The Economist

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Hard truths about green growth

Our new AI-adoption index

Why short jail sentences fail

Raising the standard of flags

JULY 1ST–7TH 2023

THE HUMBLING OF VLADIMIR PUTIN






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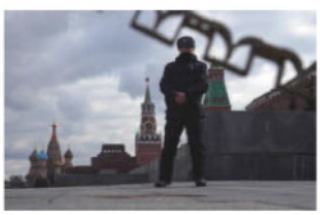
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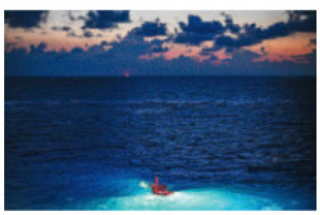
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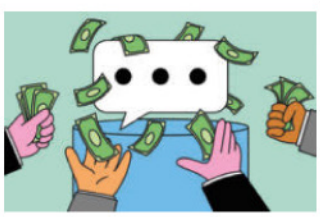
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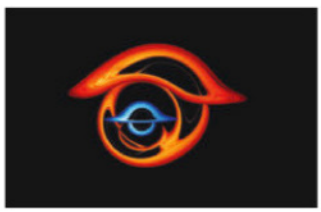
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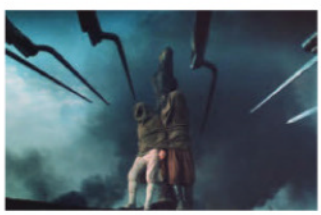
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to take part in *"a severe contest between intelligence, which presses forward, and an unworthy, timid ignorance obstructing our progress."*

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Vladimir Putin resurfaced to address Russians in a televised speech, after a mutiny by troops from the mercenary Wagner Group. Trying to reassert his authority following perhaps the most serious challenge to his two decades in power, the president said the organisers of the revolt had "betrayed their country" but repeated a promise that those who took part could either join the Russian army or move to Belarus. Yevgeny Prigozhin, Wagner's leader, claimed that his rebellion, which had started to march on Moscow, was a protest at the military's mishandling of the Ukraine war. The speed at which Wagner's troops advanced in Russia has led to speculation about collusion with Russian generals and the potential for civil war.

Mr Prigozhin went into exile in **Belarus** under a deal brokered by the Belarusian dictator, Alexander Lukashenko. Latvia, Lithuania and Poland, which all border Belarus, warned that the regrouping of Wagner forces in that country posed a threat to their security.

The failed rebellion by **Wagner Group** raised questions about the future of its operations in **Africa**, where it is thought to have some 5,000 mercenaries and extensive business interests. Press reports suggested that Russia's government is trying to take direct control of Wagner's foreign operations, including those in Syria.

Volodymyr Zelensky, the president of Ukraine, said that **Ukraine's counter-offensive** was making gains. In its regular assessment, Britain's Ministry of Defence reported that Ukraine may have retaken some land in the Donbas region that Russia has occupied since 2014, but described this as a small advance.

The presidents of Lithuania and Poland met Mr Zelensky to talk about Ukraine's application to join **NATO**. Lithuania is hosting a summit of the military alliance on July 11th and 12th that will discuss Ukraine's bid for membership.

Right turn

The second election in **Greece** in a month was won by the conservative New Democracy party, which now holds a rare majority in parliament. After winning the previous election in May the party called for a new ballot to give it a bigger mandate; it trounced the left-wing Syriza party by 23 percentage points. With the far right also making gains, the new parliament is the most right wing since democracy was restored in 1974.

Rioting broke out in **Paris** and other cities in France after police shot dead a teenager of north African descent who drove away from a traffic stop. Police unions criticised Emmanuel Macron, the president, after he described the shooting as "inexcusable".

Britain's Court of Appeals ruled that the government's controversial policy of sending some asylum-seekers to Rwanda was unlawful, finding that Rwanda was not a safe third country. The issue may now go to the Supreme Court.

America's Office of the Director of National Intelligence published a declassified report on the origins of **covid-19** in China. The long-awaited study offered no evidence that the virus escaped from a laboratory, but did conclude that both a laboratory-associated leak and a transfer from animals to humans at a live market remain plausible explanations. It also stated that no American intelligence agency thinks that covid was developed as a biological weapon.

The UN's first independent investigator to visit America's prison at **Guantánamo Bay** said that the remaining 30 men held there faced continuing cruel and degrading treatment. Some of the inmates have been detained without trial for more than 21 years.

Meanwhile, the UN reported that 1,095 civilians have been killed in **Afghanistan** since the withdrawal of America's remaining troops in August 2021. Most of the deaths were caused by explosive devices.

Australia's defence minister visited the **Solomon Islands** to discuss security and other regional matters. Australia and the Pacific island country have a long relationship. The visit came shortly before the Solomons' prime minister was due to visit China, which has increased its investment in and co-operation with the islands.

Sowing the seeds



In a surprise result, Bernardo Arévalo, the candidate of the anti-corruption Semilla (Seed) party, came second in the first round of **Guatemala's** presidential election. He will face Sandra Torres, a conservative former first lady, in a run-off in August. Mr Arévalo's showing has stirred hopes that Guatemala may reverse its recent drift towards authoritarianism. But 17% of voters spoiled their ballots to voice their discontent, more than voted for any single candidate.

Brazil's top electoral court began a trial of the former president, Jair Bolsonaro, on charges of spreading false information about the voting system. Mr Bolsonaro, who lost an election to Luis Inácio Lula da Silva last year, had claimed that Brazil's electronic voting machines were vulnerable to fraud. If the court finds against Mr Bolsonaro it could bar him from holding political office.

Olivia Chow defeated more than 100 rivals to be elected mayor of **Toronto**. A former member of Parliament from the left-leaning New Democratic Party, she succeeds John Tory, a Conservative who resigned after admitting to an affair with a staffer. Ms Chow, an immigrant from Hong Kong, is the Canadian city's first non-white mayor.

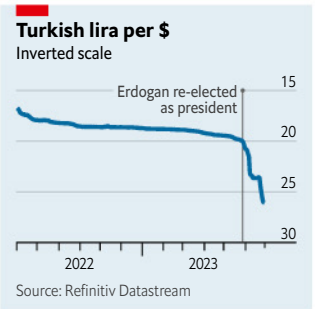
Electoral officials in **Sierra Leone** said that Julius Maada Bio, the incumbent, had won 56% of the vote in the presidential election. Observers questioned the result.

The UN was expected to vote to end a 13,000-strong peacekeeping mission in **Mali** after the Malian government ordered it to leave as soon as possible. The blue helmets have been helping to secure a country overrun by jihadists.

At least 11 people were killed in Russian strikes on the rebel-held province of Idlib in **Syria**. According to the Syrian Observatory for Human Rights it was the deadliest Russian attack this year.

In **Israel** Ehud Barak, a former prime minister, and Yair Golan, a former left-wing member of the Knesset, are to be investigated by an official task force established by Itamar Ben-Gvir, Israel's far-right national-security minister. Both men have been critical of the government's plans to reform the judiciary.

The **hajj**, the annual pilgrimage that every able Muslim must complete at least once during a lifetime, began in Saudi Arabia. This is the first time since the pandemic that it has operated at full capacity. More than 2.5m pilgrims are expected.



Under its new governor, Hafize Gaye Erkan, **Turkey's central bank** took steps to loosen its support for the lira and to encourage savings and lending in the currency. This came soon after the bank made a break with its easy policy of the past few years by raising its benchmark interest rate from 8.5% to 15% (markets were expecting a bigger increase). It said it was beginning a "monetary tightening process in order to establish the disinflation course as soon as possible". Official annual inflation stood at 39.6% in May, though unofficial measures are much higher. Ms Erkan was appointed governor by Recep Tayyip Erdogan after he was re-elected president in May.

Britain signed a memorandum of understanding with the European Union on **financial services**. The agreement establishes twice-yearly meetings through which the two sides will discuss co-operation on issues such as regulation, digital finance and financial crime. Jeremy Hunt, Britain's chancellor of the exchequer, said he was "absolutely delighted" with the deal. An EU spokesman pointed out that the agreement does not restore Britain's access to the EU.

It was a busy week for Mr Hunt, who persuaded British banks to give **mortgage-holders** who fall behind on their payments at least 12 months before repossessing their homes. Mortgage rates have surged in line with interest rates. Mr Hunt also told the banks to pass on higher interest to their customers by increasing **savings rates**. Enticing people to save could help lower inflation.

The British government held emergency discussions on taking **Thames Water** into public ownership. The company, which provides water and sewage services to London and the surrounding region, has fallen heavily into debt.

HSBC is to leave its global headquarters at London's Canary Wharf and move to a more central location in the City, according to reports. The decision is a big blow to the Canary Wharf business district, which competes with the City as a base for financial companies. HSBC is searching for smaller premises because of the shift to remote working.

A car crash of a deal

Once hailed as a pioneer in electric pick-up trucks, **Lordstown Motors** filed for bankruptcy protection. The startup, based in a former General Motors factory in Ohio, blamed Foxconn for its woes. Best known as the company that assembles the iPhone, Foxconn had a deal with Lordstown to help produce vehicles. Lordstown claims Foxconn reneged on the deal. Foxconn says it tried to resolve the dispute with Lordstown and accuses the company of making "malicious attacks".

Eni, a global energy company based in Italy, agreed to buy **Neptune Energy**, which has its headquarters in London, for $4.9bn. Eni's acquisition hugely expands its business in producing natural gas.

Official statistics showed that **house prices** in Germany were 6.8% lower in the first quarter than a year earlier, the biggest drop since the series began in 2000. Higher house-financing costs may be to blame.

Siemens Energy lost a third of its stockmarket value after warning that quality problems with rotor blades and bearings on the wind turbines it supplies across the world were worse than it had thought and may cost €1bn ($1.1bn) to fix. The German company's problems reflect wider difficulties for the wind-power industry, which is struggling with rising costs for materials and a shortage of components.

Rupert Stadler, the former boss of Audi, was given a suspended prison sentence in Germany for his role in the Volkswagen **emissions-cheating scandal**, which came to light in 2015. Mr Stadler is the first former board member at VW to receive such a sentence. He has also been fined €1.1m ($1.2m).

With demand for covid-related products on the wane, **Walgreens Boots Alliance** reported a lower quarterly profit and reduced its forecast for the year. The pharmacy company is closing a further 150 Walgreens stores in America and 300 Boots locations in Britain. The Boots that are shutting are within 5km (three miles) of another Boots shop; there will still be 1,900 branches left across Britain.

Riding a wave

Amid a boom in travel and tourism, **Carnival** reported that its bookings and customer deposits were hitting all-time highs. The cruise line increased its operating-profit forecast for the year.

Larry Fink, the chief executive of BlackRock, who was in the vanguard of pushing **ESG** (environmental, social and corporate governance) investing, said he no longer uses the term because it has become politically "weaponised". BlackRock has been lambasted from the left for still investing in fossil fuels and from the right for not investing enough in them. Mr Fink said his company's commitment to invest in green and ethical products was unchanged.



The humbling of Vladimir Putin

The Wagner mutiny exposes the Russian tyrant's growing weakness. But don't count him out yet

THE LAST pretence of Vladimir Putin to be, as he imagines, one of his nation's historic rulers was stripped away on June 24th. A band of armed mercenaries swept through his country almost unopposed, covering some 750km (470 miles) in a single day, seizing control of two big cities and getting to within 200km of Moscow before withdrawing unharmed.

Mr Putin long ago failed as a reformer, having presided over ever-deepening corruption and economic stagnation and unable to make Russia anything more than a purveyor of hydrocarbons just as the age of oil and gas is coming to an end. He is failing ever more obviously as a great wartime commander, 16 months after starting an invasion of Ukraine that he expected to be over in a matter of days but which has turned into a quagmire. Now he has shown that he cannot even discharge a leader's first and greatest responsibility, to ensure the security of the state.

Whether Mr Putin's fall comes soon, or in months or years, he stands revealed as a blunderer. He is not so much a tsar as simply the top thug in the hollowed-out gangland to which he has reduced Mother Russia. What is more, in a world where power is everything, he now looks like a weakened thug.

Yevgeny Prigozhin, the leader of the Wagner Group, serves as an encapsulation of everything that is despicable about Mr Putin. An ex-con turned restaurateur turned murderous mercenary in Africa, Syria and Ukraine, Mr Prigozhin ascended only because of Mr Putin's paranoia and brutality. Mr Putin mistrusts his own army, so he needed a loyal band of thugs. He wanted deniability for some of his gorier actions abroad, so "private military contractors" like Wagner went on to commit war crimes on three continents. And Mr Putin used Mr Prigozhin to interfere (again, deniably) in foreign elections, including the one that brought Donald Trump to power in 2016.



Wagner's mutiny also encapsulates the rottenness of the state that Mr Putin has created (see Europe section). Amid a feud with his rivals in the regular army, Mr Putin decreed that Wagner should be brought directly under the defence ministry's control. That threatened to destroy Mr Prigozhin's power base, so he mutinied, railing against Mr Putin's misconceived war, the incompetence of the Russian army and the losses it was suffering in Ukraine. For all Mr Prigozhin's brutality, it was a truth that cut through the Kremlin's empty propaganda.

Even more shocking, Mr Prigozhin has exposed Mr Putin as out of touch. The mutiny seems to have taken the Kremlin by surprise—so corroded are the intelligence agencies under the presidency of a former spy. On the morning of June 24th a shaken Mr Putin denounced his creature as a traitor and vowed he would be punished. Yet just hours later, he agreed to let Mr Prigozhin go scot-free to Belarus, taking Wagner troops with him.

Having created one-man rule, Mr Putin also seemed unable to command loyalty. Although support did not flock to Mr Prigozhin, neither did it to Mr Putin, either on the streets or among the political and military elites. For 24 nerve-jangling hours Russia stayed silent and inactive, waiting to see which way the wind would blow.

Optimists will take Mr Putin's weakness as proof that his rule is doomed. If only that were so. The reality is that despots, even weak ones, can survive for a long time if no obvious alternative is available, and if they still have plenty of guns on their side and the ruthlessness to use them. Look at Alexander Lukashenko in next-door Belarus, or Bashar al-Assad in Syria.

However, two extra factors are working against Mr Putin. The first is the war itself. Ukraine's counter-offensive continues to make steady progress. Although it is slower than hoped for, it is chipping away at the territorial gains Russia has made since February 2022, and in some places even taking back ground that Russia seized in its first incursion, in 2014.

Mr Putin's theory of victory is that Russia can wait out the West. If Ukraine cannot accomplish the breakthroughs it needs—severing the land bridge connecting Russia to Crimea is the key one—Western support might in time start to fracture. But Mr Putin's theory is looking ever less plausible. Yes, Russia has succeeded in hurting Ukraine; but far from being conquered, it has been forged as a nation, and is on a path to membership of the European Union and perhaps of NATO, too. And far from Mr Putin's vision of Western disarray, NATO has expanded to take in Finland, and soon Sweden; European defence spending has risen; and dependence on Russian energy has been eliminated.

By contrast, the loss of over 100,000 Russians, dead and wounded, has brought little for even the Kremlin's best propagandists to spin as success. The narrative instead is for the need for ever more sacrifice. Every piece of bad news for Russia from the front adds to the pressure on Mr Putin. That is why the counter-offensive is so critical, and why the evidence of division in the Russian ranks is so welcome.

Mr Putin's second problem is the economy. Last year it held up pretty well, thanks to oil and gas prices that rocketed as the war took hold. Oil shipments have continued and the state still has plenty of cash. Though growth is down, a full-blown economic crisis looks unlikely this year at least.

However, Mr Putin does not have the resources for a big new offensive. Russia's gas revenues have crashed (it cut off its best customer, after all), and the global oil price is down, too. The gap between government spending (including the huge costs of the war) and receipts is widening, forcing Russia to raid its sovereign-wealth fund. The rouble has lost almost 40% of its value in the past year. China has bought Russian oil—at a discount—but it has not yet supplied large amounts of weapons.

Mr Putin now appears to be bent on re-establishing his authority by presiding over savage repression and purges. But sooner or later, his ability to ride out trouble will desert him. The world will need to be ready for that. Of the many possible outcomes, the collapse of order in a country with more than 4,000 nuclear warheads would be terrifying. Yet Mr Putin has shown that corrupt, one-man rule is no way to run a superpower. The path back to order and sanity for Russia will be perilous, but for as long as Mr Putin wears the crown and his soldiers dream of imperial rule over Ukraine, the journey cannot even begin. ■

Climate change

Hard truths about green growth

How misfiring environmentalism risks harming the world's poor

THANK GOODNESS for the enthusiasts and the obsessives. If everyone always took a balanced view of everything, nothing would ever get done. But when campaigners' worldview seeps into the staid apparatus of policymaking and global forums, bad decisions tend to follow. That, unfortunately, is especially true in the world of climate change.

One example is the effect of global warming on the world's poorest people. As the planet heats up, extreme events such as droughts, floods and storms are becoming more common and more severe. Many places are becoming less habitable. Over the coming decades many vulnerable farmers, from Mali to the Mekong Delta, will find their crops failing more frequently. And as resources grow scarcer, more fighting will break out.

This pattern is no longer just a warning by activists. It is accepted by the mainstream to the point where fears of a surge in climate migration are fodder for the nativist right. Because people are understandably troubled by the idea of climate change forcing poor farmers to leave behind their ancestral lands, an important goal of adaptation spending is to help them stay.

Yet the truth is more complex. The vast majority of displaced people will not cross international borders but move within their own country (see Briefing). By 2050, 50m-216m people could be on the move internally. And many will be rural folk moving to cities, where their lives are likely to become better. Urbanisation usually aids development, bringing people closer to schools, health care and well-paying jobs, as well as more liberal social norms, particularly for women. This is not an argument in favour of climate change. But it suggests that one cost-effective and beneficial form of climate-adaptation spending would be helping people move, rather than preserving small farms in ever-harsher conditions.



There is another, more profound, example of the danger of climate groupthink. From the panels of Davos to the pages of newspapers, it is increasingly argued that no trade-off exists between the economic development of low- and middle-income countries and reducing their greenhouse-gas emissions. This is partly because much of the rich world has successfully made some cuts in emissions while continuing to grow, and its leaders want more of the same. But more crucially, it is because governments and development banks with limited budgets struggle to admit that not all their goals can be reconciled, and that they must therefore choose between them.

Yet choose they must, because the trade-off is in plain sight. Growth is the best way to lift people out of poverty and improve average living standards. But in the developing world, more growth still leads to more emissions. Researchers at the IMF have found that in 72 developing countries since 1990, a 1% rise in annual GDP was on average associated with a 0.7% rise in emissions. By 2030, fast-growing India and Indonesia alone will have increased their annual emissions by the equivalent of over 800m tonnes of carbon dioxide—an extra Germany's-worth of greenhouse-gas belching. In other big emerging markets such as Brazil, Egypt and the Philippines, emissions are rising, too.

Many rich-world leaders say they can square the circle by funding green development projects which, in theory, cut emissions and boost growth at the same time. That is true to a degree. But, without adequate carbon pricing and cross-border emissions trading to encourage the private sector to invest on its own initiative, it is an enormously expensive and fiendishly complex task. On June 23rd, at the conclusion of a summit in Paris, rich countries again pledged to meet a target of providing $100bn a year in "climate finance" to fund such projects. Yet that is only a fraction of the $2.8trn annual investment thought to be needed by 2030 to put the developing world on a green growth path, at least $1trn of which probably needs to come from rich countries.

The reality of limited resources worsens the trade-off. The need to spend money decarbonising big developing economies that already offer citizens reasonable services threatens aid budgets which help pay for things like vaccines and schooling in the poorest parts of Africa. Unlike Brazil or India, say, such nations are unlikely ever to contribute significantly to global emissions.

They lose out, however, when foreign aid and loans come with green strings attached. As well as facing stingier healthcare and education budgets, they might find scant funding for expanding a gas-powered electricity grid, even though nobody stands ready to pay for the far greater costs of converting it to a green one. African governments rightly resent being told to cut emissions rather than help people in desperate need—especially given that Westerners continue to belch carbon.

As a result, while leaders offer bromides about sustainable growth, an epic fight for resources rages behind the scenes between those who favour development as practised in decades past and those who want the world's foreign-aid apparatus to turn wholeheartedly towards decarbonisation (see Finance & economics section). It is a battle over what is worse: a poorer today or a hotter tomorrow.

The virtue of hard choices

That is an excruciating choice, given the moral force of the argument that the rich world should pay the developing world's climate bills. Global temperatures depend on the stock of carbon in the atmosphere, not the current flow of emissions. On a per-person basis, the rich world has been disproportionately responsible for rising global temperatures and has more capacity to respond to them. Poor countries lack the resources to invest to cut emissions or adapt to climate change themselves. Yet relative to the size of their economies, they face the biggest costs.

As with the decision between forestalling or accommodating climate-induced migration, pretending that this choice does not exist helps no one. Politics mean that neither an adequate carbon price nor sufficient Western money are likely. Limited resources make it essential to squeeze as much value as possible out of what is available. Squeamishness about weighing costs and benefits—stemming from a well-meaning desire to avoid every injustice—gets in the way. And the consequences of that evasion fall most heavily on those in the greatest need. ■

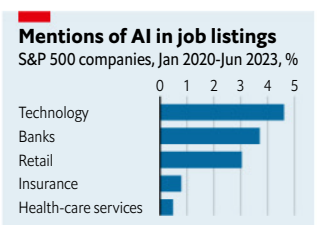
AI and productivity

Not so fast

Some firms are adopting the latest AI technology, but its broad diffusion across the economy will take time

The 2010s brought no shortage of miraculous technologies, from tablet computers and 4G mobile internet to new forms of artificial intelligence (AI)—Hey, Siri! But these had surprisingly little effect on the economy. During that decade productivity growth in the rich world averaged a measly 1% a year, holding down average wages. Innovative firms embraced new tech, but many less adventurous ones did not bother, and saw few efficiency gains as a result. The experience showed that technological wizardry and improvements in average living standards do not always go hand in hand.

Generative AI, its boosters say, will be different. Not since the invention of the internet has a new technology so captured the public imagination. The technology is consumer-friendly: within days of its release to the public, ChatGPT, the most famous AI chatbot, had millions of users. It is easy to see how this innovation could improve all types of work at all types of firms, from increasing the accuracy of doctors' diagnoses to helping programmers write software code more efficiently.



Some companies are already incorporating AI into their operations (see Business section). Tech firms are investing heavily in the technology, advertising for many thousands of roles. So are some bricks-and-mortar companies. A drug discovered and designed by AI is progressing through human trials in China. Analysts at UBS reckon that Domino's Pizza can use AI to "improve the accuracy of order-delivery-time estimates". Investors are rewarding the early adopters. Since the start of the year, the median share price of the most AI-enthusiastic firms in the S&P 500 has risen by 11%. For those moving more slowly, it has not changed at all.

The potential is huge. Yet for AI to truly diffuse through the economy, it needs to make its mark beyond the most go-getting companies. And this will take time. Although the internet began to be used by some companies in the early 1990s, it was not until the late 2000s that two-thirds of American businesses had a website. Some 70 firms in the S&P 500 still show no interest in AI, according to our analysis. And below the corporate crème de la crème, the trends look even less encouraging. According to one recent survey of American and Canadian firms, a third of small businesses have no firm plans to try generative-AI tools over the next year. Some evidence even suggests that usage of ChatGPT and its competitors is falling—perhaps as people have tried it out, and then decided it is not for them.

Can AI live up to its promise? Organisations like the OECD propose lots of ways to improve diffusion from the best firms to the rest, including through better education, schemes to raise business investment and changes to competition policy. Such goals are worthy, but hard to achieve. Efforts by technology firms to make AI cheaper and easier to use will do more to speed up adoption. In practice, most companies will adopt AI by default, as new, AI-powered features are added to the software and services that they already use.

Indeed, even the most powerful technologies take time to diffuse, because companies tend to use a hotch-potch of software and services, some of which may be years or even decades old. Replacing outdated systems can be costly, complicated and painful. Moreover, in the many industries either run or heavily regulated by the government, such as health care, education and construction, bosses and trade unions often resist the deployment of new technology, worried that it will lead to job losses. In time AI could well transform how people live their lives and do their jobs. But the road to widespread diffusion, and any resulting productivity boom, will be a long one. ■

Education in India

It doesn't add up

Poor schools put India's economic dreams at risk

When Narendra Modi, India's prime minister, visited the White House last week, he did so as the leader of one of the world's fastest-growing big economies. India is expanding at an annual rate of 6% and its GDP ranks fifth in the global pecking order. Its tech industry is flourishing and green firms are laying solar panels like carpets. Many multinationals are drawn there: this week Goldman Sachs held a board meeting in India.

As the rich world and China grow older, India's huge youth bulge—some 500m of its people are under 20—should be an additional propellant. Yet as we report, although India's brainy elite hoovers up qualifications, education for most Indians is still a bust (see Asia section). Unskilled, jobless youngsters risk bringing India's economic development to a premature stop.

India has made some strides in improving the provision of services to poor people. Government digital schemes have simplified access to banking and the distribution of welfare payments. Regarding education, there has been a splurge on infrastructure. A decade ago only a third of government schools had handwashing facilities and only about half had electricity; now around 90% have both. Since 2014 India has opened nearly 400 universities. Enrolment in higher education has risen by a fifth.

Yet improving school buildings and expanding places only gets you so far. India is still doing a terrible job of making sure that the youngsters who throng its classrooms pick up essential skills. Before the pandemic less than half of India's ten-year-olds could read a simple story, even though most of them had ▸▸

spent years sitting obediently behind school desks (the share in America was 96%). School closures that lasted more than two years have since made this worse.

There are lots of explanations. Jam-packed curriculums afford too little time for basic lessons in maths and literacy. Children who fail to grasp these never learn much else. Teachers are poorly trained and badly supervised: one big survey of rural schools found a quarter of staff were absent. Officials sometimes hand teachers unrelated duties, from administering elections to policing social-distancing rules during the pandemic.

Such problems have led many families to send their children to private schools instead. These educate about 50% of all India's children. They are impressively frugal, but do not often produce better results. Recently, there have been hopes that the country's technology industry might revolutionise education. Yet relying on it alone is risky. In recent weeks India's biggest ed-tech firm, Byju's, which says it educates over 150m people worldwide and was once worth $22bn, has seen its valuation slashed because of financial troubles.

All this makes fixing government schools even more urgent. India should spend more on education. Last year the outlays were just 2.9% of GDP, low by international standards. But it also needs to reform how the system works by taking inspiration from models elsewhere in developing Asia.

As we report, in international tests pupils in Vietnam have been trouncing youngsters from much richer countries for a decade. Vietnam's children spend less time in lessons than Indian ones, even when you count homework and other cramming. They also put up with larger classes. The difference is that Vietnam's teachers are better prepared, more experienced and more likely to be held accountable if their pupils flunk.

With the right leadership, India could follow. It should start by collecting better information about how much pupils are actually learning. That would require politicians to stop disputing data that do not show their policies in a good light. And the ruling Bharatiya Janata Party should also stop trying to strip textbooks of ideas such as evolution, or of history that irks Hindu nativists. That is a poisonous distraction from the real problems. India is busy constructing roads, tech campuses, airports and factories. It needs to build up its human capital, too. ■

Flags

Raising the standard

How to avoid having an embarrassing emblem

Have you ever met a vexed vexillologist? This is someone who frets when flags are badly designed. Sadly, too many flags flutter to deceive: they are cluttered with imagery, a mess of colours and all too easily forgettable. Yet flags matter. Witness Ukraine's blue-and-yellow banner, which now serves as a potent symbol around the world (not to mention on this newspaper's covers). A fine flag can be something that citizens feel proud to pledge allegiance to, as well as an excellent marketing tool. Canada's red maple leaf, for example, has advertised the country on countless backpacks across the world.

A bad banner has an obvious solution: change it. That is what several American states and cities have been doing, or at least contemplating. In March, Utah approved a new standard with a bold beehive to replace its fussier old flag. Maine may ask voters to decide in November whether it should switch from its current, over-intricate design to a different one with a plain pine tree and a blue star, a reinterpretation of an older banner, which is already proving popular (see United States section). The design is not yet settled, so perhaps a flag with a lobster could pinch the honours at the last minute.



Many people in Minnesota may not even realise they have a state flag—which is lucky. The state representative who has led a campaign to replace the current one has described it as "a cluttered genocidal mess". Its imagery includes three dates from the 1800s, a French motto and a Native American riding away in the background while, in the foreground, a farmer tills the land. A new design is due to replace it next May.

Fortunately, the world has centuries of experience that can help guide better flag design. This has led to a few well-established rules. First, keep it simple. A good test is whether a child can draw it from memory. Japan's red circle in a white rectangle passes the test with, er, flying colours. So does New Mexico's design (pictured), another red-sun symbol, against a yellow background; it is a thing of simple beauty.

Second, use meaningful symbolism: think Israel's Star of David, the Soviet hammer-and-sickle or America's 50 stars, representing all its states, and 13 stripes, evoking the original colonies. (Mozambique, displaying an AK-47 assault rifle, perhaps went too far.) Third, limit the palette to just a few basic colours. True, as South Africa's black-gold-green-white-red-blue emblem shows, it is possible to break this rule successfully, but even the rainbow Pride flag, in its most familiar version, cut two colours from its original eight, because hot pink and cool turquoise made it hard to manufacture. The fact that banners are often viewed from the back helps explain a fourth sensible rule: avoid lettering.

Last but certainly not least: be distinctive. You will then avoid the situation of Indonesia and Monaco, whose flags look the same, as do Romania's and Chad's. Nepal's jagged double-pennon, by contrast, is delightfully unique—the only national flag with an irregular shape. Similarly, Jamaica's is the only one without red, white or blue. Switzerland and the Vatican stand out as the only countries with flags that are square.

Sometimes proposals for new flags fail. Badges of identity arouse strong feelings. New Zealanders rejected a switch in a referendum in 2016. Traditionalists can feel attached to old emblems. But from Maine to Milwaukee, plenty of places—call them flaggards—have dreadful, old-fashioned banners that are ripe for change. In 2004 Pocatello, Idaho, was reckoned in a survey of vexillologists to have the worst city flag in America. It was changed in 2017, and in a survey last year the new flag ranked 11th in the country. Come on, flaggards, do the Pocatello. ■

Letters

Back to economic basics

Faced with ruinous inflation, Turkey's people should welcome the appointment of Hafize Gaye Erkan as governor of the central bank and Mehmet Simsek as finance minister ("Braking at the cliff's edge", June 10th). The appointments signal a return to economic orthodoxy. However, unless Recep Tayyip Erdogan, the country's re-elected president, has undergone a change of heart, it's going to be an uphill struggle.

In 2018 Mr Erdogan appointed his son-in-law, Berat Albayrak, as finance minister in the belief that he could command market forces. Two years later Mr Albayrak resigned for health reasons after splurging $128bn in foreign-exchange reserves to defend the lira. Mr Erdogan has dogmatically insisted that interest rates are "the mother and father of all evil" and has fired three central-bank governors for not reducing them. Two years ago the president made clear at a meeting with the Turkish Industry and Business Association that as a Muslim he would continue to lower interest rates in accordance with Islamic teaching.

Now Ms Erkan has cautiously increased the benchmark interest rate from 8.5% to 15%, although the market expected 20%. And the lira has crashed. The question is who will blink first when Islamic teaching comes into conflict with economic orthodoxy.

ROBERT ELLIS
International adviser
Research Institute for European and American Studies
Athens

It's all about the cloud

Your leader on the Microsoft-Activision deal accepted without question the market definition that Microsoft has been promoting to the competition-policy authorities ("Merger crush saga", June 24th). On this logic, the deal is about two kinds of gaming platforms (console and cloud) that add up to one market in which Microsoft is hardly a dominant player. What's more, the company has promised to keep console platforms competitive by guaranteeing to other console providers ten-year access to key titles, while the potential for expanding the new and fast-growing platform of cloud gaming promises a net benefit to consumers. All good, so far as it goes.

But cloud gaming is not so much about gaming as it is about the cloud, and here the competition policy issues are more profound. The data engineering, graphics, real-time compute, language and image synthesis, and related functions that power today's games are precisely the technologies that will power tomorrow's AI-supercharged enterprise cloud applications. And in that much larger and more important market, Microsoft's old habits of bundling, licensing and leveraging market power have continued largely unabated.

The Federal Trade Commission should look at this as a question about the future of the cloud, not simply gaming. It should stop an acquisition that would further advance Microsoft's subversive efforts to win the future of cloud by creating a battle among walled gardens in enterprise cloud computing—as it has already tried to do with OpenAI.

STEVEN WEBER
Professor of the Graduate School, School of Information
University of California, Berkeley

Breaking down the silos

Jargon can boost efficiency (Bartleby, June 17th). I can say to a good software engineer that "this needs a mutex" and he knows what I mean. I can quickly judge people's competency in my field by how much widespread jargon they know.

On the other hand jargon is also explicitly a way to keep insiders (who know the jargon) separate and superior to ignorant outsiders or new employees (who don't know the jargon). It adds a barrier to entry. Corporate management slavishly adapts less efficient opaque phrases as a way to signal false competency. This is a mutation of the insider/outsider use, elevating managers above their customers and employees and bonding with their fellow managers. Like roosters that crow all day long.

RON DIPPOLD
San Diego

The origin of the term "fourth leader" used by journalists at *The Economist* to describe lighthearted opinion articles originates from the *Times*, where the fourth editorial used to be of a more jovial nature than the three previous, heavyweight ones.

CEDRIC REAVLEY
Burford, Oxfordshire

Honest government

I enjoyed reading about Botswana's success story ("Carats and sticks", June 10th). In 1978 I led a team to rescue a brewery that was in a financial mess. One of the great advantages of operating in Botswana was that the president, Seretse Khama, enforced strict measures against corruption. Ministers and government officials all operated for the benefit of the country. There were no parades of large expensive Mercedes to be seen. In fact, the official ministerial cars were General Motors Commodores. Ministers were quite often seen running about in their own pick-up trucks.

When we sent a couple of cases of beer to the ministry of finance as a Christmas present they were returned. We were politely told that this sort of gift was against the government's regulations.

GUY HALLOWES
Sydney

Wisdom comes with age

I disagree that innovation, as measured by patent filings, has any correlation with age ("The old and the zestless", June 3rd). Your article cites research which found that patenting rates peak in a researcher's late 30s and early 40s. However, this does not necessarily mean that innovation peaks at this age. It is possible that older researchers are simply less likely to be the inventors on patents, because they are more focused on mentoring and other leadership activities.

There is a growing body of evidence suggesting that innovation can continue well into old age. For example, a study by the Kauffman Foundation in 2019 found that the rate of new entrepreneurs was highest among Americans aged 45–64 and lowest among those aged 20–34. This suggests that older people have the skills, experience and knowledge necessary to be successful innovators.

Innovation is not just about coming up with new inventions. It is also about bringing those inventions to market and meeting an unmet customer need. Older people often have the networks and resources necessary to do this. They may also have a better understanding of the needs of customers and the market.

ERIC HEINZ
President
Heinz Ventures
Memphis

Oxford's Harry Potter oak

Bagehot cited the assertion of Theresa May, a former British prime minister, that "there is no magic money tree" (June 3rd). In fact there is one. New College, Oxford, has in its cloister a splendid old tree. It featured in the Harry Potter films. The college's fee for filming the tree, plus incremental entrance fees from fans who now come to admire it, are sizeable. That money, produced by a tree via magic, suffices to fund a couple of academic positions.

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Letters are welcome and should be addressed to the Editor at
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Economist.com/letters



Out of the frying pan

CAIRO, CHATTOGRAM AND NIAMEY

To adapt to climate change, people will migrate. The results will not be all bad

On the outskirts of Niamey, the capital of Niger, it looks as if the countryside has moved to the city. Clusters of dome-like wooden huts have popped up. Cows and goats are tethered in the shade. Waves of rural folk have arrived, largely because of climate change.

"The seasons are not good like they used to be. It is hotter and the rains often fail," says Ganso Seyni Ali, the chief of a group of herders from rural Niger. He has moved permanently to the city with half of his home village—over 150 families.

To a visitor from a rich country, their settlement looks grim. They have no right to the land they occupy and are periodically evicted. But the city is safer than the countryside, where herders and farmers clashed constantly over dwindling pasture and water. Mr Ali describes deadly battles fought with guns, arrows and machetes. In the city such strife is rare, in part because life is less desperate.

Mr Ali's group have swiftly adapted to their new environment. They take their cows outside the city to graze, and find extra forage by knocking on doors to ask for vegetable scraps. They find it easier to sell milk, with so many customers close by. Mr Ali offers your correspondents a steaming bowlful, fresh from the udder.

Many of his group have also found jobs. "It's better here. There's work," says Ali Soumana, an ex-herder who now makes bricks. Back in the village he did not have enough to eat; now he does.

An obvious move

When flames approach and you don't have a fire extinguisher, you move. By the same token, as parts of the Earth grow less habitable, people will migrate. The rich will find it easier to adapt to higher temperatures or rising sea levels, since they can afford air-conditioning and flood defences. The poor have fewer options.

How many will move because of climate change is impossible to say. In "Nomad Century", a book published last year, Gaia Vince wrote that if the world grew 4°C hotter by 2100 (an apocalyptic scenario), regions currently inhabited by 3.5bn people would become uninhabitable. Extreme forecasts like this are often seized on for political reasons. Green groups have cited the threat of "billions" of climate refugees to lend urgency to their calls to curb emissions. Nativists in rich countries use imagined hordes of climate migrants to justify ever stricter policing of borders.

Cooler thinking is required. More plausible numbers come from a modelling exercise by the World Bank known as Groundswell, the findings of which were first published in 2018 and updated in 2021. It uses a "gravity model" to simulate how changes to things like water availability, agriculture and sea level might push people out of some areas and into others. It predicts that by 2050 between 44m and 216m people in Africa, Asia, eastern Europe, Latin America and the Pacific islands could be on the move within their own countries (see chart on next page).

Groundswell looks only at domestic migration, rather than the cross-border sort, because most climate migrants will be too poor to travel far (especially if droughts or floods have wiped out their assets). It excludes rich countries and small island states. Its analysis is hostage to unpredictable factors, such as how much governments spend on flood defences. Its gloomier scenarios rest on implausibly pessimistic assumptions about global

emissions of greenhouse gases. But it gives a sense of the daunting scale of the problem: there are roughly 100m displaced people in the world today, mostly owing to war, so Groundswell's higher estimate of 216m additional climate migrants would constitute a tripling.

Climate-induced migration will often be traumatic. Yet it will also be an essential tool for adapting to a warming planet. And it may have some positive side-effects. If it causes more subsistence farmers to move to cities, they will probably find better work, health care and schools. They may also start having smaller families.

A moving story

Niger, where climate change is already spurring large-scale migration, gives a sense of how things might unfold. More than nine in ten people have noticed changes in the environment, such as more frequent droughts, floods or soil degradation, finds a survey by the International Organisation for Migration. Three-quarters said climate change had made it harder to grow food or raise livestock. Half said that a member of their family had been forced to move because of the weather.

Hardly any have the cash or connections to move to Europe, but many can head to nearby spots with more water. That, in turn, can spark conflict, as Mr Ali described. An increase of one standard deviation in local temperature raises the risk of intergroup conflict by 11%, finds a study by Marshall Burke of Stanford University and others. Niger is racked by insurgency. "Terrorism and crime are closely linked with climate change," its president, Mohamed Bazoum, tells *The Economist*.

When rural migrants move to urban areas, their lives tend to improve. Throughout the developing world, poverty is less common in cities. Urban wages are higher and depend less on the weather.

Climate change may jolt some into making a decision (to migrate) that would long have been in their interest anyway. A study in Kenya in 2020 found that rural people underestimate how high wages are in the capital, and that this makes them less likely to move. Another study looked at the aftermath of a volcanic eruption on an Icelandic island. Comparing the children of families whose homes were destroyed by lava with those that weren't, it found that being forced to move dramatically improved their education and lifetime earnings. This is not an argument for razing homes; but it suggests people would benefit from moving more than they do.

Those who move to the city are more likely to send their children to school, because schools are easier to get to and urban jobs require more book-learning. Back home, almost no children from his village attended classes, says Mr Ali. In Niamey that figure has risen to 30% or so, he reckons. That may be low, but it is progress. In Niger as a whole, urban children are twice as likely to attend primary school as their rural peers, and nearly four times as likely to attend secondary school.

Access to health care is usually better in cities, too. Abdul Moumouni Hassone, a farmer who moved to Niamey five years ago, recalls the time back in his village when his younger brother was feverish with malaria. Mr Hassone loaded him into a donkey cart and raced to the nearest clinic, 40km away. It took three hours. "He died as we arrived," he sighs. In the city, by contrast, "It's easy to get medicine. There's a pharmacy on every corner."

By accelerating urbanisation, climate change could hasten cultural change, too. Niger's population is still more than 80% rural. Villages can be stifling places, where old men enforce rigid traditions that, among other things, treat women abominably. In the hurly-burly of a city, those rules weaken. Old men may lament the shift to immodest dress and individualism. "In a village, when we make a decision, everyone follows it. Here [in the city], it's everyone for himself," sighs Mr Hassone, who is 66. Yet he admits that his children prefer urban life, because there is more to do (and, whisper it, more freedom). "When we visit our village, they don't want to stay there even two days."

The biggest change concerns fertility. In sub-Saharan Africa rural women each have on average 5.8 babies whereas urban ones have just 3.9. A study by George Martine, a Canadian demographer, and others found that urbanisation plays a big role in reducing family sizes. So climate migration could reduce population growth in some of the places where it is fastest.

Mr Hassone says that in his village a typical woman would have a dozen children, of whom perhaps nine would survive. He still thinks big families are desirable, but he can see how norms are shifting, as each child is no longer seen as an extra pair of hands to help in the fields, but as an extra mouth to feed, with added school fees. Some women who move to the city have "just two or three [babies], and then they are done!" he laments. Yet he concedes that, unlike rural children, all the urban ones will probably survive.

Whereas some climate migrants flee drought, others will be displaced by rising waters. In 2018 Daniel Lincke and Jochen Hinkel, two academics in Germany, used cost-benefit analyses to calculate that only 13% of the world's coastlines would be worth defending under their most pessimistic scenario, mostly in wealthy and densely populated parts of Europe, East Asia and the eastern United States. Conversely, 65% of coastline was not worth protecting under any scenario.

People will have to move out of flood zones. Some rich countries have property buy-out schemes to encourage this, but so far these have been modest in scale. Roughly 40,000 American families have taken buy-outs in the past 30 years, for example. Occasionally, a scheme may involve moving a whole community. A decade ago America spent $48m to move two dozen families from a rapidly disappearing sandbar in Louisiana to a new site 60km away.

That model will be hard to replicate, however. People tend to move as individuals or families, not as villages. And poor countries must adapt to rising waters on much tighter budgets. Consider Bangladesh. Most of this South Asian country of 170m is flood plain: flat as a billiard table. Its people have adapted shrewdly to violent weather. Whereas a cyclone in 1970 killed over 300,000, now early-warning systems, typhoon shelters and embankments keep the annual death toll from floods and storm surges to a few dozen.

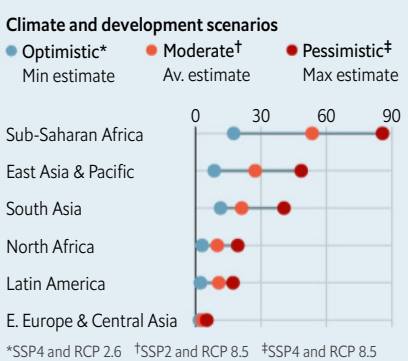
Yet the elements still cause havoc. In the south, cyclones flatten houses. In the north, floods gnaw away at friable river banks. A village can disappear in days. The Groundswell report predicts that climate change will prompt between 6.8m and 19.9m Bangladeshis to migrate internally by 2050—3.8-11.3% of the projected population. Many will flee the rice-paddies of the north-east and the southern river delta.

Cyclones come and go quickly, displacing people only briefly, notes Tahura Farbin of the University of Liberal Arts Bangladesh. More insidious is when a river gobbles up a family's land. They save themselves from drowning by moving. They often remain in the countryside because the land is exceptionally fertile, and rural social services are surprisingly good in Bangladesh thanks to a legion of NGOs. But they have lost their assets, and often end up working other people's land.

Amirul Islam lost his home three times. He weeps at the memory. "When my two children ask me where my grandfather's

Parched and peripatetic

Projected internal climate migrants by 2050, m



*SSP4 and RCP 2.6 †SSP2 and RCP 8.5 ‡SSP4 and RCP 8.5
Source: World Bank

house is, I cannot answer. Our house is now in the middle of the river," he says. He moved to Chattogram, a port city, with seven relatives, and found work in a garment factory. He earns more than he did in the village, although he misses his old life.

The government's national strategy for climate displacement seeks to warn people of risks, curb settlement in vulnerable areas and help the displaced earn a living. Previous efforts did not always work well, however: many people were sent with little consultation to far-flung places with few jobs. Despite being given new houses and plots to farm, many chose not to stay. "We would go back a few years later and find that they had sold the land and ended up landless again," says Tasneem Siddiqui of the University of Dhaka. Many simply pocketed the money and moved to cities. They may have a better idea of their own interests than any planner.

Lots of climate migrants would like to move to the rich world. Some prosperous places enable this, albeit in a strictly controlled fashion. Shahed Hossain's home in Bangladesh was destroyed by a flood. He moved to a city, worked in a factory, saved and borrowed and eventually managed to buy a plane ticket to the United Arab Emirates (which lets in far more unskilled migrants than any Western country). As a labourer there he makes $400 a month—four times what he earned in Bangladesh. He has repaid his debts, and can now afford to send his children to university.

But most rich countries are far less open to migrants, many of whom take extraordinary risks to get to them nonetheless. Sylla Alseny, a farmer from Guinea, left home because his crops were ravaged by insects. (He blames climate change.) He headed for Europe overland. (Flying would have been cheaper, but he had no visa.) In Algeria his traffickers robbed him at knifepoint. In Tunisia police deported him, after gang-raping a female migrant in his group. He never made it to Europe.

Some countries are contemplating a warmer welcome for climate migrants. One, Argentina, has created a new visa for those fleeing climate-related disasters. (It has barely been used, perhaps because Argentina is far from anywhere people are fleeing.) A White House report in 2021 said some of those displaced by climate change "may" qualify as refugees. That is a tricky category to define, however, and the world's asylum systems are dysfunctional.

In the meantime, most climate migrants will have to stay close to home. Few of the most vulnerable places are prepared for a surge of them. In north Africa, whose inhabitants cluster by the coast, Groundswell predicts that 4.5m-13m people (2-6% of the population) will be displaced by climate change by 2050. In Egypt many will leave low-lying coastal areas and head for Cairo, the capital.

Many Egyptian farmers will see their fields dry out, too. Almost all Egypt's water comes from the Nile. Yet Egypt's government encourages waste by providing water free of charge to farmers and cheaply to households. Farmers flood their crops, rather than using drip irrigation. As a result, pipes often run dry.

This happened last year to Romany Sami, a 27-year-old farmer. He moved to Cairo and found a job as an electrician. But to afford a flat big enough for his family, he would have had to commute two or three hours each way through the city's awful traffic. Instead he shared a cramped space with 12 other labourers. It was miserable, so eventually he went back to his farm, where there is water again—for now.

Egypt's urbanisation rate, at 43%, has barely changed since the 1970s. At some point it will have to rise again; it makes no sense for half the swelling population of a desiccating country to live in the countryside. Yet the government has done little to make cities more welcoming. Fuel subsidies promote congestion. Red tape and rent controls make housing hard to find. The government should be making cities more livable. Instead, it is building a grandiose new capital with ornamental lakes 50km from Cairo. That provides fat contracts for military-backed firms, but few Egyptians can afford to live there.



Life might be easier in a city

Nobody move

Amazingly, many governments discourage domestic mobility. Roughly half have policies to reduce rural-urban migration, according to the UN. China's household-registration system bars rural folk from many public services in big cities, forcing millions of domestic migrants to leave their children in awful village schools. A huge rural job-guarantee scheme in India in effect pays the poor to remain in their home states. Similar schemes reduce mobility in Ethiopia, Indonesia and Vietnam. Discouraging free movement makes societies less dynamic under any circumstances. It also makes it harder for them to adapt to climate change.

Policies aimed at the world's estimated 475m smallholder farms tend to focus on helping them stay where they are by adopting more climate-resilient farming techniques. That can be useful. But many of these small farms will eventually become unsustainable because of climate change. Many farmers will have to give up farming, find other jobs and rely on bigger, more capital-intensive farms for food.

Rather than trying to prevent the inevitable, Sam Huckstep and Michael Clemens of the Centre for Global Development, a think-tank in Washington, suggest that governments should subsidise rural-urban transport, teach rural folk how much urban jobs pay and help them find work when they arrive. They should also make state benefits portable, so that migrants do not lose them when they move.

The challenges of preparing for climate migration, though only a subset of the challenges of preparing for climate change itself, are immense. New arrivals will need physical infrastructure, from housing to transport, and the human capital to help them adapt, especially education, health care and job training.

All this may seem daunting. Yet if one thinks of climate mobility "as a process that occurs over the next hundred years, it can become a lot less scary," says A.R. Siders of the University of Delaware. "One hundred years from now things will look very, very different...And so resisting the idea of change—it's sort of nonsensical." ■



Repeat offenders

Crime and pointless punishment

Short prison sentences, and a probation system under strain, expose flaws in the criminal-justice system

REFORMING THE BRITISH STATE



THE THREE weeks Liam spent in prison after he rashly opened a can of beer in a shop and swigged from it cost him and the taxpayer vastly more than the £1.90 ($2.40) he had failed to pay. He stole while he was beset by mental-health problems and a failing relationship. Prison made his troubled life worse. Released, he found he had been kicked out of his flat, so had to move away from the relatives and friends on whom he relied. He lacked cash because universal credit, a benefit for those on low incomes, stops during prison sentences (new applications take a month to begin). All this made him feel desperate. Again, he stole a small amount of alcohol. This time, because he was on probation, he got seven weeks. In less than a year he went to prison four times.

Short prison sentences are widely used in England and Wales to punish repeat perpetrators of minor crimes. More than half of those sentenced to prison every year get less than 12 months and most of those under six months. Yet, on almost every metric by which the criminal-justice system should be measured, short sentences fail. They are, says Pavan Dhaliwal, chief executive of Revolving Doors, a charity, a "hideously expensive policy failure".

First, and most worrying, they increase criminality. Over 60% of those sentenced to less than six months reoffend within a year of release. Direct comparisons are difficult, but for those given community sentences, which chiefly consist of unpaid work, the rate is considerably lower. This may be because less prolific offenders are more likely to get community sentences. But a study from the Ministry of Justice allowing for that difference has shown community sentences work better.

Short sentences also fail because they make prisons more chaotic. Too many are overcrowded, violent places in which men (96% of those locked up) get few chances to work, exercise or learn. Underfunding is one cause, but it is dwarfed by another: a vast increase in the prison population. Although crime has broadly fallen since the 1990s, imposing longer terms for serious offences means the incarcerated population has doubled, from around 40,000 to 85,000 (see chart). England and Wales jointly put away more people than any country in the EU: 142 people per 100,000. The EU average is 109. The growth looks set to continue. The Ministry of Justice expects the prison population to reach 98,500 by 2026. The expansion has not been matched by a commensurate increase in resources, cells or prison guards.

Prisons nonetheless offer some hope of rehabilitation. Short sentences mess with that. As a share of those in prison at any time, short-termers are a small group, perhaps less than 5% of the total. But they cause excessive trouble. Their movement in and out of prisons creates churn, unsettling long-term inmates. The nature of repeat, petty offenders exacerbates this. Prisoners generally have a few characteristics in common, which point to the failures of the state as much as criminals' morality. Around a quarter have spent some of their

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childhoods in care. They are much more likely to have a learning disability than most people, or to be illiterate, and they suffer mental illness at a higher rate.

Yet low-level repeat offenders are "the most chaotic people in the system," says Andrew Neilson of the Howard League for Penal Reform. It is unhelpful to park them alongside those who have committed more serious crimes yet lead a more stable existence. "It uses up all the energy of the system when you bring in vulnerable people, often with addictions and mental-health problems, for a short time," says Pia Sinha, a former prison governor and chief executive of the Prison Reform Trust. "You're importing chaos." Short terms are the main reason prisons have high staff turnover, she says. They are also the main way drugs get into prisons.

Short term failure

For prisoners themselves, short terms achieve little beyond making unhappy lives worse. Locking up nuisance-makers protects the public, but without tackling any of the problems that cause the bad behaviour. "Prison screws up your life on the outside and if you send someone away for a few months that isn't enough time to rehabilitate them," says Chris Atkins, author of "Time after Time", a book about repeat offenders. He spent nine months in HMP Wandsworth , where he repeatedly saw fellow inmates leave and return.

The harms are particularly grievous for women. Most female prisoners have committed minor crimes such as shoplifting. Many are mothers. When men are behind bars, their children usually remain living at home. But when women are locked up, their children often go into care or stay with relatives. Some 17,000 children are affected this way each year. They, in turn, are more likely to end up in the criminal-justice system themselves.

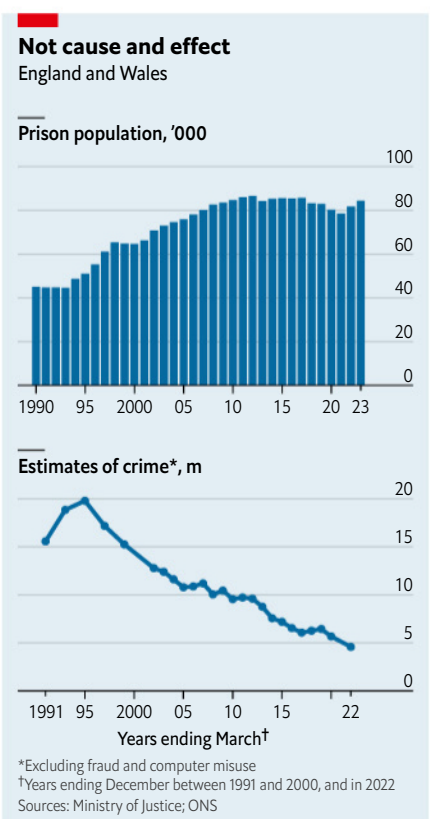
Nor are short sentences a cheap way to mete out justice. Locking up people is vastly more expensive than community options. A year in prison, per inmate, costs the state £47,000: more than a pricey boarding school. A community sentence costs a fraction of that. Polls, meanwhile, suggest voters are less keen than is popularly supposed on prison terms for crimes such as theft.

Some nonetheless believe short sentences are crucial. Civitas, a think-tank, argued in 2019 that a proposal by the then prisons minister to introduce a presumption against short sentences would mean that "mostly prolific criminals...[would be] free to continue victimising their neighbours." Yet successive governments have agreed that short terms don't work. And sentencing guidelines have long made clear that people should be jailed only when there is no suitable alternative.

The problem is that many magistrates, who do most of the sentencing for minor crimes, do not favour community sentences, the main alternative. Overseen by the probation service, the use of such sentences appears to have fallen in recent years. Because the data are patchy, the reasons for this are not entirely clear (the number of offenders receiving short sentences has also fallen). It may be in part because the crimes that tend to lead to community sentences, such as theft, have decreased.

Some believe magistrates need more training on different types of punishment. Ms Sinha calls for greater use of pre-sentence reports. These, produced by the probation service, set out the likely causes of an offender's behaviour and the risk they pose. They also offer sentencing recommendations, and so could encourage more magistrates to divert low-level offenders away from jail. But they take time to draw up. Amid an effort to speed up sentencing, their use has fallen.

Too often community sentences fail. Liam, the beer-stealer, was given four of them, the first when he was 17, before he first went to prison in his 30s. Courts routinely see offenders who have had dozens of convictions before they are jailed. In May, Justin Russell, the chief inspector of probation, told Parliament's Home Affairs Committee that community sentences were failing to help people who are pointlessly sent to prison. "Typically, a street heroin user who is constantly shoplifting or committing minor, petty offences, will not get a community order; they will get a fine or a short prison sentence," he said, describing this as a "gap in the market". It is a big one: half of thefts are committed by someone addicted to drugs.



*Excluding fraud and computer misuse
†Years ending December between 1991 and 2000, and in 2022
Sources: Ministry of Justice; ONS

Healthier options

The most effective help comes from thinking about health and welfare, as well as justice. Liam stopped offending after his fourth prison stint when he was referred to Liaison and Diversion, a service run by the NHS and the justice ministry. It identifies offenders with mental-health and drug-and-alcohol problems. It introduced him to someone who had escaped long entanglement with the law and gave him practical aid, including with housing. When he was first arrested, he says, he sensed the police knew he was deeply troubled, but didn't know what to do.

Another initiative, Community Sentence Treatment Requirement Protocols, which requires treatment for offenders with mental-health problems and drug addiction, was launched by the NHS and the justice ministry in 2018. It is being rolled out across England: magistrates need to be made aware of it. Another solution would be to provide residential rehab for some drug-addicted offenders. This would be better, and in the long term cheaper, than jailing them.

Yet the success of such alternatives also depends on a well-functioning probation service, which England and Wales currently lacks. Largely because of its part-privatisation in 2014—so disastrous it was reversed in 2021—the probation service is struggling with a vast shortage of experienced staff. Mr Russell said that of the 23 local probation areas that were inspected since the service had been renationalised, 13 were "inadequate".

The probation service's failures reach deep. They affect how politicians talk about crime and sentencing. In January, it was revealed that overworked probation officers had classed a high-risk offender as "medium-risk"; but he went on to sexually assault and murder Zara Aleena, a young woman in London. Such cases deter politicians from promoting policies that could be seen as soft on crime, even when they are sensible in general.

Sir Keir Starmer, Labour's leader and a former director of public prosecutions, has a particular horror of being thus labelled. Yet people who work in prisons hope that Labour would make good on a manifesto pledge to create a "trauma-informed" criminal-justice system—meaning one that acknowledges that the roots of crime often lie in childhood and poverty. This approach is the only one that is likely to work. The next government would be wise to adopt it. ■

Turning against Brexit

Buyers' deeper remorse

Whoever is in office is likely to seek closer relations with the EU

Politics is routinely dominated by the short run: in-party scraps; looming by-elections. But quietly shifting and longer-term trends risk being neglected. One such is the rise of disillusion with Brexit. Polls from YouGov, Ipsos and NatCen Social Research all find that sizeable majorities of Britons now regret the decision to leave the European Union. The latest numbers show a margin as wide as 60-40% for those wishing that Britain had remained in the EU, compared with the 52-48% vote to leave in June 2016.

Had all of those with an opinion on Brexit voted seven years ago, the result would have been even closer. Still, the numbers suggest a steady shift. What explains it? Several factors, according to Sir John Curtice, of NatCen, who spoke at a recent conference of the UK in a Changing Europe think-tank. Demography is one: older people mostly backed leave while younger ones preferred remain, so the passage of time tilts against Brexit. Those who did not vote in 2016 now break strongly against leaving the EU. Remain supporters are almost all still convinced they were right. But the most significant change is that as many as 20% of those who backed leave in 2016 now say they would support remain instead.

Why? The obvious answer is disappointment with the outcome. Voters' concerns have moved beyond Europe to focus on more short-term worries—the high cost of living, falling real wages, struggling public services and high immigration. Brexiteers like to argue that such ills were largely caused by covid-19 and the war in Ukraine. A few also argue, like Marxists of yore, that true Brexit has never been properly tried. Yet leaving the EU has clearly made at least some problems worse. Britain was one of the last G7 economies to recover to its pre-covid level of output; growth remains nugatory; most economists reckon extra barriers to trade have had damaging economic effects; inflation and interest rates are higher than in most other European countries; net migration is running at its highest level ever.

Most of the specific promises made by the Vote Leave campaign in 2016 have proved illusory, too. This goes beyond the notorious red-bus pledge of £350m ($445m) extra a week for the NHS. The campaign claimed that trade with the EU would go on much as before, red tape would be swiftly shredded and big new free-trade deals with America and others would be simple to deliver. The broadest promise, that there would be no downside to Brexit but only considerable upside, looks empty. When Nigel Farage, the former leader of the UK Independence Party, admits (as he did in May) that "Brexit has failed" and Sir Jacob Rees-Mogg, a Tory Brexiteer, is laughed at for citing the benefits of Brexit, rising disillusion seems less surprising.

This does not mean that there is growing demand to rejoin the EU. Europe is falling down the list of voters' priorities and almost nobody wants to reopen such a bitterly divisive issue. Yet there is scope to soften the hard Brexit agreed to by Boris Johnson in December 2020. In February Rishi Sunak, the prime minister, won kudos for negotiating the Windsor framework. That resolved many practical problems over the border in the Irish Sea created by Mr Johnson's decision to take Great Britain out of the EU's single market and customs union but leave Northern Ireland in both. This week Britain and the EU signed a memorandum of understanding on regulatory co-operation over financial services, though it will do little to open up the EU market to London-based firms. As the chances of a Labour government after the next election rise, so do hopes that it may further improve relations with the EU.

Sir Keir Starmer, Labour's leader, insists he will not rejoin the single market or customs union. David Lammy, the shadow foreign secretary, suggests the EU would not agree anyway unless the Tories changed their stance. But he also told a recent meeting of the EU-UK forum, a talking-shop in Brussels, that better relations with the EU were his "number one priority". Labour figures have floated various ideas. These include more formal security and defence co-operation; a veterinary agreement to facilitate trade in food; full association with the EU's Horizon and Copernicus scientific-research programmes; a mobility deal to reduce visa hassles for travelling musicians and others; and an enhanced agreement on financial and other services.



Refusing to enjoy sunlit uplands

At least you have sovereignty

Three more suggestions for how thicker relations with the EU might be added to Mr Johnson's notably thin trade and co-operation agreement (TCA) have appeared. In April the House of Lords EU committee published a report on how to improve ties in the political, diplomatic, security, climate-change and mobility fields. In May the UK trade and business commission, co-convened by Hilary Benn, former Labour chairman of the House of Commons Brexit committee, came up with 114 ideas for mitigating the damage to trade. And in late June the Tony Blair Institute, a think-tank, put forward its own shopping list of proposals for closer relations with the EU.

The biggest obstacle lies in persuading the EU to agree to any such ideas. At the meeting of the EU-UK forum, Maros Sefcovic of the European Commission suggested that trade barriers were likely to get worse not better, and saw little hope for big changes during a five-year review of the TCA that is due in 2025-26. The commission thinks the review should be mainly about implementing the 2021 deal, not expanding it. The EU likes the existing arrangement, as it helps goods exports but does little for services, Britain's strength. It is also wary of a non-member cherry-picking the benefits of its single market without signing up to associated obligations.

There are two political lessons to draw from Brexit disillusion. One: it is no longer possible for the Tories to persuade voters who backed them in 2019 not to switch to Labour for fear of losing the advantages of Brexit—for these are so difficult to discern. The other: whoever wins the next election, the trend will be towards closer relations with the EU, not moving further away. The process may take longer than anti-Brexiteers hope, and it will always be a mistake to take EU assent to future changes for granted. Yet Brussels and national capitals will surely feel under strong pressure to be nicer to Britain, especially if Labour wins. The eventual destination is uncertain; but the direction of travel now looks settled. ■

Navigation

Sweeping changes

TREVOSE, CORNWALL

English lighthouses are losing their swooshing beams

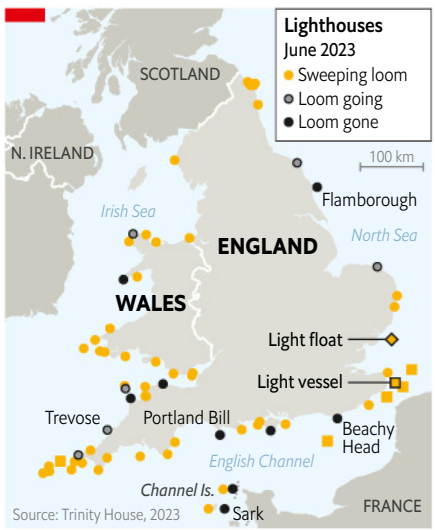
IF A CHILD were to draw a lighthouse they would draw Trevose. It is perfect. Round white walls above; rocky cliffs below; stormy seas beyond. And best of all is its beam. As the sun goes down the beam begins: dark-light-dark-light, all night, every night. For 110 years, Trevose's slowly turning beam has swept the sky, the sea, the land. And now it is stopping. On October 23rd Trevose's sweeping beam will be removed. A simpler LED light will come in its place. It will go on and off. But the moving beam will be gone.

Britain's lighthouses are losing their sweep. Many of the great beams that swooped over the seas and shores of England for over a century, almost more metaphor than mere maritime aid, are being phased out. One by one their massive, slowly turning lenses are being removed; one by one simpler flashing LEDs will wink on and off instead. Many will stay (as they are too tricky to replace); but many have gone already. The sweeping lights of Beachy Head and Portland Bill have gone; so too has Sark; so too has Flamborough.

It is astonishing that many of these lighthouses existed at all. Building 50-metre towers is hard; building them on ragged rocks in surging seas is "the most dangerous thing you can do", says James Campbell, professor of architecture and construction history at the University of Cambridge. Early lighthouses variously fell down, burnt down, or were washed away like sandcastles in storms. Then in 1756 a Royal Society engineer called John Smeaton decided to do things differently: instead of building his foursquare to the sea he would copy the trunk of the English oak which withstood storms so well. A new style of lighthouse—tall, tapering, curved—started to grow around the English coast; today 66 are in use in England and Wales, many so slender that they sway, like trees, in high winds.

They are just some lights among many. Landlubbers will almost never notice, but thousands of lights gird coastlines: some red, some green, some white; some flashing, some turning, some still; a coastal Christmas display, telling sailors where to go. They may be pretty but their placement is precise, for they act as trigonometric tripwires for sailors: sail too far this way and these lights won't line up; veer too far that way and that light will turn red.

And above them all are the lighthouses, though their grandeur is almost an optical illusion: the great sweeping beam of Trevose comes from a tiny 35-watt bulb you can hold in the palm of your hand. Their brilliance—in every sense—lies in their Fresnel lenses, the lighthouses' massive, slowly turning glass lenses (to picture their shape, imagine a pebble dropped into a pool, then its ripples frozen) which bounce light back and back and back again until it becomes a beam that travels nearly 40km out to sea. Each lens is vast—taller than a human and over three tonnes—but so delicately balanced on its bed of mercury that you can turn it—an elephant on ice—with the push from a single finger.



That mercury is why they have to go. Trinity House, which looks after the lighthouses of England and Wales, is trying to remove all mercury bearings from its properties; partly because it is poisonous and partly because a turning light has more that can go wrong. Lighthouses were not really intended to sweep anyway; the "loom" was only to provide a timed flash to let sailors know which light they were looking at. Each lighthouse, a maritime Morse, has its own pattern: Beachy Head flashes twice every 20 seconds; Trevose every seven-and-a-half. LEDs can do this without the drama. Take out the loom and you take out the poetry—but also, says Nigel Hare, head of navigational requirements at Trinity House, "a significant part of the risk" of their failing.

You also cut the cost. In 1996 William Nordhaus, an economist, compared how the cost of lighting had fallen since Babylonian times and found the answer: lots. An hour's work today buys 350,000 times as much light as in ancient Babylon. Trinity House is Mr Nordhaus's insight in nautical form: 40 years ago, it had 1,900 employees, including three lighthouse-keepers in every lighthouse; boatmen to bring them food and fuel and and pen-pushers to manage them. Today, it has 300. All British lighthouses are unmanned: open the doors of one and you are greeted by silence and the smell of engine oil alone.

Now, in Trevose, the energy required to brighten the sea will fall once more. The great beam will still search over the waves for a few months more, but the lens is coming out; by November it will have gone. The beam will circle one last time—sky, sea, land—then it, and an era, will be over. ■



A loom with a view

Sir Simon Gass

Fine judgments

Britain's departing spy boss on what his team got right—and wrong

As Vladimir Putin massed his forces on the Russia-Ukraine border in the winter of 2021, one man had the task of telling the prime minister what to expect next. Sir Simon Gass was the chair of the Joint Intelligence Committee (JIC), a role he held for over four years until retiring on June 28th. His team had hotly debated the question, he tells *The Economist*. "We produced, in one month, twice as much product as we'd produced in a previous year."

The forewarning of Russia's invasion was an intelligence coup for both America and Britain: arguably the most striking one since spies revealed that Soviet missiles had been placed in Cuba in 1962. It was as much about assessment as raw material, suggests Sir Simon. Weeks before the attack, his team judged that an invasion was "highly likely", a term which denotes 80-90% probability, in the language of intelligence analysis. France, Germany and other allies saw much of the same intel—though not every detail—but thought Mr Putin was bluffing. Sceptics "couldn't get past [the idea] that he wouldn't do something so stupid and destructive", says Sir Simon.

The JIC is a curiosity. America has 17 intelligence agencies. Each one does in-house analysis, so assessments from over the Atlantic can be a cacophony: a recent report on the origins of covid-19 is filled with dissenting views of rival agencies. British spooks gather secrets but do not formally analyse them. Instead the JIC, with a small team of analysts, convenes agencies and departments to hash out an agreed position in collegiate fashion.

The system failed disastrously in 2002-03 when the JIC, under pressure from Downing Street, produced faulty assessments about Iraq's weapons of mass destruction. That led to wholesale reforms, including professional training for analysts and more emphasis on dissenting views. The JIC chair now tends to be someone at the end of their career who is thus in a stronger position to speak truth to power. Sir Simon says he occasionally had to deliver "pretty unwelcome" assessments to ministers. "I've never felt myself put under inappropriate pressure."

One challenge for the JIC is the rise of open-source intelligence, or OSINT. Consider Yevgeny Prigozhin's march towards Moscow on June 24th. Russian military bloggers documented the insurrection in real time. Plane-tracking websites showed Mr Prigozhin's subsequent exile to Belarus. Analysts are now using commercial satellite images to look for his troops' encampments there.

Is a JIC still needed if ministers can get the bulk of their news from Twitter and Telegram? "The sheer quantity of high-class open source presents a problem for policymakers in its own right," says Sir Simon. "They can't read everything...even if all you're doing is distilling it down into a story for them, that in itself is important." Even open sources must be scrutinised by trained analysts. Technology is also helping to harness the deluge of data. A new cloud-based platform, INDEX, lets users access analysis from within the government and beyond. It uses natural-language processing, a form of artificial intelligence, to summarise documents and extract key information. "We're in the foothills of this," says Sir Simon, "but more is coming."

Britain's pre-invasion intel was notable not only for its prescience, but also its public profile. America and Britain released highly classified material to expose Mr Putin's plans. Is this a model for the future? Declassified secrets must be "a fair reflection of what's happening on the ground", warns Sir Simon, not just cherry-picked detail. They must also be used sparingly, only when the impact is "truly consequential", as it was last year. "If you're not careful, it rather cheapens the brand and loses the effect."

Not every judgment has been as successful as Ukraine. "We did not foresee, for example, the speed at which the Taliban took over in Afghanistan," admits Sir Simon. "Having spoken to the Taliban," he adds, "neither did they." But an enduring lesson from these crises, he says, is that those weighing up intelligence, often ambiguous and fragmentary, need to have "analytical courage" in stating a conclusion. "Poor analysis tends to march the leader up the hill, and then leave them there to draw their own conclusion." ■

Nutrition and height

The children are shrinking

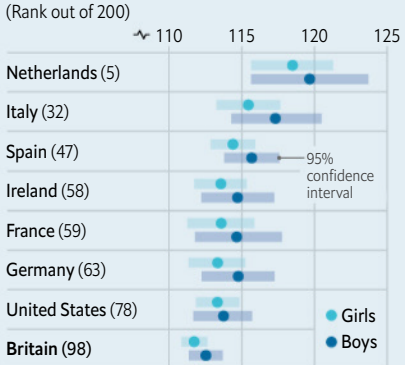
Bad diets have grim effects—made worse by soaring food inflation

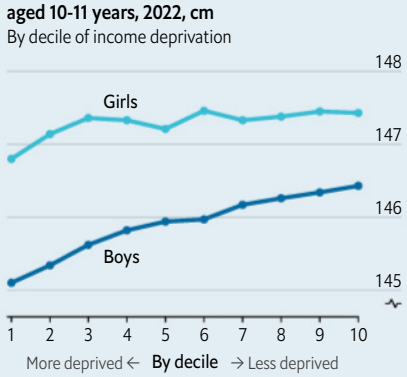
A report this week from the Food Foundation, a think-tank, notes the social cost of soaring food inflation: the poorest fifth of households would now need to spend half of their disposable income to eat a healthy diet. Instead, too many eat cheap, high-calorie but low-nutrition meals. That takes a toll. Years of poor diets lead to more obesity and affect children's heights.

A study in the *Lancet* in 2020 suggested British five-year-olds were already among the shortest in Europe (see left chart). That study, based on analysis of data up to 2017-18, indicated that average height started falling in 2014. Confirming that is not easy. Different factors could be at play, such as changing immigration trends: on average African and Caribbean children are taller than white children, while South Asians are smaller. Country comparisons may also be tricky, if ways of measuring differ.

But deprivation clearly goes in hand with stunting. A comparison of 10- and 11-year-olds (all white, to set aside any ethnic difference) finds the average boy in the most deprived area of Britain is now 1.3cm shorter than one in the least deprived area.

Not a tall story





Sources: NCD Risk Factor Collaboration; Department of Health and Social Care

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Fatima Cardoso
President
Advanced Breast Cancer Global Alliance



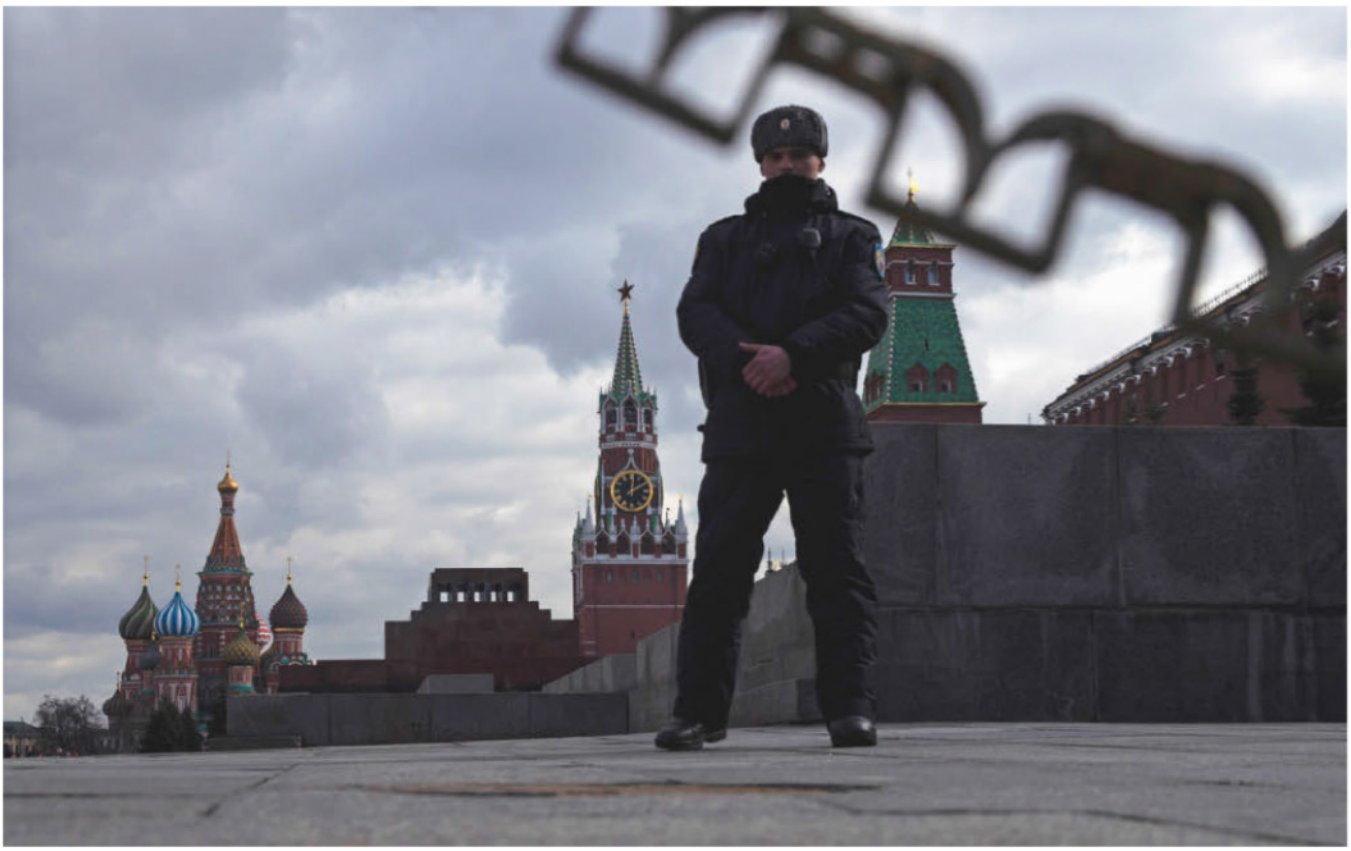
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Russia

Putin's time of troubles

The Wagner mutiny has exposed the weakness of the president

AFTER VLADIMIR PUTIN was anointed as Russia's president at the end of 1999, he compared the first post-Soviet decade to *smutnoye vremya*, the time of troubles—the uprisings, famine and invasions of the late 16th and early 17th centuries, before the rise of the Romanovs. He was casting Boris Yeltsin, Russia's first democratically elected president, as Boris Godunov, the Russian regent, and himself as the beginning of a new line of tsars, promising stability, prosperity and the restoration of the state.

On June 24th, as a convoy of armed militia charged at high speed towards Moscow, that promise—which was first broken years ago—looks more bankrupt than ever. Led by a violent warlord, Yevgeny Prigozhin, Wagner Group mercenaries drove from Russian-occupied Ukraine, shooting down several helicopters and a military plane, and killing perhaps 20 Russian troops along the way. A furious Mr Putin spoke about history once again, evoking the return of soldiers from the front in 1917 and "the tragedy of the civil war". This time, as he conjured up the spectre of the Bolshevik revolution, he looked not like the first Romanov, but the last.

Mr Prigozhin was Mr Putin's creation in more ways than one. He is an ex-convict who ran a restaurant in St Petersburg where Mr Putin entertained his guests; he supplied mercenaries who could be deployed with plausible deniability for the Kremlin across Africa and in Syria; and his trolls could tamper with Western elections. The funding, as Mr Putin himself admitted, came from the state.

Mr Prigozhin came into his own after the invasion of Ukraine in 2014. In last year's much bigger assault, its business grew. Wagner's equipment was supplied by the GRU, Russia's main intelligence directorate. It also lent the mercenaries some commanders, and Russian prisons provided cannon fodder. When Wagner captured Bakhmut, a town in south-eastern Ukraine, at the cost of some 20,000 Russian lives, according to Mr Prigozhin, Mr Putin deemed it effective.

However, since Wagner operated outside the regular army, Mr Putin has let it impose a heavy cost on Russia. Part of this is financial. As Russia's president has revealed, Wagner received $3bn, which is equivalent to 6% of national defence spending in the first year of war. At least $1bn of that went straight to Mr Prigozhin's catering firm, which supplied the army.

Worse was the corrosion of Russia itself. To protect his business, Mr Prigozhin built a populist political platform, pitching himself against the rich and lazy elites. Wagner's mutiny exposed the state's decay. Russia has lapsed into a violent, lawless place with undefined borders and rival private militias. Alexei Navalny, an imprisoned opposition leader who faces another 30-year sentence for charges including "extremism", expressed his view through his lawyers: "There is no greater threat to Rus-

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sia than the Putin regime."

Throughout his rule Mr Putin has talked up the state while, behind the façade, gutting its institutions, rules and laws. Having emerged from gangster-ridden St Petersburg, he looked to informal arrangements to get things done. Mikhail Khodorkovsky, a former tycoon who first challenged Mr Putin over corruption, says that his two main tools of political control are corruption and violence.

The system sponsored criminal interests; personal loyalty was secured with *kompromat* (blackmail). In this one-man system, Mr Putin was not so much a dictator as a kingpin, fomenting rivalries between his chiefs so as to make himself indispensable: the only man powerful enough to stand between order and chaos.

Mr Prigozhin's mutiny represents a public breakdown of that system. Mr Putin did not mind him occasionally attacking the army chiefs. It was a way of spurring them on. But when the conflict started to spill into the open, Sergei Shoigu, the defence minister, and Valery Gerasimov, chief of the defence staff, persuaded him to integrate Wagner into the regular structure. With Mr Putin's blessing, they ordered Mr Prigozhin to sign a contract with the army, and bring in his men and equipment by July 1st. Mr Prigozhin realised he was about to get cut off from state finance and maybe eliminated. He struck first, aiming to remove them instead.

A gifted communicator, he armed himself with the rhetoric of Mr Navalny and declared "a march for justice". In a video that he posted on the eve of his mutiny, he called it how it was: Donbas, which Mr Putin claimed to defend, had been robbed and plundered by Russia's officials since 2014, he growled. Nobody had threatened Russia. Instead of killing Ukrainian Nazis, who did not exist, Russian forces were killing ethnic Russians in the east of Ukraine. While Russian soldiers were dying and killing Ukrainians, Mr Shoigu was treating his guests to caviar and cognac. Mr Prigozhin said he was marching to Moscow to liberate Russia from crooks.

Mr Prigozhin's words rang true to many army officers and the public. Most of the officer corps did not join Mr Prigozhin's mutiny—but neither did they try to stop it, even as Wagner seized the military headquarters in Rostov-on-Don, the key hub for the war in Ukraine.

Indeed, Mr Putin's vast repressive machine terrorises Russian society by torturing peaceful protesters—including a man who died in custody in Rostov for handing out anti-war leaflets a week before the city was taken by mutineers who have not been charged. But it faltered when faced with armed soldiers and ex-convicts. The FSB intelligence service, heirs to Stalin's secret police, kept their heads down.



The army stayed in its barracks. The national guard were nowhere to be seen. Ramzan Kadyrov, Chechnya's warlord and strongman, boasted on Telegram that his fighters would "crush the rebellion", but they did not materialise. Even some propagandists suddenly lost their voice. Margarita Simonyan, the boss of RT, the state's main propaganda outlet, claimed to have spent the weekend on a river cruise, blissfully ignorant of events.

The rusty nail

Mr Prigozhin's mutiny may have lasted only 36 hours, but it has brought down a large part of the edifice of Mr Putin's state, leaving him humiliated and wounded in the eyes of his peers. The most serious blow was not the attempted coup—Mr Prigozhin probably never intended to take over the Kremlin—but what it revealed: the hollowness of Mr Putin's popular support.

Not a single person took to the streets to rally around the tsar. Instead, crowds of spectators came out to witness the excitement. They did not take anyone's side, but many observed the cowardice of the police and security services with evident glee. When Mr Prigozhin's car left Rostov, people treated him like a celebrity. The police returning to the streets were heckled.



Prigozhin and friend in happier times

A similar collapse of Mr Putin's authority emerged in jokes circulating on social media. A portrait of Mr Putin, who apparently fled to his residence near St Petersburg, was captioned: "I need a ride, not ammunition". And the joke went round that the biggest city taken by the Russian army in its war with Ukraine was Rostov.

Now that Mr Putin has shown such obvious weakness, nobody can say how fast his remaining authority will crumble, if it does so at all. Much depends on the factions close to power. Within the government there are broadly three: the army, the FSB and the technocrats who make things happen. Outside it are several clans of Mr Putin's cronies.

All of these have children with business interests and all of them are thinking about life after Mr Putin. Yet even if they see him as a liability, they may not be prepared to act. They do not just fear repression, although the danger of that is real. They also see Mr Putin as a nail holding their dysfunctional system together. The nail is rusty and bent, but if they pull it out, the whole lot will come tumbling down—and they along with it.

Despite this, Mr Putin will surely not be sleeping soundly. Many strongmen in his position would purge the army and the security services. But in a time of war he needs them. That is why he is more likely to unleash repression not against those who threatened him with arms, but against those who laughed at him, though there are reports (see next article) that General Sergei Surovikin, a former commander in Ukraine, has been arrested.

Already Mr Putin is trying to cover up his mistakes with spin. On June 27th he staged a display of victory over the rebels. He lined up roughly 2,500 men in parade uniforms in the historic Cathedral Square of the Moscow Kremlin. Just like a tsar, he descended along a long red carpet to address them from the steps of the armoury.

That square provides the setting for the concluding scenes of *Boris Godunov*, Pushkin's play about the time of troubles. After Godunov dies, boyars whip up a mob and his children are murdered. But then a feeling of revulsion passes over the crowd. A boyar roars at them: "Why are you silent? Let's hear you cry: Long live the Tsar, Dmitry Ivanovich!" But the mob has subsided. The play ends with the most famous stage direction in Russian literature: "The people are speechless." Andrei Zorin, a Russian historian at Oxford University, notes that the time of troubles often follows the end of a tsar's reign. In Mr Putin's case, it could yet bring the end about. ■

The front lines

A chance for Ukraine

KYIV

Can its army capitalise on the chaos in Russia's high command?

UKRAINIANS WATCHED with glee as Russia flirted with civil war on June 24th. They had hoped that Yevgeny Prigozhin's march on Moscow would tie up Russian troops and destabilise Vladimir Putin's regime. Alas, the insurrection proved short-lived. In recent days Ukraine's army has made modest advances in the east. But a counter-offensive that began on June 4th shows little sign of breaking through Russian lines in force any time soon, making some Western officials nervous.

Still, Ukraine has made some hay with the disarray next door. Its army made striking progress in the eastern town of Bakhmut, which Mr Prigozhin's Wagner Group had captured only last month after almost a year of fighting. Ukrainian forces now threaten to encircle Russian defenders from the north and south. Volodymyr Zelensky, Ukraine's president, hailed a "happy day" after visiting front lines on June 26th. Russia responded with a dinner-time missile strike on a popular restaurant in Kramatorsk on June 27th, 30km from the front line. It killed at least eight people, including three children.

The aim of Ukraine's offensive towards Bakhmut appears less to enter the city than to surround it. "We can now hit any point in the city and on the approaches...We are working to cut off their logistics," says Denys Yaroslavksy, a special-forces officer fighting to the north of Bakhmut. Serhiy Cherevaty, a military spokesman, confirmed that a number of brigades advanced around Bakhmut by around 2km on the day of Mr Prigozhin's mutiny.

The front lines shifted elsewhere, too. Ukraine's capture of territory in the western suburbs of Donetsk city was especially telling: troops crossed into territory which Russia had captured in 2015, during its first invasion of Ukraine. Farther west, in the Kherson region, Ukrainian forces established small bridgeheads above and below the partially destroyed Kakhovka dam. Some officials suggest that Ukraine may be able to conduct a more serious crossing of the rapidly desiccating Kakhovka reservoir in the weeks to come.

The question is whether the convulsions in Russia will have longer-lasting effects on the battlefield. One issue is the future of the Wagner Group. "What set them apart from the rest was that they just stormed forward," says one soldier in Bakhmut. "They didn't run because they would be shot if they retreated." The group had left the city in late May, replaced by low-quality Russian regulars, but Ukraine expected Wagner to return.

Some of its fighters have indeed gone back to Ukraine, where Mr Putin says they will be absorbed into Russia's regulars. Others, including the 2,500 to 5,000 troops who took part in the mutiny, may join Mr Prigozhin in Belarus. Alexander Lukashenko, that country's dictator, has offered the use of an abandoned military camp. Satellite images show tents cropping up 120km south-east of Minsk. "These are professional troops who could be used on diversionary missions," warned a Ukrainian government official. A military-intelligence source said the prospect of another Russian invasion from the north remained slim. "There may be a game to get us to move forces to the north," he suggested. "But we play games too."

The second issue is the impact on morale. A spokesperson for Ukraine's 56th Motorised Brigade, now fighting on the outskirts of the city, says her colleagues had observed new levels of "confusion" among their Russian counterparts since June 23rd. Their befuddlement is understandable. Mr Prigozhin now insists that he was never out to topple Mr Putin. But on the eve of his mutiny, on June 23rd, he publicly skewered Mr Putin's rationale for war by rubbishing claims that Ukraine had bombed the Donbas region for eight years and that Ukraine and NATO intended to attack Russia. The war, he said, was launched for the benefit of Russia's "oligarchic elite".



In angry remarks the next day Mr Putin himself drew an indelicate comparison to 1917, a year in which revolution at home contributed to the mutiny of Russian armies in France. Anthony King, a military sociologist at Warwick University, warns against over-egging the effect of Mr Prigozhin's subversive messaging. Troops tend to fight for several reasons, he says. A political cause is just one. Others include the bonds of loyalty within small units, and the effect of coercion—such as Russian "blocking detachments" which threaten to shoot retreating soldiers. Mr King says he is sceptical that "political shenanigans" will have much of an effect on platoons and companies at the tactical level.

The impact on Russia's high command, the third question raised by the insurrection, could be more severe. The divisions and intrigues inside Russia's leadership are becoming more apparent. On June 28th the *New York Times* reported, quoting American intelligence sources, that General Sergei Surovikin, the commander of Russian forces in Ukraine between October and January, had prior knowledge of the rebellion. Other reports suggest that he may have been arrested; he has not been seen in public since the the mutiny. The *Wall Street Journal* has also reported that Mr Prigozhin had intended to kidnap Sergei Shoigu, Russia's defence minister, and General Valery Gerasimov, the country's chief of general staff, during their visit to a region near Ukraine's border.

For now, Ukraine is making slower progress than many American and European officials had hoped. "It is still too early to tell how successful the ongoing counter-offensive will be," acknowledged General Sir Patrick Sanders, Britain's army chief, on June 26th, adding: "Russia has been a country of comebacks." Ukraine has yet to commit the majority of its new Western-equipped brigades. But its initial attacks against well-defended Russian positions, including minefields, have exposed its troops' limited training. They have taken heavy casualties, according to people familiar with the details.

Ukrainian commanders want to protect their depleted forces; Western advisers retort that a lack of shock and momentum will cost more lives in the longer term. A Ukrainian military-intelligence source complains that the country is moving as fast as it can, given the tools at its disposal. "Let me put this as diplomatically as I can," he says. "Certain partners are telling us to go forward and fight violently, but they also take their time delivering the hardware and weapons we need." ■

Greece

Back in triumph

ATHENS

Kyriakos Mitsotakis returns to the Greek prime minister's office

THE RIGHT-OF-CENTRE New Democracy (ND) party raced to an expected victory in Greece's general election held on June 25th. It took 40.6% of the vote to win a second four-year term, with the radical left-wing Syriza party trailing a distant second with 17.8%. The conservatives, led by Kyriakos Mitsotakis, were boosted by the 50 bonus seats they were awarded under a new version of the country's proportional electoral system. That gave Mr Mitsotakis, who was prime minister until last month when he made way for an interim leader following an inconclusive election, an overall majority of eight seats in the 300-member parliament. Eight parties are set to enter the new house.

The second general election in just over a month saw the gap between ND and Syriza widen marginally, a sign of optimism about the chances for a sustained economic recovery against a backdrop of political stability. At the previous poll, on May 21st, under a different system with no bonus seats, ND finished five seats short of an outright parliamentary majority. Mr Mitsotakis believes that his eight-seat majority this time will be enough to push through further reforms.

ND's four years of governing for the most part competently and providing generous handouts, during both the covid-19 pandemic and last winter's electricity price rises, apparently reassured voters worried about joblessness and soaring prices, according to pollsters. Greeks were horrified by a train crash in February, in which more than 50 people, mostly youngsters, were killed as a result of a botched signal. Earlier this month a ship was wrecked, drowning several hundred Egyptian, Pakistani, Syrian and other asylum-seekers, triggering claims that Greece's coastguard had been negligent. But Mr Mitsotakis seems to have brushed these disasters aside.

Yet the emergence of two newly registered far-right nationalist parties, the Spartans and Niki (Greek for "victory"), which comfortably cleared the 3% threshold for entering parliament, is giving observers some pause for thought. Support for the Spartans jumped in the last few days of campaigning, according to opinion polls, after a jailed former leader of Golden Dawn, an outlawed fascist party, tweeted that he would back them. A third right-wing group, the pro-Russian Hellenic Solution, also got seats in parliament.

Pundits note that far-right splinter groups have a record of undermining ND politicians, especially in the provinces. Together the three hard-right parties racked up almost 13% of the vote. On the campaign trail in northern Greece, Mr Mitsotakis, the son of a centrist former prime minister, appealed to ND supporters not to break ranks. Not all were listening, it seems.

Syriza's dismal performance at the polls reflects a wider malaise among left-wing parties across western Europe that have been losing ground to conservatives and populists. After a third consecutive defeat, the political future of its leader, Alexis Tsipras, who served as prime minister from 2015 to 2019, looks in grave doubt.

Once the hero of Europe's radical left, Mr Tsipras pushed Greece to the brink of leaving the euro, then reversed course and carried out harsh but effective measures imposed by Brussels, preparing the way for Mr Mitsotakis to steer Greece back to normality. But Mr Tsipras has lost much of his former support, for example from older Greeks, after ND cut delays in awarding pensions, while a majority of new voters—traditionally fertile ground for the left—pragmatically backed the conservative choice. The veteran Panhellenic Socialist Movement (Pasok), hoping to become the official opposition, made only modest gains, capturing 11.8%, still well behind even the battered Syriza.

Mr Mitsotakis's team promises a flood of Greek and foreign investment in his second term. But there are warning signs, too: several economists note that Athens is suffering a property bubble. Prices have almost reached levels last seen in 2008 before the financial crash. The new government will have to tread cautiously. ■



A majority for Mitsotakis

Kosovo

Rumbling again

This time ethnic Albanians are more to blame than the Serbs

IT WAS "AN escalation on top of a previous escalation," said Gabriel Escobar, an American diplomat charged with helping the EU to calm relations between Serbia and Kosovo, a republic of under 2m people which most of the Western world recognises as an independent country but which Serbia still considers its own land. On June 14th three Kosovo policemen were arrested by Serbian police, though the two sides dispute which side of the border they were on. On June 26th they were freed. But this latest of many Kosovo-Serbia crises persists.

Kosovo police have been arresting local Serbs who, they say, have attacked NATO peacekeepers and journalists. The police also claim to have found a big weapons cache in the northern bit of Kosovo, where most people are ethnic Serbs. Ethnic Albanians are a large majority elsewhere. American and EU diplomats are crisis-fighting, afraid that another violent incident could blow up into a bigger conflict.

Last November Kosovo's Serbs resigned from the country's institutions, including the police. Elections in the Serb-populated north to replace the mayors who had quit were boycotted by Serbs, so ethnic Albanians were elected in their place, often by only a handful of voters. When the new mayors tried to move into their offices in May, local Serbs protested and a mob attacked NATO peacekeepers trying to keep demonstrators back. The Serbian government in Belgrade had hitherto kept a tight grip on Serb paramilitary-cum-criminal ▸▸



groups in northern Kosovo, but has recently seemed less active in doing so.

Mr Escobar and Miroslav Lajcak, the EU's negotiator, had achieved a breakthrough in the spring by securing an agreement to implement a plan whereby Serbia would treat Kosovo as a state in all but name. In return, Kosovo's tiny Serb minority would be given a form of autonomy, which they had been promised in an earlier agreement, in 2013.

But Serbia broke the new agreement by trying to block Kosovo's accession to the Council of Europe. America and the EU then asked Albin Kurti, Kosovo's prime minister, not to physically install the ethnic-Albanian northern mayors in their town halls. He did it anyway. Backed up by ethnic-Albanian policemen, he is changing the status quo of the past 20 years, alarming Kosovo's Serbs. A former political prisoner in Serbia, Mr Kurti has found that playing hardball pays dividends.

Russia's invasion of Ukraine is changing the political landscape. Serbia's president, Alexandar Vucic, though declining to join sanctions against Russia, is letting Serbian companies send weapons to Ukraine. America's ambassador to Serbia lauds it as a "better and better partner". So it is Mr Kurti who is getting the blame.

One diplomat says he doubts Mr Kurti is likely to keep his promise of autonomy for Kosovo's Serbs and suggests that the crisis in the north may help him disguise the fact that he has failed to fulfil many of his pledges elsewhere. Trouble in Kosovo may also be a welcome distraction for Mr Vucic, since he faces demonstrations at home.

For 30 years America has been the Kosovo Albanians' greatest benefactor. In 1999 an American-led intervention by NATO ended Serbian rule in Kosovo. Now not only have the Americans come out against Mr Kurti, but so has Edi Rama, the prime minister of neighbouring Albania. Mr Kurti is unperturbed. America and the EU have begun to impose sanctions on Kosovo, but not on Serbia. There is no end to this crisis in sight. And the threat of violence on a wider scale is real. ■

Spain

Back to the centre

MADRID

Spain is heading back to two-party dominance, but not fast enough

SINCE 1982 Spain has been led by only two political parties, the centre-left Socialist Workers' Party (PSOE) and the centre-right People's Party (PP). Those first three decades of restored democracy were the good old days, say many. Since the financial crisis of 2008, when a property bubble spectacularly burst, the party system has splintered. The radical-left party Podemos ("We Can") arose out of fury with political and financial elites. Regional separatism gained momentum in Catalonia beginning in around 2012. And Vox, a hard-right party critical of immigration and cultural change, spun off from the PP.

All this has made stable government much harder. The socialists currently govern with Unidas Podemos, a fractious grouping that includes Podemos itself. Lacking a majority even so, the government has repeatedly had to offer favours to Basque and Catalan separatists to get its laws and budgets passed. That has infuriated many voters. The PP stormed to victory in May's regional and local elections, leading Pedro Sánchez, the prime minister, to call a snap election for July 23rd.

The conservatives have been able to watch smugly as the left tears itself to pieces. Mr Sánchez has bluntly blamed Podemos's policies on gender and identity politics for alienating traditional (and especially male) voters. Podemos did so badly in May's elections that it has had to limp into a new left-wing formation called Sumar, formed by the popular labour minister, Yolanda Díaz. Sumar subsequently refused to put one of Podemos's most recognisable faces—Irene Montero, the deeply unpopular minister for equality—on July's electoral lists. Podemos once promised to "storm the heavens" and overturn Spain's politics. It is now a much-diminished junior partner to a junior partner.

But the PP's leaders have not had long to enjoy the moment. Last week was its turn to start wrestling with potential coalition partners in the regions and municipalities it had won. It has outright majorities in only a few of those places, notably in Madrid. In most others, it can hope to govern only by joining up with Vox—either by negotiating to win its support for a minority government, or by taking it in as a full coalition partner.

In Valencia, a bellwether eastern region, the PP duly made a deal; Vox took several government jobs, making a former bullfighter vice-president. But shortly thereafter María Guardiola, the PP leader in Extremadura, in the south-west, stormed out of negotiations with Vox, saying her conscience could not allow her to deal with a party that "denies *machista* violence...that dehumanises immigrants, that throws the LGBT flag in the bin." She then veered again, telling party members she would in fact have to deal with Vox.

Alberto Núñez Feijóo, who took over as leader of the PP last year, has been trying to drag it to the centre. After the Extremadura imbroglio he was left looking off-balance about his party's relations with Vox. In interviews he can only say, with increasing impatience, that he aims to win an absolute majority (which no poll shows him likely to do), and that he is loth to put up with lectures from a prime minister who cut deals with Podemos and separatists.

In November 2019 only half of the votes went to the two big parties. Now they have a combined 60% in the opinion polls, with Sumar and Vox each polling at around 13-15%. Spaniards seem to want centrism and stability back. But even so, no party currently appears to have enough support to win an outright majority.

Mr Feijóo promises a fix: let the party that wins the most votes form a government, even if it is in the minority, removing the need to resort to the extremes. Mr Sánchez has refused that offer. He seems keen to campaign against the prospect of Vox being brought into government.

So Spain seems doomed to more coalition-wrangling after the elections, with at least one party that is distasteful to a great majority of Spaniards likely to be in government. That is because there is one tie-up no one even bothers to speak of: though most voters are near the political centre, Spain (unlike, for instance, Germany) has no tradition of grand coalitions. ■



Sánchez weighs his options

Charlemagne | Hotch-potch politics

European politics has gone from complicated to impenetrable



THE IDEA of a political "left" and "right" originated in revolutionary France: members of the freshly minted National Assembly picked their seats according to their fealty to either the king (they sat on the right) or the people (on the left). For as long as the idea of a political spectrum has existed, there have been complaints that a single axis is inadequate to reflect the complexity of multifaceted civic matters. Still, the idea has proved enduring, even as the meaning of being left- or right-wing has evolved. For people not obsessed with politics, the shorthand provides an adequate framework for understanding the values of those running the country. Care about locking up criminals, rewarding work, defence spending and family values? Tick this box. You favour better public services, giving people second chances, foreign aid and social justice? Tick that one. Other options available on request.

From America to India and Japan, voters in democracies the world over will recognise such polarising partisanship. Often there is too much of it. Europe now has too little. Its political waters are muddied as never before. Power in many of the EU's 27 member states has become increasingly fragmented. Beyond left and right, centrist liberals now vie for office, as do greens, on top of populists on either fringe of the spectrum. Bring this electoral jumble up to the quasi-federal European level, where most big decisions are made nowadays, and it becomes impossible to work out what ideas those running the show have in common (not to mention that it can be hard to figure out *who* is running the show). Across Europe, coalitions have long been a cumbersome necessity to form national governments. At the EU level, you now have coalitions built atop coalitions.

European politics has become like quantum physics: anyone who claims to understand it doesn't. It was not always thus. In 2010, nine of the 12 biggest countries in the EU had governments led by the centre-right; the rest were in the hands of the centre-left. The EU institutions in Brussels were also controlled by the right, starting with the European Commission, the bloc's executive arm. When the continent's big beasts came together—Germany's Angela Merkel and France's Nicolas Sarkozy, or José Manuel Barroso, the commission boss—they thought in broadly similar ways. They spoke the same language, albeit in different tongues.

Even then, decision-making could be tortuous: being right-wing in Poland is not quite the same thing as being right-wing in Portugal, and national interest can divide more than ideology unites. Nonetheless, when deals had to be struck, for instance on how to bail out Greece, a common intellectual framework existed. You might not have liked Europe's fiscally rigid ways, say, but you understood where they came from. EU leaders met regularly (as they did this week, starting on June 29th). The thorniest decisions were quietly pre-arranged at meetings of the centre-right leaders that immediately preceded the summits.

But look at the 12 biggest EU countries these days, and no clear pattern emerges. Four political families—centre-right, centre-left, liberals and a populist conservative bloc—now hold sway in three countries each. Getting Germany, Italy, France and Sweden to agree on much was hard enough in 2010, even when their leaders hailed from the same political group. Now Germany has a three-way coalition led by a centre-left chancellor, France a liberal president with no parliamentary majority, Sweden a right-wing prime minister backed by hard-right populists, and Italy vice versa.

If there is a convincing narrative of what is going on in European politics, Charlemagne has yet to hear of it. The centre-right is not the force it once was, but nor is it completely doused: Kyriakos Mitsotakis triumphed in Greece last weekend, and the right is odds-on favourite to win in Spain on July 23rd as well as in Germany in 2025, displacing left-led governments in both cases. Liberals have probably the most prominent EU leader at the moment in Emmanuel Macron, but he has no clear succession plan. Think socialism is kaput? In France and Poland perhaps. But a third of EU citizens live in countries led by centre-left heads of government, more than any other political group. Populists, especially on the right, for a while were thought to be unstoppable at the ballot box; the hard-right is now second in the polls in Germany, and first in Austria. In other places, such as the Czech Republic and Slovenia, they look a spent force.

Could elections for the European Parliament in a year's time provide a sense of the political direction in which Europe is heading? Probably not. There also, two parties used to dominate: the centre-right (European People's Party) and centre-left (Socialists & Democrats). Now they control, respectively, a quarter and a fifth of the seats: not enough for a majority. Both are likely to lose ground next June. In any event, few people look to the parliament—a place where regulation is finessed, not high politics crafted—when it comes to setting a pan-European direction.

All directions, please

Europe's political mush has not mattered so much in recent years, dominated as it has been by one crisis after another. Fighting covid-19 was a multipartisan affair. Dealing with the pandemic's aftermath was mostly consensual, too. Everyone from small-state conservatives to hardened communists agreed it was time for government to spend lavishly to keep the economy afloat. The war in Ukraine united Polish populists and lefty Finns by way of liberal Dutch, all as keen as one another to combat Russian aggression.

But politics cannot be suspended for ever. If Europe is to feel like a single polity, as its proponents advocate, citizens must grasp what they are signing up for. Right now they do not. The Punch-and-Judy politics of two-party states has its drawbacks, but the clarity that emerges from such elections is enviable. America will go to the polls in 2024, and emerge with a government either of the right or left. The EU will keep opting for all-of-the-above. ■



Industrial policy

Going nuclear

IDAHO FALLS

The Biden administration is pouring billions of dollars into nuclear energy. The payoff is far from certain

REBUILDING AMERICA'S ECONOMY

After the second world war, America's new Atomic Energy Commission was on the hunt for a remote site where engineers could work out how to turn the raw power contained in a nuclear bomb into electricity. They settled on the desert shrubland of south-eastern Idaho. Towns in the area fell over themselves to compete for the headquarters of the reactor test site, seeing it as a catalyst for growth. Idaho Falls, then a city of 19,000, launched what it called "the party plan". Locals wooed officials at lunches, cocktail parties and on city tours. The guest lists included women who were "as winsome as possible" to make the town seem attractive to the (male) engineer in charge of choosing.

The plan worked. Nearly 75 years later, Idaho Falls (population 67,000) remains home to the test site's successor and the centre of nuclear-power research in America: the Idaho National Laboratory (INL).

Now America's nuclear-power industry is partying again. Nuclear is a carbon-free alternative to other sources of steady baseload power, such as coal and gas. Nuclear reactors are much smaller than wind or solar farms, which sprawl across landscapes and attract legal challenges from groups with other ideas on how the land should be used. The need to limit greenhouse-gas emissions has spurred liberals, historically wary of nuclear's toxic-waste problem, to rethink their stance. In America 46% of Democrats favour using nuclear energy for electricity, the highest proportion in a decade. Republicans have long approved of it.

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But the biggest reason for celebration is the billions of dollars the Biden administration is pumping in through the Inflation Reduction Act (IRA), which made nuclear power eligible for the same tax credits as renewables like wind and solar; and the Infrastructure Investment and Jobs Act of 2021, which created a $6bn fund to help keep existing plants running. The administration is even offering developers a bonus tax break if they build reactors in fossil-fuel areas, such as a coal-mining town, to funnel workers into green jobs.

Boosters predict an atomic renaissance after decades in the dark ages. Nuclear provides about 19% of America's electricity generation, but at least 13 reactors have been shut down since 2013 alone. California had planned to shutter its last remaining nuclear plant, Diablo Canyon, which provides 9% of the state's power. It is now using a $1.1bn grant from the infrastructure law to try to extend the plant's life. West Virginia repealed a ban on new reactors. Bill Gates, who founded TerraPower, a nuclear startup, has expressed interest in building a plant there. The Nuclear Energy Institute (NEI), a lobby group, counts 12 states that passed laws in 2022 to help keep plants running, and attract new ones.

The Department of Energy (DOE) is praying that the party turns into a fully fledged rager. A recent report from the DOE suggests that America could triple its nuclear-power generation, to 300 gigawatts, by 2050, the year by which the Biden administration has pledged to reach net-zero emis-

sions. This push would be driven by the development of new advanced reactors that the DOE is helping to fund.

But three massive difficulties could dampen the mood. The first is cost. Because their designs are so technical and take years to get approved, nuclear plants are extremely expensive to build. The DOE estimates that nuclear reactors need to cost about $3,600 per kilowatt to be built quickly around the country. But first-of-their-kind reactors are costing anywhere from $6,000 to $10,000 per kilowatt. And an era of elevated interest rates will only complicate matters. NuScale, a startup building a small modular reactor on INL's campus, recently said that the cost of its project would surge by 75%, to $9.3bn, because of inflation and higher interest rates.

The second question bedevilling some nuclear startups is where they are going to get fuel. Before the uranium from mines can be plugged into a reactor, it needs to be processed. Russia dominates uranium processing, and is the world's only commercial supplier of high-assay, low-enriched uranium (HALEU). Ever since Russia invaded Ukraine last year, American lawmakers and executives have felt queasy about buying Russian uranium. Republicans in Congress have introduced several bills to reduce imports. But TerraPower needs HALEU for the reactor it is planning to build in a coal town in Wyoming. In December the firm said the plant would be delayed by at least two years for lack of fuel. The DOE is scrambling to provide firms with an alternative, and plans to release a national uranium strategy this year.

Add to that the dilemma over what to do about spent fuel. Nevadans remain wary that the federal government will force them to accept the country's uranium waste at Yucca Mountain, where an underground repository was long planned. Instead Jennifer Granholm, the secretary of energy, said recently that the agency will spend $26m to search for communities willing to host the waste until the government can find a permanent solution. But even a temporary home could take up to 15 years to build.

Third, officials are worried about finding enough workers to build and operate new nuclear plants. The DOE reckons that America will need an extra 375,000 workers to meet its 2050 target. "The very near term is going to require the skilled trades: electricians, metal workers, fabricators, construction," says Kathryn Huff, the head of the DOE's Office of Nuclear Energy. The need for reactor operators and nuclear engineers will come later.

It is an exciting prospect for a president hellbent on reviving American manufacturing. "Jobs are coming back, pride is coming back...This is a blue-collar blueprint to rebuild America," said Mr Biden in his latest state-of-the-union message. But in a tight labour market it is unclear where all those workers will come from.

Ask officials and industry people, and the success of American nuclear energy is not just crucial for tackling climate change, but also for national security. America is competing with Russia and China to be the world's supplier of advanced nuclear technology. Of the 40 reactors being built since 2015 that use Russian technology, 27 are outside Russia's borders, according to NEI. China has more reactors under construction than any other country (see chart). America's State Department has set up partnerships with more than a dozen countries to help them fund and develop nuclear-energy programmes and, eventually, small modular reactors.

The next decade is crucial: four small modular reactors are scheduled to come online by 2030. Cost overruns, permit delays and fuel shortages can easily halt construction. The fate of NuScale's Idaho plant may be decided this year. The electricity wholesaler in Utah that is developing the reactor with the startup wants its customers, which are small towns in the region, lined up to buy 80% of the plant's power by the end of the year. It is currently at 26%. If it can't hit the target, says Mason Baker, the wholesaler's chief executive, "we're able to terminate the project".

Nuclear energy has not spurred this much excitement since Idaho's towns were competing for the reactor test site in 1949. But sceptics have heard industry leaders crow about a nuclear renaissance before. "We're now on the fourth or fifth nuclear renaissance," warns David Schlissel of the Institute for Energy Economics and Financial Analysis. There might yet be reason to celebrate, but the bubbly should probably be kept on ice. ■

Shine a light for the whole world over

Nuclear reactors under construction
At June 22nd 2023



Source: International Atomic Energy Agency

Guns and the Bay State

A bizarre bazaar

LITTLETON

Massachusetts is not the gun-control beacon it once was

NEVER BEFORE had your correspondent been forcibly escorted out of a shop. But when sellers at the Littleton Mill, America's largest cluster of federally licensed gun dealers, realised they had a reporter in their midst they swiftly kicked her out. Just 45 minutes' drive north-west of Boston, the old textile mill has operated—in a county that Joe Biden won by a 45-point margin in 2020—for a decade. But tucked behind a fast road, with no signs visible from the street, most locals did not know it existed. That changed when the *Boston Globe* published an article on it in September. Five months later the Feds raided the place, following the arrest of a 28-year-old dealer for selling guns to a straw buyer that were traced to the scene of a South Boston shooting.

To many the Mill seems out of place. Progressives laud Massachusetts for its stern gun-control regime. A 1998 bill banned the sale and possession of new assault weapons and raised the penalties for gun crimes. To avoid steep fines dealers had to make their guns childproof, fit them with state-approved trigger locks and give customers safety warnings. The number of licensed dealers fell from 950 to 469 between 2000 and 2001. Today prospective gun-owners must jump through hoops to get licensed, including applying for a permit with the local police, who can deny requests at their discretion. (An elderly cou-



Guns en Mass

ple was reportedly refused one after saying that aliens had visited their home.)

Massachusetts now boasts the third-lowest gun-ownership rate in the country, ahead of only Hawaii and New Jersey. Few guns means fewer gun deaths. In 2020, 3.7 in every 100,000 Bay Staters died by gunfire; nationally 13.6 did.

That could change as the appetite for guns grows. Firearm sales in Massachusetts doubled to 140,000 in the decade to 2021; local dealers sold 30,000 more handguns in 2020 than in 2019. More people who used not to shoot have taken to it: Boston Pink Pistols, for example, now teaches LGBT folk to wield handguns for self-defence. The rise mirrors a national trend. After a dip in gun sales at the start of Donald Trump's presidency, demand surged in the pandemic.

New evidence suggests that Massachusetts's gun-control rules are not being enforced. A *Boston Globe* investigation of 112 police stations charged with inspecting gun dealers found that few had been doing their job. More than half had not inspected gun shops in their jurisdiction since 2017. Such inattention may be what allowed the Littleton Mill to grow from three to more than 80 dealers in just eight years.

The legal lines can be blurry. In one Littleton shop, glass cases hold shiny pistols behind a handwritten "PRE-BAN" sign. Though assault weapons were outlawed in 1998, those that were made before the ban can still be lawfully sold. But police have a hard time distinguishing between old and new models, says a former chief. In another room a dealer offers to take apart an AR-15 (the mass-shooter weapon of choice), sell it to a customer and give him instructions to remake it at home, which can be simpler than building an IKEA bookshelf. That could be enough to skirt the assault-weapons ban.

This week a Massachusetts House Democrat introduced an omnibus gun-control bill that would require that gun parts be serialised, create a database for cops to track them and forbid carrying in schools and while drunk. (Gun lobbyists nicknamed it "The Lawful Citizens Imprisonment Act".) The state's once-pioneering assault-weapons ban now looks deficient.

And the state remains a haven for gunmakers. Since George Washington chose to store muskets and cannons for the Revolutionary War in Springfield, the region, nicknamed "gun valley", has been a hub for producers. Firms brought revenue and jobs to the commonwealth; state tax breaks helped them expand. Researchers at Drew University estimate that between 2000 and 2020, 21m firearms, 16% of the country's new stock, were made in Massachusetts. That is more than in any other state. A 2021 bill to outlaw the manufacture of assault weapons died in committee. ■



Student entrepreneurs

Gen C-Suite

CHICAGO

Undergraduates are hawking themselves as consultants

THE EMAIL had a businesslike tone. From a "client recruitment director", it was "reaching out" to offer *The Economist* services. In the next sentence, the word "leverage" was used as a verb, relating to a "perspective". It concluded with a question: "Would you be able to hop on a 15-minute call"? Yet it stood out from the guff that clutters journalists' inboxes for one reason: it came not from an established firm but from an undergraduate economics student at Yale University. The perspective to be "leveraged" was that of "Gen Z", a marketing term for people now aged from roughly 11 to 26. The offer was made on behalf of the Yale Undergraduate Consulting Group, a student club with around 60 members.

Postgraduate students have long provided paid services to corporate clients. But over the past decade or so, undergraduate "consulting clubs" have proliferated. The idea is to band together and offer to do work for firms for a fraction of the cost of hiring regular consultants, and in the process learn a lot about business. Like real consultants, they pitch for clients, cold-calling or emailing. Some student clubs have a charitable bent: 180DC, a network of clubs founded in 2007 that has spread to scores of universities around the world, targets "social-impact organisations". Others are more mercantile: Milan Singh, the sender of the Yale email, says the group he belongs to has also worked with several large companies, doing jobs like market research for fees.

Students quickly adopt the jargon of the industry they are aping, appointing themselves "project managers", gathering information from "subject-matter experts" and, at the end, producing "deliverables" for clients: typically in the form of slide presentations. Work is carried out under legally enforceable non-disclosure agreements. All this is done alongside normal studies.

It consumes plenty of time. Alexandra Koullick, a 21-year-old member of a 180DC-affiliated club in Berkeley that was founded in 2016, says she puts in up to ten hours a week of unpaid work for her clients. Practical skills, like managing spreadsheets, are passed down by "bigs", as in "big brothers", to new members.

Why devote a chunk of precious undergraduate years to this? The students defend it creditably. Ms Koullick joined as a way to make friends at a time when a normal university experience was impossible because of covid-19. "It was a big family of folk to spend time with," she says. Mr Singh points out that the fees his group earns pay for great parties. Both extol the benefits of being able to experiment with different types of work before they commit to a career.

There are potential financial rewards, too. Clubs provide a fast track to well-paid jobs later. John Paul Rollert, an academic at the Booth Business School at the University of Chicago, notes that uninhibited ambition in America's youth is not new: "These kids are going to make a fortune," he says.

Lost-love lawsuits

The heart of the matter

NEW YORK

The legal anachronism behind a statehouse drama in North Carolina

HEARTACHE IS MESSY; marriage is made of compromise. How potentially satisfying, then, to see all the mess and ambiguity turned into something simple and unequivocal in a lawyer's brief. In North Carolina and a handful of other states, a jilted spouse can indeed sue for heartbreak.

Under an archaic tort called "alienation of affection", a third party—someone outside the marriage—can be liable if shown to have intentionally ruined the marital bond. Paramours are the most common target, though Alice Stubbs, a divorce lawyer in Raleigh, the capital of North Carolina, says plaintiffs have sued their mother-in-law. Anyone who has sex with a married person is liable under another tort called "criminal conversation".

The "heart-balm" torts are at the centre of a drama captivating the North Carolina capitol. On June 18th Scott Lassiter, an assistant school principal, sued Tim Moore, the speaker of the state House, for having an affair with his wife, who works in the state government. Mr Moore, the lawsuit says, "deprived [him] of Mrs Lassiter's love, society, companionship and consortium and proximately caused [their] marital separation". Mr Lassiter is seeking at least $200,000 in damages. Mr Moore says it was his understanding that the Lassiters had already separated, which, if true, could get him off the hook. The speaker wants his colleagues in the state legislature to ban lawsuits of this sort.



Capitol punishment

North Carolina has had some eye-popping judgments. In 2011 the new wife of a trucking magnate was ordered to pay $30m to his ex. Such lawsuits are more common than you might think: last year 185 were filed across the state for alienation of affection. And the threat of one, to extract a settlement and keep things confidential, is even more widespread.

Success depends on how rich the target is. In that way the lawsuits resemble legalised blackmail. They also afford leverage in divorce proceedings. A husband who wants to spare his mistress a lawsuit may give his soon-to-be ex-wife more alimony, child support or the beach house if she waives her right to sue.

The torts date from a time when a wife was considered her husband's property; the idea was that he should be able to sue anyone who seduced her or "stole" her affections. Starting in the 1920s most states stopped recognising the wrongdoing, owing partly to that misogynistic provenance. (North Carolina, by contrast, gave wives the opportunity to sue too.) Others dislike the idea for its woolly legal standard. To claim injury, plaintiffs must show that there existed "some degree of love and affection" in the marriage. But how to prove that in a rigorous way?

Then there is the cost—in acrimony and embarrassment—of allowing such lawsuits. People considering a complaint must prepare to be reminded of everything that they ever did wrong in their marriage. Defendants will dredge it all up. Ms Stubbs urges jilted clients to consider how many sunsets they have left and whether they want to spend them battling their ex's lover in court. Why not write them a thank-you letter instead? ■

The independent state legislature theory

A victory for democracy

NEW YORK

A fringe theory gets a chilly reception from the Supreme Court

IN THE RUN-UP to the 2020 presidential election—and in its fraught denouement—supporters of Donald Trump turned to a novel theory to boost their candidate's chances of staying in the White House. Citing the "independent state legislature" theory, they sought to block state-court rulings in Pennsylvania and elsewhere that made voting easier during the covid-19 pandemic by, for instance, extending deadlines for mail-in ballots. And after election day, legal advisers drew on the notion in cooking up a radical scheme to replace electors in states won by Joe Biden with "alternative" slates for Mr Trump.

On June 27th, in *Moore v Harper,* the Supreme Court threw cold water on the theory behind these moves: the idea that state legislatures have near-absolute authority, unchecked by state courts, to set the terms of federal elections. As part of an end-of-term rush for the court—several big cases remained to be decided by June 30th, including the fate of affirmative action in university admissions and Mr Biden's student-debt-relief plan—John Roberts, the chief justice, wrote for the three liberal justices (Ketanji Brown Jackson, Elena Kagan and Sonia Sotomayor) and two of Mr Trump's picks (Amy Coney Barrett and Brett Kavanaugh). Clarence Thomas wrote a dissent that was joined in part by Samuel Alito and in full by Neil Gorsuch.

Moore began in North Carolina. In 2021 the state's Republican-dominated legislature drew an electoral map giving Republicans the upper hand in ten of the state's 14 seats in the House of Representatives. Given the state's near-even split between Republicans and Democrats, North Carolina's Supreme Court found this aggressive gerrymander inconsistent with a guarantee in North Carolina's constitution that all elections "shall be free". It ordered experts to redraw the district lines. In 2022, using a fairer map, Republicans and Democrats won seven seats apiece. But Republican legislators balked, saying the federal constitution should have stopped the North Carolina Supreme Court from interfering.

The hook for their complaint appears in Article I of the constitution, which says that the "times, places and manner of holding elections" for Congress "shall be prescribed in each state by the legislature thereof". North Carolina Republicans argued this means no state entity may constrain a state legislature performing the "federal function" of election regulation.

Chief Justice Roberts roundly rejected this contention. "Since early in our nation's history", he wrote, "courts have recognised their duty to evaluate the constitutionality of legislative acts." The federal constitution might empower state legislatures to make laws governing elections, but it "does not insulate state legislatures from the ordinary exercise of state judicial review". Citing Supreme Court decisions stretching back more than a century, the ▸▸

chief justice explained how legislatures have never been autonomous actors when it comes to election law. "The reasoning we unanimously embraced" in a 1932 case, he wrote, "commands our continued respect." State legislators "may not 'create congressional districts independently of' requirements imposed 'by the state constitution with respect to the enactment of laws'."

Just eight years ago, the Supreme Court decided that Arizona's voters were authorised to outsource the legislature's redistricting tasks to an independent commission. That decision was 5-4, with Chief Justice Roberts writing a spirited dissent. But his vote in 2015 did not stop the chief from relying on the precedent to confirm that legislatures are "subject to constraints set forth in the state constitution".

In his dissent, Justice Thomas argued that the court lacked jurisdiction to consider *Moore* because the North Carolina Supreme Court (after recently gaining a Republican majority) has reversed its ruling on the constitutionality of the warped map. The case is "indisputably moot", he wrote. But the longest-serving and most conservative justice on the court also rejected the majority's reasoning on the merits. The court "offers no clear rationale for its interpretation" of the salient constitutional clause. "I worry that today's opinion", Justice Thomas warned, "portends serious troubles ahead for the judiciary."

Some observers on the left think Justice Thomas may have a point. In rejecting full autonomy for state legislatures, Chief Justice Roberts's opinion also denies state courts complete deference from federal courts. Without laying out a standard, the majority holds that state judges may not "unconstitutionally intrude upon the role specifically reserved to state legislatures". There are limits, in other words, to what state courts can do when policing state legislatures' handiwork with elections—and federal courts will keep watch. From the right, Justice Thomas is concerned that the ensuing uncertainty will give federal judges little direction in "some of the most politically acrimonious and fast-moving cases". From the left, Rick Hasen, an election-law expert at the University of California, Los Angeles, worries that it "sets up a Supreme Court power-grab down the line".

But these fears may be overstated. All three of the lawyers arguing against the independent state legislature theory last winter acknowledged that federal courts may need to step in to correct egregious errors in state-court decisions. And judging by the strong affirmation of the role of state courts in *Moore*, the six-justice majority does not seem inclined to enter the fray idly. After taking a stand against racial discrimination in redistricting earlier this month, the Supreme Court has again stood up against a subversion of democracy. ■

Local flags

Bad banners

PORTLAND, MAINE

Several cities and states have been trying to replace them

The lobster is ubiquitous in Maine. Its image is on everything from licence plates to home decor. Now another emblem is growing in popularity: a green pine tree with a blue North Star, designed by Bethany Field and Chris Korzen, founders of Maine Flag Company and Original Maine. Their hand-stitched flags are inspired by the original 1901 official flag of Maine and also nod to the state's maritime burgee. It can be found on sweatshirts, car bumpers, Adirondack-chair cushions and front porches. Its grassroots popularity has given momentum to a legislative proposal to switch from the current official state flag, which features the state seal, to a version of the simpler 1901 banner.

Other states are changing their flags. In March Utah swapped its busy seal for a big beehive, a symbol of industriousness. As simple and lovely as this is, it is not without controversy. Some say the flag, which also has Native American symbolism, is "woke" (despite being proposed by a conservative Republican) and want the old one back. Mississippi scrapped its flag in 2020, because of its Confederate imagery. Massachusetts and Minnesota want to redesign their banners, each based on a seal with troubling depictions of Native Americans.

Many municipal flags are terrible, too. "Why city flags may be the worst-designed thing you've never noticed", a TED talk by Roman Mars, a podcaster, in 2015, shone a light on how awful many official flags are. Since his talk, which has had 7m views, the North American Vexillological Association has documented more than 300 cities redesigning flags. Mr Mars singled out the (still unchanged) flag of Milwaukee as the "kitchen sink". Its images include a barley stalk for the brewing industry, a gear representing industry, a ship and, bizarrely, a wartime-service flag—a flag within a flag.

Maine's seal is also far too fussy. It depicts a pine tree, a star, a moose, a sailor and a farmer, plus the words "Maine" and "*Dirigo*" ("I lead" in Latin). Ted Kaye, author of "Good Flag, Bad Flag", a design primer, calls state flags with seals "SOBS: seals on bed sheets". Seals were meant to be read on documents, not fly on poles. More than 20 states use seals with blue backgrounds as flags. It is tricky to tell them apart. Some try to solve this problem by including the state's name. "Imagine if the flag of France said 'France' on it," despairs Mr Kaye.

A good flag creates a connection with the place it represents. Texas's "Lone Star Flag" is a fine example, and is the best-selling state flag in the country. Earle Shettleworth, Maine's state historian, points out that "state identity means a great deal to people. And it's really a question of how are we going to project ourselves?"

"We didn't set out to change the flag," says Ms Field. When she and Mr Korzen started making their version, they asked: "Could we make this image be as recognisable as the word 'Maine'?" Since Maine's bicentennial in 2020, the star-and-pine-tree image is everywhere. The state Senate recently added an amendment to the bill requiring a referendum on whether to change the flag. Sean Paulus, the state lawmaker who proposed the bill, says it is "embracing what people have already shown that they want". ■



Lost in translation, and ripe for change

Lexington | AI is making Washington smarter

So far, lawmakers are taking cautious, bipartisan steps toward regulating it



Among the startling, hopeful developments that have greeted the advent of generative artificial intelligence (AI) has been an outbreak of bipartisan focus, curiosity and deliberation in Washington, DC. Legislators and regulators are trying hard to come to grips with the protean technology. Chuck Schumer, the Senate majority leader, has been holding senators-only briefings with experts to educate his chamber. In late June he called for "a new and unique approach" to writing legislation about AI, saying it was "unlike anything Congress has dealt with before".

"It's not like labour or health care or defence where Congress has had a long history we can work off of," he said. "In many ways, we're starting from scratch." He has set up a steering group of two Republicans and two Democrats, including himself, and plans this autumn to supplement the normal committee process, or posturing, with "AI Insight Forums", to include the industry's leaders and its critics, to do "years of work in a matter of months".

It is understandable that wise guys are making fun of this. Given Congress's reputation for speed and technological literacy (the Senate was in session for all of 14 days in June, and Mr Schumer uses a flip phone), the jokes write themselves, almost. ChatGPT's first, unfunny stab reflected the cynicism any sentient being might feel: "Why did the AI refuse to testify before Congress? Because it didn't want to be caught in a loop of lawmakers asking the same question over and over."

Yet Americans should bask in this rare season, while it lasts, of good-faith searching and head-scratching. Not only are the regulators interrogating themselves about where and how they should regulate, the industry itself is asking to be regulated, up to a point. Even if it is all doomed to end in partisan impasse and recrimination, now is the time to ask: how could Washington get this right?

One danger is that lawmakers could wind up bickering over a problem they can address only at the edges. Representatives of both parties regret not more aggressively regulating the internet in general and social media in particular. Being politicians, they are alert to how political actors are already using AI tools to generate political messages, including fabricated images. For their part journalists, being journalists, are obsessed with AI's potential to create and spread lies.

These are serious concerns. But because of America's speech protections, congressional action would probably be less constructive than voluntary standards by campaigns, technical approaches by the private sector to authenticate images and scepticism from a jaded electorate. The more Congress focuses on the flow of information, the more it will be riven by fights over whether a particular chatbot is inclined to disparage one party or another. "If we get drawn into refighting the social-media wars, we risk not realising the promise of machine learning," warns Kent Walker, the president of global affairs at Google and Alphabet. "Social media isn't going to cure cancer, but AI has the potential to, and it would be a shame if that promise were politicised. It would be a shame to hold back progress in nuclear fusion because we can't agree about Twitter."

A better starting point would be to recognise that the government is already regulating AI. Years ago it set the nerve ends tingling of the federal bureaucracy, another complex, amorphous entity that somehow translates countless inputs into answers that cannot always be explained. Plenty of laws already cover the use of AI. And questions about AI's use in providing health care, hiring people, driving cars or investing are being asked and answered, albeit too slowly for some industries. The National Institute of Standards and Technology, part of the Commerce Department, has drawn up voluntary standards by which AI might be governed.

Chris Meserole of the Brookings Institution, a Washington-based think-tank, says Congress could exploit this "incredibly rare moment" of bipartisan seriousness by mandating that each regulatory agency develop a plan to adapt the NIST standards to its sector. It could also mandate disclosure about the use of AI in products, and require transparency into algorithms used in high-risk systems. "If an autonomous vehicle using AI has an accident, we need to understand what went wrong," he says.

To walk humbly with Chuck Schumer

Congress might also consider export controls for AI models and chips it deems too powerful. It could look at creating an agency to regulate big tech (disclosure: Lexington's brother, Senator Michael Bennet of Colorado, has proposed legislation to do so) or whether some other means might bolster the agencies' AI expertise. It could also help universities pay for the computing power they need to conduct AI research in the public interest.

The good news is that these are the sorts of measures that Congress and the Biden administration are weighing. The most striking word in Mr Schumer's recent speech was "humility", as in, "We must exercise humility as we proceed." Like many of his colleagues, Mr Schumer is not celebrated for this quality. Nor are the technology companies, but, in the face of AI, they are embracing it, too. Mr Walker notes that AI researchers have spoken of the "AI half-pipe of heaven and hell", meaning it tends to be treated as either wonderful or terrible. "There's very little market for, 'Well, AI has a lot of important pros and cons, and we have to incrementally navigate'," he says. "But that's probably where the wisdom is."

China has forbidden AI-generated images that impersonate people without their consent, and the European Union has proposed sweeping AI rules (which, like the EU's data rules, may reverberate globally). But America's reactive, incremental approach to making regulation up as its industries develop has kept it in the lead since the Industrial Revolution, and seems particularly suited to such a rapidly evolving, disruptive technology. Maybe AI and America's lawmakers, in the end, can help each other grow up. ■



Mexico

The parsimonious populist

MEXICO CITY

Andrés Manuel López Obrador has put parts of the Mexican state on a starvation diet

When Andrés Manuel López Obrador won Mexico's presidency in a landslide in 2018, he promised to "transform" the country by putting the poor first. Observers assumed he would spend without restraint to bring that about, jeopardising the stability of public finances. But Mr López Obrador, especially early in his presidency, has been an unusually parsimonious populist. He has run smaller budget deficits and built up less debt than most Latin American leaders (see chart 1 on next page). During the pandemic, when presidents from Brazil to Pakistan splurged to protect their economies and strengthen their health systems, Mr López Obrador was tight-fisted. Only in the past couple of years has his government raised discretionary spending significantly in real terms (see chart 2).

As he nears the end of his presidency (he can only have one six-year term), it is becoming possible to judge the effects of his early peso-pinching and the freer spending that followed. AMLO, as he is often known, can boast that inflation is relatively low, which is good for the poor; the currency is strong; and interest rates have risen by less than they might have done.

But he has coupled prudence with parsimony in a way that has hurt Mexico. His government has underinvested in health and education, undermined the bureaucracy and cut funding for institutions that underpin democracy. It has taken money away from successful anti-poverty programmes and handed it to ones that are less effective. It has been weirdly reluctant to raise tax revenues. And, while starving some parts of the state, the president has lavished funds on the badly managed state oil company and on pharaonic projects of no proven value. The net effect of AMLO's spending policies is to make Mexico's economy, and its democracy, weaker than they should be.

This has not made him unpopular. His approval rating is 65%. The candidate of his Morena party is widely expected to win next year's election. Luck has helped obscure his mistakes. Mexico is a beneficiary of "friend-shoring", a shift in investment away from China towards countries that are closer to and have better relations with the United States. In 2021 and 2022 Mexico's real GDP growth averaged 3.9%.

AMLO applies "republican austerity" first of all to himself. One of his first acts in office was to cut his own salary by 60% from the 270,000 pesos (then $14,300) a month paid to his predecessor, Enrique Peña Nieto, who sported designer watches. AMLO decreed that no one in government could earn more than the president, so salaries of other senior officials were also cut. He sold the presidential aeroplane (although it took until this year to find a buyer, Tajikistan's government). His frugality adds to an aura of saintliness. AMLO wonders aloud why people need more than one pair of shoes. Recently, he has spoken of his dedication to "Franciscan poverty".

This aversion to extravagance is in part a reaction to a debt crisis in 1982, when bondholders bossed the government around and the economy began a decade of slow growth. His extension of frugality to the public sphere is "popular with citizens because the government has long been seen as the enemy", says Paula Villaseñor of IMCO, a Mexican think-tank.

What civil servants can spend on such things as phone calls, petrol, seminars and colour-printing has been capped. In 2020 three-quarters of workers in the economy

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ministry were told to hand back their computers or pay to continue using them. Some civil servants bring their own toilet paper to work. All told, this has demoralised the bureaucracy and made it less effective. Many experienced officials have quit. Complaints about public services rose by 38% between 2018 and 2020.

Even in the pandemic AMLO did not relent. Mexico was among a small number of states, most of them in sub-Saharan Africa and South-East Asia, that spent less than 2.5% of GDP to protect people from covid-19. Mexico's toll of excess deaths was the fifth-highest in the world (its population is the tenth-largest). Without extra cash from the government, people had to work—and thus to mingle with others.

Mr López Obrador is no Thatcherite, restraining the state so that the private sector, and citizens more generally, can flourish. Nor does he deftly redirect scarce funds from wasteful purposes to useful ones. Rather, he has used republican austerity to amass power. Although parsimony has been the rule, especially early on, he makes ill-judged exceptions.

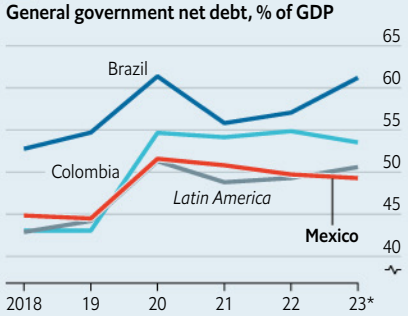
His pet projects are not feeling the presidential pinch. These include energy schemes that push Mexico away from a green transition, and infrastructure in the country's poor south. Mr López Obrador justifies secrecy about how much he has spent on these on grounds of national security. It is much more than planned. Last year he admitted that a refinery in his home state of Tabasco had cost 46% more than the $8bn he had forecast. After a period of restraint, spending has recently jumped and is budgeted to soar this year, as the government rushes to complete such projects before AMLO's term ends.

Daniel Gutiérrez, a Morena lawmaker from the southern state of Oaxaca, says that AMLO is the first president to invest seriously in the south. Some of that investment may bring more and better jobs. An upgrade of ports, now under way, has been widely praised. But the other main projects for the region—the refinery and a planned railway—are thought to be white elephants. No cost-benefit studies have been carried out on the proposed train. A new airport for Mexico City, completed in March 2022, has not cleared up congestion in the skies. While splashing out on big projects, the government has cut spending on humdrum infrastructure. Between 2018 and 2021 the government reduced by 28% its budget for keeping up roads.

Seeking to make Mexico self-sufficient in energy, Mr López Obrador has directed 42% of the public-investment budget this year to Pemex and CFE, the inefficient and highly indebted state oil and electricity companies. The state's implicit guarantee of Pemex's debt was one reason given by Moody's, a credit-rating agency, when, despite AMLO's fiscal prudence, it downgraded Mexico's government debt last year.

Peso prudence 1

General government net debt, % of GDP



Budget deficit, % of GDP



Source: IMF *Forecast

Mr López Obrador has used his odd mix of largesse and miserliness to strengthen institutions he likes while weakening ones he doesn't. Partly to save money, he has asked the armed forces to help build airports and run ports and bolstered their role in fighting crime. A draft decree published on June 27th would give the navy control of Mexico City's older (and bigger) airport; the defence ministry is already in charge of the new one. The military budget soared between 2019 and 2022, but even so the army overspent it by 25%. It will be able to keep part of the profits from running infrastructure, giving it access to money without civilian oversight.

For institutions that annoy Mr López Obrador, there are cuts. Since 2020 he has been trimming the budget of the independent electoral commission, which, he claims without evidence, manipulated the vote count to deny him the presidency in an election in 2006. He cited a need to economise to justify a package of reforms that would have reduced the commission's staff and network of offices; the Supreme Court rejected it. The budget of the energy regulator has fallen by 14% during Mr López Obrador's presidency. In April this year he said he would eliminate or merge 18 agencies, including an anti-corruption body, to save money.

Putting a lid on it 2

Mexico, federal-government discretionary spending, trn pesos, 2022 prices



Sources: Bank of Mexico; Refinitiv Datastream

A bigger surprise is the way Mr López Obrador has dealt with programmes that could bring about the transformation he claims to want. Only this year did the budget for transfers to the poor surpass that of 2014. He has shaken up social spending, abolishing a conditional cash-transfer scheme that had improved the health and education of Mexico's poorest. To replace it he brought in transfers to young people who are not studying or working and a scheme to pay people to plant trees. He presents these as presidential gifts. Unlike the programmes they replaced, they are badly monitored; initially, at least, they did not reach the poorest people.

It is hard to disentangle the effects on poverty of AMLO's policies from those of other factors, like the pandemic, which pushed up the official poverty rate between 2018 and 2020, though it is falling again now. One group that has clearly benefited are pensioners: AMLO made a scheme nationwide that pays them 4,800 pesos every two months.

No more pencils

Underspending on education and health dates back to before Mr López Obrador's presidency. This year health care got an injection of post-pandemic cash; the budget is the largest in a decade. But this does not make up for his earlier decision to close an insurance programme that provided health care to the poor. Last year, when Mexico reopened schools after a 17-month shutdown prompted by the pandemic, the education budget was 3.1% of GDP, the lowest figure since 2010. The government says that 5.2m children dropped out of school during the pandemic, and that those who stayed have fallen far behind where they should be. The president has raised teachers' wages, but has taken other measures that harm education. He reversed a reform from 2014 that linked teachers' pay to performance. He reduced the number of full-time schools, which make it easier for mothers to work and ensure that children get one good meal a day. Most children are in school for half-days.

Crime-fighting, another supposed priority, has also suffered from presidential

parsimony. While militarising law-enforcement, Mr López Obrador has been stingy with the justice system and police. Mexico's spending on domestic security is 0.7% of GDP, the lowest level among all Latin American and Caribbean countries. The number of recorded murders fell by 8% between 2018 and 2022, but the rise in the number of disappearances—usually murders with no corpse as evidence—suggests that violence has not actually fallen.

Mr López Obrador's "starving state" would be better fed if he raised taxes, says Viridiana Ríos, a Mexican analyst and columnist. There is scope for that. Total tax revenue is 16.5% of GDP in Mexico, well below the average of nearly 23% in Latin America and the Caribbean. Although Mr López Obrador has squeezed more from private corporations, he cut Pemex's tax bill. In 2022 tax revenues fell in real terms for the first time since 2017, partly because the government introduced a tax break on fuel. The subsidy was not targeted and did not help most the people hit hardest by inflation, says Renzo Merino of Moody's. To his credit, Mr López Obrador has not undermined Mexico's fiscal foundation. But he has weakened the economic and democratic edifice that stands on top of it. ■



Guatemala

Seeds of hope

A surprise election result offers a glimmer of hope for Central America

Even by the standards of Central America's ailing democracies, the run-up to elections in Guatemala on June 25th was ominous. For unconvincing reasons the electoral tribunal banned three popular presidential candidates from running. A court jailed José Rubén Zamora, a prominent investigative journalist. So it was a pleasant surprise for many Guatemalans when an outsider defied the polls to come a close second to a candidate who was backed by the country's ruling elite. Bernardo Arévalo of Semilla (Seed), a young progressive party, won a place in the runoff in August by getting 12% of the vote. He has a real chance of becoming the country's next leader.

The vote for Mr Arévalo, who is 64, is a sign of thirst for change in a country where corruption is widespread and standards of democracy are sinking. (More voters left their ballots blank or spoiled them than voted for any single candidate, a sign of their discontent.) Mr Arévalo trailed behind Sandra Torres, a former first lady, by only four percentage points. He also beat other candidates favoured by the political, military and business elites, which Guatemalans damn as "the pact of the corrupt". Semilla increased its number of lawmakers in Congress from seven to 23, making it the third-biggest party.

The surprise result offers a glimmer of hope in a despairing region. Many of Guatemala's neighbours are dictatorships or on their way to becoming one. Daniel Ortega has crushed opposition in Nicaragua. In El Salvador Nayib Bukele has taken control of all three branches of the state, and has convinced Salvadoreans to praise him for it. On June 26th his party said he would run for re-election, even though the constitution appears to forbid that. Many of Honduras's leading politicians are thought to be corrupt and some have been in league with drug-traffickers and other criminals. Juan Orlando Hernández, the country's president until last year, was extradited to the United States to face drug-trafficking charges. (He has pleaded not guilty.)

Guatemala has gone downhill, especially since 2019, when Jimmy Morales, then the president, closed down CICIG, a UN-backed anti-corruption body. Under Alejandro Giammattei, the current president, the courts have been politicised and anonymous threats have forced scores of independent-minded judges and journalists out of the country.

Mr Arévalo, by contrast, has strong democratic credentials. The son of the first democratically elected president, who held office between 1945 and 1951, he has promised to bring greater openness, to fight corruption and to spend more money on education and health to reduce poverty. The World Bank estimates that more than half of Guatemalans live below the national poverty line. Ms Torres promises much the same, but does not look like change to most Guatemalans. Her disapproval rating is far higher than Mr Arévalo's.

The widespread discontent in Guatemala suggests that an anti-establishment candidate like Mr Arévalo should be the favourite to win in the second round. But his foes will make it hard. Support for Semilla, whose candidate in 2019, a former attorney-general, was barred from running, began among young people. They in turn persuaded their parents and grandparents to vote for the party.

But the ruling elites are "a formidable enemy" that will do "even the unthinkable" to defeat Mr Arévalo, says Ricardo Sáenz of San Carlos University in Guatemala City. Voices have already started whispering on social media and elsewhere that Mr Arévalo is a communist who will nationalise businesses. (There is no evidence of that.) Dirtier tricks are likely to follow.

Guatemala has been on the verge of change before, only to be disappointed. In 2015 thousands of Guatemalans celebrated when Otto Pérez Molina resigned from the presidency after CICIG presented evidence of corruption against him. Then came Mr Morales. This time there is no UN-backed body to help. But Semilla is hopeful. The elites "thought that having control of the state, courts and public prosecutor would be enough", says Samuel Pérez, a Semilla lawmaker. "But they forgot that the will of the people matters too." ■

Venezuela

Maggie in the making

CARACAS

An interview with María Corina Machado, the front-runner to challenge the country's authoritarian president

She promises a "total transformation" of Venezuela. The mammoth, decrepit state oil company, PDVSA, will be privatised, as will all utility companies. "We will have open markets. We will have rule of law...This country will become the energy hub of the Americas," she pledges.

These are the ambitions of María Corina Machado, a 55-year-old former congresswoman who on June 23rd launched her bid to become the opposition's candidate to unseat Nicolás Maduro, the country's authoritarian president, in an election due next year. She is the favourite among the 14 contenders to win a primary vote among supporters of opposition parties. That is scheduled for October 22nd; 57% of likely voters back her, according to Poder y Estrategia, a polling company.

Beating Mr Maduro in the general election ought to be easy. Since he took office in 2013 the economy has shrunk by 75%, pushing millions into poverty. Nearly a quarter of the population—some 7m people—have left Venezuela. But the vote is likely to be dodgy. Venezuela last held a national election with a legitimate result in 2015, when the opposition won control of the National Assembly. The Maduro regime stripped the legislature of its powers.

Ms Machado, who is renowned for her firebrand style, is on the rightward end of the opposition's political spectrum. In an interview with *The Economist* in Caracas she named Margaret Thatcher as the politician she most admires. Despite the odds against her, she insists that the battle for democracy is not yet lost. Although she has strong reservations about taking part in any election overseen by the regime, the primary "could be the catalyst" for change, she says. It will be a chance for voters to shout "no" to Mr Maduro, rattling his government and reminding other countries that Venezuelans still want democracy.

Ms Machado comes to the fight with advantages. She once personally confronted Hugo Chávez, who initiated Venezuela's economic and democratic decline and named Mr Maduro his successor as president. In 2012, while Chávez was in the midst of a nine-hour speech to the legislature, she interrupted to denounce as "theft" his expropriation of businesses (among them, a steel mill owned by her family). Irritated, Chávez tried to put the young congresswoman in her place. "Eagles don't hunt flies," he boomed, backed by a chorus of jeers from his lackeys.

Ms Machado played no formal part in the failed "interim government" of Juan Guaidó. That should help her now. In 2019 the United States, the European Union and dozens of other nations recognised Mr Guaidó, who was head of the legislature, as Venezuela's legitimate president, but he never came close to achieving power. The project ended in January this year, when the opposition voted to dissolve his non-government. Mr Guaidó is now in the United States. Ms Machado, who backed American sanctions on the Maduro regime, "now has a monopoly of the more radical sector of the opposition", says Luis Vicente León, a pollster based in Caracas.

Sell 'em off

Privatising PDVSA is the heart of Ms Machado's policy, and marks her out from her rivals. Once the most profitable major oil company in the world, it has been brought low by corruption and mismanagement under Chávez and Mr Maduro. But her declared rivals in the primaries doubt that privatisation is the answer. "Oil belongs to the people," declares Henrique Capriles, a former state governor who has twice run for the presidency and, like Ms Machado, hopes to be the opposition's nominee this time. Venezuelans should not assume that "everything public is bad and everything private is good". Ms Machado disagrees. Venezuela "has only known statism and socialism in different colours and manners...We must dismantle this."

Ms Machado, though the daughter of an industrialist, insists that she has plenty in common with all Venezuelans. "There are thousands of us that have been robbed by the regime," she says in the flawless English she learned at a boarding school in Massachusetts. Her three children live abroad, but the regime has barred her since 2014 from leaving the country. Many other families have been divided by the exodus of recent years. "We all just want to have our families back together," she says.

The 14 opposition candidates have yet to agree on how the primary will work. On June 16th the main parties decided to organise the logistics themselves rather than rely on the electoral council, which is controlled by the regime. That means that the opposition will have to pay for holding the vote and setting up polling stations across the country.

In a normal election, Ms Machado would be the early front-runner to defeat a president who has brought disaster to his country. But Mr Maduro, described by one Caracas-based diplomat who saw him recently as "definitely jovial", has given no sign that he will allow himself to be dislodged. If Ms Machado is his opponent, his reluctance will deepen. She has repeatedly called for the dictator and his entourage to be put on trial. Once, she says, she told him to his face that she does not want him to die because it would be better for him "to live and face justice".

Mr Maduro will probably remain in power for another decade, thinks Mr Vicente León. That could change if he allows a fair election in the belief that he is more popular than he really is. But there is small chance of that. ■



Machado meets the masses



Putin and putsches

What next for Wagner's African empire?

CAPE TOWN AND DAKAR

The group is unlikely to pack its bags. But African states may rethink Russia's reliability as a strong and stable partner

Until the events of the past week it seemed that the Wagner Group's next outpost was more likely to be Burkina Faso than Belarus. But on June 27th Yevgeny Prigozhin arrived in the latter, as part of a deal between the mutinous leader of the paramilitary network and Vladimir Putin. From there Mr Prigozhin hopes to run the brutal African operations that have become crucial not just to his empire but to the Kremlin's approach to the continent.

Wagner has carried out "a huge number of tasks in the interests of the Russian Federation" in African and Arab countries, Mr Prigozhin complained in a Telegram message on June 26th. The mercenary group has sent fighters to five African states, including the Central African Republic (CAR) and Mali, where its operations will continue, insisted Sergey Lavrov, Russia's foreign minister. Wagner has also had some sort of presence in at least another seven countries on the continent (as well as Syria).

What happens now is unclear. But even if Mr Prigozhin, the group's figurehead, is sidelined, it seems unlikely that Wagner will up sticks in Africa. The organisation has a vested interest in staying put. Moreover, the Kremlin will be loth to lose a source of influence on the continent. Most probably Wagner will retreat from Africa only if Africans themselves start to see Russia as a weak and unreliable partner.

To grasp what might happen next to Wagner's African empire, it helps to understand how it operates. There is no Wagner Inc but a network of firms with links to the Russian state that operate under contracts with foreign governments. As with colonial enterprises of the 19th century, these deals allow Russia to partake in foreign adventures with scant accountability.

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In Africa, Wagner uses a business model that has three potential elements, the mix of each depending on the country it is in. These three elements—military, economic and political—have their clearest case study in the CAR, a former French colony that Wagner entered in 2018. Further evidence of its role there was provided on June 27th by The Sentry, an American investigative outfit, in a new report.

The first pillar is the military one, in cases where African governments have turned to Russia and thus to Wagner for security. There are no official estimates of how many Wagner fighters are in Africa, but analysts suggest the number is about 5,000, with most of them in Mali and the CAR. (It has unknown numbers still in Syria, where it augmented Russia's military efforts.) The total number may be relatively small, but interviews with Wagner defectors suggest that its fighters in Africa are skilled and battle-hardened.

They also enhance the capabilities of African states' own forces. In the CAR Wagner has raised a "parallel army" of roughly 5,000 fighters. Many of these are recruited from the same ethnic group as Faustin-Archange Touadéra, the president, outside the procedures monitored by the UN, according to The Sentry. It alleges that Wagner has trained the fighters in torture techniques. Wagner allegedly imported weapons, drones and aircraft in violation of a UN arms embargo.

Wagner used this parallel army as part of a "campaign of terror", says The Sentry. It accuses Wagner of massacres, torture and rape as part of the group's strategy of "cleansing" villages. It quotes one CAR soldier under Wagner command as saying: "We kill villagers only, we bury them, or we throw them in the bush." (Spokespeople for Mr Touadéra and the Wagner Group did not respond to requests for comment.)

Though *The Economist* could not independently verify The Sentry's claims, they chimed with other investigations, including by Human Rights Watch. The UN estimates that one in five people in the CAR has been forced from their home. An astonishing study published in April in *Conflict and Health*, a journal, suggests that 5.6% of the CAR's population died last year, more than four times the UN's estimate for the CAR in 2010 and more than twice the share in any other country. Wagner's presence "at least contributed to increased difficulties of survival", say the researchers, diplomatically.

The second element of Wagner's model is economic—the quid for a security quo. Wagner should not be thought of as a hierarchical business, but instead as a loose conglomerate with a network of subsidiaries. There is little public information about its revenues or profitability, but what seems clear is that Africa is a crucial part of its money-making. On June 27th America imposed sanctions on several Wagner-linked companies, including one that controls the Ndassima mine in the CAR, which has gold reserves worth more than $1bn.

The Sentry claims Wagner has killed and looted villages near gold- and diamond-mining areas in the CAR. In addition, The Sentry counted 15 flights by Wagner-linked planes to Sudan, a gold-trafficking hub, where Wagner also has links.

The CAR is also a case study of the political services Wagner offers—the third element of its model. The Sentry notes that the group ran pro-Touadéra campaigns in the run-up to elections he won in 2020 and then helped negotiate political deals with leaders of various factions. Elsewhere in Africa Wagner companies have run propaganda and disinformation campaigns, and organised sham election-observer groups.

Understanding the Wagner model helps to think through what may happen next. Some speculate that as part of any deal between Mr Prigozhin and Mr Putin the former may be able to maintain his role in Africa, though it is unclear if any such deal will be honoured. On June 27th Russia's president seemed to emphasise who controlled whom when he admitted that the state had directly funded Wagner's operations, at least in Ukraine.

Given its structure, "whatever happens to Prigozhin says very little about what happens to the Wagner Group in Africa," argues Kimberly Marten of Columbia University's Barnard College. He is neither the CEO of a unified Wagner firm nor a commander whose orders are obeyed by all. Though he may be a charismatic leader and adept at logistics, it would be "relatively easy" for Russia's defence establishment to replace him, she argues.

The people and entities in the Wagner network also have their own interests that they will wish to protect. Some of these are linked to Mr Prigozhin, others much less so. The bottom-up evolution of the group is often missed, argues John Lechner, author of a forthcoming book on Wagner. "And even if there were a big shift at the top of management, then you're not going to fire everyone else."

Wagner has also been a critical part of the Kremlin's resurgent interest in Africa over the past decade. After the annexation of Crimea in 2014, and again last year, Russia redoubled its engagement on the continent. Next month Mr Putin will host African leaders at a summit in St Petersburg. Wagner is far from the only tool in its African toolkit, but it has been a low-cost, high-impact instrument. "The advantages that Wagner offers the Russian state will still remain," says Julia Stanyard of the Global Initiative against Transnational Organised Crime, who co-wrote a report on the group, published in February, describing Wagner's "tripartite" business model.

The advantages Wagner offers Russia are multiple. It is a source of gold, stockpiles of which help Russia resist the impact of Western sanctions. It also helps seed anti-Western messages in the countries in which it operates. Wagner was reportedly behind the lie that French soldiers were responsible for the killing of nine Chinese nationals in the CAR this year. It establishes unofficial channels of influence with African politicians that can be turned into official relationships. The CAR's ambassador to Russia recently said that things had gone so swimmingly with Wagner that his government would consider hosting a Russian military base.

Even so, the Russian security services may wish to take greater control of Wagner's foreign operations. One option would be to nationalise them, though that may suit neither the Russian state, which can (implausibly) deny responsibility for Wagner's atrocities, nor African governments, which can more plausibly argue that they control their own security if they use mercenaries rather than foreign troops. Other options may be to rebrand the group, bring in new leadership or shift the constituent firms so that different elites are in control. In the days following the mutiny, the Kremlin reportedly scrambled to reassure the countries that host Wagner of its continued commitment to the missions, whether under the group's banner or not. Russia's deputy foreign minister visited Syria to mollify the regime of Bashar al-Assad, while the "instructors" operating in CAR and Mali are going nowhere, said Mr Lavrov. Regardless, it would seem illogical for Russia to withdraw unilaterally from fruitful ventures. "It would damage Russia in the eyes of African governments if they pulled them out," adds Ms Stanyard.

The biggest factor in deciding Wagner's future on the continent may be its African customers—the politicians who have turned to Russia for help. In the CAR, where Wagner is most entrenched, the government seems unmoved. Fidèle Gouandjika, an adviser to Mr Touadéra, told the AFP news agency that "the CAR signed a defence agreement in 2018 with the Russian Federation and not with Wagner", adding that

A diversified enterprise

Wagner Group's influence in Africa, 2017-Feb 2023

	Military*	Political†	Economic‡
CAR	■	■	■
Sudan	■	■	■
Libya	■	■	
Mali	■	■	
Mozambique	■ §	■	
Cameroon		■	■
Madagascar		■	■
Burkina Faso		■	
Congo		■	
Equatorial Guinea		■	
South Africa		■	
Zimbabwe		■	
Kenya			■



*Mercenary activities †Political strategy, advice and influence ‡Commercial, grey market and illicit activities §No longer active
Source: Global Initiative Against Transnational Organised Crime

"Russia has sub-contracted with Wagner; if Russia no longer agrees with Wagner then it will send us a new contingent". Tensions between Mr Prigozhin and Mr Putin are "an internal matter in Russia".

In Mali, meanwhile, a recent gamble by the ruling junta looks even riskier. On June 16th the military-led government told a 13,000-strong UN peacekeeping mission to leave "without delay". The last blue helmets are expected to leave by no later than the end of the year. The junta is counting on Wagner to help it fight the jihadists who have killed thousands in the past few years. Yet as the mutiny unfolded Sadio Camara, the junta's minister of defence, was "almost feverish" with anxiety, reported *Jeune Afrique*, a magazine based in Paris.

Since the mutiny, African elites may well be changing their opinion of Russia. Jędrzej Czerep of the Polish Institute of International Affairs notes that some of Africa's most influential cheerleaders for Russia have gone quiet in recent days. This reflects how support for Russia depends on it being seen as powerful enough to help its African clients achieve their own ends. "It will lose its charm as soon as it looks weak and incapable," he argues. A long-anticipated deployment of Wagner forces to Burkina Faso, which like Mali is run by a military junta, is now surely less likely.

That points to an irony that will not be lost on many African observers. Russia's president pitches his country not only as a strong ally for African leaders but as something of a model. Yet the very same group that his government has sent to help African leaders fight their internal enemies has itself staged an uprising in Russia. That is not exactly a good advertisement for a regime selling coup-protection to autocrats and juntas abroad. ■

Elections in Sierra Leone

Anatomy of a heist

DAKAR

Sierra Leone's president is re-elected in fishy circumstances

INSIDE THE opposition headquarters people suddenly hit the floor and crawled for safety; outside, the security forces kept firing. Samura Kamara, the main opposition candidate in the presidential election the day before, circulated photos of holes in a door. "Live bullets fired at my private office," he wrote. A woman was found dead under a window with a fist-sized hole in it. The police insisted they had merely fired tear gas to disperse a crowd in the street.

After the violence came the result. On June 27th the electoral commission declared Julius Maada Bio, the incumbent, the winner with 56% of the votes. This squeaked him over the 55% threshold needed to avoid a run-off. Mr Bio was hurriedly sworn in within an hour. Mr Kamara called the outcome "a frontal attack on our fledgling democracy".



Too many ticks

Others agree. For more than 15 years National Election Watch (NEW), a coalition of civil-society organisations, has produced a tally of results based on a representative sample of polling stations. In the previous three elections, its results matched the official ones. Not this time. It reckons Mr Bio scored about 50%. The electoral commission also reported a voter turnout that was well above NEW's estimates. More worryingly, it reckons that in some districts there were more votes cast than there were registered voters. Foreign observers also raised concerns about transparency.

Sierra Leone, a country of 8.4m people, has been widely seen as a success after its 11-year civil war ended in 2002. It has since held four mostly clean elections, twice witnessing peaceful transfers of power to opposition parties. The government has been lauded for efforts to promote education by its Harvard-trained education minister, David Sengeh, whom foreign donors love.

Yet troubling signs have emerged. Last August some 21 civilians and six police officers were killed in protests triggered by soaring inflation. Mr Bio claimed, without evidence, that the protesters were trying to overthrow him. Having staged two coups in the 1990s before handing over to civilians, Mr Bio may consider himself something of an expert.

A rigged poll could have grim consequences. Donors might withhold hundreds of millions of dollars in aid. Clashes and ethnic violence could break out amid opposition protests. For now Freetown, the capital, is calm. It is not certain that it will remain so. ■

Israel's settlers

Out of control

TURMUS AYYA

Settler vigilantes, egged on by the government, are getting more violent

A NARROW VALLEY separates the Israeli settlement of Shiloh and the Palestinian town of Turmus Ayya in the West Bank. On June 21st over 200 Jewish settlers crossed the valley and set Palestinian fields, homes and cars ablaze in revenge for the killing a day earlier of four Israeli civilians at a nearby settlement. "If the army won't do what's necessary to prevent Jews from being murdered, we will create deterrence ourselves," said one.

Only a small military force was deployed, but it protected the settlers and fired tear gas at the Palestinians, said a villager. One Palestinian was killed by an Israeli officer who said he had been fired on.

Turmus Ayya was one of several Palestinian villages attacked in a three-day spree. Such vigilante action has long been common in the West Bank. But in the past it was carried out by small groups, usually at night, says Omer Bar-Lev, a Labour politician who as public security minister in the previous Israeli government urged the army to arrest violent settlers. "Now it's much more brazen, with hundreds attacking villages in broad daylight. They are being encouraged by cabinet ministers."

Support for the settlers from Binyamin Netanyahu's far-right government is unprecedented. Last week Itamar Ben-Gvir, the national security minister, told settlers they had his "full and complete backing" and called on the army to "exterminate" terrorists. Following a previous rampage in the Palestinian town of Huwara, after two Israelis had been killed there, Bezalel Smotrich, the finance minister, said in March "Huwara needs to be wiped out." (He later tried to soften his remarks.) Some ministers have in the past been implicated in such attacks.

By contrast, in a rare joint statement on June 24th, the army's chief of staff, the police commissioner and the head of the Shin Bet, Israel's internal security service, denounced the settler attacks. One minister then likened the trio to the Wagner Group and lambasted them for "preaching".

Mr Netanyahu, who relies on the far right for his majority, offered a weak remark in support of the army. But his woolly criticism of the settlers paled in comparison with his excoriation of recent protests against his government. As long as he remains in hock to his most vicious nationalist allies, he is unlikely to take on the settlers, however violent they are. ■

The IMF in the Middle East

Don't care too much for money

DUBAI

After years of talks, indebted Arab states and the IMF are at an impasse

THE IMF likes to say it will never walk away from the negotiating table. If a country needs a bail-out, talks have no deadline. A few countries seem determined to put this promise to the test.

Egypt, Lebanon and Tunisia are all in dire need of help. Home to roughly one-third of the Arab world's population, they are burdened with high levels of debt and dwindling foreign reserves. They are struggling to import basic necessities and prop up their flagging currencies.

Lebanon has already defaulted on its debts, in 2020; bonds from the other two countries pay high yields because of their junk ratings. "The most vulnerable economies are being pushed to the brink of debt distress," says Jihad Azour, the IMF's Middle East director (who took temporary leave in June after being named a candidate for president in his native Lebanon).

All three countries have sought loans from the IMF, hoping to augment their financial buffers and reassure foreign investors. Yet after years of talks with the fund, all are stalling. The delays illustrate the economic dysfunction in the Arab world's oil-importing states—but also the problems with IMF programmes in the region.

Egypt reached a $3bn deal with the IMF in December. Since 2019 its foreign reserves have fallen from $44bn to $35bn, while public debt rose from 80% of GDP to a projected 93% this year. Investors, spooked by Russia's invasion of Ukraine, pulled $22bn of portfolio investments out of the country last year. With dollars scarce, Egypt has devalued the pound three times since the start of 2022, halving its value to around 30 to the dollar.

Abdel-Fattah al-Sisi's government had hoped an IMF deal would restore confidence. It promised to shift to a flexible exchange rate and to sell billions of dollars in state assets. The pound still looks overvalued, though, trading in the high 30s on the black market. Annual inflation hit a near-record high of 33% in May, far outpacing the central-bank interest rate of 18.25%.

The government insists it must build up a buffer of hard currency before devaluing the pound or raising rates again. Foreign investors, understandably, want that sequence reversed: negative real interest rates and a too-strong currency make both Egypt's debt and its state-owned assets look like bad bets. So its economy and its IMF programme are at an impasse. The first review of its progress under the agreement, which would unlock more aid and was due in March, remains unfinished.

Tunisia, with government debt of more than 80% of its GDP, started talks with the fund early last year. Foreign reserves have fallen from $9.8bn in 2020 to $6.8bn today. Staple foods and many medicines are frequently in short supply.

While it will probably get through 2023 without a default, it may struggle to repay close to $2.6bn in external debts next year. But Kais Saied, the authoritarian president, all but rejects the idea of an IMF deal, calling "foreign diktats" unacceptable.

Then there is Lebanon, which reached a preliminary agreement with the fund last April. Since 2019 it has plunged into one of the worst economic crises in modern history, the result of a years-long central-bank Ponzi scheme to prop up the currency. Banks are insolvent. The lira has since lost 98% of its value. Annual inflation has been above 100% for almost three years.

To finalise the agreement, the IMF asked Lebanon to implement a few modest reforms: draft a plan to restructure the banks, overhaul the bank-secrecy law and unify its myriad exchange rates. The government has dawdled for more than a year.

Powerful elites are blocking progress in all three countries. Egypt's army does not want to sell off lucrative assets and allow civilian firms to compete. Trade unions in Tunisia, which periodically call crippling strikes, reject efforts to cut subsidies or trim the wage bill. Politicians and bankers who led Lebanon into crisis are loth to admit that the financial sector is zombified.



Grab that cash with both hands

Yet Mr Sisi is not wrong to fret that another devaluation will hurt Egyptians, nor Mr Saied to worry about increased poverty. Egypt weakened the currency, cut subsidies and raised taxes after signing a $12bn deal with the IMF in 2016. That meant painful inflation and tighter budgets for citizens—without fixing the country's underlying problems. Mr Sisi had to come back for another IMF loan before he finished repaying the last one.

Austerity brings only a small reprieve in countries that share deeper ills. One is a reliance on tourism and remittances, rather than exports, as the main source of hard currency. They spend hefty sums on enormous public-sector wage bills, which leaves little in the budget for social services or investment. Growth has been sluggish: Egypt's non-oil private sector has contracted for 30 consecutive months.

In my dreams I have a plan

Fixing these problems requires a bigger strategy to boost growth. That seems implausible with the current crop of leaders—and they seem unlikely to go anywhere.

Presidential elections in Egypt are scheduled for next February, but there is talk that Mr Sisi may bring them forward to late 2023. Frustrated military officers and powerful businessmen might support a challenger. No one has announced plans to run, however, which is understandable: before the last election, in 2018, several of his would-be opponents were arrested.

Mr Saied's five-year term is also due to end in 2024. He has spent the past few years hacking away at the foundations of Tunisia's young democracy, sacking parliament and drafting a new constitution to expand his powers. A fair election therefore seems improbable.

In Lebanon sectarian politics mean that most voters choose the same warlords and criminals who plunged the country into crisis. The country has not had a president since October and may soon lack a central-bank chief: Riad Salameh, the longtime governor, is due to leave office this summer.

For now, then, these countries are stuck. Tunisia has taken some loans from Algeria; Egypt has received a bit of help from its Gulf allies. European leaders, worried about illegal migration, are also becoming more generous. Some 3,200 Tunisians crossed the Mediterranean to Italy in the first four months of this year, up 154% from the same period in 2022. Giorgia Meloni, the Italian prime minister, recently pledged €700m ($764m) in aid to Tunisia. Irate Italian officials have even wondered privately if the IMF might sign a deal with Tunisia without Mr Saied's approval. The answer, unsurprisingly, was no. ■



Education in India

Missing the mark

BODHGAYA AND PUNE

India's failing schools put at risk its hopes of becoming an economic superpower

CLOSING THE factory in the north Indian state of Uttar Pradesh was not a decision he took lightly, says the boss of a manufacturer based in Mumbai, India's business capital. Yet the local workforce's lack of skills and discipline meant it made sense to produce in the south and west. "We offer training at all our production sites, but bringing people to the required level simply wasn't worth our time."

The tale illustrates one of India's biggest problems. Its education system is failing it. At some 1.4bn, it has more people than China, and its economy is growing fast. It needs to make hundreds of millions of its young people employable, particularly in the poorer, more populous northern states. Otherwise it could waste much of its growth potential and court instability as undereducated, underemployed youngsters lose hope.

Graduates of its leading universities are high-flyers at the world's best firms. But many of the 265m pupils enrolled in its schools will leave them barely able to read or do basic maths. ASER, an annual survey of children in rural India (three-quarters of the total), found that in 2022 just a quarter in Year 5 (when they are ten) could do basic division and a mere 43% managed to read a Year 2-level text. Of those in Year 8, when compulsory education ends, barely 45% could do basic division and less than 70% could read a Year 2-level text.

Even more alarming is the lack of progress. Though school infrastructure and enrolment have improved in recent years, with more children attending schools that have toilets, running water and sometimes even computers, learning has not kept pace. By 2022, maths skills had barely budged in a decade; reading skills had declined, partly owing to learning lost during the covid-19 pandemic. These numbers hide regional variations; learning levels tend to be higher in richer southern states and lower in the poorer north.

One reason is a long-standing focus on elite education inherited from British rulers, keen to train administrators to run the empire. Post-independence governments relied on a small, brainy elite to build the new nation. "It's a sorting mechanism, a system for the first two rows of the class," says Yamini Aiyar, who heads the Centre for Policy Research (CPR) in Delhi.

The system's narrow emphasis on finishing a rigid syllabus assumes skills few children have when they start school—and never get a chance to acquire. It does little for the vast majority of pupils at non-elite government or low-cost private schools. Yet they are the ones India's economy needs to broaden from its focus on services and increase its heft in manufacturing, which it hopes will account for 25% of GDP in 2025, up from 17%. Even a factory job requires skills many school leavers lack.

Some signs of change can be seen. On a recent afternoon in Bajraha village in Bodhgaya in the eastern state of Bihar, a dozen children in their early teens sat in a circle in the village hall as Baijanti Kumari, a local volunteer, drew letters on a blackboard. In their summer holiday the children were learning how to read a simple story and do basic maths, things they had

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not learnt in four years at school. The programme, organised by Pratham, an Indian NGO, along with the state government, aims to stop them and some 1.5m other children across Bihar falling further behind in the new academic year. Similar efforts are afoot in Uttar Pradesh and Madhya Pradesh, reaching some 3.3m children.

Such catch-up activities are welcome, but cannot fix the system's many problems. Attendance by children remains poor, with the national average at around 70% and closer to 50% in states like Bihar. Teachers in government schools are paid well, but penalised little if children fail to learn anything. Data published in 2017 showed that a quarter of spot-checks found teachers absent from schools.

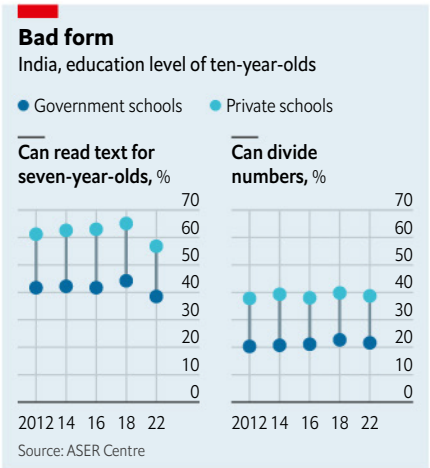
Fixing those problems requires complex cultural changes, says Ms Aiyar of CPR. One state-level government that has done more than most is in Delhi, India's capital, under the Aam Aadmi Party (AAP). Starting in 2015, it massively boosted spending on education. The aim was to improve infrastructure and the quality and accountability of teachers and administrators in its secondary schools through a combination of curriculum reform, training and community involvement. The approach worked: for the past eight years, formerly grotty government schools in the city have done far better than private ones.

Modified ambitions

Narendra Modi's government has been less decisive. When he took office in 2014, he promised that national spending on education would rise to 6% of GDP, close to what is spent in Brazil (6%) or South Africa (6.6%). Yet on its own figures it has never cleared the 3% mark, though the World Bank, source of the figures for the other countries, puts it at 4.5%. His government has also made alarming moves to "rationalise" textbooks, stripping them of references to undesirable subjects, from India's Muslim heritage to the theory of evolution.

Yet it has begun to overhaul the education system. A national policy, published in 2020, wants every year-3 pupil to achieve basic reading and maths skills by 2027, a welcome if wildly ambitious target. As in Delhi, teachers are being urged to forsake rigid adherence to the curriculum for teaching at their pupils' actual level. More emphasis is put on pre-primary education, one of the most cost-effective ways to improve learning. The policy also provides for improved teacher-training, reduced non-teaching responsibilities and performance-based rewards.

Such efforts are better than simply spending more, says Karthik Muralidharan, an economist at the University of California, San Diego. Cheap interventions such as learning camps can help a lot. He adds that "volunteers can be very effective as supplemental instructors", as they are local and so "more connected to the pupils". Deepak Kumar, a 24-year-old university graduate who runs a summer catch-up camp from his family home in Bihar's Gaya district, proves the point. He plans to support his pupils for the next year as he swats for government exams; no child has ever missed a class of his.



The covid-19 pandemic, when schools remained closed for the best part of two years, highlighted the importance of parental involvement in education, says Rukmini Banerji, who heads Pratham. Nearly a third of children now receive extra private tuition, up from a quarter five years ago. Policymakers want to deploy parental interest more systematically, setting up school-preparedness camps for mothers of children starting school and keeping them engaged through simple technology tested during the pandemic, such as videos, audio stories or texts with suggestions for activities. At one camp *The Economist* visited in Pune, Maharashtra's second city, mothers were full of praise for the approach. "I always struggled to understand what my children were doing at school. Now I feel like I have a bigger stake in it," says Sushma Deshmukh, the mother of a ten-year-old.

Yet technology is not the magic fix for government failure that many in India's burgeoning ed-tech sector once imagined: Byju's, an education startup from Bangalore which as recently as April said it offered online classes to as many as 150m students, was this week scrambling to reassure investors after it lost three board members and its auditor.

Working out which reforms ultimately make the biggest difference will take years. Most important, says Mr Muralidharan, the government has to stay on the case. "They need to put in place independent mechanisms to measure what works, accept the results, and adjust policy accordingly." Given the government's aversion to data that contradict claims about its success, that may be too much to hope for. ■

Education in Vietnam

Best in class

SINGAPORE

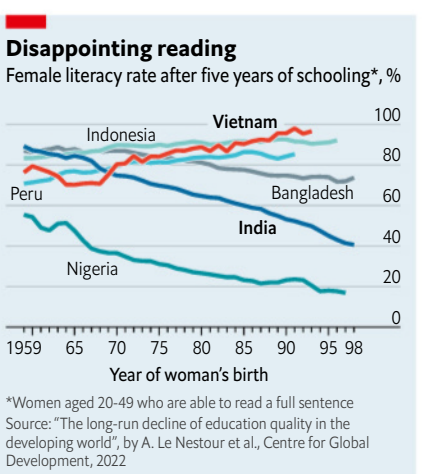
Vietnam's schools teach global lessons

HO CHI MINH, the founding father of Vietnam, was clear about the route to development. "For the sake of ten years' benefit, we must plant trees. For the sake of a hundred years' benefit, we must cultivate the people," was a bromide he liked to trot out. Yet despite years of rapid economic growth, the country's GDP per person is still only $3,760, lower than in its regional peers, Malaysia and Thailand, and barely enough to make the average Vietnamese feel well-nurtured. Still, Ho Chi Minh was alluding to a Chinese proverb extolling the benefits of education, and on that front Vietnam's people can have few complaints.

Their children go through one of the best schooling systems in the world, a status reflected in outstanding performances in international assessments of reading, maths and science. The latest data from the World Bank show that, on aggregate learning scores, Vietnamese students outperform not only their counterparts in Malaysia and Thailand but also those in Britain and Canada, countries more than six times richer. Even in Vietnam itself, student scores do not exhibit the scale of inequality so common elsewhere between the genders and different regions.

A child's propensity to learn is the result of several factors—many of which begin at home with parents and the environment they grow up in. But that is not enough to explain Vietnam's stellar performance. Its distinctive secret lies in the classroom: its children learn more at school, especially in the early years.

In a study in 2020, Abhijeet Singh of the Stockholm School of Economics gauged





They're on the ball

the greater productivity of Vietnam's schools by examining data from identical tests taken by students in Ethiopia, India, Peru and Vietnam. He showed that between the ages of five and eight Vietnamese children race ahead. One more year of education in Vietnam increases the probability that a child can solve a simple multiplication problem by 21 percentage points; in India the uplift is six points.

Vietnamese schools, unlike those in other poor countries, have improved over time. A study published in 2022 by researchers at the Centre for Global Development, a think-tank based in Washington, DC, found that in 56 of 87 developing countries the quality of education had deteriorated since the 1960s (see chart on previous page). Vietnam is one of a small minority of countries where schools have consistently bucked this trend.

The biggest reason is the calibre of its teachers. Not that they are necessarily better qualified; they are simply more effective at teaching. One study comparing Indian with Vietnamese students attributes much of the difference in scores in mathematical tests to a gulf in teaching quality.

Vietnam's teachers do their job well because they are well-managed. They receive frequent training and are given the freedom to make classes more engaging. To tackle regional inequality, those posted to remote areas are paid more. Most important, teacher assessment is based on the performance of their students. Those whose pupils do well are rewarded through presitigious "teacher excellence" titles.

Besides such carrots, a big stick is the threat of running foul of the ruling Communist Party. The party apparatus is obsessed with education. This percolates down to school level, where many head teachers are party members.

The obsession has other useful effects. Provinces are required to spend 20% of their budgets on education, which has helped regional equity. That the party pays such close and relentless attention also ensures that policies are adjusted to update curriculums and teaching standards. Society at large shares the fixation. Vietnam's families are committed to education because of its ingrained Confucianism, suggests Ngo Quang Vinh, a social-sector officer at the Asian Development Bank. He says that even poorer parents fork out for extra private tutoring. In cities, many seek schools where teachers have won "excellence in teaching" titles.

All this has reaped rich rewards. As schools have improved, so has Vietnam's economy. But growth is testing the education system, suggests Phung Duc Tung, the director of the Mekong Development Research Institute, a think-tank in the capital, Hanoi. Firms increasingly want workers with more sophisticated skills, such as team-management, that Vietnamese students are not trained for. Growth has also pulled in migrants to cities, overburdening urban schools. More and more teachers are forsaking education for higher-paying jobs in the private sector. To ensure Vietnam remains best-in- class, the government will have to tackle these trends. As Ho Chi Minh liked to remind people, cultivation requires constant attention. ■

Ethnic violence in India

The need to close Pandora's box

DELHI

A political solution to the conflict in Manipur remains elusive

MANIPUR IS A state of fertile valleys and lush green hills on the border with Myanmar in India's north-east, and home to some 3m people. For the past two months it has also been the site of a deadly and uncompromising flare-up in one of Asia's longest-running ethnic conflicts. Though violence is currently subsiding, there seems to be little political will to resolve the underlying conflict, which could boil over again at any time.

The violence pits the state's majority-Hindu Meitei community against its hill tribes, chiefly Christian Kukis. The Meitei, who dominate the valley, including the capital, Imphal, have long claimed that Kukis have been unfairly privileged by their tribal status. The Kukis oppose demands by the Meitei to be included in the state's list of "scheduled tribes", which would expand their access to government jobs allocated by tribal quotas, and allow them to settle in tribal areas. Kukis fear this would further strengthen Meitei economic dominance and threaten their own already limited livelihoods.

More than 130 people have been killed and hundreds more injured in mob attacks and clashes with security forces since the violence worsened following a protest march on May 3rd, organised by a union of tribal students against the inclusion of the Meitei in this list. Hundreds of homes and churches have been burnt and members from both communities living in mixed areas have been forced to flee, with as many as 60,000 displaced. A process of ethnic cleansing is largely complete, say people living in the state.

The escalation was preceded by months of simmering conflict in which the state government has not been a neutral party. Its chief minister is Biren Singh of the Bharatiya Janata Party (BJP), the ruling party nationally, who is a Meitei. The government accuses Kukis of peddling drugs and sheltering illegal immigrants. Under the guise of protecting forest land, it had been stepping up evictions in tribal villages in recent months.

Lately the violence has subsided, owing both to a heavier and better-managed central-government security presence and to disruption from heavy monsoon rains. Residents in both the capital and the hills report a tenuous calm. The central government has deployed the army to guard a buffer zone between tribal areas and the valley; most of the state has had no internet service since early May.

The conflict remains unresolved. A peace committee convened by the central government earlier this month was stillborn when leaders from both sides declared its members unacceptable and refused to engage with it. Kuki leaders have revived old demands for wide-ranging political autonomy before agreeing to talks, a condition Mr Singh has ruled out.

The chief minister himself appears to be on increasingly shaky ground. After briefing the home minister, Amit Shah, in Delhi over the weekend, Mr Singh conced-



ed to reporters that the situation was "very chaotic" and "We can't say what's happening now." Yet he also seems to be seeking to project a contradictory sense of normality. On Tuesday he ordered government employees to return to their posts or face having their salaries cut, much to the chagrin of those who had been displaced. They are scared to return to their homes, many of which have in any case been destroyed. "How can we go back if we cannot be sure that the government will protect us?" asks Benjamin Mate, a Kuki and BJP politician, who fled from Imphal in May.

With the state authorities seen as weak and compromised, leaders from both sides hope the central government may broker a deal. Yet despite a four-day visit to the state last month by Mr Shah, few signs of what such a political solution might look like have emerged, beyond a promise from the central government to maintain security in tribal areas. Renewed violence remains a threat. Vigilante groups still control thousands of weapons looted from state-police armouries.

Meanwhile, displacement is turning into a humanitarian disaster. Relief camps across Manipur are filling up with people coming back to the state after exhausting their relatives' patience. One resident of Churachandpur, a tribal district in the south, says the local camps currently house some 16,000 people in atrocious, unhygienic conditions exacerbated by heavy rain. Fevers and diarrhoea are widespread; markets remain shut and medicine and food are running low, as relief goods promised by the state government have yet to reach the area. If a deal remains elusive, displacement may soon prove deadlier than violence. ■

Banyan Finding a voice

An effort to give first Australians a say in their own affairs is in the balance

BEGINNING IN 2016 thousands of Aboriginal and Torres Strait Islanders from hundreds of communities across Australia came together in regional dialogues culminating in a constitutional convention. The consultations were impressively inclusive—far more so, for instance, than for white Australians when the country's constitution was agreed on in 1901. Out of the convention came an "Uluru Statement from the Heart". It identified structural failings ruining indigenous lives. It called for an advisory body, a "Voice to Parliament" to be enshrined in the constitution. Its aim is to improve outcomes by giving indigenous Australians a greater say over laws and policies that are foisted on them.

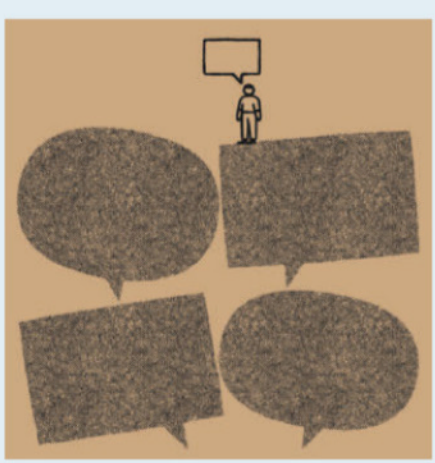
On June 19th a law introduced by the government of Anthony Albanese, the Labor prime minister, passed, enabling a national referendum on the matter. It will be held later this year. At stake is not just how modern Australia reckons with a past blighted by the treatment of its indigenous people. Approving the Voice would represent a collective desire to bring the continent's first inhabitants into the national fold and to redress the vast disparities that exist between them and everyone else. Here is a chance to remake Australia's future. But the bar for constitutional change is high, requiring a majority of votes and support in a majority of states. On current polling, Australians may vote against it.

Aboriginal Australians represent the longest continuous cultures on Earth—tens of thousands of years. Yet it is hard to understate the grim hand dealt them since white settlers first arrived. They brought disease and chased Aboriginal people into reserves or forced them into servitude. Frontier massacres—inoffensively called "dispersals"—continued into the 20th century. The constitution of 1901 marked the start of Australian nationhood. Yet it decreed that Aboriginals not be counted. Up until the early 1970s, "stolen generations" of mixed-race children were taken from their families and put in church-run missions. Meanwhile, full-blooded Aboriginals were assumed to be headed for extinction; the whites' job was to "smooth the dying man's pillow".

Only in 1967 was the constitution amended to count indigenous Australians in the census and to make the federal government, for the first time, responsible for Aboriginal policy. Recognition of native title to land came only in 1992.

For a sense of the hardships, drive out of Alice Springs to one of the indigenous "camps" around its fringes. The rest of Australia is a world away. Broken cars and torn mattresses litter the streets. Overcrowded homes go without electricity when owners cannot pay. Unemployment, alcoholism, domestic violence and broken homes are legion. As Banyan visited, a posse of police burst into one house.

Aboriginal Australians die, on average, eight years younger than others. Just over 3% of Australia's 26m people, they fill more than a quarter of its prison cells. A higher proportion of their population is incarcerated than any other in the world. Two-fifths of children in care are Aboriginal, taken from troubled parents. Aboriginal people are more than twice as likely as other Australians to kill themselves. "This is the torment of our powerlessness," the convention declared at Uluru, the sacred rock that rears up outside Alice Springs.



Billions of dollars go each year on well-intentioned policies to improve indigenous welfare. They have failed, as Thomas Mayo and Kerry O'Brien argue in a booklet about the Voice, because decisions made in faraway Canberra with too little indigenous input always face the risk of lurches in government direction.

The Voice is intended to rectify that. Some critics warn it will have overweening powers. That is unfair. The Voice will not be in Parliament, but have the constitutional right to make representations to it. That is something, even if Parliament may still reject them.

Some arguments against the Voice, says Hannah McGlade, an academic at Curtin University, smack of racism, even when it is being decried. Peter Dutton, leader of the right-wing opposition, claims the Voice "will permanently divide us by race", having an "Orwellian effect where... some Australians are more equal than others".

Yet the Voice would give Aboriginal people a say where they still have little. A leg up for them does not mean a leg down for others. What better way, indeed, for a nation to come together than to deal with its greatest unfinished business. And what a blunder it would be to deny indigenous Australians a fair go.



Marine archaeology

Bringing up the past

BEIJING

By salvaging shipwrecks, China hopes to enhance its territorial claims in the South China Sea

DEEP UNDER the South China Sea, below the reach of sunlight, lies treasure. Last year Chinese researchers found two rotting shipwrecks some 1,500 metres down and 20km apart. One contains thousands of porcelain cups and vases, their bright blue-and-white glazes half-covered in silt. The other holds timber. The two wrecks offer a glimpse of global trade during the Ming Dynasty (1368-1644), when porcelain fired in the imperial kilns of southern China was shipped to buyers as far away as Europe. The timber was probably headed in the other direction, perhaps towards Chinese shipyards. The discoveries are of interest, however, not just to scholars.

Officials in Beijing say the wrecks "confirm historical facts that Chinese ancestors developed, used and travelled to and from the South China Sea". That may not sound like a geopolitical statement, but such claims are the soft side of China's push to control nearly the entire body of water. Larger than the Mediterranean, the sea is still a crucial trade route and home to valuable fish stocks and energy reserves. Seven countries have claims to part of it. But China's is by far the most expansive. Its maps feature a "nine-dash line" that stretches over 700 nautical miles from its coastline. China asserts sovereignty over the vast area within (see map on next page).

Much of this task falls to China's navy and coastguard, which have long tried to bully its maritime neighbours. But Chinese officials are also compiling a (rather dubious) historical case. They point to ancient Chinese maps and texts that refer to southern seas. The wrecks add another layer to their argument. By China's logic, the remains of old Chinese ships mark territory which the country once controlled—and, therefore, which it still should.

There is plenty for salvagers to find in the South China Sea. A portion of it, near the Spratly Islands, is called Dangerous Ground due to its poorly charted rocks, reefs and shoals. Dreams of sunken riches have lured commercial treasure-hunters. One called Mike Hatcher, a Briton, led an expedition in 1985 that found the wreck of the *Geldermalsen*, an 18th-century Dutch East India Company ship that was carrying Chinese porcelain and gold. The "Nanking cargo", as it became known, raised more than $20m at auction in Amsterdam.

Two Chinese porcelain experts were sent to the auction to buy some of the items, which China considered its property. But, with only $30,000 at their disposal, they walked away empty-handed. A year later China's national museum created an underwater-archaeology centre and the state began investing heavily in the field.

Today China dominates the wreck-finding business. Near the Paracel Islands, which are also claimed by Vietnam, Chinese researchers have found at least ten wrecks—proof, they say, that China had "continuously managed" the area for centuries. Conveniently, the Chinese seem to find only their own wrecks in waters they claim. They don't collaborate with foreign archaeologists and are intolerant of other expeditions. In 2012 a Chinese ship chased away one led by a French archaeologist working with the National Museum of the ▸▸

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Philippines near the Scarborough Shoal. The territory is claimed by China, Taiwan and the Philippines. China accused the expedition of trying to destroy evidence that the area had been discovered by China.

For years China's archaeologists stayed in shallow, sunlit waters, where wrecks are easier to spot and scuba divers can help with excavations. Since 2018, though, they have also been looking in the deep sea (anywhere below 200 metres), where less light and increasing pressure mean better technology is needed. Sonar pulses are used to probe the sea floor. Submarines inspect promising sites. The Ming-era discoveries are indicative of China's ability to reach down deeper.

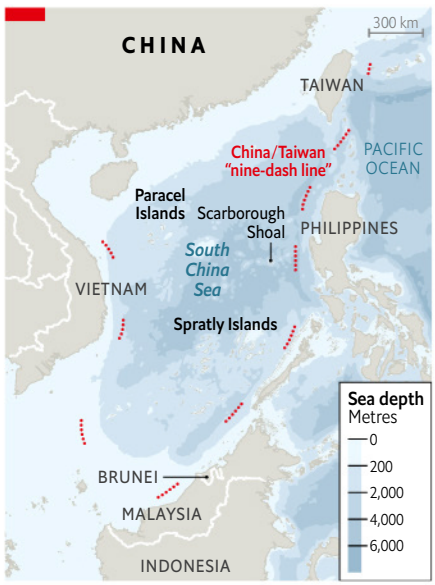
China's advances in underwater archaeology have been impressive. In 2007 it lifted an 800-year-old ship called the *Nanhai One* (originally discovered by a British team in 1987) out of the sea and into a custom-made saltwater tank on land. The research submarine that discovered the Ming-era wrecks, called the *Shenhai Yongshi* (or *Deep Sea Warrior*), holds three people and can withstand the pressure at depths of up to 4,500 metres. It has two robotic arms that can pick up delicate artefacts, as well as a cluster of cameras that allow researchers to create digital models of wrecks. Its manufacturer, the state-owned China Shipbuilding Industry Corporation (CSIC), boasts that 95% of the sub's components were made in China.

It is no coincidence that CSIC also makes warships. Much of what China is doing in the field of underwater archaeology has military and strategic uses. Exhaustive surveys of the South China Sea help China's navy navigate the waters. Vessels that rely on sonar, such as naval submarines, use information collected about the sea's temperature, currents, saltiness and the seabed, says Brent Sadler, an American former naval officer now at the Heritage Foundation, a think-tank in America. In 2021 an American nuclear-powered submarine crashed into an undersea ridge in the South China Sea.

Deep-sea expertise also helps China bring other treasures to the surface. The *Shenhai Yongshi* has aided efforts to tap large oil and gas fields in the South China Sea. And it has been used to prospect for valuable minerals—such as cobalt, copper, manganese and nickel—in the seabed. That helps explain why China wants to control the body of water—and why it forcibly obstructs the efforts of other countries to fish and explore for hydrocarbons and minerals. China has ignored a ruling from 2016 by a tribunal at The Hague that struck down most of its territorial claims.

Yet China's historical case is as brittle as salvaged porcelain, say experts. Just because a ship was carrying cargo to or from China, that hardly means it was marking territory under Chinese rule. The nine-dash line seems to have emerged in the 1940s—it would have made little sense to Ming emperors, let alone traders. Many of the thousands of ships lying beneath the South China Sea are not even Chinese. Some were owned by individuals and private firms, says Tansen Sen of New York University Shanghai. Their crews might have hailed from across the Indian Ocean and spoken Arabic, Persian or Malay.

In other words, the South China Sea has a rich, multicultural history. China is best equipped to explore it. No one in the region can match its capability to find and excavate ships in the deep sea. "From a scholarly point of view, they are doing something that's very important, because others can't do it right," says Mr Sen. But the country most able to reveal the sea's fascinating past is also the one most likely to misrepresent it. ■





Finders, keepers

Xi Jinping's language

Nonne intellegis?

To understand China's leader, it helps to be steeped in the classics

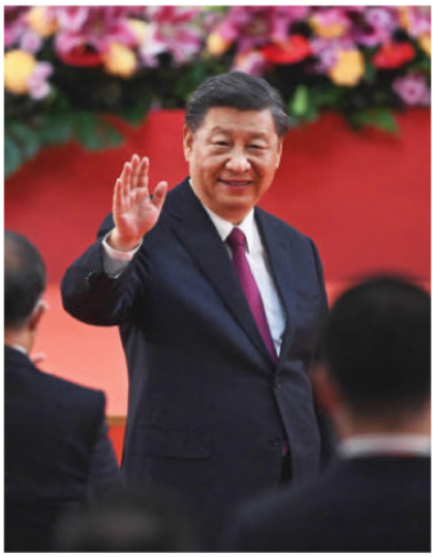
TAKE FOUR Chinese characters, all of them in everyday use. Put them in a certain order and, lo, they become a phrase that looks like classical Chinese—the kind of language used by the literati of yore. The idea they convey could be expressed just as succinctly in colloquial Chinese, but the classical style has gravitas. And it is a phrase loved by Xi Jinping, China's leader, so all must follow suit.

More than any of his predecessors, Mr Xi likes to spice up his speeches with quotations from classical literature, especially poetry and philosophy. It fits one of his stated missions: instilling "cultural self-confidence" (alongside confidence in the political system). And it helps to buff up his image. In Chinese history, rulers were expected to be erudite. Two volumes have been published providing explanations of Mr Xi's classical aphorisms.

Mr Xi's four-character phrase is not among the more colourful of his classicisms. It is *guozhidazhe*, which he uses to mean "the main affairs of state" or "national priorities". Unlike other phrases that he bandies around, it has no obvious origin in a well-known text. It is as if a Western leader, when presenting a big idea, were to concoct a Latin term to describe it. The grandiosity of Mr Xi's phrase makes it stand out, which is clearly what he wants.

Since Mr Xi's first public use of *guozhidazhe*, during a trip in 2020 to the province of Shaanxi, it has taken the country by storm. Officials pepper their speeches with it. Articles about it keep appearing in state media (the phrase is usually adorned with attention-drawing quotation marks). Chinese academics write papers on the topic. Communist Party members discuss the term at meetings. It has spawned a book industry: "What is Guozhidazhe?" is the title of one work, published last year, that provides the answer in 156 pages.

Why should such a banal-sounding phrase get such a billing? It is because *guozhidazhe*, as used by Mr Xi, is a catch-all that really means "my lofty goals". The term is applied to everything from "food security" (see next story) to "political security" (keeping the party in charge) and fulfilling the "Chinese dream" (making China a global power and unifying it with Taiwan). Mr Xi says officials must always "cherish guozhidazhe". It is a way of reminding them who is boss. When they use the term, it is often in conjunction with



God ye good morrow, gentlemen

other phrases expressing loyalty to Mr Xi.

Experts in China have tried to show that *guozhidazhe* has links with the classical canon, even if it is not a phrase associated with one of the literary giants. One such scholar is Chen Chengzha of Shanghai University of Finance and Economics. He points to the "Tao Te Ching", a core text of Taoist philosophy that was written over two millennia ago (Mr Xi likes to quote from it). This mystical work says there are four great things in the universe (*guozhidazhe* could be translated as "the country's great things"). One of them is the ruler. The flattery is obvious.

Engineering an image

Some cynics in China wonder whether Mr Xi is really as learned as he makes himself out to be. Much of his education was disrupted by the tumultuous Cultural Revolution. He attended one of the country's most prestigious universities, Tsinghua, at a time when little was taught there except Marxism and Maoism, and classical literature was scorned. Ostensibly, Mr Xi's degree was in chemical engineering. Later, while working as a provincial leader, he got a doctorate from Tsinghua. The English title of his thesis was "A Tentative Study on China's Rural Marketisation".

No such scepticism surfaces in the official media. In 1969, when a teenager, Mr Xi is said to have hauled "heavy suitcases full of books" when he was sent to the countryside to do farm work. The collections of his classical references purport to show his familiarity with a broad array of writers, from Confucius to Su Shi, an 11th-century poet. He has supposedly read numerous works by Shakespeare, or so the public is told. Xinhua, a government news agency, describes his reading list as "going on and on". It is surprising, perhaps, that he has much time left for *guozhidazhe*. ■

Entertainment

Planting seeds

A reality-TV show about farming doubles as propaganda

A YOUNG MAN drives a harvester through a rice field. Slow down, a farmer chides him. But he zooms on—then gets stuck in the mud. Welcome to "Become a Farmer", the hit reality-TV programme on iQIYI, a Netflix-like Chinese service. The show transplants ten preppy actors and musicians from the city to the countryside in Zhejiang province, where they must live together and try their luck at farming.

The 20-something men (pictured) arrive wheeling giant suitcases, only to find what one calls "inhuman" living conditions, an outdoor toilet and endless mud. Audiences are entertained as they work things out and embrace the task at hand. (The group has six months to turn a profit from about ten hectares of farmland.) But this is also propaganda. Rural revitalisation is a pet project of China's leader, Xi Jinping.

Mr Xi, of course, is not the first Chinese leader to elevate rural life. Mao Zedong sent millions of city dwellers to the countryside during the vicious Cultural Revolution of 1966-76. A young Mr Xi was one of them. At first he couldn't take it and ran back to Beijing. But he was arrested and eventually returned to the village of Liangjiahe. There, according to Communist Party mythology, he learned the virtues of hard work.

Today Mr Xi exhorts young Chinese to show "responsibility and grit"—an apparent dig at their own fragility—and to focus on collective goals. "Become a Farmer" embraces these messages. "When you see me again, I'll be a real tough man," says a star in the show's trailer. Indeed, he is soon seen mucking in with his teammates, who support each other. "It's always right to rely on the crowd," says one.

Other government priorities, such as food security, are reflected in the show, too. Episodes remind viewers that China depends on imports. "Every piece of grain, every grain of rice, is hard to come by," says the narrator in the premiere. Mr Xi and other leaders have long called for Chinese rice bowls to be filled with locally grown crops.

In recent years, millions of Chinese have joined the "new farmer" movement, according to the government. Many are young graduates who grew tired of the rat race or couldn't find jobs (the unemployment rate for people aged 16 to 24 in cities is over 20%). The state, which supports the newbies, hopes their skills will lead to increased production. On the show, stars gush over cool machines and high-tech methods. "I think the farmers are great," says one.

The series aims to revive audiences' love for the soil and nature, said a producer earlier this year. But the political messages of "Become a Farmer" are about as subtle as its product placement (the men engage in manual labour all day but drink only a zero-calorie beverage). Young people need to "abandon arrogance and pampering", says Mr Xi. The government wants them to learn from the peasants—again.



Buckets of fun

Chaguan | Wagnerian drama flops in China

To officials in Beijing, Russia's woes prove Mao's adage: the party must command the gun



What lessons might China's leaders learn from the recent Wagnerian drama in Russia? To hear scholars in Beijing tell it, China is not the country in need of lessons. Instead, it is for Russia to study China's good example. Specifically, Vladimir Putin should learn from the wisdom of China's Communist Party founders, who imposed strict, top-down political control over armed fighters from the earliest days of the revolution. They cite Chairman Mao Zedong's dictum: "The party commands the gun, the gun must never be allowed to command the party."

That tone of complacency might surprise some in the West. Logic would suggest that turbulence in Russia should provoke a crisis of self-doubt in the corridors of Chinese power. After all, just days before Mr Putin's invasion of Ukraine, the Russian leader secured a written agreement offering friendship "without limits" from his Chinese counterpart, Xi Jinping. Even as Russian troops and mercenaries commit atrocities in Ukraine, China's diplomats and propagandists have stuck to an unvarying script: namely, that the war is the fault of West, which pushed Russia into a corner by expanding the NATO alliance, and is being prolonged with weapons supplied for the profit of American arms dealers. They have hewed to those pro-Russian talking points even as they undermine China's image in many Western capitals, notably in Europe.

Spurning all calls to condemn the invasion, Mr Xi has stood by Mr Putin personally. On a state visit to Moscow in March, China's leader paused at the Kremlin's doors and allowed cameras to record him calling Mr Putin his "dear friend", before telling him: "Right now there are changes, the likes of which we haven't seen for 100 years, and we should drive those changes together."

Today, Mr Xi's bet on Mr Putin looks riskier than before. Yet if outsiders expect to hear Chinese leaders fretting openly about backing a loser, they fail to grasp the nature of the two leaders' bond. The rulers of China and Russia are united, powerfully, by contempt for the West and its liberal, democratic norms. Their words reveal a shared conviction that an older, bleaker world order—based on balancing the interests of individual states, with special deference paid to great powers—is coming back. Each country brings very different tools and techniques to that fight. In China, officials and scholars agree, semi-publicly, that Russia can be a reckless and sometimes alarming friend. But they also call this struggle for dominance a long one. What matters is that the West should be driven from the global centre-stage in the end.

In the past few days, censors and propaganda chiefs allowed the Chinese public to receive relatively unfiltered reports about the Wagner Group's mutiny. While official media issued careful reports calling the crisis an internal affair of Russia, online news outlets and commentators were less cautious. Censors let them repost and debate video statements by the mercenary group's founder, Yevgeny Prigozhin, alleging corruption in Russia's high command. Netizens compared him to sundry Chinese rebels from antiquity (An Lushan, a treacherous eighth-century general, was a popular choice). Such relative openness may signal China giving itself room for manoeuvre, should Mr Putin's woes continue. Most simply, it seems to show a lack of panic at the top in Beijing.

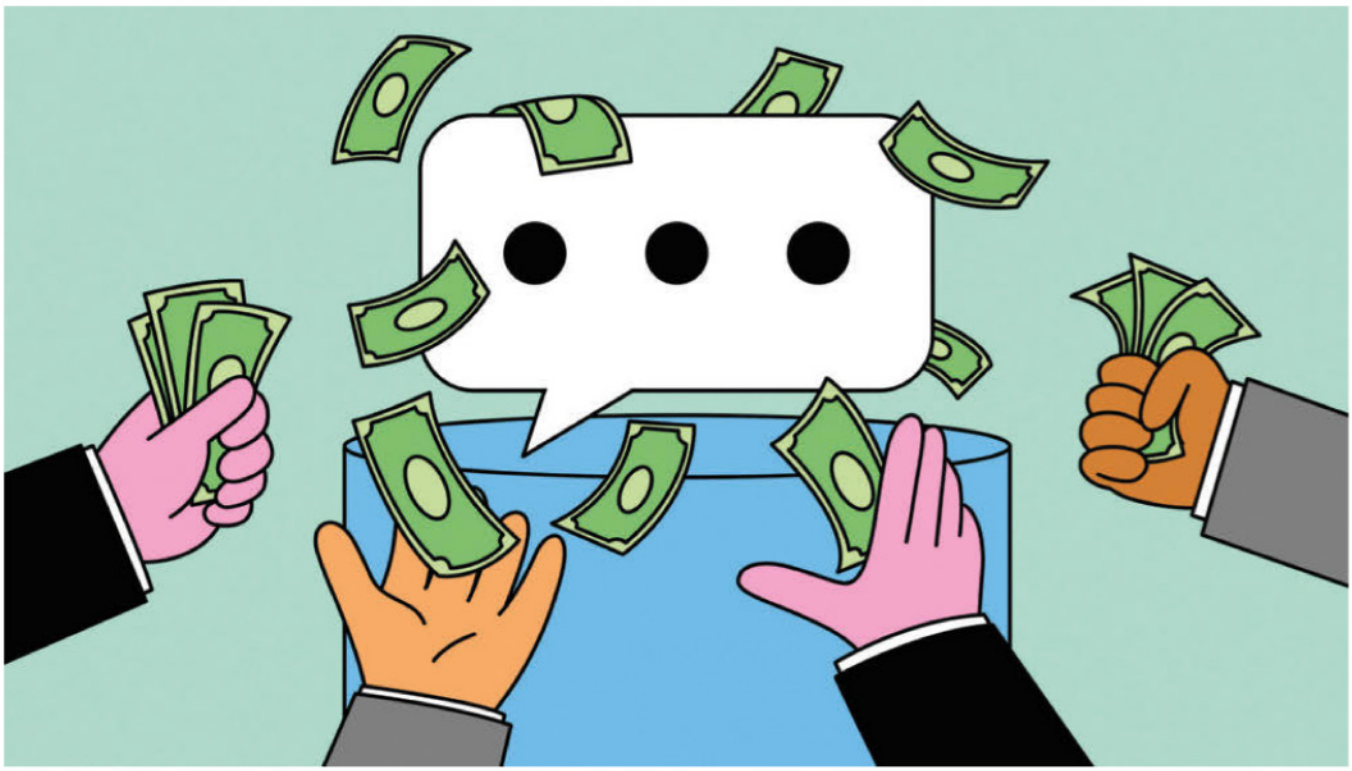
China's confidence should be enhanced by recent events, suggests Zhou Bo, a retired senior colonel in the People's Liberation Army (PLA) now at the Centre for International Security and Strategy at Tsinghua University. He recalls how Mao imposed party cells and commissars on the Red Army when it was a band of ragtag guerrillas, and praises the modern PLA for maintaining this "fine" tradition. "Maybe what happened in Russia just proves to China's leadership that what we do is right," says Mr Zhou. It suited Russia to use mercenaries to project power overseas, or the Wagner Group would have been reined in sooner, he ventures, just as it suited America to use armed contractors from firms like Blackwater in Iraq, or Britain's East India Company to build an empire with for-profit troops. But such outsourcing would never be tolerated in China. Nor would the PLA ever recruit convicts from prison as the Wagner Group did, "no matter how brave", he says.

China does use private security companies to guard its nationals working abroad, concedes Mr Zhou, a former PLA liaison officer to international anti-piracy patrols off the Horn of Africa. But, he adds, this is because the Belt and Road Initiative, a vast infrastructure scheme, takes Chinese firms to dangerous places.

Good friends, different business models

China is not averse to using civilians to perform ambiguous, quasi-military tasks. Fishermen aboard large, steel-hulled ships are sometimes called up as a state-backed "maritime militia" to bully China's neighbours. But when projecting power abroad, China's preference is typically for order, says Alessandro Arduino of King's College London, author of a forthcoming book, "Money for Mayhem: Mercenaries, Private Military Companies, Drones, and the Future of War". Perhaps 20 Chinese private security companies are active overseas. In addition to protecting Chinese companies and investments in Africa and elsewhere, they are often "brand ambassadors" for China's high-tech population controls, selling facial-recognition cameras, drones and other surveillance kit, he reports. Many Chinese guards are unarmed, hiring locals with guns as needed. In contrast, Russian private military companies like the Wagner Group actively profit from chaos and killing. "Insecurity is their business model," says Mr Arduino of the Russians.

Stability-obsessed China might sound an unlikely supporter of Mr Putin's reckless, murderous adventure in Ukraine, then. But China's goals are larger than this conflict. If the war drags on and if the endgame finds the West weary, divided and weakened, as China still hopes will happen, party leaders in Beijing will forgive a bit of Russian chaos on the way. In the meantime, PLA commanders can expect fresh lectures about absolute loyalty to Mr Xi. ■



Artificial intelligence

ChatGPT Inc

SAN FRANCISCO

Our "early adopters" index examines how corporate America is investing in AI

TECHNOLOGY STOCKS are having a bumper year. Despite a recent wobble, the share price of the Big Five—Alphabet, Amazon, Apple, Meta and Microsoft—has jumped by 60% since January, when measured in an equally weighted basket. The price of shares in one big chipmaker, Nvidia, has tripled and in another, AMD, almost doubled. Their price-to-earnings ratios (which measure how much the markets think a company is worth relative to its profits) are ten times that of the median firm in the S&P 500.

The main reason for the surge is the promise of artificial intelligence (AI). Since the launch in November of ChatGPT, an AI-powered chatbot, investors have grown ever more excited about a new wave of technology that can create human-like content, from poems and video footage to lines of code. This "generative AI" relies on large language models which are trained on big chunks of the internet. Many think the technology could reshape whole industries, and have as much impact on business and society as smartphones or cloud computing. Firms that can make the best use of the technology, the thinking goes, will be able to expand profit margins and gain market share.

Corporate bosses are at pains to demonstrate how they are adopting AI. On April 4th Jamie Dimon, JPMorgan Chase's boss, said his bank had 600 machine-learning engineers and had put AI to work on more than 300 different internal applications. David Ricks, the boss of Eli Lilly, has said that the pharmaceutical giant has more than 100 projects on the go using AI.

Company case studies reveal only part of the picture. To get a broader sense of which companies and industries are adopting AI *The Economist* examined data on all the firms in the S&P 500. We looked at five measures: the share of issued patents that mention AI; venture-capital (VC) activity targeting AI firms; acquisitions of AI firms; job listings citing AI; and mentions of the technology on earnings calls. Because other types of AI could bring benefits for business, our analysis captures activity for all AI, not just the generative wave. The results show that even beyond tech firms the interest in AI is growing fast. Moreover, clear leaders and laggards are already emerging.

AI expertise already seems to be spreading (see chart on next page). About two-thirds of the firms in our universe have placed a job ad mentioning AI skills in the past three years, says PredictLeads, a research firm. Of those that did, today 5.3% of their listed vacancies mention AI, up from a three-year average of 2.5%. In some industries the rise is more dramatic. In retail firms that share has jumped from 3% to 11%, while among chipmakers that proportion grew from 9% to 19%.

The number of AI-related patents being registered trended upwards between 2020 and 2022, according to data provided by Amit Seru of Stanford University. PitchBook, another research firm, concludes that in 2023 some 25% of venture deals by S&P 500 firms involved AI startups, up from 19% in 2021. GlobalData, also a research firm, finds that about half the firms scrutinised have talked about AI in earnings calls since 2021, and that in the first

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quarter of this year the number of times AI was mentioned in the earnings calls of America Inc more than doubled compared with the previous quarter. Roughly half have been granted a patent relating to the technology between 2020 and 2022.

The use of generative AI may eventually become even more common than other sorts of AI. That is because it is good at lots of tasks essential to running a firm. A report by McKinsey, a consultancy, argues that three-quarters of the expected value created by generative AI will come in four business functions—research and development, software engineering, marketing and customer service. To some extent, all these operations are at the core of most big businesses. Moreover, any large company with internal databases used to guide employees could find a use for an AI-powered chatbot. Morgan Stanley, a bank, is building an AI assistant that will help its wealth managers find and summarise answers from a huge internal database. SLB, an oil-services company, has built a similar assistant to help service engineers.

While the adoption of AI is happening in many firms, some are more enthusiastic than others. Ranking all the companies using each metric and then taking an average produces a simple scoring system. Those at the top seem to be winning over investors. Since the start of the year, the median share price of the top 100 has risen by 11%; for the lowest-scoring quintile it has not moved at all.

The top spots are unsurprisingly dominated by Silicon Valley. On a broad definition, the S&P 500 contains 82 tech firms. Almost 50 of them make the top 100. Nvidia is the highest-scoring firm. According to data from PredictLeads, over the past three years a third of its job listings have mentioned AI. In the past year the firm has mentioned AI in its earnings calls almost 200 times, more than any other company. Other high-ranking tech firms include the cloud-computing giants—Alphabet (3rd), Microsoft (12th) and Amazon (34th). They sell access to a range of AI tools, from services that help train sophisticated models to software that allows the use of AI without having to write reams of code.

Beyond tech, two types of firms seem to be adopting AI the quickest. One is data-intensive industries, such as insurers, financial-services firms and pharmaceutical companies. They account for about a quarter of our top 100. These firms tend to have lots of structured datasets, such as loan books or patient files, which makes it easier to use AI, notes Ali Ghodsi of Databricks, a database firm. Around a tenth of JPMorgan Chase's current job listings mention AI. The firm recently filed a patent for IndexGPT, an AI-infused chatbot that gives investment advice. Health-care firms like Gilead Sciences and Moderna use AI to discover new drugs. Others, such as Abbott and Align Technology, are building AI-powered medical devices. America's Food and Drug Administration approved 97 such machines last year, up from 26 in 2017.

A second group is industries that are already being disrupted by technology, including carmaking, telecoms, media and retail. Thirteen firms from these industries make the high-scoring 100, including Ford, General Motors and Tesla. The rise of electric vehicles and the prospect of self-driving cars has encouraged vehicle manufacturers to invest in technology. In March Ford established Latitude AI, a self-driving car subsidiary that might one day rival GM's Cruise. In April Elon Musk told analysts that Tesla was buying specialised AI chips and was "very focused" on improving their AI capabilities in an effort to improve his firm's self-driving efforts.

Retailers are using AI to bolster their core business. Nike, a sportswear giant, filed an application for a patent in 2021 for a system that can generate three-dimensional computer models of trainers. Christian Kleinerman of Snowflake, a database provider, notes that retailers are also taking advantage of the growth of e-commerce by collecting more data on customers. That allows more accurate targeting of marketing campaigns. Some may take personalisation a step further. In 2021 Procter & Gamble, a consumer-goods giant, applied for a patent for an AI-based system which analyses users' skin and hair conditions based on photos, and recommends products to treat them.

One source of variation in AI use across industries may be a result of the type of work undertaken. A working paper led by Andrea Eisfeldt of the University of California looked at how exposed firms are to AI. The researchers assessed which tasks took place in a firm and how well ChatGPT could perform them. The most exposed were tech firms, largely because AI chatbots are good at coding. Those industries least exposed, such as agriculture and construction, tended to rely on manual labour.

Clear leaders and laggards are emerging within industries, too. About 70 firms in the S&P 500 show no sign on any of our metrics of focusing on AI. That includes firms in AI-heavy industries, such as insurers. The mass of smaller firms not included in the S&P 500 may be even less keen. One distinguishing factor within industries may be investment. For the top 100 firms in our ranking, the median R&D expenditure as a share of revenue was 11%. For those in the lowest 100 it was zero.

Vlad Lukic of BCG, a consultancy, notes that there is even a lot of variation within companies. He recalls visiting two divisions of the same medium-sized multinational. One had no experience working with AI. The other was advanced; it had been using a pilot version of the technology from OpenAI, the startup behind ChatGPT, for two years.

Among early adopters, many non-tech companies' AI use is growing more sophisticated. Mr Seru's data reveal that about 80 non-tech firms have had AI-related patents issued which were cited by another patent, suggesting that they have some technological value. Some 45 non-tech companies in the S&P 500 have recently placed ads which mention model training, including Boeing, United Health and State Street. That suggests they may be building their own models rather than using off-the-shelf technology from the likes of OpenAI. The advantage of this approach is that it can produce more-accurate AI, giving a greater edge over rivals.

However, a shift to in-house training hints at one of the risks: security. In May Samsung discovered that staff had uploaded sensitive code to ChatGPT. The concern is that this information may be stored on external servers of the firms which run the models, such as Microsoft and Alphabet. Now Samsung is said to be training its own models. The firm also joined the growing list of companies that have banned or limited the use of ChatGPT, which includes Apple and JPMorgan Chase.

Other risks abound. Model-makers, in-

Taking Aim

S&P 500 companies, median mentions of AI, selected sectors

	Job listings Jan 2020-Jun 2023, %	Patents 2020-22, %	Earnings calls Q2 2022-Q1 2023
Technology	4.6	8.3	11.5
Banks	3.7	14.9	0.7
Retail	3.0	1.9	1.3
Aerospace/defence	1.9	2.3	0.9
Carmakers	1.8	3.5	5.4
Health-care products	1.7	2.2	3.6
Diversified financial services	1.0	5.3	1.0
Health-care services	0.5	8.2	1.9

Sources: Bloomberg; PredictLeads; GlobalData; Amit Seru, Stanford University; *The Economist*

cluding OpenAI, are being sued for violating copyright laws over their use of internet data to train their models. Some large corporations think that they could be left liable if they use OpenAI's technology. Moreover, models are prone to make up information. In one incident a New York lawyer used ChatGPT to write a motion. The chatbot included fictional case-law and the lawyer was fined by the court.

But all this must be weighed against the potential benefits, which could be vast. Waves of technology frequently turn industries on their head. As generative AI diffuses into the economy, it is not hard to imagine it doing the same thing. Mr Lukic says that the biggest risk for companies may be falling behind. Judged by the scramble in America Inc for all things AI, many bosses and investors would agree. ■

Asian consumer tech

The super-app droop

SINGAPORE

The struggle to expand and make profits at the same time

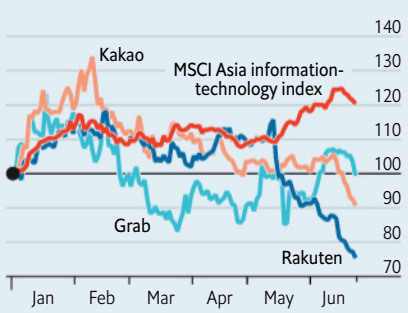
American technology barons occasionally bemoan the lack in the West of "super-apps", multifaceted online platforms offering a variety of different services. But the global interest in the business model belies the difficulties facing existing super-apps in Asia.

Their recent performance has disappointed (see chart). Collectively, the market capitalisation of Singapore's Sea and Grab, South Korea's Coupang and Kakao, Japan's Rakuten, and the parent company of India's Paytm has declined by around 60% since the end of 2021. None of the firms is the same; they each make money from a blend of mobile gaming, social media, e-commerce, ride-sharing and financial payments. What they have in common is an aspiration to bundle together a variety of services which complement one another on one app. They had hoped hoping to emulate Chinese companies, such as Tencent's WeChat and Alibaba's Alipay, which pioneered the business model.

Not so super apps

Share prices, January 1st 2023=100

$ terms



Source: Refinitiv Datastream

But the newer Asian super-apps have been put under huge pressure by a rapidly changing environment. Funding, which was once cheap and plentiful, has dried up, making ambitious growth plans harder to finance. James Lloyd at Citigroup, a bank, notes that China's super-apps started with a core of profitable and engaging businesses (e-commerce for Alipay and social media in the case of WeChat), which other services were built around. Outside China, few firms have balanced both significant scale and earnings in a similar way.

Kakao, a South Korean firm, most closely fits the bill. Unlike most Asian would-be super-apps, it has been reliably profitable. Yet its share price has declined by 8% this year. Because the company is dominant on its home turf, it is running out of room for further domestic growth. Its ride-hailing arm has a market share in South Korea of as much as 90%, by some estimates. The firm wants to raise the international share of its revenues from 10% today to 30% by 2025—but such global expansion comes at a cost.

At other firms the funding squeeze has inspired ambitions for profitability, which inevitably comes at the expense of previous plans for rapid expansion. GoTo, an Indonesian super-app, created from the merger of Gojek, a ride-hailing company, and Tokopedia, an e-commerce firm, was expected to appoint a former banker, Patrick Walujo, as CEO at its shareholder meeting on June 30th, after we published this. Mr Walujo has stressed that his aim is to make the company profitable.

One Asian consumer-tech firm has bucked this year's trend. The share price of Paytm, a would-be Indian super-app based around digital payments, has rallied by around 60%. The stock is still less than half of its all-time high, reached shortly after it floated in November 2021, and the firm has yet to make a profit. Nonetheless, its rising share price may reflect something companies elsewhere in Asia lack: a single, large and growing domestic market to work with. Whether that potential for scale proves enough for a more sustainable future for Paytm has yet to be seen.

The idea of a company using a single platform to offer a variety of services to consumers has an intuitive appeal. But after more than a decade of discussion about the coming dominance of super-apps, many of the Asian firms are still struggling to find a balance between size and profitability. With no end in sight to higher funding costs, a speedy recovery for these one-time darlings of tech investors is hard to foresee. ■

Foreign investment in South Korea

Too close for comfort

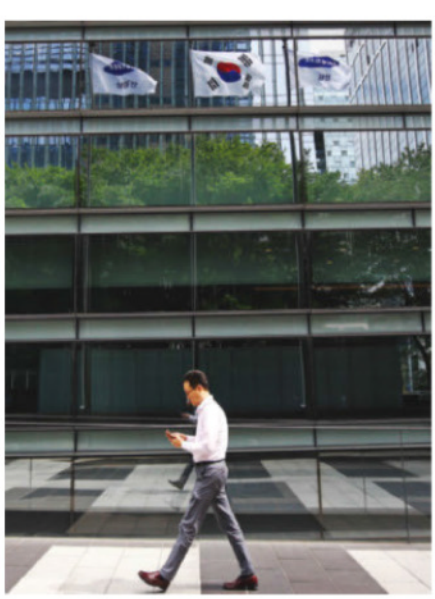
SEOUL

Cosy relations between government and business

Lee Kun-hee embarked on a world tour in 1993 to take stock of Samsung, the firm he inherited from his father. Finding its televisions and other electronics languishing on shelves, he decided to remake Samsung's image. "Change everything but your wife and your children," he told employees. One thing that didn't change, according to a ruling by the International Centre for Settlement of Investment Disputes (ICSID), is the close relationship between such *chaebol*, family-run conglomerates that form the backbone of South Korea's economy, and the government.

On June 20th the World Bank's arbitration forum ruled that South Korea's government had left Elliott Investment Management, an American hedge fund, out of pocket by improperly meddling in a merger between two units of Samsung. The deal in 2015 between Samsung C&T and Cheil Industries was seen as an attempt to ensure a smooth succession between Mr Lee and his son, Lee Jae-yong. Elliott, which owned a 7% stake in Samsung C&T, objected to the valuation of its shares and launched a proxy battle, which it lost after South Korea's National Pension Service (NPS), which held stakes in both firms, backed the deal.

Yet in 2016 Moon Hyung-pyo, the health minister at the time of the merger and by then the head of the NPS, was indicted for pressing the pension service to approve the deal. This triggered a series of investi-



Ties that refuse to flag

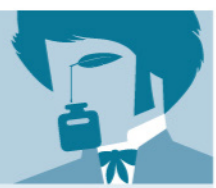
gations into corrupt dealings between Samsung and the government which revealed that the younger Mr Lee had bribed the then president, Park Geun-hye, to aid his succession. Ms Park was impeached; both ended up in jail (and both were subsequently pardoned).

Elliott filed suit in 2018 with the ICSID, claiming that the government's actions violated its free-trade agreement with America, and sought $770m in compensation. The government claimed that Elliott's hedging strategy, which involved buying Cheil swaps after the merger went through, meant that it had made a profit of $1.9m. Despite the court finding in its favour, Elliott says that it was awarded only $108m, including interest and legal costs.

Instead of quietly paying up, on June 27th the Ministry of Justice petitioned the court to deduct from the amount it owed a sum previously paid to Elliott from Samsung related to the merger. Continuing to make life hard for a foreign investor seems at odds with the spirit of the country's capital-market reforms, which are designed to attract investors and end the "Korean discount" that plagues its companies. Such meddling—in other ongoing cases the government is accused of exerting undue influence on the business dealings of foreign firms—in part explains the discount.

The entire affair may also upset ordinary South Koreans. Aside from the drain on the public purse from the court case, it is a reminder that the original merger cut the value of the country's pension fund by $300m, by some estimates. Park Sang-in of Seoul National University says the drama highlights how the "relationship between the government and the *chaebol* will cost the taxpayers money". ■

Bartleby Overloaded overseers



A new paper illuminates the potential and the plight of middle managers

NOTHING TURNS on management theorists more than conflicting incentives. (If the idea of an aroused management theorist has ruined your breakfast, sorry.) They ruminate on financial motives—the adverse impact that individual bonus schemes might have on team collaboration, say. They churn out studies and books on the competing interests of shareholders and the executives who act on their behalf.

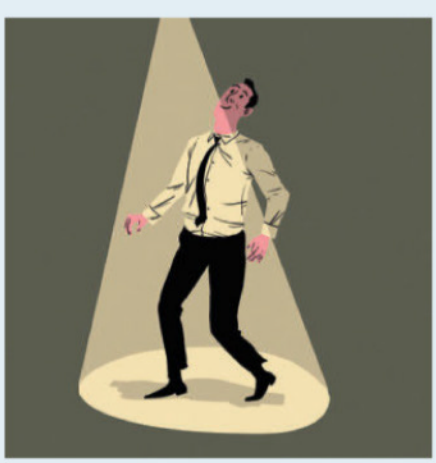
A new paper, published by Achyuta Adhvaryu of the University of California, San Diego, and Emir Murathanoglu and Anant Nyshadham of the University of Michigan, casts fresh light on the problem. It shows that clashing incentives are not always financial, and that conflicts can occur even between different levels of management. In the process it underlines that a much-mocked group deserves to be taken far more seriously.

The authors examined the decisions of middle managers at Shahi Exports, one of India's largest garment-makers. The firm has about 70 factories, where multiple teams of cutters, sewers and finishers produce clothing. In their study the academics tracked which team supervisors were being recommended for soft-skills training by their own managers, and then looked at the effect of that training on productivity and retention.

What they found was curious. On average the training worked. Teams whose supervisors had been through the course saw big productivity gains compared with control groups. But these advances were distributed unevenly. Teams whose supervisors were most highly recommended by middle managers for training experienced no productivity gains; the benefits were concentrated on supervisors who were less recommended. The pattern for retention was the reverse: there was a big drop in subsequent quit rates among supervisors who had been highly recommended by their managers, and little change among less recommended ones.

Mr Adhvaryu et al look at a variety of explanations for this strange pattern and conclude that it reflects a deliberate calculation: managers were nominating those supervisors whom they regarded as flight risks. That did not necessarily suit the interests of the company's senior leaders. But it did suit the interests of middle managers, who bear the burden of filling in for missing supervisors and training new ones. Losing workers, in short, makes their lives a lot harder. Retention matters more to them than productivity.

The paper provides three lessons, beyond the hoary one that incentives matter. The first is that agency problems can occur wherever power is delegated. A decentralised organisation often makes a ton of sense, but it also risks introducing layers of competing interests. Another recent paper by Ingrid Haegele, then of the University of California, Berkeley, found that German managers at a big manufacturing company tried to hoard the best workers for their own teams. When managers are themselves about to move into new positions, they have less incentive to discourage good employees from job-hopping. Ms Haegele found that workers' applications for internal promotions more than doubled during these temporary periods of selflessness.



The second lesson is that middle managers deserve respect more than ridicule. The type of behaviour observed by the academics is possible because these managers have valuable private information: they know who is thinking of leaving the company and who is worth keeping. People in corner offices and boardrooms are usually too distant from the action to have this kind of insight.

All of which means that middle managers can have a hugely beneficial effect on the performance of the workforce if the incentives are right. The third lesson from Shahi Exports is that money is not always the root problem. Its middle managers were making their training recommendations to avoid the extra work that comes from higher churn.

That might make them sound lazy. In fact, they are suffering from a common problem. "Power to the Middle" is a forthcoming book on middle managers by Emily Field, Bryan Hancock and Bill Schaninger, a trio of consultants at McKinsey. It argues that a lack of time and resources bedevils these unfortunate souls everywhere. A survey of 700 middle managers conducted for the book finds that they are spending one full day a week on administrative tasks. Replacing good workers is never fun, but it is a lot worse if a manager is already running on empty. You don't need to be a theorist to work that out.

Film and fashion

Traders of a lost art

Indiana Jones and the fedora boom

In a summer crowded with blockbusters, Disney may sweat to recoup the $295m it reportedly spent making "Dial of Destiny", the fifth and final Indiana Jones film, out on June 30th in America (see Culture section). But the movie is already a hit for a firm in another industry. Herbert Johnson, a 134-year-old London hatmaker, is fielding soaring demand for a certain fedora.

"It's been just glorious," says Michelle Poyer-Sleeman, the master hatter who designed the latest iteration of the Poet, the hat first donned by Harrison Ford in "Raiders of the Lost Ark" in 1981. The firm had to keep the product under its hat until a couple of weeks before the movie's launch. But already the "Destiny Poet" has caused a seven-fold rise in Herbert Johnson's revenue since June last year. A backlog of over 300 orders waits to be handmade in a workshop that hums with the sound of fans, steam and irons.

The boom marks a sharp turnaround for the firm. After the success of "Raiders" it provided Indy's hats in the follow-ups, "Temple of Doom" (1984) and "Last Crusade" (1989). But a downturn in hat-wearing brought hard times. Venerable hatters such as Italy's Borsalino went bust. Herbert Johnson was sold and for a while stopped making its hats in-house. For "Kingdom of the Crystal Skull", Indy's fourth adventure, in 2008, the producers went elsewhere.

After a rethink in 2016 the firm went back to handmaking and focused on the Poet, which today accounts for three-quarters of sales. The internet brought new customers, many of them American (and many women). Customers wait up to six months for their £495 ($630) rabbit-felt Poet, which comes with an optional "Raiders turn", a 25-degree twist of the crown to match the jaunty angle at which Mr Ford wore his (supposedly to keep it on during stunts). The firm advises keeping it out of heavy rain and heat and to brush it only anticlockwise. Dr Jones would surely scoff.

Swaine, the 273-year-old luxury-goods firm that owns Herbert Johnson, hopes for success with other on-screen products. It sells a £520 umbrella of the sort twirled by Gene Kelly in "Singin' in the Rain" and a £3,200 attaché case used by James Bond in "From Russia with Love" (minus the concealed knife). In March it opened a new flagship shop. Hat-wearing is making a comeback, says Ms Poyer-Sleeman, who spotted several clients at the "Dial of Destiny" premiere. There is also a "swing back to quality", she says. People want something that will last, "and we're in that niche." ■



A head for business

Siemens Energy

An unfair wind

BERLIN

Siemens Energy is blowing off course

Christian Bruch always said that the turnaround of Siemens Energy would not be easy, but "this setback is more severe than I thought possible". In a call with analysts on June 23rd, after the company dumped its profit guidance for the year, the boss of Siemens Energy, a spin-off in 2020 of the gas and power business of Siemens, an engineering behemoth, said that "too much has been swept under the carpet". He admitted that Siemens Gamesa, its maker of wind turbines, will make big losses this year and will take longer than expected to become profitable.

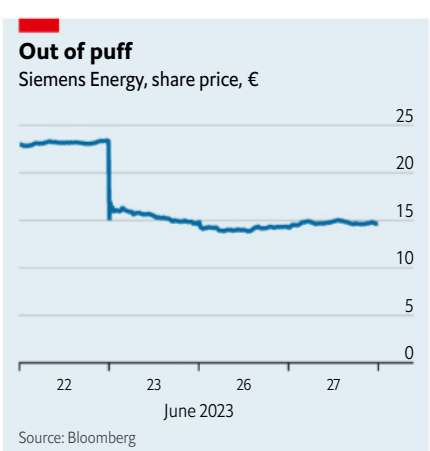
The reaction to the announcement by Siemens Energy, a company with 92,000 employees and sales of €30bn ($32.8bn) last year, was brutal. Its share price fell by over a third (see chart), wiping off nearly €7bn in market capitalisation. "The market reacted so strongly because Mr Bruch can't tell how bad the problem is and how much it will cost to fix it," says Felix Schröder of Union Investment, a fund manager. Siemens Energy says it will cost "in excess of €1bn" to fix Gamesa's problems; Jefferies, a brokerage, puts it at €2bn.

Siemens Energy has three sets of problems, says Andre Kukhnin of Credit Suisse, a bank. One is that the integration of Siemens's offshore-wind business and the onshore operations of Gamesa, a Spanish firm, was not well managed after they joined forces in 2017. Siemens Energy held a majority stake until recently taking full control of Gamesa, in part to get the turbine troubles finally under control.

Another is that Gamesa, like other manufacturers of wind turbines, has been hard hit by supply-chain disruptions, inflation, and a lack of components and raw material such as steel. This has raised costs which it cannot pass on to customers. Their contracts predate these inflationary trends, and do not include provisions to charge more. It is also affected by ruinous competition for public tenders from rivals such as GE Renewable Energy, Nordex and Vestas. A third sort of troubles are specific to Gamesa, relating to below-par performance of onshore turbines, in particular with their blades and bearings.

Whether Gamesa's problems are fixable at all is the big question, says Mr Kukhnin. Mr Bruch was parachuted in from Siemens Energy's gas business, where he did a good job. But his credibility is now at stake, as he seems to have underestimated badly the problems at Gamesa. Shareholders are particularly upset that he spent €4bn in December buying the remaining shares of Gamesa, which is now dragging down Siemens Energy's three other business units: the gas arm, a division that provides grid technologies and a maker of technology to decarbonise industrial processes.

Investors are waiting nervously for the next quarterly results, which will be unveiled on August 7th. They hope that the company will provide more clarity on the scope of losses in the wind business by then. Siemens Energy has a €102bn order-book backlog (including €17bn-worth for Gamesa) and three of the four pillars of its business are in good health. Within the next six to 12 months it will become apparent whether Gamesa can be fixed, says Mr Kukhnin—and whether, as a result, Mr Bruch will stay in his job. ■



Schumpeter | The Saudi gusher

Meet the world's most flirtatious sovereign-wealth fund



Your columnist was in Riyadh in 2016 when Muhammad bin Salman, wearing robes and sandals, announced his Vision 2030, aimed at ending what the crown prince described as the kingdom's addiction to oil. Saudi Arabia's de facto ruler talked of selling shares in Saudi Aramco, the world's biggest oil company, to fund a giant sovereign-wealth fund (SWF), worth $2trn, to invest in diverse non-oil industries. He would be its chairman, benefactor and mastermind. It was heady stuff, even if some of it sounded unhinged in a hidebound autocracy like Saudi Arabia. The most striking thing occurred later when a palace official invited Schumpeter to a café. Young men and women sat without head coverings, flirting openly. The rule-breaking atmosphere was electric.

Today, the Saudi SWF, called the Public Investment Fund (PIF), is becoming the goliath Prince Muhammad dreamed about. The value of its assets has ballooned to $700bn, it has over 1,400 employees and a rising global profile, and, like those youthful café-dwellers, it has discovered the joys of public flirtation. Whether revolutionising golf, buying Europe's football glitterati, betting on star video-gaming companies, building an airline from scratch or turning Aston Martin electric, the PIF cannot stop orchestrating one headline-grabbing deal after another. It has come "screaming onto the scene" with an "everything, everywhere, all-at-once investment approach", says Robert Mogielnicki of the Arab Gulf States Institute, a think-tank based in Washington, DC. Yet it may not be as promiscuous as it sounds. Look carefully and there is more than adolescent impetuousness to its investment approach.

It starts with the PIF's mandate. Like many SWFs, one aim is to redirect the country's oil wealth into global assets for long-term growth. But it is also required to nurture a diversified economy at home in case demand for oil drops. It has aggressive expansion plans. It wants to amass over $1trn in assets under management by 2025 and at least to double that by 2030, making it the biggest SWF on Earth. It is unlikely that much of that growth will come from investment returns, not least because over two-thirds of its assets are in Saudi Arabia. Instead it will require more public disbursements, such as the 4% of Aramco shares, at a value of almost $80bn, that it received in April. How much money is available will depend on oil prices, which are well below the highs of last year.

It is not only reliant on oil. Mr Mogielnicki notes that the PIF's asset values could increase if it attracts co-investors into its Saudi projects. That is where its domestic strategy dovetails with its foreign one. It has taken a 75% stake in four Saudi sports teams, which may attract more investment if they are privatised, pushing up their value. He believes that over time, co-investment could also increase the worth of some of its industrial and tourist megaprojects, such as Neom, which the PIF is aiming to turn into a desert-city Utopia. The kingdom needs visitors—both well-heeled tourists and deep-pocketed investors—to turn vision into reality. For that, the PIF needs to put Saudi Arabia on the map.

Its most eye-catching gambit in that pursuit is sport. Whether or not it pulls off the golfing megamerger of the century, it is already now a name to be reckoned with. Its purchase of Newcastle United, an English Premier League club, was a down-payment for a bigger ambition; to turn the kingdom into a football powerhouse. Luring players like Cristiano Ronaldo, who recently trousered a $200m salary to play for a Saudi team, is part of that strategy. Don't be surprised if such influencers are used as character references to secure the rights to host the FIFA World Cup in 2030.

Such investment has led to accusations of "sportswashing", ie, using prominent brand ambassadors to obscure appalling human-rights abuses, such as the murder in 2018 of Jamal Khashoggi, a Saudi-born columnist for the *Washington Post*. Yet image laundering also has economic logic. Qatar showed with last year's World Cup the value of what Max Castelli of UBS, a bank, calls the "prestige element" of hosting big events, regardless of financial returns. Sport costs the PIF relatively little. Yet it provides a lot of bang for buck in the global market for attention.

The PIF is making other strategic investments that attract less hullabaloo, but also have domestic ramifications. Two of note are gaming and clean energy. In February the PIF became the biggest foreign shareholder in Nintendo, a Japanese gaming company, to add to a collection of assets including Activision Blizzard and Electronic Arts. It hopes to turn Neom into a gaming-development hub. As for decarbonisation, one of its biggest foreign investments is in Lucid, a California-based electric-vehicle (EV) maker. On June 26th Lucid won a contract to provide electric motors and battery systems to Aston Martin, a British luxury carmaker, in which the PIF is also a big shareholder. Unsurprisingly, Lucid is building its first overseas factory in Saudi Arabia.

The PIF's EV investment illustrates both its dreams and a less silver-lined reality. Some of its biggest bets have seriously underperformed. That includes Lucid, venture-capital investments via SoftBank's Vision Fund, and its stake in Uber, a ride-hailing firm. At home, its record is also tarnished. Saudi National Bank, one of its biggest holdings, lost a fortune in March on an ill-timed investment in Credit Suisse, a Swiss bank. Megaprojects such as Neom have become so grandiose, they risk looking farcical (and Neom is under human-rights scrutiny over treatment of the Howeitat tribe that lived on the land). If investors are seduced, it will be by the promise of returns, not by the razzle-dazzle of Potemkin villages.

Lifting the veil

Yet one big thing that the PIF has in its favour is its openness. According to Diego Lopez, boss of Global SWF, a data gatherer, no sovereign fund advertises its ambitions so publicly. That no doubt is a way of enhancing Prince Muhammad's reputation for boldness. It also puts the PIF under extra pressure to make sure his vision does not all go horribly wrong. ■



Aid in the 2020s

Development v climate

ACCRA AND PARIS

The choice between a poorer today and a hotter tomorrow

SUPPOSE, FOR a minute, that you are a finance minister in the developing world. At the end of a year in which your tax take has disappointed, you are just about out of money. You could plough what little remains into your health-care system: dollars spent by clinics help control infectious diseases, and there is not much that development experts believe to be a better use of cash. But you could also spend the money constructing an electrical grid that is able to handle a switch to clean energy. In the long run this will mean less pollution, more productive farmland and fewer floods. Which is a wiser use of the marginal dollar: alleviating acute poverty straight away or doing your country's bit to stop baking the planet?

The thought experiment is a simplified version of a dilemma currently facing global institutions and developing countries. On June 22nd politicians arrived in Paris for a summit to design "a new global financial pact". The aim was to work out how to spread the cost of climate change. Leaders from poor countries turned up in droves; aside from Emmanuel Macron, France's president, no Western head of state made it. Little surprise, then, that the jamboree ended without rich countries contributing a single extra dollar. Instead, attendees tinkered with the World Bank and the IMF, the biggest of the multilateral agencies that seek to reduce poverty. The lack of action means painful trade-offs lie ahead.

A huge amount of money is needed to help poor countries go green. In 2000 the developing world, excluding China, accounted for less than 30% of annual carbon emissions. By 2030 it will account for the majority. The Grantham Institute, a think-tank at the London School of Economics, estimates that at this point poor countries will need to spend $2.8trn a year in order to reduce emissions and protect their economies against climate change. The institute thinks these countries will also need to spend $3trn a year on sectors like health care and education to keep tackling poverty. This figure could rise. Since covid-19, gains in development indicators, ranging from HIV deaths to the number of people in absolute poverty, have stalled.

The world is spending nowhere near such amounts at present. In 2019, the latest year for which reliable data are available, just $2.4trn went on climate and development combined. According to the Grantham Institute, rich countries and development banks will have to stump up at least $1trn of the annual shortfall (the rest should come directly from the private sector, and from developing countries themselves). In 2009 rich countries agreed to provide $100bn a year in fresh finance by 2020. They have missed the target every year since, reaching just $83bn in 2020—with much of the money coming from development banks. Excluding climate finance and spending on internal refugees, aid from OECD countries has been flat over the past decade.

In a recent article, a number of world leaders including Joe Biden of America, William Ruto of Kenya and Muhammad bin Zayed of the United Arab Emirates wrote that they were convinced "poverty reduction and protection of the planet are converging objectives". Some policies do indeed provide useful fixes for both. Sustainable agriculture cuts emissions, climate-proofs the food supply and reduces the risk of famine. Mangrove preservation sequesters carbon, protects against storm surges and helps provide fishermen with a living. Across the board, damage from climate change makes development more expensive—and halting climate change makes it more affordable.

But although alignment is possible, it is also rare. Spending to cut emissions will ▸▸

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inevitably be aimed at middle-income countries, which pollute more; spending to cut poverty will be aimed at low-income places, where poor people live. Researchers at the IMF who have analysed data from 72 developing countries since 1990 find that there is an unfortunate pattern: a 1% rise in annual GDP is on average followed by a 0.7% rise in emissions.

The reasons for this are simple. Growing industries require lots of power. Big, mechanised agriculture requires lots of space; its growth is the main reason for deforestation. The African Development Bank (AfDB) reckons that Africa needs 160 gigawatts (GW) of extra capacity by 2025. The continent now generates just 30GW or so of renewable energy. At the African Exim Bank's recent annual meeting in Accra, the talk was about how to mine metals for the green transition, with little concern about the pollution this would involve.

In theory, the next generation of industrialising countries could power their growth using renewable grids, rather than ones that run on oil and gas. Africa has more solar potential than any other continent, as well as plenty of minerals that could be used for batteries. Yet although green growth is possible, it is not happening—replacing old grids and installing new technology is just too expensive for developing countries. To reach net-zero emissions by 2050, the International Energy Agency, an official forecaster, reckons developing countries would have to spend at least $300bn on renewable grids until 2030, five times their current outgoings.

Green dreams

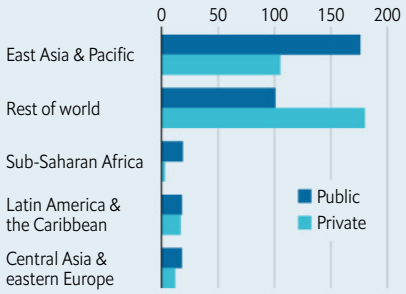
Thus there is no way round the missing finance. And as the meagre progress in Paris demonstrates, an enormous increase in aid spending is unlikely. After the conference, donor countries and the World Bank plan to suspend more repayments in the event of extreme-weather disasters, and have recycled from rich countries a modest amount of special drawing rights, a financial instrument the IMF allocates to the balance-sheet of every country's central bank. Where some of the promised finance will come from has yet to be revealed, as have the mechanics of spending it.

More ambitious proposals came from African politicians. They included ideas for global taxes and a new international financial institution, as Mr Ruto put it, "not hostage to its shareholders". They were treated as outlandish. "Taxed by whom? And for whom?" demanded Mr Macron. Even a worldwide tax on shipping, which Mr Macron supports, faces years of political wrangling. "We will forget all about it in a few months," sighed a finance minister. "There is a clash between the global good and the national interest," Mr Ruto said. "And the national interest always wins."

Tough climate

Destinations of climate finance

2019-20 average, $bn



Source: Climate Policy Initiative

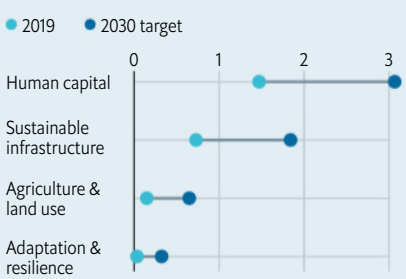
This produces two bleak trade-offs. The first concerns priorities for national governments. Given their lack of preparation and sweltering temperatures, developing countries are among the most vulnerable to climate change. In the next couple of decades, pollution and extreme heat will worsen people's health. Natural disasters will wreak havoc and impose vast reconstruction costs. But in the short run, governments are unsure how to grow without fossil fuels. Their economies are held back by dodgy electrical grids and insufficient energy, meaning officials are on the hunt for power. Oil, gas and other raw commodities are valuable sources of foreign exchange for exporting countries. Without fossil-fuel revenues, at least a dozen poor countries, including Ecuador and Ghana, would face unmanageable debt burdens, according to reports by the IMF. Governments are not always responsible with their fossil-fuel bounties—but pollutants have nonetheless paid for billions of dollars in African social spending and pension contributions in recent years.

The short-term pressure to find funding for public services is intense. Last year, after paying creditors and civil servants, Zambia had just 13% of its budget left. The country is an extreme case, but governments in most of the developing world have little room for manoeuvre. "How do I justify to voters taking away subsidies, school funding and health care to build a waste-processing plant or a big sea wall?" asks a finance minister. "In 20 years of course it will be useful, but it is the cost now that is concerning." He reckons that the cost of building a school in his capital city has doubled in the past decade, because of the need to make facilities green and resilient. "What about when we have to choose between hospitals treating lung disease and swapping to electric buses?"

As a result, developing countries are a long way from the national climate targets first offered at the COP21 meeting in 2015. New coal plants will provide Indonesia with 60% of its electricity until at least 2030. The associated carbon release will push the country even further from the recent emissions target it submitted to COP. Between 2019 and 2027 Brazilian policymakers, seeking to avoid hydropower shortages that occur thanks to increasingly frequent droughts, plan to spend $500bn on oil and gas. "African countries need a fair exit plan from fossil fuels," says Mavis Owusu-Gyamfi of the African Centre for Economic Transformation, a think-tank.

A long way to go

Spending in developing countries* by activity, $trn



Source: Grantham Research Institute *Excluding China

The Matthew effect

That brings international financiers to the next trade-off. If the aim is to cut emissions as fast as possible, or to "mitigate" climate change, then the best way to spend is to pump cheap loans and grants into big, middle-income countries. Last year Indonesia's coal-powered energy industry released more carbon dioxide than sub-Saharan Africa minus South Africa. The country's coal plants will be profitable until 2050, unless the government is coaxed to retire them early through cheap loans and grants. According to researchers at the IMF, some $357bn will need to flow to three big middle-income countries (India, Indonesia and South Africa) each year until 2030 in order to phase out their coal-power plants by 2050. Mia Mottley, the prime minister of Barbados, who served as Mr Macron's co-host for the conference in Paris, is pushing the World Bank to offer middle-income countries the cheap loans it usually reserves for the poorest.

Dollars go further in middle-income countries, since it is easier to attract private money. In Paris, Ajay Banga, the World Bank's new president, led a group brimming with ideas about guarantees and insurance schemes that need concessional finance. Most will land in middle-income countries, where there are big private sectors and doing business is relatively straightforward. Such countries also have more desire for clean energy, which will yield a return, than for costly adaptation to protect against climate change, which does not bring in cash. "Every month, I have oil-and-gas [companies] knocking on my door. Do you know how much [of the priv-

ate sector] has knocked to protect my forests? None," says an African minister. Kenya and rich countries hosted a humanitarian fund-raiser for Africa in May. Advanced economies committed just $2.4bn out of a $7bn target.

The biggest climate-finance projects to date are JET-Ps—or "Just Energy Transition" packages—comprising loans and grants from banks, rich countries and private firms, which are intended to shepherd middle-income countries from fossil fuels to cleaner energy. Indonesia's package is worth $20bn, some $10bn of which comes from other governments at cheap rates. South Africa has won $8.5bn in concessional finance. Such plans offer a healthy bang per buck. If Indonesia sticks to its JET-P promises, rather than its national energy plan, it will limit annual power emissions to 290 megatonnes in 2030. This will involve shutting multiple coal plants and becoming one of the few countries with emissions close to those required for a world with only 1.5°C of warming.

Grants are development finance's golddust. With a limited amount to go around, the concern is that low-income countries, which have come to rely on cheap financing, are going to miss out. Ministers in such countries are worried about a lack of finance for their energy transition. Without support, they will be left with stranded assets from investment in fossil-fuel facilities, for which there will be little demand. But they are more worried about having to whittle down spending on health and education. Ultimately they may have little choice. In 2021 less than a quarter of grants and cheap loans from development outfits went to the poorest countries, down from almost a third a decade earlier. Eighty poor countries, including Nigeria and Pakistan, together received just $22bn in mitigation and adaptation aid in 2021. Last year bilateral aid to sub-Saharan Africa fell by 8%.

In Paris, the presidents of both Kenya and Chad held up events in order to criticise rich countries' paralysis when it comes to debt relief. "We would appreciate a little understanding," complained Mr Ruto. To scant surprise, they did not back Ms Mottley's campaign for lending on more generous terms to middle-income countries. In private, they also complained about Western hypocrisy. European leaders ask poor countries to stop subsidising fossil fuels and skip developing gas and coal as domestic energy sources altogether, all the while bringing coal-power plants online at home and increasing imports of gas from Africa in the wake of Russia's invasion of Ukraine.

The world's biggest provider of climate and development finance—the World Bank—is caught between the two aims. Janet Yellen, who as America's treasury secretary has outsize influence over the institution, spent much of a tour of Africa last year bemoaning the quality of its climate finance. Research by the Centre for Global Development, a think-tank, finds that the 2,500 climate-finance projects the Bank has set up since 2000 have had almost no discernible impact on emissions, or on how well prepared countries are for a hotter world. Despite the projects' stated green intentions, most of the money disbursed went on work that served the Bank's poverty-alleviation aims.



Indeed, part of the reason for the Bank's troubles when it comes to climate change is that it is geared towards tackling poverty. It is planning to set up a new system to track the impact of money it spends on climate change. And there are a number of suggestions for how it could go further. These include devoting extra lending to climate change, which already makes up more than a third of its total, and changing the criteria by which its staff get bonuses, from the amount of loans they get out of the door to the amount of private-sector finance they attract. Such proposals feed fears among low-income countries that fixing the World Bank risks diminishing the flow of funds for poverty alleviation.

Financial trouble

Behind the scenes in Paris, faultlines solidified. Some in international finance think climate is now the priority. They argue that if there is no planet on which to live, poverty alleviation is somewhat beside the point. "We have been talking about development for 40 years," says Vera Songwe of the Grantham Institute. "This is a luxury we do not have with climate." The hope is that some countries will get rich from the green transition. Regardless, all countries need to eliminate net emissions, this camp argues, including those in Africa, some of which emit next to nothing. Vast amounts of finance should be diverted to countries that emit the most. Compromises should be made to get private capital on board. Multilateral development banks need new criteria by which to judge their lending, and governments need help spending their climate finance effectively.

Others disagree. "Please do not make [climate finance come] at the expense of basic investments in human capital," says Mark Suzman, chief executive of the Gates Foundation, a charity. The green transition, argues this group, will work only if a productivity boost from gains in health and education for skilled workers lays the groundwork. The group's members wonder if middle-income countries need quite as much help as they claim. The poorest countries should get climate finance for adaptation, they argue, rather than funds that come with emissions limits attached.

What counts as adaptation finance is an early flashpoint. The development camp counts spending to increase "climate resilience", which includes providing schools with storm drains, as well as teaching children about green tech. The climate camp calls some of this "greenwashing". The idea that international financiers are having this debate between themselves—rather than giving the main say about what to do with such cash to developing countries—is making local ministers furious. Even smaller institutions are taking sides. The Asian Investment and Infrastructure Bank, an outfit led by China, is considering shifting all its lending to climate finance. Unlike the World Bank, it is not beholden to poverty alleviation. "[That] will become a second-order priority," shrugs one official.

While reporting this article, your correspondent spoke to more than 20 economists, financiers and policymakers involved in the debate. When asked whether climate or development should be the priority, their allegiances were evenly divided. As the world gets hotter and poverty becomes no less pressing, the schism will only widen. ■

International finance

Out of the mire

New forms of debt restructuring risk rewarding bad behaviour

Negotiations over international debt are often headspinning. To reduce the debts of a country that can't pay the bills, it takes referees from the IMF, teams of lawyers and a contest between a country and its creditors. Everyone wants a deal, but no one is keen on taking losses. Just as creditors agree on who should club together, they start arguing about the terms. The chaos can go on endlessly. Countries, unlike bankrupt companies, are never liquidated. "It was a zig-zag, sideways, forwards, backwards, down, up, but we kept our eyes on the ball," reported Haikande Hichilema, Zambia's president, after his country finally managed to strike a deal.

On June 22nd, at a summit in Paris, Zambia's rich-country creditors announced said deal: they had agreed to push back repayments on their lending by two decades to 2043. The wriggle room created by the extension, as well as accompanying interest cuts, could make Zambia's debt burden considerably lighter—a surprise, since the biggest of the country's creditors is China, which holds $4.2bn out of $6.3bn of its external debt to official creditors, and has spent the past few years obstructing an already chaotic process.

Dragged to the negotiating table after its two-decade lending drive went awry, Beijing's reluctance to write down loans and class those from state-owned banks as official has brought restructurings across the world to a standstill. Zambia had been stuck since November 2020, when it ran out of dollars to pay its foreign bills (and its currency reserves dipped below $1bn, or just over two months of imports). It has since run up $1.8bn in unpaid interest.

Thus international financiers were forced to get creative. Before the deal was announced, the amount Zambia owed official creditors fell from $8bn to $6.3bn. The borrowing was reclassified as having been lent by the private sector, so it could be left out of this part of the process, even though in reality it came from one of China's state-run banks and was guaranteed by Sinosure, a state-run insurer. China still point-blank refuses to cut the face value of its loans.

The breakthrough also relied on unusual stipulations. Zambia will pay 1% annual interest on borrowing until 2025, a big discount. At this point, if Zambia's economy is judged by the IMF to be picking up, which is likely, the rate will rise to close to 4%, wiping out lots of the country's debt relief. In this scenario, creditors, including Beijing, will earn about the same as they would have by putting the cash in ten-year Treasuries. Oddly the deal gives Zambia better terms the worse the country's economic performance, creating moral hazard.

Zambia's is the latest of several strange restructurings. In May Suriname, which owes China $155m (or 6% of its external debt) and had been waiting three years for a deal, bucked a trend. It restructured lending from the private sector before it had reached an agreement with China, an official creditor. Last year Chad also managed to strike a deal, but only by rescheduling rather than lowering payments. Under the agreement, the country can also pay its interest bills using commodities; additional help is again conditional on economic indicators (this time the price of oil).

In richer countries, the stakes are higher. The IMF's plan for Sri Lanka, which owes China $7.4bn (or 20% of its external debt), means its debt-to-GDP ratio will remain above 100% until at least 2026. This will make borrowing from markets even more expensive. Some observers worry that the IMF's analysis of how much debt a country can handle is becoming too optimistic. Others think restructurings that reduce debts by pushing their repayment out, which look set to be the status quo until China changes tack, will transform insolvent countries into permanently illiquid ones, meaning they swing between endless short-term crises.

For now, that does not bother Mr Hichilema. He needs to tackle the next stage in his country's restructuring deal: private-sector creditors. He must decide whether to emphasise the generous terms he has won from official donors, which stay if the economy struggles, or reassure bondholders that he is already working to ensure a world in which the terms become stingier, and his country is on the up. ■



Zambia's precedent

War economics

Numbers game

HONG KONG

Financial sanctions may not deter China from invading Taiwan

A few months ago the China Select Committee in America's House of Representatives took part in a war game, complete with tabletop maps and blue and red counters. It simulated a Chinese invasion of Taiwan, and revealed familiar weaknesses in America's position: its bases need strengthening and it soon ran out of precision munitions. Yet the game also highlighted a less obvious risk: America's economic weapons went off half-cocked.

In the simulation, the Blue Team (ie, the Americans) had to cobble together sanctions on the hoof. They punished a few Chinese state-owned banks, putting only "moderate" pressure on their adversary. The conclusion was that the best time to plan sanctions is before they are needed.

Until recently, such talk might have seemed alarmist. But a Taiwan crisis is now all too thinkable. For the past eight months, Charlie Vest and Agatha Kratz of the Rhodium Group, a research firm, have met officials, analysts and businessfolk in Berlin, Brussels, London and Washington to discuss sanctions. They found that the topic is not only an American obsession.

Sanctions talk can, however, lack detail. "There was a lot of discussion about this, but not really a clear sense of the magnitude of economic assets and flows that would be put at risk," says Mr Vest. In a new report with the Atlantic Council, a think-tank, he and Ms Kratz try to remedy this. They consider sanctions that might be imposed in a Taiwan crisis short of war, such as a blockade of the island. They put numbers on several scenarios, including sanctions on individuals, industries and financial institutions. The most sweeping measures resemble the punishment inflicted on Russia after its invasion of Ukraine. The G7, acting together, would block dealings with China's central bank and its "big four" state-owned commercial banks.

These measures would freeze about 95% of China's foreign-exchange reserves (the remainder is mostly in gold). It would also cut off China's banks from most of their foreign assets (worth $586bn). The G7 would have to forfeit the modest reserves (of $52bn) they hold in yuan. And G7 banks would have to forgo claims, including loans, deposits and bonds, on Chinese banks, which amount to less than $126bn, or 1% of their total cross-border claims.

When foreigners buy goods, services or assets from Chinese residents, payments ▸▸

pass through local banks. The same is true when the transactions flow the other way. Mr Vest and Ms Kratz guess that the big four banks handle almost 40% of this business, a percentage roughly in line with their share of Chinese banks' overseas assets. Sanctions on such institutions could jeopardise about $127bn of annual foreign-direct investment, another $108bn of "portfolio investment" (purchases of stocks and bonds) and $148bn in repatriated profits from investments in China. Dwarfing these costs would be the hit to trade in goods and services. The report estimates the big-four banks settle about $2.6trn-worth per year.

Yet sanctions would not have an "immediately crippling effect", Mr Vest warns. China would impose tight controls on the outflow of capital and let the yuan fall. The report assumes the G7 would allow other banks to fill the gap left by the big four. The resumption of exports would bring in the dollars to stabilise China's economy.

Rather than disrupting trade indirectly, through financial sanctions, the G7 could restrict it directly, by banning exports or imports. The report considers sanctions on a single industry, such as aerospace, as well as sweeping ones aimed at chemicals, metals, electronics, aviation and transport equipment. Such measures could put at risk 13m Chinese jobs across the industries, the authors reckon. It could also endanger 1.3m jobs in the G7 firms that supply them.

All told, broad financial sanctions are disruptive enough that it is hard to imagine their use in any scenario short of war. But if a war did break out, even severe sanctions might do little. Armed conflict would, after all, impede vital shipping lanes, break the Taiwan-dominated supply chain for high-end chips and spread panic. "In effect, the military conflict would itself act as the sanction," as Gerard DiPippo and Jude Blanchette of the Centre for Strategic and International Studies, another think-tank, have argued. The economic weapons discovered by the G7 after Russia's invasion of Ukraine are not just double-edged. They may also be redundant in the only scenario in which they are feasible. ■

Housing problems

Sichuan pep

CHENGDU

Lessons from a city that has escaped China's property crisis

GETTING INTO Jinjiang Ode is a little difficult. The luxurious property development in central Chengdu will not allow potential buyers through its four-metre-high palatial gates without an appointment. Even finding out about the project in the south-western metropolis, home to 16m people, is tricky. The company behind it is so confident of demand that it does not deign to advertise the flats—a confidence which is not unjustified. Chengdu has a distinct, laid-back atmosphere epitomised by its public tea gardens, in which patrons spend hours sipping hot beverages and having their ears cleaned. The leisurely pace of life and tongue-numbing local cuisine appeal to younger Chinese people, who have come in droves in recent years, says Zhang Xiaojun, a sales agent at the development. Many of them buy homes.

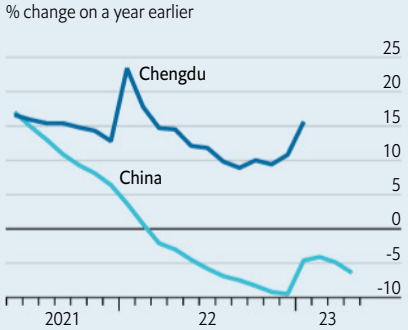
As a prolonged downturn in China's property market takes hold, Chengdu is an exception. By several metrics, including house prices and sales of new homes, it is faring better than almost anywhere in the country. At a national level, the central government's response to the deepening property crisis, including an interest-rate cut announced on June 13th, has underwhelmed. China's benchmark stock index has fallen by 8% since peaking this year in early May, when the country still appeared to be rocketing towards a full post-covid recovery. Now investors fear more developers will start to fall short of cash, defaulting on dollar debts in the process. Experts are asking how much local measures can pump up growth. Chengdu is a good place to search for answers.

There is a faint air of unreality about the local market. New home sales between April and June were nearly a third higher than in the same period in 2019, the year before the covid-19 pandemic struck, notes Larry Hu of Macquarie, an investment bank. In contrast, across China's 30 largest cities, sales have fallen by a quarter. Meanwhile, in May home prices in Chengdu rose by 8% compared with the previous year, the most of any large city. It has notched month-on-month rises for 17 straight months. Many Chinese municipalities are working through vast inventories of flats that have been built but not sold: it will take the southern city of Zhuhai more than 12 years to sell homes that have been completed or are still under construction if sales stay at the current pace. Chengdu will sell such flats in just over three years.

The outlier

Investment in residential real estate

% change on a year earlier



Source: Wind

What explains this success? Since 2016 officials in every Chinese city have been able to devise their own measures for cooling or heating local property markets. Most of the rules employed are restrictions on who can buy a flat, how many they may purchase and the size of the downpayment required. In most large cities, only people with local *hukou*, or residence permits, are allowed to buy homes. In Chengdu, high-level purchase controls remain in place. But officials have sought to attract families as a way of expanding the city and increasing demand for homes. Residents with two or more children are, for instance, allowed to buy additional homes, and local *hukou*-holders may buy up to three. Even those without a *hukou* may buy two. Since the start of the year, elderly parents who move to Chengdu to join their adult children may also purchase a flat.

Other cities have experimented with similar policies, but enjoyed much less success. Shenzhen, the technology hub across the border from Hong Kong, has relaxed some of its restrictions. Yet property prices are still down 1.8% year-on-year. One explanation for this is sweeping layoffs in the city's tech sector. Another is that Chengdu's policies are more effective because they are paired with reforms to attract educated workers, which have helped boost growth. Since 2017 local authorities have handed out housing subsidies and cash rewards to talented people who move to the city in order to work in its rapidly growing industrial base, points out Sandra Chow of CreditSights, a research firm.

Chengdu's officials also did a better job of tackling the crisis of confidence that spread across the country last year. As developers went bust, many failed to finish flats. Thousands of homebuyers responded by halting mortgage payments. Many more delayed buying new homes. Officials in Chengdu went to great lengths to ensure homes were handed over, funnelling cash to developers, says Ms Chow. Even defaulting developers managed to complete homes. About 40% more apartment floorspace was finished in the first two months

of 2023 compared with the same period the year before. This probably encouraged wavering buyers to take the plunge. Other regions may have wanted to follow suit, but lacked the cash. Sichuan, where Chengdu sits, notched up the strongest growth in municipal land sales of any province in the first half of 2022, which will have freed up funds to keep builders at work.

Chengdu benefited from some other factors that will be difficult, if not impossible, to replicate elsewhere, and perhaps even in the city itself. Its population rose by more than 7m from 2011 to 2021, making it one of the fastest-growing urban areas anywhere in the world. These inflows have been the biggest driver of housing demand, says Yan Yuejin of E-House China, a research firm. But urban migration has since slowed. There are simply not enough people in China for another population boom. Chengdu's location in the southwest also meant it did not see rapid rises in prices in past housing booms. Moreover, its growing manufacturing industry continued to lift incomes. As Louise Loo of Oxford Economics, another research firm, notes, it is thus one of a few second-tier cities that have not seen rapid price increases relative to local incomes.

A few levers remain for Chengdu's officials should things start to look peaky. For instance, they have yet to drastically ease restrictions to allow many more people to buy homes. Market-watchers are waiting for such a development, says Guo Jie of the Local Association of Real Estate Enterprises, an industry group, for it would indicate that steam is running out and that even the best-prepared cities are being swept into the crisis. Policymakers elsewhere in the country will be watching closely, too. ■

Buttonwood USA, USA...USA?



American investors love American stocks. It might be time to explore the world

"I KNOW THE allocation models don't say this," admitted Steven Mnuchin, a treasury secretary turned private-equity investor, last month, "but if I had to put money to invest for the next ten years I'd put 100% of it in the US economy." Although Mr Mnuchin's patriotism may be in part ideological—for he is both an investor and a political creature—he is not alone. According to Morningstar Direct, a data firm, American fund investors hold just a sixth of their equity allocation overseas. Jack Bogle, who invented index funds, called international exposure an overcomplication. Warren Buffett, an investor, thinks his wife should allocate 90% of her wealth to the S&P 500, America's leading index, and 10% to Treasuries after his demise.

This patriotism is an oddity. After all, Mr Mnuchin is right: it is not what asset-allocation models suggest. Diversification is perhaps the most important idea in modern finance. Its power was shown in the 1950s by Harry Markowitz, an economist who died on June 22nd. At the time, portfolio theory suggested investing in whichever stock held the highest present value of future dividends. Mr Markowitz realised such analysis ignored risk. Andy's farm might return 10% a year on average, but with wild swings. Barry the bootmaker posts a steady 7% a year. So long as the firms' fortunes are not in sync, a portfolio with a little of Andy and a little of Barry will offer better risk-adjusted returns than one holding shares in either firm.

The insight won Mr Markowitz a Nobel prize. It also laid the groundwork for Bogle's index funds (which hold shares in a vast swathe of firms, not just a few) and modern academic finance. The capital-asset-pricing model, invented by William Sharpe, another economist, assumes all investors behave as Mr Markowitz describes—maximising risk-adjusted returns—in the same way the theory of the firm assumes that companies maximise profits. Diversifying holds benefits at all levels of portfolio construction. Within stocks, investing in many firms is better than holding a few; across assets, holding stocks, bonds, real estate, commodities and so on is better than holding one or two assets. And holding these assets in many countries is preferable to just one.

Americans love America, but nothing is more American than making money. Why, then, the home bias? Maybe owning foreign stocks is not necessary for geographic diversification. American firms are multinational. Growth tends to move in sync across the globe. There are risks that volatility in returns—Mr Markowitz's measure—cannot capture. No portfolio manager will be fired for buying American. If they invest in a country that seizes their assets, they will be shown the door.

Yet the real reason for patriotism may be simpler: it has worked. American stocks have outperformed the rest of the world for three decades—an inordinately long time. Since 1990 America has on average returned 4.6 percentage points more per year than a broad index of rich-world stocks—an inordinately large premium. Although stocks everywhere moved in the same direction, negating the benefits of diversification, America's moved faster. The result is that, even though America only makes up 25% of the global economy, its stocks count for 60% of global market capitalisation. This latter share has risen by 12 percentage points in the past decade. The only other country to have seen its share rise by more than a percentage point is China.



Will the streak continue? America has deeper capital markets, stronger institutions and a bigger economy than anywhere else. Innovation flows freely—just look at the recent artificial-intelligence boom. Yet these traits are not new, meaning they should be priced in.

A new paper by Cliff Asness and colleagues at AQR Capital Management sounds another note of caution. They adjust returns for changes in valuations, finding that most of American outperformance is down to soaring valuations. Of the 4.6% premium American stocks have commanded, some 3.4% exists because price-to-equity ratios in America are higher. Just 1.2% comes from fundamentals, like higher earnings.

Outperformance owing to strong fundamentals might be repeatable. Winning "simply because people were willing to pay more for the same fundamentals", as Mr Asness has written, is probably not. Shifting to foreign stocks after their long losing streak might feel risky. But the case for diversification is reasserting itself. America is the home of the brave. The country's investors should remember that—and look abroad.

Energy markets

Pump prizes

Russia continues to flog diesel—to the delight of its buyers

On June 26th the *Captain Paris*, a Greek-owned vessel transporting 730,000 barrels of diesel from Russia, reached the Suez canal. The crew are familiar with the passage, through which they usually ferry oil from the Gulf or India to Europe or Africa. This time, though, the ship is going the other way: it is due to unload its cargo in the United Arab Emirates (UAE).

In February, when the EU banned imports of refined oil from Russia, many doubted the country could redirect its vast exports of diesel, which amounted to 950,000 barrels a day (b/d) last year, and made up most of its $65bn-worth of petroleum-product sales. At the end of last year the EU still bought two-thirds of the country's exports. China and India, which fast replaced Europe when it boycotted Russian crude, were uninterested. The rest of the market was fragmented. Yet as the *Captain Paris*'s odyssey suggests, trade has been rerouted. New buyers have already emerged—as have methods for minting money by exploiting sanctions.

Indeed, take a glance at aggregate trade figures and you would think Europe's ban had never been imposed. In March Russian exports of diesel reached a record 1.3m b/d. Although they have fallen below 900,000 b/d since May, their level remains on par with recent years, and the drop is largely a result of seasonal refinery maintenance.

The countries enabling such a feat fall into two camps. First are those that buy more diesel from Russia, at a discount, to replace supply from elsewhere. They include South American countries, led by Brazil. Having bought nothing from Russia in January, Brazil received 152,000 b/d in June, equivalent to 60% of its total diesel imports. North African countries, such as Algeria, Egypt and Morocco, also smell a bargain. In recent months Russia even exported refined oil to North Korea, the first such shipments reported since 2020. These new buyers export little themselves.

The second category comprises countries that have become greedy for Russian products despite having refineries of their own. Chief among them is Turkey. It is now buying twice as much diesel from Russia as in January, but its own exports have grown more rapidly still. It is unlikely Turkey is re-exporting much of the stuff under a new label. Instead, it is probably taking advantage of its proximity to Europe to "triangulate" Russian flows, using cheap imports to meet its domestic needs while selling its pricier production to the bloc.

The Gulf states are making a similar trade. Saudi Arabia did not import diesel from Russia for years; since April, its purchases have passed 150,000 b/d. It is not unusual for Saudi imports to rise before the summer, when power demand for cooling soars. This year, however, the country's exports of diesel have risen in tandem—by around 120,000 b/d between April and June compared with the same period in recent years. A lot of that is going to Europe and, increasingly, to Asia.

This flourishing trade implies that—in addition to new customers—Russia's export machine has enough ships to serve them. This was far from a given. "Clean" products like diesel cannot be carried on regular tankers, where traces of crude or heavier products may sully them. The tiny global fleet of diesel tankers could have been stretched when Russia's barrels started making longer journeys. February's sanctions threatened to make the problem worse. Europe bars its dominant shippers, traders and insurers from facilitating Russian sales, unless the oil is sold below a price set by the G7 at $100 a barrel for premium products. Compliance headaches, plus the PR risk of dealing with Russia, have kept many Western firms at bay.

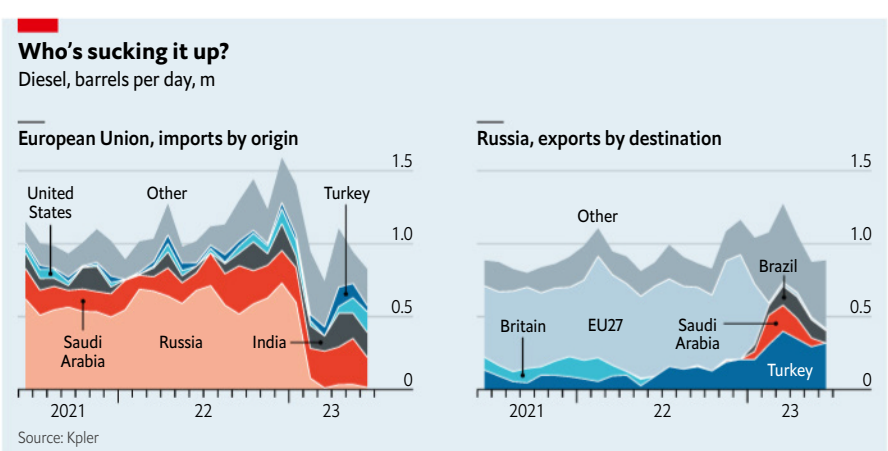
But not all. Gunvor and Vitol, two giant traders in Geneva, were still ranked among the top ten buyers of Russian oil products in the first four months of the year, according to reports citing customs data (both firms have said they comply with relevant regulations). The rest include the trading arms of Russian energy firms, as well as a mixture of obscure merchants, often set up after the war started, in Hong Kong, Singapore or the UAE. These do not seem to be short of barges to carry their wares. The *Captain Paris*, for example, is chartered by Bellatrix, a once-unknown trader that controls 36 vessels, most of them carrying clean products from Russia.

Creative techniques are being employed, too. Ship-to-ship transfers involving Russian cargo, notably near Greece and Malta, have soared since last year, suggesting attempts to circumvent restrictions. The EU admitted as much on June 21st, when it said that it would ban tankers suspected of dodgy transfers from docking at its ports. Some vessels also use military-grade equipment to send fake location signals. It helps that importers wary of legal troubles are often happy to buy Russian fuel via indirect routes. Since February Russia has sent record volumes of naphtha, a clean product used to make plastics, to Malaysia and Singapore, where it is stored in vast tanks. It is then shipped piecemeal to customers across Asia, who claim to believe it is a local product.

A refined state of affairs

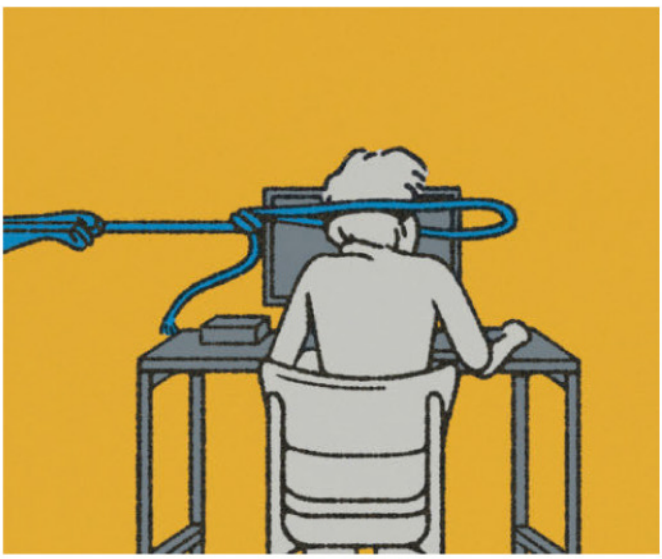
In recent years, Russian exports have made up around 15% of global diesel trade. Their resilience in the face of sanctions will probably lead to a glut over the rest of this year. Prices soared in 2022 when the risk of disruptions coincided with a post-covid rebound in demand. Yet supply shocks are now dissipating at the same time as Gulf states are adding refinery capacity and slowing economic growth is dampening Western consumption. The cost of a barge of diesel delivered in Rotterdam has fallen by a quarter in a year. Refining margins are a third of what they were.

This will hurt Europe's and rich Asia's ailing refiners, which are already being pushed out of the market by cheap products. At best, they may cut refinery runs; at worst, they will have to slash capacity. As with crude, sanctions are bringing easy bucks to those who do not observe them. ■



Free exchange | Don't be workshy

Whoops! Working from home is detrimental to productivity, after all



A GRADUAL REVERSE migration is under way, from Zoom to the conference room. Wall Street firms have been among the most forceful in summoning workers to their offices, but in recent months even many tech titans—Apple, Google, Meta and more—have demanded staff show up to the office at least three days a week. For work-from-home believers, it looks like the revenge of corporate curmudgeons. Didn't a spate of studies during the covid-19 pandemic demonstrate that remote work was often more productive than toiling in the office?

Unfortunately for the believers, new research mostly runs counter to this, showing that offices, for all their flaws, remain essential. A good starting point is a working paper that received much attention when it was published in 2020 by Natalia Emanuel and Emma Harrington, then both doctoral students at Harvard University. They found an 8% increase in the number of calls handled per hour by employees of an online retailer that had shifted from offices to homes. Far less noticed was a revised version of their paper, published in May by the Federal Reserve Bank of New York. The boost to efficiency had instead become a 4% decline.

The researchers had not made a mistake. Rather, they received more precise data, including detailed work schedules. Not only did employees answer fewer calls when remote, the quality of their interactions suffered. They put customers on hold for longer. More also phoned back, an indication of unresolved problems.

The revision comes hot on the tails of other studies that have reached similar conclusions. David Atkin and Antoinette Schoar, both of the Massachusetts Institute of Technology, and Sumit Shinde of the University of California, Los Angeles, randomly assigned data-entry workers in India to labour either from home or the office. Those working at home were 18% less productive than their peers in the office. Michael Gibbs of the University of Chicago and Friederike Mengel and Christoph Siemroth, both of the University of Essex, found a productivity shortfall, relative to prior in-office performance, of as much as 19% for the remote employees of a large Asian IT firm. Another study determined that even chess professionals play less well in online matches than face-to-face tilts. Yet another used a laboratory experiment to show that video conferences inhibit creative thinking.

The reasons for the findings will probably not surprise anyone who has spent much of the past few years working from a dining-room table. It is harder for people to collaborate from home. Workers in the Fed study spoke of missing their "neighbours to turn to for assistance". Other researchers who looked at the communication records of nearly 62,000 employees at Microsoft observed that professional networks within the company become more static and isolated. Teleconferencing is a pale imitation of in-the-flesh meetings: researchers at Harvard Business School, for example, concluded that "virtual water coolers"—rolled out by many companies during the pandemic—often encroached on crowded schedules with limited benefits. To use the terminology of Ronald Coase, an economist who focused on the structure of companies, all these problems represent an increase in co-ordination costs, making collective enterprise more unwieldy.

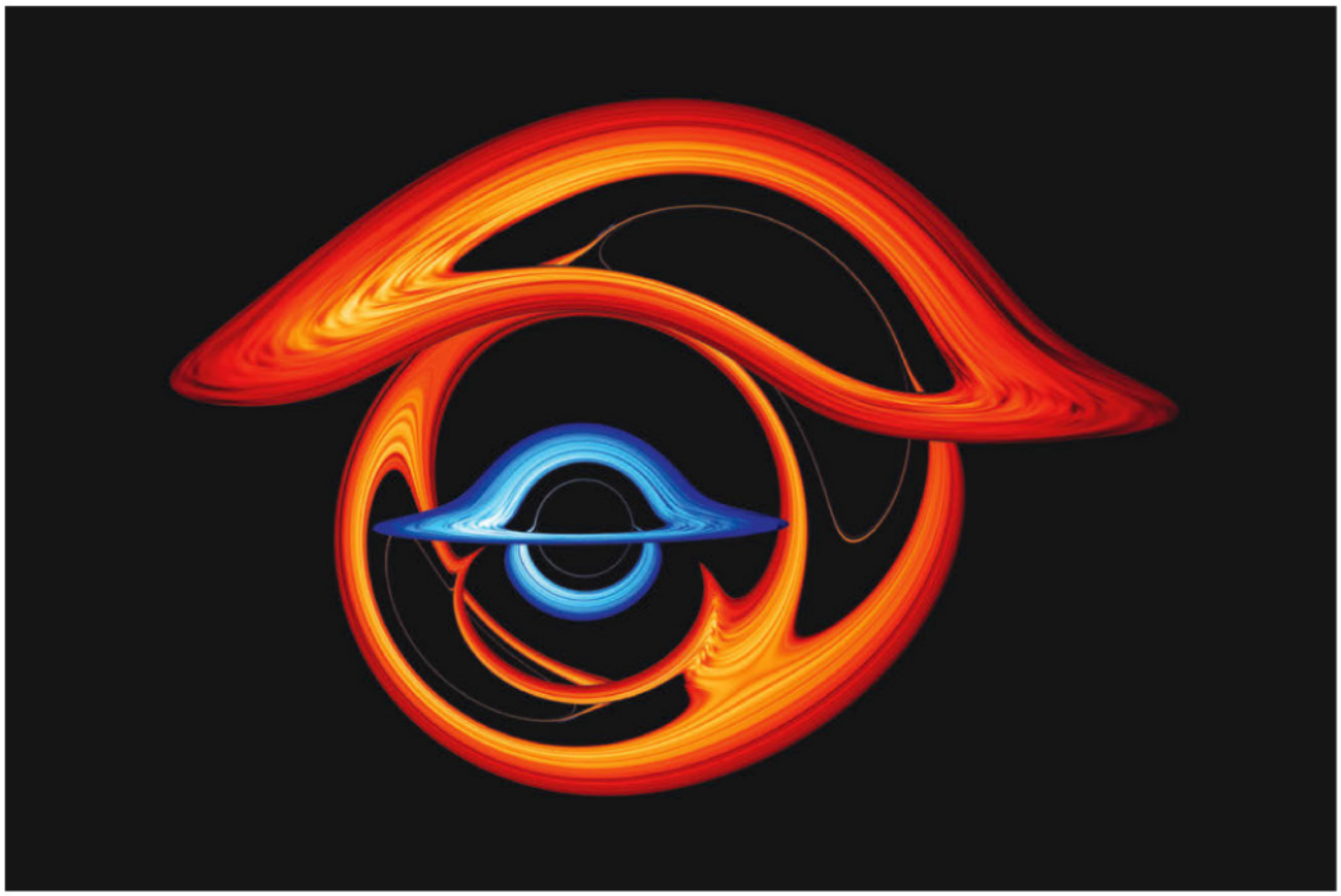
Some of the co-ordination costs of remote work might reasonably be expected to fall as people get used to it. Since 2020, many will have become adept at using Zoom, Webex, Teams or Slack. But another cost may rise over time: the underdevelopment of human capital. In a study of software engineers published in April, Drs Emanuel and Harrington, along with Amanda Pallais, also of Harvard, found that feedback exchanged between colleagues dropped sharply after the move to remote work. Drs Atkin, Schoar and Shinde documented a relative decline in learning for workers at home. Those in offices picked up skills more quickly.

The origins of the view that, contrary to the above, remote working boosts productivity can be traced to an experiment nearly a decade before the pandemic, which was reported by Nicholas Bloom of Stanford and others in 2013. Call-centre workers for a Chinese online travel agency now known as Trip.com increased their performance by 13% when remote—a figure that continues to appear in media coverage today. But two big wrinkles are often neglected: first, more than two-thirds of the improved performance came from employees working longer hours, not more efficiently; second, the Chinese firm eventually halted remote work because off-site employees struggled to get promoted. In 2022 Dr Bloom visited Trip.com again, this time to investigate the effects of a hybrid-working trial. The outcomes of this experiment were less striking: it had a negligible impact on productivity, though workers put in longer days and wrote more code when in the office.

The price of happiness

There is more to work (and life) than productivity. Perhaps the greatest virtue of remote work is that it leads to happier employees. People spend less time commuting, which from their vantage-point might feel like an increase in productivity, even if conventional measures fail to detect it. They can more easily fit in school pickups and doctor appointments, not to mention the occasional lie-in or midmorning jog. And some tasks—notably, those requiring unbroken concentration for long periods—can often be done more smoothly from home than in open-plan offices. All this explains why so many workers have become so office-shy.

Indeed, several surveys have found employees are willing to accept pay cuts for the option of working from home. Having satisfied employees on slightly lower pay, in turn, might be a good deal for corporate managers. For many people, then, the future of work will remain hybrid. Nevertheless, the balance of the work week is likely to tilt back to the office and away from home—not because bosses are sadomasochists with a kink for rush-hour traffic, but because better productivity lies in that direction. ■



Astronomy

Ripples in the sky

A new gravitational-wave detection could reveal giant black holes—or the very beginnings of the universe

THE 2017 Nobel prize for physics was given for the confirmation of a prediction made 101 years earlier. In 1916 Albert Einstein, whose theories of special and general relativity revolutionised scientists' understanding of physics at the scale of stars and galaxies, predicted that, in certain circumstances, the fabric of the universe itself should wobble and flex.

The culprits are gravitational waves, which are to gravity as radio waves or visible light are to electromagnetism. In 2015 gravitational waves were directly observed for the first time. LIGO, an American observatory based in Washington state in that country's north-west, and Louisiana in the south-east, detected waves produced by a pair of colliding black holes, each about 30 times the mass of the sun. That produced ripples in spacetime with a frequency of about 150HZ, or cycles per second, and a wavelength of around 2,000km.

This detection marked the beginning of the era of gravitational-wave astronomy, which uses gravity to examine the universe in the same way that conventional astronomy uses electromagnetic radiation, from visible light to radio waves and gamma rays. On June 29th four collaborations led by researchers in America, Australia, China and Europe claimed to have pushed forward the state of that emerging art. They announced the tentative detection of new, ultra-low frequency gravitational waves which could offer insights into some of the hardest-to-study bits of the universe.

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Most gravitational-wave detectors are interferometers. These work by splitting a beam of light in two, and sending each half down one of a pair of long, perpendicular arms. At the end of the arms the light pulses are reflected back towards the source, where they are recombined. If that journey is uninterrupted, the returning beams will cancel each other out when they are put back together. If they do not, then that suggests some disturbance—sometimes a mere seismic tremor, but occasionally a passing gravitational wave—has disturbed them on their journey.

Big-game hunters

Hunting for gravitational waves requires big instruments. LIGO's arms are 4km long; those at Virgo, a European instrument, span 3km. And the lower the frequency of the waves you want to detect, the bigger you have to go. Waves with a frequency around 1HZ, for instance, require detectors bigger than Earth itself. That is why the European Space Agency is building a spacecraft called LISA, due to fly in the late 2030s. It will use a system of space-going lasers and mirrors to create "arms" that are 2.5m kilometres long.

But the latest result concerns waves with frequencies in the nanohertz range, billions of times lower still. To detect

those, astronomers must rely on light pulses created by Mother Nature—specifically, by pulsars. These are collapsed, spinning stars that emit flashes of light with metronomic regularity. If a passing gravitational wave distorts a region of spacetime between the pulsar and Earth, then some pulses would arrive earlier or later than expected. Monitoring groups of pulsars can create, in effect, interferometers with arms of interstellar size.

And ultra-low frequency distortions have now been spotted. Doing so was not easy. A great deal of patience was required, as results from the various observatories trickled in over the years. Some of the data included in this week's research were collected over 25 years ago.

None of the collaborations believe they have quite enough evidence for a conclusive discovery just yet. Physicists measure the significance of a result using a statistical term called sigma. A score of 5, the gold standard, indicates a roughly 1-in-3.5m chance that what seems like a result is instead the product of chance. Individually, the four detections have sigma values between 2 and 4.6. But combining their data could take them over the 5-sigma mark within a year. "I have no doubt it's really just a matter of time," says Vivien Raymond, an astrophysicist at Cardiff University, who was not involved in the work.

The most likely source of the waves, says Alberto Sesana at the University of Milano Bicocca, are pairs of supermassive black holes, each with a mass millions of times that of the sun. They are most commonly found at the centres of galaxies, and are thought to pair off when those galaxies collide and merge. Over billions of years, such pairings are predicted to be frequent, producing a background gravitational "hum" across the sky. Still, says Dr Sesana, "this would be the first observational proof that supermassive black hole binaries do indeed occur in nature."

There is another possibility, much less likely but far more exciting. It is just about conceivable that the new signal could be the first-ever glimpse of the universe's earliest history, when a phenomenon known as inflation—in which the size of the universe briefly increased rapidly—would have set spacetime ringing.

If that is indeed what has been detected, it is hard to think of a more dramatic demonstration of the power of gravitational astronomy. Because it was so hot and dense, the universe is thought to have been opaque to electromagnetic radiation for the first 380,000 years of its existence. That means that no standard telescope (all of which depend on detecting light of various wavelengths) can detect traces of anything that happened before that. That is not a limit to which gravitational telescopes are subject. Watch this space. Or spacetime. ■

Brain injuries

Seeing stars

VANCOUVER

Diagnosing concussions is hard. A new test could make it easier

On June 23rd a court case brought by more than 200 rugby-union players kicked off in London. The players claim the sport's administrators failed in the past to protect them from repeated concussions and blows to the head that, they say, have left them with lifelong brain injuries and early-onset dementia.

Concussions and other forms of brain injury have become one of the biggest worries in sports from soccer to ice hockey. In America the National Football League, which governs American football, has had to pay out hundreds of millions of dollars to brain-damaged players.

Rugby's current administrators are scrambling to change things. Authorities in France, England and New Zealand have changed the rules to lower the legal height of tackles, in the hope that will prevent at least some head impacts. New rules released in April mean that a player with a suspected concussion must be removed from the pitch immediately.

One of the problems, though, is properly diagnosing concussion in the first place. Currently this is an unreliable art. Pitchside doctors must rely on a mix of outward clinical signs and self-reported symptoms, which players keen to return to the fray may underplay. Away from professionally organised sports, where people take spills or butt heads without medical supervision, it is even harder to decide whether damage has been done.

Doctors are trying to help. In May the American Congress of Rehabilitation Medicine published a new set of diagnostic criteria, under which a patient without clear external signs—such as confusion or unconsciousness—would have to report at least two symptoms, such as feeling confused or dizzy, for a concussion to be suspected. But a new development, pioneered by Adam Shuhendler, a biochemist at the University of Ottawa, may bring more rigour. Earlier this month, at the Canadian Chemistry Conference in Vancouver, he laid out how a reliable clinical test for concussion might work.



Getting your bell rung

Dr Shuhendler's specialty is creating dyes that bind to specific molecules in the body. In this case, the molecules he has in mind are a class of chemicals called aldehydes. Though these are thought to function as messengers between many different cells in the body, they seem to be produced in greater quantities in response to cellular stress—including from injury. Perhaps, he thought, the same thing would happen in the brain as well.

Once Dr Shuhendler and his team had developed a dye, they created concussions in a dish, by squeezing a chunk of lab-grown neurons. They applied the dye and waited for it to make aldehydes visible—which, sure enough, it did. The next step was to check if they could spot concussions in mice. That required concussed mice, which the researchers produced with a device that impacted the animals' heads with enough force to disorient them for a few seconds, but without causing serious damage. To make the experience better they gave them painkillers—but they did not sedate them, because a sleeping brain is known to react differently to shocks. They then injected the mice with the dye and put them in miniature magnetic-resonance imaging (MRI) scanners, which revealed the dye-marked aldehydes.

Transferring the technology to humans may take some time. For one thing, the safety of the dye has yet to be proved in people. Dr Shuhendler thinks one option might be to try the dye with positron emission tomography (PET) scans rather than MRIs. Though they tend to be more expensive, PET tests are also much more sensitive, and therefore require only trace amounts of dye. That should make getting approval easier.

Eventually, it might even be possible to do the diagnosis with a simple blood test. In the meantime, though, a hospital test that offered a definitive diagnosis of concussion would still be useful, because so many are missed by doctors. One paper, published in 2018, noted that health statistics suggest around 22m people around the world suffer a mild brain injury every year. When the researchers tried to correct for undercounting, they arrived at a figure of 55m. But that is still merely an informed guess. It would be useful to be sure. ■

Public health

The forgotten pandemic

Two charities will spend half a billion dollars to develop a new vaccine for TB

TUBERCULOSIS (TB), WHICH kills one person every 20 seconds, is a forgotten pandemic. About a quarter of the world's population has been infected with the bacterium *Mycobacterium tuberculosis*. Most will never know, as they are asymptomatic. But these latent infections go on to sicken about one person in ten. And even though TB is treatable, around 1.6m people each year, mostly in poor countries, nonetheless die from it.

A 100-year-old vaccine, the BCG, has helped, but it is only partially effective. On June 28th two of the world's wealthiest charities, the Bill & Melinda Gates Foundation and Wellcome, said they would fund a late-stage trial of a new TB vaccine known as M72. That will cost $550m, of which the Gates Foundation will contribute $400m, making it the charity's biggest ever investment in a single product.

M72 is a "sub-unit" vaccine. Rather than a dead or weakened form of the bacterium itself, it contains two proteins found on the bug's surface. GSK, a big pharmaceutical firm, acquired it from Corixa, an American company, in 2005. Early trials, the results of which were published in 2019, concluded that it was about 50% effective in preventing TB in the lungs of those with a latent infection—a group in which no other vaccine has worked. But GSK decided developing the vaccine further would not be commercially viable.

That is where the charities come in. The Foundation will not only pay for most of the bigger trial that is required before the vaccine can be approved by regulators, it will also sort out the logistics. It has identified a dozen sites in Africa and Asia where rates of latent TB infection are unusually high, between 40% and 60%. Testing here will allow scientists to see more quickly whether the vaccine prevents the emergence of active TB. But the trials will still take four to six years, says Trevor Mundel, president of global health at the Foundation. That is one reason for the high cost; others include the number of participants required—around 26,000—and the expense of setting up laboratories.

If the new jab really is 50% effective, it could save 8.5m lives, and prevent 76m cases of TB, over the next 25 years. It could also avert 42m courses of antibiotic treatment, which might slow the rate at which TB is evolving resistance to such drugs.

Academic and charitable support for vaccines is not new. But such organisations can only do so much. The vaccine will ultimately need a commercial partner to put it through regulatory assessments and organise sales and distribution. Pharmaceutical firms also conduct post-marketing surveillance, which helps regulators spot side-effects that might have gone unseen during the trials themselves. Despite their financial firepower, "there is no way Wellcome and the Gates Foundation can…become a vaccine company," says Mr Mundel. Other vaccines, such as one for Lassa fever being developed by the non-profit group IAVI, remain in commercial limbo for such reasons.

Wellcome and the Foundation hope to secure a commercial partner for their new vaccine within 12 months. Indian vaccine-makers, which are more used to investing in developing medicines for low and middle-income countries, seem interested. An earlier GSK vaccine for malaria was licensed to Bharat Biotech, an Indian firm, in 2021. As for all the new trial sites built for testing M72, Mr Mundel is hoping the investment may also be of use to others wanting to test other vaccines in future. BioNTech, a German firm, is developing an MRNA vaccine to target TB, for example. With a growing pipeline of drugs and vaccines for TB, optimism over better treatments is growing—even if getting them to market needs a helping hand. ■



Neuroscience

Conscious thinking

NEW YORK

A gathering of experts attempted to track down how consciousness is generated in the brain—and which other animals might have it

THE AMYGDALOIDS sound like one of the aliens-of-the-week from "Star Trek". In fact, they are a rock band from New York University (NYU), whose singer, lead guitarist and moving spirit is Joseph LeDoux. Dr LeDoux is one of the world's top authorities on the amygdalas, a pair of almond-shaped structures in the brain that are responsible, among other things, for generating fear in response to threats. But he is also president of the Association for the Scientific Study of Consciousness (ASSC), which held its 26th meeting at NYU between June 22nd and 25th.

The Amygdaloids were merely the warm-up act. Top of the bill was the announcement of the result of a so-called "adversarial collaboration" between proponents of two hypotheses about the nature of consciousness. This involved running a series of experiments, begun in 2020, to determine which (if either) of them is correct.

And there was more at stake than mere science. In 1998 David Chalmers and Christof Koch, a pair of up-and-coming consciousness researchers who are now doyens of the field, made a bet. They wagered that, within 25 years, the so-called neural correlates of consciousness (the nerve cells in which consciousness is generated) would be clear (Dr Koch's position), or would not be (Dr Chalmers's). Both researchers agreed that the adversarial experiment would also determine the outcome of their bet.

Consciousness is one of the few natural phenomena which remain thoroughly ▸▸

enigmatic. Physics has mysteries, for sure—one of the biggest is how to reconcile quantum mechanics with the theory of relativity. But physicists do have some sense of where they are going, and what they are dealing with. People studying consciousness, less so.

Deep thoughts

Their difficulty was crystallised by Dr Chalmers, who is now at NYU, in 1994. He split the study of consciousness into the "easy problem" and the "hard problem". The easy problem is to pinpoint which mechanisms in the brain lead to conscious experience. It is not in fact that easy—but it should at least be tractable. The hard problem concerns the subjective experiences which philosophers call "qualia". As Dr Chalmers, himself a philosopher rather than an experimentalist, put it: "Why is it that when our cognitive systems engage in visual and auditory information-processing, we have a visual or auditory experience?"

The big experiment tried to tackle the easy problem. As Rocco Gennaro, a philosopher at the University of Southern Indiana, outlined, the field of consciousness has no shortage of theories. Among those he mentioned were substance dualism, epiphenomenalism, eliminative materialism, multiple drafts theory, attended intermediate level theory, sensorimotor theory, panpsychism and emergentism. Two, though, have muscled their way to the front. One is called Integrated Information Theory (IIT); the other, Global Neuronal Workspace Theory (GNWT). It was between these ideas that the experiment was intended to adjudicate.

That merely connecting up a lot of nerve cells is not enough to create consciousness is well known. Some people, for example, are born without a cerebellum, a structure which contains half the brain's nerve cells but takes up only 10% of its volume. Though these individuals may have problems with everything from balance to emotional engagement, they are fully conscious. What seems to matter is exactly how the cells are connected—and especially, many researchers believe, how feedback loops between them work.

IIT attempts to capture that mathematically, using a value called phi to measure the level of integration brought about by such feedback loops. GNWT does not depend on feedback loops in this way. It involves the shuffling of data between a central-processing short-term memory area, where they are thought to enter conscious perception, and peripheral areas that process things such as perception, attention, motor-control and long-term memory.

IIT suggests conscious activity is generated towards the back of the brain, in the sensory areas of the cerebrum, particularly the visual cortex. Advocates of GNWT, by contrast, reckon consciousness arises at the front of the cerebrum. This contains the prefrontal cortex, which is, roughly speaking, the brain's executive centre. The front and back of the cerebral cortex have different micro-anatomical structures as well as different jobs. Supporters of IIT argue that only the back part has the connective architecture needed to support a high enough phi for consciousness. Partisans of GNWT, meanwhile, think that the processing they envisage as necessary for consciousness is best carried out by the columns of nerve cells characteristic of the front of the cortex. It was this distinction which underpinned the experiments.

In the event, those hoping for a definitive victory were disappointed, though IIT seemed to have won on points. (Some data remain to be analysed, so this judgment may yet be strengthened or weakened.) But what everyone did agree was that no clear neural correlates of consciousness had been seen—making Dr Chalmers the winner of the 25-year-old bet. Bottles of wine duly changed hands.

It is just possible, however, that the experiment was asking the wrong question. Asger Kirkeby-Hinrup of Lund University, in Sweden, pointed out that, just as heat can be generated in many ways, perhaps the same might be true of consciousness. If so—and Dr Kirkeby-Hinrup said he only half believes it himself—then methods like those used in the adversarial collaboration may never give clean results.

Having more than one way of generating consciousness could also help those investigating how consciousness can have various states in humans (dreaming, for example, is a conscious state, but a rather different one from being awake), and to what extent other animals are conscious (different groups might have different mechanisms). It might also bear on the question of how to design conscious artificial intelligence (AI).

When it comes to animals, most researchers in the field agree that three groups (and probably only three) display behaviour that is complex enough for it to be worthwhile asking if they are conscious. These are vertebrates, cephalopods and arthropods. All three had their champions at the meeting.



Many creatures great and small

Oryan Zacks at Tel Aviv University and her colleagues study vertebrate phylogeny and neuroanatomy. They have concluded that the common ancestor of all jawed vertebrates, which lived over 400m years ago during the Silurian period, had a brain which could support the neural architecture required by GNWT. That would bring about 60,000 modern species, including mammals, lizards, amphibians and most fish, into the consciousness camp.

Peter Godfrey-Smith of the University of Sydney championed the cephalopod cause with a behavioural argument rather than an anatomical one. He pointed to experiments conducted on octopuses showing the animals' sophisticated reactions to aversive stimuli, as well as some beautiful video of them playing with cameras they had picked up from the seabed.

That leaves arthropods. Here, the arguments are more equivocal. Daria Zakharova of the London School of Economics made a case for consciousness in a genus of hunting spiders called *Portia*. Experiments she and others have conducted suggest these animals, which have good vision, plan in advance how to get to prey, and can work out beforehand if this is impossible. Andrew Crump, a colleague of Ms Zakharova's, meanwhile, presented a less convincing case for bumblebees being worthy of further investigation on the basis of some experiments using sugar water as a reward and quinine as a punishment.

As to conscious AI, Yoshua Bengio of the University of Montreal, a pioneer of the modern deep-learning approach to AI, told the meeting he believes it might be possible to achieve consciousness in a machine using the global-workspace approach. He explained the advantages this might bring, including being able to generalise results with fewer data than the present generation of enormous models require. His fear, though, is that someone will build a self-preservation instinct into a conscious AI, which could result in its running out of control. Indeed, he was a signatory to an open letter released in March calling for a pause on giant AI experiments.

At the moment, conscious AI remains the stuff of science fiction. But ten years ago, so was the idea of a machine which could apparently hold an intelligent conversation. From a Silurian fish to *Homo sapiens* was a long journey. The next step on consciousness's path looks like being far faster than that. ■

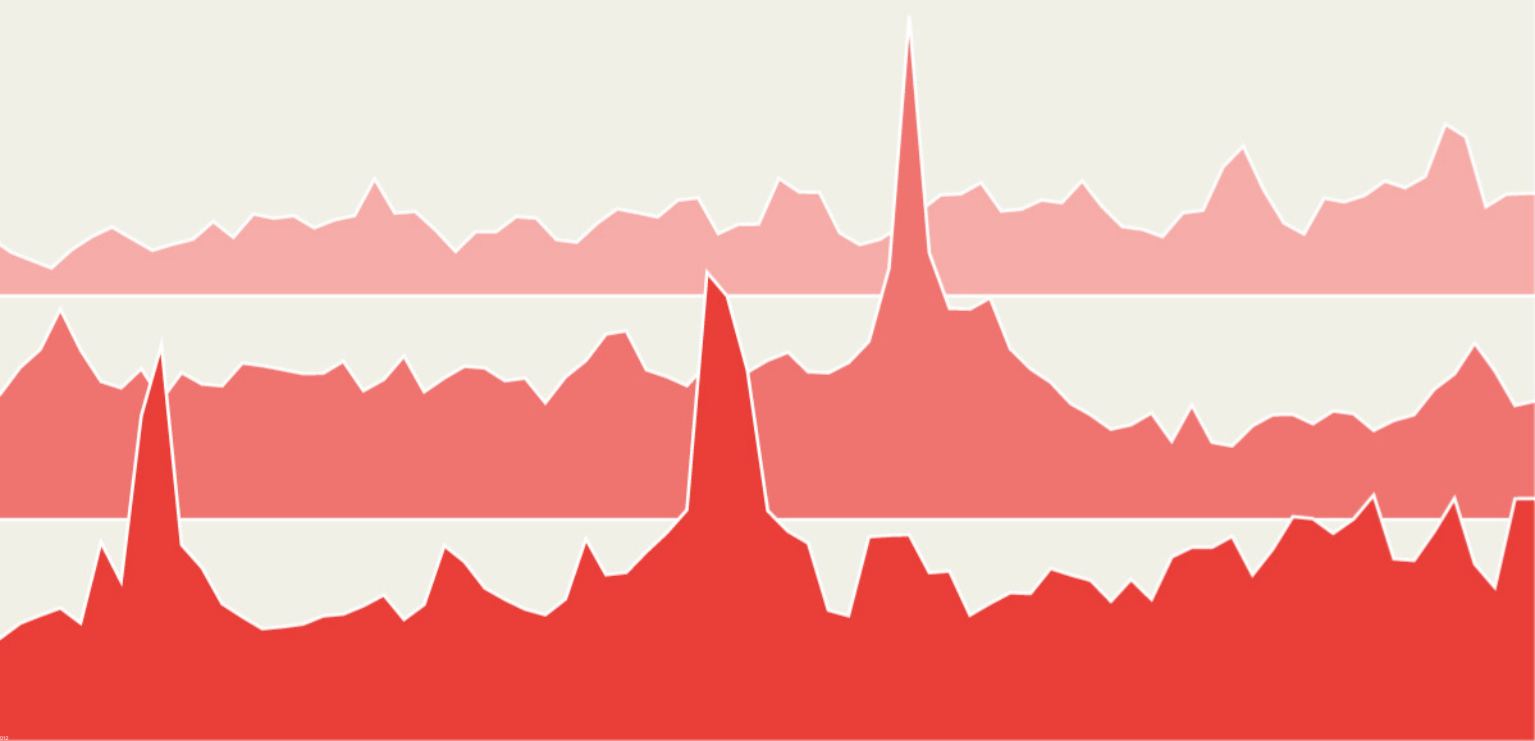
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Tolstoy in a time of war

Bethink yourselves!

MUNICH

Like other Russian rulers, Vladimir Putin has used and abused Leo Tolstoy. But the author and seer has always resisted

"EVIL HAS become a heroic act," declared Dmitry Muratov, a courageous Russian journalist and a winner of the Nobel peace prize, in a recent speech in Bonn. Never again, he lamented, will Russians and Ukrainians "be fraternal nations". He was interrupted by the sound of air-raid sirens played by Ukrainian reporters on their phones. He did not complain: "The world needs to hear the sound of war."

These days many Ukrainians find it hard to listen to Russian voices, even those of dissidents. Volodymyr Zelensky, Ukraine's president, recently signed a law that restricts the printing of contemporary Russian books. A magnificent exception to this rupture is a production this year of Sergei Prokofiev's "War and Peace" at the Bavarian State Opera in Munich. Under a Russian director, Dmitri Tcherniakov, and conducted by Vladimir Jurowski, a Russian-born German citizen, Ukrainian, Moldovan and Russian singers are performing an opera based on Leo Tolstoy's saga of the Napoleonic wars.

Part of what brings them together is Tolstoy's pacifism. The young writer who fought in Russia's wars in Crimea and the Caucasus evolved into an opponent of all forms of violence and repression and an inspiration to Gandhi. Applying the artistic and psychological mastery of his fiction to these radical ideas, he became a prophet of peace. He loathed war "not because he was afraid of death, but because of how war poisons the human soul and is inevitably steeped in lies and hatred", says Andrei Zorin, a biographer of Tolstoy at Oxford University.

In Munich, the hatred and lies are exposed on stage. Why, ask both Tolstoy and the production, do people travel far from home to kill total strangers? How do human beings become possessed by the rage of violence and war? These urgent questions, immortally formulated by an author who died over a century ago, loom over Russia's past, present and future.

"Tolstoy is making a comeback. Now he is not only the brilliant author of 'War and Peace'," declared InLiberty, an educational project in Russia, on the centenary of his death in 2010, "but also an ideologue of non-violence." Russians who considered themselves individuals rather than disempowered subjects of the state found in his writings an ideal version of nationhood that had yet to materialise in real life. As a 19th-century literary critic says in Tom Stoppard's "Coast of Utopia", a trilogy of plays about Russian thinkers: "In Russia, there's no division of labour, literature has to do it all." In fact, "literature can replace, can actually become Russia!"

When Vladimir Putin launched his full-scale invasion of Ukraine—waging war to suppress independence and freethinking in both countries—Russians who were ashamed and appalled armed themselves with Tolstoy's words. A man who held up a copy of "War and Peace" in Red Square was promptly detained. The most quoted text was a searing essay Tolstoy wrote in 1904 in response to Russia's humiliating war against Japan, which he entitled "Bethink Yourselves!" "Stupefied by prayers, ser-

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mons, exhortations," Tolstoy thundered, thousands of soldiers "will commit the most dreadful act of killing men whom they do not know and who have done them no harm." A man who posted these words online last year was charged with discrediting the Russian army.

Alexei Navalny, Russia's imprisoned opposition leader, spoke Tolstoy's words in court: "War is a product of despotism. Those who want to fight war must only fight despotism." It was not the first time he had enlisted Tolstoy to his cause. In a film about Mr Putin's secret palace on the Black Sea, released on the day of Mr Navalny's arrest in 2021, he cited Tolstoy's image of Russia's rulers: "The villains have gathered. They have looted people, they have hired soldiers and judges to guard their orgy. And they are having a feast."

The villain-in-chief moved to neutralise Tolstoy and co-opt him for his own purposes. Less than a month before sending his forces into Ukraine, Mr Putin signed a decree. "Taking into account the outstanding contribution of Leo Tolstoy to national and world culture," it read, "I hereby resolve...to celebrate the 200th anniversary of Tolstoy's birth in 2028."

Mr Putin was not the first Russian leader to lay claim to Tolstoy's legacy while trampling on his ideas. Nor was he the first to find that Tolstoy fiercely resisted.

A crackpot and a mirror

"What happiness it was to live in the time of Tolstoy," wrote Konstanin Stanislavsky, a legendary theatre director, on the day Tolstoy died, "and how scary it is to remain on this Earth without him." Lenin branded him a "crackpot" for urging non-violent protest. But in power the Bolshevik leader, who had also called Tolstoy "the mirror of the Russian revolution", sought to nationalise him. In 1920 Lenin authorised the publication of Tolstoy's works in full.

The 90-volume project was launched in 1928—the centenary of Tolstoy's birth and the beginning of Russia's descent into Stalin's totalitarianism. Statues of Tolstoy were erected and medallions minted. Yet even as Tolstoy was canonised, thousands of his disciples were arrested and murdered. Famine was inflicted on the peasantry, which he had striven to raise up.

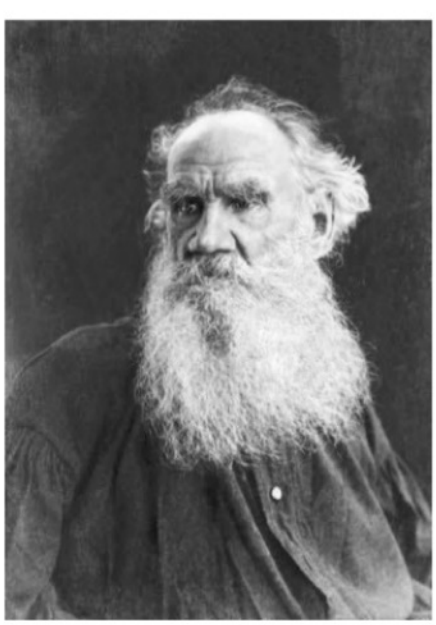
During the second world war, Stalin's regime ransacked "War and Peace" for parallels between the struggle against the Nazis and Russia's defeat of Napoleon in 1812. On the day the Soviet Union was invaded, Vyacheslav Molotov, the foreign minister, declared: "Napoleon's march into Russia was answered with a patriotic war, and Napoleon was defeated...The Red Army and all our people will once again lead a victorious patriotic war for the fatherland, for honour and for freedom."

But the novel, like the author, fought back. As Pierre Bezukhov, one of its main characters, says: "They took me and shut me up. They hold me captive. What, me? Me? My immortal soul? Ha ha ha!"

Soviet citizens turned to the book of their own accord, seeing it as a reservoir of national unity and courage in a country where honour and freedom were suppressed. "People avidly read 'War and Peace' as a means of testing their reactions (not Tolstoy's, because no one doubted he was equal to life's challenges)," wrote Lidiya Ginzburg in "Blockade Diary", a chronicle of the siege of Leningrad. "The reader would say to himself, 'Yes, now I know that my feelings are accurate'." Leading actors read chapters of the story on the radio.

Prokofiev began composing his operatic version before the invasion. He was more interested in the lyrical "peace" scenes than in the stylistic diktats of Socialist Realism. When war began he was advised to rethink the heroic aspects of the story and enhance the choral elements that could represent a unified mass rising against invaders. Prokofiev complied—but never saw his opera fully staged. Stalin feared Soviet soldiers would return from the war with new ideas of freedom, like the Russian officers who triumphed in 1812. He barely celebrated victory and was quick to rebrand his wartime allies as enemies.

In 1948 Prokofiev, along with other great artists, was declared guilty of "formalist perversions and anti-dramatic tendencies alien to the Soviet people". He died on March 5th 1953—the same day as Stalin. The volume in the collected works that included Tolstoy's denunciation of the death penalty was belatedly printed in 1956. A few years later, as the defeat of Hitler came to replace the Bolshevik revolution as the country's unifying myth, the authorities dragooned Tolstoy into service once again, adapting "War and Peace" into an epic film (see picture on previous page). Thousands of Soviet soldiers appeared as extras.



Hero of the resistance

Returning in July as part of the Munich Opera Festival, the Bavarian production, too, was conceived before an invasion. But it opened a year into the war. It is set in the Hall of Columns in the House of Unions in Moscow, where Stalin's corpse lay in state. Instead of an overture, a quote from "Bethink Yourselves!" is projected above the stage: "Again war. Again sufferings, necessary to nobody, utterly uncalled-for; again fraud, again the universal stupefaction and brutalisation of men."

The murderer's fallacy

The first sound is not music, but a despairing animal yelp that merges with Prokofiev's chords and emanates from Prince Andrei Bolkonsky, another of the story's characters (sung here by Andrey Zhilikhovsky, a Moldovan baritone). The atmosphere of war is present from curtain-up; peace is already a memory. Mattresses are strewn on the floor, as in a shelter for internally displaced people.

Yet if war is ever-present, the enemy is absent. The invasion does not come in the shape of French troops—there are none—but rather from within. It is not borders that are violated but the bounds of decency and the bonds of family and love.

A vast chorus that emerges from the darkness at the start of the second act breathes war. Intoxicated with Prokofiev's music and by propaganda, the crowd whips itself into a patriotic frenzy, punching the air as if possessed. The "feverish, hot-headed, insane excitement which has now seized the idle upper ranks of Russian society", Tolstoy wrote in 1904, was a symptom of a guilty conscience. So were the mendacious vows of "readiness to sacrifice life (or one should say other people's lives)", and promises to "defend with one's breast land which does not belong to one".

This insanity is a form of self-destruction. In the novel, Prince Andrei is wounded in battle. Here he puts a gun to his own chest and pulls the trigger. In one of the production's most moving scenes, which forms a climax in the novel, his sometime fiancée Natasha Rostova, sung by the Ukrainian soprano Olga Kulchynska, tries to lift Andrei's bleeding body and lead him in a waltz. His limbs flop like a broken puppet's; she lowers him onto a mat, covers him with a blanket and lies beside him.

Just as "the murderer who has begun to assassinate his victim cannot stop", wrote Tolstoy, so the Russian people imagine that "the fact of the deadly work having been commenced is an unanswerable argument in favour of war." The antidotes, he knew, were empathy, tenderness and love. ■



World in a dish

Comfortably numb

Sichuan peppers exemplify the surprising things food can do to you

"Polysemous" describes a word with several meanings, such as "run", "set", or, in the kitchen, "pepper". That term encompasses the entire *Capsicum annuum* family, from vegetal green bell peppers to searing little Thai chillies. It includes dried, powdered *Piperaceae* berries, known as black and white pepper, as well as one of the strangest and most addictive spices in the world: *Zanthoxylum simulans*, more commonly known as Sichuan pepper.

Whereas ordinary peppercorns grow on vines, Sichuan peppers are berries of the prickly-ash tree and part of the citrus family. They come in red and green varieties; the red has an earthily floral taste, where the green is more astringent. Their most pronounced feature, however, is not their flavour but their effect on the mouth: they contain a chemical called hydroxy-alpha-sanshool, which induces a tingling numbness in the lips and tongue, a bit like being subjected to a long but mild electric shock.

As its English name suggests, the pepper is indispensable to the deliciously complex cuisine of Sichuan, a province in south-west China. Together with dried chillies it forms the flavour profile known as *mala*, a term made up of the characters for "numbing" and "spicy". Anyone who has had the eye-watering, nose-running pleasure of eating *shui zhu yu*—poached fish in a sea of seething, peppery chilli oil—knows this sensation. In the West, *kung pao* dishes, a Sichuan speciality, tend to be oversweetened and bland; the real version sings, the zingy pepper set off by the mellow kick of black vinegar.

Less traditionally, dry-fried and then crushed with salt, Sichuan pepper can be a bracing topping for popcorn. Toasted and mixed with cumin and fennel seeds, dried chillies, anise, sugar and salt, it makes a spice rub that enlivens stir-fried potatoes. The lemony intensity pairs well with the austere richness of dark chocolate and the buttery blank slate of shortbread.

A few peppercorns go a long way. Just as inexperienced barbecue cooks often ignite so much wood that they char their meat, pepper novices risk making diners' heads vibrate for hours. Yet even when used in moderation, they remain, like anchovies or coriander, a divisive ingredient. Detractors wonder why anyone would want to anaesthetise their mouths while eating. There is no answer, really—no disputing tastes, as the maxim goes.

Sichuan peppercorns, however, are just one of an array of foods prized by gastronauts for the sensations they induce. The appeal of foie gras is partly its lush richness. Unripe guava, which often shows up on Thai tables, has a tannic, mouth-drying quality that balances fiery foods perfectly. Some cannot get enough of the jolting burn chillies produce; for others, the pain outweighs any pleasure. In "Love in the Time of Cholera", one of Gabriel García Márquez's characters munches asparagus for the resulting aroma of his urine.

To sample any of these items is to expand your understanding of what food can do to you. They add more dimensions to the concept of taste. Inevitably, some prefer the familiar. Their loss. ■

Rethinking German history

A world elsewhere

Germany in the World. By David Blackbourn. *Liveright; 800 pages; $45 and £35*

The Thirty Years War of 1618 to 1648 killed up to 7m soldiers and civilians. Parts of the German lands over which Europe's armies fought lost more than half their populations. If there was a consolation it was the flight of some extraordinary Germans from the horror, among them Samuel Hartlib and Athanasius Kircher.

Hartlib, a Calvinist, settled in London in 1630 where his interests in "mathematics, physics, optics, chemistry, botany, natural history, landscape gardens, pearls, beehives, public health, the mechanical arts and communication" earned him the sobriquet "the Great Intelligencer of Europe". His admirers included John Milton and John Evelyn, a diarist who called him the "Master of Innumerable Curiosities". Some 400 correspondents helped spread his theories across the continent.

Kirchner, a Catholic scholar, narrowly escaped being drowned in the Rhine and hanged by Protestant soldiers. After various teaching posts, he arrived in Rome and established himself as one of the foremost scientists of the age. He published dozens of books, sharing his insights and findings through a global network of over 760 scholars. In such ways, argues David Blackbourn in his all-embracing history of Germany's relationship with the outside world, the German diaspora had profound effects on the intellectual life and institutions of a rapidly globalising world.

Later, Germans could take pride in their unique contributions to European culture through science, literature and, perhaps above all, philosophy and music in the 18th and 19th centuries. German ideas about education were hugely influential. The kindergarten, the gymnasium and the university in its modern form were all invented by Germans and copied abroad.

Professor Blackbourn, a historian at Vanderbilt University in Tennessee, demolishes the idea that a divided Germany was so wrapped up in its own affairs that it lacked a "world history" like those of England, Spain, Portugal, France and the Netherlands. In fact, Germans were both ubiquitous and prominent in the expanding empires of the seafaring nations as soldiers, ship's gunners, merchants, doctors, scientists, missionaries and settlers.

As the author says, in the 300 years after ▸▸



Kant stop the feeling

1500 Germans helped shape those empires (for better and worse: they were active in the slave trade) and connected Central Europe with that wider world. Germans were inclined to see their attitudes to colonised peoples as gentler than those of the traditional empire-building powers. But behind their enthusiasm for ethnography, exemplified by Alexander von Humboldt, lurked a more sinister impulse.

The idea of racial differences was not new, but in the late 18th century Germans systematised thinking about race. Immanuel Kant epitomised Enlightenment ideals, yet the philosopher defined race as a "class distinction between animals of one and the same line of descent…unfailingly transmitted by inheritance". He and his associates, such as Johann Friedrich Blumenbach, an amiable natural scientist, did not mean to propose a racial hierarchy. However others, such as the popularising academic Christoph Meiners, soon used pseudo-science to justify racist, dehumanising views of black people and Jews.

The rise of German nationalism in the first half of the 19th century—and its apotheosis in the formation of a Prussian-dominated German Reich in 1871—brought many of these themes together. A widespread urge to make up for lost time in acquiring an empire was driven by more than a wish to secure raw materials and markets. The public also saw colonies as outlets for Germany's energy and superior culture. Meanwhile the defeat of France in 1871 demonstrated and fostered German military prowess. The country's role in the world, argued Kaiser Wilhelm II's foreign minister, Bernhard von Bülow, would no longer be defined by writers and thinkers but by the exercise of national power. Germany would have its "place in the sun".

Like the bullish von Bülow, most Germans in 1900 looked forward to the new century with confidence and optimism, writes Professor Blackbourn. Yet "the German century became synonymous instead with military aggression and Nazi dictatorship, above all with the Holocaust." Only from the ruins of the Third Reich and the creation of NATO and the European Union, then the reunification of the country, did a new form of nationhood emerge.

In this century, Germany's infinitely more benign relationship with the world has been marked by its manufacturing exports and generous welcome of refugees (though its economic ties with Russia and China have proved worrisome, and public opinion on immigration is souring). After Russia's full-scale invasion of Ukraine, Germany pledged to play a more assertive role in upholding Europe's security.

Professor Blackbourn believes that viewing Germany through a "global lens" casts familiar landmarks of the past in a fresh light and lets new features emerge. He is largely vindicated. His story is rich in characters both engaging and repulsive, obscure and notorious. It flags a bit when it arrives at the 20th century and the claim to a novel perspective is weaker. All the same, readers of this book will never see Germany in quite the same way again. ■

Art heists

Mine, all mine!

The Art Thief. By Michael Finkel. *Knopf; 240 pages; $28. Simon and Schuster; £16.99*

He called the sensation a *coup de cœur*: a blow to the heart. When he stood in front of an artwork, Stéphane Breitwieser felt exhilarated. A tingling sensation would flood his body, starting in his hands, and before long he would get to work on the screws or seals that kept him from the object of his desire. Once liberated, the item would usually be sequestered inside his coat, down his trousers or in his girlfriend's handbag. Mr Breitwieser would then transport his loot back to the attic of his mother's house in Mulhouse, in eastern France, where he still lived.

That covetous compulsion struck him a lot. Between 1994 and 2001 he stole well over 200 items from museums in seven countries; Anne-Catherine Kleinklaus, his girlfriend, often kept watch. Though his preference was for Flemish goods or art of the late Renaissance—such as Corneille de Lyon's portrait of Madeleine de France (pictured)—Mr Breitwieser's tastes ranged widely. As well as pieces by Boucher, Jan Brueghel the Elder, Cranach, Dürer and Watteau, his collection included ivory sculptures, tapestries, altarpieces, musical instruments, tobacco boxes and weaponry. Experts value the haul at somewhere between $1bn and $2bn.

As Michael Finkel recounts in "The Art Thief", Mr Breitwieser was an extraordinary criminal, and not just because he was extremely prolific. (He managed, on average, a theft every 12 days for seven years.) His heists did not involve a squadron of marauders working under the cover of night. He did not prepare sophisticated plans months in advance. His art-stealing epiphanies "emerge from the spot where spontaneity and simplicity meet", Mr Finkel writes. His larcenous philosophy was: "Don't complicate things."

Mr Breitwieser would walk into a museum or auction house, work out the security weaknesses and take advantage of opportunities presented to him. He knew how to slice deftly through the silicon glue that held display cases together and how to wriggle a painting out of its frame. It was important to behave normally while the deed was being done: lingering too long at a particular spot, or running out of a museum, would be bound to arouse suspicion. Sometimes he and Ms Kleinklaus would take a guided tour or stay for lunch after they swooped. This provided cover, for surely "a thief would never purposely remain inside a museum with stolen loot", nor "pause a heist to dine".

His motives were as unusual as his methods. Most thieves pinch artworks for money: they hope to sell them to a corrupt dealer, extort payment from a museum or insurance firm or take the piece underground to use as collateral in dodgy deals (trafficking art is one of the most lucrative criminal enterprises). Mr Breitwieser claimed he purloined only pieces he liked. In his telling he experienced Stendhal syndrome, a condition characterised by an intense physical response to beautiful art. Museums were lousy places



The lady vanishes

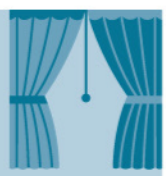
to appreciate a work, he thought. He preferred to admire it from the velvet-draped four-poster bed in his mother's attic.

Eventually museum officials and police grasped what was happening. Mr Breitwieser got sloppy. He was caught stealing a painting, then a gold-plated bugle. In 2002 he confessed to taking scores of objects. (Many had been dumped in a canal, probably by his mother, while he was in custody; she claimed to have burned his collection of paintings.) Mr Breitwieser was fined and sentenced to four years in prison. His mother spent a few months behind bars, Ms Kleinklaus a single night.

The author's account of the skulduggery is thrilling; the description of the subsequent investigation less so. Mr Finkel is largely sympathetic to his subject, whom he interviewed at length, suggesting that the trauma of Mr Breitwieser's parents' divorce and his anti-social tendencies may have contributed to his behaviour. But he was also selfish in his pursuit of beauty, Mr Finkel argues. "Works of communal heritage, often suffused with spiritual significance and a sense of place, should be open and accessible to all," he admonishes. Mr Breitwieser's and Ms Kleinklaus's actions were a "cancer on this public good".

Mr Breitwieser was responsible for the needless destruction of priceless artworks; at the same time, and in his own eccentric way, he emerges from this astonishing tale as a tragic figure. After serving his sentence, he considered launching a career as a security consultant, but his light fingers took over once again. He lost his girlfriend and fell out with his mother. His passion for thieving became all-consuming. "I was a master of the universe," Mr Breitwieser says. "Now I'm nothing." ■

Back Story The secrets of Indiana Jones



As Indy coils up his whip, what was it all about? Not just fortune and glory, kid

We saw the whip—and saw him use it—before we saw his face, Harrison Ford's rugged features perspiring beneath that battered fedora. The first blast of the triumphant music sounded early in "Raiders of the Lost Ark" (released in 1981), as, dodging poison darts, Indiana Jones Tarzan-swung to a moving seaplane. The pilot's pet python slithered onto his lap. Snakes! He hated them.

The whip, the hat, John Williams's theme and the phobia of snakes have punctuated all Indy's adventures. He cracked the whip as part of his combative seduction technique in "Indiana Jones and the Temple of Doom"; while being whacked in the kidneys in "Indiana Jones and the Last Crusade", he used it to secure his father to a runaway tank. He grabbed the hat from beneath a deadly descending door and had it blown back to him after falling off a cliff. He was entombed with snakes and fed them.

These accoutrements have two origin stories. "Crusade" traced the whip, hat and snake issues to a teenage tussle on a circus train in Utah. They also came from the magical pairing of Steven Spielberg (director of the first four Indy films) and George Lucas (who dreamed up the idea). So many bits of old Westerns and war movies, James Bond and Bogart, went into Indy that he was almost a walking homage. Yet he was his own man: an archaeology professor but a fighter, whose punches made a special *kerpow!* snap; a guy who took his own whisky to face down the Nazis in a Cairo bar.

Just when Indy thought he was out, he has been pulled back in for a fifth and last caper in "Indiana Jones and the Dial of Destiny", directed by James Mangold (Mr Lucas and Mr Spielberg are executive producers). It is 1969 and Indy is set to retire; female students no longer swoon at him. Mr Ford is 80, but he and Indy are put through the usual stunt-a-minute frenzy, taking breaths only for wisecracks and just enough exposition for the plot to make sense, more or less. The quarry is the dial of Archimedes, an ancient calculator. Indy teams up with his louche goddaughter Helena (Phoebe Waller-Bridge), who comes with her own sidekick, a Moroccan urchin named Teddy (Ethann Isidore).

The greatest-hits motifs return for the finale, including a rickety rope-bridge, creepy-crawlies and giant eels in lieu of snakes. The dial is kicked around a mêlée like the vial of antidote in "Doom". The red lines on the map that track Indy's odysseys streak from Tangier to the Aegean. Where he's going, though, he won't need maps, for the wondrous dial can predict "fissures in time". To reverse an old line of Indy's: it's not the mileage, honey, it's the years.

So, after five films, four decades and all those booby traps, cobwebby cadavers and cryptic clues; all the chases through souks, palisaded walls, fisticuffs on the bonnets of trucks and messy encounters with propellers; all the planes, trains, automobiles, zeppelins and horses (in "Dial" Indy rides one into the New York subway): what was it all about? The main meaning of Indiana Jones lies in the joy he has given generations of viewers. But it wasn't just fortune and glory, kid.



First, those Nazis. Bumbling American Feds got in the way, but the Nazis were Indy's main foe. (The fourth film, "Indiana Jones and the Kingdom of the Crystal Skull", roped in both the Soviets and aliens, a classic case of more equalling less.) With its ineffable Sieg-Heiling monkey, "Raiders", like "Crusade", was specifically a fantasy of besting the Nazis in the 1930s, before the horrors of war. Indy is still beating them in "Dial", in the form of a renegade physicist enlisted in the Moon-landing programme.

Next, the dreadful allure of knowledge. In Indy's world, knowledge is noble and sexy—"the search for fact" is his calling—but too much, or the wrong sort, is hubristic and malign. The Ark of the Covenant in "Raiders", the Holy Grail in "Crusade", the urge to "know everything" in "Crystal", that time-scrambling dial: pursuing these mysteries can make a baddy's face melt amid a sandy whirlwind. Stay in school, runs the moral of Indy's story, but stay in your lane.

Another, everyday tension courses through his quests. In each he must balance his mission against his personal feelings—for a hard-drinking ex-lover, a young apprentice, an absentee dad (it was complicated), a long-lost son and finally his godchild. The future of the world is at stake, too, but Indy's basic dilemma—work or family?—is shared by every office schlub who yearns to head home from a desk, or vice versa. His darkest secret is that he was always one of us. As a villain says in "Raiders", then prematurely: "Indiana Jones, adieu!"

TIDZ

WE GROW TOGETHER

DIRECTORATE FOR TECHNOLOGICAL AND INDUSTRIAL DEVELOPMENT ZONE OF REPUBLIC OF NORTH MACEDONIA

IS ANNOUNCING CALL FOR AWARDING A PUBLIC-PRIVATE PARTNERSHIP CONTRACT REALIZED AS A PUBLIC SERVICE CONCESSION

FOR THE FIRST GREEN ZONE – GEVGELIJA

Subject of concession:
Contract on the establishment of a public-private partnership for the design, construction, operating, maintenance, and finance of the technological industrial development zone Gevgelija, North Macedonia.

Estimated value of the contract:
approx. 120 million EUR for Phase 1

Deadline for submission of the application for participation
26.07.2023 16:00h

The Tender Documentation can be obtained free of charge in electronic form by submitting a request to the Public Partner at following e-mail address:
greenzone@fez.gov.mk

Note:
The request must contain Economic Operator'sname and the electronic address(es) for further communication.

https://fez.gov.mk

Courses



Economic & financial indicators

Economic data

	Gross domestic product, % change on year ago: latest		quarter*	2023†	Consumer prices, % change on year ago: latest		2023†	Unemployment rate, %		Current-account balance, % of GDP, 2023†	Budget balance, % of GDP, 2023†	Interest rates, 10-yr gov't bonds: latest,%		change on year ago, bp	Currency units: per $ Jun 28th	% change on year ago
United States	1.6	Q1	1.3	1.1	4.0	May	3.9	3.7	May	-3.0	-5.4	3.7		51.0	-	
China	4.5	Q1	9.1	6.1	0.2	May	1.2	5.2	May‡§	2.5	-3.0	2.5	§§	-20.0	7.25	-7.7
Japan	1.9	Q1	2.7	1.3	3.2	May	2.6	2.6	Apr	3.2	-5.8	0.4		16.0	145	-5.7
Britain	0.2	Q1	0.5	0.4	8.7	May	6.5	3.8	Mar††	-3.0	-4.8	4.4		208	0.79	3.8
Canada	2.2	Q1	3.1	1.2	3.4	May	3.6	5.2	May	-0.7	-1.4	3.2		-11.0	1.33	-3.0
Euro area	1.0	Q1	-0.4	0.8	6.1	May	5.7	6.5	Apr	1.5	-3.5	2.3		68.0	0.92	3.3
Austria	1.9	Q1	0.4‡	1.0	9.0	May	7.6	5.1	Apr	1.1	-2.4	3.0		76.0	0.92	3.3
Belgium	1.4	Q1	1.9	0.7	5.2	May	4.8	5.6	Apr	-2.1	-4.9	3.0		69.0	0.92	3.3
France	0.9	Q1	0.7	0.7	5.1	May	5.6	7.0	Apr	-1.7	-5.0	2.8		86.0	0.92	3.3
Germany	-0.5	Q1	-1.3	-0.2	6.1	May	6.0	2.9	Apr	4.4	-2.5	2.3		68.0	0.92	3.3
Greece	2.3	Q1	-0.3	2.0	2.8	May	3.9	11.2	Apr	-7.2	-2.4	3.6		-30.0	0.92	3.3
Italy	1.9	Q1	2.2	1.2	6.4	Jun	6.4	7.8	Apr	0.1	-5.0	4.0		31.0	0.92	3.3
Netherlands	1.9	Q1	-1.3	0.8	6.1	May	5.8	3.5	May	6.2	-2.4	2.6		70.0	0.92	3.3
Spain	3.8	Q1	2.4	1.8	3.2	May	3.6	12.7	Apr	1.4	-4.2	3.3		69.0	0.92	3.3
Czech Republic	-0.1	Q1	-0.2	0.4	11.1	May	10.8	2.8	Apr‡	-2.2	-4.6	4.3		-106	21.7	8.2
Denmark	2.8	Q1	1.0	0.5	2.9	May	5.0	2.8	Apr	9.8	0.7	2.6		64.0	6.83	3.7
Norway	3.0	Q1	1.0	1.6	6.7	May	4.8	3.4	Apr‡‡	17.6	12.5	1.4		76.0	10.8	-9.2
Poland	-0.3	Q1	16.1	1.3	13.0	May	12.3	5.1	May§	-1.2	-4.0	5.8		-149	4.11	8.5
Russia	-1.8	Q1	na	-1.6	2.5	May	6.0	3.2	May§	5.0	-4.3	11.1		234	86.6	-38.3
Sweden	0.8	Q1	2.4	1.0	9.7	May	6.5	7.9	May§	3.8	-0.3	2.5		66.0	10.8	-6.3
Switzerland	0.6	Q1	1.1	1.1	2.2	May	2.6	2.0	May	7.5	-0.7	0.9		-53.0	0.90	6.7
Turkey	4.0	Q1	1.3	3.0	39.6	May	41.7	10.0	Apr§	-4.7	-4.6	16.3		-216	26.1	-36.1
Australia	2.3	Q1	0.9	1.5	7.0	Q1	5.5	3.6	May	1.1	-0.1	3.9		13.0	1.51	-4.6
Hong Kong	2.7	Q1	23.0	3.5	2.0	May	2.3	3.0	May‡‡	6.4	-1.5	3.7		52.0	7.83	0.3
India	6.1	Q1	5.3	6.2	4.3	May	5.3	7.7	May	-1.3	-5.7	7.1		-41.0	82.1	-4.0
Indonesia	5.0	Q1	na	4.9	4.0	May	3.8	5.5	Q1§	0.9	-2.6	6.2		-109	14,992	-1.0
Malaysia	5.6	Q1	na	3.9	2.8	May	2.7	3.5	Apr§	3.1	-5.0	3.9		-34.0	4.67	-5.8
Pakistan	1.7	2023**	na	1.7	38.0	May	31.7	6.3	2021	-1.5	-5.3	15.3	†††	242	287	-28.2
Philippines	6.4	Q1	4.5	5.3	6.1	May	5.7	4.5	Q2§	-5.3	-6.5	6.3		-79.0	55.3	-1.0
Singapore	0.4	Q1	-1.6	1.0	5.1	May	5.1	1.8	Q1	16.2	-0.1	3.0		-1.0	1.35	3.0
South Korea	1.0	Q1	1.3	1.5	3.3	May	3.0	2.7	May§	2.5	-2.1	3.6		-5.0	1,307	-1.8
Taiwan	-2.9	Q1	-2.4	0.6	2.0	May	2.0	3.5	May	11.3	-2.2	1.2		-2.0	31.1	-4.6
Thailand	2.7	Q1	7.8	3.2	0.5	May	2.2	1.0	Apr§	2.1	-2.7	2.8		-20.0	35.6	-1.5
Argentina	1.3	Q1	2.7	-3.6	114	May	116.1	6.9	Q1§	-2.6	-4.5	na		na	256	-51.2
Brazil	4.0	Q1	8.0	2.4	3.9	May	4.8	8.5	Apr§‡‡	-1.9	-7.5	10.9		-227	4.86	7.4
Chile	-0.6	Q1	3.4	0.3	8.7	May	7.9	8.7	Apr§‡‡	-4.3	-1.9	5.2		-113	801	13.4
Colombia	3.0	Q1	5.9	1.6	12.4	May	11.7	10.7	Apr§	-4.2	-3.8	10.2		-139	4,191	-2.5
Mexico	3.7	Q1	4.1	2.1	5.8	May	5.5	2.8	Apr	-1.8	-3.7	8.6		-54.0	17.1	16.8
Peru	-0.4	Q1	-2.2	1.7	7.9	May	6.8	6.1	May§	-2.0	-1.6	6.9		-91.0	3.63	4.4
Egypt	3.9	Q4	na	3.8	32.7	May	30.8	7.1	Q1§	-1.9	-6.4	na		na	30.9	-39.2
Israel	3.8	Q1	3.1	2.8	4.6	May	4.1	3.6	May	4.3	-2.3	3.7		84.0	3.68	-6.8
Saudi Arabia	8.7	2022	na	2.0	2.8	May	2.2	4.8	Q4	3.7	-1.0	na		na	3.75	nil
South Africa	0.2	Q1	1.4	0.5	6.6	May	5.7	32.9	Q1§	-1.7	-5.6	10.5		4.0	18.7	-14.4

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 Jun 28th	% change on: one week	Dec 30th 2022
United States S&P 500	4,376.9	0.3	14.0
United States NAScomp	13,591.8	0.7	29.9
China Shanghai Comp	3,189.4	-0.3	3.2
China Shenzhen Comp	2,021.0	-0.9	2.3
Japan Nikkei 225	33,194.0	-1.1	27.2
Japan Topix	2,298.6	0.2	21.5
Britain FTSE 100	7,500.5	-0.8	0.7
Canada S&P TSX	19,818.9	0.6	2.2
Euro area EURO STOXX 50	4,344.7	0.5	14.5
France CAC 40	7,286.3	0.3	12.6
Germany DAX*	15,949.0	-0.5	14.5
Italy FTSE/MIB	27,637.5	0.1	16.6
Netherlands AEX	767.8	1.1	11.4
Spain IBEX 35	9,481.3	0.5	15.2
Poland WIG	66,690.1	-0.7	16.1
Russia RTS, $ terms	1,014.7	-4.1	4.5
Switzerland SMI	11,183.6	0.1	4.2
Turkey BIST	5,759.1	11.0	4.5
Australia All Ord.	7,384.1	-1.6	2.2
Hong Kong Hang Seng	19,172.1	-0.2	-3.1
India BSE	63,915.4	0.6	5.1
Indonesia IDX	6,661.9	-0.6	-2.8
Malaysia KLSE	1,388.4	-0.4	-7.2

	index Jun 28th	% change on: one week	Dec 30th 2022
Pakistan KSE	41,326.5	2.7	2.2
Singapore STI	3,207.3	-0.5	-1.4
South Korea KOSPI	2,564.2	-0.7	14.7
Taiwan TWI	16,935.6	-1.6	19.8
Thailand SET	1,466.9	-3.6	-12.1
Argentina MERV	409,622.8	-4.7	102.7
Brazil BVSP*	116,681.3	-3.1	6.3
Mexico IPC	53,460.1	-1.1	10.3
Egypt EGX 30	17,665.3	-0.2	21.0
Israel TA-125	1,774.1	-2.0	-1.5
Saudi Arabia Tadawul	11,459.0	-0.1	8.7
South Africa JSE AS	74,831.1	-1.1	2.4
World, dev'd MSCI	2,924.9	-0.1	12.4
Emerging markets MSCI	992.1	-1.2	3.7

US corporate bonds, spread over Treasuries

Basis points	latest	Dec 30th 2022
Investment grade	149	154
High-yield	471	502

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

Commodities

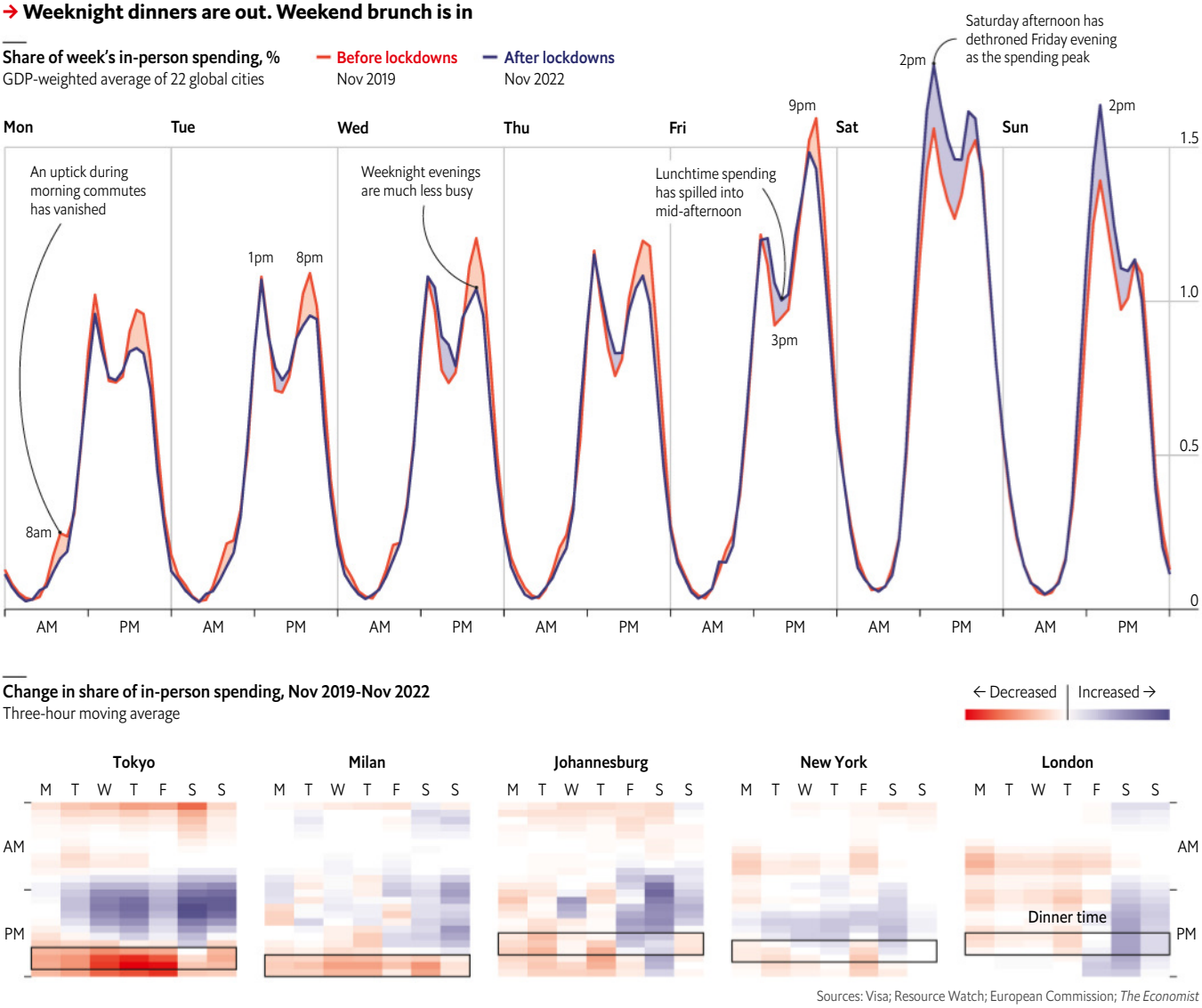
***The Economist* commodity-price index**

2015=100	Jun 20th	Jun 27th*	% change on month	year
Dollar Index				
All Items	150.3	147.4	5.1	-11.8
Food	140.6	139.6	6.0	-9.7
Industrials				
All	159.3	154.7	4.4	-13.6
Non-food agriculturals	111.3	110.4	3.7	-33.8
Metals	173.6	167.9	4.5	-8.1
Sterling Index				
All items	180.1	176.6	2.3	-15.6
Euro Index				
All items	152.9	149.3	3.0	-15.3
Gold				
$ per oz	1,935.8	1,915.1	-2.2	5.2
Brent				
$ per barrel	75.9	72.3	-1.8	-38.8

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

For more countries and additional data, visit **economist.com/economic-and-financial-indicators**

→ **Weeknight dinners are out. Weekend brunch is in**



Sources: Visa; Resource Watch; European Commission; *The Economist*

Saturday afternoon fever

In-person spending has shifted from weekday nights to weekend days

COVID-19 TRANSFORMED white-collar labour. Years after the end of lockdowns, work-from-home days have become standard. Much has been made of the resulting effect on where people spend time (less in city centres, more in residential areas). But less is known about how this shift has changed people's schedules.

In theory, remote labour should make weekdays more like weekends. Work-from-home days and weekends are both free of commuting, and it is easier to fit errands or meet-ups between video calls than to abscond from the office. Yet credit-card data show that it has had the opposite effect: weekends' outsized share of in-person spending has grown even further.

At our request, Visa, the world's biggest card-payment network, shared hourly data on spending on entertainment, food and drink, retail goods and transport, but excluding online transactions. The numbers covered 22 cities on six continents in November 2019 and November 2022. They tracked shifts in the timing of purchases, but not changes in total spending levels.

Before covid, card use fit a familiar pattern. Spending surged twice a day, first for lunch and then at dinner. It also rose slowly from Monday to Saturday, peaking on Friday evening. Weighting the 22 cities by GDP, Friday between 9pm and 10pm accounted for 1.6% of weekly spending, 2.7 times the hourly average of 0.6%.

By 2022, habits had changed. Weekday lunches remained robust, but the share of spending on weekdays from 6pm to 12am fell by 2.7 percentage points. The biggest dips were on Thursday and Friday between 9pm and 11pm, which together lost 0.7 percentage points. Weekends' spending share rose correspondingly, with most of the increase during daylight. Saturday and Sunday lunches gained 1.2 percentage points.

Two factors probably explain this shift. Thinly attended offices mean fewer people going out after work, and many restaurants, bars and clubs shut for good during lockdowns. If remote labourers are laptop-bound during the workday and have fewer places to go at night, that leaves weekend days to absorb their spending.

Both trends are bad for businesses built around pre-covid lifestyles. Average transactions are smaller during daytime than at night, reducing revenue per customer, and capacity constraints limit how much of the income lost on weekdays can be made up at weekends. They also bode ill for cities' social fabric. Many areas benefit from residents consuming services closer to home. But limiting evening activity to weekends makes for lots of eerie quiet. ■



Her working life

Glenda Jackson, actress and Member of Parliament, died on June 15th, aged 87

ASKED WHAT her greatest or her best role was, Glenda Jackson's reaction was usually a snort or a sigh. Was it Gudrun in "Women in Love" in 1969, blithely doing her amorous eurhythmics in front of a herd of cows? Was it Elizabeth R in the TV series in 1971, an imperious mask of shaven head and white paint? Or was it the asylum patient playing Charlotte Corday in "Marat/Sade" in 1967, falling dazed to her knees to sing a song to Marat, before tenderly contemplating the knife with which she would kill him?

No, none of those, she would say, searching for a hanky or looking the other way as the clips played behind her. She never watched her old stuff, anyway. She always insisted that her finest performance was in 1971 on the comedy show "Morecambe and Wise", playing Cleopatra in a glossy black wig beside Ernie Wise as Mark Antony (dodgy tunic, lopsided helmet) and Eric Morecambe, in his owlish glasses, as "Octavian Caesar". Eric had given her the best note she had ever had: "Don't laugh, and speak up." She managed the second, but not the first.

Praise didn't interest her, and nor did awards. She won an Oscar for "Women in Love", another for "A Touch of Class", nominations for "Sunday Bloody Sunday" and "Hedda". She won Emmys, Baftas and a Tony. Thank you kindly, she said, while inwardly muttering, *Come off it!* The Oscars went to her mother for bookends and her mother, being a cleaner, soon polished all the gilt off.

Awards didn't mean that you got work afterwards. But she had to. She had started acting, as a bored teenager serving in Boots in northerly Birkenhead, because she thought there might be a job in it. (In her family, with a bricklayer father and six in the household, if you didn't work, you didn't eat.) Two years of RADA training got her bit parts round the country until the RSC recruited her. Work kept cropping up after that, but she stayed convinced, each time one job finished, that she wouldn't get another.

This was more than partly because she was a woman, and not conventionally pretty, with her gawkiness and big uneven teeth. She had nowt to sell. Critics often said she had intelligence and power, but who wanted those in women? The whole acting world was tilted against them. They were almost never the dramatic centre of plays, just adjuncts on the sidelines. It was true in the 1960s, and it was still true in the 2020s. Good God, she had bitched about it for all those years, and nothing had changed.

"Elizabeth R" was an exception. There she was regally, icily in charge. Courtiers cringed before her. She played the part again in the film "Mary, Queen of Scots", where her contempt almost toppled her rival off her horse. Yet she had also studied Elizabeth's softer side, finding that, for example, the great queen once went to sleep sucking her thumb. It was a six-part series, so they spent a long time together, that mythical figure and herself.

Truth was what she was after. Peter Brook, her favourite director, always demanded that. Absolute truth, which made you think in a new way. Shakespeare in his plays asked three great questions: Who are we? Why are we? What are we? Each role was an exploration of a human being, and of how human beings behaved towards each other. When she played standard women's roles, needy sidekicks to the male leads, such as Alex, the third point of the love-triangle in "Sunday Bloody Sunday", or even Ophelia in "Hamlet", she made sure to make them deeply interesting.

Yet she did not see herself as an actor. She *was* the character, seeing the world through their eyes. Since they were fascinating, and she was boring, she took on that fascination. Her most difficult role came in 2016 with the TV drama "Elizabeth is Missing", when she played a grandmother with Alzheimer's, drifting in and out of self-knowledge. Who was she then? And who was this tearful young woman at the bus stop, who said she was her daughter? Her lined face seemed to collapse with the effort to understand.

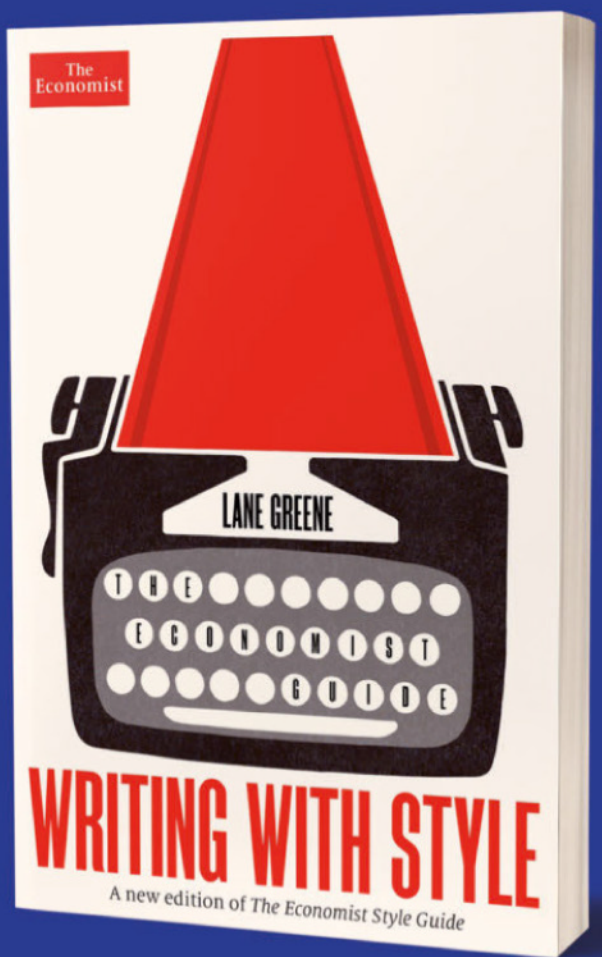
This preoccupation with human behaviour led in 1992 to an extraordinary decision, to give up stage and screen for politics. Pretty similar, really. If there was any one trigger, for she had been Labour all her life, it was Margaret Thatcher's remark that there was "no such thing as society". Against her own expectations, she won Hampstead and Highgate—north London wealth with patches of poverty—and represented it, seriously but passionately, for 23 years. The House of Commons, she would tell people whose main image of her was of coltish rolling in the grass, was not at all a place for performance. You didn't dissemble or play games, because you were speaking for the voters who had put you there. You didn't pose. She did wear a scarlet jacket sometimes.

Again, it was speaking truth that mattered most. She briefly became a junior transport minister, but savaged Tony Blair over Iraq. And when Thatcher died, rather than join in the syrupy tributes, she furiously attacked "the most heinous economic, social and spiritual damage" her nemesis had caused. In her own constituency, shop doorways were now the bathrooms of the homeless. School walls were held together with Sellotape. Greed, selfishness and scorn for the weaker were now presented as virtues. Over the continuous male heckling her voice rose as strongly as Elizabeth I's, gravelly from years of smoking.

She was sometimes asked if she could ever play Thatcher. Awful thought. She couldn't possibly get into the world Thatcher saw. But even stranger worlds she bravely entered. A year after stepping down from Parliament, in 2016, she played Lear on the London stage, howling in an old suit through the soaking storm. Later she took the show to New York. She was in her 80s. Ridiculous to think she had the energy! But she did, because the energy, like a roaring car, came from the work itself.

She was glad to note that gender barriers were more fragile as she aged. Playing an old mad king was fine, and a liberation. She still had that bloody worry that, afterwards, she wouldn't get work again. Yet even as she died she had a film in the can, "The Great Escaper", with Michael Caine. She helped him to break out of his care home. Independence championed, to the last. ■

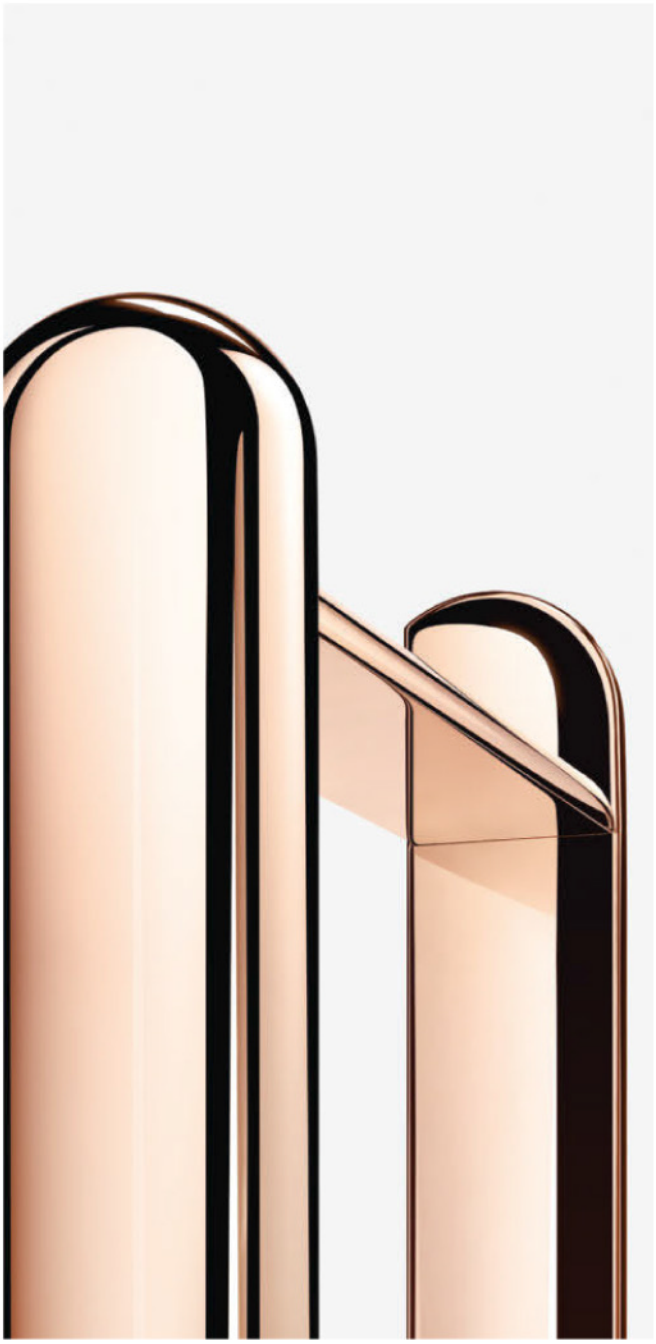
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