes C\$6bn in this fiscal year to eliminate backlogs of medical procedures, plus around C\$15bn over five years to help Canadians cope with high housing costs, in part by building 1.4m houses.

Although fiscal hawks worry about Mr Trudeau's spending plans, he is not throwing caution to the wind. The Liberals will impose higher taxes, including a surtax on large banks and insurers, and promise to reduce federal deficits and debt as a share of GDP. The Institute of Fiscal Studies and Democracy at the University of Ottawa, a think-tank, says the pledge is credible.

But economists will continue to grumble that the Liberals show too little interest in promoting growth and productivity. Business investment per worker has fallen since 2014, according to a recent paper by the C.D. Howe Institute, a think-tank in Toronto. Among the main worries about the new government is that the tax-the-rich agenda favoured by the NDP will influence policy, which could discourage investment. Businesspeople are "feeling quite rattled", says William Robson, one of the report's authors. The Liberals' platform has ideas for investing in research, which could help raise productivity, but has little to say, for example, about boosting competition in telecoms or aviation.

Canadian voters have given Mr Trudeau only a grudging endorsement. "There's a lot that I don't like, but now is not the time to experiment with new policies and new things," says Kathy Ustel, a resident of Richmond Hill, a town located in the electoral battleground of greater Toronto. The constituency's Liberal MP easily won re-election. The Liberal prime minister will now have four years to convince Canadians that his old approach really can move the country forward. ■

Salmon farming

Fishing for compliments

Chilean salmon take a vigorous leap towards sustainability

IN 2015 ALEXIS SÁNCHEZ, a Chilean footballer, scored the decisive penalty in the Copa América final against 14-times winner Argentina, ending Chile's 100-year dry spell in the tournament. Now Chilean officials hope he will give the country's export market a similar boost. He is the face of a campaign launched in June by ProChile, a government agency. Arturo Clément, the president of SalmonChile, an industry body, hopes it will depict the country as a world-class exporter of sustainable fish.

Fish farming is supposed to provide cheap piscatorial protein while also relieving pressure on the oceans. But critics say its environmental virtues are overstated, because carnivorous farmed fish, such as salmon and trout, are given feed derived from wild fish. Globally much of the industry has become more sustainable over the past two decades, by putting salmon on a partially plant-based diet or reducing the use of antibiotics to treat their diseases.

Chile's fish-farming industry still has a way to go. It uses more antibiotics than its competitors: for every tonne of salmon produced, fish are showered with an estimated 500g of bacteria-killing medicine, compared with hardly any at all in Norway. Chile lags in standards for the discharge of nutrients into waste water, which are around 15 times stricter in Europe, Australia and the United States. In 2016 two harmful algal blooms, caused in part by unusually high ocean temperatures, poisoned shellfish and killed millions of farmed salmon. Many accused producers of exac-



Back of the net

erbatating the problem by dumping into the ocean 4,500 tonnes of rotting fish that died in the first bloom. A government report dismissed the possibility that the salmon industry fuelled the blooms, but an independent task-force said it was possible that rotting biomass had contributed.

The country's environmental rules are a hangover from the dictatorship of General Augusto Pinochet. The military junta wanted to diversify the country's exports from copper; salmon farming was seen as a valuable way of doing so. It is now Chile's second-biggest export. But fishing policies rarely took the environment into account. Over the past decade reforms have benefited fish producers rather than try to mitigate farming's ecological impact, argues Beatriz Bustos at the University of Chile.

Some producers are trying to change. Between 2017 and 2019 antibiotic use declined by nearly a third. More than half of the 155 members of Chile's constitutional assembly, elected this year to write a new constitution, want to boost environmental protections. This reflects a growing demand for greener policies. If the fish farmers do not mend their ways, they risk being regulated out of existence. ■

Pre-Columbian exploration

Medieval mapping

A monk in 14th-century Italy wrote about the Americas

THAT VIKINGS crossed the Atlantic long before Christopher Columbus is well established. Their sagas told of expeditions to the coast of today's Canada: to Helgeland, which scholars have identified as Baffin Island or Labrador; Markland (Labrador or Newfoundland) and Vinland (Newfoundland or a territory farther south). In 1960 the remains of Norse buildings were found on Newfoundland.

But there was no evidence to prove that anyone outside northern Europe had heard of America until Columbus's voyage in 1492. Until now. A paper for the academic journal *Terrae Incognitae* by Paolo Chiesa, a professor of Medieval Latin Literature at Milan University, reveals that an Italian monk referred to the continent in a book he wrote in the early 14th century. Setting aside the scholarly reserve that otherwise characterises his monograph, Mr Chiesa describes the mention of Markland (Latinised to Marckalada) as "astonishing".

In 2015 Mr Chiesa traced to a private collection in New York the only known copy of the *Cronica universalis*, originally written by a Dominican, Galvano Fiamma, be- ▶▶



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▶ tween around 1339 and 1345. The book once belonged to the library of the basilica of Sant'Ambrogio in Milan. In Napoleonic times, the monastery was suppressed and its contents scattered. The owner of the *Cronica* let Mr Chiesa photograph the entire book and, on his return to Milan, the professor gave the photographs to his graduate students to transcribe. Towards the end of the project one of the students, Giulia Greco, found a passage in which Galvano, after describing Iceland and Greenland, writes: "Farther westwards there is another land, named Marckalada, where

giants live; in this land, there are buildings with such huge slabs of stone that nobody could build them, except huge giants. There are also green trees, animals and a great quantity of birds."

Mr Chiesa says that giants were a standard embellishment of faraway places in Norse folklore and, indeed, Galvano cautioned that "no sailor was ever able to know anything for sure about this land or about its features." The Dominican was scrupulous in citing his sources. Most were literary. But, unusually, he ascribed his description of Marckalada to the oral

testimony of "sailors who frequent the seas of Denmark and Norway".

Mr Chiesa believes their accounts were probably passed on to Galvano by seafarers in Genoa, the nearest port to Milan and the city in which the Dominican monk is most likely to have studied for his doctorate.

His thesis raises a new question: why does the eastern seaboard of America not feature on any known Genoese map of the period? But it could help explain why Columbus, a Genoese, was prepared to set off across what most contemporaries considered a landless void. ■

Bello The pen versus the paramilitaries



A Nicaraguan writer reflects on exile from a dictatorship

"MONSIGNOR IS ARMED with the word. The word is more powerful than a four-barrelled machinegun, comrade," says Lord Dixon, a character in "Tongolele no sabía bailar" ("Tongolele didn't know how to dance"), a new novel by Sergio Ramírez, a Nicaraguan writer. "Those are stupidities," replies another. "Bullets rip through cassocks too." And yet it appears that Lord Dixon, whose role is that of a chorus, is right. In the novel the bishop in question is so dangerous to those in power that they secure his exile to Rome. And Mr Ramírez's novel has so enraged the dictatorship of Daniel Ortega that this month it issued an arrest warrant for him. "I think the book was the trigger," Mr Ramírez told Bello. Mr Ortega has banned it and customs officers have been seizing copies.

The two men were once comrades. Mr Ramírez was vice-president, under Mr Ortega, in the revolutionary Sandinista regime of the 1980s. Mr Ramírez then joined a short-lived breakaway movement that embraced democracy and, when that fizzled, devoted himself to writing (he won the Cervantes prize, Spain's most prestigious literary award, in 2017). Mr Ortega won an election in 2006 and, together with his wife Rosario Murillo, a devotee of esoteric cults, has clung to power ever since.

The charges against Mr Ramírez are totalitarian and specious. He is accused of laundering money, goods and assets, "denigrating national integrity", "provocation" and conspiracy. The first relates to grants of \$13,000 over five years received by his cultural foundation for journalism courses. The charges echo those used by Mr Ortega's regime to throw three dozen political prisoners in jail, seven of them opposition hopefuls in a presidential election due in Novem-

ber, which will now be a farce.

Mr Ramírez saw what was coming when he was interrogated by prosecutors in June. After that he left the country. The warrant thus amounts to a sentence of exile. In the 1970s, during the Sandinistas' struggle against the dictatorship of Anastasio Somoza, Mr Ramírez lived as an exile in Costa Rica. Back then, he says, "I had my whole life in front of me to think that I might return." Now he is 79. "The horizon is shorter. I have to accept the probability of never going back. This creates anguish and you have to struggle against that." He leaves behind a house full of books, collected over many decades, which police have raided.

"Tongolele" is ostensibly a detective story. Its title refers to the nickname of the intelligence chief. Its rapid-fire dialogue is written in the slang of the Central American street. The crimes it portrays are crimes of state. Its subject is a popular uprising against the Ortegas in 2018 and its repression, during which more than 300 people were killed. The characters are fictional but the events were real. So is

what the author calls "the dark, esoteric atmosphere". So, too, were the paramilitaries, recruited from former guerrillas and the lumpen of Managua, who gunned down unarmed students using AK-47s and high-powered snipers' rifles. They patrolled the city in unmarked Toyota Hilux pickups—just as the death squads of Argentina's military junta did in unmarked Ford Falcons in the 1970s.

The Ortegas never appear by name in the book. It does, however, feature "the comandante" and the "señora", "those at the top" whose whims inspire fear, paranoia and betrayal in a claustrophobic world in which fanaticism and opportunism are "twin diseases". "Who are my enemies and who are my friends, now that all the dogs piss on me?" asks Tongolele, as he falls out of official favour.

"We saw how those who when young struggled for a new world inflicted a coup d'état on the people, changing the constitution to perpetuate themselves in power in the name of a now-dead revolution, and we said nothing," preaches the bishop in the novel. The students raised their voices and were slaughtered. Repression worked, Nicaraguans are scared and the Ortegas and their prison regime look secure. Nevertheless, Mr Ramírez thinks a return to democracy can only come from within. The regime "won't last for ever", he says. "There are moments when things suddenly change."

Book-banning and the exile of writers have long been staples of Latin American dictatorships, including old-fashioned tyrants a century ago and military juntas in the 1970s. "Time is frozen in Latin America," says Mr Ramírez. "It's part of its attraction for novelists, that everything repeats itself." It is part of the region's tragedy that such dictatorships are no longer of the past.





Inequality in South Africa

Not so black and white

JOHANNESBURG

The racial income gap has narrowed since 1994. But the gains went largely to the black elite

JOHNNY MILLER, a photographer, began taking drone footage of South African cities in 2016. Shots from Cape Town, Durban and Johannesburg depict adjoining neighbourhoods—but different worlds. On one side of a photograph might be a verdant suburb spattered with azure swimming pools; on the other a slum with tightly packed shacks.

Economic research into South African inequality has produced a less granular picture. Reports from the World Bank and other bodies draw on benchmark measures of income inequality, such as the Gini coefficient, to conclude that South Africa is one of the world's most unequal countries. But they often say little about wealth, the role of government policy or, crucially, what has happened to the gap between blacks and whites since the end of apartheid in 1994.

Two recent papers from the academics Aroop Chatterjee, Léo Czajka and Amory Gethin fill some of these holes. In doing so they offer perhaps the most detailed picture of the haves and have-nots in South

Africa in the democratic era. The research is crucial to understanding the profound discontent felt by many South Africans.

In their latest paper the economists combine household surveys, tax data and national accounts to track incomes from 1993 to 2019. They start by noting that, before taxes, the share of income going to the

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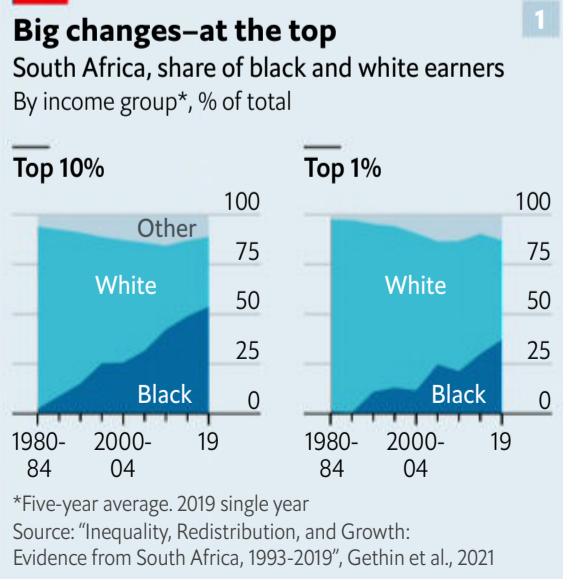
54 Lebanon's energy crisis

top 10% of earners grew from 57% to 66%—levels higher than in any other comparable country. The average income of the top 1% increased by 50%, while that of the poorest half fell by more than 30% after inflation. Even after taxes and transfers are included, the share of income going to the top 1% is roughly the same as it was at the end of apartheid—nearly one-fifth.

Since 1994 the ruling African National Congress (ANC) has raised taxes and introduced welfare grants for pensioners and children. It has expanded public health care and education, which researchers count as “in-kind” income for the beneficiaries. On paper these transfers largely make up for the loss in pre-tax incomes for the poorest half of South Africans.

Yet it would be wrong to think that social policies have pushed back the tide of inequality. For a start, the authors note that regressive consumption taxes such as VAT mean the poorest have high effective tax rates. The child-support grant is not enough to buy nutritious food. Unemployment benefits are paltry and patchy; hence the growing campaign by NGOs for a universal basic-income grant. The “income”, as defined by the researchers, that the poor receive from public services is not the same as a pay cheque. And given the poor quality of schools and hospitals, it may be valued less by South Africans than by the authors of the study.

One seemingly positive trend identified by the economists is the narrowing of the



underlying racial income gap. In the 1990s whites earned about seven times more than blacks. By the end of the 2010s they made about four times more.

But this narrowing is “mostly attributable to the emergence of a new Black elite”, notes the paper. Once in government the ANC introduced affirmative-action laws, which have helped increase the share of well-paid jobs held by blacks, especially in the public sector, where trade unions have won above-inflation pay rises. Another policy, called “black economic empowerment” has steered business towards black-owned firms and enriched a small number of black investors.

Partly as a result of policies like these, the share of blacks in the top 10% of earners has risen sharply (see chart 1), though it is still less than their share of the overall population (81%). Poorer blacks have done less well. While the gross income of the top 10% of black earners has tripled, that of the bottom 50% has fallen (see chart 2). When the researchers looked only at the ratio of white earnings to those of the bottom 90% of black earners, the racial gap had increased slightly since apartheid.

An earlier paper by the same authors found similar trends. It noted that concentration of wealth in South Africa is greater than in any other country for which there are comparable estimates. The 3,500 households making up the top 0.01% have more net wealth than the bottom 90% combined. The share of wealth held by the top 10% is roughly the same as at the end of apartheid; that owned by the top 1% and 0.01% has, if anything, risen.

Many of the inequalities of the present stem from the white-supremacist past, when blacks were systematically denied a good education and prevented from accruing wealth. Today whites on average are eight times richer than blacks—twice as large an overall gap as for income. Inheritance, notes Mr Gethin, helps old inequalities endure.

Taken together, the two papers under-

line not just the legacy of white rule, but also the ANC’s failure to help most black South Africans overcome it. Redistribution and elite empowerment are no substitute for growth and jobs. Unemployment, as work led by Murray Leibbrandt of the University of Cape Town has repeatedly found, is at the heart of South African inequality. South Africa’s GDP per person has been declining since 2015—a result of corruption and bad policies. In the second quarter of

2021 joblessness reached a record 34.4%.

On November 1st South Africa will hold local elections. For the first time, the ANC may win less than half of the vote in a nationwide contest. If that happens, it will be easy to point to the party’s dysfunction, or a surge in opposition turnout following civil unrest in July. Yet there are deeper forces at play. The party of Nelson Mandela promised “a better life for all”. So far it has delivered a much better life for a few. ■

Nigeria

Sum of a preacher man

CANAANLAND

Nigerian megachurches practise the prosperity they preach

“THE LORD loves a cheerful giver,” proclaims a preacher as she warms up the congregants for Bishop David Abioye’s third service of the day in the 15,000-seater Living Faith church near Abuja, Nigeria’s capital. “As you drop your offerings today, your financial captivity will be turned around for good,” she promises. Slipped in among the Bible verses are instructions on how to pay by cheque or online. What the Lord thinks of your correspondent’s reluctant gift is left unsaid.

As ushers wielding lime-green baskets take the offerings, a choir croons, “I’m restored and I’ve been rewarded.” Mr Abioye, resplendent in a pinstripe suit and gold tie, explains how God repays prayer with hard cash. “This week people will be giving to you,” he proclaims. Congregants jump up and cheer. “As I’m speaking they are already looking for your telephone number,” he shouts. All this, he says, is thanks to the “purchasing power” of Jesus’s blood.

Mr Abioye is a pastor in a Pentecostal empire known as Winners Chapel. It is led by Bishop David Oyedepo, who practises the prosperity he preaches. He zips around in private jets. He once dismissed a report that he was worth \$150m as an “insult” and “too small”. His business model combines the power of the pulpit with the slickness of corporate marketing. His books include “Understanding Financial Prosperity” and “Satan Get Lost!”

Like many charismatic pastors, in Nigeria and elsewhere, he preaches that faith will bring material rewards, and that the faithful should express their devotion by tithing, ie, giving a tenth of their earnings to the church. Some millionaire pastors hint that their wealth is evidence of their piety. The stacks of cash sent up the chain from their church branches may help, too.

“There really isn’t a line between what belongs to the pastor and what belongs to



The rewards of prayer

the church,” says Ebenezer Obadare, a sociology professor at the University of Kansas. Christian forgiveness seems in short supply for those who fail to deliver. In July a pastor in a branch of Winners Chapel said he was sacked for failing to raise enough cash. Winners Chapel says it was because he didn’t attract a larger flock.

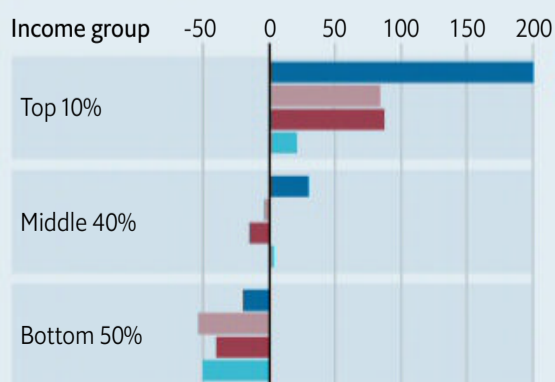
Some holy men have earthly business interests. Pastor Enoch Adeboye’s church has a construction company, a window factory and hundreds of holiday chalets at its Redemption City religious camp. Pastor Chris Oyakhilome, a televangelist, runs satellite broadcasting channels in America and Britain and an online shop, which accepts payments in 120 currencies. Bishop Oyedepo’s church has a 10,500-acre campus called Canaanland which has a bottled-water factory, bank and petrol station, as well as a palatial home for the bishop.

Several Nigerian churches own univer- ▶▶

Failing the bottom half

South Africa, % change in income*, 1993-2019

■ Black ■ Asian ■ Coloured ■ White



Source: “Inequality, Redistribution, and Growth: Evidence from South Africa, 1993-2019”, Gethin et al., 2021 *Cumulative

sities. These are popular with parents, partly because many of Nigeria's public universities are mediocre. Covenant University in Canaanland has strict rules: mobile phones are banned. It also has an impressive sports stadium, high-tech lecture halls and taekwondo classes. Posters vaunting its academic rankings adorn the walls, alongside photos of Bishop Oyedepo. The university says 98% of graduates land jobs or employ people themselves within two years of graduating.

Yet for many church members, it is unaffordable. The young staffer who showed your correspondent around the campus longed to study there, but his family, who have attended the church since 2003 and tithed till it hurt, could not pay the fees. It was cheaper to send him to university in Ghana. The university says it provides value for money, and that Bishop Oyedepo's foundation gives scholarships to students at Covenant University and other universities. Still, at Covenant, which has at least 6,000 undergraduates, the foundation currently provides only about 30 scholarships.

A worker at another Winners Chapel church laughs when asked if his salary is enough to send his children to the church school. Matthew, a parent who attends the 100,000-seater Glory Dome of a different megachurch in Abuja, says the church school is too expensive for his children. "My father went to a missionary school for free," he says. "Why are we not doing the same?" The reality, says Mr Obadare, is that these are "moneymaking enterprises".

Covenant says it reinvests its earnings in the university. But "the university is owned by the church," adds the vice-chancellor, Abiodun Adebayo. Does the church expect some return on its investment? "You grow until the time when you are big enough to also be supporting the church," says Mr Adebayo curtly.

The blurry lines between megachurches and their businesses matter for tax reasons. Churches are not taxed. In theory their businesses are. But figuring out where churches end and their businesses begin is not easy.

Critics do not mince their words. The logic of prosperity churches is similar to that of Ponzi schemes, says Mr Obadare, but with the added advantage that when people do not get rich, pastors can promise that their riches will come in the next life. Criticism of these beliefs may be expected to come from intellectual institutions such as universities, he adds, but in many cases these have bought into the churches' view of the world. The result in Nigeria, where more than 80m people live on less than \$1.90 per day, is that church "members are getting poorer and poorer", says Francis Falako, a professor of religious studies at the University of Lagos. "And the pastors are getting richer and richer." ■



Algeria

Bye-bye, Bouteflika

The former president is dead, but his regime lives on

FINALLY THE rumours are true. For years Algerians whispered about the health of Abdelaziz Bouteflika, their president from 1999 to 2019. After suffering a stroke in 2013 he was rarely seen in public, often leading to speculation that he was dead. When the whispers grew too loud, officials would roll him out in his wheelchair to sit before the cameras, a vacant look in his eyes. The people wondered who was really in charge. By 2019 they had had enough of the charade and toppled the old man.

Mr Bouteflika died on September 17th, aged 84. The young people who make up most of Algeria's population will probably remember him as that decrepit president—and lament that little has changed since his ousting. It is telling that the government buried him at a cemetery for independence fighters, with few of the honours accorded to past leaders.

Older Algerians may remember Mr Bouteflika more fondly. He was barely an adult when he joined the National Liberation Army in the war against French rule. A year after independence in 1962, he became Algeria's first foreign minister, still in his mid-20s. He would hold the position for 16 years. Witty and dashing in his three-piece suits, Mr Bouteflika helped establish the country as an influential member of the Non-Aligned Movement and a beacon of the anti-colonial struggle, earning it the nickname "the Mecca of revolutionaries".

Che Guevara visited Algeria hoping to stir revolutions in Africa. A young Nelson

Mandela received military training from Algerian soldiers. Mr Bouteflika, in the role of president of the UN General Assembly, invited Yasser Arafat to address the body in 1974, a historic moment for the Palestinian cause. When Carlos the Jackal took oil ministers hostage in an attack on OPEC headquarters in Vienna in 1975, the terrorist demanded to be flown to Algiers. Mr Bouteflika met him and negotiated the release of some of the hostages.

Passed over for the presidency in 1979, Mr Bouteflika left Algeria to avoid corruption charges (which were eventually dropped). He returned but kept a low profile during Algeria's civil war in the 1990s, when some 200,000 people were killed in fighting between Islamists and the army. In 1999 the ruling cabal of generals and security men, known as *le pouvoir* (the power), turned to him. Five months after winning a rigged presidential election, Mr Bouteflika pushed through a referendum on national reconciliation that granted amnesty to Islamists and militia members. Criticism of the army's conduct was prohibited. Many credit him for guiding Algeria out of its "black decade".

The regime would invoke the civil war and the need for stability whenever it wanted to justify its repression. Unfair elections were held—Mr Bouteflika won four of them. *Le pouvoir* siphoned off the country's vast hydrocarbon wealth, while the young struggled to find jobs. The public's frustration had been growing for years when the regime announced in 2019 that Mr Bouteflika would seek a fifth term. Tens of thousands of protesters took to the streets, chanting "Bye-bye, Bouteflika". Finally the regime gave in. Slumped in his wheelchair, the president passed his letter of resignation to a colleague. It was the last time most of the public would see him.

Yet any hope that Mr Bouteflika's resignation would bring real change has dimmed. The army remains the dominant power in Algeria. Abdelmadjid Tebboune, a former prime minister seen as the generals' choice, was elected president in 2019. The poll was shunned by most Algerians. Meanwhile, the number of political prisoners is thought to be rising. The government has tried to sow discord in the pro-democracy movement, known as the *Hirak*. It blames opposition groups and Morocco, with which it recently cut diplomatic ties, for fomenting unrest.

Sometimes the government still uses Mr Bouteflika, but now as a scapegoat. Covid-19 has taken a toll and the economy continues to stall. With few answers, officials also point to the villainy of France or other foreign conspirators. Most Algerians, born after independence, are unmoved by these tired anti-colonial narratives. They wish Mr Bouteflika's regime would expire with him. ■

Lebanon's energy crisis

Power politics

DUBAI

Friends and neighbours have offered to help, but mostly to help themselves

THE CELEBRATIONS seemed fit for a conquering hero returning home. As the trucks crossed the border, women showered them with flower petals and rice. Banners hailed the mastermind of the operation for “breaking the siege” imposed on his country by malevolent foreign powers. A few men fired bullets and rocket-propelled grenades in the air—a particularly ill-advised form of salute given that the trucks were carrying 4m litres of diesel.

It says much about today's Lebanon that a few petrol-tankers were greeted with such jubilation. The fuel is meant to ease an energy crisis that has paralysed the country. But 4m litres is less than a day's consumption. Moreover, it will exacerbate the long political crisis in Lebanon. The shipment, arranged by Hizbullah, a Shia political party and militia, came from Iran to the port of Baniyas in Syria (see map), where it was transferred to trucks. It violates a range of American sanctions on Iran, Syria and Hizbullah itself. America, in turn, has put forward its own plan to keep the lights on in Lebanon—yet that proposal, ironically, will also fall foul of American sanctions on Syria.

Lebanon needs fuel, whatever the source. It is two years into a financial crisis that has left the currency all but worthless. Foreign reserves plunged from \$38bn in 2019 to \$15bn this summer. The government is struggling to import fuel and make it affordable for an impoverished population. It has steadily reduced subsidies. Twenty litres of petrol now cost 30% of the monthly minimum wage.

That is when fuel is available, which often it is not. Petrol queues stretch for kilometres. At home many Lebanese receive just two hours of electricity from the grid, while back-up generators that long filled the gaps have run out. Water authorities and the telecoms monopoly have cut service in some areas because they cannot power pumps and mobile-phone towers.

None of this is caused by a Western “siege”, as Hassan Nasrallah, the leader of Hizbullah, is fond of claiming. American sanctions on Lebanon are mostly limited to his party. In fact, some of Lebanon's energy woes can be traced to Hizbullah's role as a guardian of a corrupt political system.

Founded in the 1980s, Hizbullah is now the most powerful force in Lebanon, with a militia that outguns the army and an ever-stronger position in politics (it helps to be



able to assassinate your critics). Yet it insists that its focus is national defence. Domestic policy, it says, falls to others.

But some of those others are its closest partners. In recent years it has forged an alliance with the Free Patriotic Movement, a Christian party led by Gebran Bassil, the president's son-in-law, which has controlled the energy ministry for a decade. Mr Bassil served as minister from 2009 to 2014. He pushed a widely criticised scheme to build a power plant in Selaata, a Christian-majority village that is not even connected to the national grid. He also hired power plants on barges, which were meant



Barely enough energy to celebrate

as a stopgap but have become permanent, at great financial and environmental cost.

Loth to let Hizbullah pose as a saviour, America and its friends have offered their own energy plan, which relies on the 1,200km Arab Gas Pipeline. Though built to export Egyptian natural gas to other Arab states, for much of its history it has sat idle. After the Egyptian revolution in 2011, militants repeatedly bombed the feeder pipeline. Then Egypt ran into gas shortages caused by falling output and surging demand. By 2015 it had halted exports and become a net importer.

The picture is quite different today. The eastern Mediterranean is awash in natural gas thanks to massive finds such as the Zohr field in Egypt, which went online in 2018, and Israel's Leviathan, which started production in 2019. Last year Israel began piping gas to Egypt, some of which can be liquefied and shipped to customers in Europe. (A few Lebanese wags have asked how their government will ensure that none of the gas arriving through the Arab pipeline contains Israeli hydrocarbons.)

Yet this American plan also faces American obstacles. Since the pipeline crosses Syria, Bashar al-Assad's regime stands to collect transit fees. Rather than paying in cash, Syria could be paid in kind. One option would see it receive electricity from Jordan, which has a surplus, to help ease blackouts in regime-held territory. Either approach, however, would infringe the Caesar Act, an American law passed in 2019 which prohibits business with the regime.

Much of this is hypothetical. Syria must first fix its decrepit infrastructure, which will take months. But it underscores the fecklessness of an America that is hooked on using sanctions as a weapon. The Caesar Act was meant to give Mr Assad a choice between political reform and economic isolation. He chose the latter—not surprising for a man who destroyed his country to stay in power. But America is struggling to keep him isolated. Egypt, Jordan and the Gulf states—all American partners—are restoring ties. Now Syria is set to become Lebanon's energy broker.

As for the Iranian fuel shipments, they violated a host of American sanctions. Yet short of seizing tankers at sea, America had no power to stop them. It could impose sanctions on the Lebanese state (which insists that the imports were a private transaction), but that would only add to the country's misery. Sanctions have already failed to change the behaviour of regimes in Syria and Iran, and America will find it ever harder to enforce them consistently.

Lebanon has long been buffeted by larger geopolitical struggles. A few tankers of fuel from Iran, or a trickle of gas from Egypt, will not repair its long-mismanaged energy industry. As ever, though, fixing Lebanon's problems is not the real goal. ■



Democracy in Japan

Going round in circles

TOKYO

An unpredictable election is no cure for the malaise in Japan's democracy

THE FOUR candidates for the presidency of Japan's ruling Liberal Democratic Party (LDP) come from different corners of the party's big tent. Takaichi Sanae (pictured, left) is a nationalist who wants to become the first female prime minister, but opposes allowing married couples to keep separate surnames. Kono Taro (pictured, bottom) is the American-educated scion of a political family; he supports gay marriage and renewable energy. Kishida Fumio is a Hiroshima native who pines for a new form of capitalism. Noda Seiko is the mother of a disabled son. She has promised to be a champion for the vulnerable.

It is an unusually eclectic cast for the staid old party. It is also an unusually unpredictable contest: facing a revolt from younger members, most of the party's faction bosses have promised to allow their members to vote as they wish. The outcome will remain unknown until the votes are counted on September 29th, unlike last year's election when faction heads closed ranks beforehand and marshalled support for Suga Yoshihide, the current party leader and prime minister.

Yet the exciting—by the standards of Japanese politics—leadership contest is also a distraction from a deeper malaise in the country's democracy. Japan has avoided the populism and paralysis that have beset many Western ones. But its stability is not the result of widespread support for the status quo. "Our democracy is facing a crisis, as people's trust in politics is broken," said Mr Kishida, a former foreign minister, upon entering the LDP race.

Apathy has become endemic. Voter turnout has plummeted (see chart on next page). The Pew Research Centre, a pollster, found in 2018 that 62% of Japanese believe elections do not change things. At the start of this year, more voters supported no party (41%), than supported the LDP (38%) or the Constitutional Democratic Party of Japan (CDP), the main opposition party (7%). The opposition's fundamental weakness means that, as Sone Yasunori of Keio University in Tokyo, puts it, "The LDP presidential election is the real game, not the general election," which will come and go some time in November.

The LDP has dominated Japanese poli-

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tics since its founding in 1955. It ruled uninterrupted for decades, leading scholars to refer to Japan as an "uncommon democracy". The reality was more complicated than a one-party state: factional groupings functioned as parties within the LDP. And for years, the Japanese left was sufficiently powerful to check the government.

In 1993 a group of LDP defectors helped form a coalition that unseated the party for the first time; they reformed the electoral system to facilitate more inter-party competition. The coalition quickly fell apart, but in the ensuing years, a new party, the Democratic Party of Japan (DPJ), grew into a competitive centre-left force, eventually unseating the LDP in 2009. It seemed to augur the emergence of a two-party system with more debate over policy.

Yet the DPJ faltered in office, alienating voters, infuriating bureaucrats and upsetting Japan's chief ally, America. It had the bad luck to be in power when an earthquake struck north-east Japan in 2011, triggering a deadly tsunami and a nuclear meltdown in Fukushima. Its unsteady handling of the crisis made voters wary of power changing hands.

After losing to the LDP in 2012, the DPJ fractured. Along with its coalition partner, Komeito, the LDP has won the past six national elections and established firm control over both houses of Japan's Diet. The remains of the DPJ coalesced into the CDP in 2017, but the new party has proved unable to mount a serious challenge. It currently holds 113 seats in the lower house to ▶▶

▶ the LDP's 275.

The LDP's ham-fisted handling of the pandemic seemed to open a window, however small, for more serious political competition. Japanese voters have a history of showing up in droves when their frustration spills over. They did so repeatedly in local contests this year, most recently in August when they elected an opposition candidate as mayor of Yokohama over one backed by Mr Suga. Over the summer, some LDP members fretted they might go from their current supermajority to having to expand their coalition to stay in power. "It's scary," one admitted.

When the unpopular Mr Suga resigned last month, the LDP hoped it would help to placate the public, which, despite its frustration, remains wary of radical change. It appears to be working. The opposition parties, which had been somewhat hopeful of making advances before his resignation, are now clamouring to get noticed in the media. Support for the LDP has risen nearly 10% in some polls since the resignation; the Tokyo stock market has been rising in anticipation of a new leader.

Mr Kono, a former foreign and defence minister who now serves as the government's vaccine tsar, seems to represent the best prospect for a meaningful shift in style, if not in substance. He leads the polls among the general public. He has built a reputation as a maverick willing to challenge the LDP's entrenched ways. The party's younger members tend to support him.

Yet even Mr Kono has been forced to confront the realities of LDP politics. In a press conference announcing his candidacy, he softened his opposition to nuclear

power and played down his openness to allowing female heirs in the imperial family, two issues that had been symbols of his free thinking. Party elders nonetheless remain wary of him and are said to prefer the more pliable Mr Kishida.

Mr Kono's best chance lies in winning an outright majority in the first round of the LDP election, where parliamentarians and the party's rank-and-file are given equal weight. If he fails to do so, he will have to prevail in a run-off where Diet members' votes have far more weight. There, the result will probably hinge on power struggles and internal party rival-

ries. Mr Kishida, the likely second-place finisher, could yet prevail. (Ms Takaichi is seen as having an outside chance at advancing; Ms Noda has virtually none.)

The first task for the eventual winner will be to lead the party in the lower-house elections. While the LDP may lose some seats, the defeats are likely to be smaller than many in the party expected with Mr Suga at the helm. But unless the LDP's next leader can connect with the public, he or she may last no longer than Mr Suga did. Voters will have a chance to issue another verdict in upper-house elections which loom next summer. ■

Love hotels in India

In and out

MUMBAI

Companies are creating places for couples to canoodle in a conservative country

LOCALS CALL it "lover's paradise". Upan, a picturesque lake in Thane, a satellite city of Mumbai, attracts its share of joggers, cyclists and pot-smoking college students. But mostly the lane surrounding the lake is filled with young couples getting cosy under umbrellas. Every Indian city has such spots, where skittish lovebirds find privacy out in the open. A socially conservative culture, small flats, joint families, pricey hotels and uptight hotel-owners mean that there is often nowhere else to go.

That is starting to change. "Love hotels", which offer (very) short-stay rooms to unmarried couples, are a well-established concept in other Asian countries. But they have been a hard sell in India, says Prateek Singh, a co-founder of Brevistay, an app for hourly bookings at some 1,500 hotels. "The challenge was not convincing hotel owners of the business model, but changing their mindset."

What couples need is a room, not judgment, says Amit Sharma of StayUncle, a similar service that offers rooms, including gay-friendly ones, in some 1,800 hotels. That is not a popular opinion in a country where moral policing is common. For years couples celebrating Valentine's Day in Mumbai would be harassed and sometimes rounded up by the police. In March the chief minister of Uttarakhand, in northern India, bemoaned the state of the country after encountering women "showing their knees" in ripped jeans. Last month a state-run park in Hyderabad erected a notice announcing that "unmarried couples are not allowed inside the park". It was taken down after a public uproar. "We need to be mature about the whole thing," says an exasperated Amit Chakrabarty, who works at a



Get a room!

hotel in Kolkata.

As in any other business, pleasing customers is the key, says Sikender Yadav, whose hotels in Delhi are listed on StayUncle. About one in ten bookings involve extra services, such as room decoration packages. Errant lovers sometimes ask management to spell out "sorry" with flower petals on the bed.

Apps do their bit to spice things up too. "We are all clean for you to get dirty," runs a StayUncle slogan. The outfit supplies some rooms with a free "love kit" that includes chocolates and condoms. Mr Sharma says he intends to elevate the "in-room experience" by providing smart speakers and Spotify accounts. More ambitious plans include trying to convince hotels to soundproof their rooms. "We are not in the hotel business," he says, "but in the freedom-of-expression business."

Slimming down

Japan

Seats in the lower house of the National Diet

September 17th 2021

Government: Liberal Democratic Party (275), Komeito (29)
Opposition: Constitutional Democratic Party (113), Others (44), Vacancies (4)



Voter turnout at general elections, %



Sources: The Association for Promoting Fair Elections; The House of Representatives

The Philippines' drug war

Duterte harried

MANILA

The president and his killer cops are beyond the reach of the law—for now

FOR ONCE, Rodrigo Duterte exercised his right to remain silent. The last time the Philippine president crossed swords with the International Criminal Court (ICC) in The Hague was in June, when its prosecutors sought judges' permission to investigate him. At the time he reacted with dismissal: "Bullshit!" Yet when the court announced on September 15th that it would allow a full investigation into his war on drugs, which has killed untold thousands, Mr Duterte was uncharacteristically civil.

When he did eventually refer to the subject, it was without naming the ICC. On September 21st the president told the UN General Assembly that the Philippine justice system would deal with any excesses in his campaign. The president's spokesman, Harry Roque, had earlier pointed out various obstacles to the court ever putting Mr Duterte or his law enforcers on trial. Chief among them is the government's refusal to help investigators with their inquiries. But that argument ignores the possibility that next year's presidential election may install a new administration that is less keen on shielding the drug warriors from international law.

The killings in question began around the time Mr Duterte became president, in mid-2016. His campaign rhetoric had been full of calls to kill methamphetamine dealers to save the Philippines from narco-statehood. When law enforcers duly began shooting suspects dead, Mr Duterte repeatedly urged them on, promising to protect them from repercussions.

As the corpses piled up, the killings came under the scrutiny of the ICC's prosecutors. Mr Duterte reacted to the court's opening of a preliminary inquiry in 2018 by withdrawing the Philippines from the ICC's jurisdiction, though the country remained within its purview for another year. In announcing its decision this month to allow prosecutors to investigate, the court pointed out that it "retains jurisdiction with respect to alleged crimes" that occurred "up to and including" the date the Philippines officially left, in March 2019.

Most of the killings followed a pattern. Police officers would hunt down suspects and demand their surrender. According to the official version, the armed, drug-crazed traffickers would then open fire, provoking the cops to retaliate and shoot the suspects dead—lawfully, because they would be acting in self-defence.

After the first few hundred retellings of that sort of tale, an alternative version began to seem more probable. In this version, as related by witnesses, the police would burst onto the scene, gun down in cold blood the poverty-stricken addicts or small-time dealers they found there, then plant firearms and packets of methamphetamine on the slain victims to incriminate them. The police and other law-enforcement agencies admit that, by July 31st this year, 6,181 people had been killed in their operations against the drug trade since Mr Duterte became president. Human-rights monitors think the official tally omits thousands more killings.

The constitution limits presidents to a single term, so Mr Duterte must step down when his ends in June. He has said he will run for vice-president instead. But holding that office is unlikely to give him immunity unless he has a sympathetic successor; the two posts are elected separately.

One likely candidate for the leading role is his daughter, Sara Duterte, the mayor of the southern city of Davao, though she says she has no interest in running. Another is an estranged ally of Mr Duterte's, Senator Manny Pacquiao, a recently retired world-champion boxer, who has announced his candidacy. A potentially less sympathetic contender is Isko Moreno, Manila's mayor.

Politicians more bitterly opposed to Mr Duterte and his war on drugs have yet to confirm that they will run. If they do, some may try to win votes with campaign promises to bring justice to the families of the dead. Though Mr Duterte has remained consistently and unprecedentedly popular in the polls, Filipinos have misgivings about the scale of the violence in his war on drugs. The freedom of Mr Duterte and his enforcers may be at stake in the election. That promises to make the contest unusually ferocious. The president's newfound civility is unlikely to last. ■



Under the president's protection

Press freedom in South Korea

Off-target

SEOUL

A plan to fight fake news could hobble real journalism

WHEN LAWMAKERS from South Korea's ruling Minjoo party discuss their plan to impose tougher penalties on the media for reporting "fake news", they stress that they merely want to safeguard vulnerable citizens. "It's the least we can do to protect the people from fake news," one legislator told reporters earlier this month. "We have to remember that our people's basic rights and freedoms are more important than the freedom of the press," said another. The proposed changes to the Press Arbitration Act of 2011, the party argues, would improve the quality of reporting and increase the public's trust in it.

Hogwash, says the conservative opposition, which quashed a first attempt to pass the bill last month by threatening a filibuster. The proposal, it argues, is an attempt by the government to shield itself from criticism. Other observers appear to agree. Last week, a coalition of activist groups including Human Rights Watch called on legislators from all parties to reject the bill when it is put to another vote in the National Assembly on September 27th.

The bill introduces new provisions allowing individuals and small businesses to go after reporters and media organisations for, among other things, causing "emotional distress" by spreading false information either intentionally or as a result of "gross negligence", for instance without fact-checking. Critics worry the vague wording of some of the clauses would give the authorities too much discretion to decide which reports qualify for corrections or damages. A letter from the UN's special rapporteur on freedom of expression, sent to the government in August, warned that the law could be used to limit ordinary news reporting and criticism of the government, and could see writers held liable for parody and satire or simply for expressing unpopular opinions.

The ruling party's concerns are not entirely unfounded. Like people everywhere, South Koreans are exposed to mountains of humbug. A noisy minority of mostly elderly right-wingers watch YouTube channels that spread misinformation about vaccines, American politics and President Moon Jae-in's supposed chumminess with North Korea, the Chinese Communist Party, the devil, or all three. Even beyond the radical fringe, most people get their news from online aggregators whose algorithms reward sensationalist clickbait and which

▶ take little responsibility for sourcing. The biggest newspapers have long-standing links to big conglomerates; the heads of public broadcasters change with the government. Unsurprisingly, less than a third of South Koreans say they trust the news.

But if legislators are indeed trying to solve these problems and bolster their democracy, they are going about it in a curious way, says Park Kyung-sin, a law professor and free-speech activist at Korea University in Seoul. Most fake news and conspiracy-mongering originates on social media, he notes. But the law only applies to

newspapers and broadcasters, leaving the main source of falsehoods untouched. Mr Park suspects the party's real motive is a feeling of being under siege by the press: they find it hard to accept that, in government, "they're being criticised by all journalists, not just the right-wing media".

It is all the more surprising given that press freedom in South Korea has improved significantly since Mr Moon took power in 2017. South Korea climbed 30 places in a global press freedom index compiled by Reporters Without Borders, a watchdog, after his election. And it is an

unusual bill for a liberal democracy to propose, carrying as it does elements of similar laws passed in recent years by bossier places such as Singapore.

The many complaints have not fallen on deaf ears. Minjoo legislators have responded by drafting a revised version of the bill. But it still fails to resolve the main worry, that the law would unduly restrict speech. Given the party's absolute majority, it is likely to pass, unless legislators decide to withdraw it. If it does, South Korea will surely drop a few places in next year's press-freedom ranking. ■

Banyan Bamboo-shoots of resistance

A campaign of civil disobedience to military rule in Myanmar is turning violent

UNTIL FEBRUARY 1ST, when General Min Aung Hlaing mugged his country by ousting the civilian government, Zaw Maung Myint (not his real name) was just another urban youth with soft hands and a penchant for social media. Not long ago, however, he slipped into the jungles of Myanmar's borderlands. There he has been receiving military training from one of the country's powerful ethnic armies that have long waged war against the Tatmadaw, as the Burmese army is known, and even from defectors from the Tatmadaw itself. Living on bamboo-shoots and fish paste, Zaw Maung Myint is training to be a sniper. "If someone asked me what I wanted most, I would say: 'Guns!'"

As with Zaw Maung Myint, so with Myanmar: the country is descending further into violence. After arresting Aung San Suu Kyi and other leaders of the ruling National League for Democracy, the army began an orgy of bloodletting. Security forces have already killed over 1,000 civilians in their attempt to snuff out defiance of the junta. Ms Suu Kyi has disappeared from view, apart from the odd photograph from court as she answers a raft of absurd charges, such as possession of walkie-talkies.

Gone, too, is her doctrine of non-violent opposition that was at the heart of the pro-democracy movement she spearheaded during years of house arrest, and which helped bring an elected government to office in 2015 after decades of military rule. On September 7th the National Unity Government or NUG, which, though underground, claims to be the legitimate government of the land, declared a "people's defensive war".

Zaw Maung Myint is a member of one of several hundred "people's defence forces" (PDFs) that have sprouted in



recent months. There is a David-and-Goliath flavour to the contest, notes Gwen Robinson, a longtime chronicler of Myanmar, in *Nikkei Asia*, a magazine. The Tatmadaw controls a budget of billions, whereas the PDF volunteers rely on a covert lottery organised by the NUG. Still, a lethal dynamic of violence is unspooling.

The Tatmadaw acknowledges over 800 deaths from PDF "terrorists", both in the cities and in the rural heartlands. PDFs have blown up so many telecoms towers belonging to the army-owned Mytel (more than 80 at the last count) that the Tatmadaw has taken to laying mines around them. Tatmadaw soldiers, brutalised by decades of fighting what Anthony Davis, a security analyst, calls Myanmar's "forever insurgencies", do not shy from reprisals. The regime is training its own civilian militia of vigilantes to counter the PDFs.

Most ominously, this dark struggle is leaching into Myanmar's long-standing ethnic conflicts. Mr Davis argues in the *Asia Times* that PDF resistance to the Tatmadaw along the western flank of central Myanmar is "fundamentally changing

Myanmar's larger conflict map". The PDFs have made possible a broad corridor linking big insurgent groups in the north of the country, notably the Kachin Independence Army (KIA), with its ally the Arakan Army in Chin and Rakhine states in the west. The Arakan Army has agreed to a tactical ceasefire with the Tatmadaw, the better to regroup. Huge caches of arms are flowing down the corridor into its territories.

To secure support from Myanmar's various ethnic groups and their associated militias, the NUG has recruited leaders and politicians from such backgrounds. Around half of the cabinet comprises ethnic minorities, in deliberate contrast to Ms Suu Kyi's, which was dominated by the Bamar majority. The NUG has been lobbying hard for the right to take up Myanmar's seat at the UN General Assembly (a decision was put off).

Though ethnic armies such as the Karen National Liberation Army and the KIA are training a new wave of pro-democracy fighters, it would be wrong to imagine the NUG and various ethnic groups morphing into a united front capable of taking on the Tatmadaw. As Min Zin of Myanmar's Institute of Strategy and Policy points out, no ethnic army has said it will answer the NUG's call to coalesce into a "federal army". The leaders of some ethnic groups want to preserve the hard-won peace agreements they have with the Tatmadaw—along with their drugs, timber and jade rackets.

Others either harbour the suspicion that the NUG remains a Bamar-centric project or, like the Arakan Army, think they can carve out more territory as the Tatmadaw tries to stamp out pro-democratic resistance in the heartlands. More confusion, more murk as a benighted country tips further into mayhem.





Chinese-language media

Black, white and red all over

The Communist Party increasingly controls Chinese-language media outside the country

IN 2019, AT a conference in China of Chinese-language media firms from around the world, a senior official deviated from his script to make his point clear. It was, he said, the “duty and mission” of such firms to help “retransmit” news from China’s state-controlled press at “important times”. But the more than 400 delegates from over 60 countries, including America, Australia, Britain and Canada, would have needed no reminding. Their presence itself was a sign that China had already succeeded in bringing much of the world’s Chinese-language media under its thumb. Widespread use of WeChat, a censored Chinese social-media platform, is helping it shut out those that are not.

China’s main spending on propaganda abroad has been on the foreign-language news services of its state-controlled media. In recent years it has lavished billions of dollars on building a global television network aimed at rivalling the BBC and CNN, as well as on the overseas expansion of its newspapers. But it has also been working hard to boost its influence among

media abroad that are not under the Communist Party’s direct command. Those that use the Chinese language are among its main targets. There are tens of millions of ethnic Chinese living outside the country. The party likes to think of them as potential defenders of its cause in an increasingly China-sceptical West.

Chinese officials say there are more than 1,000 Chinese-language media outlets overseas. Some are newspapers that have long been partisan. Until the 1980s, the most widely circulated ones were run and owned by people from Hong Kong and Taiwan. They were staunchly anti-Communist. Those with Taiwanese connections were usually backed by the Kuomintang, the party that was toppled by the Communists in 1949 and took refuge on the island. During the Tiananmen Square

protests of 1989, the party grew alarmed by widespread support within the diaspora for the pro-democracy demonstrators. It began stepping up efforts to bend Chinese-language media abroad to the party’s propaganda needs.

The party was helped by dramatic changes within the global newspaper industry as a result of the spread of the internet and falling revenue from print advertising. Many cash-strapped Chinese-language outlets were delighted by offers of paid content from Chinese state media with which they could fill their pages. Owners of Chinese-language newspapers became all too willing to sell their stakes to tycoons with business interests in China, who were eager to show their loyalty to the party by regurgitating its propaganda.

In some cases China’s own state-owned firms became big shareholders. The majority of Chinese-language news organisations outside China are now either directly or indirectly owned by the Chinese government, says Rose Luqiu of Hong Kong Baptist University. In February *Sing Tao*, a Hong Kong-based Chinese-language newspaper that is widely read in America, was bought by Kwok Hiu-ting, the daughter of a mainland-Chinese property developer. That prompted America to require the newspaper to register as a “foreign agent”, a designation that the Trump administration applied to several mainland-controlled media as a way of highlighting their ties with the Communist Party. ▶

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China has also used heavier-handed methods. Journalists and editors who have family members in mainland China are sometimes warned either directly or through their relatives to write copy that pleases the party. Businesses are pressed not to place advertisements in Chinese-language outlets that criticise China. News organisations that try to remain independent struggle to recruit journalists because potential candidates fear retribution, says the founder of one such outlet. Such organisations are subject to cyber attacks. To avoid difficulties, many Chinese-language media practise self-censorship. Most of the big ones in America now read like the *People's Daily*, the party's official mouthpiece.

Some still resist the party's embrace. A handful are controlled by overseas-based practitioners of Falun Gong, a spiritual sect that the party banned in 1999 and calls an "evil cult". The website of New Tang Dynasty Television, or NTDTV, a Falun Gong-backed outfit, is more frequently visited in America than that of the official Chinese state broadcaster, according to Alexa, an internet research company. There are also services funded by Western governments, such as the BBC, Deutsche Welle, Voice of America and Radio Free Asia, that publish Chinese-language news online. Some international media have news websites in Chinese. Mandarin-speaking vloggers on YouTube broadcast political commentary that is critical of the Chinese government. Several of them have hundreds of thousands of subscribers.

To the party, however, the most crucial subset of the diaspora is made up of the millions of people who were born in China and have gone abroad to work or study, or as émigrés. This group is still outnumbered by foreign-born ethnic Chinese, many of whom are the descendants of people who left China generations ago. But their ranks have been growing fast. China wants to ensure that they do not turn their backs on the party, not least because it fears their potential influence over friends and relatives in China itself.

People in this group rely heavily on WeChat, a super-app that nearly everyone uses in China, to stay connected with people on the mainland and communicate with other China-born contacts abroad. In Australia, over 60% of Chinese-language news consumers say they read most of their news on WeChat, according to a survey by two academics in that country: Wanning Sun of the University of Technology Sydney and Haiqing Yu of RMIT University. WeChat has almost 700,000 daily active users in Australia.

Many Chinese newspapers increasingly rely on WeChat to reach new readers. To make that easier, they often censor themselves. In China, WeChat purges content that the party does not like. The interna-

tional version of the app is less tightly controlled, but it is difficult for news organisations considered hostile by the party to set up public accounts on it to push their articles to users. In December the platform even deleted a post by Australia's prime minister, Scott Morrison, in which he said that Australia was a "free, democratic, liberal country". He was criticising a Chinese diplomat's Twitter post of a faked image of an Australian soldier killing a child in Afghanistan. WeChat said it had removed Mr Morrison's message because it had used "misleading words" to "distort historical events and deceive the public".

In May China's leader, Xi Jinping, called for a bigger push to explain to people abroad "why the Chinese Communist Party is capable, why Marxism works and why socialism with Chinese characteristics is good". He has found willing assistants. ■

Climate-change policy

Low-hanging fruit

China has agreed to stop financing coal projects abroad. Will it do more?

IN A SPEECH by video-link, Xi Jinping, China's president, told the UN on September 21st that his country would stop supporting new coal-power projects overseas. Since 2013, 95% of the funding for coal-fired power plants that came from outside the countries where the plants are located has come from China, Japan and South Korea. In April South Korea vowed to end state-backed financing of coal plants abroad; in June Japan pledged to do the same. Climate campaigners are celebrating China's decision to follow suit.

By some estimates, 70% of all coal plants being built today rely to some degree on China's cash. Cutting off this source will hobble the building and opera-

tion of such projects in poor countries, where demand for power is often difficult to meet without foreign help. But by mentioning only overseas coal, Mr Xi glossed over China's own dependence on the stuff. Last year, the country's power plants produced over half the world's coal-generated electricity. It continued adding new coal-fired power capacity at a pace of roughly a new coal plant a week. China is already moving away from funding coal plants abroad anyway, mostly because of the falling price of renewable energy.

However, the gesture is at least a sign that China does not want to be seen as a spoiler of global climate-change efforts. John Kerry, President Joe Biden's climate envoy, had been urging China to make a pledge of this kind. But China had warned that climate-change co-operation with America could be jeopardised by tension in the two countries' relationship. Now tongues are wagging about whether China might have more good news to announce at COP26, the UN climate summit that is due to be held in Glasgow in November. (Mr Xi is unlikely to attend in person—since the pandemic began, he has shunned travel abroad.)

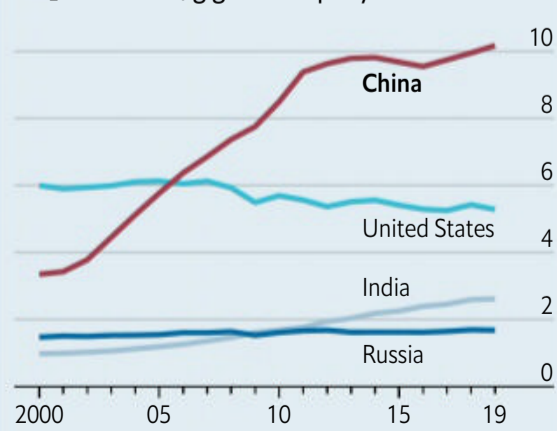
The speculation mainly surrounds China's plans for cutting emissions of greenhouse gases. The most tantalising possibility is that the country will move forward the date by which it aims for its carbon emissions to reach a peak: currently 2030. (A year ago, Mr Xi also said China would strive for "carbon neutrality"—a balance between carbon emissions and carbon reduction—by 2060). Given that China is the world's largest emitter, an earlier peak could make a big difference to the world's climate prospects, especially if it is followed by a marked decline.

Many analysts argue that China could, with effort, achieve an emissions peak in 2025. But Li Shuo, an analyst for Greenpeace, an environmental NGO, says China is unlikely to make a formal commitment to this effect. It would require shutting down many coal plants and overhauling the current five-year economic plan, which took effect this year.

A G20 summit in July gave a flavour of things to come. Italy presided over the event and was keen to extract a commitment to phase out coal power. China, among others, was reluctant. It also resisted a push for faster decarbonisation to prevent more than 1.5°C of global warming above preindustrial temperatures (the Paris agreement on climate change, reached in 2015, calls for the stabilisation of temperatures somewhere between 1.5°C and "well below" 2°C). But with thermometers showing roughly 1.1-1.2°C of warming already, it would take a Herculean effort to achieve that goal. China knows much of the task would fall on its shoulders. ■

Scaling the peak

CO₂ emissions*, gigatonnes per year



Source: Global Carbon Project

*Excludes emissions from ships and aircraft

Chaguan | How AUKUS is viewed from Beijing

To China, the new alliance is proof that America's plan is containment



FOR CHINESE leaders, the rows about AUKUS, a new security pact between America, Australia and Britain, confirm cherished prejudices about the Western world. China has always believed that America's network of global alliances is a cover for hegemony, even if American leaders offer warm words about defending universal values, standing up for friends and opposing "attempts by stronger countries to dominate weaker ones", as President Joe Biden did at the UN on September 21st.

Chinese suspicions are, in this case, bolstered by French anger over AUKUS, which was born out of Australia's decision to break a deal to buy diesel-electric submarines from France, in favour of buying nuclear-powered ones from America. When a French government minister accused Britain of returning to the American fold and "accepting a form of vassal status", that was a vindication for China. Indeed, the Frenchman's attack could be printed, without alteration, in the *People's Daily*, a mouthpiece of China's Communist Party. For all that, at least to date, the Chinese official response has been a study in caution, avoiding loud expressions of solidarity with France. That is revealing, because China normally praises French leaders when they call for Europe to pursue "strategic autonomy" in its foreign and security policies. Chinese diplomats know that France's vision of autonomy is code for avoiding over-reliance on America.

Instead, China has so far pursued narrower, rather technical lines of attack on AUKUS, related to the eight nuclear-propelled submarines that Australia is to buy from America. China's ambassador to the International Atomic Energy Agency, a nuclear watchdog, accused America of undermining non-proliferation work by transferring nuclear know-how and weapons-grade uranium to Australia, saying this would make it harder to stop Iran and North Korea from seeking similar technologies. The foreign ministry in Beijing added some tut-tutting about countries forming small cliques. By the standards of recent America-bashing in China, such grumbles barely count as throat-clearing.

After speaking to various wise owls in Beijing, both Chinese and foreign, Chaguan has explanations to offer. It is true that AUKUS confirms prejudices dear to Chinese officials and scholars. The first of these is that power is the driver of geopolitics, even if

smaller countries talk of putting their faith in multinational co-operation, the rules-based order and other pretty phrases. If Australia would rather be America's vassal than France's partner, that merely confirms China's bleak, might-makes-right worldview. That view is reflected in lectures that China delivers to envoys in Beijing. With tiresome regularity, it is the lot of Western ambassadors to be informed that, if their small or mid-sized home country has dared to challenge China, it can only be because their government is foolishly trying to please America, whose hand is behind all of China's troubles.

The AUKUS pact also reinforces a talking point that the Western world is far from united about China, especially when it comes to speaking out about questions of principle, such as the crushing of Hong Kong's democratic opposition or the repression of Muslims in Xinjiang. These are mostly Anglo-Saxon obsessions, Chinese diplomats and scholars like to suggest. Alas, they sigh, Americans, the British and their friends in the Anglosphere think it is their birthright to run the world, like some gang of finger-wagging missionaries or sunburnt colonial administrators. Chinese officials praise leaders whom they see as more focused on business interests, such as Angela Merkel in Germany.

Still, China has not hastened to woo France in its hour of wrath. For one thing, China may see a benefit in letting Western powers feud, uninterrupted. For another, France's furious response is a bit undignified. In Chinese culture, a public tantrum may signal *nao xiu cheng nu*, or "from shame to rage", meaning the specific form of high-decibel meltdown staged by someone facing humiliation. Ticking off reasons why France might be cross, a Chinese scholar lists the cancelled contract worth tens of billions of dollars, and a "loss of face" caused by Australia's hint that French submarines are not capable enough to deter China.

Nor is AUKUS hailed as a chance to divide the West. Wang Yiwei, director of the Institute of International Affairs at Renmin University in Beijing, notes China's relatively weak anti-submarine capabilities. "For Australia to have nuclear submarines is very dangerous for China," he says. "They are not needed for Australia's national defence. This is about China."

An arms race looms

Chinese leaders have a double view of America. They remain exceedingly wary of American areas of strength, from its armed forces to its high technology. Chinese leaders can see for themselves America's robust economic growth, compared with Europe or Japan. Yet they increasingly believe that Western societies are growing decadent. "The key competition between China and the US is about domestic governance," explains Professor Wang, before listing America's failings, from economic and racial inequalities to its handling of covid-19. "In the view of the Chinese ruling elite, US domestic governance is in serious trouble," he says.

In Beijing it is seen as enraging that this failing ex-hegemon remains strong enough to defy or dream of containing China. Mr Biden is called a weak, transitional figure. Chinese diplomats have treated his envoys, including his secretary of state, Anthony Blinken, and climate envoy, John Kerry, with studied belligerence. Under President Xi Jinping, a stern autocrat, China is impatient with being criticised. It rejects Mr Biden's assertion that the relationship can be at once sharply competitive and co-operative when needed. Above all, China is sure that America is trying to create alliances to stop its rise. A cautious initial reaction to AUKUS should not be misread. Discretion is not the same as calm. ■

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Influenza

Northern exposure

During the pandemic the world has largely escaped flu. But as the northern winter draws in, scientists fear it may return

IN SEPTEMBER 2020 doctors and public-health officials in the northern hemisphere were on high alert. They did not know how covid-19 would behave in the first winter of the pandemic. Respiratory viruses tend to surge during cold weather. And there were the usual concerns about influenza, the shape-shifting virus that sickens and kills many people every year. At worst, doctors feared they would see simultaneous outbreaks of covid-19 and flu which would overwhelm hospitals and send deaths soaring—a “twindemic”.

It never materialised. Covid-19 cases continued to rise in much of the world in late 2020 and early 2021 but the wave of influenza never struck. And yet today those same experts are worried once again. Flu’s absence in 2020-21 has probably made the prospects for 2021-22 worse: outbreaks could occur sooner, last longer and affect many more people than usual.

Seasonal flu is caused by a group of viruses that circulate around the world in and between birds, humans and other mammals. The flu season in the northern hemisphere—loosely defined for this pur-

pose as North America, Europe, north Africa and West Asia—usually starts around October each year and peaks the following January or February. In the southern hemisphere the season begins around May and peaks between June and August.

Two types of virus cause winter flu. Influenza A viruses originate in birds and pigs. The H1N1 and H3N2 subtypes (named for the structures of two proteins on their surfaces) also infect humans. Influenza B infects only humans.

As these viruses mutate and spread, they are adept at reconfiguring the proteins that sit on their surfaces, making them less recognisable to people’s immune systems, even those that have encountered similar viruses before. As a result, flu vaccines need to be updated and re-administered every year.

It takes manufacturers at least six months to create, test and manufacture large quantities of flu vaccines, so they need to decide well ahead of the flu season which versions of which viruses vaccines should target. It is at this point that the World Health Organisation (WHO) steps in.

The Global Influenza Surveillance and Response System (GISRS) is a network of laboratories and public-health institutions in 123 countries that collect respiratory samples throughout the year. They sequence the genes of any influenza viruses and characterise the proteins on their surfaces to build a detailed picture of the most prevalent influenza viruses in circulation, how those viruses are evolving and which new ones are emerging.

Armed with these data, every February and September the WHO brings together experts to recommend which strains of flu should be targeted by the forthcoming vaccines for the northern and southern hemispheres respectively.

In February 2021 those experts, using information from the viruses circulating in previous months in the southern hemisphere, selected four viruses for this year’s vaccines for the northern hemisphere. By the start of October, those vaccines should start going into arms.

The first big uncertainty for the coming winter is whether they picked the right viruses. This is always a problem but it is especially acute this year. Far less information was available from GISRS because the 2020-21 flu season was such a non-event across the world (see chart on next page). Less than 0.2% of samples globally tested positive for influenza between September 2020 and January 2021, according to the WHO. Between 2017 and 2020 the rate was 17%. The number of flu hospitalisations in America in the 2020-21 season was the low-▶▶

est since such records began in 2005. The Centres for Disease Control and Prevention said it received one report of a child dying of flu in the 2020-21 season in America, compared with 199 in 2019-20.

What explains such low levels of flu? Because of covid-19, people were wearing face masks, social distancing, washing their hands, avoiding public transport and staying at home. This also helped limit the spread of other respiratory viruses, including influenza.

This happy result has a troubling corollary. Vaccines for influenza are generally less effective than those for covid-19; they prevent about 70% of detectable infections in healthy adults and about 50% in the elderly. How well a vaccine works is a function of how well its components match the viral strains that a person actually encounters. When they are poorly matched, vaccines are less effective at preventing both infection and severe disease, resulting in worse epidemics. Given the paucity of information available about which strains of flu are circulating, the Academy of Medical Sciences (AMS) in Britain reckons the likelihood of mismatches is higher this year.

A second big unknown is how people's immune systems, which have largely avoided influenza for more than a year, will respond when they do encounter it. The mild or non-existent influenza season of 2020-21 was probably welcome at a time when covid-19 was killing tens of thousands of people and putting many more in hospitals. But it also means that many fewer people will have been exposed to the circulating flu viruses in the past year so the levels of natural immunity in populations will be relatively low. A wave of influenza in such an environment "could be problematic", warned the AMS.

Even those who have previously been exposed are at risk. Immunity diminishes over time. Worse, flu viruses change rapidly, so the immune system's memory of one season's flu may be of limited use against new viruses. Some have little or no protection against flu—babies and young children who have never been exposed to it.

Research on previous flu outbreaks in America provides some clues for what might happen in 2021. A study in 2013 examined what happened after mild winters, when rates of influenza transmission tended to be lower than usual and therefore resulted in lower-intensity epidemics. The researchers found that 72% of the subsequent epidemics were more severe than average. They started 11 days sooner and the epidemic growth rate was 40% higher. Their severity was probably exacerbated by their earlier onset because fewer people would have been vaccinated at that point.

Modelling by the AMS has shown that, if Britons returned to their pre-pandemic way of life, the country could at worst face

a winter influenza epidemic 2.2 times more deadly than normal. In recent years flu has typically killed 10,000-30,000 people annually in England. The 2017-18 season was the most recent bad season, with about 26,000 deaths.

Respiratory syncytial virus (RSV) provides more clues as to what could be in store for the northern hemisphere. RSV is a major cause of hospitalisation and death in young children, particularly those less than a year old. Reports from around the world showed a 98% reduction in cases of RSV during the pandemic. But researchers in Australia also found that, after physical distancing restrictions had been relaxed in the last few months of 2021, RSV cases shot up. They peaked in December (the country's summer), instead of the usual June or July (its autumn/winter). The peak itself was almost three times higher than usual and there were many more cases of infection in older children. Doctors in New York City found similar results after March 2021.

In the grippe of winter

If influenza or RSV surge when covid-19 levels are high, some doctors worry that people could be struck by several respiratory viruses at once. Around a fifth of children who end up in hospitals with bad lung disease are infected with multiple viruses, says Stephen Holgate, a pharmacologist at the University of Southampton. Growing evidence suggests that influenza and SARS-cov-2 can coexist and that they interact negatively, he explains. The AMS reckons that being infected with influenza A makes people more susceptible to SARS-cov-2. It also worries that the wider circulation of other respiratory viruses could lead to more dangerous variants of SARS-cov-2.

Preventing a "twindemic" in 2021-22 will take three steps, argues Dame Anne Johnson, an epidemiologist at University College London and president of the AMS.

First, a concerted effort to get more vac-

cines—for both covid-19 and influenza—into arms. Since natural immunity to flu is probably at its lowest for years around the world, immunity via vaccines will need to make up the shortfall. That will mean jabbing those normally at high risk, such as the elderly, pregnant women and health-care workers, but also children, who are prodigious spreaders of infection.

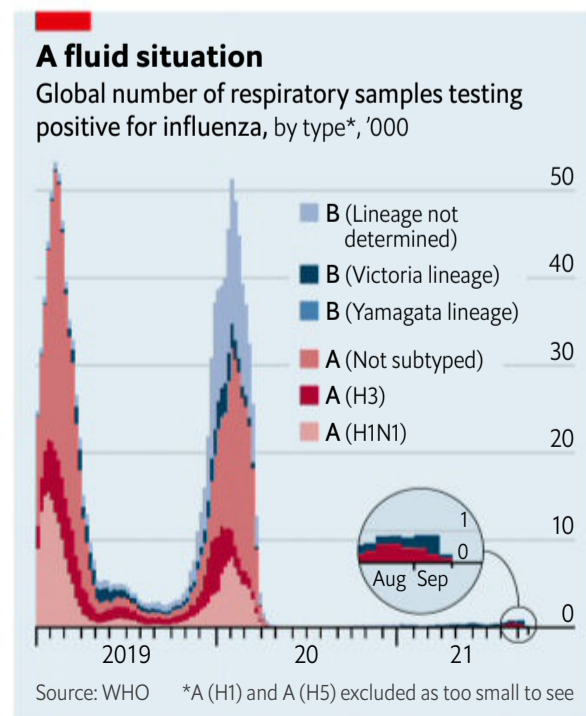
Second, since the symptoms of various respiratory illnesses including covid-19 are similar, doctors and clinicians need routine access to multiplex testing, where throat swabs are tested for different viruses at the same time. Rapid tests for influenza should readily be available in hospitals, clinics, care homes and pharmacies, says Professor Johnson. Identifying infections is useful—the timely use of antivirals can shorten an episode of flu.

The third way to fend off the bug is for ordinary people to practise what Professor Johnson calls "respiratory hygiene". Social-distancing rules may no longer be in force in much of the world, but people should still wear masks in crowded indoor environments. They should also work from home where possible and socialise outdoors, she says.

Scientists will face the coming flu season using the tools they know work. But the current process for making flu vaccines is slow—it takes six months and involves incubating viruses in chickens' eggs or mammalian cells before carefully extracting and purifying proteins that go on to make the building blocks of the vaccines.

The success of messenger RNA (mRNA) vaccines for covid-19 has spurred scientists to investigate how to use the same technology against flu. mRNA should speed up the process, leaving less time between concocting the vaccine and the viruses mutating. And mRNA vaccines should be easier to tweak if new strains emerge.

In July Moderna, an American firm that developed a successful mRNA covid-19 jab, began a trial of its mRNA flu jab, which targets all four virus strains recommended by the WHO. Pfizer, the other American mRNA covid-19 vaccine-maker, has also adapted its technology to make a candidate flu vaccine. Seqirus, a British drug firm, has announced plans to begin clinical trials of its mRNA flu vaccine in late 2022. It wants to use self-amplifying messenger RNA (SA-mRNA). A typical mRNA vaccine tells a person's cells to make an antigen (against which their immune system can then make antibodies). SA-mRNA vaccines also instruct the body's cells to replicate the mRNA itself. That should mean a much smaller vaccine dose can elicit the same immunological result, useful if you need to vaccinate people against multiple flu viruses at once—or keep boosting immunity for covid-19, which is set to join influenza as a regular visitor every winter. ■





Chipmaking

Neutral but not idle

LEUVEN

The technological brain trust at the heart of the \$550bn global chipmaking business

LEUVEN IS PERHAPS best known to the general public as the birth place of Stella Artois. Among chipmakers the Belgian city's biggest claim to fame sits in a squat building not far from the Leuven Institute for Beer Research. Metal banding lends its facade the glittering look of a silicon wafer etched with microcircuitry. Inside, its lower floors hum with the noise of \$3bn-worth of some of the most complex equipment humanity has ever devised. The offices above house hundreds of the planet's keenest semiconductor engineers dreaming up the future of chipmaking.

The building (pictured) is the headquarters of the Interuniversity Microelectronics Centre. IMEC, as it is better known, does not design chips (like America's Intel), manufacture them (like TSMC of Taiwan) or make any of the complicated gear in its basement (like ASML, a Dutch firm). Instead, it creates knowledge used by everyone in the \$550bn chip business. Given chips' centrality to the modern economy—highlighted by the havoc wrought by current shortages—and increasingly to modern geopolitics, too, that makes it one of the most essential industrial research-and-development (R&D) centres on the planet. Luc Van den hove, IMEC's boss, calls

it the “Switzerland of semiconductors”.

IMEC was founded in 1984 by a group of electronics engineers from the Catholic University of Leuven who wanted to focus on microprocessor research. In the early days it was bankrolled by the local Flemish government. Today IMEC maintains its neutrality thanks to a financial model in which no single firm or state controls a big share of its budget. The largest chunk comes from the Belgian government, which chips in some 16%. The top corporate contributors provide no more than 4% each. Keeping revenue sources diverse (partners span the length and breadth of the chip industry) and finite (its standard

research contracts last three to five years) gives IMEC the incentive to focus on ideas that help advance chipmaking as a whole rather than any firm in particular.

A case in point is the development of extreme ultraviolet lithography (EUV). EUV is a delicate process involving high-powered lasers, molten tin and ultra-smooth mirrors. The bus-sized machines that generate EUV are today all made by ASML and used by TSMC and Samsung, a South Korean chipmaker. It took 20 years of R&D to turn the idea into manufacturing reality. IMEC acted as a conduit in that process. That is because EUV must work seamlessly with kit made by other firms. Advanced toolmakers want a way to circulate their intellectual property (IP) without the large companies gaining sway over it. The large companies, meanwhile, do not want to place all their bets on any one experimental idea that is expensive (as chipmaking processes are) and could become obsolete.

IMEC's neutrality allows both sides to get around this problem. It collects all the necessary gear in one place, allowing producers to develop their technology in tandem with others. And everyone gets rights to the IP the institute generates. Mr Van den hove says that progress in the chip industry has been driven by the free exchange of knowledge, with IMEC acting as a “funnel” for ideas from all over the world.

This model has lured ever more contributors. Today “several hundred” are active at IMEC at any one time, the institute says. They range from startups to the stars of the chipmaking firmament, from ASML to TSMC. Pat Gelsinger, Intel's newish boss, is effusive in his praise for the outfit. Even ▶▶

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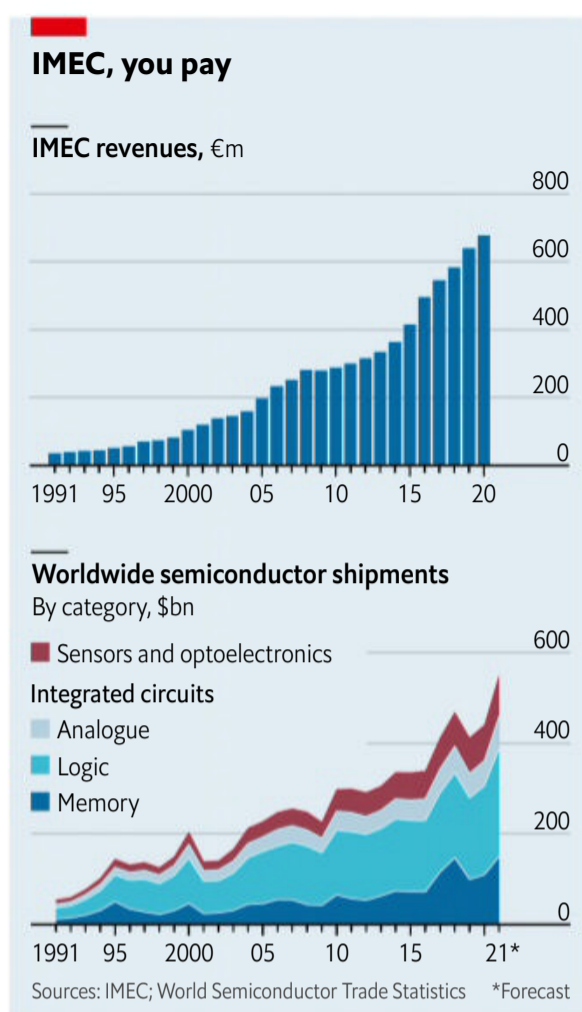
▶ as their number has grown, individual partners have also become more generous, in part to keep pace with the rising price of all the chipmaking equipment that IMEC must procure (even if it gets a lot of it from collaborators at reduced rates). As a result, IMEC's revenues, which come from the research contracts and from prototyping and design services, doubled between 2010 and 2020, to €678m (\$773m). Its annual takings are already on the order of those of giant charities such as the Ford Foundation or the American Cancer Society, and growing roughly in line with the booming chip business (see chart).

The deepening rift between America, home to some of the industry's biggest firms, and China, which imported \$378bn-worth of chips last year, threatens IMEC's spirit of global comity. China's chip industry is increasingly shielded by an overbearing Communist Party striving for self-sufficiency, and ever more ostracised by outsiders as a result of American and European export controls. All this limits the extent to which IMEC can work with Chinese semiconductor companies.

It is a matter of public record that IMEC has worked with Chinese firms in the past, including Huawei, a telecoms-gear giant with a chip division that has been hobbled by American sanctions, and SMIC, China's biggest chipmaker. Chinese make up 3.5% of people working at IMEC, the fifth-largest group and ahead of Americans at 1.5%. IMEC has a unit in Shanghai. Still, no Chinese tools are visible in its basement. IMEC would not comment on individual partnerships but says it has "a few engagements with Chinese companies, however not on the most sensitive technologies, and always fully compliant with current European and US export regulations and directives". Mr Van den hove adds that IMEC has no "major partnerships" with up-and-coming Chinese toolmakers.

Less chipmaking know-how flowing to China and less streaming out of it means that Chinese engineers' ideas can no longer be integrated with the global technology base of which IMEC is the custodian. There is little that IMEC can do about the growing distance between the Western and Chinese techno-spheres. So it is focusing instead on what it does best: pushing the cutting-edge of chip manufacturing.

A hulking machine made by Süss MicroTec, a German firm, scans chips to create a 3D image so that multiple processors can be aligned and affixed—fiddly business at nanometre scales. Elsewhere in the building Peter Peumans, who runs IMEC's health-tech portfolio, hands over a prototype developed during the pandemic that uses a custom silicon chip to cut DNA-sequencing times from hours to minutes. Xavier Rottenberg is developing semiconductor-based ultrasound sensors that



can be printed out using the technology to make flat-screen TVs, which may lead to scanners much larger than today's handheld ones and able to capture the whole body at once at a higher resolution. Such work keeps IMEC's neutral ideas factory awhirl. Maintaining Swiss-like neutrality in chip geopolitics will be tougher. ■

American retail

Two new shocks for shopping

NEW YORK

Retailers contend with shortages and a stampede back to the aisles

VISITORS TO A big supermarket in America these days could be forgiven for feeling disoriented. From one angle, all-American consumerism is on full display, with throngs struggling to steer overflowing trolleys. Retail sales (excluding cars) rose at a seasonally adjusted rate of 1.8% in August, compared with July, the fastest since March. Other images, though, look distinctly un-American. To their horror, some shoppers see empty shelves where their favourite brands of biscuits, detergents and loo roll typically sit—the result of supply-chain disruptions as outbreaks of the infectious Delta variant of covid-19 shut factories and ports around the world.

Unlike early in the pandemic, when shops were stripped bare by panic-buying, America's consumers mostly have alterna-

tives to pick from. But the shortages are a sign that things in the country's \$5.6trn retailing industry are not back to normal. If the supply shock weren't enough, retailers must also deal with demand from shoppers once again keen to stroll the aisles rather than scroll through apps. Having survived the initial pandemic upheaval, shops are in the throes of another.

Start with the bottlenecks. Congestion in ports from China to California has pushed shipping rates to record highs. Domestic trucking costs are up, too, owing to a surge in online deliveries. This is less of a problem for premium goods like iPhones than for the cheaper wares peddled by big retailers, where shipping makes up a bigger slice of the list price. Walmart went so far as to charter vessels directly to ensure steady supplies.

Companies also face a shortage of labour. Depending on whom you ask, this is down to workers being spooked by Delta, spoiled by generous covid-era benefits or rethinking their lives and careers in the wake of the pandemic. Whatever the reason, the result is an absence of customer service at big stores. Helpers who normally direct shoppers to the right shelf are nowhere to be found. With many cash registers closed, long queues form at the few open ones. In-store placards that used to promote products now advertise vacancies.

In August Walgreens, a chain of chemists, said it would raise wages, matching a move earlier in the month by its main rival, cvs. Target raised wages earlier this year. Walmart has done so several times in the past 12 months. As with higher shipping costs, this puts pressure on margins. Additional expenses might be coming from the federally mandated covid-19 tests for employees who refuse to get vaccinated. This month the Retail Industry Leaders Association, which counts Target among its members, warned about insufficient domestic testing capacity to meet this requirement.

The shift back to bricks and mortar presents a second set of problems. E-commerce, which shot up from 11% of American retail sales before the pandemic to nearly 16% in the panicky second quarter of 2020, has fallen back to 13% of the total. Target's comparable digital revenues grew by 10% year on year in the three months to June, down from a rate of nearly 200% the year before. Meanwhile, offline sales shot up by a third in the same period, to \$1.4trn, handily outpacing e-commerce (see chart 1 on next page). Coresight Research, a firm of analysts, reckons that so far this year shop openings have exceeded closings (see chart 2). If the trend continues, it would be the ▶



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► first time since 2016 that America has added net new outlets.

The retailers' investments in online capacity will not go to waste. Once seen as a costly mistake, Walmart's \$3.3bn takeover in 2016 of Jet.com gave America's mightiest conventional retailer a platform on which it built a successful digital business. Some 3,000 of its 4,700 domestic stores now offer same-day deliveries. Similarly, Target's \$550m acquisition of Shipt, a same-day delivery platform, a year later formed the basis of an integrated technological network that now stretches from a data centre in India to its 2,000 or so stores in America.

Even Amazon recognises that the future is "omnichannel", mixing digital and in-store experiences, and plans to expand its piddling physical footprint, maybe with a chain of department stores. Americans' rediscovery of the pleasures of in-person shopping helps explain why the online giant no longer looks unstoppable; its share of American retail sales dipped from 7.8% in the first quarter to 7% in the subsequent one (though it is above its pre-pandemic level of under 6%). Target, Walmart and their peers stand to benefit more in the short run from renewed physical shopping than the beast of Bezosville. But a shopper stampede to outlets requires another reshuffling of resources, before the retailers' foray into cyberspace has been completed.

Investors have faith that the biggest firms can withstand the pandemic aftershocks, as they did the original covid-quake. The combined market value of the three largest bricks-and-mortar generalists—Costco, Target and Walmart—has swelled to some \$730bn, from \$520bn or so at the start of the pandemic. In the past year Costco's and Target's share prices have outperformed that of Amazon by a factor of two and nearly four, respectively.

Beyond the big firms, which have more or less maintained their market shares in the pandemic, the picture is one of wreckage. As in many sectors, covid-19 has put struggling merchants out of their misery. Last year nearly 9,000 shops shut for good,



while just over 3,000 opened, according to Coresight. Casualties include such venerable names as Neiman Marcus (a department store for the well-off) and JCPenney (one for everybody else). Targets and Walmarts may be abuzz with activity. Derelict malls marooned amid the cracked concrete of empty parking lots have replaced rustbelt factories as the poster children of creative destruction's toll. ■

Enterprise in Germany

Berlin Inc

BERLIN

The capital reasserts itself as a business hub

CONVENTIONAL WISDOM has it that the capital of Europe's most powerful economy is poor, bolshie, chronically indebted and utterly reliant on subsidies from richer states. The debacle of the construction of the Berlin-Brandenburg airport, completed in 2020 nine years late and more than €4bn (\$4.7bn) over budget, confirmed every prejudice about the city. A political storm is brewing over property firms and rents (see Finance section).

Reputations are hard to shed. But Berlin's business circles are trying. During the tenure of Klaus Wowereit, mayor from 2001 to 2014, no firm in the DAX, the index of Germany's bluest chips, called Berlin its home. After the DAX's expansion on September 20th from 30 to 40 companies, five have headquarters in the city. Zalando (an online fashion retailer) and HelloFresh (a pedlar of meal kits) joined three other Berliners, Deutsche Wohnen (one of the beleaguered real-estate firms), Siemens Energy (a spin-off from the engineering giant) and Delivery Hero (a food-delivery darling), themselves recent additions. Berlin's share of Germany's total market capitalisation has risen since 2000 (see chart).

Before the second world war Berlin was a cradle of mighty firms such as Daimler and Siemens. After the city's partition by the victorious allies, many companies moved their offices and factories to West Germany. Banks moved to Frankfurt, publishing houses to Hamburg and industry to southern Germany. The exodus intensified after the erection of the Berlin wall in 1961. After East and West Germany reunified in 1990 these businesses had little reason to move back. Instead the city attracted artists and aspiring club owners, lured by low rents and countless abandoned factories and warehouses that made for fabulous studios and party venues. These new, cool residents had lots of fun, made little money and paid hardly any tax. In 2003 Mr Wowereit described his city as "poor but sexy".

It is that sexiness that now helps explain Berlin's business revival. The young and hip it attracted brought fresh talent, including entrepreneurs and techies. In August Google announced that a chunk of its €1bn investment in cloud-computing infrastructure will go to Berlin (alongside Hanau, near Frankfurt). Amazon Tower, a skyscraper in Berlin's Friedrichshain district named after its biggest occupant, will house 3,500 of the online giant's workers. In the first half of this year Berlin-based startups received €4bn in venture capital, half the German total. In spring Olaf Koch, the former boss of Metro, a retailer, set up a food-tech investment fund in the city with the aim of raising €500m.

Between 2017 and 2020 Berlin's digital economy expanded by 30%, ten times faster than its overall output. Last year, as the pandemic put a premium on all things digital, employment in Berlin tech increased by 8.5%. Ramona Pop, Berlin's economy minister, expects jobs in the city's digital industry to double in the next few years to 200,000. "Berlin is spearheading the digitisation of the entire German industry," she proclaims. After making Germany poorer for decades Berlin is making it a little richer: in 2019 the city's GDP per person was slightly above the national average. ■





Universal Music Group

Gimme! Gimme! Gimme!

Investors rush to sample the music-streaming boom

ROCKSTAR'S WELCOME greeted Universal Music Group when it launched on Amsterdam's Euronext exchange on September 21st in Europe's largest listing of the year. Giddy investors all but threw their knickers at the newly public company, whose share price finished the day up by 36%, valuing the world's biggest record label at €45bn (\$53bn).

Not long ago Universal looked like a

flop. In 2013, as digital piracy ravaged the music industry, SoftBank, a Japanese group, bid €7bn for the label. Vivendi, Universal's French owner, was thought mad for turning down the offer. In fact the decision was inspired. A streaming boom has since lifted worldwide recorded-music revenues by half. Two-thirds of last year's sales of \$22bn went to the three "major" labels: Universal, Sony Music and Warner Music Group.

Investors' rush owes in part to a dearth of alternative tickets to this hot market. Sony Music is locked inside a conglomerate. Warner went public last June, since when its value has risen by half (including a bump of 12% on September 21st, amid the Universal frenzy), but its catalogue is half the size of Universal's. The listing of Universal gives investors the chance at last to get their hands on what JPMorgan Chase, a bank, dubbed a "must-own asset".

Now, after their chart-topping run, the majors face the equivalent of a difficult second album. Streaming is nearing saturation-point in the rich world. Three in five American homes subscribe to a service like Spotify, up from one in five in 2016. DIY audio tools are helping unsigned artists take a small but growing share of the business. And regulators are asking whether labels are giving artists a fair share of streaming profits. On September 22nd Britain's government ordered a competition probe into the music industry.

Keeping the hits coming will therefore rely on conquering emerging markets, where revenues are lower (Spotify costs the equivalent of \$4 per month in South

Africa, less than half what Americans pay), and on licensing music to new forms of media. This year Universal has signed deals with TikTok and Snap, allowing the apps' users to sample clips from Universal's back catalogue in their videos. Future deals with gaming, streaming and other entertainment platforms are likely. "Fortnite", an online game, and Roblox, which lets users make their own games, have already become popular virtual-concert venues. Next year ABBA, a troupe of septuagenarians on Universal's books, will appear in a series of gigs in London as digital "ABBA-tars". As the streaming boom slows, labels will need new ways of bringing in money, money, money. ■

Technology in Japan

Do me a solid

TOKYO

Japanese firms want to win back their battery-making edge

WHEN YOSHINO AKIRA, a Japanese chemist, worked on rechargeable batteries in the 1980s, it was with a view to powering portable devices. His Nobel-prizewinning research led to the first commercial lithium-ion (Li-ion) battery. These now power everything from smartphones to electric vehicles (EVs). But the Japanese firms that, building on Mr Yoshino's work, dominated the Li-ion business early on have lost their edge. CATL, China's battery giant, and the energy arm of LG, a South Korean group, have eclipsed Japan's Panasonic as the world's largest suppliers of EV batteries. Others are catching up in the production of materials and components.

Japanese battery-makers want to regain their rightful place at the head of the pack. To do so they are betting on solid-state batteries. These still shuttle lithium ions between the anode and the cathode to charge and discharge, but the electrolyte where this shuttling happens is solid not liquid. That makes the batteries more stable and potentially more powerful. It also dispenses with the need for bulky cooling systems, required for fast-charging Li-ion systems. Cars equipped with solid-state batteries could be lighter, which increases range.

Japan submits more battery-tech patents a year than any other country; second-ranked South Korea files half as many. Japanese firms and inventors accounted for more than one in two solid-state-related patents between 2014 and 2018. More are coming. Japan's government is pouring money into research, including a centre headed by Mr Yoshino. Industrial and chemicals firms, of which Japan has plen-

Business etiquette

New civility

SAN FRANCISCO

Wave goodbye to the handshake?

IN THE 1800S greeting an associate in the West meant doffing your hat. A hand may have been kissed. But seldom was it shaken—a gesture deemed too pally. The handshake has since become *de rigueur* even in Asia, which had resisted it in favour of bows. Now Jose Maria Barrero, Nick Bloom and Steven Davis, three economists, find that 19th-century mores are back. As part of a long-running survey of American business practices they find the handshake is out, especially among women: 62% now prefer a verbal greeting, up from less than 30% before covid-19. Whatever the replacement—fist bump, anyone?—Baroness de Fresne's tip sounds pertinent. Proffering your hand, she wrote in her etiquette manual from 1858, shows "poor upbringing and is liable to be considered an affront".

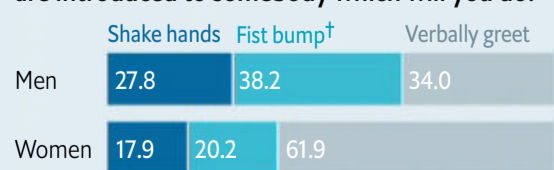
A post-pandemic handbook

United States, % responding*

"In 2019, when you were introduced to somebody at work what did you do?"



"When you return to work in person, and you are introduced to somebody which will you do?"



Source: wfhrefsearch.com

*July-August 2021 †Or other

Bartleby Stake claims

A takeover in Britain shows shareholders still rule the corporate roost

FOR MOST people, coming into work is about more than picking up a pay slip. Not everyone aims to change the fate of humankind at the office. But even a sense that one's employer is making a useful product helps escape the lure of the duvet in the morning. Bosses hype this up. It has become fashionable to claim that the pursuit of purpose in the service of "stakeholders" matters more than pleasing shareholders. The outcome of a takeover battle shows how removed from reality the rhetoric is.

On September 20th Philip Morris International (PMI), a giant cigarette-maker, announced it had convinced over three-quarters of the shareholders in Vectura, a British pharmaceutical business, to back its takeover plan. Thus a maker of inhalers designed to combat respiratory diseases will soon be fully owned by a firm whose products often cause them. Whatever sense of purpose the research scientists toiling at Vectura may have had when it was independent is unlikely to survive intact becoming Marlboro's sister company.

If stakeholderism had any teeth, this would have been the moment to bare them. Vectura is certainly among those beyond-mere-shareholder companies. It was spun out of academia in 1997. Its annual report talks of building a business that delivers value to stakeholders, among them employees, suppliers and patients. Staying independent was probably a stretch given Vectura's ho-hum performance in recent years. But the winning bid of £1bn (\$1.4bn) valued each share at just 6% more than an offer by Carlyle, a private-equity group without PMI's health baggage.

Self-interested legal analyses exist on both sides as to whether Vectura's directors were compelled to recommend the

highest cash offer. Justifying its decision, the board spoke of its "fiduciary duties". It appears to have interpreted these duties as weighing whether 165p a share offered by PMI was indeed a larger figure than the 155p offered by Carlyle (Bartleby has run the numbers and concludes that it was). That did not stop the directors from insisting that "wider stakeholders could benefit" from a deal with PMI.

Where the battle lines were drawn is telling. Anti-tobacco campaigners led the charge against PMI. They did not pretend stakeholders beyond the shareholder register were in a position to block the deal, not even staff (who may receive bountiful bonuses). Instead, their main argument was to point out that a PMI-owned Vectura's long-term profitability would suffer if its scientists were left unable to participate in industry conferences, or if doctors balked at prescribing medicinal products tarred with big tobacco's brush. The implication was that stakeholders matter, but only in so far as keeping them happy leads to bigger shareholder profits down the line.



Ultimately, nobody disagreed that the outcome was for owners of the stock to decide. Even that might have derailed the creation of a pharma-tobacco group, given the presence on Vectura's share register of many fund managers whose bosses trumpet their stakeholderist tendencies. Plenty make money peddling funds that specifically exclude tobacco, and rarely lose an opportunity to paint themselves as visionaries looking beyond just profits. But if a high-minded portfolio manager held out from handing over his Vectura shares to PMI on moral grounds, he has been hiding behind a thick pile of glossy reports about the importance of ethical investing.

Quite often, stakeholder satisfaction will align with shareholder success. A happy workforce, satisfied customers and so on tend to lead to good financial outcomes. In this case, PMI will get from Vectura something that matters more than its target's (modest) earnings. The purveyor of cigarettes has pushed hard into smoke-free products. This started with vaping, but is now extending to things that have nothing to do with nicotine. Buying Vectura, which will be run independently, is a signal that PMI is serious about that strategy. This seriousness of intent matters more to investors than Vectura's narrow prospects.

Helping PMI pivot from cigarettes could itself be painted as delivering such large societal benefits so as to offset the likely impact on Vectura's current stakeholders. Perhaps in future such arguments will feature in takeover battles. That would at least be consistent with the airy pronouncements of how business has moved beyond shareholder value. For now, deciding which bid is better is still a case of comparing two figures and going with the bigger one.

ty, are gearing up to make the materials needed to bring the technology to market.

Murata, a big manufacturer which bought Sony's battery division in 2017, plans to begin mass-producing smaller solid-state batteries this autumn. Nakajima Norio, Murata's boss, sees "lots of potential in wearables", since the batteries do not burn or get hot (which is why they are already used in things like pacemakers). This month Toyota announced plans to invest \$13.5bn by 2030 in next-generation car batteries, including the solid-state variety. Honda and Nissan, two other carmakers,

are also eyeing the technology.

Naturally, if making solid-state batteries were easy, manufacturers would be churning them out. It isn't. Water mucks up the materials, so factories must be kept ultra-dry. Mitsui Kinzoku, an engineering firm, has been testing mass production of solid electrolytes and found that it is "indeed a very difficult process", in the words of Takahashi Tsukasa, who is involved in the project. Toyota hopes to begin manufacturing in the mid-2020s, but even its technology chief, Maeda Masahiko, has cautioned that "we can't be optimistic yet".

Even if they can get the technology right, Japanese firms are not running unopposed, as they had been in Li-ion's early days. Most big carmakers, including Ford, Hyundai and Volkswagen, have solid-state cars in the works. They may want to make the batteries themselves. Volkswagen has a big stake in QuantumScape, an American solid-state-battery startup backed by Bill Gates. Last month a group of British organisations, including Johnson Matthey, a big chemicals firm, and Oxford University formed a consortium to work on the technology. That's some solid competition. ■

Schumpeter | The Midas of Mordor

Peter Thiel is reinventing America's military-industrial complex



FOR A MAN who wants to live for ever, Peter Thiel has already done enough in his 53 years to leave mere mortals exhausted—and mostly frustrated. The venture capitalist, techno-Utopian and scourge of the liberal left is a myriad of contradictions.

He co-founded PayPal, a payments platform that, as a young libertarian, he hoped would undermine the world's monetary system. Instead it gave him the money to bestride Silicon Valley, a place he disdains. He was the earliest outside investor in Facebook, a tech giant on whose board he remains, though he mocks social media. As a hedge-fund manager, he bet on an economic meltdown in America ahead of the financial crisis of 2007-09, but called the bottom of the market too soon. He was one of the most prominent financiers to throw his weight behind Donald Trump's bid for the presidency in 2016. Yet his efforts to populate the Trump administration with radical-thinking acolytes failed.

Max Chafkin, who trawls through this litany of inconsistencies in a new book, "The Contrarian", writes fluently. But he fails to find an explanation that ties the threads together. At his most charitable, he praises Mr Thiel as a creator of immense wealth because of the tech firms he has backed (besides PayPal and Facebook, they include sharing-economy giants such as Airbnb and Lyft, plus a host of other blitzscaling platforms). At his most damning, he portrays his subject as a tax-avoiding "nihilist" whose right-leaning ideology is mostly aimed at increasing his wealth and power.

And yet strangely Mr Chafkin, a business writer, only obliquely refers to the most intriguing business story. Between the lines, a picture emerges of an erratic visionary whose work, however creepy, isn't done. Mr Thiel is applying the radicalism that inspired PayPal to cryptocurrencies and decentralised payment platforms. The "Make America Great Again" schtick that drew him to Mr Trump has led to investments in military, surveillance and space technology that have helped double his net worth in the past year. His yearning to reclaim Silicon Valley from software-loving peaceniks and return to its roots in the cold-war military-industrial complex is bearing fruit—and spreading beyond California.

In short, his peculiar brand of libertarianism appears to have a new lease of life. With one hand, he wants to free individuals from government shackles by enabling them to create their own cur-

rencies. With the other, he is selling technology to a strong security establishment so that it can protect them from potential enemies. It is enough to make Silicon Valley's mixture of hippies and yuppies hyperventilate on their yoga mats.

It is not the first time a man described by Mr Chafkin as socially awkward has built a movement of like-minded people bent on shaking up the tech industry. The PayPal mafia that he helped bring together at the turn of the century continues to flourish. Besides him, its best-known member is Elon Musk, whose SpaceX rocket company is backed by Mr Thiel's Founders Fund, a venture-capital (vc) firm. Last valued at \$74bn, on September 18th it returned the first-ever civilian crew from orbit. It is in the vanguard of America's re-energised aerospace industry.

Others, too, have stuck by Mr Thiel for decades and share his security obsessions. Palantir, a data-analytics firm worth \$52bn, is used by the American armed forces, immigration authorities and numerous police departments. It was co-founded by Mr Thiel in 2003 and is run by an old friend, Alexander Karp (who used to sit on the board of *The Economist's* parent company). In the run-up to its initial public offering last year, Mr Karp told potential investors the company, though born in Silicon Valley, shared few of its values. "Our software is used to target terrorists and keep soldiers safe...we have chosen sides," he said.

Anduril, a startup defence contractor also backed by Mr Thiel, is building pilotless drones for military surveillance. Marc Andreessen of Andreessen Horowitz, a vc firm (who is also a Facebook director), has written of the emergence of a new generation of Silicon Valley-style defence companies. "There are some in our industry who view serving such agencies and missions as controversial. We do not," he wrote in 2019, announcing a co-investment with Mr Thiel's Founders Fund in Anduril. It was last valued at about \$4.6bn.

Even without Mr Trump, Mr Thiel continues to mix business and politics. This year he joined forces with Narya, a vc fund led by J.D. Vance, the author of "Hillbilly Elegy", to invest in Rumble, a video platform popular among right-wingers. He is backing Mr Vance in the Republican Senate primary in Ohio. Blake Masters, Mr Thiel's co-author on "Zero to One", a bestseller published in 2014, hopes to represent the Republicans in the Arizona Senate race. The *New Yorker* has speculated that "The Rise of the Thielists" could provide the Republican Party with a post-Trump ideology.

The cryptoking

If that is the case, it would probably involve continued pillorying of big-tech firms, especially Google, which Mr Thiel has long accused of being a monopoly. The new ideology would be anti-China, a country Mr Thiel portrays as using artificial intelligence (AI) to centralise control over the economy. "If AI is communist, crypto is libertarian," he wrote last year. It would look favourably on cryptocurrencies and blockchains. He is a big backer of Block.one, a blockchain-software company whose crypto unit, Bullish, is planning to go public via a \$9bn reverse merger with a special-purpose acquisition company.

All this takes tech investing beyond Silicon Valley into new realms, some of them menacing to many observers. That will not worry Mr Thiel. Palantir is named after a "seeing stone" most often used by Sauron, ruler of J.R.R. Tolkien's evil empire of Mordor in "The Lord of the Rings". Evidently Mr Thiel, ever the contrarian, does not view Mordor as harshly as most Tolkien fans do. As he once told a friend: "I'd rather be seen as evil than incompetent." ■



China's property woes

The folly of Evergrande

HONG KONG

What are the systemic risks from China's debt-strapped housing firms?

CHINA'S FINANCIAL authorities are honing a new skill: the “marketised default”—or an orderly market exit and well-managed restructuring for troubled companies. The term has surfaced in government documents as regulators manage larger, more frequent and highly complex defaults. They have had some successes. Evergrande, a massive Chinese property developer on the brink of collapse, is proving to be anything but.

The company, the world's most indebted property firm with \$300bn in liabilities, said on September 22nd that it had come to an agreement with bondholders on a coupon payment on an onshore bond due this week, easing some fears of an imminent collapse. Analysts had been expecting the company to default on both yuan- and dollar-denominated interest payments. The fate of the dollar-bond payments, due as *The Economist* went to press, was unclear. On September 23rd The People's Bank of China, the central bank, injected more short-term liquidity into the financial markets than it has since late-January, in a

sign it was attempting to soothe market concerns about an Evergrande default.

Far from being a well-managed process, Evergrande's distress has been roiling markets around the world. Major indices in Europe and America fell on September 20th as Evergrande's situation appeared to worsen. Yields on the dollar bonds of some Chinese borrowers outside the property sector have risen.

Hong Kong-traded shares in one large Shanghai-based group, Sinic Holdings, collapsed by nearly 90% on September 20th on fears that it would fail to repay a bond due in October. R&F Properties, another highly indebted group, has said it will raise up to \$2.5bn by borrowing cash from company executives and selling a property project. Several financial institutions with high exposure to the property sector have suffered steep declines in their market value. The price of iron ore fell below \$100 per tonne on September 20th for the first time in a year amid speculation that Chinese homebuilders will construct fewer properties.

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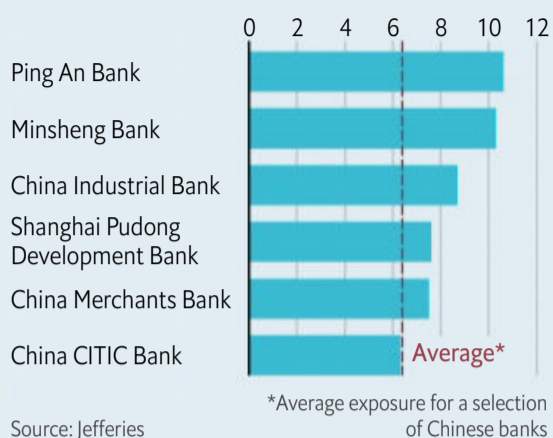
The crackdown on developer debt is not an isolated event, but one of several campaigns Xi Jinping, China's president, is using to remould the country, including a clampdown on internet companies. As part of Mr Xi's slogan of “common prosperity”, the measures include making housing more affordable and ridding the property market of speculation. “A regime shift is occurring without necessarily the markets fully comprehending the enormous underlying change to the structure of the economy,” said Sean Darby of Jefferies, an investment bank.

Analysts and short-sellers have been predicting the death of Evergrande for years. Its chairman, Xu Jiayin, who founded the company in 1996, put up \$1bn of his own cash in 2018 to meet a shortfall in demand for an Evergrande bond with a 13% coupon. The company has relied on ever-increasing short-term debts, often at higher and higher cost, to fund a business model that depends on borrowing money to develop properties and selling them years before they are completed to generate cash from buyers' deposits.

When central-government regulators stepped up their campaign against leverage last August, the first major cracks began appearing in its business. Authorities have constricted developers' capacity to continue accumulating debt, limiting liability-to-asset ratios to less than 70%, net debt-to-equity ratios to less than 100% and mandating levels of cash that are at least ▶▶

Home bias

Chinese banks' loans to property developers
% of total loans, H1 2021



equivalent to short-term debt. The policy has changed the nature of the business. Unable to continue perpetually expanding their debts, Evergrande and several other weak companies have slashed home prices and halted projects in order to preserve cash. Evergrande is said to be offloading housing projects in an attempt to generate just enough cash to make payments to suppliers. It is also selling off its land at a 70% discount, says one investor. UBS, a Swiss bank, has identified ten other Chinese property groups with 1.86trn yuan (\$290bn) in contracted sales that are in similar risky positions.

How far will the turmoil spread? The volatility leading up to the expected default on September 23rd has already given investors a taste of the risks emanating from China's deleveraging campaign. However, many analysts still believe severe contagion can be ring-fenced to groups with known connections to Evergrande and other weak property developers.

Start with banks, the main area of regulatory concern. China's banks have lent heavily to developers. A recent central-bank stress test on banks' exposure to the property sector concluded that an extreme scenario, in which loans to developers suffered a 15-percentage-point rise in their non-performing ratios, would eat up 2.1 percentage points of banks' overall capital-adequacy ratios, reducing the industry average to 12.3%. Such a drop in the banks' capital buffers, evenly spread across the banking sector, would be a tolerable depletion of protection. But such a crisis would not hit banks evenly; weaker banks would see a much larger reduction, according to analysts at S&P Global, a ratings agency.

Ping An Bank and Minsheng Bank, both hit by sell-offs in recent days, had big shares of their total loan books extended to property groups in the first half of the year (see chart). Minsheng has tight links to Evergrande. Shengjing Bank, which is majority-owned by Evergrande, is thought to have lent heavily to the property company. A banking crisis is not the base case for ma-

ny investors watching the situation. But "the situation would change very quickly" if a bank of Minsheng's scale proved vulnerable, says a China-based executive at an asset manager. Central authorities would probably step in swiftly at the first sign of distress at a major bank, the investor adds.

Of more immediate concern are Evergrande's links to China's shadow-banking system. About 45% of its interest-bearing liabilities in the first half of 2020 were from trusts and other shadow lenders, which are opaque and typically charge higher rates, compared with just 25% for bank loans, according to Gavekal, a research firm.

Panic in the offshore bond market is another worry. Chinese developers are the largest issuers of dollar-denominated bonds traded in Hong Kong, and among them Evergrande is the single largest issuer. The company's bonds have traded at less than 30 cents to the dollar over the past week. Many other developers' yields have shot up above 30%. Investors are waiting for a signal from Beijing. So far the absence of any strong sign of support has shown that regulators do not want to step in as they did recently with Huarong, a state-owned investor in distressed debt that required a full bail-out in August. The treatment of Huarong, which is intricately connected to China's financial system, suggests that Mr Xi is still intent on avoiding a generalised market meltdown.

If Evergrande does default, there is still the possibility that the government may step in to help individuals. The state, which is likely to be worried by protests in recent days by savers who have bought Evergrande's wealth-management products, is expected to be forced to broker a partial bail-out for assets most connected with social stability. Such a process would be focused on the properties the company has already sold to ordinary people and which are not yet built. Capital Economics, a research firm, estimates there are about 1.4m of those. This could involve a number of companies carving up construction projects across the country and taking over assets in the provinces where they are based. By keeping these projects under development, suppliers and contractors would also in effect be bailed out.

One difficulty in organising such a bail-out will be finding buyers. The crackdown on leverage has left few developers with excess cash to make such purchases. That means local governments may need to step in to help out.

Perhaps the biggest contagion risk flaring up in the market is not that posed by Evergrande itself but by Mr Xi's unyielding crackdown on leverage. Logan Wright of Rhodium Group, a research firm, sees Evergrande not as the root cause of the troubles in China's property sector. Instead

it is a symptom of the government's efforts to reshape the market. Mr Wright says the assault on China's vibrant tech sector suggests Mr Xi will see the deleveraging campaign through.

These implications are bigger than the current market rout. China's property sector accounts for 20-25% of its economy. An extended campaign against developer debt could significantly lower China's growth prospects, says Tommy Wu of Oxford Economics, a research firm. Such a strategy could lead to much greater economic and financial turmoil farther down the road. It would also raise further questions about where Mr Xi's relentless and wide-reaching campaigns are leading China. ■

Natural gas

Boiling over

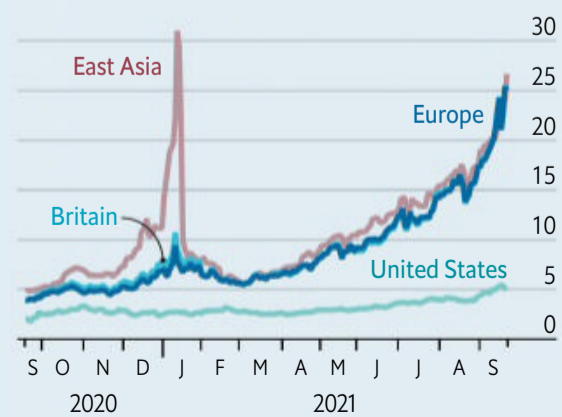
What is causing the frenzy in global gas markets?

ACROSS THE world, a natural-gas shortage is starting to bite. Prices are surging (see chart), pushing up the cost of power. In many countries, including Britain and Spain, governments are rushing through emergency measures to protect consumers. Factories are being temporarily switched off, from aluminium smelters in Mexico to fertiliser plants in Britain. Markets are frantic. One trader says it is like the global financial crisis for commodities. Even in America, the world's biggest natural-gas producer, lobby groups are calling on the government to limit exports of liquefied natural gas (LNG), the price of which has climbed to \$25 per million British thermal units (MBTU), up by two-thirds in the past month.

In one sense the crisis has fiendishly complex causes, with a mosaic of factors from geopolitics to precautionary hoard-

Power surge

Natural-gas prices*, \$ per million Btu†



Source: ICIS

*Future contract for the nearest month
†British thermal unit



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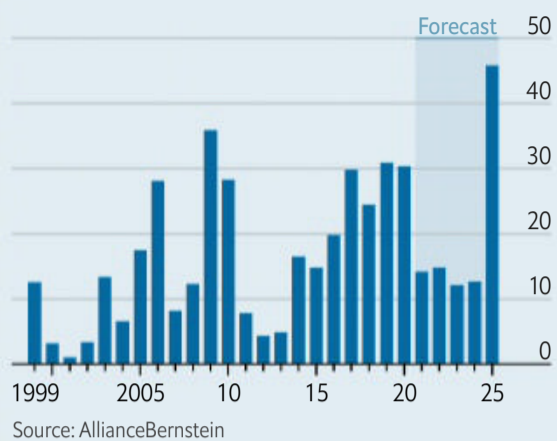


Joerg Lau
Foreign policy editor
Die Zeit



Plant-based fuel

Global new installed LNG liquefaction capacity
Tonnes, m



ing in Asia sending prices higher. Viewed from a different perspective, however, its causes are simple: an energy market with only thin safety buffers has become acutely sensitive to disruptions. And subdued investment in fossil fuels may mean higher volatility is here to stay.

The shortfall has taken almost everyone by surprise. In 2019 there was plenty of gas on the international market, thanks to new LNG plants coming online (see chart). When the pandemic struck and lockdown constrained demand, much of the excess gas went into storage in Europe. That came in handy last winter, which was very cold in northern Asia and Europe. The freeze pushed up demand for heating. In Asia gas prices quadrupled in three months.

This year odd weather has featured again. A hot summer has added to booming gas demand in Asia. The region accounts for almost three-quarters of global LNG imports, according to AllianceBernstein, a financial firm. China led the way, thanks to its swift economic recovery. In the first half of 2021 its power generation jumped by 16% compared with the previous year. Three-fifths of China's power is generated by coal; a fifth comes from hydropower. But hydropower generation has been low because of a drought. And coal demand fell, partly because of environmentally friendly policies, such as replacing coal-burning boilers with gas ones. Investment in mining coal has also been low. That meant more reliance on natural gas.

Other countries have seen higher demand too, partly because of the warm summer in Asia. Meanwhile, a drought in Latin America, which gets half of its power from hydro, has increased the need for gas there. The region's LNG demand has almost doubled in the past year.

Booming demand has been met with lower supply of LNG. Small disruptions, some caused by maintenance, others unplanned, have nibbled away at global output. The combined effect has been to cut global LNG supply by roughly 5%, estimates Mike Fulwood of the Oxford Insti-

tute for Energy Studies (Mr Fulwood's daughter works at *The Economist*).

With LNG being sucked into Asia, less has been left for European buyers. LNG imports into Europe are about 20% lower than they were last year. Gas production has also dropped in Britain and the Netherlands. Analysts had expected Russia's Gazprom, which supplies a third of Europe's gas, to make up the difference. But even though it met all its long-term gas contracts to Europe this year, it has not sold additional gas in the spot market. Some suspect Gazprom wants to speed up the launch of Nord Stream 2, a big gas pipeline.

Weather has worked against Europe in other ways. Across the north-west of the continent the air has been still, reducing wind generation. Moreover, usually European utilities respond to high gas prices by using more coal. But the price of coal is also at near-record highs because of demand for electricity and output bottlenecks.

America's gas market has responded to international demand. In the first half of the year America exported about a tenth of its natural-gas production, a 42% increase on the year before, according to the Energy Information Administration, a government statistical agency. But LNG facilities in America are running nearly at full capacity. So are liquefaction facilities in other big gas-producing countries, such as Australia and Qatar.

What could take the heat out of the market? One possibility is substitution. Europe is burning more coal than this time last year. Some power plants in Pakistan and Bangladesh have switched to oil from LNG. Another possibility is an increase in supply from Russia. A final possibility is warmer weather. But meteorologists are already forecasting a cold winter. Gas prices are unlikely to come down to earth soon. ■

Transpacific trade

Wiping America's eye

HONG KONG

China throws a wrench into a big regional trade pact

CHINA'S REQUEST to join the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) landed on the desk of Damien O'Connor, trade minister of New Zealand, on September 16th. The location was a fitting nod to the deal's history. In 1999 a meeting between the trade ministers of two small export powerhouses, New Zealand and Singapore, kicked off what became one of the world's largest free-trade areas.

When that alliance was first mooted,



A lot of heavy lifting to do

China was a nascent trading nation and its economic heft was piddling. Its share of global merchandise exports was 3.4%. Last year, that figure ran to 14.7%, making China the only country in the world which accounts for a double-digit share.

America, which signed up to join a forerunner of the CPTPP, before pulling out in 2017, often sought to portray the bloc as a tool to keep China from exercising influence over trading rules. It is still difficult to imagine China's application being successful in the short term. The CPTPP is a detailed agreement requiring deep economic integration, and new members must be admitted by unanimous approval. "China is surprisingly close to meeting CPTPP conditions in many areas. But where there are gaps, they're huge," according to Jeff Schott of the Peterson Institute for International Economics (PIIE), a think-tank in Washington, DC. He reckons the country has made huge strides in recent years on intellectual-property and investment rights. But the dominance of state-owned enterprises (SOEs), weak labour rights and concerns about data privacy leave a lot of ground to catch up.

The treatment of SOEs is a perpetual bugbear of many of China's trading partners. To gain membership of the CPTPP, Vietnam in particular had to agree to restrictions on support for its own state-run firms and increased transparency on their operations and structure, which China would be expected to mirror. Data governance is a case where China is, if anything, moving in the opposite direction to the one which would be needed for membership. The CPTPP countries have committed themselves to promoting the cross-border transfer of information. In contrast, China has become the global exemplar of data localisation: a data-protection law passed

▶ last month will make it harder for foreign companies to move data out of the country.

Moreover, China is not the only country with a pending application. The Taiwanese government lodged an application to join the bloc less than a week later. Its diplomatic status vis-à-vis China makes its membership of any trade deal fraught, but on strictly economic grounds, it would have fewer hurdles to clear.

Despite the difficulties, some member countries might look eagerly on the potential economic gains of having China on board. Once it was thought that America

would be the economic powerhouse in the bloc. Today, among CPTPP members, only Canada and Mexico trade more with America than with China. A PIIE paper published in 2019 estimated global income gains from the CPTPP as it stands run to \$147bn a year. If China were included, that would rise to \$632bn. The benefits to many of the members would run to more than 1% of their national income.

China is already the largest member of the Regional Comprehensive Economic Partnership, a larger but shallower trade deal agreed last year. It contains fewer con-

ditions for membership, but unlike the CPTPP includes every big South-East Asian economy, as well as South Korea. Membership of both, if it were to happen, would make China a formidable leader of commercial diplomacy in Asia.

Most bets are that its bid to join the CPTPP will fail. And yet not long ago few would have wagered that China would show more interest in membership than America. If the application means little else, it remains a stark illustration of just how quickly America's commercial influence in Asia has waned. ■

Buttonwood Just add crypto

Why it is wise to hold bitcoin in an investment portfolio

“DIVERSIFICATION IS BOTH observed and sensible; a rule of behaviour which does not imply the superiority of diversification must be rejected both as a hypothesis and as a maxim,” wrote Harry Markowitz, a prodigiously talented young economist, in the *Journal of Finance* in 1952. The paper, which helped him win the Nobel prize in 1990, laid the foundations for “modern portfolio theory”, a mathematical framework for choosing an optimal spread of assets.

The theory posits that a rational investor should maximise his or her returns relative to the risk (the volatility in returns) they are taking. It follows, naturally, that assets with high and dependable returns should feature heavily in a sensible portfolio. But Mr Markowitz's genius was in showing that diversification can reduce volatility without sacrificing returns. Diversification is the financial version of the idiom “the whole is greater than the sum of its parts.”

An investor seeking high returns without volatility might not gravitate towards cryptocurrencies, like bitcoin, given that they often plunge and soar in value. (Indeed, while Buttonwood was penning this column, that is exactly what bitcoin did, falling 15% then bouncing back.) But the insight Mr Markowitz revealed was that it was not necessarily an asset's own riskiness that is important to an investor, so much as the contribution it makes to the volatility of the overall portfolio—and that is primarily a question of the correlation between all of the assets within it. An investor holding two assets that are weakly correlated or uncorrelated can rest easier knowing that if one plunges in value the other might hold its ground.

Consider the mix of assets a sensible investor might hold: geographically



diverse stock indexes; bonds; a listed real-estate fund; and perhaps a precious metal, like gold. The assets that yield the juiciest returns—stocks and real estate—also tend to move in the same direction at the same time. The correlation between stocks and bonds is weak (around 0.2-0.3 over the past ten years), yielding the potential to diversify, but bonds have also tended to lag behind when it comes to returns. Investors can reduce volatility by adding bonds but they tend to lead to lower returns as well.

This is where bitcoin has an edge. The cryptocurrency might be highly volatile, but during its short life it also has had high average returns. Importantly, it also tends to move independently of other assets: since 2018 the correlation between bitcoin and stocks of all geographies has been between 0.2-0.3. Over longer time horizons it is even weaker. Its correlation with real estate and bonds is similarly weak. This makes it an excellent potential source of diversification.

This might explain its appeal to some big investors. Paul Tudor Jones, a hedge-

fund manager, has said he aims to hold about 5% of his portfolio in bitcoin. This allocation looks sensible as part of a highly diversified portfolio. Across the four time periods during the past decade that Buttonwood randomly selected to test, an optimal portfolio contained a bitcoin allocation of 1-5%. This is not just because cryptocurrencies rocketed: even if one cherry-picks a particularly volatile couple of years for bitcoin, say January 2018 to December 2019 (when it fell steeply), a portfolio with a 1% allocation to bitcoin still displayed better risk-reward characteristics than one without it.

Of course, not all calculations about which assets to choose are straightforward. Many investors seek not only to do well with their investments, but also to do good: bitcoin is not environmentally friendly. Moreover, to select a portfolio, an investor needs to amass relevant information about how the securities might behave. Expected returns and future volatility are usually gauged by observing how an asset has performed in the past. But this method has some obvious flaws. Past performance does not always indicate future returns. And the history of cryptocurrencies is short.

Though Mr Markowitz laid out how investors should optimise asset choices, he wrote that “we have not considered the first stage: the formation of the relevant beliefs.” The return from investing in equities is a share of firms' profits; from bonds the risk-free rate plus credit risk. It is not clear what drives bitcoin's returns other than speculation. It would be reasonable to believe it might yield no returns in future. And many investors hold fierce philosophical beliefs about bitcoin—that it is either salvation or damnation. Neither side is likely to hold 1% of their assets in it.

Investing in property

The new rent-seekers

A tide of Wall Street money is raising the prospects of a renters' revolt

BERLINERS, MORE than four-fifths of whom rent their homes, have an unusual opportunity on September 26th to vent their anger over the rising cost of housing. A referendum, on the same day as Germany's national and municipal elections, will give them a say on whether or not the city should in effect "expropriate" some of Germany's largest residential-property firms, affecting up to 240,000 homes. The vote is non-binding. But its impact on the housing market is already having an effect. On September 17th two giant property investment trusts, Vonovia and a firm it is targeting in a €19.1bn (\$22.5 billion) takeover, Deutsche Wohnen, said they would sell almost 15,000 flats to the city for €2.5bn. They portrayed it as a friendly gesture. But it was also a thinly veiled attempt to stop being stripped of the keys to their own homes.

Whatever the outcome of the referendum, it serves as a warning for institutional investors piling into residential property in Europe and America. Real-estate investment trusts (REITs), private-equity firms, insurance companies and pension funds see the single-family rental housing market as a relatively high-yielding hedge against inflation that has been spared the impact of pandemic-related lockdowns on offices and shops. But housing affordability has high political sensitivity. In Berlin, rents have roughly doubled in a decade. Across Europe their rise has outpaced wage

increases. In America, where a quarter of renters pay more than half of their income to landlords, rents in June were up 7.5% compared with last year, when they rose by 1.4%. The highest increases were in Phoenix and Las Vegas, up by 16.5% and 12.9%, respectively over the same time period. Nationally it is hard to lay the blame for the rent rises on institutional investors. But in some cities where they concentrate their portfolios, faceless megacorps are increasingly being seen as part of the problem.

The biggest names are well known. BlackRock and JPMorgan Chase's asset-management business feature among the stampede of buyers. KKR, a private-equity firm, is building out a new single-family landlord entity in America. The sums involved are rising fast. An estimated \$87bn of institutional money went into America's rental-home market during the first half of this year, according to Redfin, a residential brokerage. Around 16% of single-family homes for sale were bought by investors in the second quarter, up from more than 9% a year earlier. A similar shift is under way in Europe where firms such as Goldman Sachs, Aviva and Legal & General are wading into the market. Lloyds Banking Group, Britain's largest mortgage lender, is also moving into housing with a target to purchase 50,000 homes within the next decade. That could make it the country's largest landlord.

It is not the first time the investment

market has been hot. Blackstone, a financial conglomerate, was one of the first big investors to purchase foreclosed homes, many of them vacant or in disrepair, after the 2007-09 global financial crisis. The firm showed up at foreclosure auctions in America's courthouses and drove street by street, comparing neighbourhoods and school districts. In 2012, it paid \$100,000 for its first purchase in Phoenix. Soon it was spending \$125m on homes each week. That same year Blackstone created Invitation Homes, now the largest owner of single-family rental houses in America, before taking it public in 2017 and selling off its shares two years later. Today Invitation Homes owns 80,000 homes out of a total market of 16.2m single-family rental homes. Altogether the bet on housing earned Blackstone nearly \$7bn in dividends paid before and since Invitation Homes listed its shares, or more than twice its initial investment. The firm, which has returned to the market, recently made a \$6bn acquisition of Home Partners of America, which owns more than 17,000 single-family homes. It gives its tenants the option to buy.

The main impetus for the renewed investor enthusiasm is different from a decade ago. It is partly because of demography. Following the financial crisis, many millennials favoured metropolitan flats as they established their careers. As more of them enter middle age—the 35- to 44-year-old age cohort in America is expected to grow at double the pace of the average over the next five years—they want more space. It is also because of the pandemic. If remote working remains attractive, it will increase demand for homes that are farther from city centres. That helps explain why institutional buyers have piled into secondary cities such as Phoenix, Raleigh, Greensboro and Dayton.

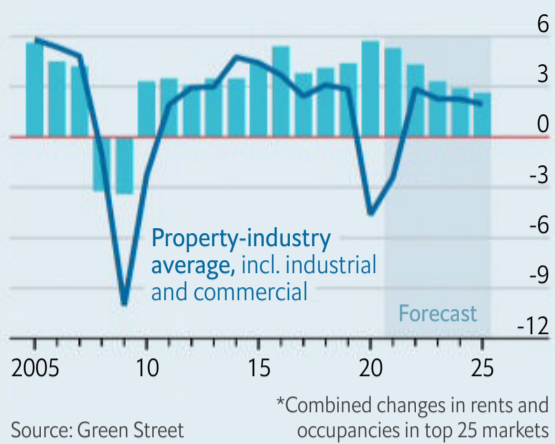
Many of this cohort would prefer to buy than to rent, but high house prices are an impediment. In America, the median home cost around 4.3 times the median household income in 2019, up from 3.9 times in 2002. In Britain the average home currently costs more than eight times average earnings—a level that has only been breached twice in the past 120 years. Even if rents are rising, too, leasing a suburban home with an office and room to raise children can be an interim option.

Some people blame large investors for both skyrocketing house prices and rising rents. At an aggregate level that's a hard case to make. Professional investors own just 2% of the total rental-housing stock in America. In Europe, less than 5% of residential real estate is in the hands of large, publicly traded funds. But in those cities where institutional investors are increasingly active, they may have more of an impact. They also frequently pay with cash, ▶▶



House party

United States, single-family rental-market revenue*
% change on a year earlier per available square foot



▶ giving them an edge over buyers with a mortgage in a competitive market. One in six home sales in America went to an investor between April and June, according to Redfin. In cities such as Atlanta, Miami and Phoenix, the figure was one in four.

That may explain some of the political scrutiny. “Institutional investors are walking on a tightrope,” says Cedrik Lachance of Green Street, a property-analysis firm. On the one hand, rising rents make investments more attractive. On the other hand, they invite tougher policy responses. The White House is placing limits on the sale of lower cost homes to large investors. In Ireland, property taxes were raised to stop institutional investors from snapping up family homes that would normally be marketed to first-time buyers.

Such regulatory responses may be crowd pleasers. They will not solve the rental problem. One study showed that rent-control policies in Catalonia, a region of Spain, not only failed to make the market more affordable, but actually worked against it. The number of homes available fell by 12% while prices remained unchanged. Similarly, researchers studying the impact of a five-year rent freeze in Berlin found that the number of rental properties slumped last year. Catalonia’s law has been challenged by a constitutional court. Berlin’s has been struck down.

Instead, more homebuilding is the answer. Some landlords argue that they increase the housing stock by offering developers the certainty of bulk purchases. Lenar, America’s largest home builder by revenue, recently signed a \$4bn deal with investors that includes building over 3,000 homes. Additionally, REITs in America such as Invitation Homes and American Homes 4 Rent are either building more homes or striking partnerships with homebuilders to boost their supply. In Britain, where one in five newly built homes could be institutionally-owned by the end of the decade, Lloyds has announced a fund to boost house building in return for a share of the profit. Professional landlords

that own multiple properties also claim that they’re able to offer better services, more maintenance and longer leases than individual landlords who could sell up at any moment.

But in the wake of the pandemic, homebuilding globally is anaemic. Shortages of labour and material have stalled growth. Fewer homes coming onto the market meant that single-family institutional investors in America increased their portfolios by 1.5% in 2020, down from 9.2% in 2018, according to Amherst Capital, a property firm. Less homebuilding increases the chance that rents will continue to rise. Annual returns in America and Europe are expected to be as high as 15.1% and 17.5% respectively over the next few years. The asset class will therefore remain enticing from an income standpoint, but more risky from a regulatory one. Even if a majority of Berlin’s renters vote against the landlords, it’s hard to imagine meaningful law changes to curb property rights. But for the greediest investors, the writing is on the wall, four windows and a door. ■

Rich-world corporate debt

A mountain but not a volcano

High levels of borrowing by firms will not derail the recovery

ON SEPTEMBER 20TH the Bank for International Settlements (BIS), the central banks’ central bank, released data showing that corporate borrowing around the world remains at an all-time high. A notable case is in China, where there is even more business borrowing as a share of GDP than in Japan at the peak of its bubble-related borrowing spree in the 1990s. But it is high everywhere (see chart). Corporate debt in the rich world stood at 102% of GDP at the end of March, compared with 92% before the outbreak of the covid-19 pandemic. Could high levels of debt threaten the recovery in advanced economies?

Many regulators were sounding the alarm about elevated company debt even before the covid-19 pandemic. Since then, the hit to firms’ incomes has led to a wave of rating downgrades: between March 2020 and March 2021, Fitch, a ratings agency, downgraded 460 firms, or almost 20% of its corporate portfolio. While defaults have eased this year as economies have recovered, many firms will be burdened by higher levels of debt for years to come. Even if interest rates remain low, this “debt overhang” could affect their willingness to invest or to hire new staff.

Intriguingly, however, hangovers from

corporate-debt booms rarely cause significant economic damage, even if creditors themselves suffer when firms default. A recent paper by Moritz Schularick, of the University of Bonn, and several coauthors, examines data on business cycles for 17 advanced countries over more than a century, and compares corporate-debt busts with those associated with household borrowing (like the 2008-09 financial crisis).

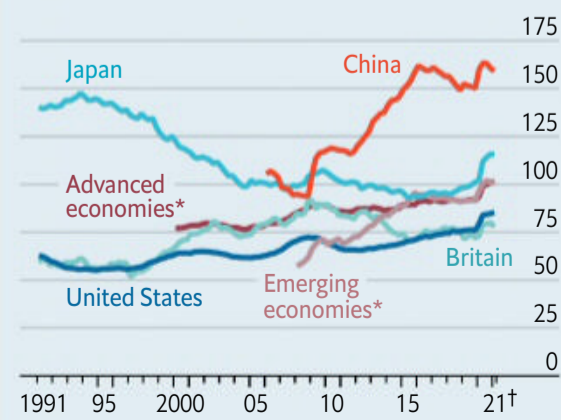
The authors argue that lenders often have an incentive to restructure old corporate loans, reducing the risk of “zombie” companies persisting, and freeing up finance to support the next recovery. For household debt, however, restructuring thousands of individual loans is often impossible, and lenders may be more inclined to keep the loans on their books in the hope that house prices eventually recover. The risks to the economy are higher after commercial-property busts than for corporate debt where lenders mainly have their eyes on firms’ cashflows. This is one reason why the property-related debt woes in China are potentially disturbing.

In much of the rich world, there are reasons to be cautiously optimistic. The largest lenders are in much better health than in 2008. All of the major regulatory authorities carried out stress tests during 2020, using macroeconomic scenarios much more severe than have actually transpired, but their banking systems were able to absorb large corporate losses and carry on lending. And the parts of the economy that have had the toughest time during the pandemic only account for a relatively small share of corporate debt. For example, modelling by Benoît Mojon, Daniel Rees and Christian Schmieder of the BIS projects that defaults will increase in the hospitality industry over the coming years, but they note that the sector only accounts for between 1.5% and 8% of corporate credit in the nine major economies they model.

There will be a mountain of corporate debt in many countries for some time. But that does not mean the recovery will necessarily falter. ■

Unbalanced-sheets

Company debt as % of GDP



Free exchange | Rules of engagement

America's debt ceiling is a disaster, but fiscal rules, designed well, can help



IT IS ONCE again time for that most bizarre of economic spectacles, a debt-ceiling showdown in America. In the name of fiscal responsibility, the world's biggest economy is flirting with an act of brazen irresponsibility: a sovereign default. The government has just about exhausted its current statutory debt limit of \$28.5trn, after which it will struggle to honour its obligations. Janet Yellen, the treasury secretary, has warned that the government will probably run out of cash sometime next month.

Most economists and executives assume that America will come to its senses before then. After all, Congress simply has to raise or suspend the debt limit, which it has done nearly 80 times since 1960, even if occasionally leaving it to the last minute. Should that occur again—and it almost certainly will—the debt ceiling will fade from view until the next clash, serving mainly as evidence of America's polarised politics (as if any were needed).

America's ritualistic threats of economic self-harm are unique. But the debt ceiling is an extreme version of something that many other countries do: they limit government borrowing through fiscal rules. Germany applies a "debt brake", capping its structural deficit at 0.35% of GDP (though it has ignored that cap since the outbreak of the covid-19 pandemic). In Britain the Conservative government aims to match its spending and revenues over a three-year horizon. Rishi Sunak, the chancellor, is expected to unveil even tighter rules in next month's budget, including a commitment to lower the debt-to-GDP ratio.

The purpose of fiscal rules is to deal with what economists call a "common pool" problem—namely, that beneficiaries of government spending ignore the costs imposed on taxpayers and future generations. The fear is that without a strict cap on spending, elected officials will burn through cash. Taken to an extreme, bond and currency markets might punish profligacy. Better not to test them. Hence the need, supposedly, for clear boundaries.

Yet the past decade has shown that the boundaries are quite a bit wider and fuzzier than previously thought. In America federal debt was about one-third of GDP in 2000; today it is just about 100%. Far from precipitating a financial meltdown, the rising debt burden has become more, not less, manageable thanks to ultra-low interest rates. In nominal terms the cost of servicing all the

debt (the annual interest payments on it) is just over 1% of GDP, nearly half what it was two decades ago. Similar trends have played out throughout the rich world. There may be no such thing as a free lunch, but governments have learned that they can get much larger portions for half the price.

One response is to soften the limits. Take the European Union's rule that member states must cap their debt at 60% of GDP—which is largely observed in the breach, with average EU debt levels now hurtling past 90% of GDP. Economists such as Zolt Darvas of Bruegel, a think-tank, suggest that this limit should be treated as a long-term anchor rather than any kind of near-term target.

Such a softening would help. But it would fail to deal with a more basic flaw with debt limits, which is that they are intrinsically arbitrary. There is little empirical basis for keeping debts to 60% of GDP, much less to exactly \$28.5trn in America. The very arbitrariness of these red lines risks creating a boy-who-cried-debt syndrome. As borrowing levels blow past them and yet the economy continues to perform well, some politicians may conclude that any and all calls for fiscal restraint are best ignored.

A more sophisticated response is to focus fiscal rules on what really matters about debt: the cost of servicing it. In a paper in 2020 Larry Summers and Jason Furman suggested that governments should aim to stop their real interest payments from rising above 2% of GDP. If they succeed, debt-to-GDP targets would be rendered all but superfluous. More generally, economists recognise that so long as a country's pace of growth is higher than its interest rates, its path to fiscal sustainability ought to be easier, because its burden of existing debts will steadily shrink.

However, these more elegant fiscal rules have their own problems. Why cap debt-servicing costs at 2% of GDP and not, say 3%. Moreover, the confidence that economic growth can surpass interest rates stems from the belief that rates will remain subdued well into the future as the population ages. But America's ongoing bout of inflation has shown just how uncertain that is. Should central banks need to jack up interest rates to quell price pressures, debts would quickly spiral higher.

You only give me your funny paper

Doing away with indefensible lines in the sand altogether is a good alternative. In a paper this year Peter Orszag, Robert Rubin and Joseph Stiglitz argue for a new fiscal architecture. An important part would be to index long-term spending to underlying drivers. For example, social-security benefits could automatically be made less generous to take into account increasing life expectancy. This can be thought of as a fiscal rule that would commit governments to sensible budgetary decisions, rather than specifying debt targets with spurious precision.

In another paper this year Olivier Blanchard and others proposed general fiscal standards for the EU, such as requiring governments to ensure that their debts are sustainable, but leaving it to them to choose their policy mixes. Independent fiscal councils could then use detailed debt-sustainability criteria to assess their budgets. If done methodically, this would be more scientific than the fiscal rules now seen in America and Europe.

Alas, all these clever ideas may amount to nothing in America. There is little chance that the government will abandon its debt ceiling, for in one dimension it is most effective. Republicans have become dab hands at wielding it as a cudgel to stall the agendas of Democrat presidents and to portray them as spendthrifts. No other fiscal rules can deliver that kind of return. ■



The future of warfare

Through a shimmering looking glass

Tomorrow's soldiers will have their reality augmented. Relevant information will be superimposed on their view of the battlefield

SUCCESS OR FAILURE in war often hinges on how much soldiers know about the enemy and the areas in which it operates. Tactical intelligence of all sorts helps. Locations of culverts where bombs may lie hidden. Spots from which snipers have scored kills. Water sources likely to have been polluted by agricultural runoff after heavy rain. Identities of locals suspected of aiding insurgents. Armed forces compile such intelligence and store it on computers. But making full use of it in the heat of battle has never been easy. This is now poised to change, thanks to display technology known as augmented reality (AR).

AR is the art of superimposing computer graphics on a view of the real world. It is popular in applications ranging from video games to selling furniture. America's army would like tactical intelligence pertinent to a soldier's mission to pop up similarly on a transparent visor attached to his helmet, no hands required. And for this capability, it is spending big. In March it announced a deal with Microsoft to build such a system. This could, over the course of a decade, cost a staggering \$21.9bn.

The army has dubbed the kit IVAS (Integrated Visual Augmentation System). David Marra, who runs Microsoft's end of the project, describes it as a holographic computer. The displays produced, he says, appear "locked to the real world", even as a wearer moves and shifts gaze.

IVAS pulls off this wizardry by crunching and synthesising several types of data. A GPS receiver locates the wearer within centimetres. Instruments fitted with accelerometers and gyroscopes provide information on how he is moving around. Cameras track eye movements. IVAS must also be aware of a soldier's environment. This relies on lidar, an optical equivalent of radar. An array of sensors record the time it takes infrared laser pulses bounced off nearby objects to return. That allows those

objects' distances to be calculated. Machine-vision software that recognises those objects then keeps track of how they move. Mr Marra describes the process as a "continuous rendering of the xyz co-ordinates of everything".

IVAS must calculate with extraordinary speed where on a headset's visor to display graphics. A latency of just seven milliseconds risks causing vestibular ocular discomfort, a type of dizziness that has long plagued the development of realistic displays of augmented and virtual reality. In most circumstances, Mr Marra says, IVAS operates well within that limit.

Theatre of war

To build the system, Microsoft has modified an AR headset called HoloLens that it has so far sold mostly to businesses and research outfits. The militarised version of this has been "ruggedised" and souped up with a computing and battery "puck", a bit bigger than a smartphone, that the user carries on his chest.

Tactical intelligence can be uploaded before an operation, with updates transmitted wirelessly as needed. AR text and graphics guide soldiers through unfamiliar terrain, highlight the whereabouts of friendly forces and mark the enemy's known and suspected positions. The headsets will also employ facial-recognition technology to append information on possible persons of interest who come into view. As Susan Fung, the army's deputy head of IVAS technology at Fort Belvoir, in ▶▶

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▶ Virginia, puts it, soldiers freed of the need to look down at a screen will be able to “focus on moving and engaging targets”.

IVAS will also exchange data with Azure, Microsoft’s computing cloud. This will permit additional features, such as language interpretation, to be included. Production of the headsets, which weigh about a kilogram, has begun. The first of an expected 120,000 or so units are to be deployed this year.

Others besides the army are also interested. America’s marine corps is a partner in the IVAS programme. Undisclosed allies are seeking to join. And modified Holo-Lenses may also see use on warships. Britain’s Royal Navy has paid \$25.5m to BAE Systems, a local defence giant, to adapt them to show pictures currently displayed on screens on the bridge to officers elsewhere on a vessel.

The benefits of AR may be even greater inside tanks, from which crew typically peer at the world through periscopes. That, says Daniel Covzhun, chief technologist at Limpid Armor, an AR firm in Kiev, Ukraine, is like viewing the world “through a length of metal pipe”. Limpid’s system, dubbed LPMK, superimposes graphics on video images collected by cameras and infrared sensors mounted on an armoured vehicle, and will soon be able to do the same for images relayed by nearby flying drones.

A handful of armoured vehicles belonging to Ukraine’s army have already been fitted with test versions of LPMK. Before an operation, these are fed intelligence from a battle-management system. Commanders choose what they wish to be marked with icons, says Colonel Vadym Slyusar of the Central Scientific Research Institute of Armament and Military Equipment, in Kiev. Options include sewers and other underground infrastructure, preferred landing zones for medical-evacuation helicopters, culturally important buildings, and spots where attacks have been recorded or are feared. The systems start at about \$50,000. Ukraine recently ordered more than 50 for delivery this autumn. The United Arab Emirates and an undisclosed Asian country have placed orders with Limpid, too.

AR can also expand the capabilities of optical gear already used by soldiers. In September 2019 the American army began to use a new AR feature added to its Enhanced Night Vision Goggle—Binoculars (ENVG-B), which are attached to a soldier’s helmet and flip down over his eyes when needed. The new feature, made by L3 Harris, a firm in Florida, highlights sources of heat and amplifies what light is available to render objects visible in the dark.

ENVG-B works out the portion of the world within its wearer’s field of view. It then superimposes icons on things like friendly and enemy troops, or the route to a rally point, drawing their co-ordinates

from a wireless network called Nett Warrior. Soldiers especially like an AR mode called “rapid target acquisition”, says Lynn Bollengier, head of “integrated vision” at L3 Harris. This pulls data from an inertial-measurement unit in a soldier’s rifle to place crosshairs over whatever it is pointing at. That means a soldier can shoot from behind a corner without sticking his head out to put an eye to the rifle’s sight. America’s army and marine corps have bought more than 6,000 of the systems..

A sight to behold

This is heady stuff. Even so, enhancing combat operations with AR will remain, for some time, beyond all but the most technologically sophisticated armies. Marcel Baltzer, of the Fraunhofer Institute’s campus in Wachtberg, who co-chairs an AR-research team for Germany’s armed forces, believes that even the European armies most advanced in the art (which are, by his reckoning, those of Britain, Germany, Lithuania, the Netherlands and Norway) will need another decade. Using AR for training, and for the maintenance and design of military hardware, he adds, is easier and will become common sooner.

Ambition, at any rate, is not lacking. Mojo Vision, a new Californian firm that has received money from DARPA, an American government military-research agency, is developing an AR system embedded

in contact lenses. Tiny batteries power sensors that track a wearer’s gaze and the movement of objects in view. An array of LEDs roughly the size of a grain of sand projects images received via a wireless link onto the wearer’s retina. The brightness of these is adjusted according to the ambient light. Steve Sinclair, Mojo’s head of marketing, expects a usable version of the system to be ready in a few years’ time.

Whether or not that proves feasible, the use of AR of any sort in combat will introduce risks. Designers must identify the point at which further visual augmentation will lead to confusing information overload—and what happens in training may not mirror the messiness of real battle. An imprecise data overlay could lead to a blunder. And if an AR system proves hackable, soldiers could be tricked by the enemy, with grim consequences.

A different sort of pitfall also looms. AR will make it easier for distant commanders to tell soldiers in battle what to do. The risk is that officers sitting far away from the fight will “feel like they’ve got puppets on the ground”, says Axel Dyèvre, of Avisa Partners, a consultancy based in Paris that has studied AR for France’s defence ministry. He calls the phenomenon a “squashing of chains of command” which robs troops of the degree of autonomy needed to fight effectively. AR for combat, then, offers perils as well as promise. ■



Footprints in the muds of time

These tracks, from a dried-up lake bed in New Mexico, are one of several sets which radiocarbon evidence suggests were made between 21,000 and 23,000 years ago. They are described in this week’s *Science* by Matthew Bennett of Bournemouth University, in Britain, and his colleagues, and are the oldest undisputed evidence of human beings in North America. Few doubt that the first Americans crossed from Asia, probably over the Bering Strait when low sea levels during the last Ice Age meant it was dry land. Exactly when, though, is unclear. The oldest human fossils in North America date from 13,000 years ago. But evidence from stone tools suggests the presence of people there as far back as 30,000 years in the past. The stone-tool evidence is, however, controversial. Such tools are hard to date directly, and may be moved into sediments older than the date of their creation by animal activity. Footprints, by contrast, stay put.

The comforts of religion

Faith and fatalism

Religious belief really does seem to draw the sting of poverty

“RELIGION IS THE sigh of the oppressed creature...it is the opium of the people.” So wrote Karl Marx in 1844. The idea—not unique to Marx—was that by promising rewards in the next life, religion helps the poor bear their lot in this one.

A paper published in the *Proceedings of the National Academy of Sciences* by Jana Berkessel of the University of Mannheim, in Germany, and her colleagues takes a statistical look at the claim. Ms Berkessel's curiosity was piqued by a counter-intuitive finding in development economics. Researchers know that low socioeconomic status correlates with poor mental health. The assumption was once that, as places became richer, this effect would weaken. Being poor in a rich country was presumed better than being poor in a poor one.

But that has turned out not to be true. Abundant evidence suggests the relationship between status and mental health is stronger, not weaker, in rich countries than in poor ones. Ms Berkessel, who studies the psychological effects of religion, noticed that economic development is also inversely correlated with religiosity—the richer a country, the more godless it tends to be. Perhaps that was driving the change?

To check, she and her colleagues analysed three surveys covering 3.3m people in 156 countries. This set of data reproduced the finding that economic development amplifies the link between mental health and status. It also supported the idea that religiosity could attenuate that effect. Among rich countries, for instance, those with higher levels of self-reported religious belief had a weaker relationship between status and mental health.

Other evidence buttresses the theory. One study covering 11 European countries, all rich, found the link between personal income and well-being was stronger in irreligious places than devout ones. After much statistical crunching, Ms Berkessel concluded that declining religiosity accounted for about half of the effect of growing wealth on the relationship between status and psychological well-being.

The upshot is that religion seems to protect people from at least some of the unpleasant effects of poverty. Exactly how is less clear. One hypothesis is that religious doctrine is directly protective. After all, many of the world's biggest religions have a sceptical attitude to wealth. Alongside the well-known biblical verses about

The evolution of fruit

Finding the right customer

Why some fruits stop ripening when plucked, and others don't



BANANAS, APPLES and avocados continue to ripen after they are picked. Cherries, blackberries and grapes do not. The difference between climacteric fruits (the former) and non-climacteric fruits (the latter) matters to fruit growers and greengrocers, who must make sure their wares are in tip-top condition when they arrive at the marketplace. But how those differences originally came about remains unclear.

In a paper in *Biology Letters*, Fukano Yuya and Tachiki Yuuya of the University of Tokyo proffer a suggestion. Fruits, they observe, exist to solve a problem faced by all plants—how best to spread their progeny around. Wrapping their seeds in a sugary pulp, to provide a tasty meal, serves as a way to get animals to do this for them. They do, however, need to make sure that their fruits favour the animals most likely to do the distribut-

ing. Dr Fukano and Dr Tachiki propose that climacterism, or its absence, is a way to achieve this. If ground-dwelling animals are the main distributors, then the continuing ripening of fallen fruit (ie, climacterism) is beneficial. If, by contrast, those distributors are arboreal or aerial, and so can feed on unfallen fruit, then non-climacteric fruits will do well.

To test their idea, the two researchers combed through 276 papers reporting on 80 sorts of fruit, and noted which animals each depended on for its propagation. Thirty-five of these fruits, they discovered, were eaten by both ground-dwelling animals and arboreal and aerial ones. But of those where one group or the other were the predominant consumers, 15 of the 19 eaten principally by ground dwellers were climacteric, while 21 of the 26 fed on by arboreal or aerial animals were non-climacteric.

That is a suggestively strong correlation. And the authors' hypothesis is fortified by other evidence. They point out that non-climacteric fruits tend to have vivid colours, especially reds and purples. This may help them stand out amid the foliage of their parent plants, advertising their presence. Climacteric fruits are generally better camouflaged. That makes them harder to spot until they have fallen to the ground.

The main limitation of their work, say Dr Fukano and Dr Tachiki, is that most of the papers they looked at concerned fruits eaten by people. This has probably contaminated the sample, for thousands of years of selective breeding for traits that human beings find appealing may have blurred any signal optimised by natural selection. The next step, therefore, should probably be to confine the analysis to wild fruits.

camels, needles and a rich person's chance of entering the pearly gates, the researchers point out that the Bhagavad-Gita, a Hindu holy book, says “The demoniac person thinks: So much wealth do I have today, and I will gain more.” Similar sentiments can be found in the Koran and in some Buddhist texts. If God teaches that the wealthy are spiritually corrupt, or will get their comeuppance on Judgment Day, then poverty may seem less of a burden.

But there are other possibilities. Ms Berkessel points out that organised religion offers a social-support network which might help attenuate the effects of low sta-

tus, whether or not its members really believe everything their holy texts say about wealth. Her next research project, she says, will look at exactly this point.

In the meantime, if religion really does help relieve poverty's burden, one question is what, if anything, to do with that knowledge. The world is, after all, getting steadily richer, meaning relative poverty's sting will only get sharper. A cynic might recall another well-known quote about religion, this time from Seneca, a Roman philosopher. “Religion”, he wrote, “is regarded by the common people as true, the wise as false, and the rulers as useful.” ■

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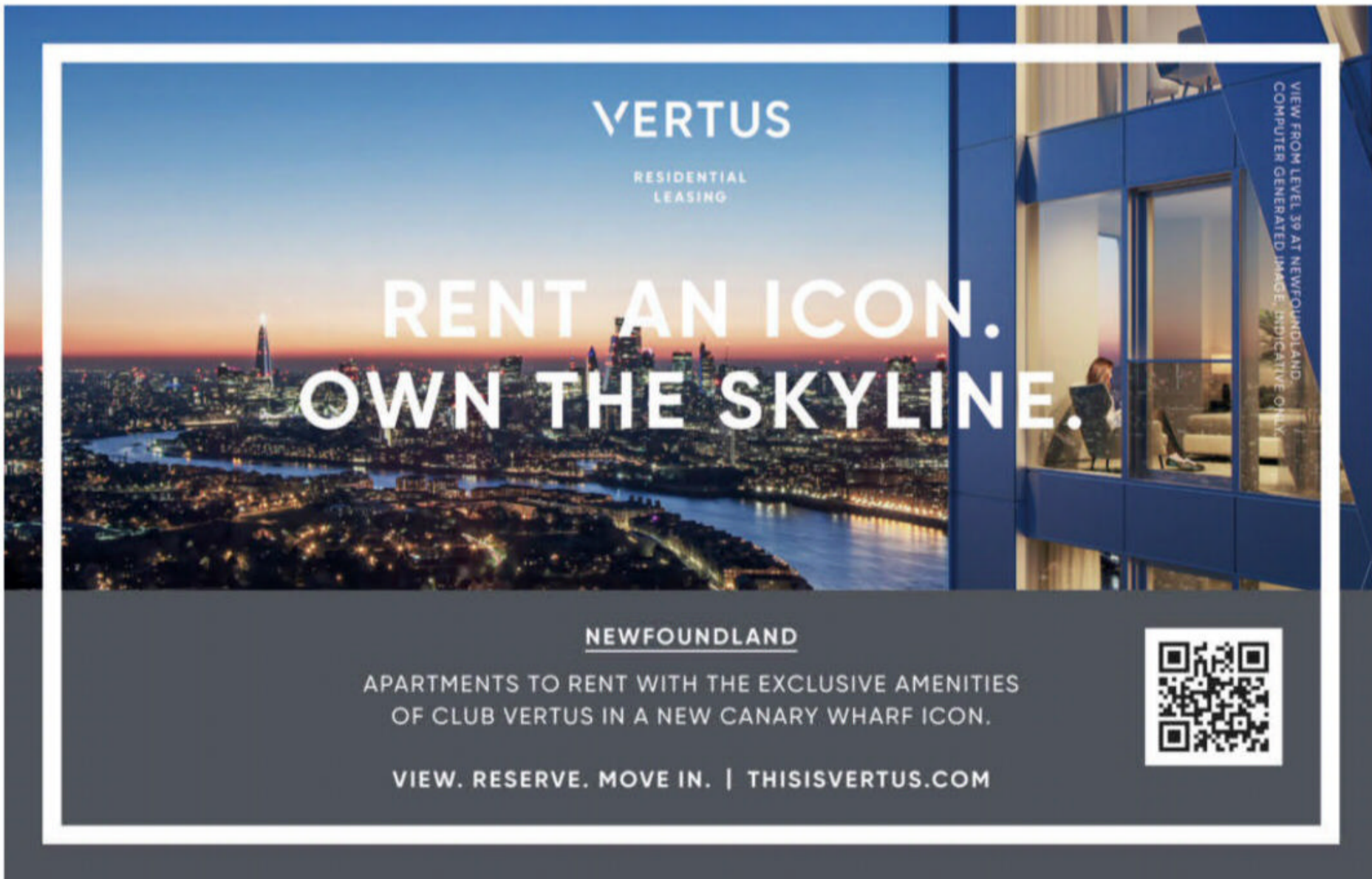
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Reason and its discontents

Faulty logic

A defence of reason by one of its champions is impassioned but flawed

STEVEN PINKER is too honest to deny that he risks blowing into his own sails. If he tried to use a reasoned argument to validate rationality, he acknowledges, he would be assuming the thing he aims to establish. And so he approaches his target from the side, first showing how rationality perfects human understanding, then reflecting on how reason has brought material and moral progress. Unfortunately, though rationalists may feel affirmed, non-believers are unlikely to be converted.

Mr Pinker, a professor at Harvard, has a lot to get off his chest. His previous book, “Enlightenment Now”, a paean to reason’s role in history, had a mixed reception in 2018. It met with praise (including in *The Economist*), but also objections that it was simplistic, Panglossian and selective in its evidence. A personal attack followed last year, with a vicious and shoddy campaign demanding that the Linguistic Society of America cancel him. Meanwhile, in recent decades, research in economics and psychology has underlined just how far *Homo*

Rationality. By Steven Pinker. Viking; 432 pages; \$32. Allen Lane; £25

sapiens falls short of rational beings who maximise their economic welfare and engage in truth-distilling debate.

Since Mr Pinker cannot simply argue for reason, fully seven of the book’s 11 chapters instead set out a rationalist’s catechism—a primer of formal logic, probability, causation and so forth. In these passages he justifies reason by showing what it can do, using games and logical puzzles.

For instance, imagine that 1% of women suffer from breast cancer and a test for the condition is 90% accurate, but reports false positives 9% of the time. If a woman tests positive, what is the chance that she has the disease? The most common answer among a sample of doctors was 80-90%, but the correct answer is just 9%. The reason is that the false positives in the 99% of women who are breast-cancer-free overwhelm the true positives in the 1%. With-

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out further data, you cannot say any more about whether this particular woman is among the true positives or the false ones.

On the face of it, the doctors’ error is damning evidence against human rationality. However, in an ingenious piece of intellectual judo, Mr Pinker turns the argument back on the irrationalists. The fact that people are easily confused by probabilities, he writes, is no more evidence that they are incapable of reason than optical illusions are evidence that people cannot make sense of what they see.

They are led astray partly by how the questions are set out. By way of illustration, Mr Pinker cites “the Linda problem”, first posed by the celebrated academics Daniel Kahneman and Amos Tversky.

Linda is 31 years old, single, outspoken and very bright. She majored in philosophy. As a student, she was deeply concerned with issues of discrimination and social justice, and also participated in anti-nuclear demonstrations. Please indicate the probability of each of these statements:

Linda is a teacher in an elementary school.

Linda is active in the feminist movement.

Linda is a psychiatric social worker.

Linda is a bank teller.

Linda is an insurance salesperson.

Linda is a bank teller and is active in the feminist movement.

Respondents tend to say that Linda is more likely to be a feminist bank teller than just a bank teller, which cannot be ►►

► true as the set of bank tellers includes all the feminists and non-feminists alike. Mr Pinker argues that such cognitive illusions may arise because people are using their intelligence to hypothesise about a social reality in which they meet a person called Linda, rather than to frame the problem as a logical puzzle. When they are told to imagine 1,000 women like Linda and asked how many belong in each category, the error rate tumbles.

QAnon and on

Ever the optimist, Mr Pinker sees the glass half-full. He rejects the idea that the human brain is “a basket of delusions”. The rationalist techniques he describes help people correct biases and hasty judgments. They extend humans’ remarkable powers of thought, just as microscopes and telescopes extend the range of their sight. The miracle is not that people make mistakes, but how easily they can be helped to see through them. Anyone can learn to reason better; indeed, Mr Pinker goes on to argue that rationality should join reading, writing and arithmetic as a fourth R.

This is all very well, but it produces an inverted doughnut of a book. To begin and end with, Mr Pinker serves up helpings of jam, in which he deals with today’s attacks on reason from anti-vax conspiracy theorists on the right and social-justice warriors on the left. In between is that ring of puzzle-solving stodge designed to show that people are capable of being rational. For all their utility, these seven chapters are divorced from the drama of the moment, and bewilderingly Spockian in their lack of empathy. When Mr Pinker at last declares on page 283 that “This is the chapter most of you have been waiting for”, you wonder why some kindly editor didn’t urge him to get to the point sooner.

The pity is that when Mr Pinker writes about the conspiracy and outrage that have infected American public life he has much to say that is interesting. He is wise enough not to blame everything on social media, nor to assert that simply elucidating Bayes’s theorem would temper QAnon supporters’ fever dreams about Democratic child-murderers. Instead he observes how humans evolved “not as intuitive scientists but as intuitive lawyers”, using motivated reasoning to fight their corner. People are titillated by conspiracy and gossip. And narrative and myth have a psychological and sociological function beyond literal truth and falsehood.

Rather than explore these ideas in greater depth, however, Mr Pinker rushes on to make the case for reason as the best defence against them. Rationality is impartial, he observes. In this, it corresponds to the ethical insight that a fair system is one that treats people dispassionately. “Rationality, then,” he writes exultantly, “is

not just a cognitive virtue but a moral one.” As for the critics who accuse him of a naive faith in progress, they misunderstand him. In fact he believes that rationality is what wrings progress from an unforgiving universe. To illustrate his point, Mr Pinker finishes up with a parade of thinkers such as Erasmus, John Locke and Jeremy Bentham who paved the way for material and moral improvements by deploying reason against cruelty and violence.

Yet that will not do. Rationality involves people knowing they are right. And from the French revolution on, being right has been used to justify appalling crimes. Mr Pinker would no doubt call the Terror a perversion of reason, just as Catholics brand the Inquisition a denial of God’s love. It didn’t always seem that way at the time.

Mr Pinker is on the side of the better angels. He is right about the value of reason. He acknowledges the contingency of what is known. But he puts too little emphasis on the need to temper rationality with scepticism, and on the way certainty slides into hubris. He is not sufficiently interested in how rationality gels with the rest of a person’s outlook. As with many doughnuts, this book has a hole in the middle. ■

The history of London

What lies beneath

London Clay: Journeys in the Deep City.

By Tom Chivers. *Doubleday*; 464 pages; £20

IN 1858 LONDON was hit by the “Great Stink” after the banks of the Thames became clogged with raw sewage. Exacerbated by a heatwave, the stench was overpowering. To dispel it—and the threat of cholera—Joseph Bazalgette, a civil engineer, created a sewer system that, although decrepit, is still in use today. As part of this Victorian megaproject, the Fleet river, by then little more than an open drain, was encased in cement and lost to public view.

More than a century and a half after the stream disappeared, most Londoners are unlikely to have heard of it, or to know that, where it joined the Thames, the Fleet was once almost 100 metres wide. Residents might also be surprised to learn that Westminster Abbey, where monarchs and other worthies are interred, was built on what in the 13th century was an island. The city is littered with such transformations and unexpected tales.

In “London Clay” Tom Chivers delves into the capital’s streets and uncovers some of these stories. Much of his journey



A journey to the underworld

is conducted above ground, but in one passage he descends to the “malodorous” Fleet, wisely clothed head-to-toe in protective gear. He finds sweeter aromas pursuing the Ambrook river in a wood in south London, and intrigue in the basement of a government building where the Tyburn is rumoured to bubble up. Forgotten waterways are not his only interest: he stomps around Bermondsey, once surrounded by marshes, and peers into a sinkhole, the site of an abandoned Tube station.

A lifelong Londoner (and a poet), Mr Chivers knows the local history and geography well. His book bounces back from Jack the Ripper to Geoffrey Chaucer by way of Elizabethan theatre, taking in asides on the mishmash of contemporary architecture and the idiosyncrasies of passers-by. A memorable assortment of modern-day characters includes environmentalists, a youth worker and a Roman Catholic priest. The drifting focus is sometimes discomfiting, at other times charming.

The book’s anchor is what lies beneath. As its title suggests, London’s geology is dominated by clay, along with sand and gravel in the river valley’s bedrock. Mr Chivers overlays a street map with colours representing the different substrata—“half eccentric artwork, half primary-school science project”—which becomes a springboard for his digressions. Quirks of geology may not interest everyone, but his travel-book-cum-memoir will open readers’ eyes to what is around and below them.

Its delight in exploration is matched by a thoughtful meditation on grief. Mr Chivers reflects on the death of his mother when he was a teenager, visiting her grave and recalling her efforts to preserve the site of a 16th-century theatre. He likens the scars of his sorrow to the flow of a river you cannot see: “It remains, the trace of a buried channel, and gives its form to the land that is your life after loss.” ■

Justice on screen

Supposing they're wrong?

Reginald Rose and the Journey of 12 Angry Men. By Phil Rosenzweig. Fordham University Press; 314 pages; \$27.95 and £22.99

IN 1954 A young screenwriter received a summons for jury service in New York. For the rest of his life he would describe how he sat with his peers in a homicide case, helping argue the conviction down from manslaughter to assault. The accused had punched a loudmouth who had pulled a knife in a bar and, after being struck, fell and banged his head. Reginald Rose recalled that he left the court, sat down at his typewriter and wrote the screenplay for the landmark film “12 Angry Men”.

But a bit of sleuthing reveals that he may not have served on the jury. Phil Rosenzweig, the author of this fascinating book about Rose’s masterpiece, searched in court records and found the most similar case. The names of all 12 jurors and both alternates are listed; Rose’s is not among them. Yet the crime was too obscure to be known beyond the courtroom. The best explanation, Mr Rosenzweig writes, is that Rose was called up but dismissed, perhaps staying on to watch the trial.

At any rate, something inspired him. Alongside “To Kill a Mockingbird” and “Death of a Salesman”, two other mid-century dramas, “12 Angry Men” became a staple of American civic entertainment. Like them it appeared in several forms: first as a live teleplay, later as a film starring Henry Fonda and in a long afterlife on stage. The

film, made in 1957, depicts a roomful of jurors—all white men from various walks of life—struggling to reach a consensus in a murder case. Fonda’s lone holdout eventually persuades the others to join him in a verdict of not guilty. Along the way they confront prejudice, conformity, class and the sharp edges of the legal system.

Mr Rosenzweig devotes ample space to Rose’s life and works, but the book is strongest on the making of the classic film. The screenwriting challenge was “to devise a case against the defendant that was strong enough for almost all jurors to vote guilty, and then to chip away at the evidence” so they could plausibly change their minds. Two weeks of rehearsal preceded filming. As the cast members ran through their lines, Sidney Lumet, the director, “moved through the room to envision each shot”. Early on he elevated the camera, gradually bringing it lower and closer to the action to build claustrophobic tension.

Most of the 12 actors had backgrounds in theatre and filming had a repertory feel. “You didn’t screw around on a Hank Fonda set,” said the assistant director; but the atmosphere was much friendlier than that depicted on screen, Lumet’s praise buoying everyone’s spirits. The days “were filled with kissing and hugging and wild exclamations of joy”, said Rose, a quiet writer among effusive show-business types. “Actors have never been more loved than when they were loved by Sidney Lumet.”

A critical success and a favourite in Europe, the film bombed in America on its release, failing to hold up against bigger hits such as “Funny Face”, “The Ten Commandments” and “The Bridge on the River Kwai”. Yet over the years its stature grew, and it was remade several times. The American Film Institute now recognises it as one of the 20th century’s best movies. Not much is sacred in American public life any more. The jury itself is one of the holdouts. ■

Dystopian fiction

Life, the universe and everything

Bewilderment. By Richard Powers. W.W. Norton & Company; 288 pages; \$27.95. William Heinemann; £18.99

AN ECOLOGICAL EPIC about deforestation, “The Overstory” brought Richard Powers a wider readership when it won a Pulitzer in 2019. His new novel, shortlisted for this year’s Booker prize, may make him even better known. It is a shorter, more intimate tale that still wrestles with the scientific themes that are his hallmark.

The story is set in Wisconsin and narrated by Theo, a widowed astrobiologist. He is struggling to bring up his son, Robin, whose diagnosis of autism he resists, and whom the novel follows from the age of eight to ten. Robin’s mother, Alyssa, recently died in a car crash; he is disruptive at school. Distressed about global warming and the ruin of the natural world, he is consoled by playing a game in which he and his father imagine life on other planets.

When the trouble at school escalates, the possibility arises of Robin taking part in a pioneering neuro-imaging therapy, which reduces his stress levels by teaching him to mimic his mother’s erstwhile brain activity. Theo agrees to let Robin appear in the programme’s publicity film, but the resulting attention spirals out of control.

This science-tinged home-schooling drama takes place against a dystopian backdrop of extreme weather, crop failures and rampaging militias—encouraged by an authoritarian president who locks up journalists and outlaws dissent. Sabres rattle between America and China. By the end, a viral brain disease has spread from cattle to humans. “Bewilderment” comes to resemble a fictional cousin of “The Road”, Cormac McCarthy’s novel of 2006 in which a widowed father and his son tell each other stories during an apocalypse.

The regretful past tense in which Theo recounts events generates suspense, as does the nagging question of why Robin’s dialogue (like Alyssa’s) is presented in italics, whereas the rest appears in inverted commas. By folding his vast themes into a blend of speculative fiction and domestic realism, Mr Powers succeeds in engaging both head and heart. And through its central story of bereavement, this novel of parenting and the environment becomes a multifaceted exploration of mortality. ■



The gentlemen of the jury



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Contemporary art

The man behind the curtain

ARLES

Philippe Parreno's work is at once high-tech and primeval

ON THE AFTERNOON before this summer's official opening of Luma Arles, an impressive new art centre in the south of France, a triangular pool in the corner of one of the ground-floor galleries began to overflow. Visitors were more amused than perturbed as the water seeped inexorably across the parquet floor. Even when the circular blue carpet in the centre of the room became sodden and dark, onlookers suspected it was part of the show. The gallery had been given over to Philippe Parreno, a French conceptual artist whose work challenges notions of what an art exhibition can be. Mr Parreno watched in silence as the water spread.

Born in Oran, Algeria, and brought up in Grenoble, one of France's most tech-savvy cities, Mr Parreno, now 57, first came to the notice of the art world in the early 1990s, just as the internet was taking off. Hans Ulrich Obrist, artistic director of the Serpentine Gallery in London, remembers a work he created in a summer garden in Villa Arson in Nice. It was made entirely of artificial fireflies which, by day, no one could see; they were visible only at night when the museum was closed. Andrea Lissoni, who worked closely with the artist at Tate Modern, recalls an early show in New York in which fish-shaped balloons filled with helium were let loose in a gallery, to be arranged and rearranged by visitors. The resulting excitement, especially among children, contrasted exuberantly with the sombre reverence generally considered normal in art galleries.

Different as they were, both shows demonstrated the artistic preoccupations which, says Mr Parreno, have gripped him over the past 30 years. These include an obsessive focus on time rather than objects; the use of various media (whether film, sound or performance); an enthusiasm for working with collaborators rather than alone; the exploration of artificial intelligence and even organic materials such as yeast as artistic "agents" that help shape his artworks; and a preference for site-specific projects rather than shows that can travel from gallery to gallery. Perhaps above all comes Mr Parreno's insistence that the intervention of the audience is a key part of any exhibition.

For his next trick

Over the decades his work has grown ever-more complex; to some, it has become incomprehensible. In the installation he created in 2016 for the Turbine Hall at Tate Modern, Mr Parreno assembled an array of data about the building, including the temperature of the galleries at different times of the day, recordings of the sounds made by the industrial piping that runs through it, and the wind speed on the roof. All this was relayed by computer and fibre-optic cables into a vast tub of live yeast placed behind glass at one end of the hall.

The energy created was used to subtly change the atmosphere in the hall. Visitors found themselves subjected to clanging roars, recordings of the whoosh of the nearby river and the slap of boats on the

shore, while assorted films by Mr Parreno were projected on screens that moved up and down on cables suspended from the ceiling. "It was a space within a space," he says now, "and within that space you had another space." He insists the sounds and screens were controlled by the yeast. One critic likened it to an "alien intelligence".

This sort of art is not for everyone. But for those wanting to understand the French artist's ambitions, his installation at Luma Arles is a good place to start. It has two parts: an 80-minute film by Mr Parreno and a projection based on how the audience reacts to it. Visitors are invited to sit on benches set in a circle, which is itself mounted in the middle of the floor. From time to time the circle turns, first in one direction, then the other. The window blinds move up and down, depending on the level of sunshine outside. A drone floating at ceiling level records the audience's reactions and plays their whisperings back into the room. "The whole thing is a learning process," Mr Parreno says. "Because the audience always responds in a different way, every showing is unique."

The film, meanwhile, is made from re-edits of several earlier pieces. Out of a sequence on the biology of the cuttlefish, for example, or on the journey taken by the train carrying Robert Kennedy's body from Los Angeles to the east coast after he was assassinated, Mr Parreno presents a completely new narrative that appears to be nothing less than the story of life.

The first frames depict a starlit darkness at the edge of a galaxy far beyond this one. From there the viewer is transported around the surface of the sun, through the heavens and down towards Earth where a bug-eyed creature (the cuttlefish from an earlier film, "Anywhen", first shown at Tate Modern) seems to be emerging from a swamp. Humankind evolves and gathers in dense cities, living in squalid apartments in Chinatown or the opulent interior of the Waldorf Astoria hotel, and all along the railway sidings of America. The "other" is ever-present, in the form of the immigrant, the alien and various characters with different voices all performed by Nina Conti, an English ventriloquist. The effect is surreal and mesmerising.

Designed by Frank Gehry, the Luma itself is a grandiose tower that looms over the old city of Arles, visually harking back to a confident, pre-pandemic world. By contrast, Mr Parreno's installation—tech-heavy yet refashioned from earlier works, made in collaboration with others, telling stories about fragile humanity—suits the moment. The seepage from the overflowing pool in the corner of the gallery turned out to be the result of a tap accidentally left on by a workman. But such is Mr Parreno's wizardry that you would be forgiven for thinking it was all part of the story. ■

Economic data

	Gross domestic product			Consumer prices		Unemployment rate		Current-account balance		Budget balance		Interest rates		Currency units			
	% change on year ago			% change on year ago		%		% of GDP, 2021†		% of GDP, 2021†		10-yr gov't bonds		per \$ % change			
	latest	quarter*	2021†	latest	2021†	latest		latest		latest,%	change on year ago, bp	Sep 22nd	on year ago				
United States	12.2	Q2	6.6	6.0	5.3	Aug	3.6	5.2	Aug	-3.0		-12.6	1.3	64.0	-		
China	7.9	Q2	5.3	8.0	0.8	Aug	1.2	5.1	Aug [§]	2.8		-4.9	2.7	§§	-23.0	6.47	5.0
Japan	7.6	Q2	1.9	2.3	-0.3	Jul	-0.2	2.8	Jul	3.4		-8.9	nil	-8.0	110	-4.2	
Britain	22.2	Q2	20.7	6.6	3.2	Aug	2.6	4.6	Jun ^{††}	-4.5		-10.9	0.8	57.0	0.73	8.2	
Canada	12.7	Q2	-1.1	5.4	4.1	Aug	3.0	7.1	Aug	-1.7		-8.9	1.2	65.0	1.28	3.9	
Euro area	14.3	Q2	9.2	4.8	3.0	Aug	1.9	7.6	Jul	3.3		-7.2	-0.3	18.0	0.85	nil	
Austria	12.0	Q2	21.1	3.1	3.2	Aug	2.4	6.2	Jul	2.7		-7.7	-0.1	25.0	0.85	nil	
Belgium	14.9	Q2	7.0	4.8	2.7	Aug	2.1	5.9	Jul	-0.2		-7.2	nil	24.0	0.85	nil	
France	18.7	Q2	4.5	5.5	1.9	Aug	1.6	7.9	Jul	-1.4		-8.7	nil	25.0	0.85	nil	
Germany	9.4	Q2	6.7	3.1	3.9	Aug	2.5	3.6	Jul	6.7		-5.7	-0.3	18.0	0.85	nil	
Greece	16.4	Q2	14.5	5.4	1.9	Aug	0.1	14.6	Jul	-3.8		-5.7	0.7	-35.0	0.85	nil	
Italy	17.3	Q2	11.2	6.0	2.0	Aug	1.3	9.3	Jul	3.8		-11.5	0.7	-20.0	0.85	nil	
Netherlands	9.7	Q2	13.1	3.9	2.4	Aug	2.2	3.2	Aug	9.8		-4.7	-0.4	11.0	0.85	nil	
Spain	19.8	Q2	11.5	6.2	3.3	Aug	2.0	14.3	Jul	0.8		-8.7	0.3	6.0	0.85	nil	
Czech Republic	8.9	Q2	4.2	3.5	4.1	Aug	2.7	2.8	Jul [†]	3.2		-8.5	2.0	111	21.6	6.6	
Denmark	8.7	Q2	9.3	2.8	1.8	Aug	1.4	3.8	Jul	7.8		-0.5	nil	39.0	6.34	0.3	
Norway	6.1	Q2	4.4	3.0	3.4	Aug	3.0	4.8	Jun ^{††}	6.9		-3.0	1.4	76.0	8.62	8.5	
Poland	11.2	Q2	8.7	5.3	5.5	Aug	4.1	5.8	Aug [§]	2.3		-6.6	2.0	65.0	3.94	-2.5	
Russia	10.5	Q2	na	3.8	6.7	Aug	5.8	4.5	Jul [§]	4.5		-1.8	7.3	82.0	72.7	4.7	
Sweden	9.5	Q2	3.6	4.0	2.1	Aug	1.9	8.5	Aug [§]	4.3		-1.9	0.2	36.0	8.66	2.8	
Switzerland	7.7	Q2	7.4	3.5	0.9	Aug	0.3	2.9	Aug	6.8		-3.8	-0.2	27.0	0.92	nil	
Turkey	21.7	Q2	na	6.3	19.3	Aug	17.1	12.1	Jul [§]	-2.4		-2.4	16.7	310	8.64	-11.2	
Australia	9.6	Q2	2.7	4.3	3.8	Q2	2.5	4.5	Aug	1.9		-6.1	1.2	34.0	1.38	0.7	
Hong Kong	7.6	Q2	-3.7	5.4	1.6	Aug	1.6	4.7	Aug ^{††}	2.5		-4.2	1.1	60.0	7.79	-0.5	
India	20.1	Q2	-41.2	8.2	5.3	Aug	5.4	8.3	Aug	-1.0		-7.2	6.1	13.0	73.9	-0.4	
Indonesia	7.1	Q2	na	3.0	1.6	Aug	2.0	6.3	Q1 [§]	0.3		-6.0	6.2	-69.0	14,242	3.8	
Malaysia	16.1	Q2	na	3.8	2.2	Jul	2.4	4.8	Jul [§]	4.0		-6.0	3.4	61.0	4.19	-1.4	
Pakistan	4.7	2021 ^{**}	na	3.8	8.4	Aug	9.2	6.9	2019	-3.3		-7.2	9.9	†††	42.0	168	-1.4
Philippines	11.8	Q2	-5.1	4.3	4.9	Aug	4.1	6.9	Q3 [§]	-0.9		-7.5	4.4	121	50.3	-3.5	
Singapore	14.7	Q2	-7.2	5.4	2.5	Jul	1.8	2.7	Q2	19.4		-4.2	1.4	58.0	1.35	1.5	
South Korea	6.0	Q2	3.1	3.9	2.6	Aug	2.2	2.6	Aug [§]	4.9		-4.4	2.1	60.0	1,175	-0.8	
Taiwan	7.4	Q2	-4.2	5.7	2.4	Aug	1.8	4.1	Aug	15.5		-0.8	0.4	2.0	27.8	4.4	
Thailand	7.5	Q2	1.5	1.4	nil	Aug	0.8	1.5	Dec [§]	-0.9		-7.5	1.6	42.0	33.5	-6.2	
Argentina	17.9	Q2	-5.5	7.8	51.4	Aug	47.5	10.2	Q1 [§]	1.3		-5.5	na	na	98.5	-23.2	
Brazil	12.4	Q2	-0.2	5.5	9.7	Aug	7.5	14.1	Jun ^{†††}	0.1		-5.9	10.7	349	5.28	2.8	
Chile	18.1	Q2	4.2	10.3	4.8	Aug	3.9	8.9	Jul ^{††}	-1.5		-6.7	5.2	258	784	-1.4	
Colombia	17.0	Q2	-9.2	7.8	4.4	Aug	3.1	14.3	Jul [§]	-3.4		-8.5	7.4	221	3,833	-0.6	
Mexico	19.6	Q2	6.0	6.4	5.6	Aug	5.2	4.1	Jul	1.6		-2.8	7.1	145	20.0	7.4	
Peru	41.9	Q2	3.5	12.6	5.0	Aug	3.6	10.1	Aug [§]	-3.6		-5.8	6.4	297	4.11	-13.6	
Egypt	7.7	Q2	na	3.3	5.7	Aug	5.5	7.3	Q2 [§]	-4.6		-8.1	na	na	15.7	0.5	
Israel	17.5	Q2	16.6	5.0	2.2	Aug	1.7	5.0	Jul	3.8		-7.0	1.1	42.0	3.20	7.2	
Saudi Arabia	-4.1	2020	na	2.2	0.3	Aug	3.2	6.5	Q1	4.5		-2.0	na	na	3.75	nil	
South Africa	19.3	Q2	4.7	4.5	5.1	Aug	4.3	34.4	Q2 [§]	1.8		-9.0	9.1	-33.0	14.7	13.7	

Source: Haver Analytics. *% change on previous quarter, annual rate. †The Economist Intelligence Unit estimate/forecast. §Not seasonally adjusted. ‡New series. **Year ending June. ††Latest 3 months. †††3-month moving average. §§5-year yield. ††††Dollar-denominated bonds.

Markets

In local currency	Index	% change on:	
		one week	Dec 31st 2020
United States S&P 500	4,395.6	-1.9	17.0
United States NAScomp	14,896.9	-1.7	15.6
China Shanghai Comp	3,628.5	-0.8	4.5
China Shenzhen Comp	2,440.1	-1.9	4.8
Japan Nikkei 225	29,639.4	-2.9	8.0
Japan Topix	2,043.6	-2.5	13.2
Britain FTSE 100	7,083.4	1.0	9.6
Canada S&P TSX	20,401.5	-1.4	17.0
Euro area EURO STOXX 50	4,150.2	0.1	16.8
France CAC 40	6,637.0	0.8	19.6
Germany DAX*	15,506.7	-0.7	13.0
Italy FTSE/MIB	25,717.5	-0.2	15.7
Netherlands AEX	792.4	-0.2	26.9
Spain IBEX 35	8,808.4	2.0	9.1
Poland WIG	70,950.8	-1.1	24.4
Russia RTS, \$ terms	1,747.3	-1.1	25.9
Switzerland SMI	11,837.6	-1.2	10.6
Turkey BIST	1,407.5	-1.2	-4.7
Australia All Ord.	7,593.8	-1.7	10.8
Hong Kong Hang Seng	24,221.5	-3.2	-11.1
India BSE	58,927.3	0.3	23.4
Indonesia IDX	6,108.3	nil	2.2
Malaysia KLSE	1,529.0	-1.7	-6.0

% change on:

	index	one week	Dec 31st 2020
Pakistan KSE	45,597.2	-2.4	4.2
Singapore STI	3,048.1	-0.3	7.2
South Korea KOSPI	3,140.5	-0.4	9.3
Taiwan TWI	16,925.8	-2.5	14.9
Thailand SET	1,619.6	-0.5	11.7
Argentina MERV	74,750.3	-4.8	45.9
Brazil BVSP	112,282.3	-2.4	-5.7
Mexico IPC	51,338.3	-1.6	16.5
Egypt EGX 30	10,596.1	-5.0	-2.3
Israel TA-125	1,852.5	-0.5	18.1
Saudi Arabia Tadawul	11,270.6	-1.2	29.7
South Africa JSE AS	63,353.1	-1.6	6.6
World, dev'd MSCI	3,074.4	-1.7	14.3
Emerging markets MSCI	1,262.8	-2.0	-2.2

US corporate bonds, spread over Treasuries

	latest	Dec 31st 2020
Investment grade	116	136
High-yield	335	429

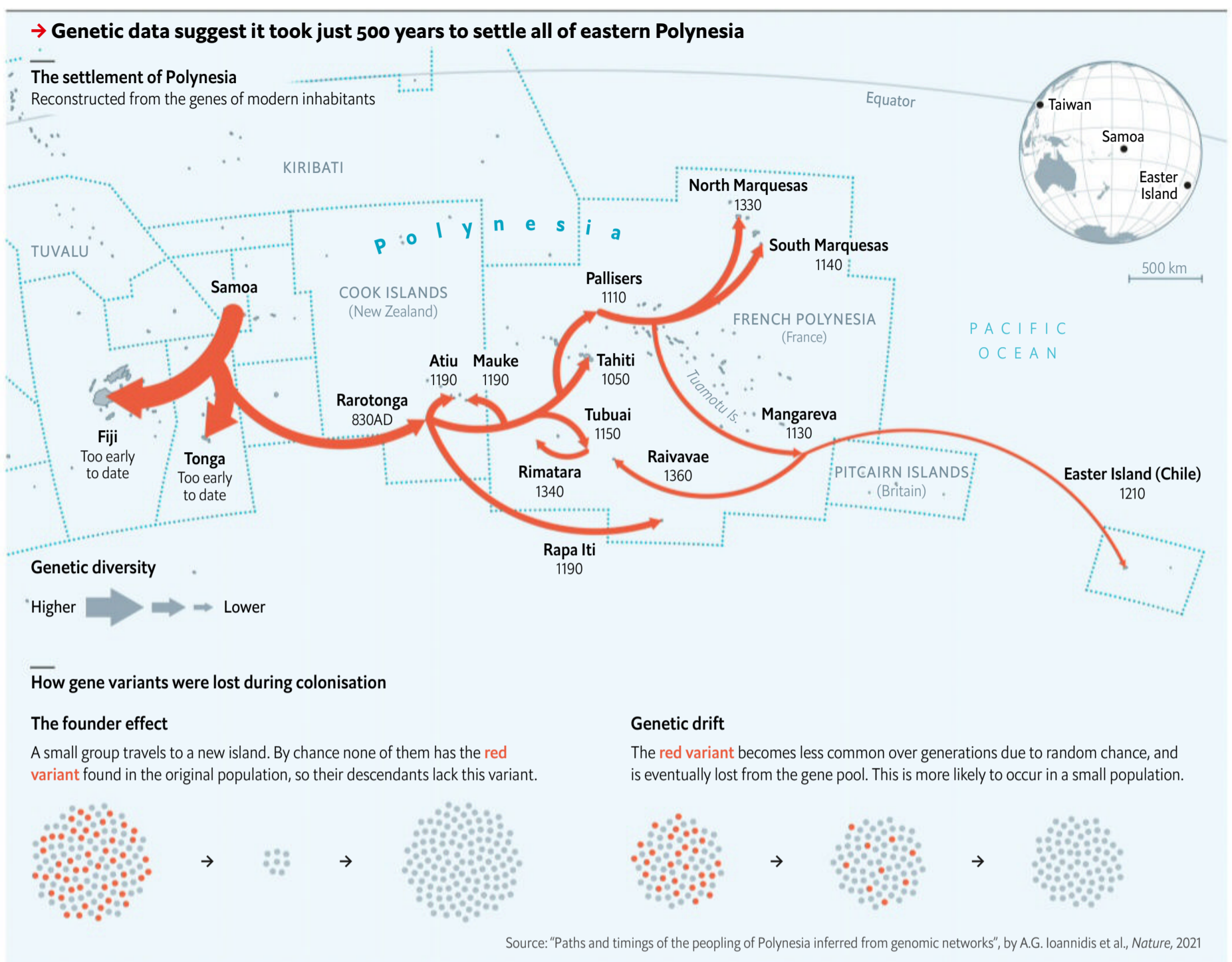
Sources: Refinitiv Datastream; Standard & Poor's Global Fixed Income Research. *Total return index.

Commodities

	The Economist commodity-price index			
	2015=100	Sep 14th	Sep 21st*	% change on month / year
Dollar Index				
All Items	153.1	143.5	-11.3	14.6
Food	127.5	126.8	-3.1	24.4
Industrials				
All	177.0	159.1	-16.5	8.3
Non-food agriculturals	136.3	139.5	-0.6	37.3
Metals	189.1	164.9	-19.7	2.9
Sterling Index				
All items	168.7	160.5	-10.7	6.9
Euro Index				
All items	143.6	135.7	-11.0	14.4
Gold				
\$ per oz	1,807.8	1,779.0	-1.5	-6.5
Brent				
\$ per barrel	73.7	74.7	5.0	78.8

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

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To the ends of the Earth

Genes reveal how and when humans reached remote corners of the Pacific

THE COLONISATION of the Pacific Ocean was one of the great feats of human navigation. Groups of a few dozen people, travelling in canoes carved from trees, discovered and settled hundreds of tiny islands separated by vast spans of open water. They found their way using the stars, dead reckoning and study of the wind.

Exactly when these trips occurred, and in which order, is unclear. Oral histories are richly detailed, but vague on dates. The colonisers moved too fast for linguistic analysis to yield answers. Archaeological evidence is scant. But a new paper by Alex Ioannidis of Stanford University and 26 other scholars claims to have clarified this fuzzy history using genetics, by analysing the DNA of 430 modern-day Polynesians.

Polynesian prehistory reaches back to the island now called Taiwan. From there, starting in around 2500BC, the ancestors of today's Pacific Islanders are thought to have spread through the Philippines and Indonesia to western Polynesian islands such as Samoa and Fiji. They paused there for centuries or more, before venturing on to the vast emptiness of the Pacific. The authors focus on this second expansion.

The team relied on a genetic pattern called the "founder effect". Each canoe probably carried only a few dozen people, out of hundreds or thousands living on the originating island. These pioneers' descendants should thus be less genetically diverse than people on the island from which their ancestors came. Every subsequent colonisation should have created a new genetic bottleneck. The authors determined the order of the voyages by finding this signature in modern genomes, while excluding confounding chunks of DNA contributed by later arrivals from Europe.

The dates are less certain than the sequence. Genomics counts time in generations, not years. However, research on oth-

er places in pre-modern time periods, such as 17th-century Iceland and rural Quebec in the 1800s, suggests an average generation length of 30 years.

The study shows that the Polynesians moved quickly once they set out into open ocean. One of the first colonisation voyages probably set off in around 830AD from Samoa to Rarotonga—the largest of the Cook Islands, a 67-square-kilometre speck about 1,500km to the south-east. By 1050, explorers seem to have reached Tahiti. Just 50 years later, they had probably set foot in the Tuamotu Islands, a 1,500km-long series of tiny atolls. A heroic 2,600km journey from Mangareva to Easter Island, one of the remotest dots of land on the planet, is likely to have occurred in around 1210.

This chronology is of course inexact. However, the authors are confident in the sequence, and say that the total dating error should be only around 60 years. Moreover, their account is compatible with both archaeological records and Polynesians' own oral histories. For those who know how to read it, the history of the Polynesian voyagers lives on in their descendants. ■



Invent or bust

Sir Clive Sinclair, innovator and prophet, died on September 16th, aged 81

UNUSUALLY, THE portrait of Clive Sinclair most Britons had in their heads was not vertical, but half-horizontal. He was reclining, with balding head, glasses and gingery beard, in his C5 electric tricycle. His legs were stretched out to work the pedals, in case the battery packed up, and his knees were raised, in order to steer the machine. It was January 1985, and snow lay on the ground. That accounted for the scarf round his neck, oddly teamed with a suit, but not entirely for his slightly anxious expression.

He was driving his dream: an electric vehicle for the masses. It was cheap, only £399, and you could buy it at the supermarket or even in Woolworth's. Anyone over 14 could legally drive it without tax, a licence or insurance. It was stylish and light, with a body of tough polypropylene and wheels of nylon reinforced with glass. After a night of charging, it could go 20 miles. How easy now to pop to the shops, nip into a parking space and buzz happily about!

Yet the reason he was not smiling much himself, on launch day, was that the C5's drawbacks were becoming clearer. First, the wobbling driver was so low to the road that he or she was below the sightline of any vehicle alongside. Second, the engine was slow and could not cope with hills. And third, without a roof or sides to speak of, what happened when it rained?

He had invested millions in the C5, and in the end only about 5,000 were sold. His mistake; he'd been in too much of a rush. He lost pretty well everything then: Sinclair Vehicles went bust, and he had to sell his computer company to Amstrad. But was it the end of the world? Lord no. He had never pretended to be a businessman. He was an innovator, whose job was to spot opportunities and think up devices that people badly wanted but could not imagine. On top of that, he was a high-stakes poker-player. The C5 had been a good idea, and still was. So, on to the next thing.

A whole raft of successes lay behind him. He had realised early that people liked gadgets, and liked them small. At 18 he was already

devising miniature radio kits, and at 22 was selling them by mail order. Then, after a whirl with mini-amplifiers, came Sinclair pocket calculators. At a time (1972) when calculators were the size of bricks, these were a mere 9mm thick, powered by a microchip. They made his name. A pocket TV came next, not much bigger. His best wheeze of all, though, was to miniaturise computers. People thought of them as bulky, baffling machines that cost the earth. He set out to show that they could sit on a desk, no bigger than a book, and that every home in the land could afford to have one.

His first attempt, the ZX80 (in 1980), was a flat box without a screen that stored data on a cassette. But it was only £99.95, a fifth of the usual price of a home computer, and it could do, he promised, "quite literally anything". Anyway, he soon devised a better one. The ZX81 had only 1k of memory, but it was even cheaper; you could type Basic programmes on it and you could make the display do interesting things. They sold in thousands, and Sinclair Radionics was soon turning profits of £14m a year. His real triumph, though, came in 1982 with the ZX Spectrum 48K. It had colour and sound, even if the colours clashed and the sound was buzzes and farts. With much patience, and a spark of ingenuity, you could make all kinds of games on it. A generation of coders and programmers learned their craft on the "Speccie" and worshipped him as Uncle Clive, a sort of amiable boffin—though he himself was pretty annoyed to see his devices used for "Manic Miner" and "Chuckie Egg", rather than for properly intellectual pursuits.

He was no mild boffin, either. It was true that his first hero had been the inventor-character in "Toytown" on the radio, and he spent a serious, solitary childhood designing submarines and rigging up telecoms systems for his hideout in the woods. But he had a wild side. He held famously drunken parties, made no secret of his shapely girlfriends and once beat up a colleague with a rolled-up copy of the *Daily Telegraph*. He liked the tag "genius" no better, though he was chairman of British Mensa and had an IQ of 159. His most comfortable public role was as the British inventor who could take on the world, or in his case Atari, Commodore and IBM, who despite their appalling designs were hot on his heels. The tabloids embraced him, Margaret Thatcher loved him, the queen knighted him and Cambridge, his base, thanked him for transforming the town into Britain's Silicon Valley.

His apogee was brief, as apogees are. His rivals soon overtook him, and the C5 debacle did the rest. Cracks had shown up already, mostly caused by his insistence on few and cheap components. The switch contacts in his pocket calculators tended to oxidise, so that they could not be turned off and sometimes caught fire. His plastic digital watch, the first with a single chip, looked elegant but had problems working. Even the Spectrum displayed his corner-cutting with a rubber-moulded keyboard that felt, some said, like pressing dead men's flesh. But that was how it was so cheap.

Glitches, in short, were part of progress. He was showing the public where the future lay, and teaching them to engage with new technology rather than fear it. So on he went. Personal transport remained his favourite field; he produced an electric bike wrapped in an acrylic bubble, sadly a little too like the C5, and an A-bike so very light and foldable that it proved impossible to ride. The dream of a little electric car continued, and he liked to drop hints that he was still devising one. But something always delayed its coming.

In his later years he lived in a world where almost every pocket contained a calculator, TV, worldwide communications and infinite games, all combined in a device half the thickness of his calculator. Electric cars and scooters purred on the roads, and digital timepieces were the norm. He was not bitter to see his future coming to pass too late. But nor did he embrace it. He couldn't be bothered with computers, email or the internet, preferring print, paper and his constant companion, a slide-rule. Anything technical near him just distracted him from inventing. He liked classical music, poetry and good wine; and, for personal transport, preferably his two feet running, no battery required. ■

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IMAGINATION TAKES FLIGHT

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