The Economist

- Heatwaves: a harbinger
- The trouble with ESG
- Lessons on inflation from Turkey
- Women's sports take off

JULY 23RD–29TH 2022

GROWTH CURE

The lessons of life sciences for the British economy

Contents

On the cover

What the life-sciences industry can teach the next Tory leader, *page 7*. It is a jewel in the economy, but to sparkle it needs help, *page 19*. Two children of Thatcher vie to succeed Boris Johnson, *page 22*. How to choose between them: Bagehot, *page 24*

Heatwaves: a harbinger Adaptation will be disruptive and costly. All the more reason to curb emissions: leader, *page 9*. A rising share of people are exposed to dangerously high temperatures: graphic detail, *page 77*

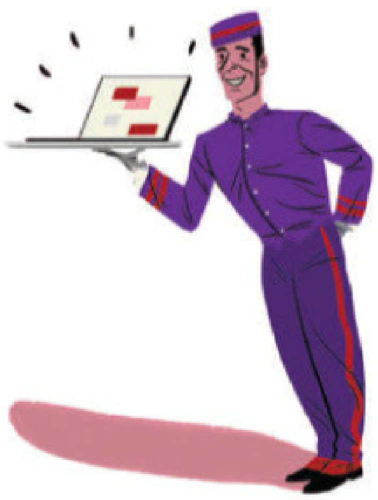
The trouble with ESG It should be boiled down to one simple measure: emissions: leader, *page 8*. The environmental, social and governance approach to investment is broken. See our Special report, *after page 40*. A recalcitrant senator has scuttled Joe Biden's climate plans, *page 31*

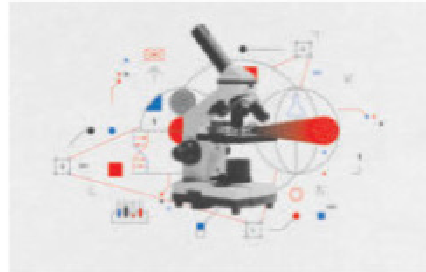
Lessons on inflation from Turkey The evils of galloping price increases: leader, *page 10*. How has the Turkish economy managed to keep growing so fast? Briefing, *page 15*

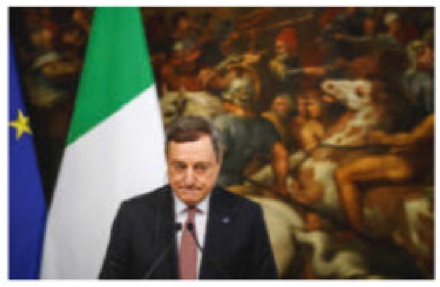
Women's sports take off A packed year promises to boost its growth, *page 52*

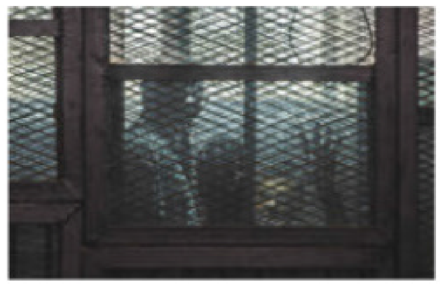
→ *The digital element of your subscription means that you can search our archive, read all of our daily journalism and listen to audio versions of our stories. Visit* ***economist.com***

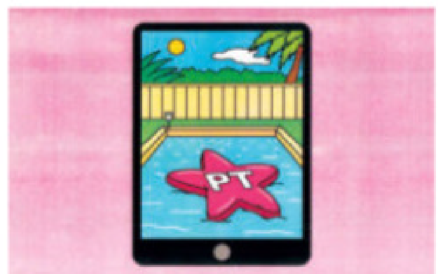
Bartleby Can "work from hotel" become a thing? Your columnist investigates, *page 56*











▸▸ Contents continues overleaf

The Economist

Volume 444 Number 9306

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

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

Subscription service
For our full range of subscription offers, including digital only or print and digital bundled, visit: **Economist.com/offers**

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

To manage your account online, please visit my.economist.com where you can also access our live chat service which is available 24/7. To call us, contact our dedicated service centre on 00800 771 12711 or +44 (0)203 868 6843.

Please recycle

PEFC certified
This copy of *The Economist* is printed on paper sourced from sustainably managed forests certified by PEFC
www.pefc.org

PEFC/16-33-582

Mario Draghi tendered his resignation as prime minister of **Italy**, after three of the four main parties in his governing coalition refused to support him in a motion of confidence. Unless a fresh government can be formed, which looks unlikely, the probable outcome is an early election. Polls predict that will bring a hard-right alliance to power. The upheaval imperils the reform package Mr Draghi drew up, which has allowed Italy to access €200bn ($204bn) from the EU's covid-recovery fund.

Russia resumed **gas supplies to Europe** through the Nord Stream 1 pipeline, albeit at reduced levels, according to its operator. There had been concerns that Russia would cut off the flow of gas following a ten-day maintenance period. Earlier, the EU urged member states to reduce their gas use by 15% compared with the five-year average, as it fears Russia may again curb or suspend supplies. The IMF warned that such an embargo could cause the economies of the European countries most reliant on Russian gas, such as the Czech Republic, Hungary and Slovakia, to shrink by around 5%.

Ukraine's parliament approved the removal of the prosecutor-general and the head of the security service, amid allegations of collaboration with Russia among staff at the agencies they oversaw. Volodymyr Zelensky, the president, said 651 cases of treason were being investigated and that more than 60 people at the agencies had been working with the Russian invaders. A further 28 officials were suspended from duty.

Russia's foreign minister, Sergei Lavrov, confirmed that Russia's war aims in Ukraine extend beyond capturing the Donbas region to include "Kherson, Zaporizhzhia and a number of other territories". America has denounced Russia's "annexation playbook", whereby it conducts sham referendums in occupied areas to justify their seizure.

MPs in **Britain's** Conservative Party settled on two candidates to put forward as their new leader, and thus prime minister, following the defenestration of Boris Johnson. Rishi Sunak, whose resignation as chancellor of the exchequer helped topple Mr Johnson, and Liz Truss, the foreign secretary, will battle it out among party members, who will vote during August.

The Trump playbook

Facing a possible defeat in October's election, Jair Bolsonaro, **Brazil's** right-wing president, cast more doubt on the reliability of the electoral process, once again claiming, without any evidence, that the country's voting system is vulnerable to fraud. Mr Bolsonaro said that the army should participate in the process to guarantee safe elections. He is trailing his opponent, Luiz Inácio Lula da Silva, by double-digit margins in the polls.

Sri Lanka's Parliament elected Ranil Wickremesinghe as president, a week after Gotabaya Rajapaksa resigned and fled the country amid mass protests. Mr Wickremesinghe had been prime minister since May, a job he had held six times. He must now lead the country out of its economic morass.

The party of Imran Khan, who was ousted as **Pakistan's** prime minister in April, won a landslide victory in 15 by-elections in Punjab, the country's most populous province. The surprising result is a boost for Mr Khan, who is demanding early national elections, and bad news for Shehbaz Sharif, his replacement as prime minister, who faces growing discontent over rising prices.

India's Supreme Court granted bail to Mohammed Zubair, a co-founder of a respected fact-checking service who was arrested last month for insulting religious beliefs. His arrest was widely seen as politically motivated. The court said it saw "no reason" for him to be held in custody.

A number of Chinese cities and provinces wrestled with outbreaks of covid-19, as new infections rose across the country. **China's** strict covid controls are struggling to contain Omicron subvariants, which spread fast and are hard to detect. Some 260m people in 41 cities are under lockdown or subject to other restrictions, according to one estimate.

Joe Biden made his first visit as America's president to **Saudi Arabia**, where he failed to secure an immediate agreement for more oil to be pumped onto the world market or to persuade the Saudis formally to join a regional defence axis that would include Israel. The Saudis did agree to open their airspace to flights to and from Israel.

Russia's president, Vladimir Putin, visited **Iran**, where he met Turkey's president, Recep Tayyip Erdogan, as well as Iran's supreme leader, Ali Khamenei, who implied in a speech that America was equally at fault for Russia's invasion of Ukraine.

The military government of **Mali** ordered the UN to suspend all flights and rotations of peacekeepers after detaining 49 blue-helmeted troops from Ivory Coast whom it claimed had entered the country illegally. UN forces are helping to fight jihadist insurgents in Mali.

The Oromo Liberation Army, an opposition armed force that claims to represent **Ethiopia's** biggest ethnic group, slaughtered hundreds of Amharas, the second-largest ethnicity, in an attack in June, according to eyewitness accounts gathered by Amnesty International, an NGO.

America's House of Representatives passed a bill that would protect **gay and interracial marriages** under federal law. The legislation, supported by 47 Republicans, is a response to the Supreme Court's decision to overturn the federal right to an abortion. Gay and interracial marriages were similarly legalised by court decisions. It is unclear if the bill will proceed in the Senate.

An investigation by the legislature in Texas into the **school shooting** in Uvalde blamed "systemic failures" in the police's response to the incident, and accused police of putting their own safety above those of the children. Nineteen children and two adults were murdered. Video has emerged of one officer stopping to sanitise his hands in the school.

Scorched earth

The **extreme heat** that has afflicted France, Italy, Portugal, Spain and other countries in southern Europe, moved north. Britain, where summers are normally tepid, saw temperatures in excess of 40°C (104°F), smashing the previous record. In Spain temperatures have passed 45°C in places. Lousã, Portugal, recently recorded 46.3°C. Excessive-heat warnings were also issued in all or parts of 28 American states. In Texas some cities have endured temperatures of over 38°C for more than a month.

Britain's annual rate of inflation rose to 9.4% in June, from 9.1% in May. Motor-fuel prices were up by 42%, the highest rate since the current series of data began in 1989, the cost of food increased by nearly 10% and clothing by 6%. The price of second-hand cars, a big contributor to inflation a year ago, continued to fall. The figures add pressure on the Bank of England to bring in bigger increases to interest rates. Andrew Bailey, the bank's governor, said a rise of half a percentage point was "on the table" for its next meeting on August 4th.

The London Stock Exchange saw its biggest stockmarket debut in a decade. **Haleon**, a spin-off from GlaxoSmithKline, began trading with a market capitalisation of £30.5bn ($36.4bn). It is a rare example of a significant listing in London. In recent years the LSE has struggled to attract new entrants and compete with the listing sprees in Hong Kong and New York.

China's economy grew by just 0.4% in the second quarter, year on year, the second-worst rate of growth in 30 years (the country's GDP contracted at the start of the pandemic). The government has only just lifted severe lockdowns in Shanghai and other cities. Meanwhile, banks in China were told to support property developers where they could, amid a growing boycott of **mortgage payments** on new housing projects that have fallen far behind their construction schedule.

House sales in America fell sharply again in June, according to the National Association of Realtors (the tally excludes newly built properties). But the median price of a home climbed to a new record of $416,000, suggesting that housing affordability is not just a problem confined to America's big cities. In the South prices were up by 17%, year on year. Mortgage rates are rising; the average 30-year fixed-rate mortgage is around 5.5%, up from 2.9% a year ago. Mortgage applications are at their lowest level since 2000.

Bank of America's net profit fell by 32% in the second quarter, year on year. America's other **big banks**—Citigroup, Goldman Sachs, JPMorgan Chase and Morgan Stanley—have also reported double-digit drops in profit. All reported big declines in revenue from investment banking, but income from trading was up.

Must-watch television?

Netflix said it lost a net 1m subscribers worldwide in the second quarter, or about 0.5% of its user base. The number was less than the 2m it predicted three months ago, when it reported its first drop in customers for a decade, causing its share price to plummet. It added users in Asia, but lost 1.3m in the United States and Canada. Revenue grew by 8.6%, year on year, more slowly than in recent quarters and far from the 19.4% growth in the same quarter of 2021. Netflix forecast that growth would slow again in these three months to 4.7%, but it blamed a large part of that on the strength of the dollar, because 60% of its revenues now come from outside America.

Pilots at **Scandinavian Airlines** ended their 15-day strike after agreeing to a pay deal. SAS filed for bankruptcy protection on the second day of the strike.

The French government provided more details of its plan to fully renationalise **EDF** by buying the 16% of shares it doesn't own. The state has set aside €9.7bn ($9.9bn) for the buy-out, which has to be approved by parliament.

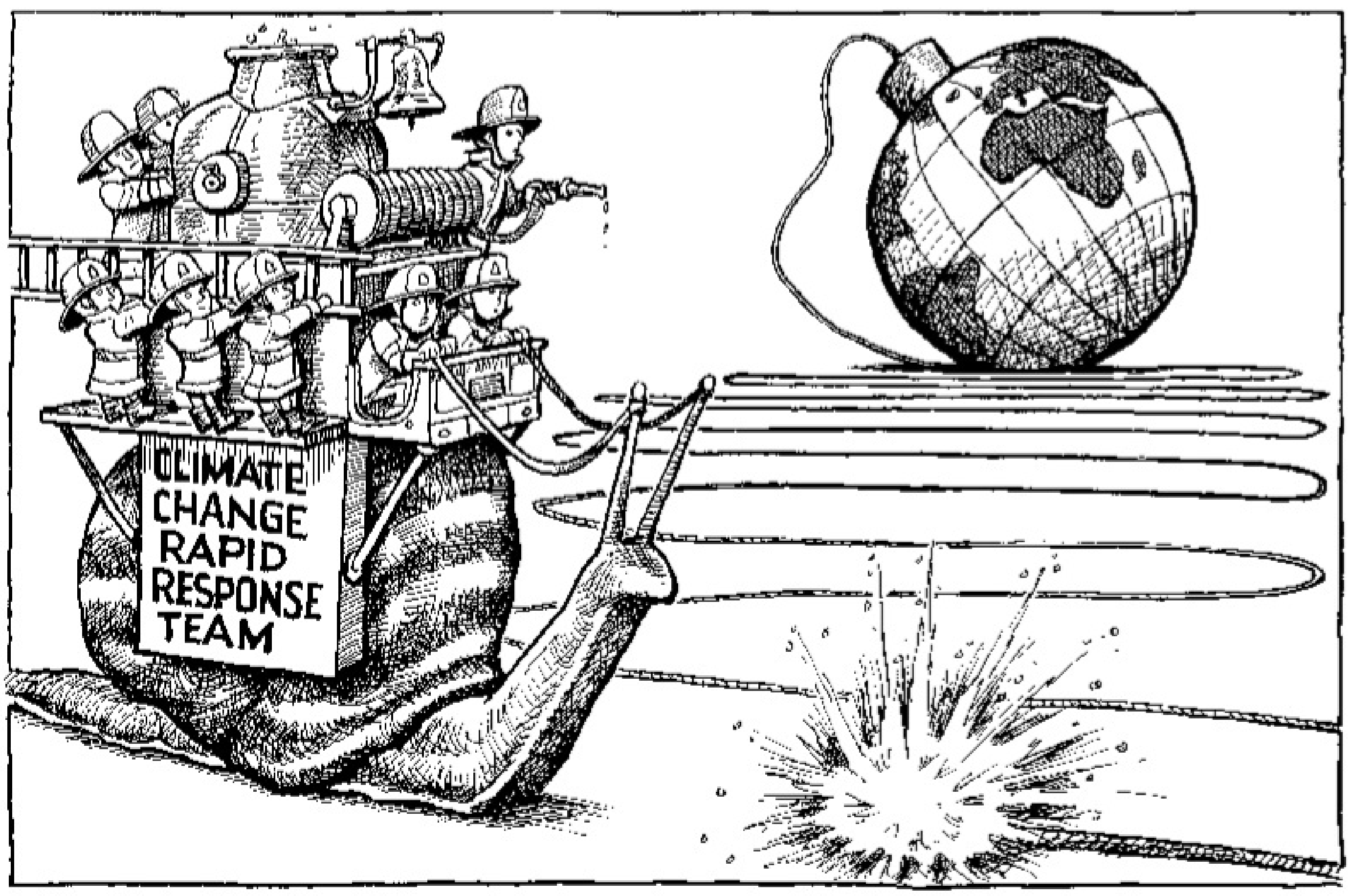
China's cyber-security regulator fined **Didi Global** 8bn yuan ($1.2bn) to conclude an investigation into mishandling of privacy data at the ride-hailing giant. Didi's clash with the authorities began in June 2021, when it went ahead with its IPO in New York (it later decided to delist). Since the start of the investigation it has been barred from signing up users on its app.

Tesla reported solid earnings for the second quarter, in spite of warning about supply-chain disruptions to its business. The company also revealed that it has now offloaded 75% of its holdings in bitcoin, the price of which has collapsed.

We'll see you in court

A judge ruled that a trial in the dispute between **Twitter** and **Elon Musk** over their takeover deal will be held in October. That is a victory for Twitter, which had asked for a September date. Mr Musk, who now says he doesn't want to buy the company, wanted the trial to be held in February. Twitter continued to play hardball, urging shareholders to vote in favour of Mr Musk's takeover at a special meeting, the date of which is yet to be decided.

America launched a trade dispute with **Mexico**, accusing it of favouring its state-owned electricity and oil companies to the detriment of energy produced in America, notably clean energy. Mexico's president, Andrés Manuel López Obrador, wants to regain state control of the electricity industry. Mr López Obrador was dismissive of America's complaint; "Oooh, I'm so scared," he said at a press conference.



The Economist

Growth cure

The lessons of life sciences for Britain's next prime minister

And then there were two. On July 20th Tory MPs chose Rishi Sunak, a former chancellor of the exchequer, and Liz Truss, the foreign secretary, to battle it out to become their new leader and Britain's next prime minister. The candidates, who will campaign for the votes of Conservative Party members over the coming weeks, agree on at least one thing: Britain sorely needs growth. The 15-year period between 2004 and 2019 was the weakest for growth in GDP per person since the one between 1919 and 1934—and that was before the shocks of Brexit and covid-19.

Boosting Britain's feeble growth will require an honest assessment of what the country does well, not just where it lags behind. That may seem head-smackingly obvious. But it needs saying. The Tories won the 2019 election on the promise of a hard break with Britain's largest trading partner. The big idea of Boris Johnson's government has been levelling up, a scheme to reduce regional inequality that has often seemed more like an excuse to bash successful places. The financial-services industry, one of the country's biggest assets, was an afterthought in Brexit negotiations. Brexit is a fact, and it will yield some opportunities. More should be done to improve the productivity of northern cities. However if the Tories are to be a party of growth again, they must play relentlessly to Britain's strengths.

There is no better example of those strengths—which include scientific excellence, fine universities and a healthy startup culture—than the life-sciences industry (see Britain section). Britain hosts four of the top ten universities in the world in life sciences, all of them within the "golden triangle" of Oxford, Cambridge and London. Enterprise is flourishing. British life-sciences firms raised £4.5bn ($5.4bn) in 2021, compared with £261m in 2012.

In the National Health Service (NHS), the industry has a major asset: a large cradle-to-grave source of data for clinical trials and drug discovery. This ecosystem rose to the challenge of the pandemic. The Oxford-AstraZeneca vaccine saved more lives—6.3m of them—in the first year of its roll-out than any other jab. The RECOVERY trial, the world's largest trial for people hospitalised with covid-19, went from first protocol to first patient in nine days. British institutions sequenced more than a quarter of all SARS-COV-2 genomes during the pandemic.

Yet the industry faces plenty of obstacles. In theory the NHS ought to be able to act as a centralised buyer of new medicines and products, giving startups a large market to test innovations. But it is often sluggish and stingy, and seldom cohesive. America's competitive health-care market is swifter to adopt new technologies. The time from approval of a medicine to it being available to patients is 120 days in Germany, but 335 days in England. Lack of space is another constraint, particularly in the golden triangle: Cambridge had no available lab space in 2021, although property developers are now responding. Labour shortages are a worry: the industry says it will need 133,000 new staff by 2030.

Most important, there is not enough domestic growth capital available to young life-sciences and other technology firms. Investors often pull firms towards other markets, notably America, which has more large companies that can buy promising startups. The public markets in America are more hospitable, too. The London Stock Exchange accounts for less than 1% of the capital raised in global initial public offerings so far this year. Its biggest listing for a decade—a toothpaste-peddling spin-off from GlaxoSmithKline, one of two big pharma firms with headquarters in Britain, which took place on July 18th—is instructive. It raised no new money and involved no new technology.

There are technocratic answers to such problems. The gap in growth capital would close if pension funds and insurers were able to put more of their money into venture-capital funds; less than 1% of these assets is currently invested in unlisted equities. The government this week endorsed proposals to smooth public listings. Last year it added the job of lab technician to its "shortage occupation list", making it easier for foreigners with the right experience to get a British work visa.

Real change requires political will. Getting the life-sciences industry, and the economy as a whole, to grow faster will require the new government to face some hard truths. The first concerns Brexit. Leaving the European Union (EU) does yield some opportunities to liberalise: Mr Sunak wants to streamline the approval process for clinical trials, for example. Yet Brexit throws an awful lot of sand in the gears, too. Britain's medicines regulator is approving fewer new drugs than its peers in the EU, in part because firms are heading to the larger market first. A bill to override the bit of the EU withdrawal agreement about Northern Ireland threatens British participation in the world's largest multinational scientific-funding programme. Until the Tories stop treating Brexit as a test of ideological purity, its economic costs will only grow.

Geography is another area where Tory thinking and economic logic collide. In 2021 the government released a plan it called the "Oxford-Cambridge Arc" to turbocharge connections between the two cities. That scheme was fundamentally wise—the fastest way to get between them by rail now is via London. But it was quietly dropped, in part because it was thought to conflict with levelling up, in part because the government is nervous of building anything that spoils the views from voters' windows. It is reasonable to worry about governments picking winners; only in Britain has it been policy to pretend winners don't exist.

The Tory leadership debate about growth has so far focused on tax cuts. Ms Truss thinks an unfunded giveaway would pep up the economy; Mr Sunak argues, rightly, that it would fuel inflation. In making these arguments, both lay claim to the mantle of Margaret Thatcher. But Thatcher was defined above all by her character, not her policies. Hauling the British economy out of a deep rut took steel and stamina. These qualities are needed again today. It is easy enough to talk about the need for growth, much harder to embrace its consequences: difficult compromises with the EU, more money for already-wealthy areas and unpopular planning decisions taken in the teeth of local objections. The fortunate thing is that Britain boasts world-class strengths. It should play to them. ■

Investment and sustainability

Three letters that won't save the planet

ESG should be boiled down to one simple measure: emissions

If you are the type of person who is loth to invest in firms that pollute the planet, mistreat workers and stuff their boards with cronies, you will no doubt be aware of one of the hottest trends in finance: environmental, social and governance (ESG) investing. It is an attempt to make capitalism work better and deal with the grave threat posed by climate change. It has ballooned in recent years; the titans of investment management claim that more than a third of their assets, or $35trn in total, are monitored through one ESG lens or another. It is on the lips of bosses and officials everywhere.

You might hope that big things would come from this. You would be wrong. Sadly those three letters have morphed into shorthand for hype and controversy. Right-wing American politicians blame a "climate cartel" for soaring prices at the petrol pump. Whistleblowers accuse the industry of "greenwashing" by deceiving its clients. Firms from Goldman Sachs to Deutsche Bank face regulatory probes. As our special report this week concludes, although ESG is often well-meaning it is deeply flawed. It risks setting conflicting goals for firms, fleecing savers and distracting from the vital task of tackling climate change. It is an unholy mess that needs to be ruthlessly streamlined.

The term ESG dates as far back as 2004. The idea is that investors should evaluate firms based not just on their commercial performance but also on their environmental and social record and their governance, typically using numerical scores. Several forces have thrust it into the mainstream. More people want to invest in a way that aligns with their concerns about global warming and injustice. More companies, including a sister firm of *The Economist*, offer ESG analysis. With governments often gridlocked, many people feel business should solve society's problems and serve all stakeholders, including suppliers and workers, not just shareholders. And then there is the self-interest of an asset-management industry never known to look a gift horse in the mouth: selling sustainability products allows it to charge more, easing a long blight of falling fees.

Unfortunately ESG suffers from three fundamental problems. First, because it lumps together a dizzying array of objectives, it provides no coherent guide for investors and firms to make the trade-offs that are inevitable in any society. Elon Musk of Tesla is a corporate-governance nightmare, but by popularising electric cars he is helping tackle climate change. Closing down a coalmining firm is good for the climate but awful for its suppliers and workers. Is it really possible to build vast numbers of wind farms quickly without damaging local ecology? By suggesting that these conflicts do not exist or can be easily resolved, ESG fosters delusion.

The industry's second problem is that it is not being straight about incentives. It claims that good behaviour is more lucrative for firms and investors. In fact, if you can stand the stigma, it is often very profitable for a business to externalise costs, such as pollution, onto society rather than bear them directly. As a result the link between virtue and financial outperformance is suspect. Finally ESG has a measurement problem: the various scoring systems have gaping inconsistencies and are easily gamed. Credit ratings have a 99% correlation across rating agencies. By contrast, ESG ratings tally little more than half the time. Firms can improve their ESG score by selling assets to a different owner who keeps running them just as before.

As investors become wiser to such flim-flam, they are growing more sceptical. This, coupled with turmoil in financial markets, is slowing the influx of money into sustainable funds. It is surely time, then, for a rethink. The first step is to unbundle those three letters: E, S and G. The more targets there are to hit, the less chance of bullseye-ing any of them. Regarding S, in a dynamic, decentralised economy individual firms will make different decisions about their social conduct in the pursuit of long-run profits within the law. Tech firms may appeal to the values of young employees to retain them; firms in declining industries may have to lay people off. There is no one template. The art of management, or G, is too subtle to be captured by box-ticking. Britain's listed firms have an elaborate governance code—and dismal performance.

It is better to focus simply on the E. Yet even that is not precise enough. The environment is an all-encompassing term, including biodiversity, water scarcity and so on. By far the most significant danger is from emissions, particularly those generated by carbon-belching industries. Put simply, the E should stand not for environmental factors, but for emissions alone. Investors and regulators are already pushing to make disclosure by firms of their emissions more uniform and universal. The more standardised they are, the easier it will be to assess which companies are large carbon culprits—and which are doing most to reduce emissions. Fund managers and banks should be better able to track the carbon footprints of their portfolios and whether they shrink over time.

Unsustainable

Better information alone will help in the struggle against global warming. By revealing more accurately which firms pollute, it will help the public understand what really makes a difference to the climate. A growing number of altruistic consumers and investors may choose to favour clean firms even if it costs them financially. And even if they can get away with polluting today, many firms and investors expect that tighter regulation of carbon emissions will eventually come and want to measure their risks and adapt their business models.

Make no mistake, though: tougher government action is essential now. We have long argued for much higher carbon prices that would harness the market to save the planet. Today pricing schemes cover 23% of global emissions, about double the level of five years ago. But far more needs to be done, not least in America (see United States section). It is government action, combined with clear and consistent disclosure, that can save the planet, not an abbreviation that is in danger of standing for exaggerated, superficial guff. ■

Heatwaves

A warning of worse to come

Adaptation will be disruptive and costly. All the more reason to curb emissions

There comes a moment when the penny drops. And in Britain this week the sound of dropping pennies was loud. Though Britons are by no means the worst affected by the heatwaves now sweeping the northern hemisphere, they have been in awe of a particular round number: 40°C. This is an air temperature never before recorded in the United Kingdom. But it was matched and exceeded in several places on July 19th. It is one thing to understand intellectually that anthropogenic global warming is real, quite another to feel one's own brain baking.

That record rammed the point home in Britain. In the rest of Europe, in parts of China and in North America similar lessons were being learned, with wildfires raging and people dying of heatstroke. Heatwaves are nothing new. But they have become more frequent and more extreme, and more often coincide in different places. A recent study found there are now seven times as many days of simultaneous heatwaves in the northern hemisphere as there were four decades ago. That simultaneity is partly a statistical inevitability: more heatwaves mean that more will occur jointly. However, changes in the pattern of the jet-stream, a high-altitude air current which regulates northward migration of hot air from the tropics, may be making things worse.

Increased intensity and frequency (America, for example, had two heatwaves a year in the 1960s and six in the 2010s) is bad enough. Increased simultaneity may have even more baleful consequences. Heatwaves damage agriculture. Simultaneous disruption of plantings or harvests in different places could create crises that cannot be dealt with by moving produce around the world, because there is less to move.

The latest heatwaves have also emphasised how built environments are designed for a bygone climate. To use Britain, again, as an example, parts of the rail network came close to paralysis because the rails on British track beds are optimised to be stress-free at 27°C. Temperatures in the high 30s are outside their comfort zone. Rails can be changed as societies adapt to rising temperatures. But the cost and disruption of upgrading all the infrastructure that will need it, from houses to hospitals to fire brigades, will be immense. Even in rich countries, governments struggle to commit the necessary resources, as America's is showing with its beleaguered "Build Back Better" package (see United States section).

In poor countries things will be worse. They have less cash to pay for adaptation and more need of it, not least because they tend to be near the equator, in zones where heatwaves can push temperatures to unsurvivable levels. They also tend to have high population growth, meaning more and more people will be affected (see Graphic detail).

A further irony is that in some cases applying technology to adapt to higher temperatures, in the form of air conditioning for inappropriately designed buildings, increases demand for electricity. In Britain, just this week, such demand has risen by 5% compared with the previous week. This is fine if the juice used comes from green sources. But if it originates in fossil-fuel power stations, it will, itself, accelerate global warming.

Adaptation, to this and other manifestations of a changing climate, is a crucial spanner in the toolkit. But it does not absolve people from addressing the problem at source, by encouraging green power-generating and energy-saving technologies and discouraging and decommissioning the "brown" sort. If the dropping pennies released by this summer's heatwaves inspire action in that direction, the suffering and loss of life will not have been entirely in vain. ■

Developing countries and debt

Progress and poverty

Emerging-market crises have become harder to resolve but less of a threat to the world economy

Whenever America's Federal Reserve raises interest rates, investors reflexively worry about a crisis in emerging markets. Today it might appear the usual pattern is playing out. On July 27th the Fed is expected to raise rates by another three-quarters of a percentage point. Meanwhile, Sri Lanka has run out of foreign exchange, Argentina faces another default and many poor countries are in trouble (see Finance & economics section). Look more closely, however, and the world economy has been transformed in ways that mean the nature and consequences of emerging-market turmoil have changed.

The archetypal emerging-market crisis was in 1997-98. As the Fed raised rates, pulling capital back to America, Thailand's currency peg broke, leading to a panic that floored South Korea and Indonesia. It then spread to Brazil and Russia, and to LTCM, a Wall Street hedge fund that collapsed. Calm was restored by the Fed and Treasury cajoling American banks to roll over loans, and by the IMF. Three American officials who led the firefighting were dubbed "the committee to save the world". A decade or so ago there was a faint echo of 1997-98 when the Fed signalled it would tighten policy, triggering a sell-off in emerging markets.

Yet today much has changed. Emerging economies' share of global GDP at market prices has risen from 21% to 43%. Asia's share of emerging-market output has doubled, to 60%, led by China and India, which are more self-contained financially, with state-led banking sectors and bond markets that are largely closed to foreigners. The weight of many crisis-prone places is ▸▸

small: Latin America represents 5% of world GDP and 1.4% of stockmarket value.

Another change is that many emerging markets have moved away from currency pegs, dollar debt and foreign borrowing. Today only 16% of their debts are in foreign currencies. Governments increasingly rely on local banks. Instead of sudden crises that spill back across borders and to Wall Street, many places face slower-burn and home-grown dangers: inflationary spirals or zombie banks. A collapse of China's debt-ridden financial system would hurt global growth because the Chinese economy is large, not because investors elsewhere are directly exposed.

The final change is that even where foreign creditors are important, their profile is different. For example, the "Paris Club" of creditors, which is composed mostly of rich countries and multilateral institutions such as the IMF, accounts for less than 60% of the poorest countries' debts, down from more than 80% in 2006. China accounts for about a fifth.

The good news is that panics in emerging markets seem less likely to inflict serious damage on the rest of the world. We calculate the countries most at risk of default today account for only 5% of GDP and 3% of global public debt. The bad news is that these places have 1.4bn people, or 18% of the global population, and face a huge humanitarian challenge with higher inflation, debt loads, interest rates and expensive oil and food.

Furthermore, the new distribution of their debts means it is harder to strike deals to provide them with debt relief. The West does not want to give aid that flows into the pockets of Chinese creditors. China is reluctant to participate in debt restructuring, even though any modern-day rescue committee needs a member from Beijing. As a result, even if emerging-market crises pose less of a danger to the global economy, they may pose more of a threat to the people living through them. ■

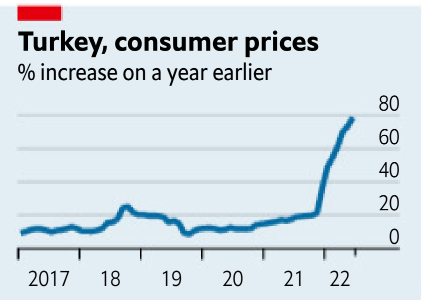
Inflation

Turkey shoot

Lessons from Turkey on the evils of galloping price increases

IT TOOK FOR EVER and then it took a night. That was how Rudiger Dornbusch, an influential economist who died in 2002, described the gestation of a financial crisis. In the Dornbusch telling, booms go on for much longer than seems rational or possible before they end with a speed that also surprises. The unsustainable can be sustained for longer than you would think.

Were Dornbusch still around, even he might be scratching his head about Turkey. For years it has been running a reckless experiment in unorthodox monetary policy. The country's president, Recep Tayyip Erdogan, believes that higher interest rates are a cause of rising prices, not a cure for them. At the end of 2021, when most countries were either raising interest rates or preparing to do so, he directed Turkey's central bank to slash them. The result could have been predicted, if not by Mr Erdogan. Inflation surged to almost 80% in a matter of months. Remarkably Turkey's economy has managed to keep growing. Real GDP rose by 11% last year. Turkey's boom seems to be everlasting (see Briefing).



It is tempting to conclude from Turkey's madcap experiment that high inflation is a nuisance that can nevertheless be coped with. Tempting, but wrong. The harms caused by runaway inflation are myriad, but three are particularly salient in Turkey: a shortening of horizons; pressures on day-to-day decision-making; and an arbitrary redistribution of wealth, which heaps the burden of inflation on those least able to bear it.

Start with shortening horizons. With stable prices, people do not have to pay attention to year-to-year changes in the average price level. Stability allows planning for the distant future. In Turkey, though, the long term is next month. High inflation is volatile. Businesses in the domestic market cannot predict their probable returns in real terms, so they are reluctant to invest in new capacity and opportunities. This harms long-term prosperity. There are immediate costs, too. Suppliers cannot wait months for payment when money is losing its value all the while. As a consequence, the informal credit and trust on which business relationships are built is eroded.

Damage is also done to decision-making. The price signals that direct resources to the best use become distorted. Businesses cannot distinguish between price increases that carry information about demand and supply in their particular industries and those that are a response to the falling value of money. As bad is the constant effort of running just to stand still. Prices have to be renegotiated all the time to stay abreast of the eroding monetary standard. This is exhausting. It is also socially corrosive. The constant haggling creates friction between firms and suppliers, businesses and customers, landlords and tenants.

This is related to a third big problem, inflation's effect on the distribution of wealth. Efforts to escape the inflation "tax" often come down to pushing it onto someone else. Businesses rightly complain, albeit mostly in private in Turkey, about the instability caused by inflation. But Turkey's bigger firms have the resources and know-how to shelter from surging prices. The rich have property and hard-currency deposits to protect their wealth. The rest are not so fortunate. A recent poll found that more than a third of Turks are unable to meet their basic needs. Include those who can barely meet them, and the fraction who are struggling rises to four-fifths. It stands to reason that the poor suffer most from inflation. But middle-class Turks are also in pain. As their purchasing power shrinks and their job security erodes, many are falling out of the middle class, and feeling both anguish and anger at their loss of status.

The politics of inflation are bad everywhere, but especially fraught in Turkey. Most voters seem to blame Mr Erdogan for inflation. He and his AK party trail in opinion polls for elections scheduled for next June. The big fear is that Mr Erdogan may resort to foul means to cling to power: by locking up his opponents, say, or declaring a state of emergency. Dornbusch's insight about the unsustainable being somehow sustained has a scary implication in this regard. No situation is so bad that it cannot become worse. ■


SAMSUNG
BESPOKE
Designed for you, by you
Customizable refrigerator that fits your lifestyle
Learn more: samsung.com/Bespoke

Medical intrusions

As national data guardian for health and adult social care in England I share your sense of excitement about the potential of artificial intelligence to improve health care ("Doctor Google will see you now", June 25th). However, by describing privacy concerns as a "hurdle" to overcome, which governments "fret" about, you take too narrow a view of the unease that people feel about the use of their data. People have strong opinions about who stands to benefit, including financially, from the use of such data. Many also worry that the insights gleaned from the information may be used in ways that disadvantage them or others.

Building and maintaining public and professional trust in how, why and by whom people's confidential health and care data are used is fundamental to ensuring that the potential benefits we all stand to gain through data-driven research can be fully realised. I am pleased that the British government has made some firm commitments in its recent data strategy to building such trust.

My panel of advisers and I look forward to contributing to this work as the government's strategy evolves.

DR NICOLA BYRNE
National data guardian
London

You described America's health-care system as "labyrinthine", "protected" and "stodgy". I would describe our system as hopelessly inefficient, irrationally duplicative, financially cruel and disgracefully unequal.

I wholeheartedly welcome the entry of technology firms into our health-care market, not because I trust them but because I cannot imagine it getting much worse.

DR NATHAN CLAYDON
Nevada City, California

Hong Kong v Singapore

You wrote about the rise of Singapore (and Shanghai) as a global financial hub and the decline of Hong Kong ("A tale of three cities", July 2nd). That view aligns with what Lee Kuan Yew, Singapore's prime minister from 1959 to 1990 and, to my mind, one of the world's greatest statesmen, predicted would happen to the two cities in his book, "One Man's View of the World", published in 2013. Even before the recent crackdowns by China's Communist Party on civil and political liberties, which have undermined the rule of law and scared businesses away, Lee stressed that Hong Kong, now being a part of China, would grow ever closer to the mainland, with all the strains that come with that. As a result, it would become less attractive to global business and more like a regular Chinese city.

By contrast, Singapore, being an independent country with a government dedicated to openness, anti-corruption and the rule of law, would grow ever more important to the region and for global business. This is just what we are seeing today.

AURELIO ORTIZ CAMACHO
Mexico City

Boris lacked charm

"The charismatic Mr Johnson" ("Clownfall", July 9th). Really? The idea of charisma used to be understood as an exceedingly rare characteristic of leadership. If the word can be applied to Boris Johnson then it has truly lost all meaning.

Max Weber, a German sociologist, wrote in "On Charisma and Institution Building" that the "charismatic leader gains and maintains authority solely by proving his strength in life. If he wants to be a prophet, he must perform miracles; if he wants to be a warlord, he must perform heroic deeds. Above all, however, his divine mission must 'prove' itself…those who faithfully surrender to him must fare well. If they do not fare well, he is obviously not the master sent by the gods."

Strength in life? Miracles? Heroic deeds? Mr Johnson might make a good case study of failed leadership, but not of charismatic authority.

R.J. MCALLISTER
York, Maine

The Swiss model

Switzerland is "nobody's idea of a forward-thinking place", you say ("The new exceptionalism", July 9th). I beg to differ. The "where-to-be-born" index, published by your own Economist Intelligence Unit in 2013, claims Switzerland is the best country to be born in. For good reasons. The country is ranked second in global competitiveness, first in patent filings per person, second in human development and first in trust in government. It does this with the seventh-highest share of renewable energy as a percentage of total energy.

Admittedly Switzerland is boring. The notion of our citizens storming our capital or the BBC featuring a running total of minister resignations until its prime minister is forced to resign because, well, there are too few left to govern, would be unthinkable.

What made America and Britain such great countries? And what could they do to regain their excellence? We often complain about this or that, but progress is usually about finding something that works and then reverse engineering it. Perhaps now is a good time to peek over the garden hedge and survey other countries for best practices. The way Hamilton, Jay and Madison did when they conceived the American experiment. Maybe becoming a quietly prosperous, slightly dull nation, at peace with its neighbours, where political high dramas and extremists have no place, where policy arises from careful deliberation and compromise, where gross inequalities are reduced and people feel they belong, is not such a bad place to learn from.

R. JAMES BREIDING
Zurich

In which we serve

Bartleby scoffed at the concept of the "servant leader" (June 25th). The phrase can be traced back to the Bible, in 1 Kings 12:7, where a rookie king is given advice that if you serve the people they will serve you. Intriguingly, one 19th-century Hebrew commentary reads this advice as a cynical ploy. Just tell the people you are there to serve them, and they will not stipulate any limitations or conditions at your coronation; eventually you'll get all the power you want, having caught more flies with honey.

I suspect many a manager would gladly subscribe to this rather devious version of servant leadership.

SHALOM ROSENFELD
Silver Spring, Maryland

The motto of the Royal Military Academy Sandhurst is "Serve to Lead". It has stood the test of time, although the British army has endured its share of charlatans and poltroons in its officer corps. Sandhurst officer-cadets of a cynical cast of mind often turned out to be the most able, inspiring, and humane leaders, when it counted. Their alternative motto was "skive to survive".

PABLO MILLER
Salisbury, Wiltshire

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

Inflation nation

GAZIANTEP AND ISTANBUL

How has the Turkish economy kept growing so fast in the face of runaway inflation?

ON THE WALL of Savas Mahsereci's office is a black-and-white photograph of his father and grandfather making shoe soles from recycled tractor tyres. The room is upstairs from his factory on the outskirts of Gaziantep, a city of 2m people in south-eastern Turkey, close to the border with Syria. Like his forebears, Mr Mahsereci is in the recycling business. His family firm, MTM Plastik, makes refuse bags, disposable gloves and pellets for use in moulded products. The business has grown rapidly. It now occupies 20 times as much factory space as it did in 2004, and started exporting in 2016. Supply bottlenecks in China are "a big opportunity for us", he says. Other industrial firms in Gaziantep are benefiting. The city enjoyed record exports last year, says Mr Mahsereci.

Outside observers may find stories of thriving Turkish businesses hard to believe. Since 2018 the country has limped from one currency crisis to the next. Foreign investors have shed Turkish bonds and stocks. The lira has slumped. Inflation has jumped to almost 80% (see chart 1 on next page). Yet the economy has somehow kept going. In the swisher parts of Istanbul, 1,100km west of Gaziantep by road, all the signs of a thriving emerging-market mega-city are on display: bustling commuters, well-stocked shops, gridlocked traffic.

The resilience of Turkey's real economy is something of a puzzle. It was one of the few big economies that managed to grow at all in 2020. Last year GDP rose by a handsome 11%. Recent figures show that industrial production rose by 9.1% in the year to May. Even seasoned businessmen have been taken by surprise.

At the centre of the mystery is a tug-of-war between two forces. On one side is a business dynamism that drives Turkey's economy forward. On the other is the erratic policymaking that has undermined it. Under pressure from President Recep Tayyip Erdogan, the central bank has kept interest rates unduly low in the face of leaping inflation. That is especially unwise as Turkey is a low-saving country that needs to attract foreign capital to cover a persistent deficit on its current account, a broad measure of the balance of trade (see chart 2 on next page). It is an importer of energy, with much of its gas supplied by Russia and Iran. When energy prices rise, its trade deficit—and its need for foreign capital—tends to increase.

Until now, dynamism has trumped fragility and bad policy. But beneath the surface, there are signs that Turkey's monetary instability is catching up with it. The authorities have resorted to desperate measures to husband the country's diminishing stock of foreign exchange and to prop up the lira. But credit is drying up and investments are being put on hold. Runaway inflation has left many people struggling to make ends meet. Mr Erdogan faces presidential and parliamentary elections in June 2023 at the latest and he trails in the polls. He has dominated Turkey's politics for two decades and seems unlikely to go quietly. Economically and politically, the coming months are likely to be volatile.

Bazaar to bizarre

For a while, Turkey had the macro-economic stability that now eludes it. Reforms after a crisis in 2001 were transformative. One big change was the granting of greater independence to the central bank in pursuit of low inflation. New laws put constraints on public spending and opened up government procurement to competitive bidding. When Mr Erdogan came to power in 2003, he stuck to the new policies. Inflation dropped to single digits. GDP growth took off. Productivity picked up.

But over time the impetus for economic reform faded. The central bank succumbed to political pressure and lost sight of its inflation goal. Mr Erdogan's love for grand infrastructure projects was given free rein. The procurement law was gutted. Building contracts were handed out to cronies. A building boom displaced export-led manufacturing as the economy's engine. Construction is a low-productivity industry, so the quality of GDP growth dropped. It is also notoriously sensitive to interest rates—perhaps one reason for Mr Erdogan's insistence on keeping them low.

Even so, a decade of easy money and surplus global savings after 2008 kept Turkey's international credit line open. But there were balance-of-payment scares, such as during the "taper tantrum" of 2013, when the prospect of tighter monetary policy in America sparked an emerging-market mini-crisis. By the summer of 2018, Mr Erdogan's belligerent insistence that high interest rates were a cause of high inflation, and not a cure for it, sparked a flight of foreign capital. The lira began a steep collapse in value (see chart 3). The last vestiges of central-bank independence were destroyed. Three governors were sacked by Mr Erdogan in as many years.

In the closing months of 2021, interest rates were cut by five percentage points, to 14%. The lira came under renewed pressure. Inflation has since surged from about 20% to almost 80%. But Mr Erdogan is unmoved. Those who insist on a link between interest rates and inflation "are either illiterates or traitors", he said recently.

Amid such chaos, it is remarkable that the economy has kept going as well as it has. Much of that is the result of Turkey's many commercial strengths. It has a large domestic market of 85m mostly young consumers, and has long been a staging post for trade between east and west. The country's business culture has deep roots. The proportion of the population that aspires to be entrepreneurs is high by international standards.

There are, broadly speaking, three kinds of Turkish business. The first is large firms, often conglomerates. These account for a quarter of employment and half of the business sector's value-added. Some are joint ventures with European firms. The best manufacture high-quality capital goods, car parts and military hardware for export. They approach German levels of productivity. At the other end of the scale are small, unregistered firms, with low productivity. In between is a third group of medium-sized family firms, with some workers on the books and others not.

This structure helps explain the agility of Turkish business. Many large firms are conservatively run and diversified across industries and export markets, which gives them a built-in resilience. The largest conglomerate, Koc Holding, has four main divisions: vehicles and parts (in joint ventures with Ford and Fiat), white goods, oil refining and banking. Sabanci Holding, another conglomerate, has retail, energy, cement-making, banking and manufacturing businesses.

The best mid-sized family firms share with them a nimbleness that comes from years of living with economic volatility. Turkey has a history of high inflation. Bosses have become experts at juggling finances. Companies have had time to adjust to a weak lira since 2018. Many have reduced their dollar debts.

Smaller firms adjust by other means. The line between company and household is blurred. Risks are pooled among family members. Very often the response to adversity is to work harder. Four-fifths of the workforce put in more than 40 hours a week in their main job, one of the highest shares in the OECD—though long hours compensate for low labour productivity. Another strategy for small and mid-sized firms is to push business into the grey economy, where wages often do not keep up with inflation or minimum-wage laws.

Istanbulls

Hard work and agility help businesses to keep going. But they also need demand. One of the big surprises in Turkey has been the strength of consumer spending. Inflation in the high single-digits has weighed on consumers in Europe and America. Yet, in Turkey, far higher inflation has not sapped demand. There are plenty of theories as to why. One is that consumers saw the fall of the lira, knew what that meant for future inflation, and splurged in anticipation of higher prices. Durable goods in particular are a hedge against inflation. New cars, white goods or imported luxuries hold their worth better than lira, even if they are not as liquid a store of value as, say, gold coins or dollar bills. With interest rates so low in real terms it is almost negligent not to borrow to spend.

But credit is not the only fuel. Turkey's young population has a high propensity to consume out of wealth gains, says one Istanbul-based economist. And well-off householders have much of their wealth tied up in foreign-currency deposits and property, which have held or increased their value.

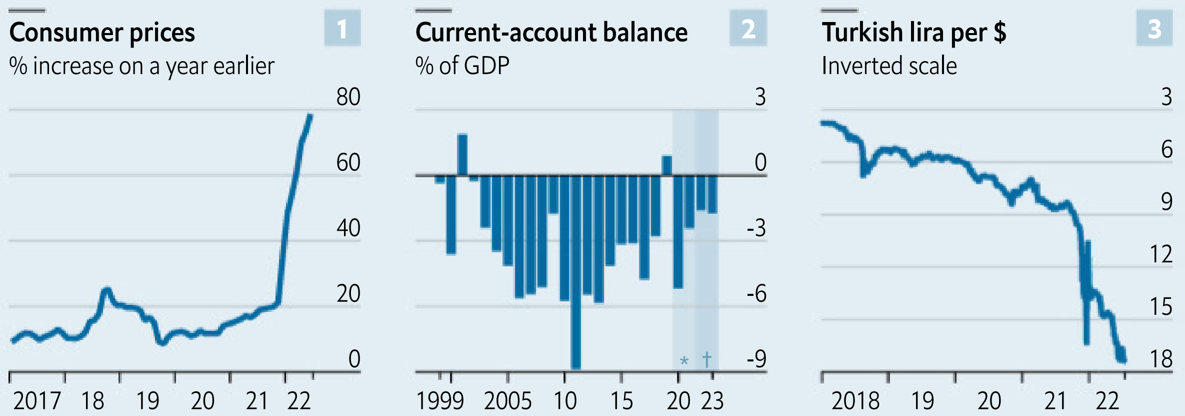
For companies that sell mainly in Turkey and for whom imported raw materials are a big part of total costs, the lira's collapse is a headache. But it has been a big stimulus to exporters whose costs are mostly in lira and whose revenues are in hard currency. The real exchange rate (that is, adjusted for relative inflation in Turkey and its export markets) is what matters for export competitiveness. Turkey's has fallen a long way (see chart 4 on next page).

There are other factors that also favour Turkish exports. The cost of shipping from Turkey to Europe is far lower than from China. Goods can be shipped from Gaziantep via local ports in less than 72 hours, says Mr Mahsereci, compared with a minimum of a month from China. And supply is more reliable. Turkey can also export via the Aegean or the Black Sea.

Yet accelerating inflation poses big challenges for even the most agile business. One is pricing strategy. It is tricky to judge where to pitch prices. Too high, and you risk losing market share to rivals; too low, and you may find you do not cover replacement cost. Hard decisions seem to multiply. "You have to be ready to negotiate with all of your customers and all of your suppliers all of the time," says a businessman. "It is very, very tiring." Some prices are slow to adjust. A large share of mobile-phone subscribers have 12-month contracts. Many are still on last year's prices.

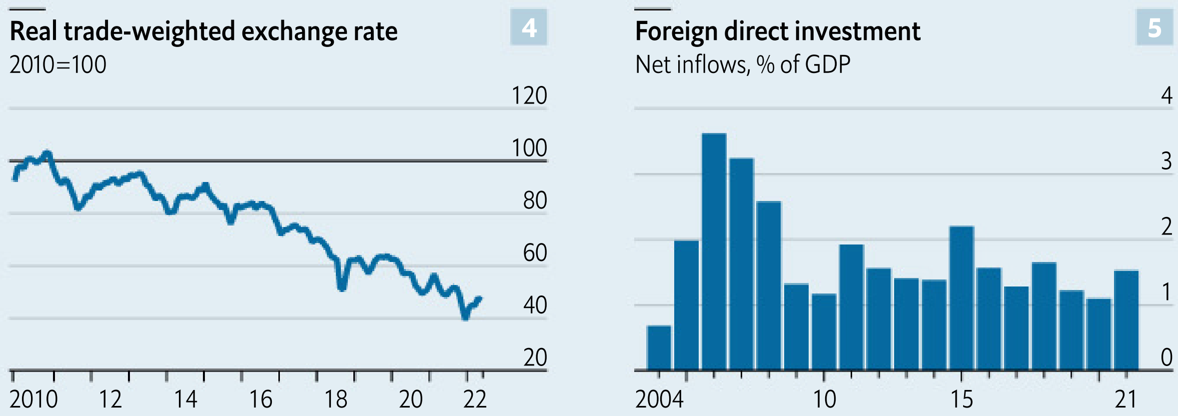
Businesses must protect themselves from inflation to survive. This often means that the cost is pushed onto others. That creates tensions—between landlords and tenants, shops and customers, and firms

Up and down
Turkey



Sources: Refinitiv Datastream; IMF
*Estimate †Forecast

Down and down
Turkey



Sources: BIS; OECD; UNCTAD

and their suppliers. No business can afford to defer the settlement of its customers' bills for very long. "Payment terms of three to six months are down to zero to three months," says an Istanbul-based investor. And there are other pressure points. Turkey's external deficit has not gone away. In principle, devaluation is a remedy. It works by stimulating exports and crushing demand for imports. The export fillip is working, but strong consumer demand has kept imports high.

Against the flow

Turkey must either attract fresh foreign capital or draw on its existing reserves of foreign currency. Both are becoming harder. The quality of capital inflows to Turkey has steadily degraded over the past 20 years. Foreign direct investment (FDI), the "stickiest" form of capital inflow, has not matched the levels of the mid-2000s, when Turkey followed more orthodox policies (see chart 5).

Some European bosses now see Turkey as a potential alternative to China as they seek to shorten and diversify their supply chains. Last year IKEA said it would move production of some of its furniture from Asia to Turkey. Hugo Boss, a clothing firm, said it would add capacity to its factory in Izmir to reduce reliance on Asia. But Turkey's monetary instability—and a deterioration in governance and the rule of law—is a bar to another FDI boom. Portfolio flows into Turkish bonds and shares have evaporated. That leaves Turkey ever more reliant on short-term syndicated loans extended to local banks. As interest rates go up worldwide, these are harder to come by.

The situation for reserves is also perilous. Turkey's central bank has burned through tens of billions of dollars trying to prop up the lira. Official reserves of foreign currency are negative if swaps with local banks are taken into account. (The central bank still has holdings of gold.) Meanwhile private-sector demand for dollars and euros has risen. At their peak last year, two-thirds of bank deposits were held in foreign currency. The growing illiquidity in currency markets means exporters have every incentive to hoard dollars and euros from their overseas sales.

The authorities are striving to curb this creeping dollarisation and to stop the lira from falling further. A scheme has been in place since December which indemnifies deposits switched out of dollars or euros and into lira from exchange-rate losses. In January Turkish exporters were ordered to hand over 25% of their hard-currency earnings to the central bank. That figure was raised to 40% in April. Complaints from corporate treasurers that they needed a float of dollars and euros to pay for vital imports or to service debts had no effect.

In a sign of growing desperation, the authorities went further. On June 24th Turkey's bank regulator said it would ban loans to firms that cling to significant hard-currency holdings. This measure was to stop companies borrowing lira on the cheap to speculate in dollars. The initial reaction in Istanbul was shock. Suddenly the main concern of corporate Turkey was not inflation but a potential credit crunch.

If the regulation is strictly enforced, says one executive, banks will be unwilling to lend and firms will be forced to cut back on non-essential spending. Some may struggle even to get enough trade credit to finance their working capital. It may not come to that. Noises from Ankara are that the banks will not bear the burden of verifying whether borrowers are complying with the new regulation.

Not (yet) melting down

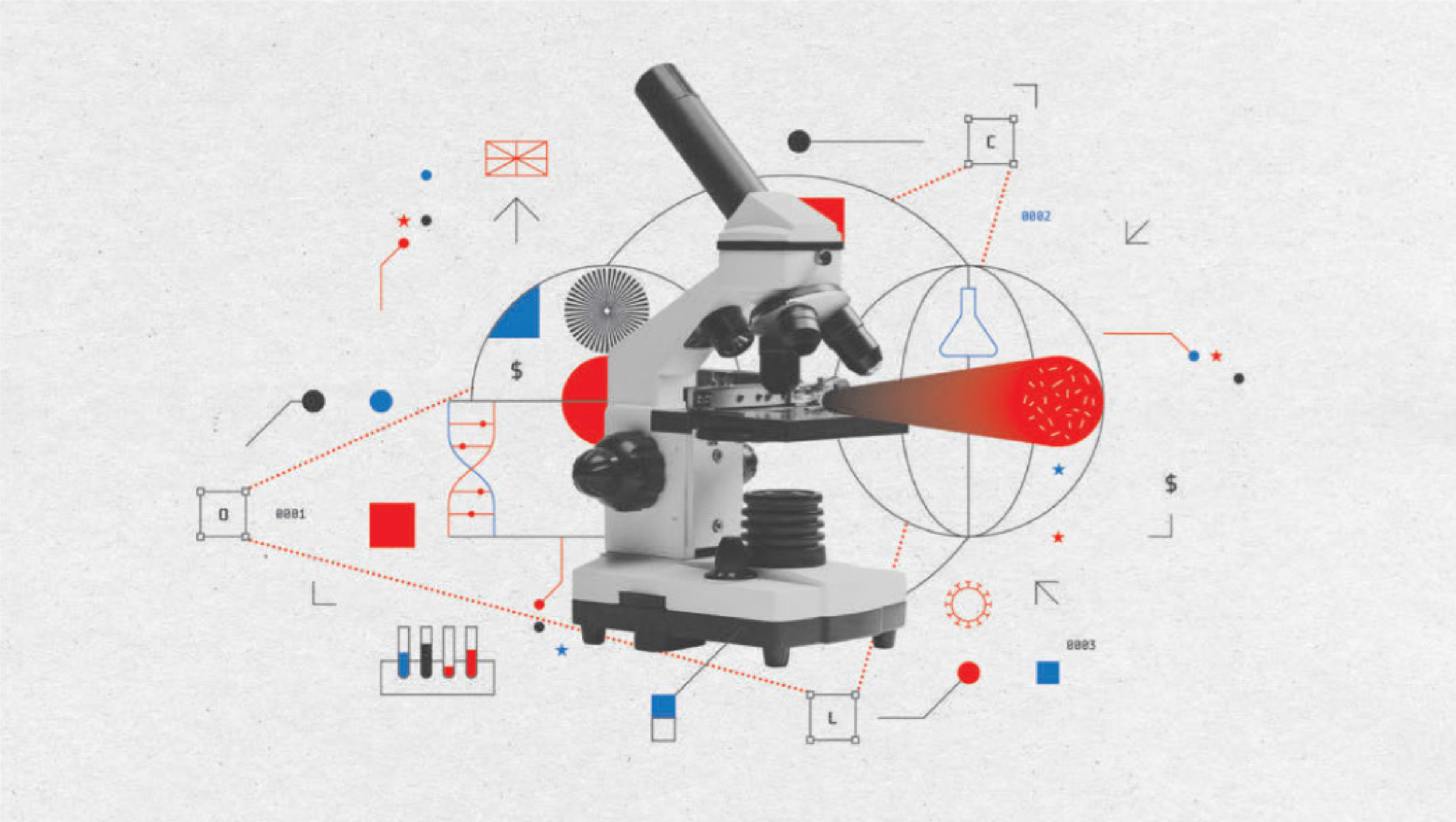
Still, companies are turning cautious and big investments are being put on hold. "Everybody is waiting for the elections," says an investment banker. Mr Erdogan's AK Party is clearly behind an alliance of six opposition parties in opinion polls. He trails in polls against the plausible opposition candidates for the presidency. His defeat would probably mean a return to monetary orthodoxy.

Taming inflation would be a big and painful job, but Turkey's experience after 2001 shows that, with the right policies, it can be done. FDI could rebound to take advantage of Turkey's position as a low-cost manufacturing hub on Europe's doorstep. A rally in the stockmarket is plausible, given how cheap Turkish shares have become. Yet electoral defeat for Mr Erdogan is far from certain. He has jailed political opponents, bullied the media, sought to suppress free speech and could resort to all manner of chicanery to cling to office. Many of the people interviewed for this article did not want to be named.

And before then, the exchange-rate crisis might enter a new, more combustible phase. Once the summer is gone, and the boost to hard-currency earnings from tourism starts to fade, things could get dicey. A tranche of protected lira deposits matures at the end of August. The state has $6bn of external debt payments due in the second half of this year, according to Morgan Stanley, a bank; big companies and banks have $23bn coming due. It seems unlikely that all these debts will be fully rolled over. Yet somehow the diminishing stock of foreign exchange must be augmented—or husbanded. In a worst-case scenario, limits might be placed on withdrawals of householders' dollar deposits.

Perhaps the economy will somehow muddle through until the elections. As strange as Mr Erdogan's approach to monetary policy has been, his fiscal policy has been quite conservative. The public debt-to-GDP ratio was 41.6% of GDP last year. This is comfortably below the debt burden of Turkey's emerging-market peers. Given the country's low solvency risk, perhaps its friends in the Gulf might stump up some of their petrodollars.

Turkey has withstood some remarkable strains. Now, more than ever, Turkish businesses are focused on survival. Inflation breeds uncertainty and uncertainty breeds caution. The things you must do, you keep doing, says a businessman. The rest can wait. "You live another day." ■



The golden triangle

Bio Britannia

CAMBRIDGE, OXFORD AND STEVENAGE

The life-sciences industry is a jewel in the economy. It needs help to sparkle

BRITAIN'S GROWTH CRISIS

TREE-LINED LAWNS and historic buildings provide the backdrop for high-tech wizardry at the Babraham Research Campus in Cambridge. Alchemab, a three-year-old company housed in its laboratories, is built on the idea that a person's response to chronic diseases may stem from differences in the antibodies they produce. Jane Osbourn, the firm's chief scientist, says they have already found a set of antibodies common to survivors of pancreatic cancer. The firm raised £60m ($82m) in 2021 on the back of such discoveries.

The painstaking collaboration of the scientists in Cambridge stands in striking contrast to the noisy combativeness of the Conservative Party leadership contest, which was winnowed down to two contenders on July 20th (see following article). But these two worlds are linked. As Rishi Sunak and Liz Truss spend the next few weeks taking lumps out of each in their bid to become party leader, they will be asked over and again about their plans to revive Britain's sagging economy.

Few industries have greater growth potential than life sciences. Although the sector employs people throughout the country, the country's most vibrant collection of life-sciences researchers, entrepreneurs and funders are, like those at Alchemab, in the "golden triangle" that contains Oxford, Cambridge and London. If the Tory candidates are serious about growth, they will be thinking hard about what makes this megacluster work, and what holds it back.

According to the *Times Higher Education* supplement's 2022 ranking, the region is home to four of the ten best universities in the world for health care: Oxford, Cambridge, Imperial College London and University College London (UCL). Strong clusters have developed around all three vertices of the triangle (see map on next page). The biggest is in Cambridge; at its heart is the Cambridge Biomedical Campus, the largest centre of medical research and health science in Europe. It is the site of AstraZeneca's new global headquarters, which will house 2,000 employees when finished. The Wellcome Sanger Institute, home to the bulk of Britain's genomic-sequencing capacity, is 13km farther south.

The Oxford cluster is centred on the Old Road Campus in Headington, and includes the Jenner Institute, which developed the Oxford-AstraZeneca vaccine. Harwell, a sprawling science park south of the city, is built on 280 hectares of land reclaimed from the Atomic Energy Authority. It is the home of Oxford Nanopore, which makes whizzy gene-sequencing equipment and is one of the largest firms to emerge from the British life-sciences ecosystem.

London's cluster includes the Francis Crick Institute in Kings Cross, with UCL and the Wellcome Trust close by. It also serves as the main connection between Oxford and Cambridge, since there are no direct motorway or rail links. Right in the middle of the triangle is Stevenage, the British home for R&D of GlaxoSmithKline (GSK), another pharma giant.

This network of nerds and nous is yielding results. According to the BioIndustry Association, a trade body, British life-sciences firms raised £4.5bn in 2021, compared with just £261m in 2012. It was not always thus. Andrew Williamson, the boss of Cambridge Innovation Capital, a venture-capital fund, says Cambridge was an "academic ivory-tower town" 25 years ago. The best graduates from the university's biology doctorate programmes would make for the City of London and well-paid jobs in finance. Now they want to join startups. "There's a complete cultural shift," says Mr Williamson. When he returned from Silicon Valley in 2017 it was because he could "see going on here exactly what was going on there 20 years ago".

In theory one of the great advantages that British life-sciences startups have is the National Health Service (NHS). A unified health system, in which every patient is assigned a single number that follows them from birth to death, is particularly useful for running clinical trials. Adrian Hill, who runs the biotechnology cluster at Harwell, notes that the trials done on the covid-19 vaccines in Britain were both very large and done very fast.

Its unified nature should make the NHS a fast adopter of innovative products, as well as the cleanest, largest pool of medical data in the world. "The basic narrative is 'we are a sample set of 60m people, you can come and prove your technology here'," says Alexis Dormandy, the boss of Oxford Science Enterprises, an investment firm that has just raised £250m and counts arms of Alphabet and the Singaporean government as shareholders. Optimists envisage a virtuous cycle: data feeding into the golden triangle's firms, fuelling innovations that feed back into a more productive NHS.

This vision is only slowly emerging, however. Many NHS data are a mess: the systems which house them need an overhaul for which no one is keen to pay. The NHS tends to focus on cost control when buying in new products. And instead of operating cohesively, bits of the system tend to move at their own pace. None of these smaller chunks of the network is big enough to be a really decent market.

Infrastructure and life-sciences institutions*, 2022

Motorways/main roads · Railways · • Institutions

Proposed infrastructure projects

Oxford-Cambridge motorway† corridor

East-West Rail — Western section ··· Central section

Sources: Department for Transport; Highways England

*Selected †Cancelled in 2021

This is not a trivial problem. The American health-care system may be a lot less centralised than the British one, but its wealth, scale and competitiveness make it a magnet for new technology. NHS infrastructure and data may help young British firms to develop products, but often the first market they deploy it in is America.

Another factor also pushes promising British life-science firms abroad: investors. Life-sciences companies are capital-intensive: it takes a lot of cash to build laboratories and run expensive clinical trials. They also tend to grow slowly, as their products are complex and highly regulated. The relatively small pools of capital available through Britain-based investors are simply insufficient for the winding path to viability. "Our venture-capital (VC) guys tend to have small funds, between £100m and £200m," says Sir John Bell, a professor of medicine at the University of Oxford.

Cash is not the only thing that startups need from investors. They want access to networks—of people sitting on the boards of large companies that might one day buy their own firm; of bankers and lawyers who can marshal the next attempt to raise capital; of people who know biotech inside out. And the investors with these kinds of networks tend not to be based in Britain.

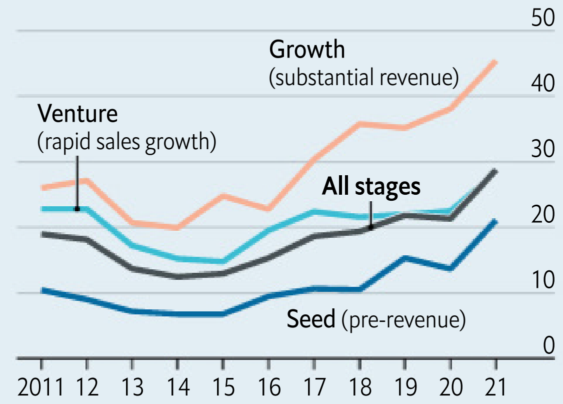
That is partly because of the dearth of large firms that might snap up a successful startup. American investors have links to tens of companies with the resources to make acquisitions. Britain has only two obvious buyers: AstraZeneca and GSK.

It is partly because of the state of the public markets. The London Stock Exchange is seen as a hostile place for firms to float. "The LSE isn't the Nasdaq. It's not even the Hang Seng," says Fred Cohen, a biotech investor who now divides his time between the Bay Area and London. "The stock exchange needs to decide if it wants to be a source of capital and liquidity for the innovative companies that don't follow the price-to-earnings metrics that the LSE was designed around." On July 20th Abcam, a Cambridge-based biotech firm, announced that it was abandoning plans to join the LSE's growth market and would maintain a sole listing on Nasdaq.

Alchemab is a good worked example of these issues. The vast majority of its £60m in funding was raised from American investors, most of it from RA Capital Management, in Boston, Massachusetts. One of the conditions of funding was that a new chief executive should be appointed in Boston; its current hiring is split evenly between Boston and Cambridge. This may be a good thing for the company, but it is now on a path where much of its growth is likely to happen in America.

Outsider perspective

Britain, venture-capital deals involving overseas investors, by stage, %



Source: British Business Bank analysis of Beauhurst data

A firm called Artios, on the other side of the Babraham campus, has a similar story. It specialises in a technology called DNA Damage Response, creating compounds that inhibit processes which let cancers spread. Niall Martin, its boss, says that the $153m he raised from American investors last year comes with a plan to float the firm on the Nasdaq stockmarket in New York in a few years' time. Artios banks with Bank of America as a result, and in order to meet Nasdaq's requirements, the firm must base its chief financial officer in America.

In both cases the lack of growth capital from investors with British networks (see chart) nudges them towards placing more resources in America. Britain is left with a strong commercial research-and-development base, but without sales forces or manufacturing hubs. "We don't want more pre-revenue companies," says Sir John. "They don't pay tax or add to growth." "Capital is definitely part of the problem," says Sir Jonathan Symonds, chairman of GlaxoSmithKline. "There is no UK source; we are totally dependent on US funds coming to pick on British tech."

The obvious policy fix, changing regulations so that British pension funds are able to invest in venture-capital firms, is not imminent. One glimmer of light is that some foreign venture capitalists are now seeing the wisdom of putting down roots in London, building out new networks of contacts to grab opportunities in the triangle. Sir John says he knows of between six and eight "really high-class investors" who are joining Mr Cohen in putting together a British base.

The dearth of lab space across the golden triangle also puts a cap on domestic growth. Mr Martin of Artios says his 100-person company can find absolutely nowhere to expand into (another reason to go to America, where lab space is plentiful). Commercial-property investors seem to have got the message, at least. In Stevenage, GSK has sold 12 hectares of land to developers as part of a £900m deal to build 130,000 sq metres of laboratory and office space; last year BioMed Realty, a Californian property developer, paid £850m for two Cambridge sites.

Finding a place to work is one part of the puzzle. Improving the connections between the various bits of the golden triangle, and opening up affordable new places for life-sciences employees to live, are others. A study prepared by the Oxfordshire Local Enterprise Partnership in 2020 found that the region between Oxford and Cambridge contributed £111bn in gross value added to the economy every year; the government reckoned that could rise to between £191bn and £274bn a year if a programme of building created new homes and linked up towns by rail and motorway.

"People can't afford the housing here or in Cambridge," says Jim Naismith, director of the Rosalind Franklin Institute near Oxford. "That is where the government can make a big difference." But planning rules remain a big barrier to growth. The housing stock in Oxford has grown by just 1,440 net homes in the past five years, a slower growth rate than the English average, due largely to the lush "green belt" of land that surrounds it. In 2021 the government cancelled a proposed motorway between Oxford and Cambridge; plans for an east-west rail link still just about survive.

Strengthening the cluster of life-sciences companies in the golden triangle could have profound effects on its culture, too. Although academics at Britain's best universities are shaking off their ivory-tower mindset, they have not yet developed the appetite for risk that their American counterparts often possess. Being part of a large network helps to encourage all-or-nothing bets. If it succeeds, then the company is on a fast track to growth. If it fails then the firm's founders and employees can just walk across the road to another firm, bringing their valuable experience with them. The whole ecosystem benefits.

By recycling people through different firms, "fast failure" also helps to ease the talent shortage that afflicts expanding life-sciences firms in Britain. Some of this shortage relates to specific skills. Lab technicians and biological scientists have been labelled "shortage occupations": the government has dropped the minimum salary requirement for visa applications for people in these jobs. But some of it is about characteristics. Katya Smirnyagina, a life-sciences partner at Oxford Science Enterprises, says its portfolio companies particularly need people who combine scientific knowledge with entrepreneurial ability.

Britain's political climate is another problem. Brexit might have freed British regulators from the burdens of alignment with the EU: on July 16th Mr Sunak promised a streamlined domestic system of clinical-trials approval to replace the one in operation in the bloc. But scale matters. In 2019 the British pharmaceutical market was worth £36.7bn, according to the Association of the British Pharmaceutical Industry, a trade body; the EU's was worth €227bn ($232bn). Research from James Barlow at Imperial College Business School has found that the British medical regulator approved fewer novel medicines in 2021 than its equivalents in either the EU or America, in part because firms are prioritising bigger markets. A standoff between Britain and Brussels over the trade arrangements governing Northern Ireland has jeopardised British participation in Horizon Europe, the world's largest research-and-development funding programme.

A sense of grievance against highly educated elites may sand away the edges of the golden triangle, too. Boris Johnson's government shelved the Oxford-Cambridge Arc project out of fears that it would undermine his "levelling up" agenda, which was supposed to stimulate economic activity outside London and the South East, and spark a revolt among Tory voters in affected constituencies. "There's a tendency in politics to think pulling down the golden triangle will help build up other things," says Mr Naismith. "That's not true."

The life-sciences industry in Britain is healthy in many ways. Capital pools are expanding. An array of bodies, such as NHSX, a government unit devoted to innovation, has made progress in creating a more fertile environment for new technologies. The strengths of the golden triangle are very hard to replicate. But it needs help to achieve its potential. The next occupant of Downing Street must provide it. ■

Haleon's listing

Don't gloat about the float

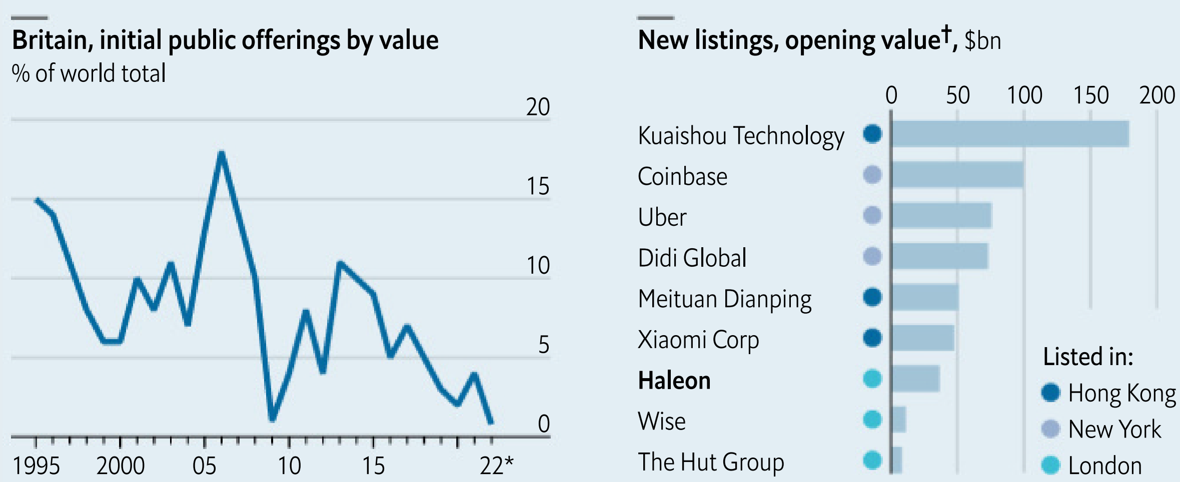
A big debut casts unflattering light on the London Stock Exchange

THE LONDON STOCK EXCHANGE welcomed its largest new entrant in over a decade on July 18th. GlaxoSmithKline (GSK), a pharmaceuticals giant included in the FTSE 100 index of leading shares, spun out its consumer health-care division in order to focus on new drugs and vaccines. Each of GSK's shareholders received one share in Haleon, the new firm, for every GSK share they owned. Haleon started trading at a market capitalisation of £30.5bn ($36.4bn).

The listing is emblematic of the travails of a stockmarket whose best days are behind it. Haleon is not a fast-growing technology or life-sciences firm. It is a long-standing business selling Sensodyne toothpaste and smartly packaged ibuprofen. Haleon is not attempting to raise any new funding by listing, which may be just as well: Britain's stockmarket has accounted for less than 1% of the capital raised in global initial public offerings so far this year. The largest firms that have listed in London in recent years have been dwarfed by those choosing New York or Hong Kong (see chart).

One big reason for the City's dimming appeal is the departure of long-term capital. Twenty years ago British defined-benefit pension funds had around half their assets in London-listed equities; today the share is less than 3%. Another is that tech firms worry City investors are too focused on short-term profits to take their businesses seriously. A new Financial Services Bill includes tweaks to the rules to make the LSE more attractive, but it can do little about the attitudes of those trading on it. Pass the Advil.

Diminutive debuts



Source: Dealogic

*Year to July 15th †Top three on each bourse in past five years

The Tory race

Sunak v Truss

Two children of Thatcher vie to succeed Boris Johnson

THE CONSERVATIVE PARTY has spent three decades seeking an heir to Margaret Thatcher. It now has two pretenders to choose from. On July 20th, after nearly a fortnight of often vicious campaigning, the field of would-be Conservative leaders was reduced to Rishi Sunak and Liz Truss. One resigned as chancellor, helping precipitate Boris Johnson's fall; the other is his outwardly loyal foreign secretary, who made up ground among MPs as other contenders dropped out.

Conservative Party members will have the final say in a ballot over the summer; a new party leader and prime minister will be installed in early September. Mr Sunak won the support of more MPs and goes down better with swing voters, according to Opinium, a pollster. Ms Truss is more popular with members by a distance, and is therefore the bookmakers' favourite.

Both seek to harness Thatcher as they battle to follow her into Downing Street. Ms Truss was raised by nuclear-disarmament activists before turning to the right at university. Her critics see in her a bizarre tribute act to the party's most deified figure: she flecks her speech with Thatcherite aphorisms, dresses like the former prime minister and lauds Ronald Reagan. Mr Sunak is a Stanford MBA graduate who speaks with the sunny inflections of Silicon Valley; no 1980s-style pinstripes here. But he is an emblem of the era of globalisation that Thatcher helped usher in: he made a small fortune in the City and married the daughter of an Indian tech billionaire.

The two draw different lessons from the Thatcher era. Ms Truss, like much of her party, remembers Thatcherism as a tax-cutting project. This is the legend that is told on tea-towels at the annual party conference. She promises to reverse tax rises implemented or planned during Mr Sunak's time as chancellor. (These hikes are worth 2% of GDP, compared with a reduction in the tax take of 4.7% of GDP under Thatcher.) "We are predicted to have a recession because you have raised tax," she told Mr Sunak in one debate.

For Mr Sunak this is a partial telling. He recalls Thatcherism as a project to tame inflation, which he regards as "the ultimate enemy" and which tax cuts now would risk fuelling. Prices rose by 9.4% in the year to June, the highest rate since 1982. Mr Sunak styles himself as a fiscal disciplinarian, who, like Thatcher, helped with the books in his parents' shop and who was blown off course only by the pandemic. In an address in February, he approvingly quoted Nigel Lawson, a Thatcher-era chancellor, who rejected the notion that unfunded tax cuts would pay for themselves through economic stimulus as a "spurious kind of virtuous circle". "This something-for-nothing economics isn't conservative, it's socialism," he told Ms Truss in the debate.

There is one alternative

Ms Truss more strongly echoes Thatcher in her monetary policy. She has suggested that she would revise the mandate of the Bank of England to tackle inflation. "We have not been tough enough on monetary supply," she said, voicing a widespread concern that quantitative easing has driven spiralling prices. Setting money-supply targets would mimic an unsuccessful Thatcher experiment in the early 1980s. Mr Sunak defends the central bank's record and has said he is "worried" by the direction of the debate.

The two candidates agree on a Thatcherite agenda of post-Brexit deregulation, although Mr Sunak's plans are more fleshed out. He promises a "Big Bang 2.0" for the City (in truth, his proposals to date are more like a balloon pop). And both have Thatcherite instincts on the climate; the former prime minister was hostile to government subsidies but increasingly agitated by the state of the planet. Both have said they support the target of reducing Britain's carbon emissions to net zero by 2050. But Mr Sunak says it must be done "in a way that carries people with us"; Ms Truss thinks it can be "more market-friendly".

Ms Truss comes over most Maggie on foreign policy. She talks of a civilisational struggle between autocracies and the "free world". Such language once appeared eccentric to many Conservatives, somewhat less so after Russia's invasion of Ukraine. She accuses Mr Sunak of being soft on China. Once a Remainer, she is the author of legislation that will renounce some of Britain's treaty obligations to the EU; that delights the section of the party which thinks Thatcher's handbagging of European leaders at Fontainebleau in 1984 marked the high point of British diplomacy. The fact that Mr Sunak campaigned to leave the bloc, and is now cast as a Europhile, underscores the ideological brittleness of the Brexit project.

In truth neither arouses genuine enthusiasm among MPs. Mr Sunak's colleagues agree he is a diligent administrator who will impose order after Mr Johnson's chaotic reign. Some fear he risks resembling Theresa May or Gordon Brown, workaholics who commanded their departments but were overwhelmed in the top job. "At the Treasury you have the luxury of staged, well-planned interventions," says a former colleague. "The reaction to immediate events he has not done so much."

Ms Truss's record as a minister divides those who think her quietly effective from those who dub her "the human hand grenade". The ideological rectitude that party members seem to admire may prove an obstacle to the imperfect business of government. "I'm a pragmatic Conservative and more tax cuts are not the answer to everything," says a cabinet minister.

These tepid reactions bode ill for party unity. The contest is bitter and personal. Whoever wins, their share of MP endorsements will be the lowest of anyone who went on to lead the party since Iain Duncan Smith in 2001. Thatcher clocked up more than 11 years in office. On that, at least, she will go unimitated. ■

Levelling up

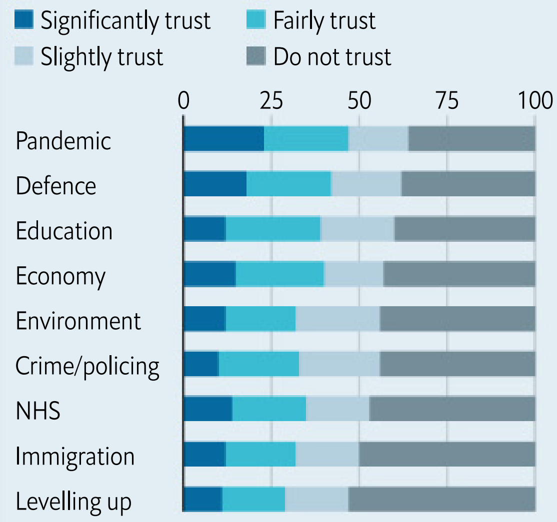
What was that, again?

EDLINGTON

The Tories seem to be cooling on Boris Johnson's big idea

FEW PLACES need levelling up more than the Royal housing estate in Edlington, a town in South Yorkshire once dominated by coal mining. Houses have been abandoned and boarded up; local children terrorise some of the remaining residents. The local Conservative MP, Nick Fletcher, has a plan for the estate. He wants to lock up criminals, hold community meetings, tidy people's front gardens and use government funds to spruce up the high street. But his party seems to be losing interest.

"Levelling up", a catch-all term for economic development, infrastructure and beautification projects in the poorer parts of Britain, was Boris Johnson's big domestic idea. The assumption was that in 2019 ▸▸



Crumbling
Britain, "red wall" voters*, level of trust in the Conservatives to deliver in selected areas, %

Source: Redfield & Wilton

*1,500 eligible voters polled on July 11th 2022

Conservatives such as Mr Fletcher won election in traditionally Labour "red wall" seats in the north of England because the Tories promised to get Brexit done and because Labour was led by Jeremy Corbyn. In order to hold such seats, however, Tories must demonstrate that they can quickly improve people's lives. Hence levelling up.

It is now hardly spoken of. The race for the Conservative Party leadership has featured obsessive talk of tax cuts and transgender issues, but not levelling up or the red wall. Some of the candidates briefed that levelling up seemed rather expensive and narrowly focused on the north. "Conservatives need to win in lots of different places," said Rishi Sunak, one of the final two candidates. A hustings on levelling up on July 19th was held behind closed doors.

Northern Conservatives are incredulous. "Levelling up is an amazing phrase," says Andrew Isaacs, a Doncaster lawyer and prominent local Tory. Politicians in the red wall have begged the candidates to commit themselves wholeheartedly to Mr Johnson's agenda, lest they (and the Conservative Party as a whole) be defeated at the next general election. Perhaps electoral logic will eventually draw Westminster's attention back to the north. But Mr Johnson's would-be successors have good reason to try to change the tune.

Levelling up has always been vague and messy, like the man who pushed it as prime minister. It is a mixture of serious analysis about regional productivity gaps, worthy but uncertain ideas about devolving power to mayors and assorted grievances about the wealth of big cities, particularly London. It is a story as much as a policy programme—saying that you are levelling up is at least as important as actually doing it. Mr Johnson is an accomplished storyteller who could disguise the holes in his agenda. Neither of the candidates to replace him is as skilled.

Even Mr Johnson was not adept enough to sell levelling up to the public. Opinion polls of red-wall voters find that the Conservative Party is distrusted on his signature policy (see chart). Some Tories believe that people are impatient for signs that headway is being made. Doncaster council, which covers Edlington, succeeded last year in a bid for money to improve the city centre. Jane Cox, the Conservative group leader, says people have yet to see progress.

It is also possible, however, that the desire for rapid results is part of the problem. Not all Mr Johnson's levelling-up policies emphasise speed, but many do. As he scaled back plans for high-speed rail in Yorkshire last year, for example, he argued that a revised plan would improve public transport more quickly. In a similar vein, Mr Fletcher hopes that the Royal estate's problems will soon begin to dissipate if his plan is followed. But people who know the estate well remember previous efforts, which had little effect. They say its problems are caused by stubbornly troublesome families, some of whom moved from other estates that were being regenerated.

Perhaps the worst thing about Johnsonian levelling up is the assumptions it makes about northern voters. They have been treated as self-interested and transactional, willing to trade votes for local investment. In fact, opinion polls show, they worry about the same things as everyone else: inflation, the state of the NHS, climate change and so on. "Is levelling up that important?" asks Chris Bonnett, a Tory-leaning electrician from Tickhill, south of Edlington. "We're at war with Russia." ■

Unmanned aviation

A motorway for drones

New freedom to fly between cities

SINCE THEY began to whirr and hover over a decade ago, small autonomous drones have turned from the plaything of hobbyists into the stuff of venture capitalists' dreams. Drones now carry out many commercial tasks: inspecting infrastructure, surveying crops, filming videos, transporting medical supplies and, in some places, dropping off shopping and delivering pizzas. But such flights are strictly limited by aviation regulators in order to prevent accidents, especially collisions with manned aircraft. The British government has decided that it is time to give drones the freedom of the sky with the world's biggest "superhighway".

The scheme was announced by Kwasi Kwarteng, the business secretary, at the opening of the Farnborough air show on July 18th, as part of a series of measures to boost aerospace innovations. Known as Project Skyway, the 265km (165-mile) drone superhighway will connect airspace above Reading, Oxford, Milton Keynes, Cambridge, Coventry and Rugby over the course of the next two years. This corridor could later be expanded down to Southampton and east to Ipswich.

As useful as they are, commercial drones are currently not supposed to be flown beyond an operator's visual line-of-sight, or BVLOS as it is known. For long flights this pushes up costs, since ground pilots and observers are required along the route. Britain's Civil Aviation Authority (CAA) has authorised some BVLOS flights without such restrictions, but the procedures can be tortuous and may involve the closing of nearby airspace. In recent trials the Royal Mail has carried letters to the Isles of Scilly and the Orkney Islands, and the NHS has flown chemotherapy drugs from Portsmouth to the Isle of Wight.

As in other countries, the CAA takes the line that if firms want to operate regular BVLOS flights, their drones must be able to detect and avoid both planes and each other, just as crewed aircraft do. Specialist gear is being developed to equip drones to do this, but it will add cost and weight to what are often small machines. The idea of a designated superhighway is that instead of putting such kit in the drones, it can be installed on the ground; this equipment would monitor and communicate with the machines, and automate flights so that they are completed safely.

Project Skyway is backed by a consortium of firms, including Altitude Angel, a specialist in automated air-traffic management, which has been testing the idea with an 8km drone corridor in the Thames Valley. Another partner is BT, which aims to use its telecoms network to link the superhighway to drone operators, who often use apps on mobile devices to fly their machines. BT will also fit the ground sensors to some of its mobile-phone masts.

Drone operators would need to be registered to use the superhighway. It would be set at low altitude, below Britain's busy flight corridors where airliners zoom. But it would be designed to detect general aviation, so that light aircraft and helicopters could pass through the superhighway safely. If a potential conflict is detected, the drone would be instructed to change its flight path or even land. Operators would be notified and would be able to take manual control of their drone if required. On some estimates, nearly 900,000 commercial drones could be buzzing around Britain by 2030; if so, the superhighway could be as busy as the M25 on a Friday afternoon. Without the queues. ■

Bagehot | The battle for the Stupid Party

Cleverness or soundness? The choice between Rishi Sunak and Liz Truss

PREJUDICE MAY stop Rishi Sunak from becoming prime minister. For Mr Sunak, the grandson of Indian immigrants, comes from a demographic that has long gone unrepresented at the very top of British politics: Old Wykehamists.

Winchester, the posh school that Mr Sunak attended, churns out clever clogs who never quite make it to become prime minister. Two former Labour chancellors, Stafford Cripps and Hugh Gaitskell, both attended the school, which now charges £45,936 ($55,000) in annual fees. Geoffrey Howe, a former Conservative chancellor who, like Mr Sunak, helped bring down a prime minister, is another alumnus. In total Winchester boasts six chancellors but just one prime minister (from more than two centuries ago). In contrast, Eton, a posher school that extols the virtue of leading over reading, has managed 20, including two of the past three.

John Stuart Mill once labelled the Conservatives "the stupid party". That is unfair. But it is true that Tories are suspicious of cleverness. They prefer a different characteristic: soundness. This trait is difficult to define. But, like pornography, Conservatives know it when they see it. Roger Scruton, a right-wing thinker, wrote that conservatism's "essence is inarticulate". To put it another way: anything that can be greeted with the guttural baying Conservative MPs use to show approval ("Yeeeyeeeyeeeyeee") is sound. The choice that party members must now make as they weigh up whom to pick as their leader is between cleverness or soundness. Mr Sunak is clever. Liz Truss, the foreign secretary and his opponent in the run-off, is sound.

Desperate times mean that many Conservative MPs have swallowed their aversion to intelligence and prefer the idea of a nerdy prime minister. During the rounds of voting to whittle the field down to two candidates, Mr Sunak won the support of more MPs (137) than Ms Truss did (113). When asked to run down the reasons he was supporting Mr Sunak, one senior Tory highlights his tendency to actually read policy briefings. Applauding a cabinet minister for doing the reading might sound like praising someone for putting on their trousers before they leave the house. But it would be an improvement on the current occupant of Downing Street.

To win over the party members, however, cleverness must be hidden. Mr Sunak was early to the threat of inflation but will receive little thanks for it. Stupid policies are needed to win support from the stupid party. Mr Sunak has called for a ban on onshore wind turbines ("Yeeeyeeeyeeeyeee"). Britain needs more carbon-free electricity. Practically all polling shows wind turbines to be popular among the general public. It is smart to support onshore wind. It is, however, unsound.

A hawkish foreign policy is sound indeed. That suits Ms Truss, who has taken a tough line on everyone from Brussels to Beijing. In contrast, Mr Sunak has been linked with a less confrontational approach to the EU. A letter leaked during the contest from Mr Sunak's team at the Treasury warned against the wholesale shredding of EU legislation on VAT, which would result in years of litigation. A calmer relationship with the EU will help Britain's enormous domestic problems. But it is not sound.

Being sound does not always come naturally to Ms Truss (who, to be clear, is also clever). There is a pantomime element to her politics. Ms Truss has appeared so often in strikingly similar outfits to those worn by Margaret Thatcher that people no longer assume it is coincidence. When speaking about foreign policy Ms Truss uses a near-parody of Thatcher's tone. When speaking about economic policy the foreign secretary reverts to a chattier manner. It may be odd. But it is sound.

Mr Sunak may be helped by the fact that he is an intelligent man with a taste for bad ideas. Ms Truss, once a Remainer, is now a hardliner on Brexit due to a mixture of democracy (17m people voted for it) and cynicism (it is impossible to criticise Brexit and rise in the Conservative Party). Mr Sunak simply thought leaving the EU was a fabulous idea from the off. As a backbencher he championed free ports, which, at best, shuffle wealth around rather than create it. He is blessed that when he is stupid, he is sound.

Penny Mordaunt, who came third in the voting among MPs, was neither smart enough nor sound enough. "Greater", her magnum opus on the state of Britain, is thrillingly insane. In a list of examples of plucky defeat she listed both Frank Spencer, a hapless television character, and the battle of the Somme. Finishing the book leaves the reader wondering whether, like a footballer's autobiography, its lead author even read it, never mind wrote it.

The Portsmouth MP pitched herself as the soundest candidate. Naturally, she supported the new royal yacht, which would sail the oceans extolling British free trade ("Yeeeyeeeyeeeyeee"). Sadly for Ms Mordaunt, an unsound past was discovered. As equalities minister she was seen as a staunch ally of transgender activists. As a candidate Ms Mordaunt distanced herself from such views. Voters may not care. But Conservative MPs did. Anything that smells of wokery is not welcome in the current Tory party.

Too clever by half

Yet Mr Sunak and Ms Truss were part of an extraordinarily diverse cast of leadership candidates. Half were women; half were ethnic minorities. The best a straight white male managed was fifth and that was despite a career engaged in the soundest of all possible activities: shooting foreigners. Although the contest was explicitly unwoke, it was accidentally intersectional, with race, class and gender all tangled together and often discussed in a more nuanced way than usual for British politics.

Ideological questions ended up trumping ones of identity. But in one important way, there is little difference between the clever choice and the sound choice. Both Mr Sunak and Ms Truss poll far behind Labour. With the Conservatives wandering towards defeat, even the cleverest, soundest politician would struggle. ■

Italy

Game over

ROME

Mario Draghi, Italy's reformist prime minister, resigns after being deserted by his allies. An early election looks likely

BESET BY PARTNERS turned adversaries, his coalition in tatters and his government facing extinction, Mario Draghi nevertheless managed to retain his wry sense of humour. As passions flared in a debate in the Senate on July 20th on a motion of confidence in his government, one of the speakers took aim at Mr Draghi's status as an unelected technocrat. "Enough of appointed prime ministers," the senator cried. "True," exclaimed Mr Draghi, shortly before getting up to leave the chamber. Asked if he was going to see the president, Sergio Mattarella, to confirm his resignation, Mr Draghi replied, "For now, I'm just taking the lift."

But the following day, Mr Draghi, who had already offered to go the week before, went to see Mr Mattarella and reaffirmed his resignation and that of his government. A statement from the president's palace merely said that Mr Mattarella had taken note of the prime minister's decision. But an early election is now expected, in September or early October; Mr Draghi may stay on as caretaker till then.

The Senate debate on July 20th doomed the prime minister. Having begun it lacking the support of one of the biggest parties in his coalition, the anti-establishment Five Star Movement (M5S), Mr Draghi ended it without the backing of two more. Meeting in a villa on the outskirts of Rome as the proceedings unfolded, the leaders of the Northern League, Matteo Salvini, and of Forza Italia, Silvio Berlusconi, issued a statement that ostensibly gave Mr Draghi their continued support. But it contained conditions that he had already ruled out—the expulsion from government of the Five Stars and a radical overhaul of the government's programme. In effect, the two leaders were demanding that Mr Draghi's broad coalition, delicately balanced between right and left, be turned into one with a straightforwardly conservative agenda.

Ironically, Mr Draghi won the confidence vote in the Senate, but with the backing of only 95 of the 321 senators; far short of an absolute majority. The Five Stars did not vote. Neither did the League or Forza Italia. The opposition Brothers of Italy (FdI) party voted against.

The likely outcome, an early general election, could scarcely come at a less opportune moment, amid at least three interconnected crises: over the invasion of Ukraine, energy and inflation. And, because of the lengthy procedures required to elect and install a new government in Italy, decision-making in the EU's third biggest economy will be paralysed until at least late-October. That, in turn, will jeopardise parliament's ability to approve a budget for 2023 on schedule. It also raises concerns for the rest of Europe.

Ready for the right?

Polls indicate a victory for an electoral alliance of the right that includes the radical, nativist FdI. And since they also suggest the Brothers would gain most votes, the probability is that Mr Draghi, a former president of the European Central Bank, will soon be replaced as prime minister by the leader of the FdI, Giorgia Meloni. An erstwhile neo-fascist, Ms Meloni's last and only government experience was as youth minister in the three years to 2011.

Such an administration would raise grave doubts about Italy's readiness to pass the reforms the European Commission is ▶▶

→ Also in this section

demanding in exchange for disbursing the €200bn ($205bn) or so in grants and low-cost loans that have been earmarked for Italy from the EU's recovery fund. The League has vigorously resisted deregulation in a range of sectors from private seaside bathing concessions to ride-hailing. It has also raised objections to Mr Draghi's efforts to improve tax collection and shift the balance of taxation away from employment to property. Crucial parts of Mr Draghi's EU-approved plan—civil-justice reform; an overhaul of competition laws and a similar overhaul of tax laws—have been stuck in parliament, and will now die with his government. Italy may well lose further tranches of the cash.

The drama inside and outside parliament was the culmination of weeks of intensifying political turbulence. It first broke into the open in June when the foreign minister, Luigi Di Maio, stormed out of the M5S in protest at the party's reluctance to back the supply of arms to Ukraine. Since then, more than 60 other lawmakers have left the M5S to join him.

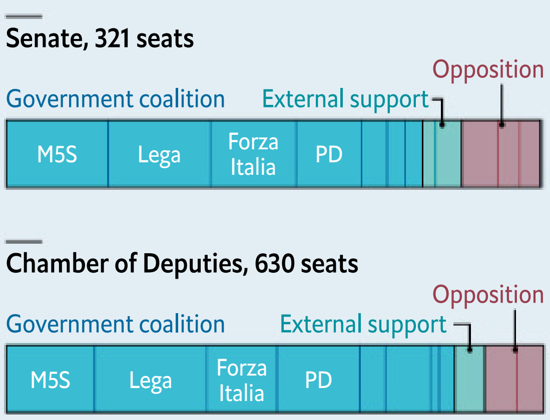
Battling to stem the flow of defectors, the Five Stars' leader, Giuseppe Conte, has adopted an increasingly strident stand on other issues. He has focused particularly on measures to offset for the poorest the effects of the rise in the cost of living. And it was largely because of dissatisfaction with a €26bn government aid package that the M5S withheld its support in the confidence vote on July 14th that prompted Mr Draghi to first tender his resignation.

Those close to the prime minister say that among his reasons for resigning was the fear that, were the Five Stars permitted to periodically withdraw their support, the League would soon start to exercise the same privilege. Ever since entering Mr Draghi's coalition, Mr Salvini has watched impotently as support for his party has drained away to the FdI, which opted to stay out of government and has therefore been free to snipe at it from the sidelines. The League, currently below 15% in the polls, trails the Brothers by around eight percentage points. An election offers Mr Salvini, an effective campaigner, an opportunity to narrow the gap. It also holds out the prospect of being able to govern the country with like-minded allies afterwards. Mr Berlusconi, whose party is a shadow of its once-powerful self, is presumably thinking along similar lines.

At the outset, Mr Draghi succeeded in bringing out the best in Italy's politicians, enthusing many with a sense of duty, a readiness to compromise and a belief in the need for national unity. But after just 17 months he is now falling victim to their reasserted worst: their ambition, narrow self-interest and failure to understand, or perhaps care, that events in their troubled country have unfortunate implications far beyond its borders. ■

Too good to last

Italy, seats in parliament by party, at July 20th 2022



Source: Italian Parliament

Unblocking the Black Sea

When will Odessa's port be reopened?

ISTANBUL, KYIV AND WASHINGTON

Vladimir Putin sends positive signals, but Ukrainians remain sceptical

Recep Tayyip Erdogan walks a geopolitical tightrope. In late June Turkey's president rubbed shoulders with leaders of Western democracies at a NATO summit in Madrid. Three weeks later he glad-handed the rulers of Russia and Iran at a summit of autocracies in Tehran. It could end in embarrassing failure, but his balancing act may also produce a deal to reopen Ukraine's ports and ship out its grain.

One of the world's leading agricultural exporters, Ukraine has been unable to ship most of its crops since the start of the war in February, raising world food prices and exacerbating hunger in poor countries. Russia has blockaded Odessa and other Black Sea ports; Ukraine has mined its own waters to prevent an amphibious invasion.

Negotiators from the UN, Ukraine and Russia are due back in Istanbul before the end of July to try to finalise an accord. "With your mediation, we have moved forward," Mr Putin told Mr Erdogan in Tehran. "Not all issues have yet been resolved, but the fact that there is movement is already good." Mr Erdogan's funambulism helps him to intercede. Turkey is selling Bayraktar drones to Ukraine, yet declines to join Western sanctions against Russia. Moreover, it bestrides the straits that link the Mediterranean and Black seas.

Early in the war Turkey played up the idea that it might broker a peace agreement between the warring sides. Those talks came to naught. This time the signals are stronger. Ukrainian officials sounded upbeat after an outline agreement was reached on July 13th. The UN's secretary-general, António Guterres, spoke of "a ray of hope". This week a Turkish official said, "The Russians seem to be on board."

The proposed deal would create two "co-ordination centres" staffed by officials from Russia, Ukraine, Turkey and the UN. They would inspect and oversee the passage of cargo ships in and out of Ukrainian ports. The centres would be in Istanbul and perhaps in Odessa, which raises the question of who would represent Russia there. Another sticking-point is Ukraine's demand for a commitment that Russia stop attacking its ports. Ukraine will open only narrow sea corridors, to prevent a Russian attack from the sea. Many questions remain: who would do the de-mining; how much repair do the ports require; will shipping firms trust assurances that they will be safe; and will Ukrainian cargo need to be trans-shipped in Istanbul?

Markiyan Dmitrasevych, Ukraine's deputy agriculture minister, says about 18m tonnes of grain await export. In the first four months of the war, Ukraine shifted 5.2m tonnes—roughly the amount it used to ship in just a month—via alternative routes, mainly through ports on the Danube river but also by rail and road. A Russian missile damaged a bridge at Zatoka on July 20th, which may curb exports further. With 60m tonnes expected from this autumn's harvest, Mr Dmitrasevych says Ukraine will lack storage for 15m-18m tonnes. If the Black Sea ports remain closed, much food will be left to rot. Meanwhile, Ukraine accuses Russia of stealing grain from land it occupies; it also chides Turkey for allowing Russia to ship the cargo through the Bosporus or sell it in Turkey.

Mr Putin says he is ready to end the blockade if "all restrictions related to the supply of Russian grain will be lifted". The West says sanctions against Russia do not apply to food or fertilisers. But in an attempt to ease indirect restrictions the European Union seems set to release some frozen Russian assets to facilitate agricultural trade. Some think that Russia may also be hoping to end Lithuania's restrictions on the transport of goods by rail to the Russian exclave of Kaliningrad.

Scepticism abounds. Will Mr Putin really throw Ukraine an economic lifeline while he struggles to advance on the battlefield and threatens to widen the war? "I still don't believe Russia," Oleksii Reznikov, Ukraine's defence minister, told an online event hosted by the Atlantic Council, a think-tank in Washington. Kurt Volker, a former American special envoy to Ukraine, argues, "The talks in Turkey are not talking turkey. They are a way for the Russians to try to deflect any blame. A solution will have to be engineered by the West, through some form of convoy system, rather than negotiated with Russia." ■

Ukraine and Belarus

Common enemies

KYIV

Why a regiment of Belarusian dissidents is fighting for Ukraine

THE RUSSIANS were in front of them. The Russians were behind them. It was, says Aliaksandr Naukovich, as if "the war [were] saying, 'What the fuck are you doing here?'" His unit, a ragtag battalion of Belarusian dissidents, had lived a charmed existence until then, surviving four months of fighting with only a few casualties. But the news coming through was not good. The battalion's charismatic leader, Ivan Marchuk, was dead following an operation to stop an incursion by Russian tanks near Lysychansk, in the Donbas region. Two men were in Russian captivity, three others missing in action.

Four months earlier, the 33-year-old former children's entertainer had been living in Poland. He had fled there, like many fellow dissidents, after Alexander Lukashenko, Belarus's despot, rigged a presidential election in 2020 and crushed the resulting protests by rounding up and torturing the protesters.

Mr Naukovich's new life was comfortable and safe, if a bit boring. But the outbreak of war changed everything. Feelings of shame and guilt pulsed through him: Russian tanks, planes and missiles were swooping from his country into Ukraine, killing people—and only because men like him had been unable to drive Mr Lukashenko from office. Mr Naukovich had no military experience, but his instincts told him he should go. So he packed a rucksack and left for the border.

From exile to battle

The Belarusian's emotions were not, however, shared by the Ukrainian official guarding the border. "Purpose of journey?" she asked, barely disguising a sarcastic smile. "I've come to fight for Ukraine," Mr Naukovich answered. The response was sharp. "No entry to Belarusians. Co-aggressors." No amount of pleading, begging or argument would change her decision. Deflated, Mr Naukovich wrote about his experience on Instagram. It was a reply to that post that made him aware of a battalion that was being developed for men like him. He applied and, on March 6th, was cheerily waved through the crossing with a busload of fellow Belarusian warriors.

Speaking in a café in Kyiv in June, just before the ill-fated Lysychansk deployment, his hair shaved Cossack-style, the soldier recalled the unit's early days as chaotic to the point of comedy. Some of the men had military experience, but the vast majority were green: journalists, IT specialists, welders, lorry drivers. They received only a minimum of training. Mr Naukovich remembers how he trembled as he dismantled a Kalashnikov; he had no idea where the bullets went.

The Belarusian volunteers took only a limited part in fighting around Kyiv. But they earned their spurs during the spring months in dangerous operations near Mykolaiv in the south, and more recently have been routinely called in to support Ukrainian operations in eastern hot-spots such as Lysychansk. There are approximately 400 fighters in the unit, which now grandly calls itself a regiment.

Sergei Bezpalov, a prominent Belarusian journalist also serving in the unit, helped fine-tune the recruitment process. First, prospective applicants send details via an anonymous social-media bot. These are then vetted by "Belarusian Cyber-Partisans", a hacktivist group better known for sabotaging Russian digital logistics. The successful applicants then head to a recruitment station in Warsaw, where they are put on buses to Ukraine. They complete the formalities—army contract, military ID, guns—once they reach Kyiv. It is a big commitment for all of them. Besides the danger of war, Belarus has promised to prosecute soldiers as "terrorists" and is intimidating their families.

Despite all this, Mr Bezpalov says Belarusian soldiers struggle to win the trust of Ukrainians, especially those working in the security services. Few understand the difference between Mr Lukashenko and his opponents, he says. Recent murmuring that the Belarusian dictator might be about to send in his own ground troops has raised suspicions further. On June 24th Volodymyr Zelensky, Ukraine's president, appealed to ordinary Belarusians in a video address. "You aren't slaves and you aren't cannon fodder. A lot depends on ordinary folk like you," he said.

Belarusian observers are sceptical about the prospect of Mr Lukashenko joining the war overtly. "The posture of the Belarusian army on the border remains a defensive one, and it isn't capable of doing much else," says Anton Motolko, a journalist and the founder of the Gajun project, an early-warning system that publishes crowdsourced information about military activity in Belarus. War remains a "frightening word" in Belarus, given the huge losses the country suffered in the second world war, he continues. "You need to understand our mentality. When the Russians say, 'We can do it again,' we say 'Never again.'" But the intentions of the military elite, and of the country's erratic leader, are harder to gauge. ■

NATO, Russia and Greece

Red-hot in Alex

ALEXANDROUPOLIS

A previously sleepy Greek port has become strategically important

THE SMALL Greek city of Alexandroupolis, 15km from the border with Turkey, briefly ran short of eggs and chicken this summer. The reason was a three-day influx of hungry American marines who had arrived on the USS *Arlington*. Alexandroupolis has turned into something of a boom town of late, no longer reliant on selling coffee, cake and souvenirs to tourists from Turkey and the Balkans. For that it can thank Vladimir Putin's invasion of Ukraine, which has caused activity at the city's port to explode.

The port's geography makes it attractive to NATO's logistics planners. It is on the Aegean Sea, with good road and rail links north through the alliance's eastern flank. In particular, it provides access to Ukraine via Bulgaria and Romania. Using it as a way-station skirts the Black Sea, which Russia patrols, and the Bosporus, a chokepoint controlled by Turkey, a member of NATO but a capricious one. Better still, the port has plenty of spare capacity, unlike the two larger Greek ports of Thessaloniki and Piraeus (which also happen to be run by firms with links to, respectively, the Russian and Chinese governments).

Since Russia's invasion of Ukraine, America's armed forces have stepped up their use of Alexandroupolis to deliver weapons, including tanks, armoured personnel carriers and helicopters. At one recent point, more than 2,400 pieces of military equipment sat on the dock. When your correspondent visited on July 12th, they had just been shipped out to seven ▸▸

other NATO countries, according to Andre Cameron, the head of the American armed forces' local logistics team. Some 630 truck- and train-loads of equipment have left the port so far, he says, though he declines to say how much was Ukraine-bound. The next batch of hardware is due within a fortnight. Britain and Italy, among others, are also planning to use the port for military shipments, says Mr Cameron.

The port's chairman, Konstantinos Chatzimichail, believes it could also become a big trans-shipment point for exports of Ukrainian grain and other commodities—though it is not currently deep enough to host the largest bulk-carriers. The port may soon be an energy hub, too, with plans for two floating liquefied natural gas (LNG) terminals a few miles offshore. These will bring mostly American LNG to Greece, Bulgaria and other parts of south-eastern Europe, helping them to reduce reliance on Russian gas.

With support from the Greek government, the port authority (currently housed in a modest dockside building with a corrugated-iron roof) has drawn up an ambitious expansion plan. This would add a lot more dock space, a new cargo terminal, an extra 500-metre pier and a bypass to the local motorway. A €1.1bn ($1.1bn) upgrade will add an extra track and electrify the railway that links the port to the EU's Trans-European Transport Network. Thanks to Ukraine, says Mr Chatzimichail, "We are preparing for a world with different corridors. It will last long after the war ends."

Greece's foreign minister has described Alexandroupolis as "one of the most important elements" of the country's mutual-defence pact with America. James Stavridis, a former NATO supreme allied commander for Europe, says the port is "located at a strategic crossroads between the Aegean and Black seas, and will be of increasing potential value as events unfold in Ukraine." He says NATO could also "forward-base warships there temporarily and have them positioned to move rapidly into the Black Sea in a crisis, with the permission of Turkey." This riles Russia: the Kremlin's spokesman, Dmitry Peskov, has described NATO's increased use of the port as a "sticky" issue that "makes us nervous".

All of which makes it a sensitive time to privatise the port. The Greek government, perennially impecunious, is pushing ahead with plans to sell a 67% stake in Alexandroupolis via a 40-year concession. Offers are due on July 29th. Two of the four consortia that have pre-qualified to bid are backed by American investors and are therefore seen as friendly to NATO. The allegiances of the other two are less clear.

One of those consortia is led by Ivan Savvidis, a Greek-Russian tycoon who is based in Russia and is reported to be on good terms with the Kremlin: he used to be an MP with United Russia, the party unofficially led by Mr Putin. Mr Savvidis's chances of winning seem remote. Were he to offer the most, the bid could be blocked on competition grounds: he already holds the concession at Thessaloniki.

The final consortium bidding is widely seen as the front-runner. It is led by an entity controlled by the family of Dimitris Coupelouzos. He is one of Greece's best-known billionaires, with interests spanning energy, construction, property and media. A former Greek MP, and reportedly a donor to multiple political parties, he is also one of its best-connected.

The Copelouzos empire has long-standing business links to Russia. For over 30 years it has been a 50/50 partner in Prometheus, a joint venture with Gazprom, Russia's state-controlled gas giant, which currently provides Greece with around a third of its natural gas. Mr Copelouzos is "one of the few Greek entrepreneurs who have developed business activities in Russia, especially in the field of infrastructure," according to a report in 2020 by the Centre for the Study of Democracy (CSD), an independent think-tank. He was part of the consortium that revamped the airport in St Petersburg.


Ships full of war chariots

Mr Copelouzos was one of two Greek business bigwigs whom Mr Putin met when visiting Greece in 2001. He has hosted dinners at his home in Athens for Gazprom's top brass and Russian officials. The CSD report calls him "the most influential businessman who has been closely linked with Russia's interests in Greece for at least four decades", and his holding company, Copelouzos Group, "an intermediary for Russian interests in Greece". The company was closely involved in developing two Russian-led pipelines (one of which was shelved) to bring Russian gas and oil into Greece and neighbouring countries, notes the think-tank. A leaked American diplomatic cable about Copelouzos Group, from 2007, was titled "Gazprom by any other name?" and said that Prometheus "operates as an extension of Gazprom's network". Copelouzos Group did not respond to three requests for comment.

Supporters of the Copelouzos bid say he is no Russian stooge. "He's not inherently pro-Russian or pro-Western. He'll work with anyone. He just wants to make money," says one. In recent years he has stepped up his business dealings with America. A firm he owns is one of the main contractors renovating the American embassy in Athens. His group is also the lead investor in the floating LNG terminals that will receive American gas.

These recent deals have helped to convince some in Washington that a Copelouzos-owned Alexandroupolis would not be a strategic disaster. Nevertheless, America has made it clear to the Greek government that it would greatly prefer to see an American-backed consortium win. Some Western officials are said to be worried that, were the Copelouzos-led bunch to win, it might give Russia a better view of the goings-on at the port or, even worse, slow down its development. The terms of the tender do not stipulate a minimum level of investment.

For its part, the government in Athens led by Kyriakos Mitsotakis—loyal to NATO and very friendly with America—will not want to irk its allies by handing the port to anyone seen as close to their geopolitical rivals. A spokesman for the state fund selling the port plays down the risks, saying that, while the aim of the sale is to "maximise the economic return", it will be subject to "screening...as regards safeguarding national security and defence".

Mr Cameron, the Americans' logistics director at the port, is not distracted by the question of ownership. He says his team is already getting ready for the next shipment of military equipment, which could be in place to defend NATO's eastern border and Ukraine by mid-August. "And there will be plenty more after that." ■

Charlemagne | Let the sleeper awaken

Germans have been living in a dream

THE STORY is old and takes many forms. A fairy-tale version, recorded two centuries ago by the Brothers Grimm, tells of a certain Karl Katz, a goatherd in the Harz Mountains of central Germany. One night a straying goat leads Katz deep into a cave. Tempted by strange men, he drinks a potion and falls asleep. On waking he finds that not hours, but years have passed. The world around him has changed.

The bewilderment felt by Katz is now shared by many Germans. Some years ago Europe's richest country slipped into a state not quite of slumber, but of sleep-walking. Newly reunited and lulled by their own economic and diplomatic success, Germans settled into a comfortable belief that their system was working near-perfectly. Governmental policies came to be guided less by pragmatism than by self-deception, as leaders plied voters with intoxicating talk of perpetual prosperity with minimal friction and, of course, zero emissions.

The awakening, to the sound of Russian tanks grinding into nearby Ukraine, has been rude. In some ways Germany finds itself not, like Katz, years in the future, but decades in the past. Instead of cruising on an Autobahn towards liberal democracy, much of the wider world has skidded into ugly kinds of populism that Germans recall all too well. Rather than enjoying an era of peaceful co-operation, Germany is finding that guns and soldiers—including American ones—are suddenly back in demand. German prosperity turns out to rely not solely on the industriousness of its people, as in the cheering fairy-tale version, but also on cheap imported energy and manpower. And of course that nice Vladimir Putin, who gift-wrapped whole pipelines full of natural gas, turns out to be a wolf.

Put simply, years of complacency have landed Germany in a pickle. Yet even as the establishment comes to terms with the scale of its dilemma, and with the immense challenge of changing course, Germany's conversation with itself remains strangely parochial and lacking in urgency. Even more odd, in a country that prides itself on the openness of its democracy, is the failure to account for what went awry. Yes, some public figures have rightly been scolded for looking at Russia through rose-tinted lenses. But the systemic nature of Mr Putin's deceptions and of Germany's wilful blindness have hardly been explored. No one seems to want to talk about what happened "in the cave".

Consider Germany's woeful dependence on Russian fuels. This came about not only because Mr Putin seduced businesses and politicians with low prices, so boosting Russia's share of Germany's natural-gas consumption from 30% two decades ago to a 55% chokehold. Decisions were also taken to shrink the supply of energy from other sources. Among numerous examples of such foolishness, the best-known concerns nuclear power. When a tsunami hit the Japanese nuclear reactors at Fukushima in 2011, the government of then-chancellor Angela Merkel *flippte aus*, shutting down half of Germany's nuclear generation capacity virtually overnight. It set a closing date for the last three plants of December 2022, a target that is only now being questioned, as crippling power shortages loom. Reflecting the peculiar absence of urgency in German politics, one mooted compromise calls on the Greens to drop their insistence on closing the reactors in exchange for their liberal coalition partners dropping objections to speed limits on the Autobahn.

Yet perhaps Germany's biggest own goal was scored against its own natural-gas industry. Germans lack the luck of the neighbouring Dutch, whose giant Groningen field, a mere bicycle-ride from the border, has gushed out some $500bn worth of gas since 1959 (allowing this newspaper in 1977 to coin the term "Dutch Disease"). But neither are Germany's own reserves puny. At the turn of the millennium Germany was pumping out some 20bn cubic metres (bcm) of natural gas a year, enough to meet close to a quarter of national demand. But although geologists think that Germany holds at least 800bcm of exploitable gas, production has not grown but rather collapsed, to a mere 5-6bcm, equivalent to just 10% of imports from Russia.

Fear of fracking

The reason is simple. Geology dictates that nearly all Germany's gas can only be extracted using hydraulic fracturing, but the German public holds an irrational fear of fracking. Not just a fear: in 2017 Ms Merkel's government passed a law that essentially bans commercial fracking, even though German firms have been using the technique in the country since the 1950s, with not a single reported incident of serious environmental damage.

The causes of the public's fear are not hard to find. In 2008 Exxon, a big American oil firm, proposed expanding the use of fracking at a site in northern Germany. As environmentalists piled in to protest, the increasingly influential Green party joined the fray. So did Russia Today, a pro-Kremlin channel, blaring warnings that fracking causes radiation, birth defects, hormone imbalances, the release of immense volumes of methane and toxic waste, and the poisoning of fish stocks. No less an expert than Mr Putin himself declared, before an international conference, that fracking makes black goop spew out of kitchen taps.

Germans do seem to like fairy tales. "Eventually we gave up trying to explain that fracking is absolutely safe," sighs Hans-Joachim Kümpel, a former head of the main government advisory body on geoscience. "I can't really blame people who have no understanding of subsurface geology, if all they hear is horror stories."

German gas producers say that given a chance, with today's even cleaner and safer new fracking methods they could double their output in as little as 18-24 months. At that level Germany could be pumping gas well into the next century. That would trim imports by some $15bn a year. And that is no fairy tale. ■


CSC:Miami
Content Supply Chains must be forensic in their detail.
Television broadcasters have long relied on instinct, market knowledge and spreadsheets to forecast TV viewership - but instinct needs to partner with information; market knowledge is never enough; and spreadsheets are no way to excel.
As witness to these challenges, Fractal undertook its own detective work.
By combining AI, data engineering and user-centric design, Fractal created an industry-first TV forecasting system for Europe's leading media and entertainment company. The result? Up to 30% improvement in forecast accuracy.
Fractal: perfectly targeted and timed TV, no drama.
fractal

Climate policy

Tick, tick, boom

WASHINGTON, DC

A recalcitrant senator has scuttled Joe Biden's climate plans. The prospect for federal legislation anytime soon looks faint

EVEN AS AMERICANS and Europeans swelter in heatwaves, the chance of Congress passing serious climate-change legislation has gone cold. When the Democrats gained unified control of the White House and Congress 18 months ago, they had grand ambitions for a swift decarbonisation of America's economy. By 2030 emissions were to be half their level in 2005. By 2035 all electricity would be produced without carbon pollution. And by 2050 emissions would, in line with the temperature goals of the Paris agreement, reach net zero.

All this was to be accomplished by spending hundreds of billions of dollars on tax credits and subsidies for clean energy and electric vehicles; creating the first national clean-electricity standard; mobilising Americans to retrofit homes; and creating a Civilian Climate Corps to employ thousands of people in conservation work. But as the negotiations dragged on over months, those ambitions steadily diminished. On July 14th they seemed to have gone up in smoke.

The proximate cause was Joe Manchin, the old-style centrist Democratic senator from West Virginia. Because the Democrats control the narrowest possible majority in the Senate, Mr Manchin's vote is essential to pass legislation that Republicans unanimously oppose. In December he rejected Build Back Better (BBB), President Joe Biden's signature legislative proposal that devoted $555bn to climate measures. Since that setback, Chuck Schumer, the Democratic majority leader in the Senate, had been quietly working with Mr Manchin to craft a bill more to his liking, which would have included some concessions to the fossil-fuel industry (with which the senator is closely associated), no clean-electricity standard but at least a rumoured $300bn in tax credits for clean-energy projects. On July 14th Mr Manchin apparently walked away from that deal, too.

Still, some Democratic bungling was also to blame. In July 2021 Mr Manchin and Mr Schumer signed a deal to devise a scaled-down version of BBB that would have limited spending to $1.5trn. But by the autumn Mr Schumer had got behind a more maximalist iteration of that deal. The West Virginian pulled out. Inflation, a bugbear of Mr Manchin's, was rising and the president's approval rating was slipping. Colleagues pleaded with him that the new deal would help reduce energy costs, and that revenues raised from corporate taxes would help pay down the national debt. But the senator was spooked.

The latest news leaves Democrats in the lurch. "It's a colossal failure to get nothing done on climate," says Ro Khanna, a Democratic congressman from California. Restrictions—like a fee on methane leaks or nationwide caps on emissions—had always seemed tough for Mr Manchin to accept. But he had signalled openness to plans for investment in solar, wind, geo-

→ Also in this section

thermal and carbon-capture projects. That Democrats failed to secure those is therefore "a big miss", says Mr Khanna.

The costs to the environment look significant. To hit the 50% reduction target by 2030, America would need to cut emissions to below 4.2bn metric tonnes of carbon-dioxide equivalent (CO_2e). Modelling by the REPEAT Project, a research outfit at Princeton University, shows by how much the country might now overshoot that. Without any change to its current policies, it finds that America will exceed the target by 32% in 2030, emitting an additional 1.3bn tonnes that year (see chart). Had last year's BBB deal become law, 91% (or 1.2bn tonnes) of the excess could have been shed. The recently scuppered Senate deal was modest only by comparison, reducing annual emissions by 67-75% of that goal, or 800m to 1bn tonnes.

Mr Biden is left with few options. He can attempt to pursue sweeping environmental policy by executive order, knowing his ambition will be circumscribed by existing laws and future lawsuits. "Plan B is going to be a bunch of standards and regulations. Those are much more blunt instruments", which cannot boost the economy through investment, says Leah Stokes, a professor of politics and environmental policy at the University of California, Santa Barbara. This outcome would be all-too-familiar for the former vice-president. Barack Obama was put in the same position after it became clear that Congress would not enact his climate agenda. In a haunting precedent for Democrats, the Waxman-Markey bill of 2009, which would have established a cap-and-trade system for greenhouse-gas emissions, passed the House of Representatives but failed to come up for a vote in the Senate—despite the party's control of both chambers.

So far, environmental agencies run by Mr Biden's appointees have held off on issuing the most demanding rules. This may have been from fear of upsetting Mr Manchin while legislative negotiations were ongoing. Now there is little holding the president back. In a speech delivered in a former coal plant in Massachusetts on July 20th, Mr Biden pledged to use his executive powers to combat the climate crisis, which he called a "clear and present danger". He did not declare a national emergency over climate change (as some activists had wanted), which would have enabled him to cancel certain oil-drilling projects and compel the construction of renewable-energy projects. Environmental agencies could set in motion rules enforcing lower pollution limits for household appliances, cars, lorries and power plants. In theory, the administration could also phase out the programme that leases federal land for oil and gas drilling. In reality, it has been desperately trying to expand it over the past two months as the political cost of high petrol prices becomes clear.

Hearteningly, some notable efforts are under way in the states. Gavin Newsom, the governor of California, recently signed a budget authorising $54bn in new spending to mitigate the effects of climate change. The California Air Resources Board, perhaps the second-most significant environmental agency in the country, has long operated a cap-and-trade programme. A new mandate by the board requires that 60% of electricity produced by 2030 be drawn from renewable sources, up from around 35% in 2020. It is likely to decide this summer that all new cars sold in the state must be electric or zero-emission by 2035. Though they vary in their stringency, other states including Illinois and Nebraska have passed legally binding clean-electricity standards and emissions-reductions targets.

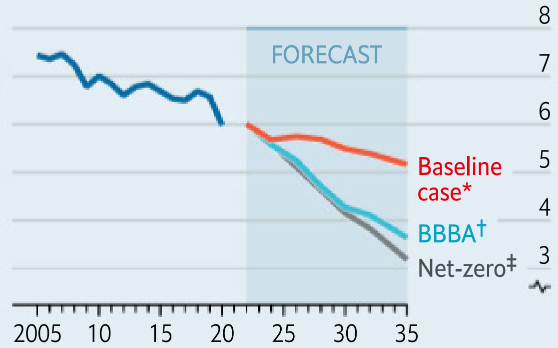
Substantial as these subnational efforts are, they will not be enough without significant federal action on climate change. Some Democrats are still hoping that Mr Manchin will come around before mid-term elections in November, after which Republicans are expected to regain control of at least one chamber of Congress. The senator claims he is waiting for inflation statistics for July to make up his mind, and is willing to pursue climate talks in September. Democratic colleagues say they have watched that film before.

More likely is that a divided Congress will doom the prospects of legislation for at least two years. A Republican presidential victory in 2024 would probably do so for at least a further four after that. In a report released in April, the Intergovernmental Panel on Climate Change found that keeping global warming below 1.5°C of pre-industrial levels would require global emissions to peak before 2025. By 2030 they would need to drop by 43% from their levels in 2019 for 1.5°C. That would require an extraordinary mobilisation. Not long ago, America seemed at last ready to do its part. No longer. ■

A load of hot air

United States, greenhouse-gas emissions

Gigatonnes of CO_2 equivalent



*After passage of the Infrastructure Investment and American Jobs Act †Build Back Better Act, Nov 2021 ‡By 2050

Sources: EPA; REPEAT Project

Congress and Ukraine

The struggle for hearts and minds

WASHINGTON, DC

Already, America risks growing weary of Ukraine's long war

PRESIDENT JOE BIDEN pledges to support Ukraine for "as long as it takes". His administration has spent about $8bn on military aid alone. In May, Congress passed a $40bn supplemental budget—more than Mr Biden had asked for, and more than the annual defence budgets of most European allies—to assist Ukraine and deal with the war's global consequences.

But nearly six months into the fight, with the prospect of a long war to come, even Mr Biden's closest allies are asking whether America might soon tire of the burden. The president is more unpopular even than Donald Trump was at this point in his presidency. Inflation has hit a four-decade high. And Republicans are set to make important gains in mid-term elections in November, where they are likely to take control of the House of Representatives and possibly also the Senate.

In an article in *Delaware Online*, Chris Coons, a Democratic senator and close ally of Mr Biden's, praised NATO's show of unity at a summit in Madrid last month. He also said he was "concerned about the commitment of the American people and its elected leaders to stay the course as the invasion grinds on." Vladimir Putin, Russia's leader, he separately told *The Economist*, "is counting on the West losing focus".

The aid for Ukraine is meant to last only until the end of September. Few in Congress think another big package can be passed before the mid-terms; many say it will probably be hard to get lawmakers to agree to one thereafter. "It will be an uphill battle," says a Republican Senate staffer. "The sales pitch from the last time is not good enough now, because the war has fundamentally changed and the domestic situation at home is different."

Americans broadly support helping Ukraine, and many want the government to do more despite the economic price they must pay for that. According to a YouGov poll conducted this month for *The Economist*, 39% of respondents—a plurality—think that the Biden administration's policy should be "tougher". Half or more support various forms of assistance. But given America's polarisation, Republicans are warier than Democrats. About one in five Republicans say Mr Biden should be less tough. A plurality, 43%, do not want to give more money to Ukraine. They are also less likely than Democrats to favour giving it advanced weapons.

Congressional aides point to three factors likely to affect support for Ukraine. The first is the complexion of Congress after the mid-terms. If Republicans retake one or both chambers, it will matter which faction in the party has the upper hand. Will it be the old establishment represented by Mitch McConnell, the Senate minority leader who in May took senior colleagues to Kyiv to meet Ukraine's president, Volodymyr Zelensky? Or will it be the devotees of Mr Trump and his MAGA ("Make America Great Again") nativism?

Mr Trump still holds much of the party in thrall. He denounced the recent aid for Ukraine, saying: "The Democrats are sending another $40bn to Ukraine, yet America's parents are struggling to even feed their children." His base might be energised if, in coming weeks, he announces he will run for president again in 2024. "Fact is if the Republicans take over the House in 2022 US support to Ukraine will come to a halt," tweeted Ruben Gallego, a House Democrat. Republican leaders, he predicted, would not be able to stop Trumpists like Marjorie Taylor Greene and Matt Gaetz "from dictating our Ukraine policy". Mr Gaetz shot back: "Ruben is correct."

Such boasting amounts to "wish-casting", says Eric Edelman, a former Pentagon official under George W. Bush. MAGA disciples are still a minority among congressional Republicans. Still, he frets, they could grow larger after the elections. If they make up a bigger share of Republicans in the House—where spending bills originate—and particularly if they hold the balance of power, it will become harder to provide more aid to Ukraine. Few expect the fickle Kevin McCarthy, the Republican House leader, to resist the Trumpian right, even though he has praised Mr Zelensky as "a modern-day Winston Churchill". Pressure will increase on the Senate (whether controlled by Democrats or Mr McConnell's Republicans) to tame the excesses of MAGA-world. The matter of Ukraine, says Mr Edelman, is part of "the larger battle for the soul of the Republican Party".

A second factor is the extent to which allies are willing to keep helping Ukraine confront Russia. "How much are our European partners doing? That's literally the first question I get," says Mr Coons. For most Americans, he notes, Ukraine is "half a world away". European countries are closer to Russia's military threat, and also more vulnerable to the danger of escalation, the loss of Russian energy supplies and the outflow of refugees.

Perhaps the biggest consideration is the third factor: Ukraine's progress on the battlefield. If the Biden administration can show that it is helping Ukrainians to gain ground, rather than getting bogged down in another "forever war", support will be easier to rally. But a protracted conflict looks all too likely. Ukraine has lately had success in using HIMARS, a guided-missile launcher supplied by America, to strike command posts and ammunition dumps behind Russia's front line. But Ukrainian forces are still heavily outgunned and on the defensive.

Shouldering the burden

Mr Biden's aim in the war is unclear. His administration has stopped talking about helping Ukraine "win", and instead speaks of preventing the country's defeat. It is delivering HIMARS in small packages of four launchers at a time (it says that it takes time to train Ukrainian forces); three lots have so far been sent, and one more has just been promised. But Mr Biden's central concern is plain: to avoid a direct conflict between NATO and a nuclear-armed Russia. America has demanded assurances that the 84km-range GMLRS munitions provided with HIMARS will not be fired at Russian territory. And it has so far refused to provide ATACMS munitions, which have a range of about 300km.

To some the war is unwinnable: they say Mr Biden should make haste and find a diplomatic deal. But for Ukraine's supporters, whether on the left or right, the answer is for Mr Biden to hurry up and win: by giving Ukraine more military help, doing it faster and accepting more risk. "If they think stalemate is the answer, or even if they are not intentionally playing for a stalemate," Mr Edelman says of the Biden administration, "they're going to lose on the battlefield, and they're going to lose the battle for public opinion at home." ■

Public transport

Derailed

CHICAGO

American public transport is facing a post-pandemic reckoning

For most of the past decade, Doug Anderson, a bartender, has commuted the 40 minutes from his home in Logan Square in north-western Chicago to his workplace in Streeterville, in the centre, on the city's L train. When his shift ends at 4am he shuts up and heads home. But increasingly, he says, getting back is "a nightmare". At those hours, trains run infrequently; these days they often fail to show up at all, meaning lengthy waits. Mr Anderson's journey often takes twice as long. He does not always feel safe on empty platforms in the early hours, so he sometimes carries a knife.

Chicago's public-transport system is just one of many across America that have been badly damaged by the pandemic. When covid-19 hit America, passenger numbers collapsed. Nationwide, in the second quarter of 2020, they fell to a quarter of what they had been in the same period in 2019. But though bars are now open again, planes packed and roads busier than ever, trains and buses remain relatively quiet. According to the American Public Transportation Association (APTA), passenger numbers in early July were still around half their level before the pandemic. New York City's have climbed back to only around 60% of what they were. In Washington the number of average daily boardings on its Metro so far this year is less than a third of what it was in 2019.

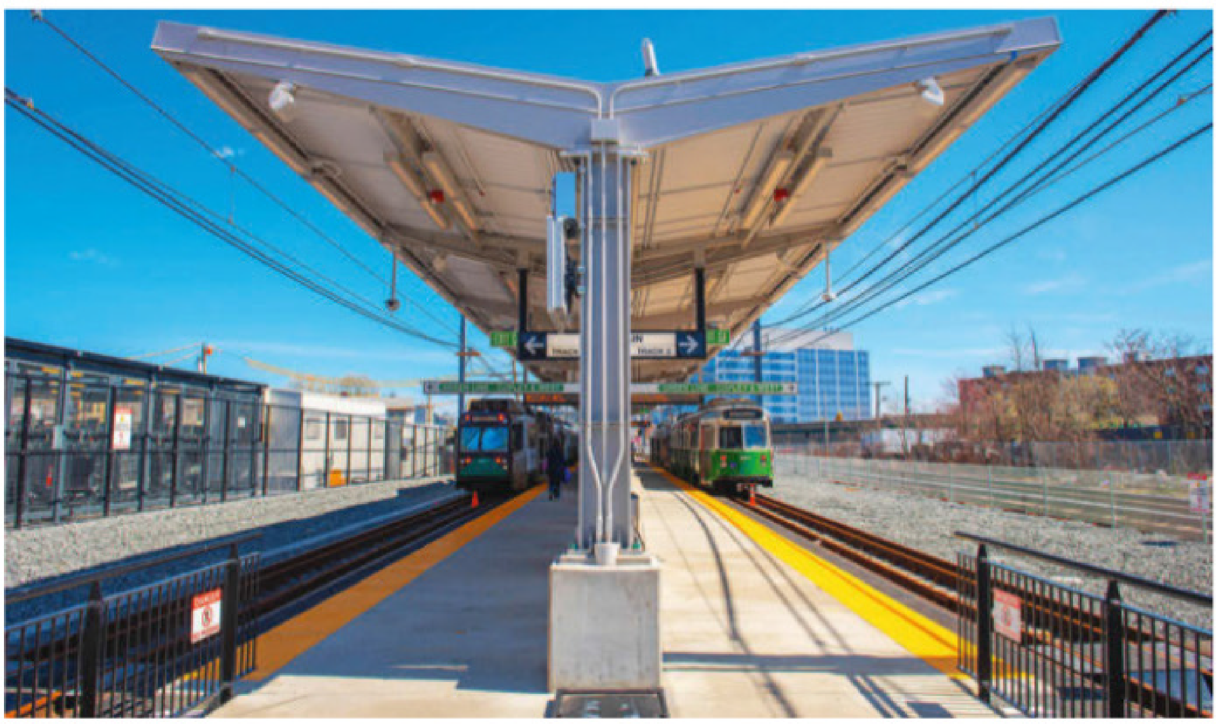
Yet the pandemic could have ravaged America's public transport systems. The number of fares collected plummeted as millions began to work from home. Sales-tax revenues, which in many cities also fund transport, fell sharply early on. But in fact, big cuts to service were avoided on the whole. In many cities fares already covered only a relatively small share of spending, and they could make up the rest from their budgets. Even big older cities, where fares cover a higher share of the costs, were able to benefit from a federal-government bailout of $70bn through the CARES Act and other laws. As a result, says Yonah Freemark of the Urban Institute, a think-tank in Washington, most agencies did not have to cancel many bus or train services. The Los Angeles Metro system, among others, was even able to stop charging people to use its buses for almost two years.

Transport systems are nonetheless struggling to get back to normal. Earlier this month Dorval Carter junior, the president of the Chicago Transit Authority (CTA), wrote an article in the *Chicago Tribune* apologising for the city's continually sub-par service, which he put down to staff shortages. Many bus and train drivers have left to take more lucrative jobs driving delivery vans; others have retired. Mr Carter has promised to redouble recruitment efforts. Other cities have even bigger problems. In Washington in October, Metro pulled more than half of its trains from the network for safety checks after one derailed. Most of those are not yet back in service, with the result that trains are packed even though passengers are fewer.

Poor service makes it even more difficult to lure riders who have the option of working from home. In Chicago the CTA has experimented with cheaper fares and Metra, the city's suburban commuter rail system, has offered hefty discounts. But as with Mr Anderson, most passengers care as much about reliability, safety and speed as they do about cost. It does not help that systems that were set up to shuttle people into and out of downtowns at rush hour must now adjust to more irregular patterns of travel. Crime has risen, too. Chicago and New York have sent more officers to patrol trains after shootings and other violent incidents. In April, ten subway passengers were shot by a gunman in Brooklyn; remarkably, none died.

Funding is not the issue. More money than ever is available, thanks to the infrastructure act that President Joe Biden signed into law last year. Paul Skoutelas, president of the APTA, enthuses about the possibilities. But he admits that the sector is in its "most vulnerable moment". Knowing what to invest in is tricky. Before the pandemic, bus use had fallen in America for decades, as cars became more affordable for the relatively poorer people who most often travelled by bus. Networks were neglected. By contrast light-rail projects and subway systems thrived, as more white-collar workers commuted to city centres. But since the pandemic they have suffered as those workers have stayed at home, and mostly poorer folk are again filling buses. Bus passenger numbers fell the least among transport systems, and are now closest to pre-pandemic levels. This divergence is creating "existential questions" for public-transport providers, says Leanne Redden, executive director of Chicago's Regional Transportation Authority, such as whether downtown commuting will ever come back, and if transit agencies need to rethink their central purpose.

Another fear is that, even as new projects are drawn up, some passengers may already have disembarked for good. Americans are driving more than they were before the pandemic. That bodes badly for dense cities like Chicago or Washington. Earlier this year Chicago's mayor, Lori Lightfoot, called Chicago a "car city". In fact, before the pandemic, over half of its workers commuted by public transport to the Loop, its central business district, and the wider downtown area. Decent public transport helps explain why the city has thrived as competitors such as Detroit or Cleveland declined. If Chicago's is not restored, the city could get into trouble. ■



On the wrong track

Lessons from a senseless slaughter

Lifting the veil on Uvalde

A report sheds light on the deadliest school shooting in Texas's history

"IT COULD HAVE been worse. The reason it was not worse is because law-enforcement officials did what they do." So said Greg Abbott, the governor of Texas, at a press conference in May, the day after 19 children and two teachers were fatally shot at an elementary school in Uvalde by Salvador Ramos, an 18-year-old. Mr Abbott must feel sheepish. On July 17th a committee of the Texas House of Representatives released a report on its investigation into the shooting. The image that emerges from the 77 pages is of a police force in chaos. The tragedy at Robb Elementary School will not only be remembered because it was the deadliest shooting ever at a school in Texas, but also because the response was botched.

The inquiry revealed that it took 73 minutes from when the first officers arrived at the school to when they entered the classroom and confronted the shooter there. The delay deprived victims of medical care that might have saved lives, the report notes. In all, 376 law-enforcement officials were deployed to Robb Elementary. None took command. And they disregarded training on how to neutralise an active shooter in a school setting, which has been established practice since the shooting at Columbine High School in 1999.

Police also wasted valuable time searching for a key to the classroom (even though the door may not have been locked) and did not share crucial details with each other, including that students were phoning for help from inside classrooms targeted by the shooter. Law enforcement "failed to prioritise saving the lives of innocent victims over their own safety," the report concludes.

The police are now in the public's crosshairs. Residents of Uvalde, a town of 15,000, are calling for the school-district police chief to be sacked. The town's acting police chief was placed on administrative leave within hours of the report's release.

The investigation and its findings are vital. But some worry that a focus on police error will detract from other failings, without which the shooting might not have happened in the first place: a lack of mental-health treatment, and lax rules on gun purchases. In the Lone Star state there is no political momentum to tackle either of these. As Texans search for lessons from Uvalde, they may be missing the biggest ones.

Maternal health

Mortal danger for mothers

WASHINGTON, DC

Already the worst in the rich world, America's maternal mortality rate looks set to rise with the end of Roe v Wade

The young woman's waters broke when she was 19 weeks pregnant. The doctors told her the baby stood no chance of surviving, but that if the pregnancy continued the woman risked an infection, which might lead to sepsis and kill her. They could not perform an abortion, though. Months earlier Texas, where she lived, had passed a law banning terminations after detection of a fetal heartbeat unless there was danger "of death or a serious risk of substantial impairment of a major bodily function". This wording worried the doctors: if they did an abortion while she still appeared healthy and the baby had a heartbeat, they could be prosecuted. They suggested she fly to Colorado instead.

So she did: booking a seat, as advised, near the toilets in case she went into labour. She reached the clinic in time and is now healthy. But things could have turned out differently, if she had not had the cash for a plane ticket, say, or if no clinic had been able to give her an appointment. "It is barbaric to put a woman in distress on a plane to another state," says Carole Joffe, a professor at the Bixby Centre for Global Reproductive Health at the University of California, San Francisco. "It is not how you do medicine in a civilised country."

America has the highest maternal mortality rate in the industrialised world. With the overturning of *Roe v Wade*, the Supreme Court ruling that abortion was a constitutional right, it will probably rise. International comparisons are imperfect but in 2018, while in the Netherlands and Norway there were no more than three maternal deaths for every 100,000 live births, in America there were 17. Most states that now ban abortion, or soon will, allow exceptions if a woman's life is in danger. But abortion providers and obstetrician-gynecologists (OB-GYNs) say laws tend to be so vaguely worded that they often do not know if they are breaking them.

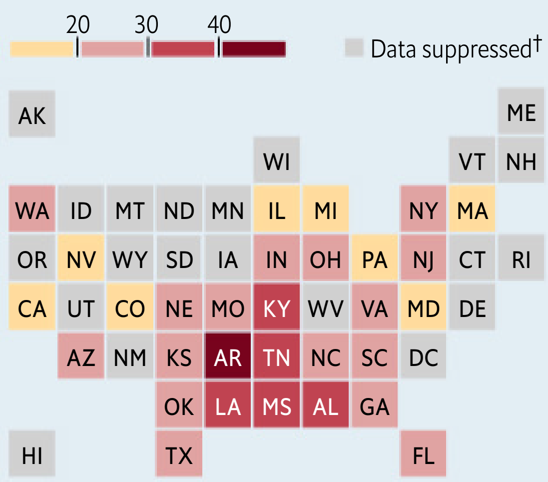
Nisha Verma, an OB-GYN who performs abortions in Georgia, where they will soon be illegal after six weeks, says such laws are not written by medical experts—and it shows. They fail to recognise that a woman can develop a condition that may not put her in immediate danger but that, without an abortion, could nonetheless kill her. Waters breaking before a fetus is viable is one such condition; cancer that necessitates chemotherapy (which may hurt the fetus) is another. The list goes on: high blood pressure, cardiomyopathy and renal disease are all conditions that can arise or worsen during pregnancy. Reports have already surfaced of women denied crucial medical care to complete a miscarriage or end an ectopic pregnancy for fear it could be construed as aiding an abortion.

Doctors should not have to weigh up whether following their training and instinct will put them in legal jeopardy. Besides the personal toll, it raises the possibility of conflicts that have no place in medicine. "The dystopia I fear is a situation in which pro-life doctors are saying, she has a 50% chance of living, while pro-choice doctors and lawyers are saying she has a 50% chance of dying," says Ms Joffe. "And while they argue, the woman dies."

No country for young mothers

United States, maternal mortality rates*

2018-20, deaths per 100,000 live births



*Including deaths while pregnant or within 42 days of pregnancy ending †Due to reliability or confidentiality restrictions

Source: National Centre for Health Statistics

Bans mean abortions are routinely delayed, exacerbating medical problems in pregnancy. Shelly Tien, a doctor at a Planned Parenthood clinic in Jacksonville, Florida, says that soon after Texas's "heartbeat bill" took effect last September she saw a woman who sought an abortion at seven weeks but did not get to Florida until 21 weeks—a common scenario, she says. She expects to see many more such patients among those now "flooding into Florida" from nearby states, including Alabama (where is abortion is illegal) and Tennessee (where it soon will be).

Dr Tien warns too of a "terrible snowballing effect" when the time it takes for a woman to raise funds for an abortion, and the necessary travel, means her pregnancy progresses so far that the cost of the procedure rises. She then delays again while she raises more funds. This will worsen, Dr Tien says, as clinics become busier.

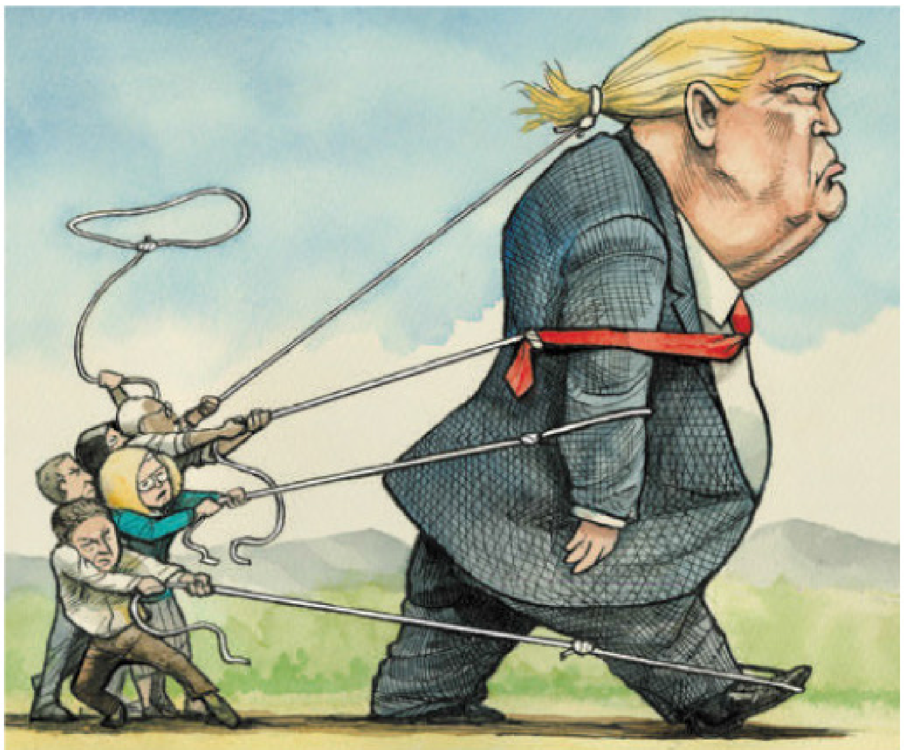
The states in which pregnant women are probably in greater danger are those that have long had high maternal mortality rates. Alabama, Arkansas, Kentucky, Louisiana, Mississippi and Tennessee score worst (with over 30 deaths per 100,000 live births). They have also long had restrictive abortion regulations and, following the end of *Roe*, have either banned abortion or plan to. There is no proven link, but it seems likely that some women have died when they needed abortions but had been unable to get them.

Yet there are other causes, too. States with high maternal mortality rates tend to share three other features: large black populations, high levels of poverty and poor access to health care. In Mississippi, which provided the case that the Supreme Court used to overturn *Roe*, Medicaid is cut off 60 days after a woman gives birth, yet many problems arise after this time. Black women (who made up the majority of patients in the state's last clinic before it closed for good on July 6th) are nearly three times likelier than white women to die from pregnancy-related complications.

Another reason why America's maternal mortality rate has long been high, say doctors, is a lack of OB-GYNs across the country. This too may worsen without *Roe*. If doctors fear their expertise will clash with badly written laws, putting them at risk of imprisonment, fewer people may want to specialise in the field. Those who do, in states in which abortion is illegal, may miss a crucial part of their training. Where access to health care is already poor, the harms will be particularly grievous. And so the tragedy piles up. The states with higher rates of pregnancy-related deaths are also among those in which more babies die before they turn one. ■

Lexington | Trumped

The January 6th committee has hobbled Donald Trump, but it has not stopped him



America should count itself lucky that Donald Trump tried so hard to overturn the election of 2020. That is the biggest obstacle—though far from an insurmountable one—standing between him and a return to power.

Democratic leaders have been saying for years that Mr Trump and his cult-like following threaten the republic, and they're right. They have not acted accordingly. Through a mix of magical political thinking, internal bickering and mismanagement, they have sharpened and handed back to him two of his three most potent causes: crime and illegal immigration. Sheer bad luck might help excuse their bestowal of the third, economic performance. They threw in a botched execution of the withdrawal from Afghanistan. In a recent CNN poll four out of five Americans surveyed said things were going badly for the country; more than two-thirds felt President Joe Biden had neglected the most important problems.

Even memories of how Mr Trump whipped up the attack on the Capitol might have faded, or been challenged and revised, were it not for the excellent work of the January 6th committee investigating the insurrection. The committee's nine members have not only kept the political class, and much of the rest of the nation, from looking away from that day. They have obliterated claims that the mob acted spontaneously, and that Mr Trump had no idea it might use violence to stop the certification of Mr Biden's victory.

Consider a world without the committee: revisionists would be far freer to minimise Mr Trump's role in rousing the mob and to burnish or invent memories of his accomplishments. Instead, the panel has been reminding the party's leaders, operatives, donors and even some of the rank and file just how debilitating Mr Trump's leadership was. True zealots still delight in rallying to Mr Trump, but Republican congressmen who were merely cowed are rediscovering how tiresome it is to defend him.

Other potential Republican candidates sense an opening. Ron DeSantis, Florida's governor, has declined to say he will not run for president if Mr Trump does; he has been courting the Fox News audience and recently invited Republican governors and donors to a day-long conference in Fort Lauderdale. Mike Pence, the former vice-president who stood up to Mr Trump and certified the electoral vote, has refused to regret that choice or forswear a run; he is endorsing competitors to Mr Trump's own election-denialist candidates in some races. Mike Pompeo, Mr Trump's secretary of state, has shed more than 40kg and has said that if he decides to run he will do so "wholly independent" of anyone else's choice.

But do not imagine that Mr Trump is fading away. "Half of GOP voters ready to leave Trump behind, poll finds", read a recent headline in the *New York Times* about a survey it conducted with Siena College. It is wiser to emphasise the darker view, that the glass remains half empty. The intense loyalty to Mr Trump of half the Republican base means that, the more Republican candidates choose to run, splitting his opposition, the better it will be for him. Betting markets are placing a higher probability on Mr Trump's being the next Republican presidential nominee than on Mr Biden's being the next Democratic one.

In a sign that the committee's work is not reaching, or at least not persuading, many Americans, the same poll found that fully three-quarters of Republican primary voters believe that on January 6th Mr Trump was "just exercising his right to contest the election". If Mr Trump reached the general-election campaign, he would be able to count on the polarisation of American politics to draw the party together behind him, as in 2016.

Anyone who doubts the loyalty and even love that millions of Americans feel for Mr Trump should attend one of his rallies, or just watch one on YouTube. Each is a vicious, exhausting festival of the counterfactual, and his crowds glory in it. If Democrats had not cheated Mr Trump out of his second term—he actually won all 50 states "plus the islands, too"—Iran would have signed a nuclear deal within a week; just three weeks in, he would have finished his wall along the border with Mexico, and foreign adversaries would not be emptying their prisons into America; America's streets would not be "flowing with the blood of innocent crime victims"; petrol would be cheap; Vladimir Putin would have left Ukraine alone, because Mr Trump would have withdrawn so smoothly from Afghanistan. Indeed, during Mr Trump's term of office, "everybody was happy"; it was "the greatest period, I believe, in our country's history, in many ways". At least, until "the horrible plague" came in from China.

The enemy within

Most chilling are the indications of how Mr Trump would govern—"rule" would be a better word—if he regained the White House. At a recent event in Las Vegas he said he regretted allowing Democratic mayors to retain control of their cities. "I wouldn't do that a second time," he said. A day later in Anchorage, Alaska, he left no doubt as to who the enemy was: "Despite great outside dangers, our biggest threat remains the sick, sinister and evil people from within our country."

"We will fight for America like no one has ever fought before," he said, after 90 minutes of fear-mongering and rambling. "The tyrants we are fighting do not stand even a little chance."

It's like sitting in gridlocked summer traffic as a New York cab driver leans on his horn; you feel helpless, bludgeoned, you just want it to stop. But Mr Trump's blaring matters. His talk is dangerous regardless of what he does—dangerous if he does not run; more dangerous if he runs and loses again; most dangerous if he runs and wins. Had Mr Trump conceded defeat, however ungraciously, his path back to the White House would be wide open. His own broken psyche, and the work of the January 6th committee, have given his opponents in both parties a chance to stop him, and there is no more urgent political project. ■

Egypt's political prisoners

Too many to count

The president wants dialogue, but he still keeps his critics behind bars

IT WAS HARD to believe. At an annual breakfast gala in April near the end of the Muslim holy month of Ramadan, President Abdel-Fattah al-Sisi suddenly wanted to hold talks with his downtrodden opponents. "The homeland is big enough for all of us," he said. "Differences of opinion need not spoil it." To show goodwill he revived a presidential pardons committee. Several thousand ordinary prisoners were freed, but very few political ones. All the same, not since toppling an Islamist government in a coup in 2013 has the former general struck so conciliatory a tone.

Alas, the national dialogue officially set to begin this month is unlikely to reverse Egypt's slide into despotism. The outlawed Muslim Brotherhood, which ran the previous government and has the largest contingent of political prisoners, has been excluded from the talks. Opposition parties taking part are doing so to get their members freed. Hamdeen Sabahi, a moderate left-wing opposition leader, was shown on television embracing Mr Sisi after the dialogue was announced. Two days later a close comrade was freed.

When Mr Sisi took power, he at first cracked down on his Islamist foes, especially the Muslim Brothers. But in recent years the repression has been aimed more widely—at anybody who, for instance, criticises the president's economic policy, or complains of sexual harassment (especially by someone well-connected), or offends conservative mores. All such critics risk going to jail. Fair trials are rare.

Least accountable for abuses are the security services. In January a leaked video appeared to show torture at a Cairo police station. Rather than investigate the police, the state prosecutor put the alleged victims on trial, accusing them of undermining the police by fabricating a tale of torture.

→ Also in this section

Public speech is controlled ever more rigorously. After Mr Sisi came to power, the intelligence services bought several of the main television channels. Officials feed talking points into current-affairs programmes and approve the scripts of soap operas. Even novelists must kowtow. The only Egyptians who publicly denigrate Mr Sisi live abroad. To silence them the security services often arrest their relatives. Human-rights defenders are hit with travel bans, their assets often frozen to make life miserable at home. Hundreds of websites deemed critical are blocked.

Despite the talk of reconciliation and some token releases of political prisoners, the pace of arrests for political reasons, including simply making Egypt look bad, has not abated. In recent weeks Egyptians have been arrested for panning the government on Facebook, for posting videos on TikTok of people dancing in a mosque, and even for encouraging people to meet near midnight dressed as Batman.

The number of people behind bars for non-violent opposition is impossible to calculate but must number in the tens of thousands. A main reason for the imprecision is that much of the justice system has come under the control of Egypt's shadowy Supreme State Security Prosecution (SSSP). Its caseload under Mr Sisi has exploded from 529 new cases in 2013 to 2,800 last year. Suspects are usually accused of joining a terrorist organisation or spreading false information. Often they are not told ▸▸

which militant group they are accused of joining—"for reasons of national security".

In the year after Mr Sisi's coup, rights groups counted about 45,000 dissidents who had been taken to court. The tally of cases was even uploaded onto a widely shared open-source document called Wiki Thawra (Wiki Revolution). But it soon became harder to track the numbers. Once a critic deemed worthy of silencing is accused of being a terrorist, his or her case is handled by the SSSP, which often denies access to lawyers for the defence and keeps the evidence and case files secret—once again, on national-security grounds. Prisoners then become harder, sometimes impossible, to count or trace.

Another difficulty in totting up the numbers is that a single case can embrace a multiplicity of defendants. A rights group that scrutinises the SSSP found that it opened 2,800 cases last year. As of June 7th only nine of them had been referred for trial, encompassing 336 defendants. In 2016 the Arabic Network for Human Rights Information, an Egyptian rights group that was forced to close down this year, estimated that the number of political prisoners had ballooned to 60,000. Its researchers' latest reckoning is 65,000. Some speculate it is higher, others lower. Many thousands of unknown prisoners are thought to be stuck in pre-trial detention, where prisoners often languish for months and sometimes years.

Kafka comes to Cairo

Egyptian law sets a two-year limit for suspects to be tried or freed. But prosecutors get round this simply by reassigning suspects to new cases, a device so common that it is known as "rotation". The SSSP can thereby reset the clock and hold suspects indefinitely without trial, even if their initial offence is only to have posted a flippant remark on the internet.

Egypt's most prominent political prisoner, Alaa Abd el-Fattah, a blogger and computer programmer, was arrested in 2013 for allegedly inciting a protest against Mr Sisi's draconian ban on protests, which are now exceedingly rare. After serving five years, he was rearrested and spent over two years in pre-trial detention. In December a court sentenced him to another five years, this time for sharing a Facebook post about abuse in prison. Since April, he has been on hunger strike in a bid for freedom.

Interrogators regularly torture suspects with electric shocks or hang them by their limbs in the hope that they will confess. Sentencing has become more severe. Egyptian courts condemned at least 356 people to death last year, the highest number in the world after China and Iran.

Prisons themselves are houses of horrors. Inmates are often beaten and denied visits, fresh air and urgent medical care. Cells for solitary confinement can be too small to lie down in. More than 1,000 people have died in detention since 2013, including the president Mr Sisi toppled, Muhammad Morsi, a leading Muslim Brother. He died of a heart attack in court in 2019 after being denied treatment in prison for high blood pressure and diabetes. When Ayman Hadhoud, a 48-year-old economist critical of the government, died in police custody in March, his family was not notified until over a month later. The public prosecutor called it a heart attack and denied that there were signs of torture, as claimed by rights defenders. It is reckoned that last year a detainee died from medical complications on average once a week.

Mr Sisi has said there are no political prisoners. Officials say that instances of torture are very rare, attributing them to bad policemen. But the regime is twitchy about such allegations. This year jails were relabelled "reform and rehabilitation centres". Prison wardens have been renamed "directors". Some inmates are being transferred to two new prison complexes with supposedly better conditions. Mr Abd el-Fattah was moved to one in May. His sister has reported that it was the first time in years that he had slept on a mattress. ■

Tunisia

A reform that makes matters worse

The president is set to enact a sloppy and ominous new constitution

In a past life Kais Saied might have flunked himself for turning in such shoddy work. Once a constitutional-law professor with a reputation for exactitude, now Tunisia's president, Mr Saied gave himself a big homework assignment this year: draft a new constitution. As with many a group project, it got going late, leaving his fellow authors just a month to overhaul the existing national charter. He finally released the text hours before a self-imposed deadline, only to admit a week later that it contained mistakes.

On July 25th Tunisians will mark his handiwork in a referendum. Or, rather, some will: the ballot was scheduled for a long holiday weekend in sweltering midsummer, not a time when many people like to queue at polling stations.

The microphonic president

The new charter would turn Tunisia's parliamentary system into a strong presidency. Almost 12 years after Tunisians overthrew a dictator in the first revolution of the Arab spring, a small share of them will decide whether to anoint a new one.

The referendum comes a year to the day after Mr Saied suspended parliament (which he later dissolved) and much of the constitution. He has since taken a sledgehammer to Tunisia's democratic institutions, seizing control of the electoral commission and sacking judges. He now rules by decree. Though he appointed a prime minister last year, her powers are limited.

His new constitution would formalise this power grab. It allows the president, not the prime minister, to hire and fire ministers and to declare an indefinite state of emergency. MPs would lose the power to impeach the president, along with some of their parliamentary immunity. They would, for instance, be liable to prosecution for libel or slander. An odd clause on religion and state seems to make Mr Saied the arbiter of God's will in Tunisia. "It's unchecked concentration of power in the president's hands," says Mohamed-Dhia Hammami, an academic.

The existing constitution, approved in a referendum in 2014, went through multiple drafts over two years. Elected representatives toured the country to hold public debates and parley with civil-society groups. The process was imperfect but gave many Tunisians a say in the outcome.

This time, no one is even sure who wrote the text. Mr Saied asked for input through an online survey, which fewer than 4% of Tunisians bothered to complete. He named a committee to draft the constitution on May 20th. Its work was due a month later. Sadok Belaid, the law professor who led it, has since denounced the final product. He says Mr Saied's text differs from what the committee submitted and calls it "dangerous".

Advisers, or the president himself, seem to have made last-minute changes—sloppily. Among the errors Mr Saied acknowledged on July 8th: the constitution failed to specify if parliament would be elected directly, or—as the president has proposed—indirectly by local councils.

Voters had less than four weeks to consider the text before the referendum. The run-up to it has been subdued. Mr Saied has no political party and has done little campaigning. His opponents have done even less to urge a No vote. Instead, several parties, including Ennahda, the Islamist faction that held a plurality in parliament, have urged voters to boycott. Tunisia's formidable main public-sector union has not taken a position.

Tunisians need little encouragement to stay at home. Voter turnout has been falling since the revolution, from 68% in the general election of 2014 to 43% in 2019. One poll in May found that only 13% of voters planned to show up for the referendum. But no minimum turnout is required to endorse the new charter.

Still, a derisory showing would be a big blow to Mr Saied. His popularity has slipped in one survey from 82% last summer to 59% in April. Yet once the new constitution is in place, he may ram through an electoral law that scraps party lists in favour of individual candidates, further hobbling the already weak opposition.

None of this helps tackle Tunisia's most pressing concern, the economy. Unemployment is 16% and inflation 8.1.%. The central bank said in May that the fiscal deficit would reach 9.7% this year, instead of 6.7% as previously expected, partly owing to costlier food and fuel subsidies. The current-account shortfall will be similarly big. Tourism has yet to recover from covid-19.

The government is hoping for a $4bn loan from the IMF, but the main trade union opposes cuts in public wages that might come with it. The union flexed its muscles in June with a one-day strike that closed state-run firms, public transport and even airports. Mr Saied has little to say about any of this, delegating economic policy to his ministers while he chases his more abstract political goals.

Before he became president, Mr Saied once described referendums as a tool used by Arab dictators to create a veneer of representative government. Now he is eagerly using them for just that purpose: to provide a façade of democracy while tearing down a flawed but real one. ■

Garden centres in Senegal

Unsecured green investments

DAKAR

Thousands of pricey plants are left unguarded yet unmolested

TUCKED ALONGSIDE the baking asphalt and dusty curbs of Dakar, the capital of Senegal, are dozens of small oases. In garden nurseries shapely shrubs, bright bougainvilleas and potted palms leaven the heat. Along some roads scores of nurseries cluster together, giving motorists the momentary sensation of zooming through a botanic garden. At night these green-fingered traders simply go home, leaving their leafy assets rustling in the breeze, vulnerable to any passing thief. How odd.

The value of this unattended flora quickly adds up. Pierre, a nursery owner, says that each of his plants is worth 10,000 CFA francs ($16) on average. He has about 300. With perhaps 30 other plant purveyors on the same stretch of road, some $150,000 of shrubbery is left by the green-fingered to the mercy of the light-fingered. That is a fortune in a country where the average income is only about $4.50 a day.

Such a contrast could be a recipe for theft—or a strong argument for a night watch to secure these green investments. Yet Birane, a 70-year-old trader, says he has suffered only one theft in his career. "We don't have a guard," he smiles, gesturing to the dozens of nurseries nearby.

Sometimes there is no one there during the day, either. When your correspondent visited on a public holiday only three of the 30 or so nurseries had anyone present—and one of them was asleep in the undergrowth. Even on normal weekdays many owners simply leave signs with phone numbers for interested buyers to call.

Such confidence is not uncommon. Pollsters from Afrobarometer found that the Senegalese are the fifth most trusting people in Africa. One in five of them think "most people can be trusted." That may be enough. Adama, who runs a roadside nursery, says he has suffered only a few thefts in ten years. "If you are friendly to everyone then when you are away they keep an eye out, even at night."

Ignorance may also play a role. Most people do not know the value of vegetation, explains Birane, pointing out a rare variety worth 50,000 CFA. The only people who might steal such pricey plants are gardeners he knows and works with, he notes with a chuckle. And since he sells his bigger, more valuable ones in heavy pots they are harder to snaffle. Some flora also defend themselves: cacti can spike the enthusiasm of thieves scrabbling in the dark.

Not everyone is so sanguine. At a small nursery in a posh part of town Moustapha, the young owner, has persuaded some unemployed friends to keep watch overnight. "I've invested a lot so I must keep it secure," he explains. Yet even he falls back on trust of a different kind—in God. I have "mystic security", he adds with a smile. "He who steals falls sick until death."

Down the garden path

Investing in Africa

Adventurous capital

JOHANNESBURG

When it comes to raising venture capital, African startups buck the global trend

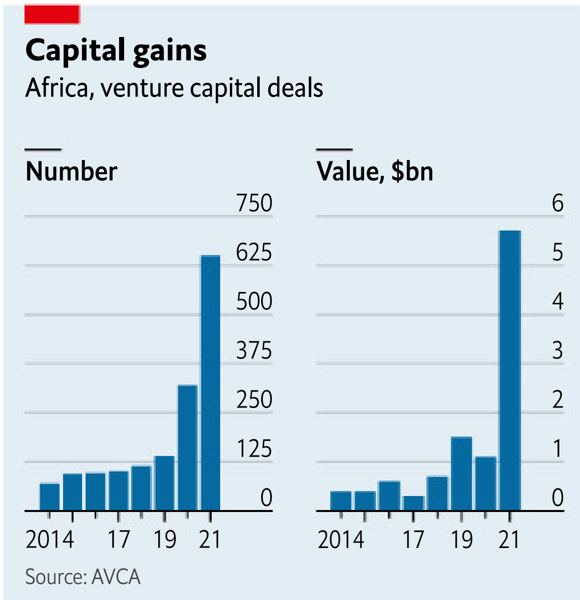
WHEN MAURIZIO CAIO, a fund manager with about 20 years of experience in tech, began raising money in 2015 for an African startup fund, investors were hesitant. "They said to pick either Africa or venture capital (VC)," says Mr Caio, who jointly runs TLcom Capital, a fund focused on Africa. "There is an Africa risk and a VC risk," was the message. "Don't combine the two."

Such attitudes are rarer these days. Last year 604 African startups raised a total of $5.2bn, according to the African Private Equity and Venture Capital Association (AVCA), an industry group. This was more than the total invested in the seven preceding years (see chart). Though just a fraction of the $600bn invested globally by VC funds, it was a sign of changing attitudes towards a continent that lacks capital and needs more businesses. It is a shift that should endure, despite the global economic downturn. Five of Africa's seven "unicorns" (startups valued at more than $1bn) won their horns last year.

American investors led the charge, with 357 involved in deals last year, compared with 268 in total in 2014-20. These included such firms as Andreessen Horowitz, Tiger Global and Ribbit Capital, and billionaires like Jeff Bezos and Jack Dorsey, the founders of Amazon and Twitter respectively. "We've broken into the mainstream of global venture capital," says Daniel Yu, the founder of Wasoko, an e-commerce startup that raised $125m in March. He thinks the success of e-commerce firms such as Flipkart in India and MercadoLibre in Latin America has spurred investors to seek similar opportunities in Africa.

Capital may soon be harder to come by. "Fundraising will be much tougher," says Marlon Chigwende of Admaius Capital Partners, a fund based in Rwanda. "Africa ends up being one of the last places to look and one of the first places that will get pulled back." That may end up being the case, but there is not yet a slowdown. Startups in Africa raised more in the first half of this year than in the same period last year, according to data collated by Max Cuvellier, who publishes a newsletter about African VC, making it the only part of the world where such investment is still growing.

One reason for this is the growth of Africa-based funds, which invested in a quarter of deals last year, compared with 10% between 2014 and 2020. Richard Okello of Sango Capital, based in Johannesburg, says, "African VC will be left standing in this slowdown," because the capital they raise on the continent is less flighty. Rich Africans are increasingly dabbling in VC. Successful founders tend to reinvest their wealth in new firms. And Africa's myriad market failures mean that there are openings for startups that tackle inefficiencies in areas such as retail, energy and logistics. "There is money to be made in these supply-demand gaps," says Mr Okello. What is more, he adds, valuations are lower relative to revenues in Africa than elsewhere.



"Five years ago the experience of trying to get investors sold was very different," says Onyekachi Izukanne, the boss of TradeDepot, a Nigerian e-commerce startup. Many investors sought out startups that resembled ones that had thrived in the West; Jumia, dubbed the Amazon of Africa, became the first African unicorn. Though its early backers did well when it went public, the firm has since lost much of its value because of a business model that did not fit poor consumers and creaky logistics. Today, rather than hunt for consumer-facing businesses like Amazon, investors focus on startups that make it easier for firms to send money to each other, transport goods and fill inventories.

Even so, the VC industry in Africa has a way to go. Because it is still nascent, it has not yet built up a record of mouth-watering returns to tempt a wider pool of investors. And even if startups do well, VC funds worry that plummeting local currencies may yet erode their gains. Diversification might help, but the industry is concentrated in Egypt, Kenya, Nigeria and South Africa. And it may be overlooking the many firms founded by women, who still find it particularly hard to raise money, says Eloho Omame of FirstCheck Africa, a fund that invests in such outfits.

A shortage of skills is another problem. Software developers are in high demand. Perhaps more important, so are the seasoned managers who can turn potential into profitability. Those with experience in multinational companies often struggle when they move to startups, adds one founder. Legal expertise is scarce, too. That has contributed to a complaint by founders—and later-stage investors—that Africa's young entrepreneurs give away too much equity, too soon.

Governments could do more to let the industry thrive. Conservative rules on how pensions use their money crimp investment. For startups, myriad regulations, especially around payments, hamper growth. This matters because investors want to back startups with the potential to scale up across Africa. Rich countries make life hard, too. Getting visas to travel to meet investors is a pain, notes Dare Okoudjou, the boss of MFS Africa, a payments firm. If it were not for his French passport (he also has one from Benin, his country of birth), he says he would not have been able to expand his firm.

Even if the next few years prove more challenging for African startups and VC, the industries seem likely to continue to grow and prosper. Today few money managers would be laughed out of an investment committee for suggesting an African venture, says Mr Caio. Just as encouraging, there is less reliance on funds that insist that an African business must solve all kinds of social problems as well as turn a profit. These days, "Africa is just a market with great business opportunities—like everywhere else." ■

The hobbled unicorn

The Economist

SPECIAL REPORT:

ESG investing

→ July 23rd 2022

A broken idea

DISCOVERING A BETTER FUTURE FOR SAUDI ARABIA AND FOR THE WORLD

We all know how difficult the past two years have been for many people and nations across the globe. Yet from adversity springs opportunity.

As governments and policy-makers around the world came to recognise the necessity of global cooperation when faced by a threat such as Covid-19, a new age of possibility was born.

That's why Saudi Arabia is prioritising Research, Development and Innovation (RDI) as a central part of its transformation, committing to investing tens of billions of dollars over the coming decade to address the issues affecting us all.

We will make it easier for public and private bodies to work together, by ensuring cooperation with major research centres, institutions and international companies.

A new RDI Authority will provide leadership, direction, secure funding and develop talent to drive innovation and advance technological development.

Our ambitions and financial resources will be aimed squarely at what we think are the four most pressing areas of global concern. These are: Health and Wellness, Sustainable Environment and Supply of Essential Needs, Energy and Industrial Leadership, and Economies of the Future.

Human health is not merely a medical concern. It is also, as the pandemic demonstrated starkly, about how livelihoods and wellbeing across the whole world can be affected by events in one part of it. We are putting finance and the best human capital to work on these problems, seeking to prevent and control disease with our genome mapping project, in conjunction with those of other nations.

Environmental sustainability also has profound implications. As we see the world's breadbaskets become less reliable, not least since the war in Ukraine has caused a severe shortage of wheat, and drinking water grows ever scarcer, the Kingdom aims to address both challenges.

Having developed advanced, environmentally friendly desalination technology, we are demonstrating how this innovation provides not only clean water for drinking but how it can revolutionize agriculture in previously barren areas, with great possibilities for food security in the Middle East and Africa.

Saudi Arabia has prospered over the past century, in large part thanks to our oil reserves. Now, as the world embraces renewable energy, we intend to lead the pack with an effective energy transition. The Kingdom is preparing to diversify from its current energy strategy, innovating and changing, while continuing our role in international energy security.

We will work together with nations and institutions around to world to build stable economies of the future, exploring the potential of space and the deep sea as new frontiers for innovation and discovery. We will also reimagine the future of urban living. Human-centric, zero carbon, 'Cognitive Cities' are crucial to improving the quality of life for citizens in the Kingdom and internationally.

This initiative will supercharge our sustainable innovation capacity. By 2040, we expect that Saudi Arabia's spend on innovation will reach 2.5% of GDP. RDI in the Kingdom will create hundreds of thousands of new jobs. We will be opening our doors to top research talent from Saudi and countries around the world.

Our commitment to this mission addresses what lies ahead, its uncertainties, and its bright hopes too. This is the first chapter in a new story we are writing with the world to build a better future for humanity.

His Excellency Munir Eldesouki – President of King Abdul Aziz City for Science and Technology (KACST).

للإنسان نبتكر

INNOVATE FOR HUMANITY

In need of a clean-up

The environmental, social and governance (ESG) approach to investment is broken. It needs to be streamlined and stripped of sanctimoniousness, argues Henry Tricks

Desiree Fixler is, in her own words, "no wallflower". When she was hired in 2020 to be head of sustainability at DWS, a German asset manager affiliated to Deutsche Bank, she reckons Asoka Wöhrmann, her boss, must have known the type of person he was taking on. She was a Wall Street veteran. She was battle-hardened, having traded credit derivatives in the run-up to the 2007-09 financial crisis. She had seen the power wielded by regulators. If you pictured somebody who works in sustainability as a soft touch, think again. "I'm hard core, especially when it comes to compliance," Ms Fixler says.

How hard core became clear on May 31st, when 50 German police, investigators and regulators, acting on allegations first aired by Ms Fixler, raided the offices of DWS and Deutsche Bank in Frankfurt. Their focus was on alleged "greenwashing"—the extent to which DWS may have misstated its use of environmental, social and governance (ESG) criteria in its investment portfolio. It cost Mr Wöhrmann his job. It was a chilling moment for big asset managers around the world. And it marked a low point in a year in which ESG has turned from an investment craze attracting trillions of dollars on promises to make the world a better place into a source of eye-rolling cynicism.

DWS and Mr Wöhrmann deny the allegations, which they say have been investigated internally. But whether the authorities find evidence of misbehaviour or not, there is much about DWS's ESG business that is perplexing. So it is with the industry in general. It is the contention of this special report that, from impact to measurement to disclosure, much of ESG is deeply flawed.

The concept's popularity has been partly fuelled by real-world concerns, especially climate change. Yet it has had a negligible impact on carbon emissions, especially by the biggest polluters. Its attempt to address social issues such as workplace diversity is hard to measure. As for governance, the ESG industry does a lousy job of holding itself to account, let alone the companies it is supposed to be stewarding. It makes outsize claims to investors. It puts unmanageable demands on companies.

And yet, for all its pitfalls, it may be better to overhaul than to bin ESG. At its core, it is a quest for something increasingly crucial in the battle to improve capitalism and to mitigate climate change: making firms and their owners accountable for their negative externalities, or the impact of production or consumption of their products on third parties, such as the atmosphere. By forcing businesses to recognise the unintended consequences of many of their activities, the theory is that they should then have a greater incentive to fix them.

The more regulatory pressure there is to make such information more accurate, the better for the long-term future of companies and the world in which they operate. As it is, measurement of the size of the ESG market is confusing, the ratings are too subjective, and the industry over-promises and under-delivers.

Start with measurement. Asset managers have two ways of thinking about ESG. The first is relatively down-to-earth. It is the sale of actively and passively managed funds specifically built around sustainability ratings. In the past two years, these have boomed. Take DWS, for instance. In 2021 it said its dedicated ESG funds had soared to €115bn ($136bn), more than a tenth of its total assets. In the industry at large, Morningstar, a fund tracker, says ▸

ESG assets in mutual funds and exchange-traded funds (ETFs) were almost $2.8trn at the end of the first quarter. That is roughly the size of the cryptocurrency market. But it is still niche compared with global portfolio investment as a whole.

The second way of discussing ESG, however, is ballyhoo verging on baloney. It is called ESG integration, and is the main problem that Ms Fixler claims to have identified at DWS. She says there were no tools in place to measure it. ESG integration means getting portfolio managers in non-ESG funds to use ratings as a risk-management tool, rather as they do to evaluate the dangers of recession or supply-chain disruption. In 2020, when DWS called ESG "the core of everything we do", it claimed that the assets to which it applied ESG integration were worth €459bn, well over half its total €793bn portfolio. That is a whopping amount. Yet a year later DWS scrapped its ESG integration number altogether. It said it was changing its approach to disclosure partly for regulatory reasons. But it also followed what Ms Fixler says was her attempt to draw the attention of the authorities to such nebulous numbers.

Your number's up

DWS's *volte face* suggests that a rethink is needed in the industry at large. Data-gatherers, such as the Global Sustainable Investment Alliance, make eye-popping claims about the size of the ESG market. According to its latest report, sustainable investment in 2020 reached $35.3trn, more than a third of all assets under management in the big economies that it covers. That makes it sound as if ESG is more important to financial markets than it really is. The vast bulk of it (some $25.2trn), comes from ESG integration, which DWS's experience shows may be little more than a finger in the wind. For an industry that prides itself on trying to measure things that are hard to measure, the job it does in measuring itself is hardly confidence-inspiring.

Next look at subjectivity. When Ms Fixler first arrived at DWS, she says one of her surprises was observing that its ESG scoring system, using third-party rating agencies, gave Wirecard, a German payments firm in which DWS funds were big investors, the second-highest rating for governance. At the time, Wirecard was embroiled in an accounting fraud that would shortly lead to its collapse. And Amazon, the e-commerce giant, had DWS's lowest governance rating, she says.

Such apparent contradictions extend to the industry at large. The ESG rating agencies are the veritable acme of inconsistency. A study of six of them found that they used 709 different metrics across 64 categories. Only ten categories were common to all—and they do not include such basics as greenhouse-gas emissions.

Index-providers add to the confusion. In May S&P Dow Jones Indices kicked Tesla out of the ESG version of its S&P 500 index, while keeping oil giants like ExxonMobil in. It noted the electric-vehicle maker's contribution to promoting sustainable transport but gave it short shrift. Instead it penalised Tesla for workplace and governance issues. Elon Musk, Tesla's boss, was not the only person to consider this absurd. Many detect too much toing and froing over complex ethical questions. Arms-makers, shunned by the ESG crowd before the war in Ukraine, are now bemused to find themselves being feted as defenders of democracy. John Gilligan, of Big Issue Invest, a $100m impact fund allied to a social enterprise for the homeless, sums up the subjectivity. "The idea of measuring ESG is like trying to find a measurement for your favourite child," he says.

The third problem is that ESG has become a gravy train for the investment industry. Although it emerged in response to the preferences of investors, especially millennials, to do more with their investments than make money, asset managers have turned this to their advantage. On average, they charge higher fees for ESG-related investments than for non-ESG ones. In marketing, they claim that ESG funds outperform mainstream ones, even if this does not stand up either theoretically or empirically.

On top of all these flaws, ESG has suffered a backlash from those who think that financial elites go too far in pursuit of trendy causes. Right-wing critics of "woke capitalism" see it as a way for sanctimonious CEOs to smuggle in progressive ideas that many dislike, such as phasing out fossil fuels. Those focused on returns, such as Aswath Damodaran of New York University's Stern School of Business, note that ESG metrics failed to discount Russia-based companies before the invasion of Ukraine, further undermining their credibility. Others point to an inherent hypocrisy: for example, ESG ratings measure the risks that climate change pose to a company, rather than the threat the company poses to the climate.

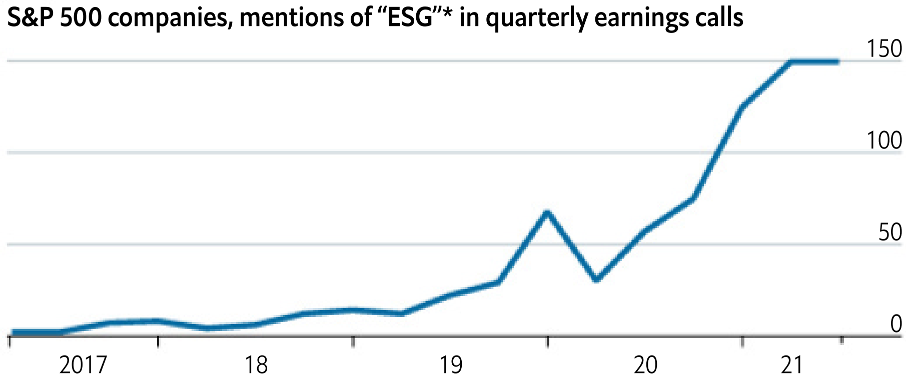
The most salient criticism is that by promoting a second-best solution such as ESG, the private sector may be giving policymakers an excuse to avoid imposing what many see as the best way to respond to climate change: co-ordinated carbon taxes. Yet it is possible to turn this on its head. ESG may be worth preserving precisely because taxes on externalities, such as carbon emissions, have proved so politically hard to push through.

Tighter regulatory oversight of ESG is coming, especially in Europe. In America the Securities and Exchange Commission is hoping to beef up oversight of climate disclosures (though a recent Supreme Court ruling may constrain it.) The hope is that greater supervisory pressure will eventually help capital markets to "internalise externalities"—ie, to reward companies for reducing their carbon footprints through higher asset prices and a lower cost of capital. That means, in the words of Ken Pucker of Tufts University, that it will be necessary to measure less, better. Moreover, Sustainability Inc, as Mr Pucker calls it, will have to jettison the hyperbole that has so harmed its reputation.

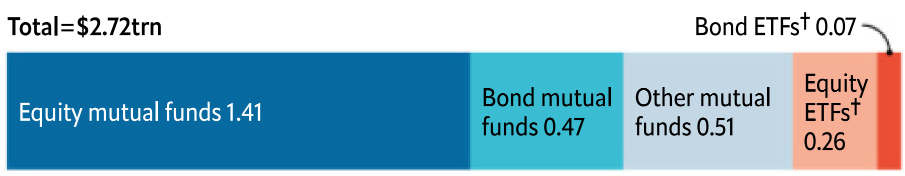
The industry, always striving to be upbeat, notes that during the recent market turmoil money has seeped out of ESG funds more slowly than from mainstream ones. Last year, even as DWS faced Ms Fixler's allegations, ESG-related money accounted for 40% of its net inflows. In his speech at the firm's annual general meeting in June, Mr Wöhrmann, after rejecting what he said were unfounded accusations, highlighted those flows. "Our clients have spoken," he said. Such over-confidence epitomises the asset-management industry. ■

Talk, talk

S&P 500 companies, mentions of "ESG"* in quarterly earnings calls



Worldwide ESG* assets under management, 2021, $trn



Source: Bank for International Settlements

*Environmental, social and governance
†Exchange-traded funds

Asset managers

The saviour complex

It's time to get real about what ESG can—and cannot—achieve

FOR ALL the things the sustainability industry tries to measure, it seldom considers its injurious effects on the ear. The field of ESG is replete with enough acronyms and platitudes to tear a hole in the English language. Win-win is only the worst. There are also purpose and profit, values and value—and the list goes on. When people cut through such pieties and liken ESG to a Wild West, where everyone makes their own rules so as to get as much money as possible, it is time to sit up and listen.

A business that started with sandal-clad clerics making ethical investments has been transformed by the world's biggest asset managers, such as BlackRock, State Street Global Advisors and Vanguard, which collectively own more than a fifth of the average firm in the S&P 500. Their actively managed ESG funds remain a small part of overall assets under management. But as Cameron Brandt of EPFR, a firm that tracks fund flows, puts it, net inflows into ESG have been like "pixie dust" to investment funds, helping offset outflows in other parts of their portfolios. And their ability to use ESG criteria to decide how to vote the trillions of dollars of passive funds that they manage adds to the concept's importance.

There are two main drivers behind this focus on ESG. The first, revealed by State Street's bronze statue, "Fearless Girl" , outside the New York Stock Exchange, is that by marketing itself as an environmental and social champion, the investment industry competes to attract the growing wealth of younger savers. Studies suggest that the young like to express their environmental and social preferences through investments (though by no means all are social warriors or tree-huggers). Given that their pensions will accumulate for decades to come, they will also be more exposed to the long-term risks of climate change than older savers.

In search of fees

The second motive is that the sale of ESG products helps asset managers to mitigate the two-decade-old curse of declining fees. A study by Morningstar, a fund-tracking firm, said investors in sustainable funds paid a "greenium" compared with those in mainstream funds. Average annual fees for sustainable funds, albeit modest at 0.61%, were almost 50% higher than for traditional ones. This is clear from a comparison of three BlackRock exchange-traded funds (ETFs), all with similar holdings; the sustainability-linked ones charge higher fees (see box on next page).

In the industry as a whole, the interplay of values-driven marketing with a hunger for high fees raises fears of "greenwashing". The concern is that funds may oversell the extent of their use of ESG purely to attract customers. "We are all grappling with how we manage this tsunami of ESG and make it fair for consumers," says Sacha Sadan, a director at the Financial Conduct Authority, Britain's securities regulator.

So far there have been only sporadic signs of a crackdown on ESG funds. The highest-profile one is the investigation by American and German authorities of DWS, the asset manager owned by Deutsche Bank. In May the Securities and Exchange Commission (SEC) imposed a $1.5m fine on an investment unit of BNY Mellon, a bank, for allegedly misstating ESG information. It was the first time it had reached such a settlement with an investment adviser. In June Goldman Sachs revealed that the SEC had launched an investigation into some ESG equity funds with assets under management of $725m. It said it was co-operating.

It is not clear how far the regulatory crackdown may go. In Europe a bigger upheaval has come via regulatory fiat. According to Morningstar, the region accounts for more than four-fifths of sustainable-fund assets. EU regulators encourage more sustainable investing, and police it more carefully.

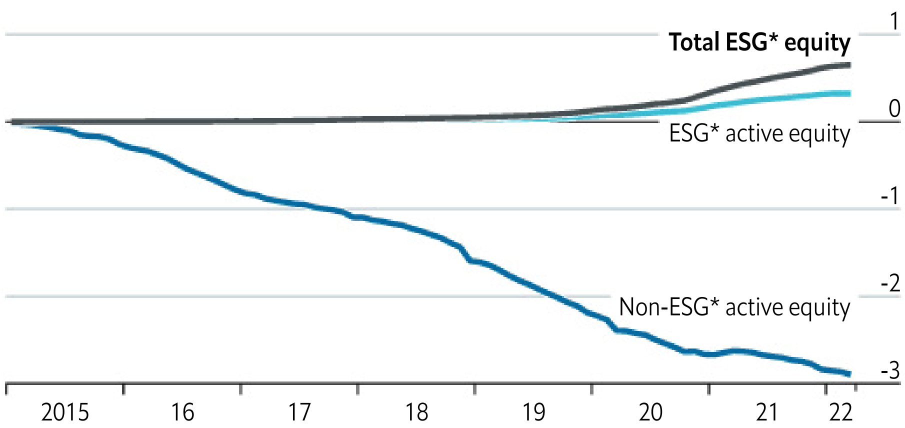
Last year the bloc introduced a sustainable-finance disclosure regulation, requiring funds that claim to use ESG to categorise themselves in three ways, depending on their sustainability ambitions. The lowest level, article six, covers mainstream funds. Those with some ESG features, known as article eight, are keen to upgrade to article nine, where ESG is their main objective. Asset managers across the world are eagerly repurposing funds to ensure they meet the article-nine criteria, insiders say.

Yet everywhere concerns about false marketing are growing, and academics, as well as regulators, wish to expose it. A study in May by Aneesh Raghunandan of the London School of Economics and Shiva Rajgopal of Columbia Business School concluded that asset managers did not "walk the talk" when they claimed to be picking stocks that engage in stakeholder-friendly behaviour. Their analysis of American mutual funds between 2010 and 2018 found that companies in ESG investment portfolios violated labour laws, paid more fines and had higher carbon emissions than those in non-ESG portfolios sold by the same institution.

Everywhere concerns about false marketing are growing

Insiders are speaking out. Tariq Fancy,

Feeling better
Cumulative flows into equity funds, $trn
Worldwide



Source: Bernstein
*Environmental, social and governance

BlackRock's former chief investment officer for sustainable investing, issued a critique claiming that the profession is little more than "marketing hype, PR spin and disingenuous promises". Some asset managers would dispute this, but others say scrutiny may help bring order to the industry, even if it reduces inflows into ESG funds. "All of this noise is going to hit the pause button," says Suni Harford, president of UBS Asset Management, an early entrant into ESG.

Drill down into different ESG strategies, however, and it is clear that there is room for improvement—so long as enforcers are given sharper teeth to weed out false claims, investors are more aware of the risks they face, and companies strengthen their own ESG-related disclosures. The result may be a smaller universe of funds, more targeted on particular issues, and more credible. "Customisation is coming fast," says Ms Harford.

One area of recent attention is so-called exclusionary funds. These old workhorses of the industry aim to shun such sectors as fossil fuels, tobacco or guns, either for ethical reasons, or because investors hope to shame the industries into behaving better. They are in the spotlight because stocks from some formerly untouchable industries have rallied sharply, partly as a result of the war in Ukraine, encouraging some fund managers to reconsider whether it is right to keep them at arm's length.

This is not just a cynical ploy. There is increasing evidence that divesting from dirty industries simply shunts assets around, creating no net benefit to anyone except those who are happy to hold "sin" stocks. And, as is borne out in a paper by Jonathan Berk, of Stanford Graduate School of Business, and Jules van Binsbergen, of the University of Pennsylvania, it does not meaningfully raise the cost of capital, making it harder for them to do business. A better way to effect change is for socially conscious investors to buy stock and use their proxy votes to influence or even take control of a firm, the academics argue.

That strategy is known as engagement, which Zhihan Ma, head of ESG at Bernstein, an investment firm, calls "the new buzzword". It took centre stage last year when Engine No. 1, an activist hedge fund, won critical support from BlackRock, Vanguard and State Street to help it replace three directors on the board of ExxonMobil to strengthen its response to climate change.

It is not always like this. BlackRock, which supported almost half of environmental and shareholder proposals in 2021, has said it will reduce its backing for them because they are overly prescriptive. Cue a volley of criticism from climate activists, who want BlackRock to use the full extent of its power to force companies to lower emissions. Others, however, claim that stewardship, particularly over trillions of dollars in passive funds, is a dangerous way for asset managers to push their own agendas, rather than those of their clients.

A letter to the SEC in April from 22 law and finance professors, led by Lawrence Cunningham of George Washington University, pointed to studies showing that individual investors do not show the same enthusiasm for ESG as the big institutions. Vivek Ramaswamy, entrepreneur and author, says that the influence of what he calls a "monarchical technocracy" is not felt principally through the ESG funds that they raise. It is the vast number of shares they can vote over their holdings, influenced in turn by their own ESG priorities.

Taking such concerns into politics, 12 Republican senators proposed in May an "Investor Democracy is Expected Act", which would allow individuals to vote their shares rather than Wall Street firms acting on their behalf. It was partly aimed at stemming the ability to stoke what one senator calls "the left's woke agenda in corporate America". Already the industry is taking heed of the political winds. In June BlackRock said that, since October, clients with $120bn of assets had opted to vote

How to charge more

Fees for managing ESG funds tend to be higher than for non-ESG ones

It can be hard to tell the difference between exchange-traded funds (ETFs) with an ESG focus and those without one. Take three iShares ETFs all managed by BlackRock: the Core S&P 500 (IVV), which has no ESG focus; the ESG Screened S&P 500 (XVV); and the ESG Aware MSCI USA (ESGU). The top equity holdings in all three funds are Apple, Microsoft, Amazon, Alphabet A & C shares and Tesla. Their biggest sectoral exposures are to tech, health care, financial services and consumer goods. Two of the three have ExxonMobil, an oil giant, as one of their top 20 holdings. IVV also has exposure to "sin" stocks, such as arms and tobacco firms, but they are a tiny fraction of its overall portfolio. All three funds have performed pretty much in lockstep this year: down by a little over 20%.

Where they differ most strikingly is in the level of their fees. For all three, these are lower than at actively managed mutual funds. But fees for XVV are almost three times those for the non-ESG fund; for ESGU they are five times as high. The obvious inference from this is that even low-fee index funds can charge more for ESG funds than for non-ESG funds. There are, however, two big caveats. One is that the core S&P 500 fund is ten times the size of ESGU and over 1,000 times that of the screened one. Its sheer scale may help it charge lower fees. And ESG index funds, though passive, also require more work to construct than plain vanilla ones. Like all things ESG-related, the truth is never simple.

Dear and dearer
Selected BlackRock exchange-traded funds
June 30th 2022

	Returns since Jan 1st 2022, %	Net assets $bn	Expense ratio, %
Core S&P 500	-21.0	280	0.03
ESG Screened S&P 500	-23.2	0.21	0.08
ESG Aware MSCI USA	-22.6	21	0.15

Source: Company reports

their own shares, taking the number up to $530bn, or 25% of its passive equity funds. Mostly this is institutional money, but it wants individuals to express voting preferences too.

For those keen to ensure that ESG investment is not just box-ticking, more funds are available that offer returns which are more than financial, such as life-saving water, health and sanitation projects in poor countries. The average value of assets under management at such "impact funds" was around $100m in 2020, says the Global Impact Investing Network. This is enough to attract big private-equity funds, such as KKR. The International Finance Corp, a unit of the World Bank, says that under its strictest definition of impact investment, or "measured impact", there were $636bn of total assets in 2020, 45% of which came from private equity. But as the amount grows, fears of "impact washing" grow too. As with ESG in general, it needs monitoring.

How quickly the universe of ESG will expand depends partly on how much investors' appetite for adventure may suffer from higher interest rates and seemingly greater market turbulence. Paul Bodnar and Eric Van Nostrand of BlackRock insist that the firm's "bottom line" when it comes to sustainability funds remains their investment performance. They also say that, although many ESG funds have underperformed recently, especially those weighted against fossil fuels, this is a healthy reminder that returns can go down as well as up.

In the long run, changing investor preferences and the energy transition should mean that ESG funds outperform, Mr Bodnar and Mr Van Nostrand predict. "Let's not confuse the short-term volatility for the long-term outperformance that is the principal basis for our focus in this space," Mr Van Nostrand says. That claim of outperformance, though, is increasingly controversial. ■

Investors

The warm glow

It's a myth that ESG investments inevitably outperform. You can't have it all

DAVID BLOOD proudly holds up on a Webex screen a framed *Economist* article written in 2004 when the former Goldman Sachs banker, together with Al Gore, a former American vice-president, set up a new investment firm, Generation Investment Management. It includes the inevitable quip about men named Blood and Gore launching a sustainable-investing business. But he is keener to point out the title, "Does it add value?" He says: "This may be your question today."

A lot has happened in 18 years. When the firm started, some of Mr Blood's former colleagues thought the idea was "completely nutty". Now sustainability has moved into the mainstream. But he retains two beliefs. First, long-term investing is best-practice, sustainability improves economies, and ESG is a useful tool to understand business and management. Second, ESG is hard. "When somebody tells you it's always a win-win, they're not being truthful. Very often there are trade-offs." So he welcomes the increased attention on the asset-management industry's misuse of language, inconsistent data and greenwashing. And he is right that the biggest question remains: does it add value?

It has been easy recently to say yes, not least since ESG funds broadly defined have outperformed the non-ESG sort in America and Europe since 2010. However, part of the outperformance was because ESG funds invested heavily in growth stocks, such as big tech. Rising interest rates and war in Ukraine have hit such firms hard this year. Though the energy crisis has exposed the need for more renewables, especially in Europe, this year returns from fossil fuels and other old-economy stocks have outperformed those in clean energy. Sin stocks have made out like bandits.

In reality, returns depend on how ESG is measured. As Alex Edmans of London Business School points out, some strategies pay off over long time horizons, but others do not, especially if they are not material to a company's core business. This focus on materiality is important. In an *Institutional Investor* article in 2019, "Where ESG fails", some of sustainability's strongest advocates from Harvard Business School (HBS) made what looked like a heretical admission that companies rated highly on an array of ESG metrics did not in fact produce better shareholder returns. But they offset this by reprising a paper, co-written by HBS's George Serafiem in 2015, which showed that when companies focused their sustainability efforts on ESG issues material to the bottom line they outperformed impressively.

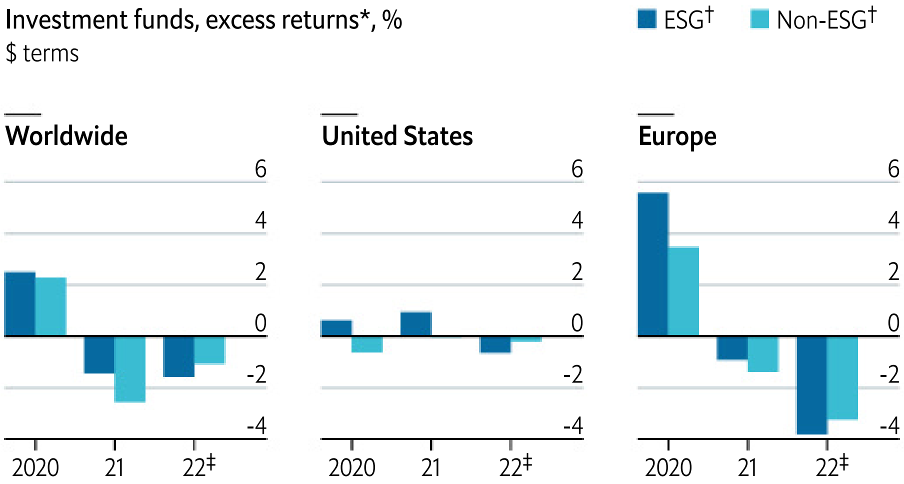
Linking ESG to materiality makes intuitive sense. An energy company's carbon footprint is more material to its business than a bank's. The first is more likely to look at emissions from an economic perspective than a social one, encouraging it to manage them better. Yet the conclusion remains controversial. In a paper this year, Luca Berchicci of Erasmus University Rotterdam and Andrew King of Boston University recrunched the numbers from the 2016 materiality study and found them to be a "statistical artefact". Mr King says this stands to reason. Efficient-markets theory suggests that excess returns are always hard to find, especially when information is widely available.

No free lunch

Others have challenged the underlying idea that virtue could ever be a free lunch. In 2017 Cliff Asness, boss of AQR, a hedge fund, noted that investors in a portfolio that shuns sin stocks should not expect to do as well as those that have no such restrictions. That should be the whole point of ESG, he suggested. By selling out of sinful companies, virtuous investors push share prices down, which offers buyers the prospect of higher returns—even though driving up polluting companies' cost of capital should make it harder for them to make money. "Frankly, it sucks that the virtuous have to accept a lower expected return to do good, and perhaps

Closing the gap

Investment funds, excess returns*, %
$ terms



*Relative to benchmark indices
Source: Bernstein †Environmental, social and governance ‡To May 31st

sucks even more that they have to accept the sinful getting a higher one. Well, embrace the suck as without it there is…no good deed done at all," he said.

More recently Aswath Damodaran of New York University's Stern School of Business has come to a similar view when assessing whether ESG bolsters corporate profits. He says that it may be true that "bad" companies face higher funding costs, but points to scant evidence that good ESG firms generate higher income or growth. He draws attention to the causation problem: do successful firms embrace ESG or does ESG make firms successful? When it comes to outperformance, he says the best idea is to get ahead of the curve and jump on stocks that show potential for improvement. Wait too long and the effect will become priced in.

Some argue that it is rewarding to scour emerging markets for "ESG improvers". Companies that turn their performance around are an indicator of management quality. If investors want to have a positive impact, it is better to back a dirty company that can be influenced to cut its carbon emissions than one that already has a negligible carbon footprint and so scores highly on ESG. Even if ESG does not guarantee bumper returns, there are other ways to attract investors. One is through risk-adjusted returns. If investors have long time horizons, it makes sense to have risk-management mechanisms to screen companies for problems like climate change, regulatory or reputational damage.

Another is to give investors the "warm glow" of doing good by not obsessing over short-term returns. This may be more applicable to younger than to older investors. A study in 2019 by New York Life Investments found that investors aged 25-39 were most likely to want to consider climate change in their portfolios, whereas those aged 55 and over focused more on data fraud and theft. Lukasz Pomorski of AQR says the desire to do good applies even in the world of hedge funds, where he sees many investors now looking for ESG strategies. AGR recently transformed some funds into ESG ones, but it first sought investors' blessing. It made clear the switch could hurt returns. "Most said 'just do it'," he says.

S.P. Kothari of MIT Sloan School of Management agrees that people passionate about climate and other causes may want to promote them through their investments. But he notes that even if some put their preferences before profit, there is a limit to how far they will go. He recalls a case in 2018 when Jason Perez, a police sergeant in Corona, California, became fed up with the pro-ESG stance of CalPERS, America's biggest public pension fund. Its returns were having a financial impact on him, his family and public servants at large. He campaigned for a CalPERS board seat, won and ousted its sustainability guru. ESG "all sounds good until it starts to bite your bottom line," concluded Mr Kothari. ■

Companies

Internalising the externalities

Can firms be made accountable for their carbon emissions?

STRETCHING AS FAR back as the Middle Ages, businessmen have tried to build up fabulous wealth then save their souls by giving much of it away. Francesco Datini, the 14th-century "Merchant of Prato" left behind hundreds of thousands of business and personal letters, ledgers and documents showing how he had made his fortune trading arms, spices and wine. As James O'Toole, a retired professor of business ethics, writes in his book "The Enlightened Capitalists", they showed Datini to be an "astute, shrewd, ambitious, ruthless and greedy entrepreneur…filled throughout his life with constant anxiety". But his cares got the better of him and before his death he left a fortune to endow a foundation for the benefit of the poor of Prato. It still exists over 600 years later.

Mr O'Toole chronicles many pioneers who set out to make business about more than just money, from Robert Owen, who turned his textile factory in Manchester into an experiment in worker development, via Anita Roddick, whose Body Shop became a symbol of eco-friendliness in the 1980s, to Ben Cohen of Ben and Jerry's ice cream. His conclusion is that however successful such ventures can be under their founders, it is hard to keep the missionary zeal going—especially if they become publicly traded entities. Investors seldom have the patience to stick with a commitment to virtue. "*Difficile est bonum esse,*" he writes.

Yet do-goodery has become all the rage. That is most obvious from the embrace of stakeholder capitalism, which redefines corporate success as serving not just shareholders but employees, suppliers and the wider community. Led by Jamie Dimon, the JPMorgan Chase CEO who chaired the Business Roundtable, a lobby group, when it embraced the concept in 2019, company bosses have used their commitment to social causes to speak out on issues ranging from racial inclusion to gay rights to climate change.

Sometimes, as when Disney protested against Florida's "Don't say gay" bill, enraging the state's governor, Ron DeSantis, this can stir a backlash that is not good for the bottom line. But it has become mainstream enough that Alex Edmans, of London Business School, is incorporating stakeholder capitalism into the next edition of "Principles of Corporate Finance", a bible for financial practitioners. As he acknowledges in his book "Grow The Pie", it is not as radical a departure as its advocates suggest. Milton Friedman, the economist often criticised for preaching shareholder primacy, argued that the social responsibility of business was to reward owners by increasing profits. But if those shareholders wanted the company to have a more social purpose, so be it.

Company bosses have used their commitment to social causes to speak out

ESG is often mixed up with stakeholderism—but there is another way to think about it. Part of its mission is to measure and disclose things that firms and their customers turn a blind eye to. The list includes the impact of commercial activities on the atmosphere, oceans, air, water and biodiversity, which are supposedly available to all but can be overexploited privately at high social cost. In strict ESG terms, the aim is not altruistic. It is rather a way of assessing the regulatory or reputational risks that arise from "negative externalities". A company may also be expected to gauge how seriously at risk it is from climate-change related events, such as extreme weather.

The measurements themselves, provided they are standardised and trustworthy, may be useful to everyone. Measuring carbon emissions is critical for tackling climate change, either as a basis for carbon taxes, or for regulatory efforts to rein in emissions, or for giving investors the opportunity to create a "shadow carbon price", in which high emitters are penalised by the markets. Better data make it clearer who is genuinely cutting emissions and who is not.

Measure for measure

The measurements are not easy, though. Companies may report greenhouse-gas emissions in their annual and sustainability reports, as well as to non-financial standard-setters such as the Global Reporting Initiative (GRI), a standards group. But as Eelco van der Enden, GRI's boss, sardonically points out: "What gets measured gets managed. But what gets measured also gets manipulated." That makes it a continuous challenge to improve data quality.

The most straightforward emissions are those from a company's day-to-day operations, called scope one, and those from its energy suppliers, such as electricity companies (scope two). Yet even among listed firms, these are not widely available. The research arm of MSCI, an index provider, says that of almost 10,000 firms in its world index, less than 40% reported scope-one and -two emissions. The share is likely to be smaller among private and state-owned firms, especially in emerging markets where many emissions are generated.

Even trickier is the measurement of scope-three emissions, which cover an entire supply chain, from extraction of raw materials through suppliers to end users, and account for as much as 90% of emissions in some industries. Supplier data may be hard to find. Consumer data may depend on estimates. Responsibilities may overlap: should an oil company be blamed for emissions when its fuel is burned in a petrol tank, or should the car company—or both? MSCI says less than a quarter of its constituents report scope-three data, and that the quality is poor. In a recent report, CDP, a data-tracking firm, found that only 55% of European oil and gas companies released scope-three information, even though it accounts for the vast bulk of their carbon footprint.

Mandatory regulation of such disclosures, especially those material to a company's business, should tighten things up. But misgivings about the quality of disclosures have given rise to a new trend. Companies, under pressure from investors and lenders, are increasingly making commitments to science-based and net-zero targets, which aim to keep global warming within the 1.5-2.0°C limit of the 2015 Paris agreement, but do so over medium- and long-term time horizons. At last count, 1,503 firms had science-based targets, and 1,194 had net-zero ones, including parts of Coca-Cola and General Motors.

The biggest pressure is on heavy industry, mining, energy and transport firms. Climate Action 100+, a pressure group formed by 700 investment funds, aims to ensure that 166 of the world's biggest greenhouse-gas emitters align with the Paris targets. It said this year that 69% of them were committed to reach net zero by 2050 or sooner. However, only 17% had set medium-term targets or produced quantified decarbonisation strategies. Almost two-thirds of oil and gas companies are still pursuing projects inconsistent with limiting global warming below 2°C, it noted.

Such commitments sound like a burden on companies. Investors appear not to take them seriously because it is rare that a company's net-zero commitment has an impact on its share price. But they may serve other purposes. Good behaviour, so long as it is in service to a robust business model, may attract a higher calibre of employees and board members, and a good sustainability record may let a company charge more for its products. It may even attract funding. Besides the interest of ESG investors in the capital markets, banks are under pressure to target lower emissions in their loan portfolios.

Target setting is not without its flaws, however. The danger, as London Business School's Mr Edmans puts it, is that "You hit the target and miss the point." He gives an example of an electric-vehicle company with low carbon emissions, but a nasty footprint through lithium-mining.

The ideal would be to price negative externalities. Carbon taxes are indeed on the rise. As of the end of 2021, more than a fifth of global emissions were covered by carbon pricing, though at levels too low to cause meaningful changes in behaviour. Amir Amel-Zadeh of Oxford University says that better disclosure should help "internalise the externalities". The next question is: can the arbiters of disclosure, ESG rating agencies, bring enough order to the chaos to influence investment flows? ■

Rating agencies

The signal and the noise

Measurement of ESG data needs a big overhaul

When Michael Jantzi, founder of Sustainalytics, an ESG research firm, started analysing the responsible-investing field in 1990, it was a "curiosity, to put it nicely", he says. To start with, there were "a lot of lean years". But the ball got rolling with the collapse of Enron, an energy giant, in 2001. Along with other corporate scandals, it gave rise to the Sarbanes-Oxley act, passed in 2002, which overhauled audit and financial reporting for public companies, boosting the G side of what is now ESG.

Growing concerns about climate change and rising inequality after the 2007-09 financial crisis have increased demand for data on the E and S sides as well. ESG rating companies, which have grown to as many as 160 worldwide, have begun to consolidate. In

2020 Sustainalytics became wholly owned by Morningstar, the fund-tracker firm. It now rates 14,000 companies globally.

The idea behind ESG ratings is to measure how exposed a company is to non-financial risks, and drive its share price and cost of capital accordingly, forcing laggards to shape up—or go out of business. But a lack of reliability, comparability and transparency in what is being measured produce too much noise to provide accurate signals. The title of a recent paper on divergent ESG ratings by Florian Berg, Julian Kölbel and Roberto Rigobon, from MIT Sloan School of Management, sums it up. It is "Aggregate Confusion". There are plenty of other criticisms of the business, and not only from the likes of Elon Musk (Tesla's impact report of 2021 opens with a blistering attack on ESG rating methodologies, calling them "fundamentally flawed" because they do not assess the scope of positive impact on the world, but only "the dollar value of risk/return").

The International Organisation of Securities Commissions (IOSCO), a regulatory body, says there is little clarity on what ESG raters intend to measure and what their methodologies are. It asks whether they suffer conflicts of interest by providing consulting services to companies they rate, and whether they incorporate developing as well as developed-country firms. It notes that the market is largely unregulated. Securities supervisors such as the EU's European Securities and Markets Authority hope to change that.

ESG raters sometimes like to seem like credit-rating agencies, which have a long (albeit chequered) history. But there are differences. The biggest is in the disparity of their ratings. Whereas the credit-rating arms of Moody's, S&P Global and others produce results that are close to 99% correlated, ESG scores produced by them and other firms such as Sustainalytics and MSCI tally barely more than 50% of the time.

The "Aggregate Confusion" paper spells out how ratings differ in what it calls scope, measurement and weightings. On scope, one rating agency may include corporate-lobbying activities, but another may not. They measure differently, with one assessing labour practices based on employee turnover, and another counting the labour-related court cases against the firm. And they assign different weights to their ESG scores, such as putting more emphasis on labour practices rather than lobbying.

For now, regulators put most attention on how the firms rate environmental practices. The OECD club of mostly rich countries found that some ESG rating agencies put less emphasis on E than the other two bits of ESG, so that investing in companies with high ESG scores does not necessarily imply they are managing carbon emissions well. It noted companies with high ESG scores also frequently had high emissions. Moreover, it found that the mere act of disclosing well-crafted climate strategies determines the E score more than the quality of interim targets or the steps actually taken to reach them.

Asset managers say that for all the misgivings about E scores, they are more trustworthy than S ones, which many would like to exclude. One talks of them dismissively as "extra-curricular activities". Another says that in some countries, such as France, too much data-mining on workers may violate privacy laws. He adds that some rating firms push the ethical boundaries by seeking out employee data on social-media sites such as LinkedIn.

Thus numerous flaws exist in ESG ratings. And though the rating firms object to the idea that regulators may force them to harmonise what they measure, they also know that there is room for improvement, especially to make ratings more forward-looking. "The last 10-15 years have been about the impact of environmental and social issues on a portfolio. The next ten years will be as much about the impact of investment on the environment," says Mr Jantzi. Conveniently, that is the direction that regulators want to take the ESG market as well. ■

The regulators

Missionary creep

New disclosure rules aim to better measure climate risks. Is that even possible?

FROM THE outside, the Wilmington Club, a brownstone mansion in Wilmington, Delaware, looks like a place where time has stood still. It sits in an overgrown garden. The front door and windows let no light out from within. Step inside and the feeling is amplified: it is like entering a refuge from woke capitalism. At the bar are heavy ashtrays. A stag's head is on the wall. A black-and-white photo celebrates the 105 whiskies ordered at a legendary dinner many years ago. Until recently, says Charles Elson, a corporate-governance expert formerly at the University of Delaware, terrapins were bred in the basement to be turned into stew.

In short, it is a convivial place for corporate lawyers in a city where the law is almost everyone's bread and butter. Some 1.6m businesses are incorporated in Delaware, and cases decided in Wilmington quickly become the law of the land. But lately the club's lawyers have been in as much of a stew as the terrapins. That is because ESG threatens to replace the state's long-established influence over American business with the long arm of government.

Mr Elson says the creep of federalism into the boardroom started with the Sarbanes-Oxley act in 2002. Then came the Dodd-Frank act of 2010, which mandated reporting on executive pay. Now comes an ESG-related proposal from the Securities and Exchange Commission (SEC) to force companies to disclose climate-related information. As Myron Steele, former chief justice of the state's supreme court puts it, "Strictly from the Delaware perspective, the only thing worse than nuclear war is a federal mandate for corporate governance."

The business of risk

It is not only American regulators. The International Sustainability Standards Board (ISSB), a newly created arm of the IFRS Foundation, aims to make non-financial disclosures as consistent as financial ones in a company's filings. The European Union is pushing for another set of standards, the corporate-sustainability reporting directive, to become law in its 27 member countries by the end of this year. It is expected to force as many as 49,000 companies who do business within the bloc to reveal sustainability information, up from 11,600 now. S.P. Kothari of the MIT Sloan School of Management half-jokingly describes the global push as a "full-employment act for accountants and consultants."

Two forces are driving things forward. The first is a sense among regulatory bodies that climate change is too big a risk to the financial system to deal with under the old rules. As Luiz Awazu Pereira da Silva, deputy general manager of the Bank for International Settlements (BIS), the central bankers' bank, puts it, financial markets are aware of the risks of climate change, but the current pricing of those risks is too low, as if global warming can be reversed by some miracle technology. "It's not a tail risk. It is something that is certain to occur if we don't do something about it."

Climate change is too big a risk to the financial system to deal with under the old rules

The second is a strong conviction that shareholders want more information. "What's changed is that investors have become much more interested in seeing the full picture," says Sue Lloyd, vice-chair of the ISSB. Gary Gensler, chair of the SEC, launched the climate-disclosure proposals in March saying that they had the support of investors "representing literally tens of trillions of dollars".

The transatlantic disclosure proposals are not identical. Both the ISSB and the SEC are proposing climate disclosures, though the ISSB also has proposals for more general disclosures. Ms Lloyd says its main aim is to give investors the sustainability information that they need to make an assessment of a company's value. She describes the current situation as confusing for both companies and investors, because firms do not know what information to make available, and shareholders struggle to make sense of a plethora of data. In one of the most difficult areas, the ISSB is seeking feedback on how companies should report greenhouse-gas (GHG) emissions, including the so-called scope-three emissions generated by suppliers and users of their products. Disclosure will depend on how material such emissions are when assessing a company's value, she says.

Regulatory ambitions

The SEC's proposed rule is 490 pages long and hugely ambitious. In a nutshell, it aims to mandate: disclosure on climate-related risks to a firm's current and future business; information on any scenario plans or internal carbon prices it uses; the threat of climate-related events such as bad weather on each item in its financial statements; its GHG emissions, including scope three, if material or part of an emissions goal; and details on other climate-related targets and whether it is meeting them. If it is a big firm, these disclosures will need to be audited.

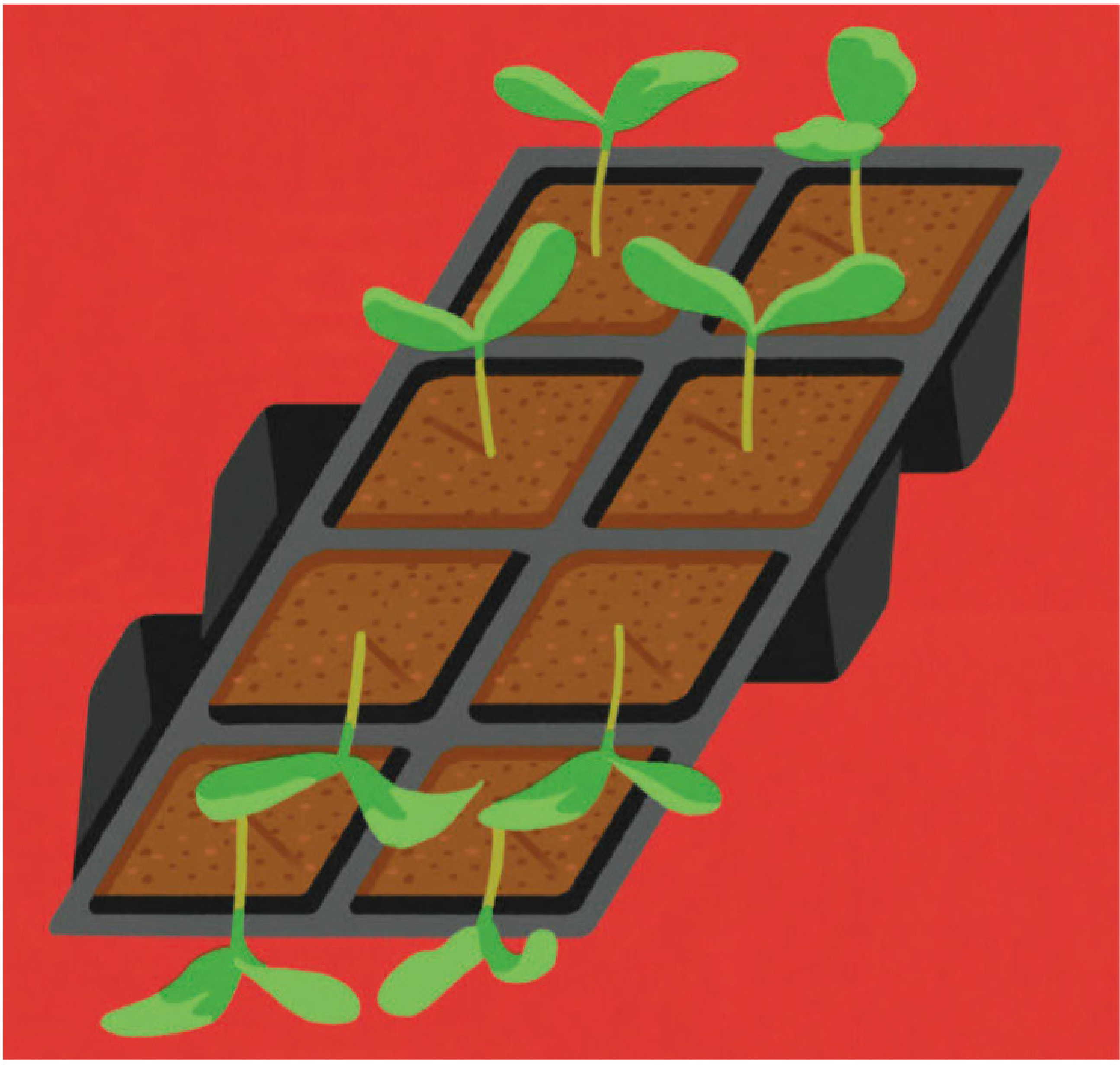
The EU's rules go beyond referring to information about climate change that is material for investors and aim to measure the company's impact on people and the environment directly. This "double materiality" has given rise to what Ms Lloyd calls "a bit of an emotional debate" about whether other regulators go far enough. But she thinks it is a red herring. The perspectives do not have to be in conflict and there is commonality in the information required. For example, when a high-emitting company assesses its GHG emissions, it will have to gauge their impact on the outside world because of the risk that a regulatory, consumer or worker backlash will affect its value, she says.

Yet if in Europe the concern is that the new rules may not go far enough, in America it is that they may exceed the SEC's remit and threaten to damage the credibility of the entire financial-reporting system. That has led to some colourful dissent. Hester Peirce, the only SEC commissioner to oppose the new proposals, set the tone by declaring in March: "We are not the Securities and Environment Commission—at least not yet." She complains that some disclosure rules will affect companies whether their emissions are material or not. She says measuring climate risks is difficult to do, and that trying to drive capital flows to the right firms is a "fool's errand" because nobody knows what effective climate solutions will emerge.

The criticisms do not stop with her. In May the *Wall Street Journal* reported that the cost of implementing the proposals was becoming a concern. It said the SEC's own estimates were that it would raise the cost to businesses to comply with the rules from $3.9bn a year to $10.2bn. There are also criticisms that the SEC has listened too much to big asset managers, who reap fees from selling ESG products, rather than to retail investors, who may be less keen on all the new information.

Perhaps most tangibly, critics foresee a backlash from both sides of the political divide: from the right, on the grounds that it thinks Wall Street asset managers are pushing a political agenda in the name of their clients; and from the left, where many think fighting climate change is more important than fussing about financial risks. Among the lawyers in Wilmington, the betting is that the courts will stop the SEC in its tracks because its disclosure rules flout the limits to its authority. This view has been bolstered by a Supreme Court decision at the end of June to curb the power of the Environmental Protection Agency, an American regulator. It could provide legal grounds for fighting the SEC on climate-related risks and GHG emissions.

For the rules to have global impact, though, America needs to play a part. The whole point of putting forward overlapping climate-related disclosures from the ISSB, the SEC and the EU is that they limit the burden of repetition on reporting companies, and spread the costs. As for their impact, granular and more standardised climate-risk disclosures could give investors a better handle on where the risks and opportunities lie. This could eventually help determine the risks affecting the value that they put on a company. As Mr Pereira da Silva of the BIS says, such signals could help to set a "shadow price" on carbon emissions even in the ab-



sence of a government-mandated carbon price.

The information would have to be trustworthy. That is why so many accounting firms are hiring feverishly as the gravy train approaches. PWC, one of the big four, said last year that it would spend $12bn creating 100,000 jobs, a fair portion of which will be working on ESG-related issues. It is also raising the skill levels of its existing staff to help handle these matters. Alan McGill, a sustainability expert at PWC in Britain, gives a sense of the mission-driven zeal that the mandatory reporting now plays into. "Every six weeks that passes is 1% of the decade gone, so the time to act is disappearing," he says.

Whether fearmongering helps is open to debate. Whether it is even possible accurately to forecast the financial impact of something as unprecedented as the future effects of climate change also remains to be seen. But for all the misgivings, it is hard to see this regulatory juggernaut stopping in its tracks. It may be better to think of how the rules can be finessed to give investors better information not just about the future of the companies they own, but also how to mitigate their impact on the planet. ■

The future of ESG

Measure less, but better

It's the environment, stupid

Last year Vivek Ramaswamy, a health-care entrepreneur, published "Woke Inc", a rollicking polemic against the passion of American CEOs to pat themselves on the back for tackling such issues as climate change, racism and workers' rights. He argued that, however fractured governments are, such problems are the job of politicians to fix. In the hands of business elites, a concept like ESG might be well-intentioned. But it threatens to subvert the integrity of democracy, Mr Ramaswamy suggested.

Other critics of ESG make a similar point about carbon taxes. They say that offering a feel-good alternative to investors, financiers, big business and regulators, aka, "the climate-industrial complex", may give an excuse to governments not to charge for carbon emissions. It is a legitimate concern. Carbon taxes would be the best way to direct investment to the most promising decarbonising technologies. Yet nobody should be fooled. The main reason the taxes are both low and insufficiently co-ordinated across the world is not because of ESG or woke capitalism. It is because politicians are too timid to foist them on voters.

In fact it is worth doubling down on private-sector and bureaucratic efforts to get companies to measure and reduce their carbon emissions. It may be a second-best solution. But with the right disclosure requirements and regulatory scrutiny, it could help direct capital where it is best needed. And if governments ever muster up the courage to beef up carbon levies, good measurement would make them more effective.

As this special report has argued, ESG has too often been neither a good measurement tool nor an effective risk-management one. It aims to satisfy so many stakeholders that the information it elicits often bears little relevance to what a company actually does. It is too imprecise to be a shadow tax on a company's negative externalities. It has created confusion for companies. And it is hard for investors to work out what it means for asset prices.

Moreover, it is infected with moral judgments that change with the weather. As researchers at the University of North Carolina's Kenan-Flagler Business School have pointed out, ESG measurement is mixed up with diametrically opposed views on the purpose of the company, as well as debates over whether shareholders or stakeholders should prevail in decision-making. That amplifies arguments over what is a "good" or "bad" company.

In contrast, the profit-and-loss accounting system that it aims to supplement is a model of clarity, eschewing moral judgments and political influence. Accounting boards have shown the value of standardised, audited financial statements for the development of capital markets, economic growth and as checks on the way managers run companies. Sustainability disclosures should try to follow a similar path.

To make ESG measurement more effective it must be streamlined. Standard-setters should not impose measurements to satisfy every interest group or asset manager's pet social cause. Instead, they should try to ensure that non-financial disclosures are required only if they are material to an industry. Measures of more general relevance can be disclosed voluntarily, as they are via the Global Reporting Initiative.

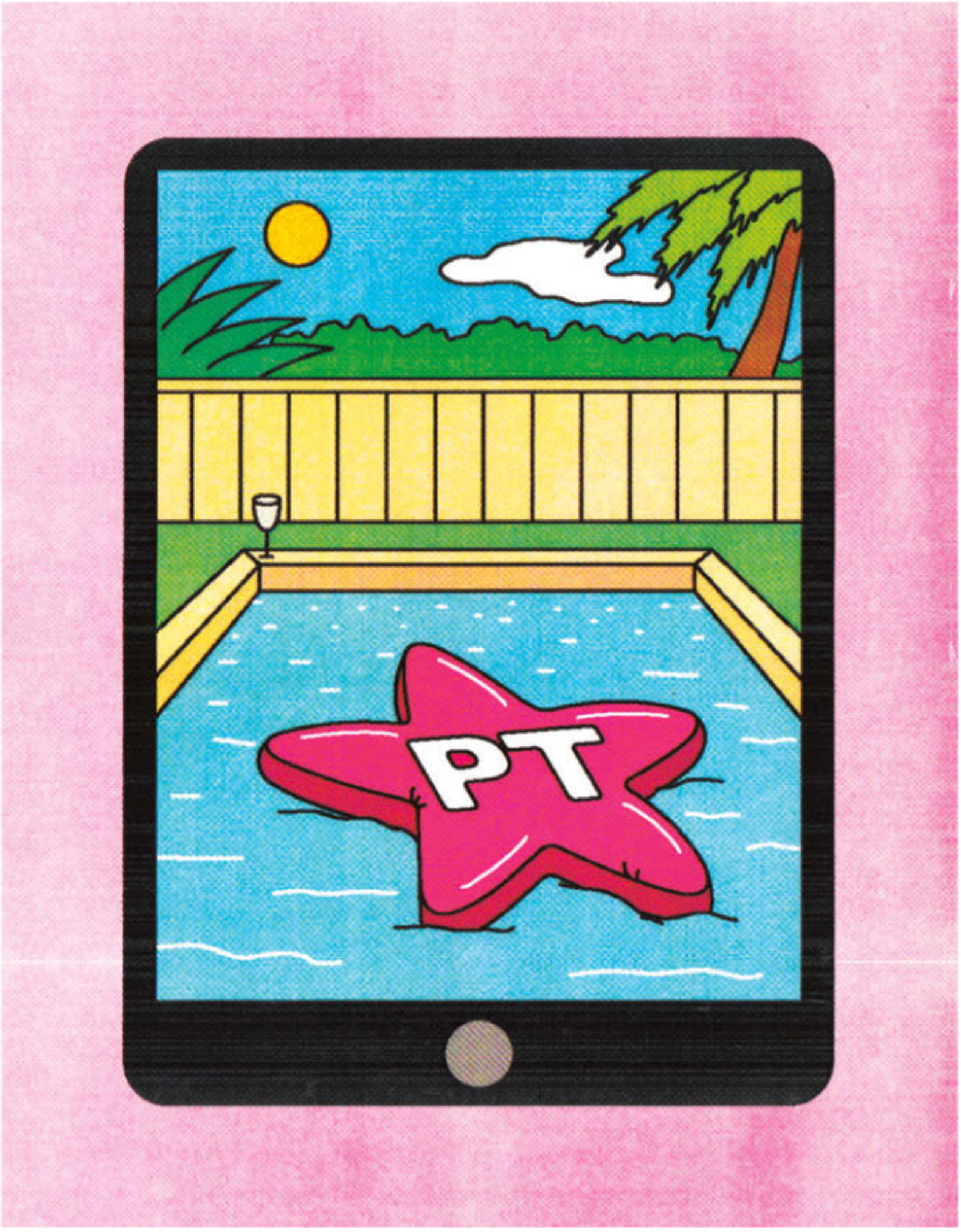
The asset-management industry should customise its offerings. It should make products better tailored to particular investor constituencies: climate funds for people who want to reduce carbon emissions, social funds for those interested in human capital; and governance funds for those worried about mismanagement. If it wants to sell products that put sustainability ahead of all other considerations, they should be marketed as "impact" funds, without reckless promises of high returns. If investment managers persist in introducing ESG criteria across the span of their portfolios, they should surrender voting rights to ordinary shareholders to make them more representative. That should steer them away from dangerous forays into the culture wars.

Streamlining need not mean shrinkage. In fact, more focused metrics could be promoted globally to encompass private companies and government entities, especially in emerging markets which have the most to do in cutting carbon emissions. It may be better to focus on the E side of ESG, and not the S or the G. In many non-Anglo-Saxon countries, there are impediments to basing investment decisions on the latter two, given information controls. Regulators, including the SEC, are for now focused exclusively on climate-related disclosures.

Ideally, the term ESG should be scrapped. As an amalgam of three words, environmental, social and governance, which sound more like a pious mantra than a force for change, its reputation is now tarnished. That may worsen if outflows continue as returns deteriorate. Yet sustainable investing is not about to disappear. More regulation may make it more credible. So would more policing of net-zero commitments. Investors will continue to care not just about returns but about the world they live in. With a suitable new name—say, natural-capital investing—there is no reason why a blend of climate and capitalism should not prove useful. Provided it is not hyped far beyond what it can actually achieve. ■

ACKNOWLEDGMENTS A list of acknowledgments and sources is included in the online version of this special report

MORE SPECIAL REPORTS Previous special reports can be found at Economist.com/specialreports



Social media

Follow the influencers

BUENOS AIRES AND SÃO PAULO

Latin American politicians court social-media stars, often ineptly

LAST YEAR, three months after her new husband fell off a hotel balcony and died, Deolane Bezerra, a 33-year-old criminal lawyer, launched a reality show on YouTube. Her personal tragedy generated copious publicity, since her husband, MC Kevin, was a well-known singer and the circumstances of his death apparently involved alcohol and adultery, reported in salacious detail by the media.

Many Brazilians, it turned out, wanted to follow the daily lives of Ms Bezerra and her sisters. Today she has more than 14m followers on Instagram, a photo- and video-sharing platform. She has claimed she charges between 400,000 reais ($73,000) and 1.8m reais for advertising contracts (*The Economist* tried to interview Ms Bezerra, but she did not show up). That would make her one of the most highly paid digital celebrities in Brazil. Recently she was invited to meet Luiz Inácio Lula da Silva, known as Lula, an ex-president from the Workers' Party (PT) who is favoured to win his old job back at elections in October. "Glad to know that everything I hope for my Brazil is in your manifesto," she posted afterwards, along with a picture of him kissing her on the forehead. (On July 14th police raided her home in a money-laundering probe. She denies wrongdoing.)

Ms Bezerra is an influencer: an internet celebrity who persuades her followers to buy things. By some measures, influencers are more influential in Latin America than in other regions, which is no doubt why politicians as well as perfume-makers are scrambling to win their approval.

Selfie nation

A survey by We Are Social, a media agency, suggests that 22% of internet users worldwide follow an influencer (although definitions of influencer vary). In Brazil the figure is a whopping 44%. In Argentina and Colombia, around a third do, compared with 20% in America (see chart on next page). According to a consumer survey conducted by Statista, a data company, two-fifths of Brazilians say they have bought a product because of an influencer, the highest share among 56 countries surveyed. Nielsen, a market-research firm, estimates that Brazil has 500,000 potential influencers on social media (which it defines as those with more than 10,000 followers). That is more than anywhere else.

Latin American influencers can be ordinary folk as well as celebrities—Ms Bezerra was little known until last year. But they can punch above their weight. Launchmetrics, an analytics firm, has created a metric refined by machine-learning that attempts to measure what an influencer's endorsement is worth by comparison with the cost of mounting a conventional advertising campaign that would generate the same degree of engagement among its audience.

It found that when JeanCarlo León, a 25-year-old Colombian influencer, uploaded a post on Instagram for Prada, an Italian fashion brand, it generated publicity worth $620,000 over six months. That may sound puny when compared with Kendall Jenner, an American influencer and model, who generated six times as much publicity ($3.7m-worth) with a post on Instagram for Prada over the same period. But Ms Jenner has 250m followers, more than 40 times as many as Mr León. Mr León's seem to be paying more attention.

The region may be especially susceptible to influencers because Latin Americans are especially keen on social media. Colombians, Brazilians, Argentines and Mexicans are estimated to spend a combined ▸▸

average of three and a half hours a day on social media, one hour more than the global average. Argentines who use Instagram on an Android phone spend a whopping 17 hours on the app each month. By contrast Americans on an Android phone spend less than eight hours on the app each month. One survey estimated that WhatsApp, a messaging app, was downloaded on 99% of Brazilian smartphones.

Influencers the world over often advise followers on improving their appearance, which is already a big business in Latin America. In Argentina one of the biggest private health insurers offers plans that include one plastic-surgery procedure a year. Brazil, where 13% of the world's elective cosmetic surgery takes place, according to the International Society of Aesthetic Plastic Surgery, started offering tax rebates for cosmetic operations in 2010. A member of the revenue service was quoted by Bloomberg as explaining that "cosmetic surgeries are also about health, physical and mental". Influencers often discuss the procedures they undergo. Ms Bezerra has talked about how she got a labiaplasty to make her vulva more symmetrical.

Young people trust influencers more than political parties, says Camila Rocha, who co-wrote a study on youth and democracy in Argentina, Brazil, Colombia and Mexico. Javiera Mieres, a Chilean fashion influencer, thinks that because influencers put up posts and speak with their fans almost daily, "people feel...they are basically interacting with a friend". When they talk about politics, their followers listen.

Jair Bolsonaro, Brazil's populist president, harnessed social media to win an election in 2018. Pro-Bolsonaro groups spent millions of dollars flooding WhatsApp with unflattering talk about his opponent, Fernando Haddad from Lula's party, the PT. By contrast the PT has been slower to embrace digital campaigning. In April Lula tweeted that he had been "asked to rejuvenate" his social-media presence; his post came with a photo of him wearing pink sunglasses. He said he would be opening accounts on TikTok and Kwai, two video-streaming platforms. He also began courting influencers, many of whom have encouraged 16- and 17-year-olds, who can vote but are not obliged to do so, to register.

But influencers can be tricky allies. On July 13th Anitta, a Brazilian pop star with 63m followers on Instagram, gave Lula's campaign a surprise boost by posting a photo of herself leaning against a stripper pole in a red catsuit, with Lula's party logo emblazoned on her bottom. She said that she did not support the PT but offered to repost messages in support of Lula from anyone who wanted "to make [Lula] rock here on the internet, TikTok, Twitter, and Instagram; just ask me and if it's within my reach and not against electoral law I'll do it." Three days later she reiterated that she was not a PT member and forbade the party from using her image in its campaigns.

Politicians also risk looking foolish. José Antonio Kast, a devout Roman Catholic who ran to be president of Chile last year, invited an influencer called Daniella Chávez to headline his final campaign event. That confused some of his more straitlaced supporters. Ms Chávez is a Playboy bunny with a channel on OnlyFans, a racy subscription platform, where she posts videos with captions such as "I can't wait to show you what's between my legs!!"

Similarly in Argentina, President Alberto Fernández invited L-Gante, then a 21-year-old singer, to his residence shortly before midterm elections in November. Mr Fernández perhaps hoped that their meeting, a video of which he posted online, would attract young voters to his left-leaning coalition, which claims to work for the poor. Unfortunately, L-Gante has the word "rich" tattooed on his face. Mr Fernández was mocked for trying to look cool.

Some influencers do not want to post about politics for fear of losing money. Ms Mieres in Chile used to upload videos supporting Gabriel Boric, the new leftist president, after graduating from university. But now that she is a full-time influencer, she only mentions politics in her Instagram stories, which are deleted automatically after 24 hours. "No influencer wants to take the risk of being too political because otherwise brands stop hiring you," she says. Luísa Sonza, a Brazilian singer, recently claimed that brands were boycotting those who denounced Mr Bolsonaro.

Perhaps because of the difficulty of convincing influencers to rally behind them, some politicians have taken up the mantle themselves. In Colombia's presidential election in June Rodolfo Hernández, a 77-year old candidate, almost won by posting prolifically on TikTok, where his tagline was "oldie but delicious". He amassed over 5m likes. It was not enough to get him elected—but he came close. ■

Sway me more

Internet users* who follow influencers, 2021, %

Selected countries

Source: We Are Social *Aged 16-64

Mexico

Mired in meth

CIUDAD JUÁREZ

Illegal drug consumption is increasing

IN RETO A LA JUVENTUD, a live-in treatment centre in Ciudad Juárez, in northern Mexico, Jenny Chávez describes how her addiction to drugs led to her losing her job as a maid, her house and her family. The 39-year-old mother of five started taking cocaine ten years ago, but it was after she moved onto methamphetamine, or meth, a potent stimulant, that things began to unravel. "It's hard because everyone takes it around here," she explains.

Mexico is home to hundreds of gangs shipping illegal drugs north. Domestic use of such substances, however, has historically been low. That is changing. Mexico's most recent national survey, from 2016, shows that 10% of people reported having tried an illegal substance in their lives, up from 7% in 2011. Synthetic drugs in particular have become more common over the past five years. In 2021 36% of users at a government network of treatment centres sought help for addiction to meth, compared with 15% in 2016.

Consumption of meth is doing "terrible damage" to the country, says Javier González, who heads the addiction agency for the state of Chihuahua, home to Ciudad Juárez. That city is particularly badly affected because of its location on the border. But the problem is national. According to data from the network of treatment centres, meth overtook marijuana in 2020 as the drug that most people sought help with.

The demography of drug users is changing, too. More women are taking drugs, while youngsters are having their first experience at an earlier age. During the pandemic consumption of illegal drugs rose among 15-24 year olds.

Analysts trace the increase in drug use to a decision around a decade ago by the Sinaloa gang, which is Mexico's main producer of synthetic drugs, to sell their wares at home as well as to traffic them. It works as a recruitment tool. The low price of synthetic drugs, as well as their potency and addictiveness, make it especially easy to get people hooked on them. According to Ms Chávez, a dose of meth costs eight pesos (40 cents) in Ciudad Juárez. That is less than a bag of crisps or a can of Coke.

The United States and Mexico have made preventing drug use a focus of bilateral efforts. President Joe Biden and Andrés Manuel López Obrador, Mexico's president, discussed this when they met in Washington on July 12th. "We are making an important transition to treating addiction as a health problem rather than a criminal one," says Gady Zabicky of the Mexican government's addiction agency, part of the health ministry.

In a few places change is afoot. A pilot project in Ciudad Juárez sends offenders to a special court that tries to avoid doling out any criminal conviction. The offenders, often young men who have been found with a small amount of drugs on them, agree to undergo treatment in exchange for a suspended sentence. If they complete it, they will have no criminal record. Jorge Ramírez, the magistrate who leads the project, says the drugs courts dealt with 7,000 cases last year. The federal government may try to copy the project.

But despite this there is little sign of change at the national level. Government adverts are crude, says Rebeca Calzada of Mexicans United Against Crime, a think-tank, suggesting that drugs equal death and that people should "just say no". Mexico lacks treatment centres. Those that exist are often shoddy.

The government is also in a muddle about another area of drug policy: legalising cannabis. Making it lawful runs the "risk of normalising" the drug that is the first step down a slippery slope for many people, reckons Xochitl Mejia of Tonalli, a centre that treats addicts in the capital. But it would also help to combat the profits made by drug gangs. In 2018 the Supreme Court ruled that cannabis should not be banned. The government ignored the ruling, so in 2021 the court itself changed the law to allow people to apply for permits to use it. Such indecision within the government hardly inspires confidence that Mexico can get its drug policy right. ■

Bello A yearning for Utopia

Latin America is a hotbed of idealistic notions that hinder good government

When he wrote "Utopia", a satire published in 1516, Thomas More was careful not to give an exact location for his imaginary island with its perfect society. But the reader is given to understand that it was sited off the coast of Brazil. That was hardly coincidental.

The idea of Utopia may be universal, but ever since Columbus and the European encounter with the Americas, which took place not long before More wrote, it has had a particular association with Latin America. This was nourished by myths of El Dorado and the Amazons; by tales of the prodigious civilisations of ancient Mexico and the Incas; and by European notions of the new world as both a natural paradise peopled by Rousseau's "noble savage" and a blank slate on which any project could be inscribed. "We have clung to Utopia because we were founded as a Utopia, because the memory of the good society lies in our origins and also at the end of the road, as the fulfilment of our hopes," as Carlos Fuentes, a Mexican novelist, wrote.

This streak continues to this day in Latin American politics. The Utopian urge is to "refound" rather than reform countries, expressed in new constitutions or the disqualification of political opponents. It often militates against the more modest but achievable goals of good government and steady progress.

Take, for example, the proposed new constitution presented this month in Chile. With 110 articles in its chapter on "fundamental rights and guarantees" it is a detailed blueprint for an ideal society in which no one is discriminated against and everyone enjoys equality, though some more than others. It guarantees everyone the right, among other things, to "neurodiversity", to "the free development" of "the personality, identity and life projects" and to "leisure, rest and the enjoyment of free time". It also requires the state to promote and guarantee "the harmonious inter-relationship and respect of all symbolic, cultural and heritage expressions". No matter that these aspirations are hopelessly woolly, are often at odds with one another and are supremely unlikely to be realised.

Or take Colombia's newly elected president, Gustavo Petro. Not only did he originally propose to ban all new prospecting for oil, gas and minerals in a country that relies on mining and oil for over half of its exports, but he also promised that the state would give jobs to the 11% of the labour force who are unemployed (his designated finance minister says this won't happen). Mexico's president, Andrés Manuel López Obrador, promises not just humdrum policy and administration but rather a "fourth transformation", akin to his country's independence or its revolution of 1910-17. And outsiders, from Butch Cassidy, an American train robber who died in Bolivia, to a group of German anti-vaxxers who set up a commune in the wilds of Paraguay during the pandemic, continue to see Latin America as a place to pursue their dreams undisturbed by laws or restrictions.

The problem with this search for Utopia is that it coexists with generally poor government. That may not be coincidental. As Carlos Granés, a Colombian essayist, has explained in "Delirio Americano", a monumental exploration of culture and politics in Latin America in the 20th century published earlier this year, the Utopian infatuation of the region's intellectuals with nationalism and revolution led them to disdain liberal democracy and embrace authoritarian leaders of the right or left. These impulses have hardened into a Latin American political brand. "If we renounce Utopia and revolution, what place would Latin America have in the concert of nations?" Mr Granés asked. Their cult reached its apogee with Che Guevara, liberation theology and Sub-Comandante Marcos and his Zapatista national-liberation army, with their respective examples of sacrifice and redemption through guerrilla war against imperialism, the exaltation of the poor and what Mr Granés terms "revolution as performance art".

The yearning for Utopia is a response to the injustices and inequalities of Latin American societies. But it may make those problems worse. Utopia slides all too easily into a dystopia of poverty and police states, as has happened in Fidel Castro's Cuba, Daniel Ortega's Nicaragua and Hugo Chávez's Venezuela. Even where it doesn't, it can lead to frustration and reaction, as may be Chile's fate.

Far better for Latin America's politicians to be honest with their people about the limits of the possible and to pursue the path of steady progress rather than the search for paradise.

Inflation

Feeling the pinch

MANILA AND SINGAPORE

The rising cost of living is making South-East Asians hungrier and poorer

NICK GANZON is tinkering with the engine of his jeepney, a kind of elongated jeep that shuttles commuters around Manila, the capital of the Philippines. That his car has broken down is yet another stroke of bad luck, for Mr Ganzon's fortunes have also ground to a halt. The price of diesel is painfully high. When it hit 40 pesos ($1.96) a litre two years ago, Mr Ganzon "panicked". Now a litre costs 88 pesos. "All our income goes to diesel," he says. The 67-year-old has tightened his belt: a self-described drinker, he has given up booze and cut back on food. His son, Mariel, also a jeepney driver, worries about being able to afford milk for his two young children.

In fact, inflation in South-East Asia is relatively mild compared with many parts of the world. This month AMRO, an economic think-tank affiliated with the Association of South-East Asian Nations (ASEAN), a regional club, forecast average inflation of 5.2% for its ten members this year. That is more than double last year's rate, but half the level of Brazil and well below India or South Africa. Yet South-East Asia had thought itself insulated against big jumps in prices: over the past decade inflation has been relatively low by poor-country standards. Prices also initially remained stable in the region even after they began shooting up in the rich world. No longer: in Laos, South-East Asia's worst-hit country, they rose by 23.6% last month compared with a year earlier.

The reasons for the surging cost of living are similar to those elsewhere. Snarled-up supply chains and Russia's invasion of Ukraine have pushed up the cost of commodities. Countries that rely heavily on imported food and fuel, such as the Philippines, Singapore and Thailand, are also importing eye-popping prices. In May energy was nearly a fifth more expensive in Singapore compared with a year before, and more than a third pricier in Thailand, while in the Philippines diesel was 86% dearer. Global cereals shortages and higher local transport costs have made food much dearer, too.

The effects of these rising prices are felt acutely in regions such as South-East Asia, where food gobbles up a big share of spending. In 2020 food consumed at home accounted for between two-fifths and half of the expenditure of Burmese, Cambodians, Filipinos and Laotians, compared to about a tenth in rich countries, according to the Economic Research Service, an American government agency. Its ranking of such spending in more than 100 countries put that quartet among the top 15.

Many South-East Asians are getting poorer. The World Bank calculates that a 10% increase in the global price of cereals or energy would raise the poverty rate in the Philippines, defined as living on less than $3.20 a day, by 1% and 0.3%, respectively. In fact, the price of cereals in June was up 27.6% on a year earlier, and the price of energy is projected to increase by 50% this year. This suggests that poverty in the Philippines will surge by at least 3.7 percentage points, impoverishing 3.85m people. A similar formula estimates that Thailand will add six percentage points this year to its poverty rate, defined as living on less than $5.50 a day.

Last year, even before prices started rising in the region, one in five South-East ▸▸

→ Also in this section

Asians—or 139m people—either lacked consistent access to food or had run out of food and gone without eating long enough to put their health at risk. That is about three times the proportion in East Asia, according to the UN. That number will inevitably increase this year. Preliminary data from household surveys being conducted by the World Bank in much of the region already show that "food insecurity is much more in evidence, especially at the lower ends" of the socioeconomic ladder, says Aaditya Mattoo, a senior economist at the bank. Inflation is exacerbating pandemic-inflicted woes.

Governments are racing to soften the blow for consumers. They have raised the minimum wage (in Laos and the Philippines), doled out cash to the poor (Singapore, Malaysia, Indonesia), and subsidised fuels or fertiliser (Indonesia, Malaysia, Philippines, Thailand). A couple have capped prices for essential goods (Malaysia, Thailand) or banned exports of some essentials, such as palm oil or chicken (Indonesia, Malaysia).

Such measures have thus far been effective at controlling inflation in Indonesia and Malaysia. As net exporters, including of coal and natural gas, both countries have profited from the commodities boom. Flush with export earnings, these governments can better afford to subsidise imports than other countries in the region, notes Mr Mattoo.

But not, perhaps, for long. Malaysia is expected to spend 78bn ringgit ($17.5bn, or 4.7% of GDP) on subsidies this year, the most ever. The costs of these subsidies already exceed the increase in revenue generated by commodity exports this year, according to Wellian Wiranto, an economist at Overseas Chinese Banking Corporation, a Singaporean bank. And inflation is already seeping into the Indonesian economy. In June prices were 4.3% higher than a year earlier, exceeding the government target of 4% for the first time this year.

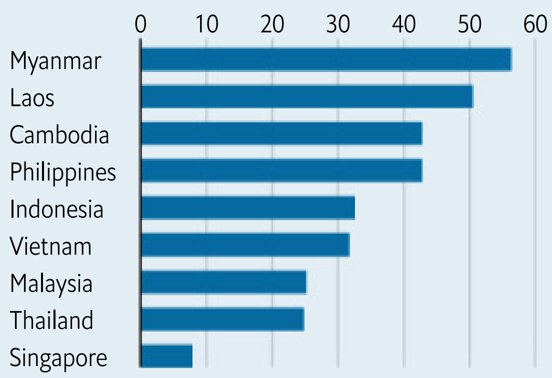
Cash transfers to the poor are more efficient than export bans and price controls, which distort incentives and benefit the wealthy as much as the poor, notes Mr Mattoo. He points to fuel grants and cash transfers, which the Philippines put in place this year in response to the spike in the cost of living, as an example to follow.

The tricky thing is calibrating support when it is unclear how long high inflation will last. There are reasons to be pessimistic. Since America's Federal Reserve started raising interest rates earlier this year, South-East Asian currencies have depreciated against the dollar, making imports more expensive and fuelling inflation. The economic recovery from the pandemic may have the same effect. As South-East Asians resume spending at pre-pandemic levels, prices are likely to increase in response to invigorated demand, says Hongyan Zhao, an economist at AMRO. That is the case in Singapore, where employees have begun demanding wage rises in response to soaring prices, suggesting that they expect inflation to persist.

Yet there is also some good news. Aside from Singapore, there is so far little sign that inflation in other countries is becoming entrenched. Core inflation, which excludes volatile items like food and fuel, remains low in most economies, and surveys show that the public expect it to stay that way. Inflation in Asia may already have peaked, reckon analysts at Morgan Stanley, an investment bank, given that global commodity prices have begun to fall, as has demand for goods. Mr Ganzon the jeepney driver, and millions like him, will be praying that they are right. ■

Generous portions

ASEAN countries*, food spending†
as % of consumer spending, 2021



*Excluding Brunei †Consumed at home
Source: Economic Research Service

Liquor licensing

Cheers!

Bangladesh loosens its laws on booze

DESPITE ITS location on one of the busiest streets in Dhaka, Bangladesh's capital, Eram is almost impossible for newcomers to find. Only a black gate marks the entrance to the bar. Inside, it is no more inviting. Guests are greeted by a miasma of cigarette smoke, sweat, urine and liquor. Those who fail to tip the waiters risk being reported to the police for breaking the country's strict alcohol laws. Yet dozens, if not hundreds, pass through the doors each day. The men—women are barred—go because the booze is cheap and the lights are low.

This is how much of the drinking in Bangladesh takes place. Consumption of alcohol has long been outlawed for Muslims, who today make up 90% of the population. Other religions are exempt but need a permit issued by the government. A loophole for Muslims was introduced in 1950, but it includes a requirement for a doctor's certificate. The permit declares that the holder "requires liquor on medical grounds" and is "hereby permitted to possess and consume foreign liquor". Few bother. Most drinking is illicit and feeds a lucrative black market for imported liquor. Cases of people dying after drinking dodgy home-brew are not uncommon.

The government has acknowledged the problem. It is overhauling the rules in a simultaneous bid to boost domestic industry and bring boozing within the law. Individuals will still require permits, but the process for restaurants and bars to get liquor licences will be made less ambiguous. The new laws, which were introduced in February, also oblige establishments to buy 60% of their stock from the country's two licensed producers: Jamuna Group, which makes Hunter, Bangladesh's only home-grown beer, and Carew & Co, a state-run distiller of such fine tipples as Gold Riband Gin, Old Rum and Imperial Whisky.

The new rules were also designed with an eye on Bangladesh's growing number of foreigners—from humanitarian workers to Chinese labourers toiling on infrastructure projects—and aim to lure in more. Even as domestic tourism has taken off, foreign tourists have remained elusive. Conservative alcohol laws and dress codes are often blamed.

Not that there is any shortage of Bangladeshis to consume the booze. During the pandemic, which hindered flows of foreign alcohol and prompted a police crackdown on the black market, Carew's liquor revenues surged from 1.56bn taka ($16.6m) in 2019-2020 to 1.95bn taka the following fiscal year. Non-Muslims may have knocked it all back alone, but it seems likelier that some believers helped out.

The new laws should allow the government to make a little more money from selling alcohol. But legalising liquor sales to all, however lucrative, remains off the table. In April, lawyers with ties to the main opposition party challenged some of the new rules in the High Court. The government will want to keep the legal battle, assuming it engages in one, quiet. An election is coming next year, and the country's powerful Islamic groups are riled by any whiff of the hard stuff—legal or not.

Politics in Sri Lanka

In with the old

COLOMBO

The new president must fix a mess which many think is partly his fault

RANIL WICKREMESINGHE is a familiar sight to anyone who has taken even a passing interest in Sri Lankan politics in recent decades. First elected to Parliament in 1977, he has held a variety of cabinet jobs over the years, including, on six occasions, that of prime minister. His most recent stint was in the service of Gotabaya Rajapaksa, whose tenure as president came to an ignominious end on July 14th when he tendered his resignation by email from Singapore, having fled the country in the dead of night the day before.

Fearing prosecution for alleged corruption and crimes committed during Sri Lanka's civil war, the disgraced ex-president is expected to lay low abroad for the foreseeable future. But Mr Wickremesinghe (pictured in effigy) will remain a familiar face around Colombo, the capital. After taking over from his boss in an acting capacity the week before, he was officially elected president by a clear majority of 134 of the 225 members of Parliament on July 20th. He is expected to serve out the remainder of Mr Rajapaksa's term, which ends in 2024.

His election raises hopes that Sri Lanka, which has been in economic and political turmoil for months, will at last regain the political stability required to solve its economic problems. But Mr Wickremesinghe's chances of success are complicated by his willingness to work with the Rajapaksas. The protesters who chased Mr Rajapaksa from office had also demanded Mr Wickremesinghe's resignation as prime minister. Their idea of his stepping down hardly involved a promotion to the highest office in the land. That bodes ill for his chances of uniting Sri Lankans behind him in a time of crisis.

There is some room for optimism. Mr Rajapaksa, for all his reluctance to relinquish the powers he enjoyed, eventually departed in the face of public pressure rather than call in the army to quash protests and rule by decree. Mr Wickremesinghe imposed a curfew, declared a state of emergency and described the largely peaceful protesters as "fascists", suggesting a degree of personal anger which he will have to keep in check over the coming months. But he also submitted to the constitutional process rather than seek to prolong his interim stint in power. Security forces acted with restraint compared with past crises. Anarchy and large-scale violence were avoided.

Already unpopular

The new president is likely to stick to a programme of economic reforms which he had begun to implement as prime minister. The plan proposes increases in income and corporation tax, the privatisation of state-owned enterprises, a public-sector hiring freeze and a stronger social-safety net to cushion the blow of the other policies. It was drawn up by a diverse group of activists and policy wonks. Its direction enjoys broad support even among members of the opposition. Getting the country's finances into a state that is sufficient to obtain a bail-out from the IMF is widely seen as a priority.

Politically, Mr Wickremesinghe has tried to sound conciliatory. In a speech to Parliament shortly after his election he acknowledged that Sri Lanka was in deep trouble and that young people in the country were demanding "systemic change". He then announced talks with all parties represented in Parliament as soon as the following day. Before his election, he had begun work on curtailing some of the powers of Sri Lanka's mighty executive presidency, though he had not committed to abolishing it, as protesters have demanded.

That may not be enough to convince the movement that drove out Mr Rajapaksa and whose aim is a wholesale change in the country's politics. Given that Mr Wickremesinghe was prime minister, few expect major changes to the cabinet. He has been silent on the prospect of an early parliamentary election, another of the protesters' demands. They see Mr Wickremesinghe's ascendancy as a victory for the discredited political class they blame for the country's travails. They say they will continue to occupy the presidential secretariat, which they took over on July 9th. Even a powerful executive presidency is, in the end, not immune to the wrath of the people it serves. ■

Politics in Pakistan

Comeback Khan

ISLAMABAD

The ousted prime minister's party wins a surprise victory in Punjab

WHEN PAKISTAN'S Parliament sent Imran Khan packing in a vote of no confidence in early April, the deposed prime minister said he would not go quietly. He has been true to his word. Night after night for the past few months he has held rallies to drum home his message that he was defenestrated in a nefarious plot orchestrated by America. From stages across the land, he has railed against the "imported government" that replaced him. Never mind that he offered no evidence for his theories; supporters lapped them up. The question for his opponents has always been whether Mr Khan could translate this fervour into electoral success.

By-elections in Punjab province on July 17th delivered the answer. Mr Khan's Pakistan Tehreek-e-Insaf (PTI) party won 15 of the 20 seats that were up for grabs, regaining control of the provincial assembly. That was unexpected. Punjab, Pakistan's most populous province, is the country's political centre of gravity. It is also the power base of Mr Khan's successor, Shehbaz Sharif, and his Pakistan Muslim League (PML-N) party. Mr Khan has wasted no time in using the victory as a platform to demand early nationwide elections.

The vote in Punjab suggests that street power does indeed bring success at the ballot box. Some voters may have bought into Mr Khan's theory of an international conspiracy against him, which America has said is nonsense. The vote also illustrates voters' distrust of cynical politicians who flit from one party to another to maintain their power. Those now defeated in Punjab had left Mr Khan's party in April to vote for Mr Sharif's PML-N.

Yet the most compelling reason for Mr Khan's success is the government's weakness. It has failed to present an alternative story to Mr Khan's conspiracy theories, leaving him to set the agenda. In the months before Mr Khan's fall, the PML-N and its allies blamed him for high inflation and Pakistan's economic woes. Mr Khan's allies are now beating them with the same stick, even though the current government has inherited the mess. Inflation is painful. Mr Sharif's reputation for hard-nosed economic-policymaking was damaged by his indecision over fulfilling the conditions imposed by the IMF in negotiations for a bail-out. When Mr Sharif at last cut fuel subsidies, he had to take the blame for sudden, big price rises.

Polling shows that Mr Khan is a particular hit with Pakistan's educated, digitally literate youth. For many of them, the PML-N represents a corrupt old guard who are holding the country back. Given that two-fifths of the electorate are between 18 and 30, this gives Mr Khan a huge advantage, says Bilal Ghani of Gallup, a pollster.

Mr Sharif's defeat in Punjab will increase tensions in his national coalition, which brings together an improbable range of politicians from the left to the religious right. They are likely to disagree over whether to hold an early election. Some in his own party are mumbling that only Mr Sharif's elder brother, thrice-elected prime minister Nawaz Sharif, currently in exile in London, can save the day.

As is usual in Pakistan, the most intriguing question concerns the position of the army. Mr Khan won in 2018 as the generals' favourite. His downfall coincided with his loss of their favour. Since then, he has been unusually outspoken in his criticism of the generals, mocking them as "neutrals" at rallies for failing to prevent his removal. The level of vitriol aimed at figures usually spoken of in respectful tones has been remarkable. Some commentators see Mr Khan's victory in Punjab as a repudiation of military meddling.

The drubbing which the Sharif clan received in Punjab may not automatically translate into similar losses in a putative general election. Shaken out of its complacency, the PML-N may try to mobilise its vote more vigorously, especially if the stakes are higher. Mr Sharif, who clearly appreciates the seriousness of the threat, says he wants Mr Khan's political finances investigated. The fight to shake off his persistent opponent will only get dirtier. ■

Banyan One-track mind

Why Indonesia punches below its weight in global affairs

For most of his eight years in power, Joko Widodo, or Jokowi, has evinced next to no interest in foreign affairs. Mention the geopolitics of the region in which Indonesia sits, and the president's knee starts to bounce impatiently up and down while his eyes dart from left to right like a schoolchild desperate to escape detention. Bring the topic back to building ports and bridges, and you have his eager attention. So what to make of a recent burst of diplomacy, and especially of an unusual and high-profile visit as a peacemaker to the capitals of both Ukraine and Russia?

Admittedly, the foreign-policy stakes are higher for Jokowi than usual. In November Indonesia hosts this year's G20 summit. Russia is a member of the group, but given Vladimir Putin's invasion of Ukraine, Western members say they will boycott the summit if the Russian president shows up. That would be galling for Indonesia. The best that can be said about a meeting of G20 finance ministers which has just ended in Bali, and which was intended to lay the ground for the gathering in November, is that it did not collapse in acrimony.

Jokowi's plan to avoid a debacle in November is to have Volodymyr Zelensky, Ukraine's president, show up too. Late last month the Indonesian president travelled to Kyiv with the first lady to deliver an invitation in person, while expressing a pious desire for an end to the war. Mr Zelensky also wants the war to end, but he may have felt that Jokowi was addressing the wrong man, particularly as his request for arms was rebuffed (Jokowi offered medical aid instead). Though Mr Zelensky received his guest with courtesy, the prolific social-media user failed to tweet about the visit.

In contrast, Mr Putin seemed pleased to see Jokowi, calling Indonesia one of Russia's "friendly countries". He promised to prioritise Indonesia in shipments of fertiliser. He proposed that Russia's state railway invest in the grand scheme of a new capital, Nusantara, that Jokowi dreams of carving out of the jungle in Borneo. And as if to underscore Jokowi's efforts as a go-between, Mr Putin even appeared to promise to lift Russia's maritime blockade of Ukrainian wheat exports (he has yet to do so, though negotiations are continuing, mediated by Turkey).

If, as seems probable, Mr Putin fails to follow through on most of his promises, the trip to Moscow will represent more of a public-relations coup for the Russian president than for Jokowi. Yet, as well as calculations around a successful G20 summit, the Indonesian president's recent travels highlight a Jokowi constant: when he does engage with the wider world, it is usually because he sees a possible benefit for the economy back home.

In this, Jokowi is different from many leaders of countries of similar size and standing, who see national interest in broader terms of regional leadership and other measures of prestige. Indeed, when Jokowi came to office he promised a "down-to-earth diplomacy", instructing officials to focus on the everyday needs of Indonesians ahead of abstract principles or even Indonesia's international profile, points out Aaron Connelly of the International Institute for Strategic Studies in Singapore.

He certainly views Russia's invasion through an economic lens. By messing with global food markets, it has caused headaches at home. One instance is cooking oil; its price has shot up so high, hurting tens of millions of Indonesian households, that Jokowi felt compelled to suspend exports of palm oil, of which Indonesia is the biggest producer.

Another is wheat, the main ingredient in the instant noodles which are an Indonesian staple. Before the war, Indonesia was the second-biggest importer of Ukrainian wheat. With the price of noodles rising fast and hurting the poorest, no wonder Jokowi wants to be seen to be doing something.

Jokowi must worry that, by compounding the strain on the economy caused by the pandemic, the war imperils the economic gains of his presidency to date. It even throws the already uncertain future of Nusantara into doubt. That puts a premium on showing an audience back home that he is helping to resolve the crisis. Not that his recent diplomacy is conducted without regard to the wider global good that success as a peacemaker would bring. But with little evidence of much diplomatic follow-up by either him or his administration, the assumption is that Jokowi the newfound statesman is guided, as he always has been, chiefly by domestic calculations—and narrowly economic ones at that.

Japan

States of mind

NARA

What drove Yamagami Tetsuya to target Abe Shinzo?

THE OMIYACHO neighbourhood of Nara, an ancient capital in western Japan, is unremarkable. A tangle of quiet streets winds around boxy apartment blocks tightly packed together. Inside are standard-issue working-class Japanese flats: modest rectangular rooms with low ceilings, fluorescent lighting and the damp odour of a humid Japanese summer. In one such home, Yamagami Tetsuya (pictured) assembled the gun he used to kill Abe Shinzo, a former prime minister, on July 8th.

Mr Yamagami's target could hardly have been more political. Mr Abe was Japan's longest-serving prime minister, and remained a force inside the ruling Liberal Democratic Party (LDP) even after ill health forced him to step down in late 2020. He was campaigning for an LDP candidate in Nara when Mr Yamagami shot him. Mr Abe's policies transformed his country, particularly on matters of defence and national security. What is more, the changes were controversial. When news of the shooting broke, many assumed that it was an ideologically driven assassination by someone opposed to Mr Abe's ideas.

But Mr Yamagami's motives instead seem to have been more personal. He told investigators that he killed Mr Abe to avenge a grudge against the Unification Church, a cult-like religious group to which neither he nor Mr Abe belonged. The connection requires a bit of unpacking.

The sect was founded in South Korea in 1954 by the Reverend Moon Sun-myung, a self-proclaimed messiah who was later imprisoned in America for tax fraud. (The group is sometimes known as the "Moonies".) Moon, who died in 2012, found common cause with Kishi Nobusuke, Mr Abe's grandfather and Japan's prime minister from 1957 to 1960, in their shared repugnance of communism. Kishi helped the church gain a foothold in Japan: its local headquarters was "built on Tokyo land once owned by Kishi", writes Richard Samuels, a scholar at MIT, in his book *Machiavelli's Children*. Moonies became reliable campaign volunteers for some right-wing members of the LDP, just as they supported conservatives in America, where the church also attracted followers.

Mr Abe continued to nurse the relationship. He spoke at an online event for the sect as recently as last September, appearing alongside Donald Trump. Mr Yamagami's mother belonged to the Unification Church, and in the early 2000s donated enough money to the group to leave her family bankrupt, according to Japanese media and a source close to the investigation. Mr Yamagami apparently blamed Mr Abe's family for his own family's travails. He planned the killing long in advance, and tested his homemade gun by shooting at the wall of a local branch of the church in Nara in the middle of the night. Prosecutors have ordered a psychological assessment to see if he is fit to stand trial.

Security failures made it possible for Mr Yamagami to carry out his plan. "In Japan, the idea that such assassinations could not happen became very widespread," says Fukuda Mitsuru, a crisis-management expert at Nihon University in Tokyo. Three big mistakes made Mr Abe's killing possible, says a former senior security official.

Failure has many fathers

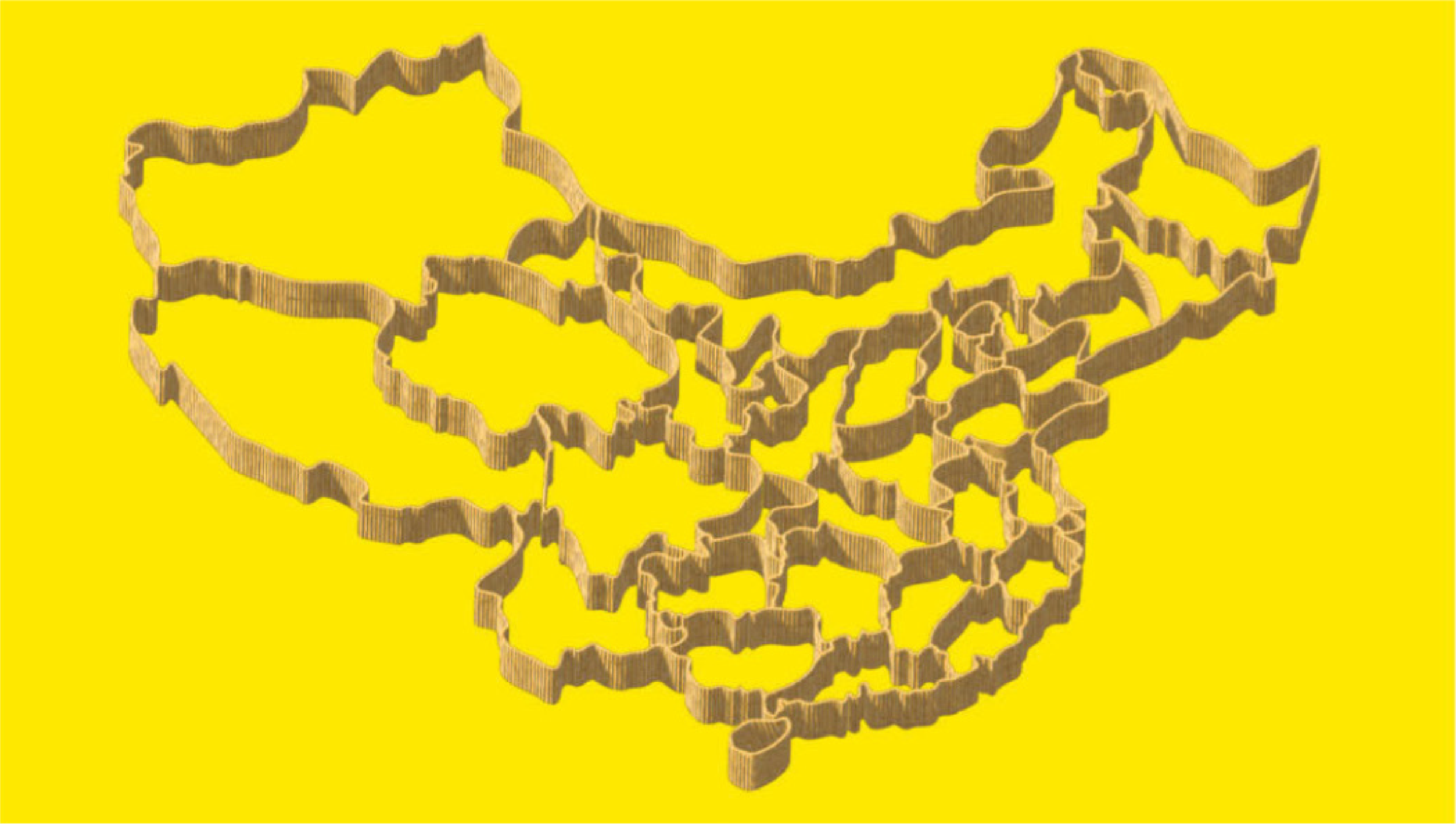
First, the branch of Tokyo's police charged with protecting dignitaries does not have enough manpower to guard all of Japan's many former prime ministers. Worse, local police in Nara failed to secure the vicinity around the campaign event where Mr Abe was speaking and did not notice as Mr Yamagami crept closer to Mr Abe from behind. Lastly, after Mr Yamagami fired his first shot, Mr Abe's security detail failed to shield him or push him to the ground. Instead, Mr Abe turned towards the sound of the gun, giving the shooter the chance to get off a fatal second round.

As Japan has sought to make sense of the killing, commentators have focused on Mr Yamagami's psychology. Some argue that concentrating on ties between the LDP and the Unification Church or on police failures obscures deeper socioeconomic forces that may have unmoored Mr Yamagami from society. Reports in Japanese media paint him as a member of a precarious class that came of age in the 1990s and early 2000s, after the economic bubble of the 1980s burst. Mr Yamagami's father and brother both committed suicide, and Mr Yamagami attempted suicide once himself, according to an uncle. The 41-year-old bounced between jobs and appears to have lived an isolated life. "I don't think anybody knew him," says one neighbour in Omiyacho. "There are a ton of big apartments here and people don't interact with each other—there is no community."

In those respects, Mr Yamagami bears a resemblance to the perpetrators of recent acts of indiscriminate mass violence in Japan. A man of a similar age and background set an animation studio in Kyoto on fire in 2019, killing 36. A younger socially isolated man dressed up as the Joker from the "Batman" films and stabbed passengers on a Tokyo subway on Halloween last year, injuring 17. Komiya Nobuo, a criminologist at Rissho University in Tokyo, likens such attacks to "suicide-bombings", where the killers seek "symbols of happiness" to attack and do not even try to escape or evade punishment.

In short, it seems to have been a complex combination of factors that drew Mr Yamagami down the road to Mr Abe's campaign event that day. As Mr Komiya points out, "It's not a linear decision-making process—criminals themselves often don't understand how they reached conclusions they did." Japan will be left searching for answers long after Mr Yamagami's trial comes to an end. ■

The man behind the gun



The economy

Tearing down the bamboo walls

HONG KONG

China fights a trade war within its own borders

ALTHOUGH MANY are embarrassed to admit it, foreign correspondents learn a lot from taxi drivers. In China economic correspondents can also learn a lot from the taxis themselves. Most cabs in Beijing are Hyundai Elantras. In Shanghai they are often the Volkswagen Touran or Passat. And in Wuhan they are commonly Citroën Elysées. In each case, the explanation is the same. These foreign brands have joint ventures with local state-owned carmakers that the city government is keen to champion—even if it is at the expense of other carmakers and their own consumers.

This is one prominent example of China's persistent "local protectionism". Many of its provinces, prefectures and counties try to shield local firms from outside competition. These measures divide the mainland's vast, singular market into something more plural. "China in many ways resembles the European Union," says Jörg Wuttke, president of the EU Chamber of Commerce in China. "We have 27 member states; they have 31." The EU has been trying to perfect its single market for three decades, often in the teeth of national rivalries and resentments. China has been battling local protectionism for just as long. Newspapers in 1991 were full of tales of "economic warlords" dividing China into "dukedoms" protected behind "bamboo walls", recalls Andrew Wedeman in his book "From Mao to Market".

Some of those walls remain. If a provincial border divides two cities 200km apart, lorries will flow between them as if they were about 100km further apart, according to Lu Ming of Shanghai Jiao Tong University and his colleagues. The "toolbox" of local protectionism is "wide", says Mr Wuttke. Governments might, for example, put out a tender with customised requirements that only a home-grown champion can fulfil. They might enforce rules on safety or unfair competition more zealously against outside firms. In the past governments have even given locally made cars priority access to express lanes, according to a paper by Panle Jia Barwick of Cornell University and her co-authors.

Some recent barriers were documented by China's National Development and Reform Commission (NDRC) in May. The province of Jilin, for example, required fertiliser companies to traipse to a local institute to get their products tested. The city of Ma'anshan refused to allow private firms to bid for the rights to mine dolomite without seven stamps from local departments (which withheld them because they "did not understand the companies' background"). Taiyuan required lorries to specify their route when applying for permits, which put drivers unfamiliar with the city at a disadvantage. The traffic-control departments in parts of Jiangxi province delegated the licensing of electric bikes to local insurance companies that compelled owners to buy insurance too. These cases of local malpractice have all been rectified, according to the NDRC. But it presumably hopes that publicising them will help deter similar meddling elsewhere.

One way to expose the seams in China's market is to see what happens when they are removed. China's counties (which have populations of about 500,000 on average) are sometimes absorbed into larger prefectures (with millions of residents), removing the administrative borders between them. When this happens, the absorbed counties tend to prosper. Their GDP per person was 12.6% higher than counties that applied to join a prefecture but failed, according to Yi Han of the University of Pittsburgh. The counties benefited from joining a larger market, just as small European countries benefit from joining Europe's single market.

Efforts to tear down these bamboo walls have gained new urgency in recent years. After the global financial crisis, the trade war and the pandemic, China's rulers have concluded that they can no longer rely on foreign markets. They are trying to steer the economy away from a growth model based on importing vast quantities of commodities and components and exporting similarly vast quantities of manufactured goods (a model known as *da jin da chu*, "big in, big out"). Their attention has turned from fickle markets overseas to the one that has been in front of them all along.

In April the Communist Party's central committee and the Chinese government's state council (the equivalent of its cabinet) jointly published a set of opinions calling for a "national unified market". They lamented "market segmentation", "repetitive low-level construction" and "vicious competition in investment promotion". The timing was unfortunate, an exhortation to remove metaphorical bamboo walls just as literal metal fences were appearing in locked-down Shanghai. But the initiative is nonetheless welcome, says Mr Wuttke. "They realise this export miracle they experience now will end," he says. "They're trying to find other means to get the economy going. And knocking down protectionist walls is not a bad idea."

One worry is that if local governments lose regulatory discretion, they will stop building their economic dukedoms and instead "lie flat", lapsing into apathy. The fierce economic competition between different parts of China does, after all, keep local governments on their toes. But even in a more unified market, local governments could compete to provide good infrastructure, well-trained workforces and brisk administration of rules that are more standardised across the country.

The bigger worry is that local protectionism will persist despite the exhortations of China's rulers. A more unified market will create losers as well as winners. It will, for example, require some local carmakers to lose custom to rivals from elsewhere. Local officials resist these market forces for a reason. They wish to preserve jobs, tax revenues and social peace, criteria that determine how they are evaluated by the party. If they imperil stability, they will also jeopardise their chances of promotion. To stop them bestowing favours on local champions, then, China's central government will have to rethink how it bestows favours on local cadres. ■

Covid-19

Test after test

BEIJING

New subvariants are the latest challenge to the zero-covid policy

IN EARLY JULY Steven Ho, a lawmaker in Hong Kong, tested positive for covid-19. That is hardly news in a city reporting some 3,000 new cases a day. But two days earlier Mr Ho had stood just metres away from Xi Jinping, China's president. Mr Ho would have been tested and made to quarantine before seeing Mr Xi. Still, the virus (which is not detectable right away) probably entered the room with Mr Ho.

Apart from a gap in his schedule, there was nothing to suggest that Mr Xi had been infected. But the incident shows how hard it is to suppress the virus. That is the goal of China's "zero-covid" policy, which relies on mass testing and lockdowns to contain outbreaks. The highly transmissible Omicron variant has strained that strategy. Now even more infectious subvariants, such as BA.5, are circulating. Longer, more frequent and concurrent outbreaks are likely, say experts.

The number of daily new cases in mainland China is still in the hundreds. But it is rising, with outbreaks leading to new restrictions in many places. Four districts, with nearly 3m residents, have been locked down in the north-western city of Lanzhou. Shanghai, still in shock after a months-long lockdown earlier this year, required residents in nine areas to take two tests over three days from July 19th. All in all, some 260m people across 41 cities are affected by lockdowns or local controls, according to Nomura, a Japanese bank.

Locked down and opening up

Yet there is no sign that the government is reconsidering its policy. Doing so would have "unimaginable consequences", Mr Xi said last month. Policymakers fear that if the virus were allowed to spread, hospitals would be overwhelmed and the death toll would spike. Many of the most vulnerable have still not been vaccinated. "Rather than harming the lives and health of the people, it is better to temporarily affect economic development a little," says Mr Xi.

But the zero-covid policy is doing significant economic damage. GDP rose by just 0.4% in the second quarter compared with a year earlier. Not since the start of the pandemic has the economy looked so anaemic. Nearly a fifth of young people are unemployed. Dozens of private hospitals—forced to devote resources to mass testing—have declared bankruptcy in the past two years. Recently Macau, the world's biggest gambling hub, closed its casinos because of an outbreak.

The government has made some tweaks to its rules, such as reducing the quarantine time for international travellers from 14 days to seven. But bigger changes may depend on how the virus evolves. Yanzhong Huang of the Council on Foreign Relations, a think-tank in America, believes it would take a new variant that overwhelms attempts to contain it, like a "dambuster", to cause a change in strategy. Otherwise, he says, China will try to exit the zero-covid policy according to its own timetable.

What that timetable looks like—or whether it even exists—is anyone's guess. To avoid mass death, any exit strategy would have to start with a campaign to vaccinate the elderly. Ideally this would require them to receive two doses of a vaccine, plus a booster shot. As of July 7th only two-thirds of those over 60 had been jabbed three times. People over 80 appear the most hesitant to get vaccinated.

Cities have tried to increase vaccination rates by, for example, offering eggs or cash to old people who get jabbed. But these sops look tiny compared with the resources thrown at testing and enforcing lockdowns. Only a few cities require proof of vaccination to enter public spaces. The municipal authorities in Beijing recently floated the idea, but backed down after opposition. In general, officials appear more worried about the potential backlash should they force shots on the elderly than about mass fatalities from the virus.

Mr Xi does not seem to be pushing them. He has not even confirmed that he has been vaccinated, let alone jabbed on television, as the leaders of some other countries have been. While most countries have accepted that the virus cannot be eradicated, Mr Xi says China will continue with the zero-covid policy until a "final victory" has been secured. Perhaps only he knows what victory looks like. ■

China, Taiwan and America

Travel bug

Talk of Nancy Pelosi visiting Taiwan angers China

The last time a Speaker of America's House of Representatives visited Taiwan, the Chinese government could do little more than grumble. Newt Gingrich, who held the position from 1995 to 1999, stopped over in 1997 and met the island's president at the time, Lee Teng-hui. A few days earlier Mr Gingrich had visited China and warned its leaders that America would intervene if they invaded Taiwan, which China claims. "OK, noted," he described them as responding. "Since we don't intend to attack, you won't have to defend."

There is scant hope of such a meek response if the current Speaker, Nancy Pelosi, goes ahead with a plan to visit Taiwan in August. The trip has not been confirmed, but people familiar with her planning said a stopover was possible as part of an Asia tour originally planned for April and postponed after she caught covid-19. When asked about the trip on July 20th, President Joe Biden said he did not know the status of it. American military officials, he added, thought it was "not a good idea right now".

China has already made its feelings clear, threatening "strong and resolute measures" if the trip goes ahead. Hu Xijin, a former editor of a nationalistic Chinese tabloid, proposed that China's armed forces impose a no-fly zone on Taiwan or at least fly aircraft over the island. He also suggested that Chinese warplanes should escort Ms Pelosi's aircraft and that, if they came under fire, China should attack Taiwan's military aircraft and bases.

Until recently such threats might have been dismissed as bluster. Ms Pelosi's visit is arguably no more provocative than Mr Gingrich's. American congressional delegations have visited regularly, as have other countries' legislators.

Yet there are reasons to be worried by China's sabre-rattling. In 1997 it did not have the capabilities for an effective military response. That became clear in 1996, when America sent two carrier groups to the area after China fired missiles into waters nearby. Since then China has accumulated many of the forces needed for an assault and, in the past two years, tested Taiwan's defences with frequent aerial drills around the island.

Chinese officials are increasingly convinced that the White House is recalibrating America's "one-China" policy (which acknowledges the Chinese position that Taiwan is part of China), including by sending officials to Taiwan more often. Ms Pelosi's trip would come at a sensitive moment for China's leader, Xi Jinping, about three months before a Communist Party congress at which he is expected to secure a third term, violating recent norms. Mr Xi is already facing unexpected challenges in sustaining his zero-covid strategy, managing an economic slowdown and finessing his support for Russia on Ukraine. Having linked Taiwan's reunification to his "national rejuvenation" goal, he might feel a need to prove his resolve if tested.

"The Chinese appear to perceive the need to demonstrate that the US cannot keep salami slicing its one-China policy with impunity," says Bonnie Glaser of the German Marshall Fund of the United States, a think-tank. She added that in April a former Chinese army officer emailed her to express his "personal opinion" that China's air force would stop Ms Pelosi's plane from landing in Taiwan. Such aerial brinkmanship is still unlikely given the risk of escalation. But one thing is certain: there is turbulence ahead. ■

Language-learning in Xinjiang

Lessons from Malcolm X

How Uyghurs became so good at English

When President Xi Jinping visited the region of Xinjiang this month, he painted China as a tolerant, multi-ethnic country. Never mind that after Mr Xi's last visit, in 2014, China launched a campaign of mass detentions and unprecedented surveillance to quell resistance among local Uyghurs. More than 1m of them have been detained, often simply for being devout Muslims.

Among the victims of those policies were English teachers, who once led a remarkable movement to learn the language. Despite representing less than 1% of China's total population, and notwithstanding official efforts to focus on teaching Chinese, from 2004 to 2014 Uyghurs performed notably well in most of China's big English competitions. A new paper explores how they became so good at the language.

The authors, Darren Byler of Simon Fraser University in Canada and his Uyghur collaborator at Stanford University, known by his initials, MA, note the story of Kasim Abdurehim, who saw English as a ticket to the world. Growing up in Xinjiang, he was not taught English in the state schools most Uyghurs attended, so he enrolled in night school. His English improved so dramatically that he won an award at a national English competition in 2004 and became a household name among Uyghurs.

She had a dream

In 2006 Mr Abdurehim opened Atlan Education, a private school that became a favourite among Uyghurs studying English. Instead of plodding textbooks, teachers selected books and films which could speak to their students' lives. Some favourite texts included "Animal Farm" and "1984" by George Orwell. But of particular interest were the stories of famous black Americans such as Martin Luther King and Barack Obama.

Prejudices abound among Han Chinese towards ethnic minorities. Uyghurs are often viewed as "backwards", says Mr Byler. So they understood how Malcolm X and Muhammad Ali felt as members of racial and religious minorities in a country that viewed them with suspicion, and they devoured writings about them. When Mr Obama became the first black president of America, students memorised lines from his victory speech.

These works taught students more than just English. They also taught them about a world outside Chinese rule: one where a member of a racial or religious minority could hold power. English felt like a passport to another life.

But in the years following Mr Xi's visit in 2014, the movement came to a halt. Uyghur-managed schools were closed. Teachers were detained. Uyghurs knew something was going to happen, says Mr Abdurehim, who fled to America. "We just didn't realise it would come to this."

Women's sport

Raising the game

A packed year for women's sport could boost its growth

IT WAS JUST the sort of start a host nation hopes for. On July 6th the opening game of the 2022 European Women's Football Championship saw England beat Austria 1-0. Blowout victories against Norway (8-0) and Northern Ireland (5-0) propelled the team into the tournament's knockout stages. A harder-fought 2-1 win over Spain put them through to the semi-finals.

As is traditional whenever England's footballers do well, the country's newspapers have begun to speculate excitedly that the team could even win the whole tournament (it is equally traditional that it never actually does).

UEFA, European football's governing body, will be happier still. The opening game packed Old Trafford, the home of Manchester United, with 68,871 spectators. That was a record for the tournament, beating the 41,301 who watched Germany beat Norway in the 2013 final in Sweden. This year's final will be at the 90,000-seat Wembley Stadium, Britain's biggest. Tickets are sold out. Television audiences have been strong, too. Around 4.5m people watched the opening game in Britain alone. UEFA has sold viewing rights in 195 countries. It hopes viewership for the tournament will hit 250m, up from 178m in 2017.

This is a banner year for women's professional sport, with many big events. The Women's Cricket World Cup was held in New Zealand between March and April, and broke viewing records of its own. The first-ever Tour de France Femmes will start in Paris on July 24th, the same day that the men's race finishes there.

Disruption from covid-19 has helped pack the calendar. The delayed 2021 Rugby World Cup begins in New Zealand in October. (In pursuit of parity with the men's game the "women's" prefix has been dropped from the name.) The Euros have likewise been rescheduled from 2021.

Women's professional sport remains far behind men's when it comes to coverage, prize money and exposure. More people watched the final of the men's Euros (328m) than are expected to watch the entire women's tournament. A study in 2019 found that only 5.4% of television sports news in America mentioned women's events. In British newspapers last year the figure was 3%. Far fewer women are paid enough to play sport full-time than men.

But interest from sponsors, broadcasters and startups is growing. "Until a few years ago investing in women's football was seen as something you have to do because if you don't you'll get criticised," says one analyst who prefers to remain anonymous. Attitudes are changing, he says, in part because even that token investment has boosted viewership and recognition. Even sports science is beginning to pay attention to the specific requirements of female athletes (see Science section).

Indeed, says Patrick Massey of Portas Consulting, which advises clients on the women's game, some advertisers and sponsors think that women's sports offer better returns than the expensive, oversubscribed male version. Mr Massey believes that, in Europe, women's football will grow faster than any other sport over the coming decade. By 2030, he says, it could have more fans than most men's sports. In 2019 the Women's World Cup attracted a billion viewers.

Spinning up

Men's sport has for decades benefited from what investors call a "flywheel effect". Big broadcast and sponsorship deals pump money into the game. That attracts more players, raises the level of play and improves the quality of the coverage, which helps attract more spectators and viewers. That, in turn, generates even more money the next time around.

Women's sport has long suffered the opposite phenomenon, says Tammy Parlour, who runs the Women's Sport Trust (WST), a charity. Broadcasters have been reluctant to show it without being sure that people will watch. With few games available, viewers cannot tune in, and few viewers means little money.

The flywheel may, at last, be starting to spin. Start with viewing figures. Numbers are not always easy to find. But the WST has been collecting statistics in Britain for a decade. The first quarter of 2022 saw the highest viewership by some distance, up by around 50% on 2019, the last full year before the pandemic (see chart 1). Women's sport, says Ms Parlour, is bucking a general trend for people to watch less television. Streaming, meanwhile, offers a way to show games without expensive deals with broadcasters, helping to build fanbases.

Lynsey Douglas, an analyst at Nielsen, a media-research firm, says audiences for women's football are split almost 50/50 between men and women. The figures frequently contradict the stereotypes. An Australian survey, published in 2020, found that more men watched women's Aussie-rules football than women, and that the biggest age group was 50-64-year olds. Figures from the WST suggest some fans of women's sport do not watch the men's game, giving advertisers a way to reach an entirely new audience.

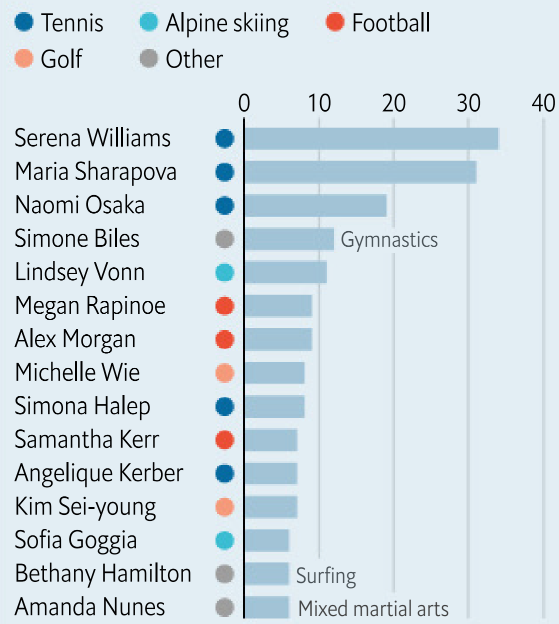
Money is starting to follow eyeballs. Viewership of the Women's National Basketball Association (WNBA) in America rose by 50% in 2021 compared with 2020. In February the WNBA felt confident enough to close its first-ever funding round, raising $75m and valuing it at $1bn. The prize pool for this year's women's Euros is $16m, double the value in 2017.

One big change, says Ms Douglas, is that several big rights-holders, including UEFA, FIFA (which runs the football World Cup) and World Rugby, now sell sponsorship rights for women's events separately, rather than bundled with the men's tournaments as an afterthought. That forces buyers and sellers to think about exactly how much such rights might be worth, she says.

Star power 2

Global awareness of female athletes

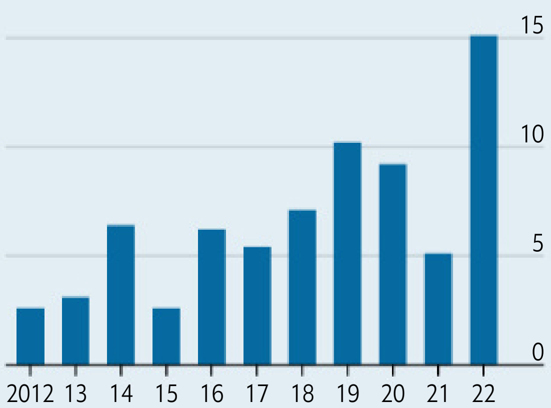
2021, % of respondents



Source: YouGov

Tuning in 1

Britain, TV viewership for women's sport programming*, January-March, millions



Source: Women's Sport Trust *At least three minutes

One of the biggest deals was in 2021, when Barclays, a bank, paid £30m (then $41m) to sponsor the Women's Super League, the top level of women's club soccer in England, for three years. (For comparison Barclays paid £48m for a three-year deal with the men's Premier League in 2001.) In 2018 Aon, a financial-services firm, sponsored men's and women's professional golf at the same time. "Fewer and fewer brands are spending solely on men's sports, says Ms Douglas. "Increasingly, they want a balanced portfolio."

Some think sponsors get a better deal with women's sports. An Australian study last year found that fans of women's sports were 25% more likely to buy a sponsor's product than those who follow men's sport. Research from the Sports Research Institute, an American non-profit, suggests that fans of women's sport are more engaged than those who follow the men.

Still, the gulf remains vast. The WNBA's billion-dollar valuation is around a sixth of the estimated value of the New York Knicks, just one of 30 teams in the American men's basketball league. Carli Lloyd was the world's best-paid female footballer until her retirement last year. Her reported annual salary of $518,000 is a sum that many male professionals make in a week.

Investors are not betting that gap will shrink to nothing. But they see plenty of opportunity for women's sports to grow. One idea is that, rather than copying men's leagues, which were mostly established in the 20th century, women's sport offers an opportunity to experiment with what a 21st-century league might look like.

Athletes Unlimited (AU) is an American firm founded in 2020 that runs women's softball, basketball and volleyball leagues. Jon Patricof, a former boss of New York City Football Club and one of its founders, says he was inspired by the mismatch between the popularity of America's women's football team—which, unlike the reliably third-rate men's squad, has four World Cups to its name—and the struggles of the National Women's Soccer League. "Women's professional leagues [in America] had not really succeeded by copying what the men's leagues were doing," he says.

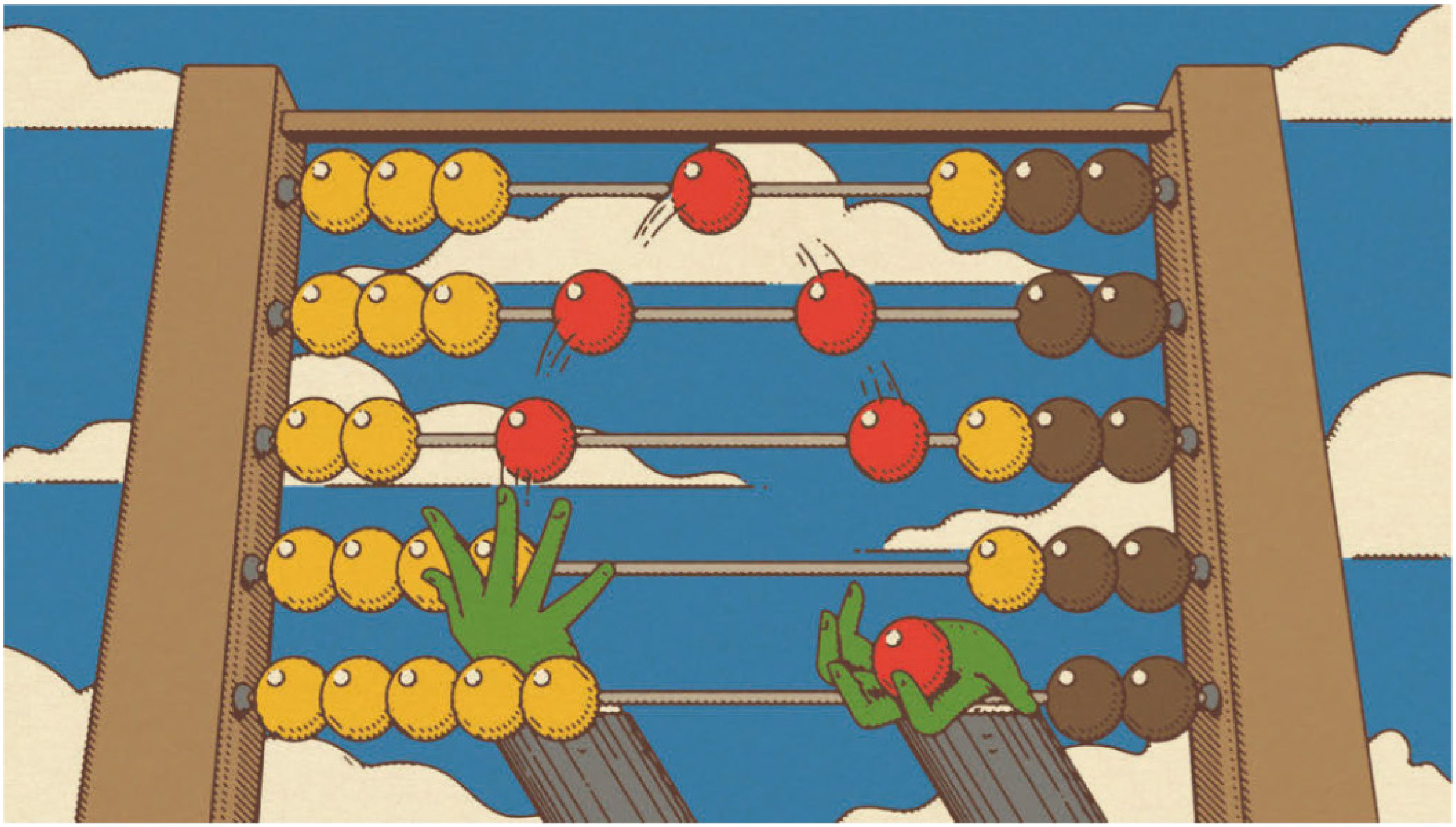
A change of tactics

Modern fans often feel more loyalty to individual players than to city-based teams, says Mr Patricof: "A really strong trend that we see in fans of all kinds of sports." AU seasons are limited to five weeks, and the action takes place in a single host city (which keeps costs down). Teams are not fixed; captains trade players at the end of every week. The system is partly inspired by fantasy-sports games, says Mr Patricof, which are growing fast around the world. Players accrue individual points, both for being part of winning teams and for playing well themselves. The one with the most points at the end of the season is crowned the champion.

Matches are broadcast on television (the firm has signed a contract with ESPN, a big American broadcaster) as well as being streamed over the internet. Viewers can bet on games and exchange trading cards or NFTs, a kind of trendy digital collectable. Audience numbers are growing, with viewer numbers for the firm's most recent softball season rising by 70%. Limiting matches to a single location helps AU put more money into slick production, says Mr Patricof. "The idea is to signal that this is a professional league, not amateur hour." Many players come back for further seasons. The firm has signed sponsorship deals with Nike, a sportswear firm, and Gatorade, a maker of soft drinks.

Optimists point out that there already exists a sport where women have similar star power to the men: tennis. Prize money at the biggest tournaments has been equal for both sexes since 2007; women's games are sometimes more popular than men's. In 2021 YouGov, a pollster, found that the three best-known sportswomen in the world were all tennis players (see chart 2).

Why women's tennis has done so well is unclear. Some point to the individual, sponsor-friendly nature of the sport. Some argue shorter matches (women play best-of-three sets; the men best-of-five) make a more enjoyable spectacle. But most asked by *The Economist* cited the lobbying efforts of players like Billie Jean King in the 1960s and the founding of the Women's Tennis Association in 1973. On that view, the only thing special about tennis is that the flywheels now starting to spin in other sports have been going for longer. ■



American business

A juggling act

How to manage a balance-sheet in troubled times

Few teenagers dream of becoming a chief financial officer (CFO) when they grow up. If things are going well, CEOs take the credit (and a fatter slice of the spoils) instead. CFOs seldom make the news and, when they do, it is usually preceded by a crisis. Corporate historians and markets alike judge finance chiefs by their ability to juggle the competing demands of capital structure, investor returns and investment. The imperfect scorecard for this game is the balance-sheet, the statement of what a firm owns and owes. Today's topsy-turvy economic conditions, with soaring inflation and subsiding GDP growth, make managing it far trickier.

Since the financial crisis, historically low interest rates have allowed firms to borrow cheaply and plentifully. High profits have been returned to shareholders instead of being used to boost investment. Now the rules are changing. A new economic chapter has begun, marked by squeezed profits and pricier debt.

Less than half of big American firms in the S&P 500 index that reported their latest quarterly results last week beat expectations on sales and earnings, below the average in recent quarters. On July 19th the share price of Lockheed Martin slid after the armsmaker announced an earnings miss and trimmed its guidance. The same day a similar fate befell Johnson & Johnson, a drugmaker. Wall Street analysts are revising down profit forecasts. At the same time, debt issuance has slowed and yields on American corporate bonds rated BBB, the lowest and most common investment-grade rating, have risen to 5.1%, up from an average of 2.4% in 2021. All this turns the calculus for what firms should save, spend or return to shareholders on its head.

Start with capital structure. Prudent CFOs have at least one eye permanently fixed on a firm's mix of debt and equity. They must constantly weigh the benefits of debt over equity (interest payments are typically tax deductible; dividends owed to the holders of equity are not) against the risk of financial distress (angry creditors are worse than irate shareholders).

A decade of cheap credit has fuelled a borrowing binge. The market for American investment-grade corporate bonds has tripled in size since 2009, to nearly $5trn. Average indebtedness for members of an index of investment-grade bonds (excluding those issued by financial firms) compiled by Bloomberg, a financial-data firm, has risen to three times earnings before interest, tax, depreciation and amortisation (EBITDA), from 1.6 times in 2010. Corporate America is increasingly funded by debt, especially if you exclude cash-rich technology giants (see chart 1 on next page).

As central banks raise interest rates, the cost of borrowing is rising for the first time in years, and sharply. Even so, big businesses' CFOs remain relaxed about debt, with good reason. Companies had a golden opportunity to fortify their balance-sheets during the covid-19 pandemic, riding a wave of huge issuance at low interest rates. Many grabbed it, locking in low rates on $1trn-plus of investment-grade bonds in 2020. Most firms are still finding it easy to pay interest on those borrowings. At the end of the first quarter of 2022, firms in the Bloomberg bond index had EBITDA equal to 15.4 times their interest payments, com- ▸▸

→ Also in this section

pared with 11.5 times in 2018.

With the maturity of corporate debt pushed into the future by all the pandemic fundraising, and with interest payments within the bounds of comfort, profits would need to take a hammering before CFOs begin to lose sleep over debt. According to a survey of American CFOs conducted in May and June by Duke University and the Federal Reserve Banks of Richmond and Atlanta, tighter monetary policy ranks eighth on the list of respondents' worries, behind a litany of operational challenges, from labour shortages to cost pressures.

These worries—and corporate sentiment at its glummest since the early innings of covid-19—have not stopped companies from forking money over to shareholders. S&P 500 firms paid out $141bn in dividends to investors in the second quarter of 2022, compared with $119bn in the same period in pre-pandemic 2019. In the three months before, they bought back $281bn-worth of their own shares, continuing an explosive growth in such payouts (see chart 2). All told, big American firms may spend $1trn this year on their own stock. So long as markets stay stormy, CEOs will be reluctant to rein such payments in, lest this be interpreted as signalling distress.

For some firms, this is a no-brainer. Technology giants, which executed more than 25% of American buy-backs in the first quarter of 2022, remain flush with cash. Apple spent more than $92bn repurchasing shares in the 12 months to March. Less deep-pocketed companies have also been lavishing money on shareholders. In 2021 more than 80 members of the S&P 500 spent more on dividends and buy-backs than their free cashflow (money left over after operating expenses and capital spending are accounted for). As borrowing gets pricier, growth slows and margins are crimped, their CFOs may need to make their capital-returns plans stingier.

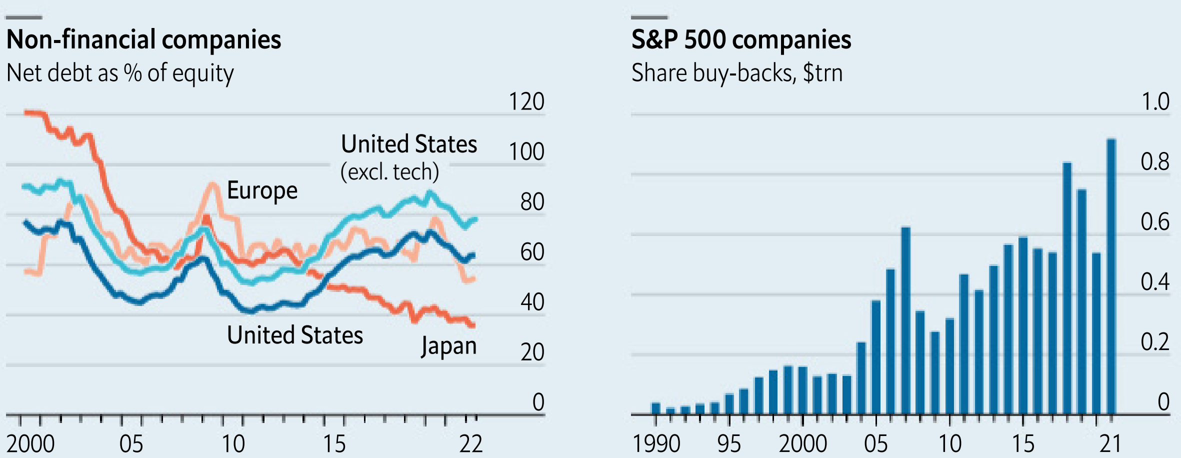
If the current run of blockbuster shareholder payouts is to end, though, the biggest culprit will almost certainly be higher investment. The share of operating cashflows reinvested by American firms in new capital expenditure and research and development has declined over the past decade to 27%, from over 40% in 2009. Companies, investors and governments are all expecting it to rise as businesses meet the demands of the post-pandemic world.

In the short term, firms are spending more today to avert supply-chain chaos tomorrow. The inventories of the largest 3,000 firms globally, excluding real-estate firms, increased from 5.2% to 6.2% of global GDP between 2019 and 2021. This creates additional cash demands as companies increase working capital (calculated by subtracting what firms owe suppliers from the value of their inventories plus what they are owed by customers).

Businesses are also investing for the future. Capital spending for S&P 500 firms rose by 20% in the first quarter of 2022, year on year. Mentions of "reshoring" and "onshoring" have spiked in earnings calls, amid a deepening rift between the West and China, on whose supply chains Western firms have come to depend. Ambitious pledges to cut greenhouse-gas emissions will require energy firms, which are among the most generous with shareholder payouts, to raise their capital spending dramatically. The total bill will be huge: Goldman Sachs, a bank, estimates that $2.8trn of additional "green capex" is needed each year over the next decade.

Finance chiefs who dust off their finance textbooks will be reminded that returning capital to shareholders and investing it are two sides of the same coin: capital which cannot be invested at a rate exceeding its cost should be handed to shareholders, who can put it to better use elsewhere. Dividends and share buy-backs are not, on this view, backward-looking celebrations of high profits. They are a forward-looking pursuit of shareholder value. Even so, shifting from capital returns to investment, while keeping a beady eye on profits and interest rates, will require CFOs to show off those juggling skills. ■

Bales of bonds



Source: Goldman Sachs

Business and the climate

Watershed's moment

The rise of a carbon bean-counter

THE HOTTEST thing in business depends on where you are. Bars in San Francisco tend to be abuzz with talk of enterprise software. Regulars at City of London pubs may discuss sustainable investing, and in particular concern for environmental, social and governance (ESG) factors (see Special report). Combine the two subjects and you have a winner—both as a topic of conversation and, hopes Watershed, a fast-growing climate-software startup, as a business proposition.

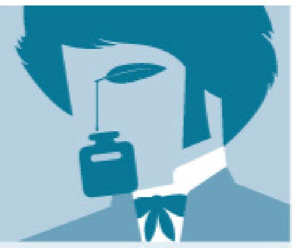
Watershed seems an unlikely subject of animated discussion. It helps companies measure and report their carbon emissions. It is, in other words, a firm of carbon accountants—not usually a profession to set pulses racing. What makes it titillating is its potentially vast market. Over a third of the world's investable assets, or some $35trn-worth, falls under the ESG umbrella, and a large chunk of that is chiefly about the E. Someone has to count the emissions from all those assets. And Watershed could be that someone, reckons a clutch of worthies from Silicon Valley (John Doerr of Kleiner Perkins and Michael Moritz of Sequoia Capital, veteran venture capitalists, co-led its last funding round) and beyond (Mark Carney, former governor of the Bank of England turned climate warrior, is an adviser). In January the firm raised $70m at a valuation of $1bn.

Businesses spew some carbon directly (by operating a vehicle fleet, say). Most also buy some electricity from the grid, which may be fossil-fuelled. And they are at least in part responsible for the emissions produced up and down their value chain. This particular indirect kind, known as "scope three", makes up the bulk of most firms' carbon impact. It is also devilishly hard to measure, especially across a complex web of suppliers and customers. Watershed's algorithms ingest information about line items in its clients' books and match them with data on the carbon cost of those activities. The result is a granular picture of a firm's carbon footprint, says Taylor Francis, the firm's co-founder.

The market for carbon-accounting technology could get a regulatory boost. In America the Securities and Exchange Commission has proposed a rule that would require some firms to report their scope-three emissions. The European Union has issued broader rules that, when implemented, could make nearly 50,000 firms subject to reporting requirements. Some firms will try to do this on their own. Many will enlist specialists like Watershed.

The company is already facing competition. Persefoni AI, a startup in Arizona, is popular with finance firms. Business-software giants like Salesforce and IBM may get in on the action. As for demand, regulators could get cold feet or, in America, be forced to relax disclosure rules by the Supreme Court, whose conservative majority spies executive-branch overreach in climatic matters. For now, though, Europe is moving full-steam ahead and American investors are demanding more details on firms' carbon footprints, whatever the justices think. Mr Francis says that Watershed's client list includes big names in tech (for example, Stripe and Spotify) and, more recently, in retail (Walmart). How's that for a conversation starter? ■

Bartleby The latest in WFH



Can "work from hotel" become a thing? Your columnist investigates

As summer descends with a vengeance on the northern hemisphere, you may be fantasising about the promise of "working from anywhere". A colleague's PowerPoint presentation would go down better by the poolside, washed down with a mojito. For most office grunts such fantasies remain just that—"anywhere" boils down to the discomfort of the sweaty kitchen table, a noisy café or the office hot desk.

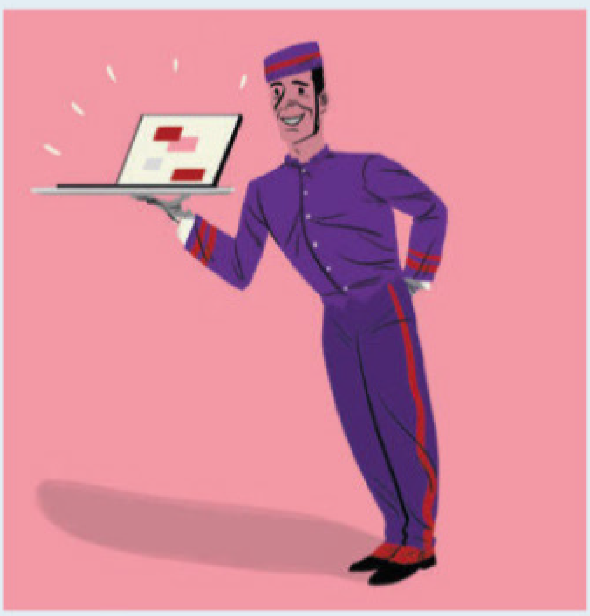
That has not stopped venues offering to combine the liberty of the home office (minus the offspring and the dirty dishes) with the climate control of the corporate HQ (minus the boss looking over your shoulder). "Third spaces", neither office nor home, are not a new idea. Soho House, a chain of fashionable clubs, pioneered 30 years ago the concept of work while mingling with other professionals in an elegant setting. Now hotels are getting in on the action. Your columnist, a guest Bartleby, tried out two recent London offerings.

She first headed to Birch, a hotel in a Georgian manor on 55 acres of Hertfordshire just north of the city. The venue invites you to "come work miracles" at its Hub co-working area, "set strategies" in spaces "ready to fit 5 or 50" or "connect and create" with classes in pottery, sourdough baking, "foraging with our farmer" and other structured activities. Men, women and gender-fluid people in their 20s and early 30s hunch over laptops and glasses of red wine on the terrace. Some digital nomads pay a monthly membership fee and enjoy special discounts to stay in the property and work remotely, but you can, like Bartleby, come as an overnight guest.

Her second destination was the Shangri-La hotel in the Shard, which now offers stays from 10am to 6pm. The pass grants access to a room with floor-to-ceiling windows looking out on central London, and to Western Europe's highest infinity pool. It is aimed at those wishing to work and relax by offering a "change of scenery to inspire and invigorate".

Both Birch and the Shangri-La have their virtues. Birch's Wi-Fi was excellent and the workspaces had enough sockets to avoid undignified tussles for the last place to plug in your chargers. The "Gentle Flow" stretch class in which Bartleby enrolled, in the spirit of going native, was perfectly pleasant (notwithstanding the instructor's insistence on starting with an astrological update and reciting a poem at the end). So were laps in the Shangri-La's infinity pool and the view of St Paul's Cathedral from her room on the 38th floor.

Yet problems soon became apparent. The first is price. An overnight stay at Birch sets you—or, if you are lucky like Bartleby, your employer—back £160 ($192). The Shangri-La charges £350 for a standard room. Cities have plenty of cheaper "third spaces" these days; a co-working space costs a fraction of that.



The second problem is: how productive can workers be with all the distractions that are designed to make work not feel like work? The spectacular view from the Shard is less conducive to dreaming up a sales pitch (or a column) than it is to daydreaming. At Birch, boardgames occupy every horizontal surface, ready to draw out the procrastinator in you. And once you are done stretching, that sourdough-baking class is a recipe to keep putting work on the back burner.

Third, if you resist the temptation to temporise and get down to business, you may as well be at home or the office. The kibbutz-like camaraderie which Birch (and other places like it cropping up everywhere) try so hard to evoke is, ironically, the very thing you miss by staying away from your office mates. While you are updating that spreadsheet or answering emails, luxury hotels' creature comforts scarcely register. As with most material indulgences, a sense of vacuity descends once the novelty of the marble floors and stacks of fluffy towels wears off.

The millennials and Gen-zs meandering around Birch suggest that demand for its hip offerings exists. And hoteliers are wise to work their assets in new ways as they cope with changes to their industry: business travel is, after all, unlikely to return to pre-pandemic patterns for a while, if ever.

Just do not expect white-collar types to flock to hotels en masse for a hard day's work. Most of the Shangri-La's daytime residents seemed to be couples seeking privacy, not executives keen to inspire and invigorate their pitches. As for Bartleby, you will find her at *The Economist*'s London head office or, failing that, her kitchen table.

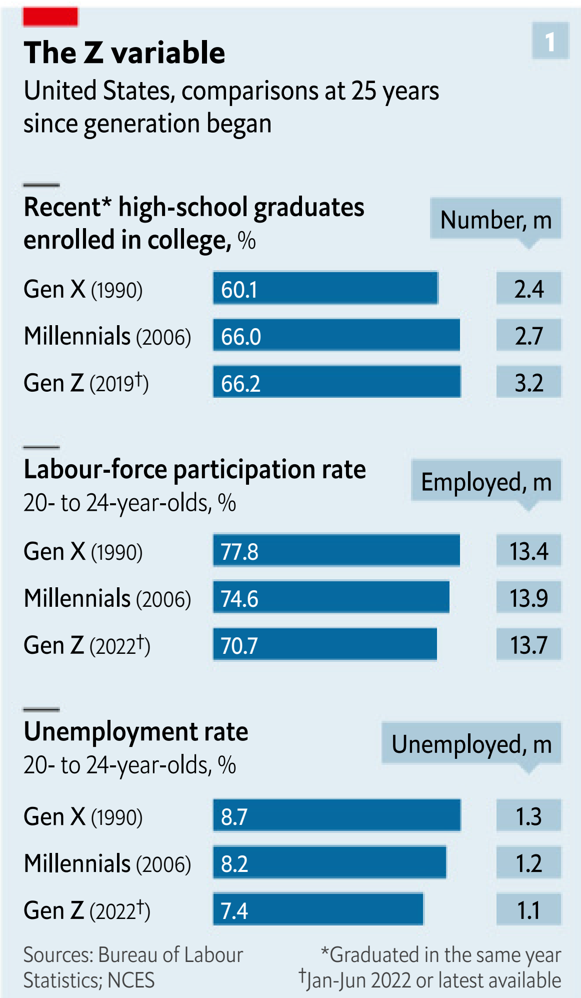
Gen Z and work

What graduates want

More flexibility, more security—and more money

GENERATION Z IS different. As a whole, Americans born between the late 1990s and early 2000s are less likely to have work or look for it: their labour-force-participation rate is 71%, compared with 75% for millennials (born between 1980 and the late 1990s) and 78% for Generation X (born in the decade or so to 1980) when each came of age. As a result, they make up a smaller share of the workforce. On the other hand, they are better educated: 66% of American Gen-Zs have at least some college (see chart 1). The trend is similar in other rich countries. With graduation ceremonies behind them, the latest batch of diploma-holders are entering the job market. What they want from employers is also not quite the same as in generations past. And as the economy sours following a pandemic jobs boom, those wants are in flux.

Start with their broad preferences. Although Gen-Z recruits felt more lonely and isolated than their older colleagues at the start of the pandemic, the ability to work remotely has unearthed new possibilities. The benefits go beyond working in your pyjamas. Many are taking calls from beach chairs and hammocks in more exotic locales (see Bartleby) or fleeing big cities in search for cheaper or larger homes.



In Microsoft's latest Work Trend Index, which polled more than 30,000 workers in 31 countries in January and February, more than half of Gen-Z hybrid workers said they were relocating thanks to remote work, compared with 38% of people overall. The option to work remotely is increasingly non-negotiable. Workers aged 18 to 34 are nearly 60% more willing to quit than their older peers if the choice is taken away, according to research by McKinsey, a consultancy. They are also more likely to engage with job listings that mention flexibility.

This has big implications. Industries with jobs that cannot be done from home are falling out of favour with recent graduates. A study by ManpowerGroup, a recruitment company, suggests an inverse relationship between talent shortages and flexible working policies. The sectors which are either less able to offer remote work or have been slower to embrace it—including construction, finance, hospitality and manufacturing—have faced some of the biggest skills gaps for all types of job. The same is almost certainly true for their university-educated workers.

That in turn has accelerated a pre-existing trend of young recruits trading Wall Street for Silicon Valley. Ever since thousands of banking jobs were axed—and the industry's reputation tarnished—in the wake of the financial crisis of 2007-09, big tech has looked more attractive to graduates than big banks have. In Britain, the number of young people studying computer science rose by almost 50% between 2011 and 2020, to over 30,000. More than 31,000 took up an engineering course in 2020, up by 21% from 2011.

Now technology bosses are more willing than their opposite numbers in finance to let employees work from home (or anywhere else). Bank CEOs such as Jamie Dimon of JPMorgan Chase or James Gorman of Morgan Stanley have urged employees back to the office. By contrast, Mark Zuckerberg has allowed workers at Meta, his social-media giant, to work from anywhere if their role allows it even after the firm reopened its American offices in March.

Annual rankings of employer desirability by Universum, a graduate-staffing consultancy, bear this out. In 2008 the list of best employers as graded by American graduates was dominated by big banks and the Big Four consulting firms (Deloitte, EY, KPMG and PWC). By 2021 seven of the ten highest spots were occupied by tech and media giants (see chart 2).

Job-hopping 2

United States, top employers of business graduates

Consulting/accounting · Banking · Tech · Media · Sportswear

Rank	2008	2021
1	Ernst & Young	Google
2	Google	Apple
3	PwC	Tesla
4	Deloitte	JPMorgan Chase
5	Goldman Sachs	Walt Disney
6	KPMG	Amazon
7	Walt Disney	Nike
8	JPMorgan Chase	Netflix
9	Apple	Goldman Sachs
10	Merrill Lynch	Spotify

Source: Universum

There are signs that Gen-Zs' love affair with tech may be losing some of its ardour. After a decade of frantic hiring, tech is suddenly looking like a less secure early-career bet for the ambitious graduate. Having taken a battering from nervy investors this year, companies such as Alphabet, Meta, Microsoft and Uber have slowed hiring. Twitter has revoked recently made job offers. Netflix has laid off hundreds of workers. So have newer tech darlings such as Coinbase and Robinhood. Elon Musk, Tesla's chief executive, has announced a hiring freeze and cuts of about a tenth of the electric-car maker's staff. More than 28,000 workers in America's tech sector have lost their jobs so far in 2022, according to Crunchbase, a data provider. Those graduates who do choose tech are likelier to pick an established firm over a sexy startup with hazier prospects.

Experimenting with drugs

Some graduates may instead opt for other high-tech sectors that seem less vulnerable to economic swings. Drugmakers at the forefront of the covid-19-vaccine rollout are finding particular favour. AstraZeneca and Pfizer, each of which has produced an effective jab, shot up in the rankings of Britain's most attractive employers last year. AstraZeneca doubled its intake of high-school and university graduates in 2021. The war in Ukraine, meanwhile, may boost the appeal of armsmakers—shunned by some millennials and Gen-Xers as irredeemably unethical but now able to portray themselves as producers of the "arsenal of democracy".

Graduates' sharpening focus on job security also boosts the appeal of the public sector, notes Dan Hawes, co-founder of

Graduate Recruitment Bureau, a British firm. In Britain, applications for government jobs rose by nearly a third at the start of the pandemic. In March there were an estimated 67,000 more public-sector employees in the country than a year earlier. Around 1.4m Chinese vied for just over 31,000 government positions by sitting the notoriously tough national civil-service exam in November 2021, up by more than 40% compared with the previous year.

If graduates keep gravitating towards safe government jobs, that will leave a smaller talent pool for private employers to fish in. Despite signs of a slowing economy, labour markets remain tight. Many older professionals quit their jobs during the pandemic. Others retired early.

Britain's labour force has lost more than 250,000 people since covid-19 first struck. America has 3.3m fewer people working. The latest official figures there show 11.3m job openings but only 6m unemployed Americans. It will take at least four years for the American labour market to return to its pre-pandemic employment rates, according to the OECD, a club of mostly rich countries.

How far will companies go to entice younger workers—and keep them happy? For the time being the short answer seems to be: quite far. To burnish its flexible-working credentials Citigroup, a bank, has opened a new hub in the Spanish coastal city of Málaga, luring over 3,000 applicants for just 30 analyst roles. In addition to providing gourmet meals, round-the-clock massages and nap pods, Google recently hired Lizzo, a pop star, to perform for staff.

The best thing firms can do to attract young talent is to cough up more money. According to Universum, some earlier Gen-Z hobby horses such as an employer's commitment to diversity and inclusion or corporate social responsibility have edged down the list of American graduates' priorities. A competitive base salary and high future earnings have edged up. Banks such as JPMorgan Chase, Goldman Sachs and Citigroup, and management consultancies including McKinsey and BCG have bumped first-year analysts' annual pay up to $100,000. Law firms have been raising their starting salaries. BP, a British energy giant, offers recent graduates sign-on bonuses of as much as £5,000 ($6,000) and discounts on cars. Money isn't everything. But it's something. ■

Sign up to our newsletter

This week we launch The Bottom Line, our Saturday newsletter about the mega-trends in technology and business, including an essential guide to the working week ahead. Sign up at **economist.com/the-bottom-line**

The microeconomics of luxury

Puttin' it up at the Ritz

LONDON, PARIS AND SAN FRANCISCO

Vacationing plutocrats are the true victims of inflation

PITY THOSE looking for a slice of luxury this summer. Consumer prices are rising fast the world over but at the fanciest hotels they are soaring. Last year you could book a night at Le Bristol, Paris's best, for less than €1,000 ($1,170) a night, if you looked hard enough. Now rooms are going for hundreds of euros more. The price of a gin martini at London's Dukes hotel (straight from the freezer, and hands down the city's best) is shooting up faster than the tippler's blood-alcohol level after the first sip. A basic room on a Monday night in November at a new Four Seasons in California's wine country is going for about $2,000.

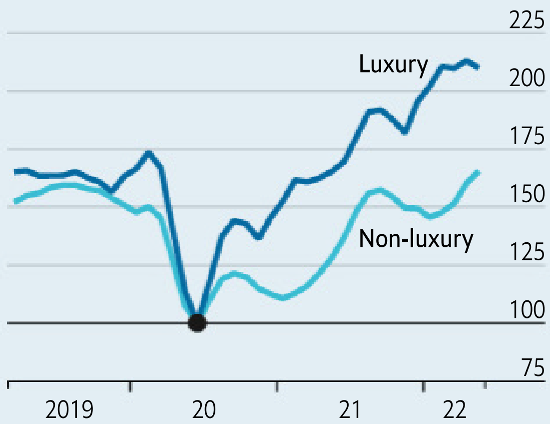
The cost of staying at a posh hotel crashed amid the first wave of covid-19 but has roared back. STR, an analytics firm specialising in the hospitality industry, finds that the typical worldwide daily rate for a luxury hotel has more than doubled in the past two years (see chart). Prices for rooms at lesser establishments are up, but by nowhere near as much. Hotel accommodation, as measured by America's consumer-price index, has risen by 27% in that period, twice as fast as the index as a whole.

Two factors explain why the very swankiest hotels are raising their prices the most. The first relates to labour costs. Fancy places employ a lot of people, from porters to car-parking valets, in order to satisfy their guests' every whim. As a consequence, they are more exposed to wage rises than are regular hotels, where guests wait longer to be served and more

Life is suite

Hotels, worldwide average daily rate per room*

June 2020=100, $ terms



Sources: STR; *The Economist* *Three-month moving average

services are automated (or, increasingly, dispensed with entirely). The latest data suggest that rich-world pay is currently rising by about 4.5% a year in nominal terms, the highest rate in decades, and it is surging even faster in America.

The second factor has to do with profit margins. Luxury hotels find it easier than others to pass on higher costs to customers. Business travellers using corporate cards do not study prices on menus very closely. The rich are probably even less price-sensitive than usual while on holiday. After a couple of years of less or no travel, and with their savings pots even fuller, they are ready for a good time. To a microeconomist that all makes sense—even if it doesn't make the price of a glass of champagne at the Ritz any easier to swallow.

Hot decking

Schumpeter | Unlocking Keyence's secret

A Japanese consultant to the world's factories is an unlikely profit machine

KEYENCE IS NOT exactly a household name, even by the low-key standards of corporate Japan. Ask most people, including some professional market-watchers, and the odds are they will struggle to say much about it. Put the same question to the world's factory-owners, and they will recognise it instantly. Founded in 1974 by Takizaki Takemitsu, a young entrepreneur without a university degree, the company has for decades been helping manufacturers get the most out of their factories with sensors and robotics. Its clients include giants from just about every industry, from aerospace (Boeing) to semiconductors (Samsung and TSMC).

As automation takes hold of industrial bosses' imagination, they are willing to pay handsomely for Keyence's services, which include designing clever kit and helping clients integrate it into their operations. Its revenues have nearly trebled since the early 2010s, to $6.7bn. Profits have grown faster still: the firm's operating margin now exceeds 50%; net margin has averaged 36% over the past decade, 13 percentage points higher than that of famously profitable Apple. Today it is Japan's fourth-most-valuable company, worth more than $90bn. Even after the recent stockmarket slump its share price is nearly ten times higher than a decade ago. Last year Mr Takizaki briefly became the richest person in Japan.

This rip-roaring success is something of a riddle. Few companies of any size enjoy that sort of profitability. Especially among big firms like Keyence, those that do tend to belong to one of three groups: regulated champions (think Saudi National Bank), dominant firms in industries with large barriers to entry (such as TSMC, whose chip factories cost $20bn a pop, or its Dutch supplier of chipmaking gear, ASML), or unregulated de facto monopolies in technology markets (Alphabet in online search, for example).

Keyence is none of these. Regulators mostly ignore its market. It is "fabless", dreaming up its gizmos but outsourcing their production to contract manufacturers; its capital spending is negligible and it devotes barely 2-3% of revenue to research and development, compared with around 9% for TSMC. And its designs are bespoke, and as such would seem to benefit less from economies of scale. You can think of it as the management consultant to the world's factories. Like McKinseyites, its engineers act as its only sales reps, tasked with bringing in business to the firm; the company employs no specialised sales team and its offerings cannot be bought from anyone else. These sales engineers, if you will, are also akin to consultants by being embedded within a client firm for a time to see how it ticks—and how it might tick better.

McKinsey, though, must fight for clients with rivals such as Bain or BCG; Accenture, a rare listed consultancy among what are mostly opaque private partnerships, reports net profits equal to roughly 10% of sales. Keyence, by contrast, faces no real competition. Firms that have tried to enter its market, such as Basler of Germany and Omron, a fellow Japanese company, are about a quarter as lucrative and have not competed away its margins. If anything, Keyence's have been edging up in recent years. So how does a company that does not make anything and invests next to nothing pull this off? And can it keeping doing so?

Explanations of Keyence's remarkable run usually start with its focus on its clients. People who have witnessed up close the relationship between the company's engineers and those who employ their services describe a painstaking process of optimisation. Without Keyence's engineers to ensure that all possible efficiencies are eked out, factories risk a bit more downtime and a bit less productivity, which can prove crippling in markets more competitive than the Japanese firm's, which is to say most of them. Engaging with analysts, investors and the odd journalist is an afterthought: a distraction that is best kept to a minimum.

Keyence's second trump card is its approach to personnel. Even by Japanese standards, working for the company is regarded as a relentless slog. But the sales engineers are compensated handsomely for their dual roles. The average salary it paid in the last financial year was ¥22m ($196,000). It regularly ranks as the country's highest-paying large company, above banks and other financial firms. This draws in ambitious youngsters who, also like many management consultants, put in a few years of hard graft before moving on. The average age of its employees is 36, far below the Japanese median age of 49.

The third factor behind the company's success is the breadth of its order book. It works for almost every large global manufacturer of note, ranging from aliments to aeroplanes. When a client brings in Keyence consultants, it is benefiting from their accumulated knowledge of best practice across most manufacturing subsectors. That may include insights from the client's direct rivals, which are also likely to rely on Keyence's services.

McKeyence & Company

This is yet another similarity to management consultancies, which likewise enjoy access to the inner workings of their clients' rivals. Where Keyence has an edge over the McKinseys and Bains is in its more specialised offerings. That makes the self-reinforcing stockpile of institutional knowledge harder for rivals to replicate. This phenomenon of scale begetting more scale is reminiscent of big tech's vaunted network-effect "flywheels".

Keyence is not without challenges. This year's global tech crunch has shaved around $60bn from its market capitalisation. As once-placid investors in Japan become more assertive they may press the company to do something with its large cash holdings of around $8bn. And even tech flywheels with seemingly unstoppable inertia can be disrupted—just ask Meta, whose social-media dominance is under threat from TikTok, a Chinese upstart. Until that happens, though, manufacturing bosses around the world will happily keep enlisting platoons of Keyence sales engineers with a tacit understanding of what their competitors are up to. ■

Emerging economies

The fragile 53

WASHINGTON, DC

The contours of a debt crisis are starting to become clear

For a fleeting moment, the protesters seemed to be having a good time. On July 9th some of the thousands of Sri Lankans who had taken to the streets to express frustration at the country's economic crisis stormed into the president's residence, where they cooked, took selfies and swam in the pool. Not long after, word came that the president, Gotabaya Rajapaksa, had fled and would resign. His successor, Ranil Wickremesinghe, until recently the prime minister, inherits a mess. In April Sri Lanka declared that it could no longer service its foreign debt. Its government has sought aid from India and Russia to pay for essential imports. The economy is likely to shrink dramatically this year. In June annual inflation climbed to 55%. If the government is unable to stabilise the situation, the country may yet succumb to hyperinflation and further political chaos.

The scenes in Sri Lanka may be a sign of things to come elsewhere. Debt loads across poorer countries stand at the highest levels in decades. Squeezed by the high cost of food and energy, a slowing global economy and a sharp increase in interest rates around the world, emerging economies are entering an era of intense macroeconomic pain. Some countries face years of difficult budget choices and weak growth. Others may sink into economic and political crisis. All told, 53 countries look most vulnerable: they either are judged by the IMF to have unsustainable debts (or to be at high risk of having them); have defaulted on some debts already; or have bonds trading at distressed levels.

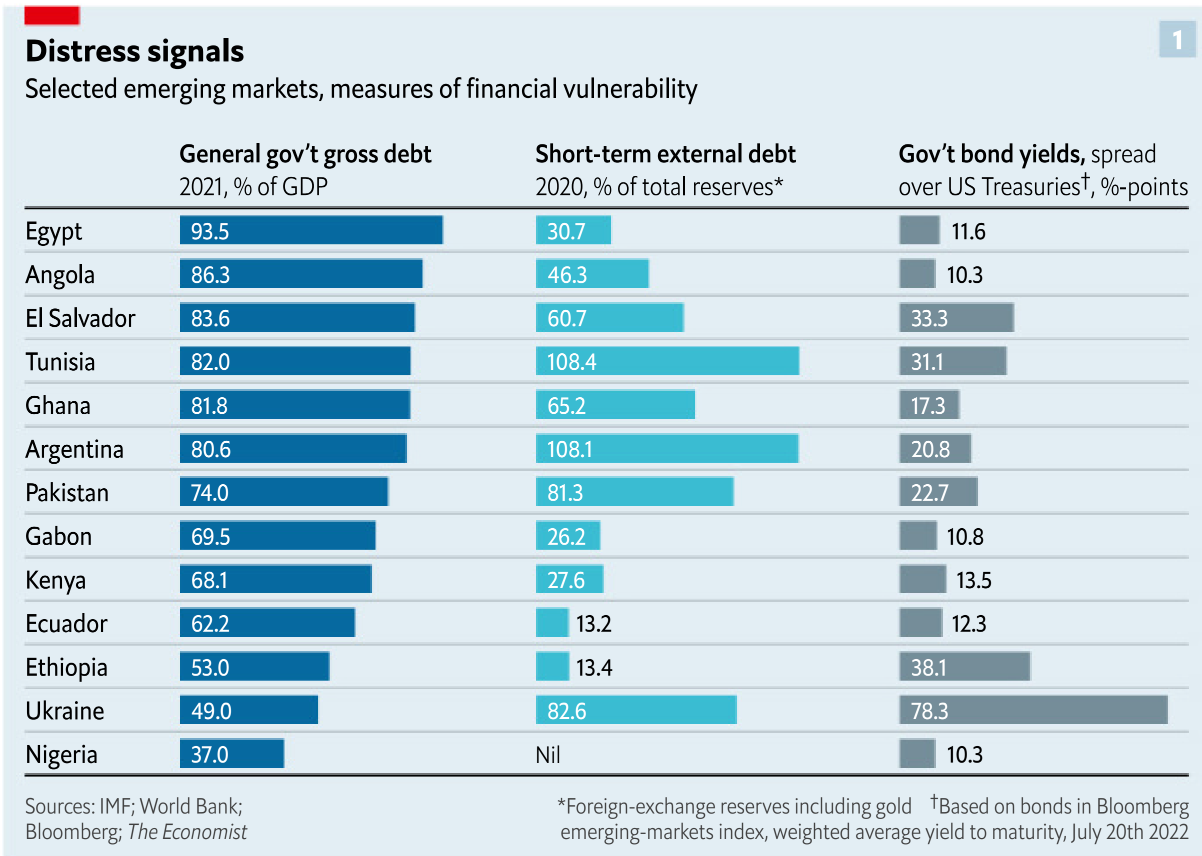
Today's bleak situation has an analogue in the desperate years of the 1980s and 1990s. Then, as now, a long period of robust growth and easy financial conditions was followed by leaner times and rising debt burdens. Macroeconomic shocks, rising inflation and, eventually, soaring interest rates in the rich world pushed many heavily indebted poor economies over the fiscal cliff. In August 1982 Mexico's government announced that it could no longer service its foreign debt. More than three dozen countries had fallen behind on their debts before the year was out. By 1990 roughly 6% of the world's public debt was in default.

Much has changed since. Many governments opened up to trade, liberalised their economies and pursued more disciplined macroeconomic policy. Faster growth and better policy led to broad improvements in the fiscal health of emerging economies. By 2008, as rich countries sank into an intense financial crisis of their own, the level of public debt across poorer economies stood at just 33% of GDP.

This allowed them to engage with the global financial system in a manner more like the rich world. Most emerging-market governments hoping to tap global capital used to have little choice but to borrow in a foreign currency, a risky step that could quickly transform home-currency depreciation into a full-blown crisis. Around the turn of the millennium, about 85% of new debt issued outside America, Europe and Japan was not denominated in the borrower's currency. But by 2019 roughly 80% of outstanding bonds across the emerging world were denominated in local currency.

As emerging economies' financial systems matured, their governments became better able to tap domestic capital markets. The crises of the 1980s and 1990s also taught them the value of stockpiling for- ▸▸

→ Also in this section



eign-exchange reserves; global reserves rose from less than 10% of world GDP in 2005 to 15% in 2020. It was thanks largely to these adjustments that most emerging markets weathered the slow growth of the 2010s and the shock of the pandemic. Only six governments defaulted in 2020—including Argentina (for the ninth time), Ecuador and Lebanon—equivalent to just 0.5% of outstanding global public debt.

But this greater resilience also allowed governments to rack up more borrowing. In 2019 public debt stood at 54% of GDP across the emerging world. The pandemic then led to an explosion in borrowing. In 2020 emerging economies ran an average budget deficit of 9.3% of GDP, not far off the 10.5% run by rich economies.

Borrowing stabilised in 2021 as economies rebounded. But the picture has grown darker this year. The jump in food and energy prices that followed Russia's invasion of Ukraine is depressing growth across most of the world, increasing debt burdens. Rising import bills have drained hard currency from many vulnerable places—including Sri Lanka—eroding their capacity to service foreign debts. Conditions will probably deteriorate as rich-world central banks continue to raise interest rates. Hawkish turns by the Federal Reserve tend to diminish risk appetite and draw capital out of emerging markets, leaving over-extended borrowers high and dry.

And Fed policy has not been this hawkish for some time. The federal-funds rate is expected to approach 3.5% by the end of this year, which, along with the unwinding of some recent asset purchases, would constitute the Fed's sharpest tightening since the early 1980s. The emerging world has thus experienced net capital outflows every month since March, according to the Institute of International Finance, an industry group. The dollar has risen by over 12% against a basket of currencies since the start of the year, and is up by far more against many emerging-market currencies. As funding conditions have worsened, borrowing costs for some governments have soared. About a quarter of the low- and middle-income issuers of debt face yield spreads over American Treasuries of ten percentage points or more—a level considered distressed (see chart 1).

The combination of heavy debt burdens, slowing global growth and tightening financial conditions will be more than some governments can bear. One set of potential victims comprises the poorest economies, which have been less able to borrow in relatively safe ways—in their own currencies, for example—and which, because of the pandemic, were already vulnerable. Among 73 low-income countries eligible for debt relief under a G20 initiative, eight carry public-debt loads which the IMF has deemed to be unsustainable, and another 30 are at high risk of falling into such a situation. Debt problems in these countries pose little threat to the global economy; together, their GDP is roughly equivalent to that of Belgium. Yet they are home to nearly 500m people, whose fates depend on whether their governments can afford to invest in basic infrastructure and public services.

Then there are the troubled middle-income economies in the mould of Sri Lanka, which are more integrated into the global financial system, and which through policy missteps and bad luck have found themselves exposed. Overall, 15 countries are either in default or have sovereign bonds trading at distressed levels. They include Egypt, El Salvador, Pakistan and Tunisia.

Home discomforts

More middle-income countries may be better insulated against deteriorating global conditions than they were in the past. Still, the IMF reckons that about 16% of emerging-market public debt is denominated in foreign currencies. And the places that are more insulated have in many cases become so by funding borrowing through local banks. That, however, raises the possibility that any credit stress experienced by a government also feeds through to its banking system, which could in turn impair lending or even lead to outright crisis. Across the emerging world, reckons the IMF, the share of public debt held by domestic banks has climbed over the past two decades to about 17% of GDP, more than twice the level in rich economies. Sovereign-debt holdings as a share of total bank assets stand at 26% in Brazil and 29% in India, and above 40% in Egypt and Pakistan.

Just how big this group eventually gets, and how serious the spillovers are to the rest of the world, depends on whether bigger economies, like Brazil and Turkey, are ensnared by crisis. Both have muddled through so far, despite some vulnerabilities, but poor policy could push them towards the brink.

As a commodity exporter, Brazil has benefited from higher food and energy prices. Its hefty pile of foreign-exchange reserves has so far reassured markets. The president, Jair Bolsonaro, trails in the polls ahead of an election due in October, though, and has loosened the country's purse strings in an attempt to win support, adding to the country's heavy debt load. He has also suggested that he may not obey voters should they decide to toss him out. If he spooks markets, an outflow of capital could at the very least leave the economy facing a severe fiscal crunch and recession.

Turkey has a dynamic economy and a modest level of public debt. But it owes a lot to foreigners relative to its available currency reserves. And its president, Recep Tayyip Erdogan, insists that the central bank keeps interest rates unduly low in the face of soaring inflation—which has climbed to near 80%. The lira has crashed in value over the past four years. Without a policy change, the government could face a balance-of-payments crisis (see Briefing).

Neither of the world's largest emerging markets, China and India, is at high risk of an external crisis. Both have intimidating piles of foreign-exchange reserves. China's government wields close control over both capital flows and the domestic financial system, which should allow it to contain panic, while India's is only minimally reliant on foreign funding. Both, however, carry enormous public-debt loads by historical standards. And both matter enough to the global economy that a period of deleveraging that depressed growth and investment could have big knock-on effects.

Taken together, then, 53 low- and middle-income countries are already experiencing debt troubles, or are at high risk of doing so. Their economic size is modest—their combined output amounts to 5% of world GDP—but they are home to 1.4bn people, or 18% of the world's population (see chart 2). And worryingly, there are few options available to ward off crisis. An end to the war in Ukraine seems a distant prospect. A growth rebound in China or elsewhere could be a double-edged sword: it would boost growth but also contribute to inflation, leading to further rate rises in the rich world.

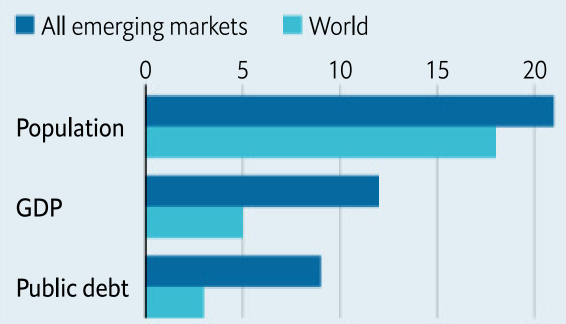
Debt relief would help. Roughly a third of the massive debts owed by middle-income economies in the 1980s was forgiven under a plan put together by Nicholas Brady, then America's Treasury secretary, in 1989. Additional relief was provided to 37 very poor countries through an initiative organised by the IMF and World Bank in 1996. The G20 took similar steps during the pandemic, first with the Debt Service Suspension Initiative, through which more than 70 countries were eligible to defer debt payments, and then through the Common Framework, which was intended to provide a blueprint for broader relief.

Yet the framework has failed to gain traction. Only three countries have so far sought help under it, and none has completed the process. Prospects for improving the scheme, or for reaching agreement on debt relief, have been dimmed by the fact that lending by Paris Club countries—rich economies that have agreed to co-operate in dealing with unsustainable debts—has become less important, while loans from private creditors and big emerging markets, China in particular, have become more so. In 2006 Paris Club economies and multilateral bodies accounted for more than 80% of poor countries' foreign obligations. Today they account for less than 60% of poor-country debt. Nearly a fifth is owed to China alone.

Money troubles 2

Emerging markets in, or at risk of, debt distress*

2021 or latest available, % of total



*53 countries that have experienced trouble servicing debt, are judged likely to experience trouble by the IMF, or have bonds trading at distressed levels

Sources: IMF; *The Economist*

Indeed, work by Sebastian Horn and Christoph Trebesch of the Kiel Institute and Carmen Reinhart of Harvard University helps illustrate how massive and murky a force Chinese lending has become. They reckon that almost half of China's lending abroad is unreported, such that their estimates of China's claims on foreign governments probably understate the true figures. Even so, they reckon that from 1998 to 2018 China's foreign lending, the bulk of which has gone to low- and middle-income economies, rose from almost nothing to the equivalent of nearly 2% of world GDP. And among the 50 economies most in hock to China, obligations to Chinese institutions amount to 15% of GDP on average, or about 40% of external debt.

More than a third of the world's most debt-distressed countries also number among those most indebted to Chinese lenders. As of 2017, the debt owed to China by Kenya amounted to 10% of the latter's GDP, and by Laos a staggering 28%. China is also a big creditor of Sri Lanka (which owed it the equivalent of 8% of GDP in 2017) and Pakistan (9%). Many indebted economies are loth to ask for debt relief from China, fearing the wrath of its leadership or a loss of access to future funding, and Chinese institutions have tended to prefer reprofiling debts to outright relief. Deteriorating relations between China and the West, meanwhile, have reduced the scope for co-operation in handling debt problems.

In the 1980s, emerging-market defaults on loans owed to American banks pushed some financial institutions to the brink of insolvency. Residents of rich economies may take some comfort from the fact that their lenders are less exposed today. But for the billion or more people living in countries at risk of distress, the pain will be only too drawn out, both as fiscal woes infect local banks and as negotiations over external debt prove intractable. ■

Wall Street

Bittersweet

WASHINGTON, DC

American banks reveal the impact of interest-rate rises so far

IN JANUARY INVESTORS expected the Federal Reserve to raise interest rates to just 0.75% by the end of the year. Expectations have shifted dramatically since: by late June markets were expecting rates to hit 3.5% by the end of 2022. This change in expectations is far bigger than the actual move in interest rates, which have climbed by 1.5 percentage points. The impact of this duality—that expectations have leapt while reality has only hopped—was plain to see on July 14th, 15th and 18th as America's six largest banks, Bank of America, Citigroup, Goldman Sachs, JPMorgan Chase, Morgan Stanley and Wells Fargo, reported earnings for the second quarter.

The activities of the lenders that run on expectations—conducted by the slick investment bankers who advise on big corporate investments, like mergers and acquisitions, and help firms go public or issue debt—had a tumultuous quarter. Investment-banking revenues plunged by 41%, year on year, at Goldman, by 61% at JPMorgan and by 55% at Morgan Stanley. Investment bankers who underwrite loans for deals have had a particularly rough time. All banks took losses on their "bridge books", the portfolios of loans they have yet to sell to investors but have agreed to issue for private-equity deals or mergers. These write-downs added up to more than $1bn in losses across the big banks.

Investment banks' trading businesses fared better. These are often volatile, and tend to do well during periods of chaos and poorly in times of calm. Markets revenues climbed by 21% on the year at Morgan Stanley and 32% at Goldman, benefiting from bond-market turmoil as investors braced themselves for higher rates.

But it was the usually staid business of retail banking that really boomed. In the early phase of a tightening cycle bankers see the net interest income they earn on things like business and credit-card loans rise, as appetite for them is still robust. But last quarter was unusually good: demand for loans roared, even in the face of modestly higher rates. Swelling loan portfolios and higher rates led to a jump in net interest income (NII). Bank of America's NII rose by 22% on the year; Citi's, by 14%.

Consumer spending on credit cards leapt by 18% at Citi and 28% at Wells, driving card balances up. Customers have been "revenge spending" on travel and dining—expenditure in those categories climbed by 34% on the year at JPMorgan—and reducing spending on goods, like clothing and home improvements, which dropped by double digits at Wells. Commercial bankers did well, too. "We have never seen business credit be better, ever, in our lifetimes," said Jamie Dimon, the boss of JPMorgan, on the firm's earnings call. ▸▸

The result of this mixed bag—bumper loan growth, vigorous consumer card spending, robust trading revenues but a slump in issuance and dealmaking—made for a mediocre quarter at Goldman and Morgan Stanley, where total revenues fell by 23% and 11% on the year, respectively. Results were better at banks where retail banking makes up a big share of business. Revenues at Bank of America went up by 6%, and at Citi by 11%, on the year.

The question is what happens as expectations become reality. It is hard to see the retail bonanza continuing: high inflation and rising rates will bite consumers eventually. Bankers at both JPMorgan and Wells pointed out that lower-income households were starting to look constrained. Charlie Scharf, the chief executive of Wells, noted that debit-card spending was up by just 3% on the year for customers who had received stimulus cheques (ie, those who earned less than $75,000).

Rapid corporate-loan growth sounds less like an indication of business health, considering that it seems to have been driven by chaotic debt markets. Jane Fraser, the boss of Citi, told investors that "clients have been less inclined to obtain financing through the debt markets." At Wells average loan balances were up by 22% year on year; Mr Scharf attributed this to the "disruption" in capital markets, which increased demand for bank financing. Interest rates in bond markets have risen more quickly than bank-loan rates, but those will probably catch up.

Still, rising interest rates and strong loan demand are, for now, a happy combination for retail bankers. For central bankers, though, they may be less welcome. As Brian Moynihan, the boss of Bank of America, put it, all this activity, together with low unemployment, "clearly makes the Fed's job tougher". ■

Spending with a vengeance—for now

The Big Mac index

A tale of three parities

Dollar-euro parity may be justified. The yen looks cheap as chips

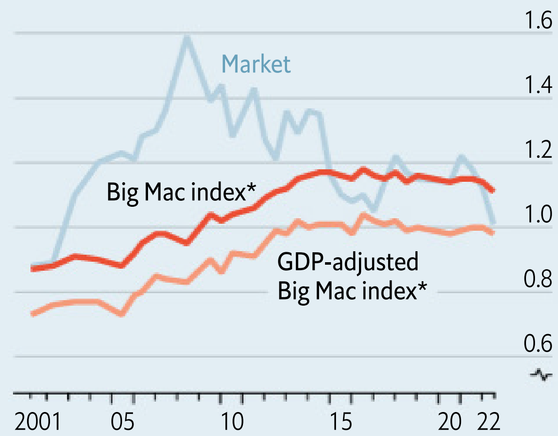
Imagine you are a Parisian investor trying to decide whether to buy American or European bonds. You compare the yields on offer. A ten-year bond issued by America's Treasury today offers 3%; German bunds return only 1.2%. But buying American means taking a gamble on the euro-dollar exchange rate. You are interested in the return in euros. The bond issued in Washington will be attractive only if the extra yield exceeds any expected loss owing to swings in currency markets.

This thinking, known as "uncovered interest parity" (UIP), explains why the dollar has recently soared against the euro. On July 12th the greenback reached a one-for-one exchange rate with the euro for the first time since 2002. (It has since fallen slightly.) UIP posits that changes in interest rates drive currency movements. If yields on Treasuries rise relative to those on bunds, then the dollar should strengthen until investors expect it to fall over the lifetime of the bonds, so that there is no longer any extra return from buying Treasuries. The Federal Reserve is expected to raise interest rates above 3.5% in 2023, more than twice the rate expected to be reached by the European Central Bank. The dollar has also risen by 20% against the yen in 2022 so far. That is probably because the Bank of Japan is not expected to raise rates above 0.2% in the next three years.

Yet there is more to currency valuation than monetary policy. Another theory, purchasing-power parity (PPP), says currencies and prices should adjust until a basket of goods and services costs the same everywhere. *The Economist* has its own lighthearted measure of PPP: the Big Mac index, which was updated on July 20th. Instead of a basket of goods and services, it uses differences in the price of the ubiquitous McDonald's burger to judge whether currencies are over- or undervalued.

Our measure suggests the weak euro may be justified (see chart). The headline index, which assumes Big Macs should cost the same everywhere, predicts an exchange rate of 1.11 dollars per euro. But a secondary index, which adjusts for differences in GDP, says the euro should trade just below dollar parity. The GDP-adjusted index takes into account differences in the prices of inputs, such as land and labour, that are hard or impossible to trade across borders, and therefore reflect local incomes. At dollar-euro parity, a Big Mac is

At last, vindication
Exchange rates, $ per €



Sources: Refinitiv Datastream; *The Economist* *Predicted

11% more expensive stateside. But because America is richer than Europe, such a difference in prices could make sense.

For the euro, then, the two theories of currency valuation look aligned. Not so for the yen, which is more than 40% undervalued against the dollar on both Big Mac indices. (Book that flight to Tokyo, American burger-lovers.) The yen has become more undervalued since January, both because the dollar has surged and because inflation is much higher in America. A Big Mac in Japan, including taxes, costs ¥390, a price that has not changed since 2018. The American price, $5.15, has gone up by 11.5% in that time, and by 2.2% since January.

That UIP is explaining recent movements better than PPP is no surprise. When exchange rates get out of whack with interest rates, traders can make a profit at the touch of a button. To the extent that varying purchasing power presents opportunities, it is to people and firms who might change the site of production or ship goods across borders. That takes time. And it is not always possible: the international delivery of Big Macs would be ill-advised.

PPP can fail even within currency zones. Our new index incorporates a change to the source for American Big Mac prices. We used to collect an average price from restaurants in four cities: Atlanta, Chicago, New York and San Francisco. These are relatively expensive places. Now we use a median price for the whole country, provided by McDonald's, which is lower. The result is that the dollar does not look quite as strong. The change has been made for the whole history of the index, though the previous version is available online. We have also refined our method for calculating the GDP-adjusted index. Fans of burgernomics should tuck in. ■

Take a bigger bite

To view an interactive visualisation of *The Economist's* Big Mac index, go to economist.com/big-mac-index

Energy in Asia

Power play

SHANGHAI

How China is coping with the global crunch

AIR-CONDITIONERS ARE running full blast in central China as much as they are in Texas or on the Iberian peninsula. As many as 900m Chinese people have experienced record temperatures in recent days; more than 80 cities have issued heat alerts. In Zhejiang province, an important manufacturing centre in the east, some energy-intensive factories have been subject to power rationing. Thermometers in the region hit about 42°C on July 13th. Given the humidity, that feels more like 54°C.

For China's leaders the sweltering temperatures raise fears of a repeat of the energy crunch of last year. As power suppliers struggled to meet demand, factories were forced to shut down, and some households experienced blackouts. The authorities have vowed to avoid shortages this time. But turmoil in global energy markets and the Chinese government's own lofty emissions targets present complications.

The events of this year and last lay bare the contradictions between the desire for clean and secure energy and vigorous economic activity. In response, China's leaders have tried interventions with varying degrees of heavy-handedness. The experience might prove instructive as governments elsewhere mull market-meddling to counter surging commodity prices.

Last year supply disruptions, together with poor policy, led to China's worst power cuts in a decade. Officials had restricted the output of many of its coal mines, in line with their climate goals. Then the recovery from the early phase of the pandemic pushed up the demand for energy. But instead of letting prices rise, state planners maintained strict caps on electricity and some coal prices. Power generators began losing money and some stopped operating. Many miners halted work, too. The resulting power cuts took a severe toll on industrial output.

This time the economy has been battered by the government's "zero covid" policy. Nonetheless, surging commodity prices and the scorching heat have revived concerns about the adequacy of energy supply. Officials are seeking to allay those fears ahead of a Communist Party congress in the autumn. Their approach includes attempts to boost supply and build up stockpiles, as well as some market reforms.

Take coal, which produces 60% of China's power. Global thermal-coal prices have reached record highs, partly because European countries have reduced their reliance on Russian natural gas. China has this time loosened restrictions on mine production to increase domestic supplies. It has also been loading up on Russian coal, which is being shunned by the West.

The National Development and Reform Commission, the state planning agency, has pressed power companies to lock in long-term contracts with miners and to stockpile at least 15 days' worth of coal. Still, with market prices elevated and state caps on electricity prices for end-users in place, generators that are continuing to buy on spot markets could be squeezed if coal prices continue to shoot up.

China is highly dependent on foreign oil and gas, importing about 75% and 40% of its consumption of each fuel, respectively. Prices of both commodities surged after Russia invaded Ukraine, though oil has fallen a little recently. Chinese importers have stocked up on crude from Iran, which is under American sanctions, causing inventories to build up in January and April, according to research by Michal Meidan of the Oxford Institute for Energy Studies. China is also buying more oil from Russia, which in May overtook Saudi Arabia as its biggest supplier of crude.

China's natural-gas imports are largely locked into long-term contracts, which for now has kept prices down. The domestic price of petrol and diesel, like that of coal, is capped. High global crude prices mean refiners make a loss on domestic sales; quotas stop them increasing exports when prices are high. One Western oil trader says that planners have been leaning on state oil firms to sell even less abroad. Refiners thus have an incentive to do fewer runs when prices are high, and to stockpile crude instead. "Export controls are a strategy to keep oil in the country in case there's a shortage," says Zhou Xizhou of S&P Global, a rating agency.

At present there are no shortages. But that does not mean the government's supply-side measures have had resounding success. A big factor in keeping shortages at bay has been the sorry state of the economy and the muted demand for energy. Some economists believe China's oil demand could be flat this year compared with last year, or even lower. Optimistic forecasters see the economy recovering later in the year, even as growth slows in America and Europe. This could lower global energy prices just as China needs to import more.

If factories come roaring back to life earlier than expected, however, then China's energy policy would face a real test. Miners, refiners and generators could respond to price caps and export bans by reducing supply. A particularly cold winter could force buyers of gas into the spot market, where prices have rocketed. And officials would start to feel the heat. ■

Housing in China

No delivery, no payment

SHANGHAI

Fresh woe for the property sector: mortgage boycotts

MR PENG IS still paying the mortgage on the flat he bought in northern Shanghai last year—for now. The property's developer, Kaisa Group, began construction on the site in July 2021 but halted work just three months later, presumably because it could no longer pay for labour and supplies. Mr Peng's new home, which was scheduled for delivery in September next year, has become a *lanweilou*—one of thousands of housing projects sitting unfinished and abandoned.

This has been a common phenomenon for years. But for the first time ever people across China are halting mortgage payments on such homes in protest. Buyers have stopped payments on at least 319 projects in 93 cities, according to documents that have been collected by volunteers and published online.

The boycotts add more trouble to a property market that was already in turmoil. Regulators have put strict limits on the amount of debt developers can take on, leading many firms to miss interest payments. Evergrande, the most indebted of them all, defaulted last year. Many others have followed. While panic swept over offshore bond markets, the onshore financial system had, before the boycotts, been relatively shielded. Now the risks might be shifted onto China's banks.

Pre-payments are one of the most important sources of liquidity for homebuilders. About 90% of new properties in China were pre-sold in 2021, up from just 58% ▸▸

Buttonwood Wake-up call

The once-benevolent Fed now looks vengeful for markets

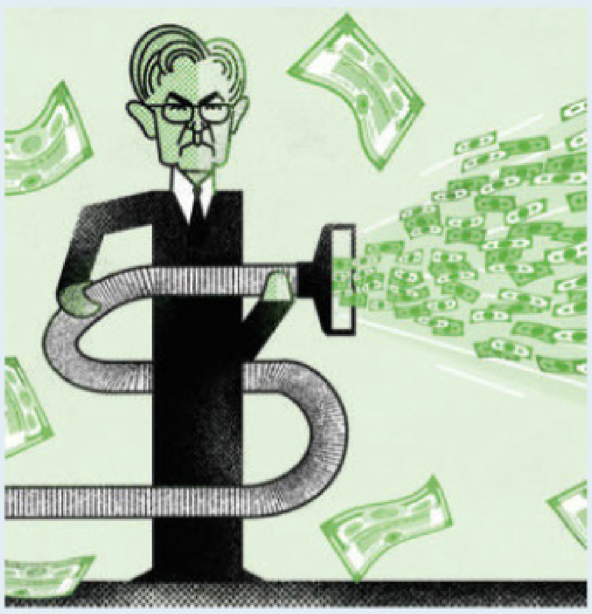
When stocks boomed early in the pandemic, an internet meme captured the madness of the moment. On the left-hand side of the image, a worried man exclaims that simply creating money cannot save the economy; on the right, a man representing the Federal Reserve replies "Haha money printer go brrr" while cranking out dollars. Joseph Politano, author of *Apricitas*, an economics newsletter, recently tweaked the meme to better fit the present situation. On the left, the worried man laments that excessive monetary tightening is increasing the risk of a recession; to the right, the Fed representative retorts "Haha money vacuum go brrr", while hoovering up dollars.

In more analytical, if less humorous, terms, another way of framing this shift is to ask whether the Fed put has become a Fed call. The concept of a Fed put dates back to the era of Alan Greenspan, a former chairman of the central bank. Starting with the stockmarket crash in 1987 and continuing for more than three decades, the Fed earned a reputation for easing policy, notably by cutting interest rates, whenever share prices plunged. To traders this looks a bit like a put option, a basic hedging tool that sets a price floor for investments.

A Fed call would imply just the opposite: namely, that the central bank is in effect capping the market (similar to traders who sell call options on their stock holdings). Steve Englander of Standard Chartered, a bank, laid out this provocative idea in a recent note to clients: "The Fed may push back against equity market gains until it is comfortable that disinflation is a lock—in other words, [there is] a Fed call."

This argument may, at first glance, seem rather crude. The Fed has long denied that it targets asset prices in setting monetary policy. Narrowly, its denials are credible. Central bankers look at oodles of data, from real-time growth figures to surveys of inflation expectations. They cannot afford to be swayed by swings in stocks. Moreover, share prices reflect many factors ranging from the overall economic outlook to corporate idiosyncrasies. Why would the Fed target something that is so volatile and only partially responsive to its actions?

In a broader sense, however, the stockmarket clearly matters to the Fed. Jerome Powell, its current chairman, has repeatedly said that its policies are transmitted to the real economy through financial conditions—a term that refers to the availability and cost of funding for businesses and consumers. Stockmarkets play a crucial role in both shaping and gauging financial conditions. Admittedly, they play a small part in a formal sense: for instance, in one index of financial conditions created by the Fed's Chicago branch, equity and other asset markets account for just ten of its 105 separate inputs, contrasting with the bigger weights assigned to credit markets. But stocks reflect these other metrics. This is especially true at times of stress. Share prices have fallen this year as indices of financial conditions have tightened, and they have risen when these indices have eased.



Concerns about inflation only add to the market's importance. When share prices rise, consumers, feeling flush, tend to spend more money and companies, feeling confident, tend to hire more workers. A paper in 2019 by Gabriel Chodorow-Reich of Harvard University and colleagues concluded that each dollar of increased stockmarket wealth lifted consumer spending by about three cents annually, while also boosting employment and wages. For a central bank fighting inflation, a large rise in share prices would therefore cut against its efforts.

This makes for borderline hypocrisy in Fedspeak. Sober central bankers can explain that they want "appropriate firming of monetary policy and associated tighter financial conditions" to help rectify the supply-and-demand imbalances that are fuelling inflation (as the Fed did indeed say in the minutes of its rate-setting meeting in June). Yet it would be beyond the pale for them to declare that they want "appropriate firming of monetary policy and associated weakness in the stockmarket"—even if their meanings are closely aligned.

In a market crash that impairs the financial system, the Fed put would come back into focus. For now, though, the sell-off has been mostly orderly. A sustained rebound in stocks would be unwelcome for the Fed, and might well tilt it towards more hawkishness. Investors accustomed to viewing the central bank as a friendly force must instead confront the harsh reality of a Fed call.

---

in 2005. The funds are virtually interest-free and are used to pay for construction. But they have also been poorly regulated and often misused. Many homebuyers fear the money they have put up for flats has been squandered and will be irrecoverable.

Analysts at Deutsche Bank put the size of mortgages affected so far by the boycotts at 1.8trn-2trn yuan ($270bn-300bn), or 4-5% of the stock of mortgage lending. If that is the full extent of the crisis, then banks can absorb it. The government has reportedly considered giving grace periods on mortgage payments while also pressing banks to keep lending to developers.

A bigger concern is that the boycotts deliver yet another blow to sentiment, and could further sap liquidity from the sector. Housing sales were already down by about 35%, year on year, in the first five months of 2022. News of the boycotts, though heavily censored, has spread via social media and may put potential buyers off, starving developers of new pre-sales funds.

More buyers could also stop paying mortgages. Just 60% of homes that were pre-sold between 2013 and 2020 have been delivered, reckon analysts at Nomura, a bank. A fall in cement output suggests that building at up to 20% of sites may have slowed or stopped since the start of 2021.

Should the boycotts spread, some banks, especially smaller ones, could experience distress. Mr Peng is part of a group of buyers that has sent a letter to Kaisa Group demanding a resumption of construction and asking how the developer has spent their money. He says he is prepared to pay his mortgage as he awaits the scheduled delivery date for his flat. The fate of the property market could hang on what he, and others in his situation, do next. ■

Free exchange | Aiming high

Should central banks' inflation targets be raised? The last in our series on the central-bank pivot

When New Zealand's parliament decided in December 1989 on a 2% inflation target for the country's central bank, none of the lawmakers dissented, perhaps because they were keen to head home for the Christmas break. Rather than being the outcome of intense economic debate, the figure—which was the first formal target to be adopted by a central bank—owes its origin to an offhand remark by a former finance minister, who suggested that the soon-to-be-independent central bank should aim for either zero or 1% inflation. The central-bank chief and incumbent finance minister used that as a starting-point, before plumping for 0-2%. Over time, 2% became the standard across the rich world.

Should the somewhat arbitrary goal of 2% be changed? The question may seem a little churlish when central banks are so flagrantly missing their existing targets: annual inflation in America, Britain and the euro area, for instance, is running at around 9%. The Federal Reserve's experiment with "flexible average-inflation targeting" has coincided with the central bank allowing inflation to get out of hand. Yet it is possible that raising the target might help prevent rich countries from returning to the low-inflation, low-growth malaise that was the rule for the decade after the global financial crisis. The idea therefore warrants consideration.

High inflation is painful. Even if wages keep pace with price growth, thereby preserving workers' incomes in real terms, it undermines the function of money both as a unit of account and as a store of value. Contracts agreed at one point in time lose their worth rapidly, redistributing income and wealth arbitrarily between buyers and sellers or between creditors and debtors. Long-term investment and saving decisions become more of a gamble, as the case of Turkey illustrates. Inflation there is in the region of 80% (see Briefing).

Yet deflation carries its own costs, too. Worryingly for mortgage-holders and governments alike, it raises the value of debts in real terms, which can generate a self-sustaining depression as incomes keep falling relative to debt payments. That explains why central banks aim for a low but positive rate of inflation.

Deciding which low but positive number is desirable is trickier. Is a target of 2% actually superior to one of 3% or 4%, for instance, or does it merely owe its exalted status to tradition? The relative damage done by extremely high or accelerating price growth may be easily visible, but economists have struggled to identify differences in the costs to an economy from different stable, low-single-digit inflation rates. The 20-year period of very low inflation that recently came to an end brought no positive leap forward in productivity nor any change in savings behaviour, except in reaction to the global financial crisis, points out Adam Posen of the Peterson Institute for International Economics, a think-tank in Washington.

If the costs of a slightly higher inflation target are small, the benefits are potentially sizeable. Chiefly, it could help central bankers avoid the so-called zero lower bound on nominal interest rates. Interest rates cannot go too far into negative territory, because they risk destabilising the banking system: depositors could always choose to empty their bank accounts and hold cash, which in effect carries an interest rate of zero, instead. That also limits the efficacy of negative interest rates. After the financial crisis some central banks set slightly negative rates on commercial banks' reserves, but lenders had little ability to pass them on to their retail clients. The impotence of negative interest rates encouraged central banks to adopt unconventional policies, such as quantitative easing.

Higher inflation targets are a different solution to the problem of the lower bound. If the public expects the central bank to generate more inflation in future then the interest rate, in real terms, can still be sharply negative, stimulating the economy even without nominal interest rates needing to venture below zero. Allowing moderately higher inflation in normal times could therefore make it easier for the central bank to give a boost to the economy when trouble hits.

The opportunity to escape the lower bound on interest rates is no small thing. The current spell of monetary-policy tightening notwithstanding, the risk remains that interest rates will stay relatively low. The long-term factors that were weighing on interest rates before the pandemic, such as an ageing population and low productivity growth, are still in place. There may be a benefit in the short term, too, to raising targets now. Reducing stubbornly high inflation requires cooling the economy, which generally involves raising the unemployment rate. The lower the inflation target, the more unemployment central banks need to generate to get there. If the costs of inflation at 3% really are not much different from inflation at 2%, central banks will be generating additional unemployment for little benefit.

Seizing the inflationary moment

Set against this, however, are the consequences of reneging on a 30-year promise. The experience of the past year has made clear that the public detests inflation; both finance ministries and central banks are being excoriated for losing control of price growth. To shift the goalposts now could give the impression of giving up the fight entirely. Inflation targeting was meant to anchor the public's expectations of price growth. Changing the target could undermine that objective altogether, by creating expectations that it will be raised again the next time inflation roars.

As long as inflation is so far off-target, such considerations seem likely to stay the hand of any would-be monetary reformers. Yet once it peaks, restoring a degree of central banks' credibility, the pain of further disinflation, together with the promise of well and truly escaping the zero lower bound, could just start to make the idea of higher targets more alluring. ■

Conflict analysis

Predict and survive

Better software aspires to forecast who will win a battle—or a war

WARFARE IS COMPLEX—and, as those who start wars often discover to their chagrin, unpredictable. Anything which promises to reduce that unpredictability is thus likely to attract both interest and money. Add the ability of modern computers to absorb and crunch unprecedented amounts of data, and throw in a live, data-generating war in the form of the conflict now being slugged out between Ukraine and Russia, not to mention the high level of tension across the Taiwan Strait, and you might assume that the business of trying to forecast the outcomes of conflicts is going into overdrive. Which it is.

One piece of software dedicated to this end is the Major Combat Operations Statistical Model, MCOSM, developed by engineers at the Naval Postgraduate School (NPS) in Monterey, California. MCOSM runs algorithms based on data about 96 battles and military campaigns fought between the closing year of the first world war and the present day. When fed information about Russia's initial push to seize Kyiv and subjugate Ukraine, which began on February 24th, the model predicted, on a scale of one to seven, "operational success" scores for the attacker and defender, respectively, of two and five.

That pretty much nailed it. On March 25th Russia's forces gave up the idea of taking Kyiv and narrowed their objectives to Ukraine's east and south, marking the end of what has come to be seen as phase one of the war. Nor was MCOSM's forecast a fluke. In the hands of knowledgeable users, says Jon Czarnecki, who created it, it gets seven out of ten forecasts broadly right.

Crunch time

To run an MCOSM forecast requires users to estimate 30 values. These cover things like the levels and expected importance, given the fight in question, of each belligerent's training, firepower, mobility, logistics, reconnaissance, decision-making and ability to sequence and synchronise operations. Keen judgment is needed, for the value of such things is often unknown, or miscalculated, in advance.

The French army that collapsed in May 1940 was, for example, widely thought of beforehand as one of the finest in Europe, just as Russia's armed forces were thought to have undergone thorough reform since 2008. Nevertheless, Dr Czarnecki, who was a colonel in America's army before he joined NPS, assigned Russia a dismal value of "one" as its Decisions score. That turned out to reflect well the Kremlin's overambitious attempt to imitate American shock-and-awe tactics by storming Kyiv rapidly from several directions.

Other models are available. Roger Smith of in[3], a consultancy in Orlando, Florida that advises developers of military forecasting models, was once chief technologist at the American army's simulation office, also in Orlando. He reckons its team is currently developing or upgrading roughly 100 predictive models, small and large.

Some, like MCOSM, are deterministic—meaning the same inputs always produce the same forecast. Others are probabilistic. Consider the matter of, say, a 600-metre rifle shot, taken at dusk against a target who is both walking and wearing a bulletproof vest, with the trigger being pulled by a fatigued, poorly trained sniper. To model an event like this, developers estimate the likelihoods, expressed as percentages, that ▸

→ Also in this section

the shot in question will miss, injure or kill. This typically involves things such as studying past battles, reviewing shooting-range data and taking into account the specifications of the kit involved.

A good example of a probabilistic model is BRAWLER, a simulator of aerial combat produced by ManTech, a defence firm in Herndon, Virginia which is used by America's navy and air force. BRAWLER crunches hard engineering data on the performance of warplanes, including their numerous subsystems, and also the capabilities of things like ground radar and missile batteries. During a simulation, the virtual representations of this hardware can be controlled either by people or by the software itself. Running the software many times produces probabilities for all manner of outcomes. How much would certain evasive manoeuvres increase an F-16's chances of dodging a Russian S-400 missile? What about the effects of altitude? Of rain? Of chaff or other countermeasures?

Bar-room brawl

Simulating the physics of all these things is daunting enough. But BRAWLER also includes algorithms that claim to approximate mental and cultural factors. Karen Childers, a retired captain in America's air force who now works at ManTech, where she is in charge of updating BRAWLER, describes this part of the endeavour as "explicit modelling of the pilot's brain".

Take, for example, IFF (identification, friend or foe) transponders on warplanes. BRAWLER models both the propagation of IFF signals and how their calls on a pilot's attention distract or slow reaction times. In this, a pilot's overall cognitive load at a given moment matters. So, Ms Childers says, does the level of skill attributed to each simulated pilot. Beyond that, BRAWLER's users enter values for each pilot's sociopolitical background. This requires some leaps of analytical faith. Real pilots from democracies are assumed to be more creative that those from authoritarian regimes that discourage personal initiative.

BRAWLER simulations are typically run with no more than 20 aircraft, but the model can handle thrice that number if needed. Distribution of the full version of the software is tightly restricted, with Britain's defence ministry the only known foreign recipient. ManTech does, however, sell a version called COBRA, from which classified algorithms have been removed. Both South Korea and Taiwan have acquired this.

An even bigger probabilistic model, Pioneer, is being developed by Bohemia Interactive Simulations (BISim), another firm in Orlando, which was bought in March by BAE Systems, a British weapons giant. Peder Jungck, head of simulation at BAE, calls the model, on which more than 400 developers are working, a "defence metaverse". America's Marine Corps hope to take delivery of it late next year.

As with commercial metaverses, Pioneer requires serious computing power and is run on cloud servers. It can simulate the actions and fates of a staggering number of entities around the world. These range from soldiers, tanks, ships and aircraft to buildings, cars, mobile-phone towers, hills, vegetation, weapons and even individual rounds of ammunition. For areas of special military importance, Pioneer's terrain data include details such as the positions of particular trees, as recorded by spy planes and satellites.

The system also employs real-time meteorological data. If a tank entering a field would thereby sink into mud, Pioneer has it do just that. It also "deforms" terrain as virtual battles unfold. If an artillery barrage blocks a street, Pioneer reroutes traffic appropriately. According to Pete Morrison, a former head of BISim who now leads commercial operations there, Pioneer simulates "the flight path of every single bullet, including ricochets". It also takes account of a fighting force's training, level of fatigue and "doctrine" (the principles, derived from military handbooks and intelligence assessments, that guide an army's actions). Run a few hundred simulations of troops crossing a stretch of enemy territory, Mr Morrison says, and casualty estimates will teach you, without bloodshed, how not to do it.

Another probabilistic software package is the Advanced Joint Effectiveness Model (AJEM). America's defence department pays about 600 people to operate it. A user first loads the software with engineering specifications for an aircraft, vehicle or boat. If the maker's files are available, this can be done in less than a month. Otherwise, it may take a year. Marianne Kunkel, AJEM's manager at the American army's Combat Capabilities Development Command Analysis Centre, DAC, in Maryland, says users then employ "kill tables" of the velocities and masses of different projectiles to run "shot lines through the target".

This lets AJEM spit out probabilities related to hypothetical attacks. Were 300 mortar shells fired at two dozen Bradley fighting vehicles moving in a given formation at a certain speed 4km away, AJEM would calculate probable tallies for types of damage. These range from "catastrophic kills" to loss of mobility, communications and the ability to shoot. Those estimates are also useful for weapons companies that wish to engineer greater survivability into hardware and lethality into warheads.

Linked in

The next step, according to Ashley Bomboy, a simulations chief at DAC, is to lash different models together. Ms Bomboy's team plans to arrange for yet-bigger (and as-yet-unnamable) simulators to tap into AJEM "on the fly, as needed", for greater fidelity. Another goal is to forecast events beyond the immediate battlespace. DARPA, one of the American defence department's research agencies, hopes to do this by using natural-language processing to comb through the texts of hundreds of thousands of reports from think-tanks, commercial media and the department itself, looking for correlations human readers would probably miss.

Causal Exploration, or CausX, as the software in question has been dubbed, is not yet ready for full deployment. But it is, according to Joshua Elliott, the programme's manager, already producing

Onwards to victory

Awards: Economist journalists collected two prizes at the Association of British Science Writers awards ceremony, in London, on July 14th. Alok Jha took the laurels for news analysis or explanatory reporting for his piece on how covid-19 is spread by aerosols: economist.com/aerosols. Babbage won podcast of the year for its episode on how constellations of satellites cause problems for astronomers: economist.com/darkskies "aha moments". It extracts "really rich and interconnected behaviour", as he puts it, that encompasses economic activity, public sentiment, crime, and political decisions relevant to war and peace. One goal has been to find links between sanctions on Russia and cyberattacks. When fully developed, CausX will be folded into a software suite called Joint Planning Services that the defence department uses to prepare military operations.

What all this means for Ukraine is another matter. A colonel in Kyiv, who asked to not be named, laments that requests for advanced American forecasting models have produced little. Such software would help the country plan missions, he says. As for what American forecasters are learning about the war, most are staying mum. But Pamela Blechinger, director of the army's Research and Analysis Centre at Fort Leavenworth, in Kansas, notes one insight. Ukraine's strong will to fight, she says, is playing a bigger role in that country's military successes than her team of about 290 forecasters had expected.

Models they use include CombatXXI (for brigade engagements) and Advanced Warfighting Simulation (when more troops are involved). Neither was designed specifically to forecast the will to fight. But software developed at RAND, an American think-tank, does focus on that.

RAND's researchers have identified a list of things that influence the will to fight. These include the obvious, such as the quality of a soldier's diet, sleep and kit, and also more subtle matters like the reasons he or she is fighting, what horrors are unfolding, and whether the enemy has demoralising air superiority, or chemical or incendiary weapons. Battlefield success tends to boost morale, a component of will to fight that typically improves marksmanship. But that benefit fades with time. More broadly, an army's will to fight is weakened by corruption, unemployment, a rising cost of living and political polarisation.

No plan survives enemy contact

Equations developed by RAND that approximate correlations between such factors and a force's will to fight have been folded into defence-department combat simulators called OneSAF and IWARS. Without these upgrades, says Henry Hargrove, a statistician at RAND, those simulators would assume soldiers are fearless automatons. Failing to account for the will to fight skews results, he opines, because "Humans are not Terminators."

Running forecasts can be a thrill. As Andrew Ilachinski, a veteran modeller at the Centre for Naval Analyses, in Virginia, puts it, "You sit back and watch the system do its thing," as patterns of behaviour emerge. Caveats are in order, though, and surprises are common. Assigning numerical scores to human psychology and military knowhow is subjective at best and fanciful at worst. As an old saw has it, all models are wrong, but some are useful.

With this caveat in mind, *The Economist* asked Dr Czarnecki to use MCOSM to predict an outcome for the Russia-Ukraine war's current, artillery-based phase two. He determined new values for variables that reflect improvements by Russian forces in areas which include information processing, operational sequencing and military judgment. Ukraine, he assessed, has held on to a number of qualitative edges, but these have shrunk. And Ukraine remains heavily outgunned. Dr Czarnecki typed in the data and let the model rip. It forecast "operational success" scores of five for both Russia and Ukraine—in other words, a grinding stalemate. ■

Depression and serotonin

Wrong turning

A popular hypothesis about the cause of depression is rebuffed

How most medicines work their magic is understood. But for some it remains a mystery. Among the most mysterious are a group of widely used antidepressants called selective serotonin reuptake inhibitors (SSRIs), the best-known of which is Prozac.

For decades, doctors believed SSRIs operated by boosting levels of serotonin, a chemical which carries signals between neurons in the brain. This supposition was based on the hypothesis that a lack of serotonin causes depression. But a growing number of investigations suggest that theory does not hold water—a conclusion hammered home by a round-up of reviews of such work just published in *Molecular Psychiatry*.

This uber-study, led by Joanna Moncrieff of University College, London, covers several strands of research on the link between serotonin and depression. One looks at levels of serotonin and its breakdown products in blood and spinal-cord fluid, taking these as proxies for the amount in the brain, which it is unsafe to measure directly in living people. Work in this strand, the review concludes, shows no difference between the clinically depressed and the healthy.

Neurons reabsorb serotonin after it has done its job. SSRIs block this, leaving more of the molecule available. Another body of work thus examined the receptor proteins which respond to serotonin, and the transporters through which it is reabsorbed. This occasionally found indications of higher serotonin activity in people with depression, the opposite of what might be expected. Dr Moncrieff reckons that may actually result from antidepressant use, something not always taken account of when those with and without depression are compared.

A third line of research depends on the fact that serotonin is made from tryptophan, a substance the body cannot synthesise, and so must ingest from food. In these experiments participants' serotonin levels are lowered by depriving them of tryptophan. Dr Moncrieff's team concluded that lowering serotonin in this way did not produce depression in hundreds of healthy volunteers.

Maybe

Last, the researchers looked at big genetic analyses. These found no differences between genes that regulate the serotonin transporter in those with depression and those without it.

If serotonin is not the cause of depression, that raises questions about SSRIs. These do help some new patients, but not others. And they come at a cost. Possible side-effects include loss of libido and inability to reach an orgasm. They can also be hard to stop taking, leaving some who recover from depression dependent on them for life.

Already, clinical practice is changing to emphasise dealing with environmental triggers of depression, such as adversity and poor coping skills, rather than deploying drugs. But it would still be good to understand upfront who will benefit from SSRIs and who won't. Without the serotonin hypothesis, doctors are, in this regard, back to square one.

Menstruation and athletics

Cycle races

Menstrual-cycle coaching may help sportswomen improve their performances

JUST 0.63 SECONDS separated first from fourth place in the women's 100 metres freestyle at the recent Tokyo Olympic Games—a race where the winning time was 51.96 seconds. In light of this and similar facts, it is not surprising that elite athletes are constantly searching for ways to get even 1% better. To that end, they hire strength coaches, nutritionists and sports psychologists. And lately, some female athletes have been trying a new tack: working with menstrual-cycle coaches.

Good data concerning the effects of menstruation on athletic performance are scant. However, according to four studies conducted in 2020 on more than 250 athletes from a range of sports, more than half of sportswomen believe their performance fluctuates with the phase of their menstrual cycle. In particular, many said they suffered in the weeks immediately before and during menstruation. World-class performers like Fu Yuanhui, a Chinese swimmer, have spoken openly about this, too. And female athletes also report distraction and worry about bleeding while actively menstruating, a matter which made the news recently when a group of activists protested about the all-white dress code at the Wimbledon tennis championships.

There is, as well, the question of safety. Again, this is poorly researched. An exception, though, is damage to the anterior cruciate ligament (ACL) of the knee. Women are much more prone to ACL injuries than men and some studies suggest the level of risk is related to the menstrual cycle.

Given the wide physiological effects of that cycle, the neglect of its consequences for sport is stark. The intricate monthly tango of oestrogen and progesterone, the main hormones which regulate it, has consequences far beyond preparing the body to reproduce. The complexity of this dance, compared with the hormonal stability of men, is one reason for that neglect. But others are that sport is studied largely by male researchers, and male sport is currently more prominent and better paid.

A dance to the music of time

The menstrual dance is, indeed, complex. For a start, oestrogen is anabolic, building up muscle, while progesterone is catabolic, breaking it down. Then, at the beginning of the cycle, body cells prefer to metabolise carbohydrates. Later on, they prefer fats. During the luteal phase, immediately after ovulation, when both hormones are high, the body is less resilient to stress and more prone to inflammation.

At this point women have increased appetites, higher internal temperatures, higher resting heart rates and higher respiratory drive. They also retain water and salt, causing them to put on weight. Their heat tolerance is reduced, too. And their moods and emotional regulation suffer. Here, then, is fertile ground for quite a few of those percentage-point improvements. And that is where menstrual-cycle-savvy coaches come in.

One possible tactic is phase-based training, in which a coach adjusts the intensity, volume and type of an athlete's workouts based on where she is in her cycle. Stacy Sims, a researcher at Auckland University of Technology, in New Zealand, recommends athletes increase intensity in the low-hormone follicular phase of the cycle, when the body is primed to bear heavy loads. Later, during the luteal phase, when bodies are less able to adapt to stress, she recommends focusing on steady-state aerobic training to allow proper bodily recovery. This pattern of training, she believes, allows female athletes to push themselves in the most efficient manner.

Such a one-size-fits-all approach may, though, be overly simple. Kirsty Elliott-Sale, a professor at Manchester Metropolitan University, in Britain, thinks there is, as yet, no conclusive scientific evidence to back phase-based training. However, while wary of general guidelines, Dr Elliott-Sale sees the merits of an individualised approach which takes account both of monthly variation within an individual and inter-individual variability.

This latter source of variety may also help explain why conclusive population-level scientific evidence is hard to come by. A regular cycle can last between 21 and 40 days, and the hormonal details—how fast concentrations change, when they peak and how high they peak—vary. Also, different women experience different sensitivities to hormonal changes. Some have no symptoms. For others, the effects may include debilitating cramps, bloating, migraines and depression.

Maddy Cope, a professional climber and coach in Britain, emphasises the need to bridge the gap between where research stands and how athletes feel. She notes, for example, that most research does not translate well to her own discipline.

Climbing is a supremely technical matter, and the tests used in research compare poorly with the actual demands of the sport. Even here, though, a little menstruation-driven thinking may help. Most good training plans for climbers include exercises of a range of intensities and incorporate a "de-load" week, to allow the body to recover. Menstrual-cycle-informed training in this case might be as simple as arranging for the de-load week to coincide with the stress-sensitive luteal phase.

Menstrual-cycle coaching is, then, in its infancy. But, as women's sports jostle more and more with men's for the limelight (see International section), and the sums of money involved increase, many more athletes are giving it a go. In this and other areas, female sports-science is a promising field of research, as the fiction that men are the baseline and women an anomaly—a rib, as it were, pulled from the chest of research on men—is put to rest. In sport, as in other areas, it is time for women to unlock their full potential. Period. ■

Every millisecond counts

Kissinger on statecraft

The vision thing

A veteran strategist examines the qualities that he thinks made six leaders great

Leadership. By Henry Kissinger. *Penguin Press; 528 pages; $36. Allen Lane; £25*

WHATEVER YOU think of Henry Kissinger, the 99-year-old former national security adviser and secretary of state in the Nixon and Ford administrations has an elephantine memory and experience that makes it an important historical resource. In his latest book, Mr Kissinger, an unofficial adviser and friend to many presidents and prime ministers, considers how six leaders from the second half of the 20th century reoriented their countries and made a lasting impact on the world.

Mr Kissinger's six are an eclectic bunch. Konrad Adenauer was the first post-war chancellor of West Germany. Charles de Gaulle saved France twice, first during the second world war, then at the time of the Algerian crisis. The author's old boss, Richard Nixon, shook geopolitics with his opening to China before scandal brought him down. Anwar Sadat paid with his life for forging a lasting peace with Israel as Egypt's president. Lee Kuan Yew made tiny Singapore one of the most prosperous places on Earth. And Margaret Thatcher reversed decades of British decline—while widening social and economic divisions—before being defenestrated by her party.

A project of this kind might have amounted to a series of brief eulogistic biographies of famous people. Much of the book will indeed be familiar to many readers—and at times the author's willingness to glide over inconvenient truths is distasteful. He justifies Nixon's covert bombing of Cambodia by the need to force the Vietnamese to negotiate. One of its consequences, the rise of the Khmers Rouges, merits a single sentence, which blames Congress for cutting off military aid to the Cambodian government. (Watergate, too, is downplayed.) De Gaulle's extraordinary refusal to give credit to allies fighting and dying to liberate France nearly earns admiration. The controversy in which Thatcher almost revelled escapes all criticism.

The book is redeemed, and more, by the analytical framework in which each leader is examined, and by the author's personal knowledge of his subjects. Moreover, the writing is always crisp and lucid, even when conveying arcane theories of international relations, such as the notion of "equilibrium" that defined Nixon's foreign policy (and, by extension, Mr Kissinger's).

Having seen so many leaders at close hand, Mr Kissinger understands the constraints they must acknowledge and bypass. Among these are "scarcity", or the limits of their societies in terms of demography and economic heft; "temporality", or the prevailing values, habits and attitudes of their times; "competition" from other states that have their own goals; and the "fluidity" of events, the pace of which can force decisions to be made on the basis of intuition and hypothesis. Leaders must traverse a tightrope from which they fall if they are either too timid or too bold.

In Mr Kissinger's view, there are essentially two types of leader, the statesman and the prophet. Statesmen manipulate circumstances to their advantage, temper vision with wariness and work with the grain of societies until existing institutions need to be changed or confronted. ▸▸

Prophets are prepared, if not eager, to break with the past no matter the risk.

Five of his six leaders clearly belong more to one category or the other. Adenauer, Nixon and Thatcher had most of the characteristics of the author's complete statesman, although all three had a motivating vision. Adenauer envisaged a humble Germany able to take its place among other liberal democracies. Nixon was committed to using America's economic and military might to bring the international system into a long-term equilibrium that would render war between great powers much less likely. Thatcher believed passionately in individual autonomy and the capacity for national renewal—if the energies of ordinary people could be freed by the magic of market economics.

By contrast, de Gaulle and Sadat were both driven by a prophetic ideal of what their countries could and should become. De Gaulle's feat of keeping the idea of the Free French alive when stranded in London in 1940 was an almost mystical triumph of will over reality. Sadat's belief that Egypt could never be independent and free without setting the terms of peaceful coexistence with Israel was rooted in a profound sense of his country's long history. Both could be pragmatic, but that was not their main *modus operandi*.

The perfect leader, thinks Mr Kissinger, combines elements of both archetypes. Of his six subjects, Lee may come closest, with his unflinching realism, ruthlessness (especially in tackling corruption) and unwavering vision of what a multi-ethnic community of Chinese, Indians and Malays, with few geographical advantages, could achieve. Singapore is far from being a liberal democracy—either Lee or his son have been prime minister for most of the city-state's existence. Mr Kissinger is not too fussed by that, but concedes that Singapore's ability to evolve from its founder's model will become essential to its continued success. The ultimate challenge will be to devise a better balance "between popular democracy and modified elitism".

At the close, the author asks whether leaders are now emerging with "the character, intellect and hardiness required to meet the challenges facing world order". He is not optimistic. The decline in erudition and the socially atomising effects of technology are unhelpful. So is the erosion of moral purpose and the religious belief that often underpinned it, and which animated five of these six leaders (even Nixon was influenced by his Quaker upbringing).

Above all, Mr Kissinger writes, faith in the future is the indispensable quality for successful leaders and the "elevated purposes" they aim to inculcate. He ends with a warning: "No society can remain great if it loses faith in itself or if it systematically impugns its self-perception." ■

Opioids in America

The guilty and the gone

Two investigative journalists chronicle a tragic, man-made epidemic

American Cartel. By Scott Higham and Sari Horwitz. *Twelve Books; 416 pages; $30. Little, Brown & Company; £20*

No name is more synonymous with the devastation inflicted by America's opioid epidemic than Sackler. For over two decades, Purdue Pharma, a drug firm owned by members of the Sackler family, pumped OxyContin, a highly addictive opioid painkiller, into communities across the country. In "American Cartel", Scott Higham and Sari Horwitz shed light on the other culprits—the callous executives, elected officials and government bureaucrats who fuelled what would become the deadliest drug crisis in American history—and on the few who tried to stop them.

Between 1999 and 2020 the epidemic killed over half a million Americans. What began as a scourge of neglected places, hitting blue-collar Appalachian towns and Native American reservations particularly hard, became ingrained in the national consciousness. For all the subject's notoriety, though, Mr Higham and Ms Horwitz offer fresh insights. In engaging short chapters they whisk readers through the legal fight against obscure drug distributors who earned billions from opioids. Investigative journalists by trade, they make esoteric legal theory and a maze of litigation both comprehensible and intriguing.

"American Cartel" opens with a "cast of characters", which helps readers keep track of the more than 70 people and companies that crop up. But it is a small band of scrappy agents and lawyers at the Drug Enforcement Administration (DEA) who are the backbone of the narrative. Eventually, they lend their testimony to a sprawling legal team that builds what Mr Higham and Ms Horwitz call "the most complex civil action in the history of American jurisprudence".

Half a million heartbreaks

Certain facts and anecdotes are difficult to forget. In West Virginia the bodies of overdose victims piled up so fast that "the state's burial-benefits department had run out of money", meaning the only option available to "the grieving and impoverished" was cremation without ceremony. In Cabell County, West Virginia, which has just under 100,000 residents, around 1% of them died of opioid overdoses in the 2010s.

Also striking is the tardiness of the general government response. Alarm bells were sounding as far back as 2002. A doctor noticed a jump in addiction stemming from OxyContin; two lawyers who subsequently looked into it agreed there was a case to be made against Purdue Pharma. Yet Eric Holder, who became attorney-general in 2009, seemed unaware of the extent and nature of the crisis until 2014. The book recounts an exchange between Mr Holder, his aides and a DEA official. "You're telling me that more people are dying from pharmaceuticals [than heroin]?" Mr Holder asked. He turned to his aides: "Were we aware of this?"

Washington's revolving door, whereby bureaucrats responsible for regulating industries move to cushy corporate jobs in the same sectors, slowed efforts further. Politicians in Congress, even some from the worst-afflicted states, accepted thousands of dollars in campaign contributions from lobbyists for pharmaceutical firms. Some sponsored legislation devised by a former DEA agent-turned-lobbyist, who knew how to stymie his former employer's efforts. The bill, which passed without objection, crippled the DEA's ability to police the abuse of prescription opioids.

"American Cartel" delves only fleetingly into the personal stories of opioid victims and their families. But the few it recounts linger. One involves a town-hall meeting in a high-school gymnasium in Portsmouth, Ohio, in 2011. A slideshow flashed up photos of the lost. "Sons and daughters and grandsons and grand-daughters in graduation pictures. They were dead before they had a chance to live." ■

World in a dish

Guts and glory

PARIS

In praise of subterfuge, an underappreciated culinary skill

A FRANCOPHILE WHO hasn't been to Paris in years may find himself so excited at breakfast that he orders andouillettes, the single most French thing on the menu. These subvert the old adage that warns against watching sausage being made: there is no mystery to them. They are simply pigs' intestines stuffed into a casing, then boiled or grilled. They have a slithery, entropic texture—slice into them and little grey curlicues slide out—and smell like a urine-soaked barnyard.

Brought up on cornflakes and toast, the Francophile's children are unconvinced, and stick with *pain au chocolat*. In their scepticism, they have plenty of company. Barbecuers in Texas nickname their spicy sausage "hot guts", but at least it looks like a sausage, and tastes good. Andouillettes look like actual guts, and the best that can be said of their flavour is that it is better than their stench. Their declining popularity—not just at your correspondent's table but among French diners as a whole—testifies to the importance of an often overlooked culinary skill: subterfuge.

Parents know this trick well. Grating courgette into pasta sauce is a good way to add vegetables to the diets of picky youngsters. Donald Trump's doctor in the White House also used this ruse, getting cauliflower mixed into his patient's mashed potatoes. But for most grown-ups, the ingredient that requires disguise is meat.

Devotees of andouillettes—such as the Association Amicale des Amateurs d'Andouillettes Authentiques (Friendly Association of Lovers of Authentic Andouillettes), which certifies the best in France—may scorn those who blanch at them. Even they might concede, however, that a wide gulf separates good from mediocre andouillettes, as is also true of, say, hot dogs. But a mediocre hot dog is still a hot dog. A mediocre andouillette is botched abdominal surgery on a plate.

And though some gourmets may revile hot dogs, they are a triumph of culinary subterfuge, as are many other sausages. Butchers developed this skill of necessity. The first, say, three-quarters of cutting up an animal for consumption—hams, ribs, loin, belly—is relatively straightforward. But what to do with the organs and other unappetising scraps?

German immigrants taught Americans to boil and mix them with oats and cornmeal to make goetta and scrapple, which are shaped into loaves, then sliced and fried crisp; served on toast, there is no better winter breakfast. A more widespread answer is to chop the bits up, season and pack them into casings—made from the animal's intestines, another leftover—and turn them into sausage. For a hot dog, the meat is pounded into a paste (though most today contain no offal).

Nowadays most sausages are industrially made, and andouillettes are artisanal. To some that makes them worth defending as a holdout against processed uniformity, a stance that in theory has a virtuous appeal. In practice, there are as many ways to disguise scraps and offal as sausage as there are sausage-makers. Almost all of them taste better than andouillettes. ■

Buckminster Fuller

Designs for living

Inventor of the Future. By Alec Nevala-Lee. *Dey Street Books; 672 pages; $35 and £25*

A MAN BRIMMING with big ideas, Buckminster Fuller saw the grand flow of history and sought to direct it into more constructive channels. Among the crises he identified before they entered the popular consciousness were climate change, unaffordable housing and technology-driven unemployment—to which he offered such tentative solutions as a fuel-efficient car, mass-produced homes and a universal basic income.

"My objective", Fuller wrote with typical immodesty, "has been humanity's comprehensive welfare in the universe." In pursuit of that goal he crafted not only innovative technologies but new perspectives, coining terms such as "Spaceship Earth", which encouraged his fellow voyagers to view the planet as a fragile vessel. But it was a ship ultimately capable of being steered by a skilled and benevolent captain.

The scope of Fuller's ambition was his greatest asset and his greatest weakness. He could be prescient, as when, prefiguring today's anxiety over a workless future, he claimed that "industrialisation is inevitably headed towards automation, that is towards disenfranchisement of man as a physical machine." But his tendency to make great leaps from slight data meant ▸▸

He was Fuller himself

his ideas often lacked solid foundations—much like his geodesic domes, novel structures that soared skywards without apparent support and occasionally came crashing down. One of his less insightful pronouncements was made in April 1940, when he said that, in war, dictatorships necessarily outdo democracies.

Fuller's path to recognition as a messiah of salvation-through-technology is an improbable tale of redemption. He was born in 1895 into a distinguished family in Massachusetts (his great-aunt was Margaret Fuller, a Transcendentalist writer); but his father's early death left him financially and socially insecure. At the age of 32, with a string of disasters behind him—including two expulsions from Harvard, a chequered employment history and, most tragically, the death of a young daughter—he stood on the shore of Lake Michigan contemplating suicide. Before he could take the plunge, however, he had a sudden epiphany: "You do not belong to you. You belong to the universe..."

Possessing few skills besides a native gift for geometry and little practical experience beyond collaboration with his father-in-law in a failed building company, Fuller decided to devote himself to bettering the human condition, embarking on a journey that led to a series of breakthroughs. These included his aerodynamic Dymaxion car, his prefabricated Wichita House and a new kind of self-supporting architecture based on what he called the "vector equilibrium". It employed a geometric lattice that allowed for the efficient distribution of weight and stress.

More important than these innovations—which never quite lived up to their transformational promise—were less tangible but mind-expanding ideas, which he tossed off with abandon. Among the most fruitful were "ephemeralisation", the aspiration to do "*everything* with *nothing at all*", which anticipated the information age; and the World Game workshops, which involved scores of young disciples dedicated to a more equitable and sustainable distribution of global resources. Fuller's tireless efforts to improve society through technology let him appeal to both rebellious youth and the establishment. Although he was lionised by the counterculture of the 1960s, its staunchest critic, Ronald Reagan, awarded Fuller the Presidential Medal of Freedom before his death in 1983.

Alec Nevala-Lee is a sure-footed guide to a dizzying life. He eschews mythmaking, laying out the way Fuller burnished his own legend by rewriting history and slighting the contributions of his collaborators. Clear-eyed about his subject's faults, Mr Nevala-Lee nevertheless gives him his due as a dazzlingly original thinker. The book's approach to this protean career is relentlessly chronological; incident follows incident at breakneck speed, a structure that captures Fuller's irrepressible energy but sometimes leaves the reader exhausted. An occasional pause to stand back and view the wider panorama would have helped.

Still, the portrait the author paints is compelling. Fuller's life did not quite justify Arthur C. Clarke's branding of him as "the world's first engineer-saint": his ego was too big for canonisation. But he comes alive in these pages as a visionary who rose above his imperfections to labour for the benefit of humankind. ■

Musical prodigies

The power of 3

Lim Yun-chan's performance of a famously difficult piece is a wonder

STILL STANDING at her podium, the distinguished conductor Marin Alsop wiped away a tear. She says she cannot remember the last time she cried onstage, but she was far from alone in feeling moved by the artistry of Lim Yun-chan. Ms Alsop had just conducted the 18-year-old South Korean pianist in Rachmaninoff's "Piano Concerto No. 3" in Fort Worth, Texas—a performance that last month helped make him the youngest-ever winner of the prestigious Van Cliburn International Piano Competition. A video of his mesmerising interpretation of "Rach 3", as the piece is known by pianophiles, has been viewed more than 5m times on YouTube.

Some classical musicians and aficionados think artists ought to have more experience of life before tackling works that demand emotional maturity, whether late Beethoven piano sonatas or Rach 3. Daniil Trifonov, a superb Russian pianist, decided not to perform the concerto early in his career because he didn't feel ready to convey its intensely passionate arc. But despite his youth Mr Lim "is an old soul", reckons Ms Alsop, as well as a "phenomenal talent" with "jaw-dropping technique", which complements "an innate musicality that is hard to fathom". He also has a fearsome work ethic: Mr Lim explains that his usual practice routine stretches from around 1pm until the following dawn.

A pianist and conductor as well as a composer, Rachmaninoff wrote the 40-minute concerto in 1909 and gave its premiere during a successful American concert tour in the same year. He practised on a cardboard keyboard during the long voyage from Russia. Other pianists of his generation were intimidated by Rach 3, which was mostly ignored until it was championed in the 1930s by the Kyiv-born pianist Vladimir Horowitz (whose recordings of it Mr Lim cites as an inspiration). Gary Graffman, an American pianist who is now 93, has said he regretted not learning the concerto when he was "still too young to know fear".

Rach 3's formidable reputation was reinforced by "Shine", a film of 1996 about David Helfgott, a troubled Australian pianist played by Geoffrey Rush (who won an Oscar); in the movie, Helfgott collapses from nervous exhaustion at the end of the concerto. It is a wildly emotional, lyrical piece that reflects the Russian romantic tradition, which Rachmaninoff continued ▸▸

Alsop and Lim rock Rach 3

as his peers experimented with avant-garde sounds. (Stravinsky began the groundbreakingly dissonant "The Rite of Spring" in 1911.) Some scholars have noted echoes of folk and liturgical music in the melancholic D-minor melody that opens Rach 3 and resurfaces throughout, though the composer denied any such influences, claiming the tune wrote itself.

Mr Lim plays this melody with a mournful dignity. At the beginning of the video he sits almost completely still, his hands barely moving over the keys. This initial restraint allows him to slowly build tension as the music ebbs and flows, until he renders the fiery climax of the third movement with exhilarating speed and force. Played by inferior musicians, Rachmaninoff's cascading notes often become a blur, but Mr Lim makes each crystalline, purposeful and often startlingly beautiful. After only two rehearsals, he and the accompanying Fort Worth Symphony Orchestra evince the chemistry of long-time collaborators. Their seemingly intuitive give-and-take imbues the complex score with an increasingly urgent pulse.

He was one of three pianists to take on the piece in the finals of the Cliburn, which bucked current trends and invited young pianists from Belarus and Russia to compete. Anna Geniushene, a Russian who has expressed solidarity with embattled Ukraine, won silver; Dmytro Choni, a Ukrainian, claimed bronze. (The contest is named after an American pianist who won the International Tchaikovsky Competition in Moscow at the height of the cold war.) But the headline news was the music itself. Anyone needing a break from doom-scrolling is advised to join the millions of listeners enthralled by Mr Lim's Rach 3. ■

Back Story The oligarch's lament

Peter Morgan brings the drama of Boris Berezovsky's fall to the stage

In retrospect, would Boris Berezovsky agree that the Russian privatisation scheme of the mid-1990s was unfair? The questioner had in mind the way a few insiders took over vast industrial assets for a song, a giant scam that helped discredit markets and democracy among their struggling compatriots. Absolutely it was unfair, replied Berezovsky, who in 2000 had sought refuge in Britain, where the exchange took place: Mikhail Khodorkovsky got more than he did.

Mr Khodorkovsky, once Russia's richest man, spent a decade in prison before his release into exile in 2013; Berezovsky died in contested circumstances in the same year. Both numbered among the original Russian oligarchs: a small cadre of men who grew up in the Soviet era and in the bare-knuckle 1990s became more rich, more quickly than almost anyone ever had. They brought their feuds to London, along with their wealth, in some cases eventually losing much of it. They lived many lives in one, all of them dramatic. Now Peter Morgan has written a version of that drama.

"Patriots" opened this month at the Almeida Theatre in London. In it, Mr Morgan, writer of the TV megahit "The Crown", brings Berezovsky back to life—the epic chutzpah, manic energy, restless intelligence, appetites and ruthlessness. Amid a high-speed, simplified tour of post-Soviet Russian politics, the play's focus is on how Berezovsky helped lever Vladimir Putin into the presidency, and how, in return, his protégé drove him out of Russia and destroyed him.

"In the West you have no idea," the Berezovsky character rightly says of foreigners looking in on Russia. Among the common Western naiveties is a presumption that the persecuted must be virtuous. This play knows that bad things

can happen to flawed people. Berezovsky (played by Tom Hollander) is forever bribing others or shaking them down, all the while insisting that his goal is to save his country. His targets include Alexander Litvinenko (Jamael Westman), who would be poisoned in London in 2006, and a coyly scheming Roman Abramovich (Luke Thallon), who, according to a court ruling of 2012, had owned much of what Berezovsky claimed was his.

The star turn, though, is Will Keen as Putin. The stage is shaped like a nightclub bar, and for a while Putin sits on a low stool, unnoticed, before—literally and symbolically—Berezovsky yanks him up and into the action. Mr Keen mimics the snarl and seething menace of a hangdog who wants to be top dog. During his traceless rise from deputy mayor of St Petersburg to FSB boss, prime minister and then the presidency, Putin's nervy strut becomes a swagger, the posture hardens inside his better-cut suits. The heart dies.

It didn't have to be this way. That is one message of "Patriots" (in which, for almost everyone, patriotism and self-interest are fused). Cornered on press night, Mr Morgan said the tragedy of his play lies not in Berezovsky's fate but in the miscalculation he makes in elevating Putin, a mistake with still-spiralling consequences. Live and organic, theatre is the perfect art form to capture this feeling of contingency, the vertiginous sense that history turns on moments and decisions that might have gone differently.

The trouble with dramatising recent history, though, is that it can catch and overtake you. "Patriots" mixes current affairs with zany comedy, spicing the power struggles with cynical wisecracks and ironies of hindsight. "You, Volodya, are clearly a decent man," Berezovsky tells Putin. "We must become close to the West," Putin avers. There is a winking line about the size of his desk. Given the carnage in Ukraine, some viewers may feel it is either too late, or too soon, for jokes about the warmonger.

As for Berezovsky and his peers: the lesson the real Putin taught them—that, under him, the Russian state would flout all laws and scruples and observe no restraints—is now on display to the world. Amid a horrific show of state force, the oligarchs seem more like bit parts in history than headliners. Those still standing are immured by their money, trapped between Western sanctions and the worse punishment that breaking with the Kremlin might entail.

Another moral of Berezovsky's fall—about the perils of proximity to brute power, and the sympathy due to those who court it anyway—is more concisely expressed in a parable that a different businessman shared with Back Story. A man finds a lion cub and takes it home. His friends warn him that lions are dangerous, but the man insists his pet is tame. The cub grows up, and eats him.

Economic & financial indicators

Economic data

	Gross domestic product % change on year ago latest		quarter*	2022†	Consumer prices % change on year ago latest		2022†	Unemployment rate %		Current-account balance % of GDP, 2022†	Budget balance % of GDP, 2022†	Interest rates 10-yr gov't bonds latest,%		change on year ago, bp	Currency units per $ Jul 20th	% change on year ago
United States	3.5	Q1	-1.6	2.3	9.1	Jun	7.8	3.6	Jun	-4.3	-5.9	3.0		181	-	
China	0.4	Q2	-10.0	4.0	2.5	Jun	2.1	5.5	Jun‡§	2.5	-6.2	2.5	§§	-21.0	6.75	-4.0
Japan	0.4	Q1	-0.5	2.1	2.4	May	2.2	2.6	May	1.4	-6.0	nil		-8.0	138	-20.4
Britain	8.7	Q1	3.1	3.6	9.4	Jun	7.3	3.8	Apr††	-2.9	-5.1	2.2		152	0.83	-12.1
Canada	2.9	Q1	3.1	3.6	8.1	Jun	6.7	4.9	Jun	1.2	-3.5	3.1		194	1.29	-1.6
Euro area	5.4	Q1	2.0	2.6	8.6	Jun	7.4	6.6	May	2.3	-4.4	1.2		166	0.98	-13.3
Austria	9.5	Q1	10.0	3.5	8.7	Jun	7.0	4.8	May	-1.3	-4.7	1.8		196	0.98	-13.3
Belgium	4.9	Q1	2.2	2.2	9.6	Jun	9.2	5.5	May	-1.2	-3.8	1.8		194	0.98	-13.3
France	4.5	Q1	-0.8	2.2	5.8	Jun	5.5	7.2	May	-1.4	-5.7	1.8		184	0.98	-13.3
Germany	3.8	Q1	0.9	1.3	7.6	Jun	7.8	2.8	May	5.3	-3.2	1.2		166	0.98	-13.3
Greece	7.9	Q1	9.7	4.0	12.1	Jun	8.2	12.7	Apr	-5.9	-5.0	3.5		279	0.98	-13.3
Italy	6.2	Q1	0.5	2.7	8.0	Jun	6.8	8.1	May	0.7	-6.1	3.5		286	0.98	-13.3
Netherlands	6.7	Q1	1.7	2.4	8.6	Jun	10.4	3.3	May	8.7	-3.4	1.6		184	0.98	-13.3
Spain	6.3	Q1	0.8	4.0	10.2	Jun	8.2	13.1	May	0.8	-5.7	2.4		203	0.98	-13.3
Czech Republic	5.1	Q1	3.5	1.4	17.2	Jun	15.2	2.5	May‡	-1.2	-5.7	4.5		278	24.0	-9.0
Denmark	6.3	Q1	-1.9	2.1	8.2	Jun	6.9	2.5	May	8.2	1.0	1.5		166	7.29	-13.3
Norway	4.8	Q1	-3.8	3.2	6.3	Jun	4.8	3.2	Apr‡‡	16.4	8.7	1.4		76.0	9.95	-9.2
Poland	9.4	Q1	10.4	4.5	15.5	Jun	13.5	4.9	Jun§	-2.5	-3.7	6.6		507	4.67	-16.3
Russia	3.5	Q1	na	-10.0	15.9	Jun	21.2	3.9	May§	10.1	-3.8	9.1		188	55.5	34.3
Sweden	3.1	Q1	-3.2	1.8	8.7	Jun	6.9	8.5	May§	3.0	-0.3	1.7		157	10.2	-14.8
Switzerland	4.4	Q1	1.9	2.4	3.4	Jun	2.5	2.2	Jun	6.3	nil	0.8		120	0.97	-5.2
Turkey	7.3	Q1	4.9	3.2	78.6	Jun	69.7	10.1	May§	-3.7	-3.9	16.9		16.0	17.6	-51.3
Australia	3.3	Q1	3.1	3.0	5.1	Q1	5.0	3.5	Jun	3.1	-3.2	3.5		241	1.45	-5.5
Hong Kong	-4.0	Q1	-11.4	0.8	1.3	May	3.0	4.7	Jun‡‡	0.9	-6.7	3.0		208	7.85	-1.0
India	4.1	Q1	1.9	6.9	7.0	Jun	7.3	7.8	Jun	-1.5	-6.6	7.5		133	80.0	-6.7
Indonesia	5.0	Q1	na	5.2	4.3	Jun	5.3	5.8	Q1§	0.4	-4.8	7.4		115	14,988	-3.1
Malaysia	5.0	Q1	na	5.0	2.8	May	3.1	3.9	May§	2.5	-6.2	4.1		90.0	4.45	-5.2
Pakistan	6.2	2022**	na	6.2	21.3	Jun	16.1	6.3	2021	-5.3	-7.1	12.9	†††	308	225	-28.4
Philippines	8.3	Q1	7.8	7.1	6.1	Jun	4.8	5.7	Q2§	-3.6	-7.7	6.8		297	56.3	-10.6
Singapore	4.8	Q2	0.1	3.6	5.6	May	5.8	2.2	Q1	18.0	-0.9	2.8		140	1.39	-1.4
South Korea	3.0	Q1	2.6	2.7	6.0	Jun	4.9	3.0	Jun§	3.1	-2.4	3.4		147	1,313	-12.4
Taiwan	3.1	Q1	4.3	4.0	3.6	Jun	3.4	3.7	May	14.2	-1.2	1.3		86.0	29.9	-6.2
Thailand	2.2	Q1	4.7	2.9	7.7	Jun	5.7	1.5	Dec§	-0.3	-5.0	2.7		134	36.7	-10.5
Argentina	6.0	Q1	3.5	4.3	64.0	Jun	64.1	7.0	Q1§	-0.1	-4.8	na		na	129	-25.6
Brazil	1.7	Q1	4.0	1.5	11.9	Jun	10.5	9.8	May§‡‡	-0.1	-6.7	13.7		449	5.44	-3.5
Chile	7.2	Q1	-3.0	1.5	12.5	Jun	10.7	7.8	May§‡‡	-6.8	-2.8	6.7		254	920	-17.5
Colombia	8.2	Q1	4.0	6.3	9.7	Jun	10.2	10.6	May§	-5.2	-4.8	13.1		612	4,322	-11.1
Mexico	1.8	Q1	4.1	1.8	8.0	Jun	7.5	3.4	May	-0.8	-3.2	9.1		229	20.5	-1.6
Peru	3.8	Q1	8.1	2.5	8.8	Jun	7.5	6.7	Jun§	-3.2	-2.2	8.0		225	3.88	1.8
Egypt	5.4	Q1	na	5.9	13.1	Jun	12.9	7.2	Q1§	-6.0	-5.9	na		na	18.9	-17.3
Israel	9.6	Q1	-1.8	4.9	4.4	Jun	4.3	3.7	May	2.9	-1.7	2.6		158	3.44	-4.4
Saudi Arabia	3.2	2021	na	7.5	2.3	Jun	2.5	6.0	Q1	15.4	10.6	na		na	3.76	-0.3
South Africa	3.0	Q1	8.0	1.9	7.4	Jun	6.0	34.5	Q1§	-1.1	-6.1	10.9		200	17.1	-14.2

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 Jul 20th	% change on: one week	Dec 31st 2021
United States S&P 500	3,959.9	4.2	-16.9
United States NAScomp	11,897.7	5.8	-24.0
China Shanghai Comp	3,304.7	0.6	-9.2
China Shenzhen Comp	2,210.5	1.6	-12.6
Japan Nikkei 225	27,680.3	4.5	-3.9
Japan Topix	1,946.4	3.0	-2.3
Britain FTSE 100	7,264.3	1.5	-1.6
Canada S&P TSX	19,020.7	2.2	-10.4
Euro area EURO STOXX 50	3,585.2	3.8	-16.6
France CAC 40	6,184.7	3.1	-13.5
Germany DAX*	13,282.0	4.1	-16.4
Italy FTSE/MIB	21,348.4	0.3	-21.9
Netherlands AEX	694.4	4.3	-13.0
Spain IBEX 35	8,028.9	1.1	-7.9
Poland WIG	53,733.5	2.5	-22.5
Russia RTS, $ terms	1,188.9	6.1	-25.5
Switzerland SMI	11,059.5	1.4	-14.1
Turkey BIST	2,525.2	4.9	35.9
Australia All Ord.	6,975.2	2.5	-10.3
Hong Kong Hang Seng	20,890.2	0.4	-10.7
India BSE	55,397.5	3.5	-4.9
Indonesia IDX	6,874.7	3.5	4.5
Malaysia KLSE	1,437.0	1.8	-8.3

	index Jul 20th	% change on: one week	Dec 31st 2021
Pakistan KSE	40,459.7	-3.4	-9.3
Singapore STI	3,170.3	1.3	1.5
South Korea KOSPI	2,386.9	2.5	-19.8
Taiwan TWI	14,733.2	2.9	-19.1
Thailand SET	1,539.3	-0.5	-7.1
Argentina MERV	106,949.1	4.6	28.1
Brazil BVSP	98,286.8	0.4	-6.2
Mexico IPC	47,132.5	-0.7	-11.5
Egypt EGX 30	9,112.7	4.0	-23.5
Israel TA-125	1,963.5	2.6	-5.3
Saudi Arabia Tadawul	11,864.3	5.1	4.7
South Africa JSE AS	67,652.4	2.3	-8.2
World, dev'd MSCI	2,643.9	3.9	-18.2
Emerging markets MSCI	986.6	1.7	-19.9

US corporate bonds, spread over Treasuries

Basis points	latest	Dec 31st 2021
Investment grade	170	120
High-yield	518	332

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

Commodities

***The Economist* commodity-price index**

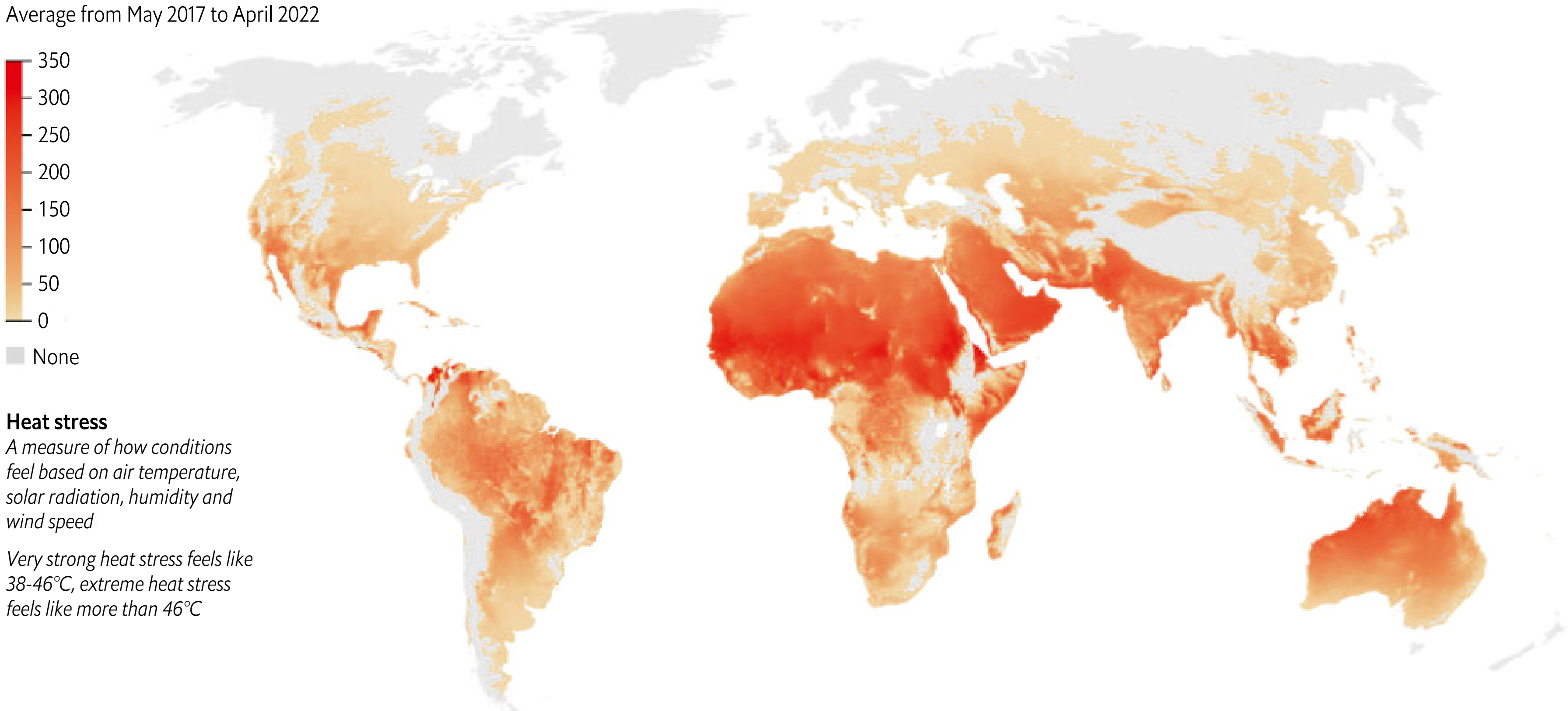
2015=100	Jul 12th	Jul 19th*	% change on month	year
Dollar Index				
All Items	158.1	150.5	-11.1	-18.2
Food	153.2	144.3	-9.8	10.3
Industrials				
All	162.7	156.2	-12.2	-33.1
Non-food agriculturals	163.0	159.6	-6.3	11.7
Metals	162.6	155.2	-13.8	-40.4
Sterling Index				
All items	203.0	190.9	-9.2	-7.5
Euro Index				
All items	173.9	162.9	-8.4	-6.1
Gold				
$ per oz	1,732.4	1,713.9	-6.8	-5.3
Brent				
$ per barrel	99.5	107.4	-6.4	54.5

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

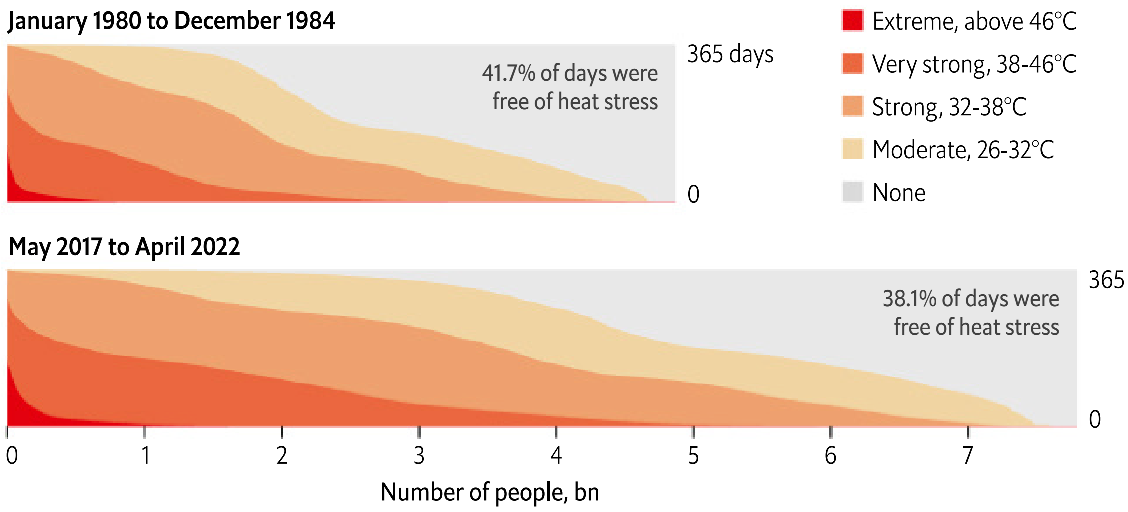
For more countries and additional data, visit **Economist.com/indicators**

→ Oppressive heat is beginning to reach northern latitudes, but it is still concentrated in the tropics

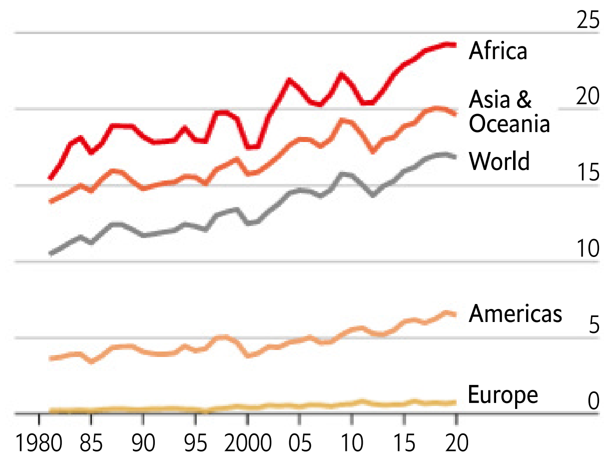
Very strong or extreme heat-stress days per year
Average from May 2017 to April 2022



Average heat-stress days per year



Share of population experiencing very strong or extreme heat stress per day, annual average*, %



*Three-year moving average Sources: Copernicus; European Commission; World Bank; *The Economist*

The scorched Earth

A rising share of people are exposed to dangerously high temperatures

As CLIMATE-CHANGE models predicted, the frequency and intensity of sweltering days has increased recently. Records were broken in Europe this week as a heatwave gripped the continent. Britain set a new maximum temperature record of 40.3°C (104.5°F), shattering the 38.7°C set in 2019. Since the 1980s temperatures have risen in the world's cooler regions, exposing more people to stifling heat. Meanwhile, population growth has been fastest in the hottest countries, increasing the share of humanity affected.

To measure heat exposure, we combined two large data sets. The Universal Thermal Climate Index (UTCI) produced by the EU's Earth-observation programme, Copernicus, measures heat at hourly intervals, dividing the world into 865,000 grid squares. The UTCI combines data on air temperature and solar radiation with humidity and wind into a single composite "feels like" temperature measured in Celsius. We then fused these data with the population living in each grid square.

UTCI above 38°C is categorised as causing "very strong" heat stress. Temperatures above 46°C cause "extreme" stress. Just 30 minutes of very strong heat stress can imperil lives, particularly among the old. Four-fifths of the world's population have experienced at least one day of very strong heat stress—defined as at least three hours—in the past five years.

Although large swathes of Europe's population have endured heat above 38°C this week, it remains exceptional. Over the past five years, the average European has experienced such heat for just three days a year. But elsewhere it is the norm: people outside Europe endure similar conditions for 65 days each year.

Extreme heat above 46°C is remarkably common, too. On average, it occurs for three days per year for each person on Earth. But the incidence is much higher in Africa and parts of Asia, particularly the Indian subcontinent. An average person living in these two continents has recently experienced such heat for 4.9 days a year, a 30% rise compared with 1980 to 1984.

High population growth in Africa and Asia means that heat stress is now affecting more people. The hottest countries have tended to grow the fastest since 1980. So the share of time that people have felt very strong heat stress has risen by 50%. Two-thirds of those who suffer extreme heat live in countries where average annual incomes are below \$2,000, meaning many cannot afford air-conditioning. Europeans should spare a thought for them as they swelter in the sun. ■

How to be a lady

Gloria Allen ("Mama Gloria"), founder of a charm school for young trans women, died on June 13th, aged 76

CENTRE ON HALSTED, next to Whole Foods, was—and is—one of the best indoor meeting places for LGBTQ people in Chicago. Young trans adults, many of them homeless because their families had kicked them out, could socialise there as long as they liked. Their elders, 60-plus, could get a hot nutritious lunch. And if you walked in there after 2012 you might well have spotted a poster on the wall:

> CHARM SCHOOL
> For young transgender persons
> Learn to embrace yourself inside and out!
> Hosted by Mama Gloria

The school happened twice a week in Room 205, which didn't give much impression of any lessons going on. Instead, groups mostly of young trans women would be casually chatting, interrupted every so often by a slim, beautifully turned-out black woman with deep dimples, her mother's genes. Everything about her, from the pixie haircut to the huge earrings to the halter-neck tops, was a statement of confident femininity. And she didn't miss a thing. "You sit down like a man," she would tell one girl. To another: "Do up that jacket button." To another, "Now, you don't brush your hair in public." Mostly, however, she just listened as they poured out their stories.

Her school made her famous all over Chicago and beyond, a surprise to her as much as anyone. After all, it was so old-fashioned, and she herself was from prehistoric, or at least pre-Stonewall, times. It had all started when she was having the seniors' luncheon one day and a group of rowdy trans girls came in, gyrating and cutting up and exposing themselves. She went right over and told them to have some respect, cover up, clean up and watch what came out of their mouths. In a word, be ladylike. They paid attention, another surprise, and a bell went off in her head—*ding!*—"They need a charm school here." She asked for a room at the Centre, got one, and took things from there.

At the school she taught, in her free-flowing way, social graces, manners, deportment, use of soap and water, how to behave in interviews, when not to put their hoochie mama clothes on, and safe sex. She told them how to do make-up and draw power from their identity as women. When they "graduated" she kept in touch, noting how many went to college or got good jobs, and continuing to tell them how proud of them she was.

She herself was transgender long before anyone knew that word. Instead she was called a sissy, which didn't bother her, and because she was prissy and cute and different the men of the family were confused by her. She was the first of eight children and came out, she liked to say, the moment she left her mother's womb. But she was called George, and her father had wanted a strong, masculine boy. Now he didn't know whether to be ashamed or to protect her. When her brothers got summer jobs at the steel mill where he worked, he wouldn't let her join them.

High school was a trial. She got through it in her boy's clothes, but if at weekends she wanted to wear a dress and parade down the street she would duck behind cars to avoid people she knew. Stones were thrown at her, and one summer Sunday four boys raped her in an alley as she walked home from the cinema. She dropped out for a year after that, unable to understand how anyone could treat her that way. But it wasn't only other people who disliked her. Just then she couldn't, and didn't, love herself.

Worse times followed. She started hormone injections in her mid-20s, then lengthy reassignment surgery, and every relationship she entered became abusive after a while. She spent ten years with a man called Kenneth whom she loved no end, and they bought a little house together; but he would go round it with a white glove looking for dust, and if he found some he would beat her. He did drugs, and cheated on her with men. In the end she shot him and, though he survived, she walked out. Hers seemed to be the life of too many black trans women: poor, struggling to find jobs and liable to get hit, or worse, by the men they went with. The difference was that, deep down, she had a stash of confidence.

Three amazing women, her mother, grandmother and great-aunt, had trained her that way from childhood. They not only accepted who she was, but encouraged her. Their own careers embraced the queer scene in Chicago: her mother, a noted beauty, danced in gay clubs and her grandmother, a seamstress, sewed the sparkly G-strings of male strippers. Nothing fazed them. If she borrowed her aunt's scarves and did the Dance of the Seven Veils round the house, that was fine. If her eyebrow pencil or clothes weren't right they would immediately say, "Oh no, sister, you do it again." From them she learned how to speak well and carry herself, head high, with a woman's dignity. She could always confide in them, and their love was unconditional. Though life as a black trans woman kept hitting up against walls, she could press through them. The only time she entered a closet, she defiantly declared, was to get herself an outfit and a pair of pumps.

This was what she wanted to pass on in Room 205. She took the poor trans girls who came to her off the streets and made them her chosen family. At first, when they called her "Mama Gloria", she felt it wasn't right, since she had no children. But quickly they became her babies, because mothering and listening was what they so obviously needed. If they had no money she would give them some, though she had to clean houses to get enough for herself. Sometimes she would get up early to cook for them.

Those last years of her life made her famous. Her school inspired a play, "Charm", and a documentary film, "Mama Gloria", which showed all over the country. In Pride Month President Joe Biden mentioned her by name. She felt giddy at all this notice, like Snow White just kissed and woken up. But it was only partly manners she was teaching, she would tell people. Her school was really all about love. ■

TARGETING SCOPE 3 EMISSIONS REDUCTION? START WITH GETTING THE DATA RIGHT

For several decades, just-in-time manufacturing (JIT) remained a highly effective way to optimize inventory and keep costs low. But it requires transporting smaller quantities of products or materials more often, which can wreak havoc on emissions targets. As enterprises strive to become more sustainable, they need to move forward with environmentally friendly supply chain management options.

Tracking emissions can be challenging under the best of circumstances. As supply chain professionals manage inflation, disruptions and economic uncertainty, there is the risk that sustainability will become just another item on the checklist.

Understanding your baseline and what you're monitoring to tackle carbon output is essential. Scopes 1 and 2 generally refer to emissions an enterprise either directly generates through its facilities or indirectly generates through the purchase of electricity or other power sources for its own use.

On the other hand, Scope 3 encompasses emissions that arise up and down the supply chain, from suppliers upstream to distributors and customers downstream. So, the biggest part of your carbon footprint is the part you have limited control over.

A key challenge of Scope 3 is collecting accurate data on use, emissions factors and finished products. There are several approaches to approximating Scope 3 emissions based on spend, volume, and detailed material specifications. But advanced tools and strategies can further refine the process.

BETTER FORECASTING FOR A MORE SUSTAINABLE FUTURE

Enterprises need to improve their forecasting capabilities to achieve their Scope 3 targets. If forecasting is askew, it can drive up transportation costs — and blow emissions targets — because less-than-full trucks are on the road more frequently.

On the flip side, if your stores or warehouses are overflowing with too many finished products, you'll likely have to steeply discount items to make room for more goods. Selling off excess inventory too often will not make the CFO happy.

The goal is to strike the right balance between inventory and demand. This requires forecasting accuracy, which hinges on real-time data availability. Enterprises need to make it easy to capture information from the supply base.

There are many technical challenges to improving data visibility because the supply landscape is so huge. However, these obstacles will lessen as data becomes more available and digital tools are more widely adopted.

Transitioning to meet Scope 3 emissions targets is not without costs or risks, including reduced demand for carbon-intensive products, devaluation of assets and legal expenses. The new climate disclosure filings also come with additional costs for registrants and may requirefurthercapital investments.

While Scope 3 presents some hurdles, they are not insurmountable. Investing in the right tools positions your enterprise and your suppliers for an eco-friendly future that will benefit the planet and the bottom line.

Enterprises must bridge the gap between what they have committed to and the goals they are able to deliver across the supply chain.

> Enterprises need to improve their forecasting capabilities to achieve their Scope 3 targets. If forecasting is askew, it can drive up transportation costs — and blow emissions targets — because less-than-full trucks are on the road more frequently.

GEP delivers transformative supply chain solutions that help global enterprises become more agile and resilient, operate more efficiently and effectively, gain competitive advantage, boost profitability and increase shareholder value.

To learn more about how you can build and operate a sustainable, resilient and high-performing supply chain, and create competitive advantage, visit gep.com.

GEP SOFTWARE STRATEGY MANAGED SERVICES

gep.com


TAGHEUER.COM
TAG HEUER
CARRERA
SAVE
THE DAY
ONE
SECOND
AT
A TIME
TAG
HEUER
THE
GRAY
MAN
ONLY ON
NETFLIX