The Economist

The UAE's ambitious ascent

Inside Hamas's finances

OpenAI: lessons from a revolution

The best television of 2023

NOVEMBER 25TH–DECEMBER 1ST 2023

CLIMATE REPORT

SOME PROGRESS, MUST TRY HARDER

INVESTMENT D

MAKING COMMITMENTS B+

RENEWABLES C+

KEEPING TO COMMITMENTS D-

ADAPTATION D

CLIMATE FINANCE INCOMPLETE

The world this week

The world this week

Politics

Nov 23rd 2023

Israel and **Hamas** agreed to a temporary truce in order to facilitate the freeing of some hostages who were captured by Hamas during its terrorist attack on Israel on October 7th and taken to Gaza. The deal, brokered by Qatar, will also release 150 Palestinian prisoners from Israeli jails, all of them either women or teenagers. Negotiations over the details delayed the release of the hostages until at least November 24th. The deal will also allow more aid into Gaza.

Israel carried out further strikes on **southern Lebanon**, killing four members of Hamas and five Hizbullah militants. A Lebanese broadcaster said two of its journalists were also killed. Israel has intensified its attacks on Hizbullah targets in response to the Iranian-supported militia stepping up its rocket attacks.

Yemen's Houthi rebels boarded and seized a British-owned and Japanese-operated cargo ship in the Red Sea, claiming it was linked to Israel. The attack by the Iranian-backed group has raised concerns over the security of a vital sea route that carries 40% of Europe's trade with Asia.

Israel recalled its ambassador from **South Africa**, following an escalation in tensions between the two countries over the war in Gaza. South Africa, along with four other countries, has asked the International Criminal Court to investigate what they allege are Israeli war crimes in Gaza.

The effort by **Zambia** to restructure its debt hit a bump when a deal it had struck with bondholders was rejected by China and France, highlighting the difficulty in getting private and official creditors to agree on debt relief. The setback raises doubts about whether other African countries such as Ghana will be able to resolve their own debt troubles.

Liberia's president, George Weah, conceded defeat to Joseph Boakai, his rival in a recent presidential run-off election. Mr Weah's concession ends worries about post-electoral violence in Liberia's second democratic transfer of power since 1944, and calls full time on the political career of a man who won fame playing top-flight football in Europe.

Ayes to the right

The **Dutch election** produced a shock result, as the Party for Freedom (PVV) led by Geert Wilders, a veteran far-right politician, won the most seats in parliament. Mr Wilders has pledged to halt a "tsunami of asylum and immigration" to the Netherlands but may find it difficult to form a coalition with the mainstream parties. The conservative party of the outgoing prime minister, Mark Rutte, came third; he is leaving office after 13 years in power.

Britain's official figure for net migration in 2022 was revised sharply upwards, from 606,000 to 745,000. For the 12 months ending June 2023 the figure was given as 672,000. The statisticians think the "more recent estimates indicate a slowing of immigration coupled with increasing emigration."

In **Spain** Pedro Sánchez named his coalition cabinet after parliament approved his bid for a new term. The prime minister's Socialist party came second in an election in July. He has formed a minority government, but only by gaining the backing of Catalan separatists after granting a controversial amnesty to their leaders for holding an illegal referendum. Two days after Mr Sánchez was confirmed as prime minister 170,000 people marched in Madrid against the amnesty, the biggest such protest so far.

Volodymyr Zelensky sacked the head of medical operations for **Ukraine's** armed forces. The president said "a fundamentally new level of medical support for our soldiers" was needed. Reports suggest that some equipment is lacking in the field. The government is also looking at ways to improve troop rotation. Meanwhile, Lloyd Austin, America's defence secretary, visited Kyiv, where he announced a new $100m package of military aid, the smallest from America so far for Ukraine's war effort.

The German government suspended a vote on the budget amid a crisis resulting from a recent ruling by **Germany's** top court, which found that a plan to divert €60bn ($65bn) in unused covid funds to climate-change programmes was unconstitutional. That legal decision has complicated the government's spending plans by creating a knock-on effect on its ability to tap money in other special funds.

Lai Ching-te, the presidential candidate of **Taiwan's** ruling Democratic Progressive Party, chose Hsiao Bi-khim as his running-mate. Ms Hsiao was

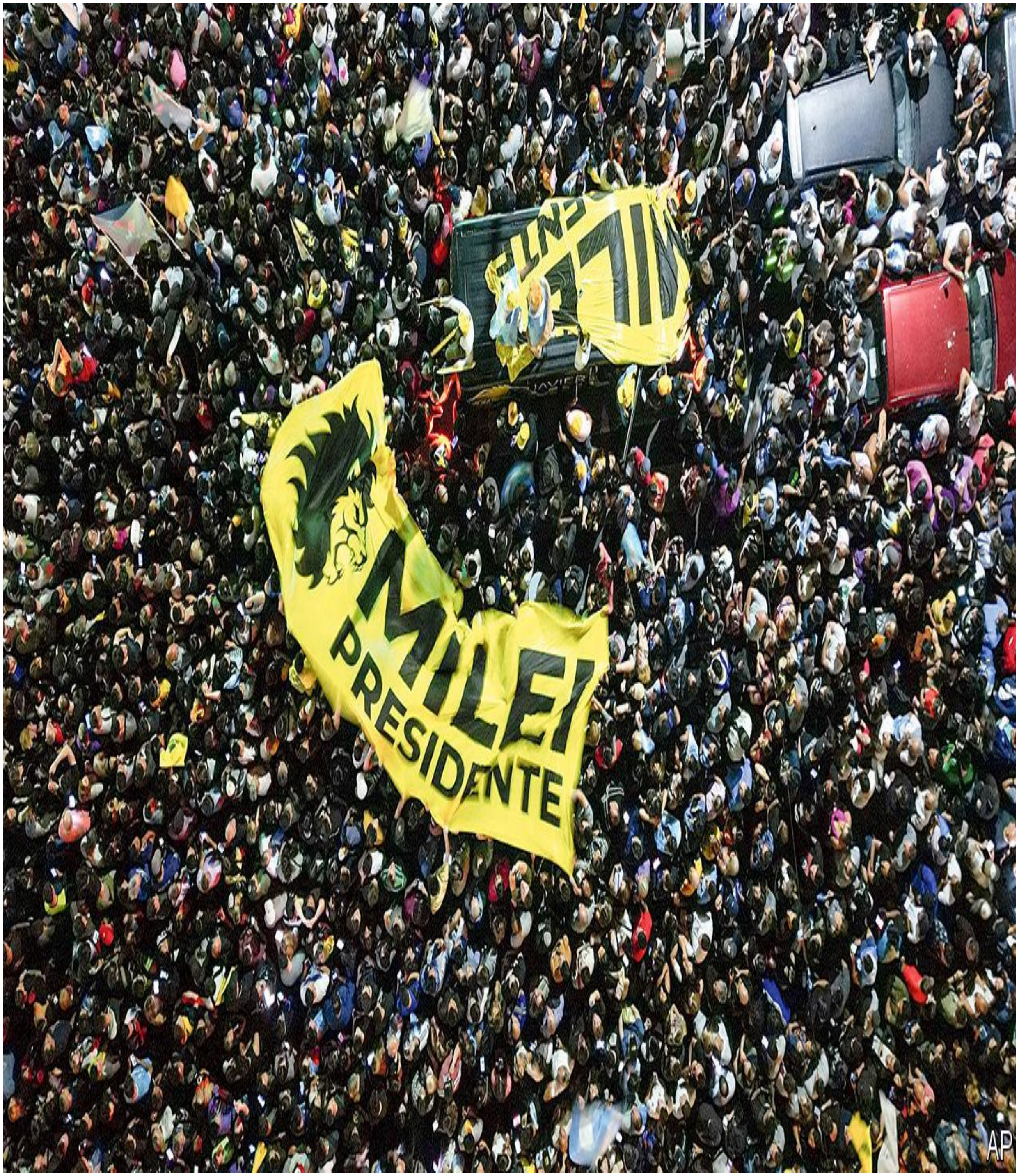
Taiwan's representative in America. Like Mr Lai she favours looser ties with China. Meanwhile, Taiwan's two main opposition parties, the Nationalist Party (KMT) and Taiwan People's Party, which both favour closer relations with China, were locked in acrimonious talks over which of their respective candidates should head a joint ticket for January's election.

North Korea claimed it had sent a spy satellite into orbit for the first time, following two failed attempts. South Korea responded by resuming reconnaissance and surveillance operations along the two countries' frontier, in effect suspending part of an agreement struck with the North in 2018 to reduce tensions.

The UN refugee agency called on **Pakistan** to stop the expulsion of illegal **Afghan** migrants from the country over the "harsh season of winter". The Pakistani government has ordered illegal Afghan migrants who are not refugees to leave. More than 370,000 have done so, but an unknown number are thought to have gone into hiding.

Thailand's new government approved an initiative to legalise same-sex marriage. If parliament approves the bill, Thailand will become the third Asian country, following Nepal and Taiwan, to recognise gay marriage.

Victory for a state slasher



Javier Milei won **Argentina’s** presidential election run-off, taking 56% of the vote. The self-styled “anarcho-capitalist” trounced the Peronist candidate in 20 of the country’s 23 provinces. Mr Milei promises to cut red tape and slash public spending. With 40% of Argentines living in poverty, annual inflation expected to be 150% when he takes office next month and interest rates at 133%, Mr Milei says the central bank has enabled only “crooked” politicians to thrive.

The governor of Texas, Greg Abbott, endorsed **Donald Trump** for president, citing Mr Trump’s pledge to crack down on illegal migration. Mr Trump’s speech at the event was mercifully short, just ten minutes. At other recent campaign stops he has spoken for 75 minutes (Iowa) and two hours (New Hampshire—they don’t call it the Granite State for nothing).

The world this week

Business

Nov 23rd 2023

Open AI reinstated Sam Altman as chief executive, just days after he was ousted, and created a new board of directors. The turmoil at the startup that developed the ChatGPT chatbot shook the artificial-intelligence industry. The reasons behind the sacking are still unclear, but are thought to have reflected a disagreement over the speed of the AI revolution. Almost all of OpenAI's staff threatened to quit if Mr Altman was not brought back. Microsoft, which owns a 49% stake in the firm, had offered to employ him. Larry Summers, an *éminence grise* and former American treasury secretary, will sit on the new board.

America's Department of Justice announced that **Binance** had pleaded guilty to money-laundering and failing to comply with international sanctions, and would pay penalties amounting to $4.3bn. Changpeng Zhao, who founded the world's largest cryptocurrency exchange, resigned as chief executive and pleaded guilty to related charges. The department said that over five years Binance had enabled nearly $1bn in illegal payments involving countries and individuals under sanctions, and simply ignored American law and safeguards.

Elon Musk tried to navigate a storm of criticism following his approval of an **antisemitic**trope posted on X. After the White House lashed out at his apparent endorsement of a "hideous" conspiracy theory, Mr Musk insisted he was not antisemitic. He also announced that users on X who apply the term "decolonisation" to Israel and other terms that imply the genocide of Jewish people would be suspended from the platform.

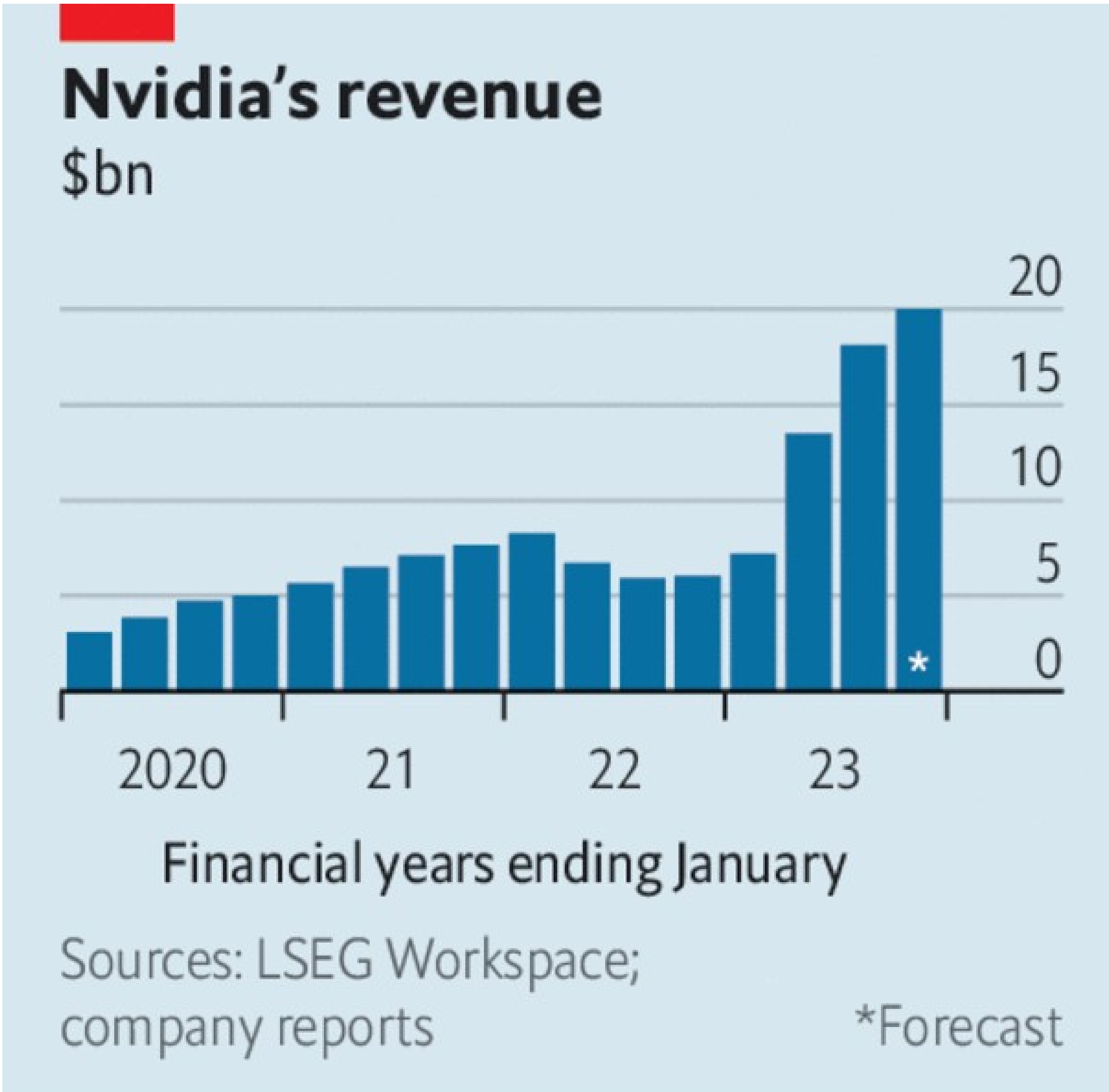
Meanwhile **X** sued Media Matters for America, a pressure group, after it published data purporting to show that X had allowed ads to run next to Nazi and Holocaust-denying posts. Some big companies, including Apple, Disney and IBM, pulled their advertising from the site following the report. X claims Media Matters "manipulated" data in order to destroy its business.

Beyond satire

X was not the only social-media company to find itself in hot water over antisemitic-related content. A number of Jewish celebrities urged **TikTok** to tackle a rise in anti-Jewish and anti-Israeli posts on its platform, which includes the re-emergence of Osama bin Laden's bilious rant against Jews and the West, which first surfaced in 2002. Bin Laden's self-styled "Letter to America" recently went viral on TikTok, which eventually removed hashtags linked to it. Sacha Baron Cohen, a comedic actor, said TikTok was "creating the biggest antisemitic movement since the Nazis".

In a tough week, Mr Musk was at least able to celebrate a further advance in testing SpaceX's **Starship** rocket, the biggest ever built. After leaving its launch pad in Texas, Starship's two stages separated successfully and one reached space for the first time, but the "super heavy booster" part of the rocket then exploded. SpaceX said this second test had provided it with invaluable data in planning for the next flight.

Broadcom at last completed its $69bn takeover of **VMware** after Chinese regulators approved the deal. The combination of the chipmaker with the cloud-computing and software company was first proposed 18 months ago.



The Economist

Boosted by a surge in demand for its AI chips from the likes of Amazon and Microsoft, **Nvidia's** revenues more than tripled in its latest quarter, year on year. Net profit rose to $9.2bn compared with $680m in the same period last year. The company expects sales to China will drop "significantly" because of tighter restrictions on exporting AI chips to the country, but thinks revenues will climb again this quarter as demand from elsewhere makes up the shortfall.

Alibaba’s share price recovered some of the ground it lost when it said it would now not spin off its cloud unit. The Chinese internet giant cited America’s latest restrictions on exports of advanced chips to China as a reason for reversing course, as it believes the curbs will “materially and adversely affect” the business.

The British government unveiled its **“autumn statement”**, a kind of mini-budget. The rate of national insurance, a payroll tax that employees pay, will be cut from 12% to 10%. In another giveaway, a tax break that enables businesses to deduct investment from their taxable profits will be made permanent. The government’s ebullient presentation of its plans was at odds with the downgrading of official GDP forecasts.

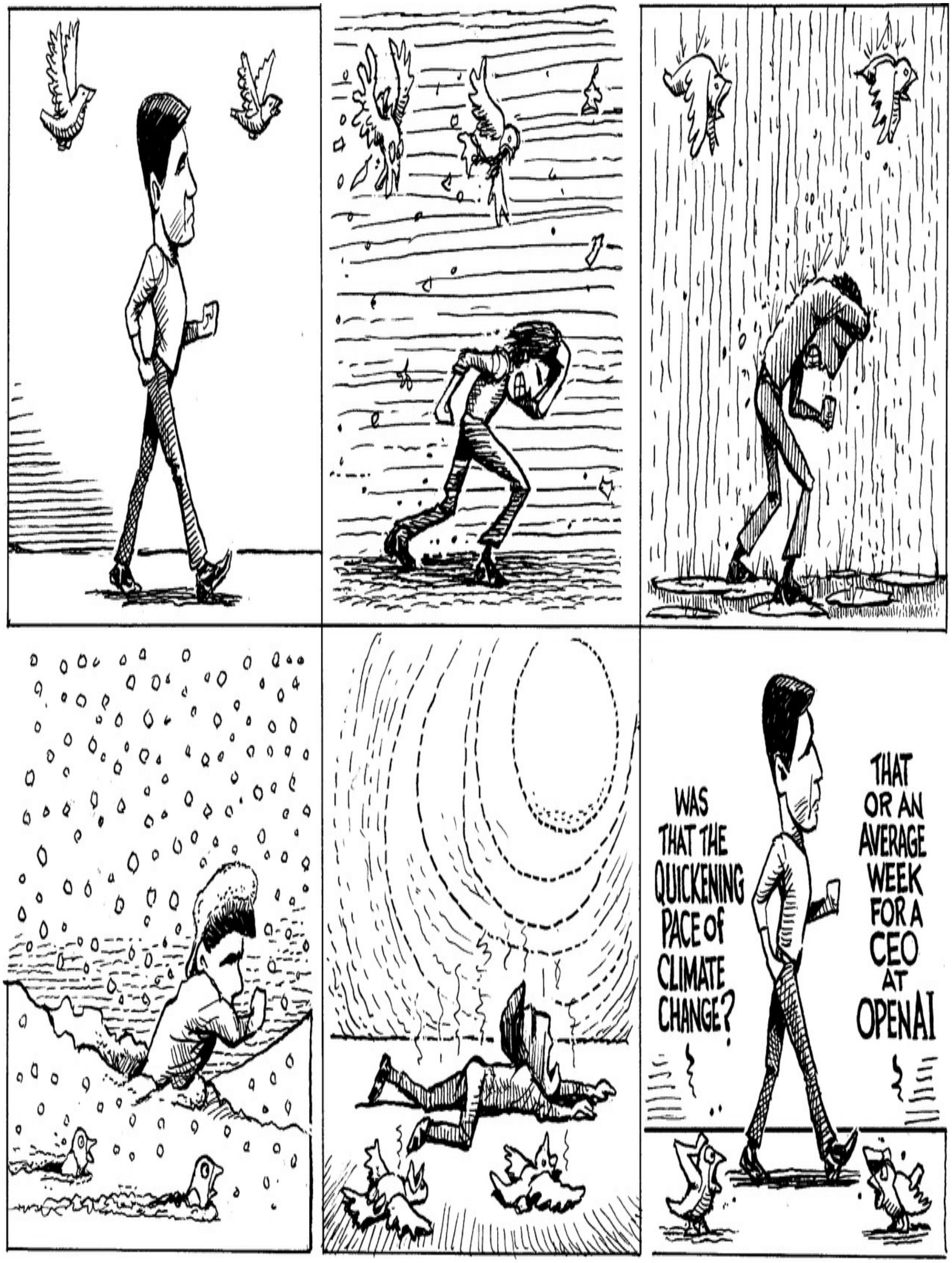
Bargaining power

A new contract between the **United Auto Workers** and Ford, General Motors and Stellantis was ratified by the union’s members, bringing an official end to its strike. As well as improved pay and conditions, the agreement brings thousands of jobs in electric vehicles and batteries under the UAW’s protection.

The world this week

KAL’s cartoon

Nov 23rd 2023



Economist.com

Kal

Dig deeper into the subject of this week's cartoon:

Progress on climate change has not been fast enough, but it has been real
The fallout from the weirdness at OpenAI
Sam Altman's return marks a new phase for OpenAI

KAL's cartoon appears weekly in The Economist. You can see last week's here.

The Economist

This week's covers

How we saw the world

Nov 23rd 2023

WE HAD TWO covers this week. With the world gathering in Dubai for the 28th COP, one cover considers the progress that has been made in the fight against climate change. Some improvements have come thanks to better policies and cheaper and more widespread renewable energy. But they are not enough. The climate is still worsening, and serious, international debates are needed about solar geoengineering and carbon-dioxide removal.

The Economist

- OpenAI: lessons from a revolution
- The UAE's ambitious ascent
- Inside Hamas's finances
- Why isolationists should aid Ukraine

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ADAPTATION D

CLIMATE FINANCE INCOMPLETE

Leaders: Progress on climate change has not been fast enough, but it has been real
Special report: Carbon-dioxide removal
Science and technology: Solar geoengineering is becoming a respectable idea


The Economist
Inside Hamas's finances
OpenAI: lessons from a revolution
A special report on the carbon economy
The best television of 2023
NOVEMBER 25TH–DECEMBER 1ST 2023
THE UAE'S AMBITIOUS ASCENT

Our other cover focuses on the United Arab Emirates. Like Singapore, the UAE is a haven for its region. But whereas Singapore's ascent coincided with a golden age of globalisation, the UAE is seizing opportunity in a time of chaos and disorder. Its successes and its failures hold lessons for middling powers as they navigate a fragmenting world.

Leaders: How to thrive in a fractured world
Briefing: The messier the world gets, the more the UAE seems to thrive

Leaders

Must try harder

Progress on climate change has not been fast enough, but it has been real

And the world needs to learn from it

Nov 23rd 2023

THE AGREEMENT at the conference of the parties (COP) to the UN Framework Convention on Climate Change, which took place in Paris in 2015, was somewhat impotent. As many pointed out at the time, it could not tell countries what to do; it could not end the fossil-fuel age by fiat; it could not draw back the seas, placate the winds or dim the noonday sun. But it could at least lay down the law for subsequent COPs, decreeing that this year's should see the first "global stocktake" of what had and had not been done to bring the agreement's overarching goals closer.

As the world gathers in Dubai for the 28th COP, the assessment of the first part of that stocktake is in some ways surprisingly positive. At the time of the Paris COP, the global warming expected by 2100 if policies did not change was more than 3°C above pre-industrial levels. If policies in place today are followed, central estimates put it around 2.5-2.9°C, though the uncertainties are large. That is still so high as to be disastrous for billions. But it is also a marked improvement.

A lot of this progress has come from cheaper and more widespread renewable energy. In 2015 global installed solar capacity was 230 gigawatts; last year it was 1,050GW. Better policies have spread, too. In 2014 just 12% of energy-related carbon-dioxide emissions came under carbon-pricing schemes and the average price per tonne was $7; today 23% of greenhouse-gas emissions do, and the price is around $32.

Those and other steps forward explain why the International Energy Agency, an intergovernmental think-tank which, at the time of Paris, saw carbon-dioxide emissions continuing to rise into the 2040s, today says they are likely to peak within a few years. Peaking is not enough; emissions must then fall very quickly to bring the projected warming down to just 2°C. But the almost ceaseless increase in emissions has been a fact of economic growth for two centuries. To reverse that could be seen as the end of the beginning of the fight for a stable climate.

To ascribe all this progress to Paris would be daft. But the process it put in motion set new expectations; it made climate something that countries had to talk about. And by spelling out that a stable climate needs to balance residual sources of carbon dioxide with "sinks" which remove it from the atmosphere, it brought the idea of net-zero goals into the mainstream. One country had such a goal in 2015. Now 101 do.

In a world where the seasons themselves are increasingly out of whack—witness last week's extraordinary springtime heatwave in Brazil—the COPs provide a predictable annual space in the international calendar for side-agreements and new expressions of intent. A recent statement by Joe Biden, America's president, and his Chinese counterpart, Xi Jinping, helped build momentum for a COP-adjacent deal on methane emissions. They also pledged their countries to do their bit in the tripling of renewable generating capacity by 2030, another goal for which the United Arab Emirates wants its COP remembered.

None of this means that COPs have saved the world. Paris provided a context for the boom in renewable energy, but it did not provide the investment that made it happen. The doubling of investment levels that BloombergNEF, a data outfit, sees as necessary for the proposed tripling in capacity will have to come from the private sector. To draw it forth is not a matter of COPpery. To attract funds, countries will need to redesign energy markets, hurry through permits, hugely improve grids and remove policies that still favour fossil fuels.

And none of this has stopped the climate from worsening. Nor could it. The main driver of global warming is the cumulative amount of carbon dioxide in the atmosphere. For as long as net emissions continue, temperatures will rise. Since Paris, that ineluctable warming has reached a level where it can no longer be treated as a problem of the future. This year climate change has felt particularly acute: the hottest August on record followed the hottest July, the hottest September the hottest August, the hottest October the hottest September.

That pace will not continue for ever. But the only way to stop the warming before reaching net zero is to cut the amount of sunshine the planet absorbs, perhaps by inserting particles into the stratosphere or whitening clouds over the ocean. The idea of "solar geoengineering" alarms many climate scientists, activists and policymakers; but a number rightly see it as worth researching. That research needs an international debate about the proper restrictions on it and the possibilities it could lead to. The incrementalist, institution-bound COPs are not the place for those discussions. But before the next stocktake, set for 2028, some forum must be found.

Mechanisms for removing carbon dioxide fall more comfortably within COP's remit. Like solar geoengineering, this process also concerns many. Hearing oil companies, in particular, talking about carbon-dioxide removal as a justification for keeping production up strikes them as likely to lead to a world where emissions continue but only a small amount of removal ever takes place. Given the industry's history, this is not unreasonable.

To allay such fears, countries will have to be explicit about their removal plans in the next round of "Nationally Determined Contributions"—the proposals for further action that they have to present to each other by 2025. In order to guard against fudging, they should also be required to keep their targets for removals and emission reduction separate.

Not just COPy and paste

This may seem a low priority compared with emissions and adaptation: removals begin to matter materially only when emissions fall far below their peak. But at that point the scale of the removals needed will be thousands of times greater than can be achieved today. Best get cracking. Being explicit about the fact that, eventually, polluters will be paying for the removal of their waste will both spur investment in technologies and concentrate the minds of emitters. Again, a UN process cannot force the changes the world requires. But when it frames debates wisely and sets appropriate rules, it can help galvanise progress. That is just as well, seeing how much more is needed. ■

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Read more of our articles on climate change

Climbing high

How to thrive in a fractured world

Lessons from the ambitious ascent of the United Arab Emirates

Nov 23rd 2023

OVER THE next few weeks Dubai will be abuzz. Tens of thousands of diplomats, activists and business folk are due to fly in to join the UN's annual climate pow-wow. The United Arab Emirates' skill at wrangling countries and industries with vastly disparate interests, in the hope of making further progress on tackling climate change, will be on full display. But that is not the only reason to pay attention to the UAE. It also shows how to thrive in the multipolar age.

The country is home to just over 0.1% of the world's people and produces only 0.5% of its GDP, but it contains nearly 10% of the world's oil reserves, and this wealth helps it punch above its weight. Like many emerging countries today, it straddles political and economic divisions. It is a closed autocracy, yet one of the world's most open economies. It is a close ally of America, but its biggest trading partner is China. Although its GDP per person exceeds that of Britain or France, it is often seen as part of the global south and is a hub for Indian and African businesses, making it the Singapore of the Middle East. And in 2020 it was one of the first Gulf countries to normalise relations with Israel.

As a consequence, the UAE is prospering even as war rages in the Middle East and superpower rivalry unravels the world . The non-oil economy is growing at nearly 6% a year, a rate that India is enjoying but that the West—and these days even China—can only dream of. Talent and wealth are flocking to the country, as Chinese traders, Indian tycoons, Russian billionaires and Western bankers alike seek stability and success. Last year it attracted more foreign investment for greenfield projects than anywhere except America, Britain and India.

Like Singapore, the UAE is a haven for its region. But whereas Singapore's ascent coincided with a golden age of globalisation, the UAE is seizing opportunity in a time of chaos and disorder. It wants not just to thrive economically but, more dangerously, to exert its political influence abroad. Both its successes and its failures hold lessons for middling powers as they navigate a fragmenting world.

One lesson is to play to your economic strengths. The UAE has had its share of economic embarrassments, notably Dubai's debt-fuelled construction binge, which ended in crisis and a bail-out in 2009. An obsession with the blockchain has faded. But in other areas it has made the most of its advantages, to impressive effect. The operators of its vast ports now run sites from London and Luanda to Mumbai and Manila. DP World, one such firm, handles roughly a tenth of all global shipping-container traffic. Masdar, one of the world's biggest clean-energy developers, has ploughed money into everything from wind farms in Texas to solar plants in Uzbekistan. All told, the UAE is now one of the biggest investors in Africa, helping build vital infrastructure across the capital-starved continent.

Meanwhile, access to lots of capital, computing power and data has helped artificial-intelligence researchers in Abu Dhabi train up Falcon, an open-source large language model that in some ways beats Meta's. Some experts reckon that the UAE may well be the third-most-important country for AI, after America and China. And throughout, its rulers have doubled down on the utility of the country's position as an entrepot at the crossroads of Africa, Asia and Europe, by building institutions for good economic governance and technocracy.

Another lesson is to welcome foreign talent. With just 1m locals, the UAE needs lots of both highly skilled and low-skilled migrants. And the world is full of go-ahead people hoping to make their fortunes. Whereas Saudi Arabia is resorting to heavy-handed measures to attract expertise, such as requiring regional offices to be set up in the country, the UAE focuses on making itself a more attractive place to live and do business. A golden-visa scheme set up in 2019 offers professionals long-term residency; a select few can even apply for citizenship, once unheard of in the Gulf. In time Saudi Arabia, which is just starting to wean its economy off oil, may become a serious rival. Although the UAE severely restricts political freedoms and has a bad record on human rights, the threat of competition is spurring it to become more socially and economically liberal.

Nor has the UAE forgotten the gains from trade. Other countries have favoured industrial policy and protectionism, but it has been doing deals. India, wary of free trade, signed its first such deal in a decade with the UAE; commerce between the two has since leapt by 16% in nominal terms. An agreement with Israel has given the UAE precious tech know-how and Israeli firms access to deep pools of capital and the bigger Gulf market.

Western airlines stopped flying to Tel Aviv after the war in Gaza began. Etihad and Flydubai, two Emirati carriers, still make regular flights there.

Yet some opportunities are turning out to be pitfalls. As America's influence wanes, enterprising powers everywhere will be tempted to amass influence abroad for themselves. Muhammad bin Zayed, the UAE's ruler, has duly seized the initiative. The country's pragmatism has sometimes served it well. In much of Africa it is a welcome business partner, without the imperial baggage of the West; at the UN climate meeting, it hopes to be a broker between rich and poor. But the UAE has also made terrible mistakes.

Mirage in the desert

Fearing the influence of political Islam in its backyard, and wanting to protect trade flows, the UAE is arming the Rapid Support Forces, a Sudanese militia that is committing genocide in Darfur. In the past that approach has failed miserably. In Libya the UAE backed a warlord who tried to march on Tripoli in 2019 and lost. In Yemen it joined Saudi Arabia in a long war against the Houthi rebels, before partially withdrawing in 2019.

Over the years the UAE's rulers have built mechanisms to ensure a stable business environment at home; they know, too, that domestic failures would quickly incur the ire of their citizens. But the regime faces no such constraints abroad, allowing it to indulge its whims and protect its interests, no matter the consequences elsewhere. In a fragmented world, many countries will be looking for new ways to play on the global stage. The UAE shows the promise that lies ahead—and the perils, too. ■

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An election in Buenos Aires

In Argentina Javier Milei faces an economic crisis

The radical libertarian is taking over a country on the brink

Nov 20th 2023

TO AN AMERICAN audience, Argentina's election may seem uncannily familiar. A political outsider with bouffant hair and a history of outrageous remarks promises to make the country "great again", and is written off by the liberal elite before winning the presidential poll. Yet the election on November 19th of Javier Milei, a self-described "anarcho-capitalist", is not a repeat in the pampas of Donald Trump's rise to power. Mr Milei faces a far trickier economic situation than any American president since the Depression. Many voted for him not because of his inflammatory rhetoric—but in spite of it, in an act of desperation.

Argentina is dead broke. Annual inflation is over 140% and is expected to reach 200% by early next year. That is up from 54% when Alberto Fernández, the outgoing Peronist president, took office in 2019. Four in ten Argentines live in poverty. Public debt is 90% of GDP; and the fiscal deficit, when measured properly to include central-bank money-printing, is about 10% of GDP. Its dollar bonds trade at less than 33% of their par value. External sources of cash are tapped out: the country already owes the IMF $44bn and its foreign-exchange reserves are about $10bn in the red on a net basis (after deducting central-bank swap lines and other liabilities).

To face Argentina's demons, Mr Milei will have to take some emergency economic measures. Rapid belt-tightening is needed to cut the fiscal deficit: unaffordable pensions and fuel subsidies are an obvious target. He must liberalise the exchange-rate system even though this will lead to a devaluation and spur inflation. This is inevitable: Argentina no longer has the dollars it needs to defend the official rates. And the new president needs to restructure Argentina's debts to lower them to sustainable levels. This will probably require the IMF to admit to losses, or to charge artificially low interest rates on the whopping loans it extended to Argentina, which represent one of the biggest mistakes in the fund's history.

What about dollarisation, Mr Milei's most eye-catching policy? When a country's financial credibility is in shreds, adopting the greenback in place of its domestic currency may make sense. Eight countries other than the United States use the dollar as legal tender, including Ecuador and Panama. Nonetheless, to do this in an orderly manner requires elaborate and time-consuming preparation and a large initial float of dollars with which to back the banking system. On both counts Argentina fails.

Indeed, the emergency economic measures are themselves a giant leap. Mr Milei may have won with a large mandate, but he will hold a fragile position in government: his coalition will have only 38 of 257 seats in the lower house of Congress and seven of 72 seats in the Senate. He will therefore have to build alliances, particularly with Patricia Bullrich, a moderate right-winger.

To forge these alliances Mr Milei needs to become more statesmanlike, after a lifetime of eccentricity. Until now he has surrounded himself with divisive figures and cranks. His running-mate, Victoria Villarruel, has downplayed the atrocities of Argentina's military junta. To signal change, he should appoint Ms Bullrich and Mauricio Macri, a former president, to his cabinet.

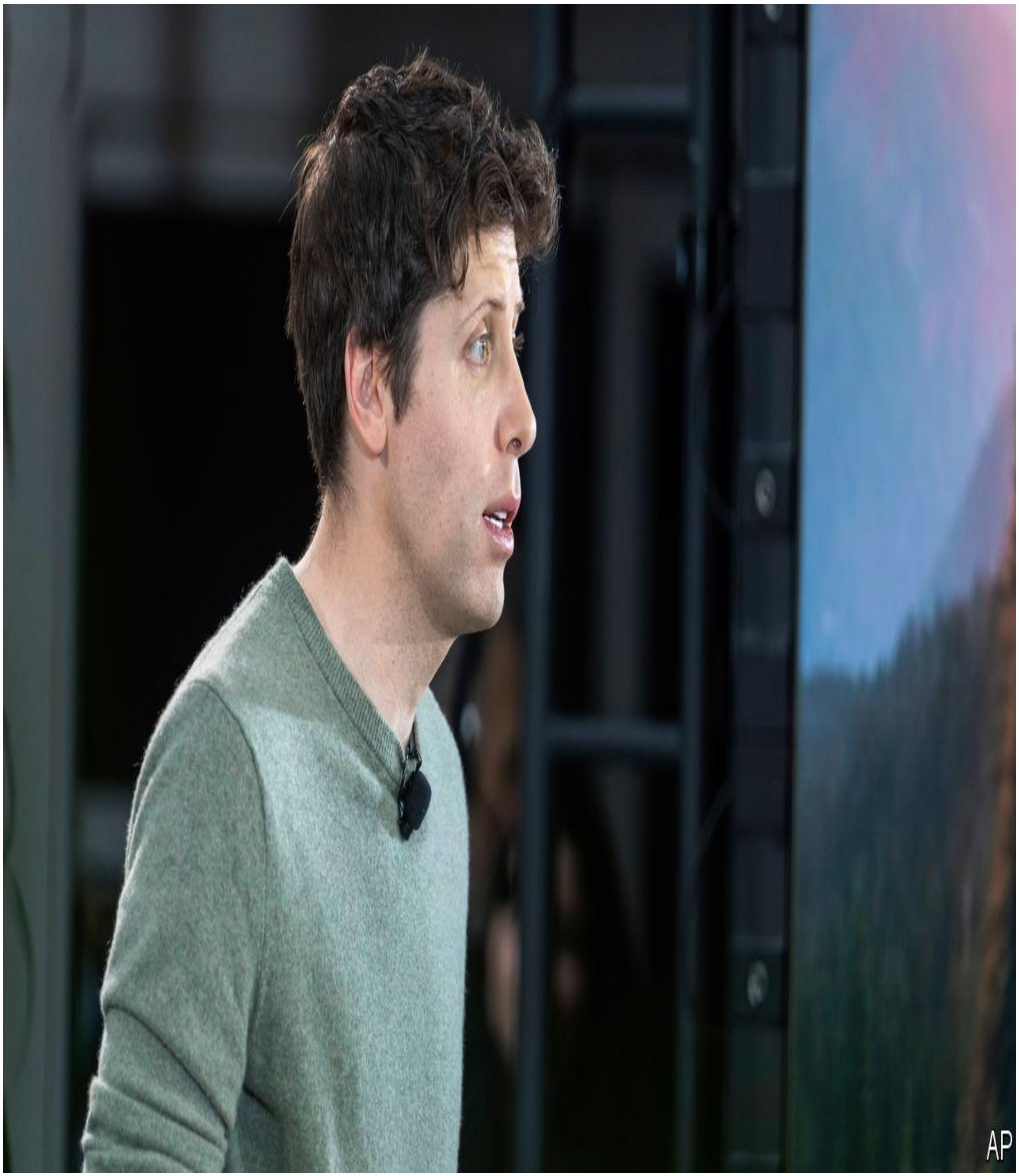
Mr Milei's time in power will not be easy. Mr Macri was the first non-Peronist to complete a term in office since the restoration of democracy in 1983. Mr Milei needs to act quickly, but also to build a national consensus about economic reform so that his policies do not result in Argentines taking to the streets. So far, his lack of experience and volatile character do not suggest that he can manage this. Yet if Argentina has become an economic casino, Mr Milei is the last roll of the dice. ■

OpenChaos

The fallout from the weirdness at OpenAI

Sam Altman is set to return, but the episode holds some disturbing lessons

Nov 22nd 2023


AP

FIVE VERY weird days passed before it seemed that Sam Altman would stay at OpenAI after all. On November 17th the board of the maker of ChatGPT suddenly booted out its chief executive. On the 19th it looked as if Mr Altman would move to Microsoft, OpenAI's largest investor. But employees at the startup rose up in revolt, with almost all of them, including one of the board's original conspirators, threatening to leave were Mr Altman not reinstated. Between frantic meetings, the top brass tweeted heart emojis and fond messages to each other. By the 21st, things had come full circle .

All this seems stranger still considering that these shenanigans were taking place at the world's hottest startup, which had been expected to reach a valuation of nearly $90bn. In part, the weirdness is a sign of just how quickly the relatively young technology of generative artificial intelligence has been catapulted to glory. But it also holds deeper and more disturbing lessons.

One is the sheer power of AI talent. As the employees threatened to quit, the message "OpenAI is nothing without its people" rang out on social media. Ever since ChatGPT'S launch a year ago, demand for AI brains has been white-hot. As chaos reigned, both Microsoft and other tech firms stood ready to welcome disgruntled staff with open arms. That gave both Mr Altman and OpenAI's programmers huge bargaining power and fatally undermined the board's attempts to exert control.

The episode also shines a light on the unusual structure of OpenAI. It was founded in 2015 as a non-profit research lab aimed at safely developing artificial general intelligence (AGI), which can equal or surpass humans in all types of thinking. But it soon became clear that this would require vast amounts of expensive processing power, if it were possible at all. To pay for it, a profit-making subsidiary was set up to sell AI tools, such as ChatGPT. And Microsoft invested $13bn in return for a 49% stake.

On paper, the power remained with the non-profit's board, whose aim is to ensure that AGI benefits everyone, and whose responsibility is accordingly not to shareholders but to "humanity". That illusion was shattered as the employees demanded Mr Altman's return, and as the prospect loomed of a rival firm housed within profit-maximising Microsoft.

The chief lesson is the folly of solely relying on corporate structures to police technology. As the potential of generative AI became clear, the contradictions in OpenAI's structure were exposed. A single outfit cannot strike the best balance between advancing AI, attracting talent and investment, assessing AI's threats and keeping humanity safe. Conflicts of interest in Silicon Valley are hardly rare. Even if the people at OpenAI were as brilliant as they think they are, the task would be beyond them.

Much about the board's motives in sacking Mr Altman remains unknown. Even if the directors did genuinely have humanity's interest at heart, they risked seeing investors and employees flock to another firm that would charge ahead with the technology regardless. Nor is it entirely clear what qualifies a handful of private citizens to represent the interests of Earth's remaining 7.9bn inhabitants. As part of Mr Altman's return, a new board is being appointed. It will include Larry Summers, a prominent economist; an executive from Microsoft will probably join him, as may Mr Altman.

Board senseless

Yet personnel changes are not enough: the firm's structure should also be overhauled. Fortunately, in America there is a body that has a much more convincing claim to represent the common interest: the government. By drafting regulation, it can set the boundaries within which companies like OpenAI must operate. And, as a flurry of activity in the past month shows, politicians are watching AI. That is just as well. The technology is too important to be left to the whims of corporate plotters. ■

Read more of our articles on [artificial intelligence]()

One cheer for Jeremy Hunt

Britain's autumn statement got business taxes right

It also cynically handed out an illusory windfall

Nov 22nd 2023

YOU DO NOT have to be an economic historian to know that politicians like to cut taxes before elections. On November 22nd Jeremy Hunt, Britain's chancellor of the exchequer, announced tax cuts worth £18bn (0.7% of GDP), 14 months at most before Britain goes to the polls. Mr Hunt said he was able to loosen the purse strings because of his sound economic stewardship. One of his measures was indeed a striking example of sensible policymaking. Unfortunately, the rest of the budget leaves a mess for the next government, which surveys suggest is very likely to be formed by the Labour Party.

Start with what he got right. Mr Hunt said that he would make permanent “full expensing”—the right of businesses to deduct upfront their capital expenditures from their taxable profits. This nerdy-sounding change was probably the single biggest pro-growth tax reform he could have unveiled that was also politically feasible. Expensing undoes much of the investment-crushing effect of corporate taxes. The Office for Budget Responsibility (OBR), Britain’s fiscal watchdog, estimates that the policy will boost annual business investment by almost 1% of GDP—a welcome fillip in an economy that has been starved of capital expenditure. Estonia and Latvia have permanent full expensing, but among big rich economies Britain will stand out for the friendliness of its tax code.

Where did the money come from? Mr Hunt said that a fall in inflation had made possible both permanent expensing and his other headline-grabbing tax cut: a two-percentage-point reduction in the rate of national insurance, a payroll tax. In fact, close to the opposite is true. Most of the “headroom” was created by inflation forecasts rising. Higher inflation fills the Treasury’s coffers because the government has frozen tax allowances in cash terms. Yet the chancellor is not increasing public investment to make up for higher inflation. In effect, he has pencilled in further real-terms cuts in public spending.

After analysing various government-spending pledges, the OBR calculates that some budgets would have to fall in real terms by an average of 4.1% per year after 2026 to make the government’s numbers add up. This is not credible. Britain has already been through a decade of austerity. The National Health Service in England has a waiting list 6.5m people long. The prison system is full up. Many school buildings are unsafe. In the coming years Britain must cope with the pressures of an ageing society, the green-energy transition and rising defence spending. Mr Hunt promises better public-sector productivity. That is a worthwhile goal but it is hard to pull off and unequal to the country’s needs. A fiscally responsible government would admit taxes must rise.

Instead Mr Hunt crowed about public debt falling—by which he means complying with the risibly lax constraint that the debt-to-GDP ratio must be forecast to fall between four and five years hence. If his successors do not reverse his tax cuts, then meeting this goal will squeeze cash-starved public services even more tightly.

More likely is that debt continues to drift upwards, even with low unemployment. It is a disappointing legacy after 13 years of Tory or Tory-led government, which has also been almost comically self-contradictory on tax. In the 2010s the Conservatives raised personal tax allowances, a change now being inflated away. They also cut investment carve-outs to fund a lower headline rate of corporate tax, the opposite of more recent changes. Only two years ago they announced plans, in effect, to raise national insurance, which Mr Hunt is now cutting. It is hard to make sense of what the Conservatives are trying to do other than win elections—and make life difficult for Labour if they lose. ■

Letters

On secondary legislation, tariffs, interest rates, realtors, Costa Rica, the Sagrada Família, James Bond, flying lawn chairs

Letters to the editor

A selection of correspondence

Nov 23rd 2023

Letters are welcome via e-mail to letters@economist.com

Scrutinising the executive

I was the chairman of the Secondary Legislation Scrutiny Committee in the House of Lords that produced the "government by diktat" report referred to in your article, "Bad laws" (November 11th). As you pointed out, the temptation to use secondary legislation has proved irresistible to governments of all colours. The fact that such legislation can only be approved or rejected and cannot be amended has meant that both houses of Parliament, and particularly the Lords, have been reluctant to press the "reject" button. Indeed, on the last occasion the Lords did so, in 2015 over tax-credit cuts, a full-scale constitutional crisis resulted.

How to redress this? One way would be to create some form of triaging process that would enable scrutiny by both houses to be focused on those regulations where it was really needed. The present procedure is more than adequate for probably more than 90% of the 700 or so pieces of secondary legislation brought forward in a normal parliamentary session. This would refute the likely argument by the government that any change to the scrutiny arrangements would gum up the whole machinery of government.

A new procedure requiring proper debate and containing a power to amend could then be introduced for the remaining regulations. This would give some teeth back to the legislature. A number of us in the Lords have made practical suggestions as to how this might work. But it will only happen if backbench MPs are prepared to pick up the ball and run with it. Any other approach will result in the government of the day alleging that this is the unelected Lords telling the elected Commons how to do its job better. That would be game over.

ROBIN HODGSON
Chairman
Secondary Legislation Scrutiny Committee, 2019-23
House of Lords
London

The decline in parliamentary scrutiny is not just an unfortunate accident. For good or ill, with a largely unwritten constitution, the British Parliament is dominated by precedent. The legislative short cuts so enthusiastically employed by the present government to avoid scrutiny for Brexit and covid will be quoted as legitimate by future administrations with even less justification. As you indicated, this forms part of a pattern, a consistent and remorseless shift of power to the executive. In our recently published analysis “Can Parliament Take Back Control?”, we reprint Lord Hailsham’s BBC lecture in 1976 on “Elective Dictatorship”. Is this where we are heading?

PAUL TYLER
Former Liberal Democrat spokesperson for political and constitutional reform
Stroud, Gloucestershire

One possible, but tendentious, proposal to resolve this terrible state of affairs would be a reform of the House of Commons, reducing the current number of constituencies and, therefore MPs, from 650 to around 300. Counterintuitive as this might sound, it would force a change to the whole content of an MP’s working day. He or she would need to focus on their main task of passing quality legislation and less time on the local affairs of their much bigger constituencies. To achieve the former they would need a much larger expert staff working with them to review bills properly. This would be made affordable by the huge reduction in the number of MPs.

The vacuum in constituency work could be filled by devolving much more power to existing locally elected councillors, who would, in any case, be more up to scratch with local affairs and take informed decisions.

Without a radical reform of our constitution in some way similar to this, there is little hope of any tangible improvement in the future.

ALAN CROSS
London

Limited trade protections

You agree that tariffs can help some manufacturers gain domestic market share ("Trade wars: episode II", November 4th). But you stress that this benefit comes at the cost of sheltered manufacturers getting away with being less efficient than their global rivals, and imposing costs on other domestic industries that use their more expensive products.

Protection can be arranged so as to give a higher benefit-cost ratio than you imply. In South Korea and Taiwan, new producers in strategic industries were given protection on their domestic market sales, and accrued higher profits. They were required to use the higher profits to subsidise entry into export markets. They were given a time limit to reach international levels of price and quality, after which the protection would be removed. Whether this could be implemented in the United States is questionable; but it should be considered in many industrialising countries.

ROBERT WADE
Professor of global political economy
London School of Economics

A useful monetary tool

The claim that the world economy is defying gravity and will surely hit the rocks as higher interest rates bite downplays the considerable benefits that come from those higher rates (“Too good to be true”, November 4th). Most obviously, higher rates are a signal that the spectre of deflation that haunted the world economy for over a decade after the financial crisis of 2007-09, leading to ultra-low rates, has been banished. Zero or even negative interest rates caused serious distortions in the financial system and engendered a sense of malaise and economic permacrisis.

The disappearance of low rates is a signal to consumers, at least, that things are "back to normal". And, as you note, central banks will eventually cut rates again. This is the biggest benefit of all. Central banks have regained the ability to boost the economy by cutting interest rates, and quantitative easing can be consigned to history.

BILL SMYTH
Bagshot, Surrey

The reality of realtors

Thank you for telling Americans how realtors rip them off ("[The great realtor racket]", November 11th). My wife and I have been "rippees" numerous times during our 80-plus year lifetimes. It takes no more time and effort to sell a $500,000 home than a $1m one, but the land sharks scoop up a commission that is doubled. Please follow up with “How to avoid the great realtor racket”. It would be very welcome.

EARL MCMILLIN
Merritt Island, Florida

Rising to the challenge

Costa Rica's fiscal reform in 2018 shifted the debt-to-GDP ratio, aiming to balance the national budget for a future focused on human security through education and health care. This goal requires time and statesmanship, not populism ("Paradise lost?", November 4th). Costa Rica upholds remarkable achievements, including abolishing the armed forces in 1949, universal health care, launching the first-ever decarbonisation plan after the Paris agreement and becoming the first Central American country to join the OECD in 2021. In the realm of democracy and freedom, hope is still possible.

CARLOS ALVARADO-QUESADA
President of Costa Rica, 2018-22
Cambridge, Massachusetts

Unfinished works

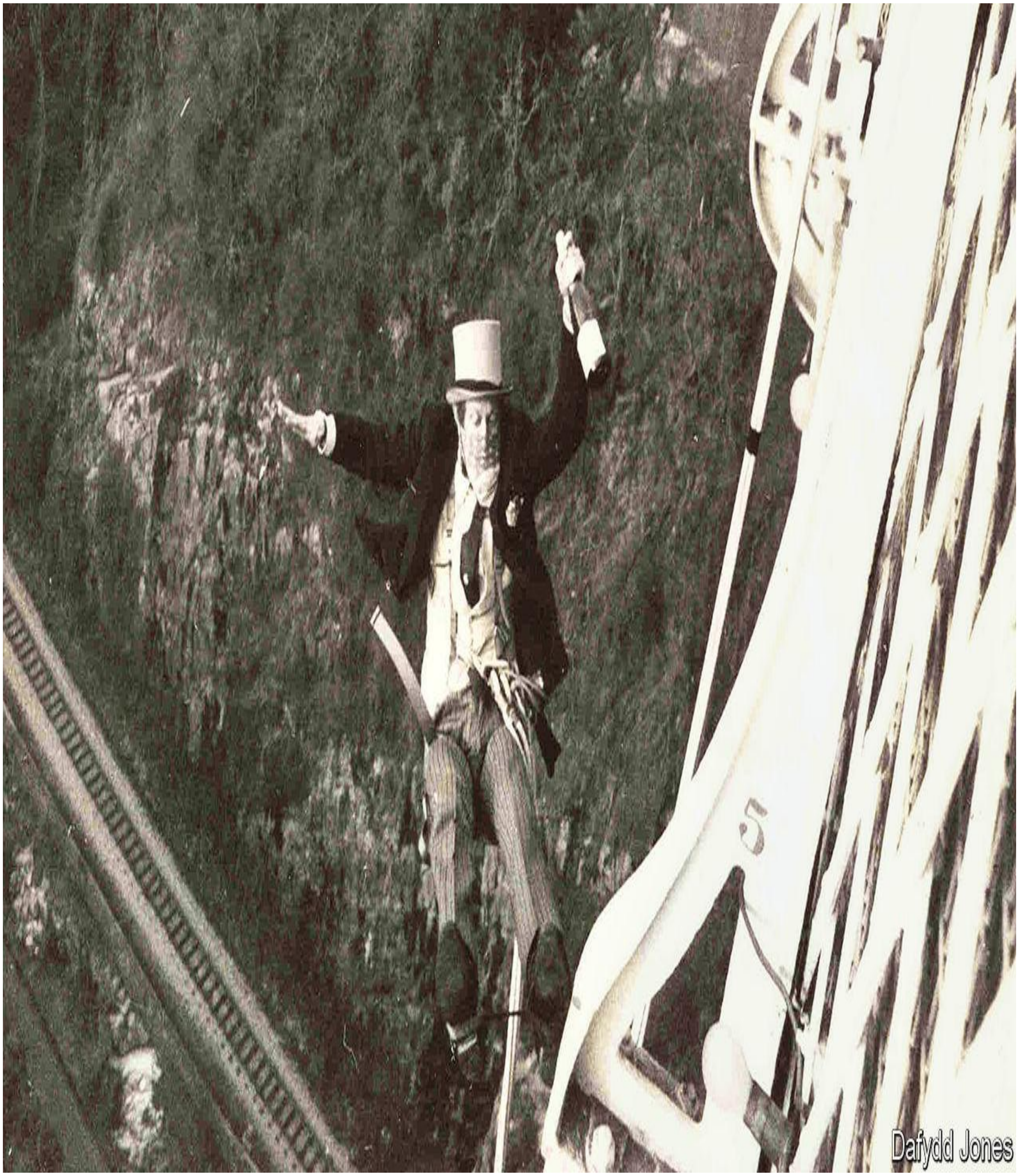
Even Antoni Gaudí i Cornet's magnum opus, the Sagrada Família, is only "sort of" by Gaudí. Its current and presumed end state certainly can't be "exactly according to his vision" (Letters, November 4th), not least because his incomplete plans and models were largely destroyed during the Spanish civil war in 1936. In particular, the angular Passion Façade, created for the basilica by Josep Maria Subirachs decades later, makes one wonder, "What would Gaudí think?" Like many debates, this one would be better settled over a couple of Barcelona vermouths or *orxatas*.

DAVID GIBBONS
San Francisco

The spy who loved TE

A letter from Alok Mohan (November 4th) mentioned John F. Kennedy's affinity for James Bond and *The Economist*. A less salubrious literary connection can be found in "An Impeccable Spy" by Owen Matthews, his biography of Richard Sorge, a wartime spy for the Soviets. The book mentions that Sorge regularly bought copies of *The Economist*, which, curiously, were available in the notorious Japanese prison where he was incarcerated in the 1940s.

A. CHANDRSEKHAR
Delhi



Is it a bird? Is it a plane…?

Although David Kirke is justly famous as the inventor of bungee jumping, I must take issue with the description of him as the pioneer of cluster ballooning in 1986 (Obituary, November 11th). Several people before Kirke accomplished this feat, most notably “Lawnchair Larry” Walters in 1982. With 42 weather balloons attached to his lawn chair, Walters rose to a height of 16,000 feet and was spotted by two commercial airliners. He drifted across part of Los Angeles before bursting several balloons with a pellet gun to slowly return to earth.

KEITH VAN SICKLE
Menlo Park, California

By Invitation

- **Mark Carney argues that finance needs to go where the emissions are**
- **Ngozi Okonjo-Iweala says open trade is crucial for decarbonisation**

COP28: climate finance

Mark Carney argues that finance needs to go where the emissions are

Helping heavy-emitting sectors to decarbonise is key to reaching net zero, says the UN's climate envoy

Nov 23rd 2023

IN A WORLD starved of good news on climate, it is welcome that investment in clean energy has grown exponentially and is now running at almost double the rate of investment in all new fossil fuels. This year solar alone will receive more capital than new oil-and-gas production. As a result of these dramatic shifts, global carbon emissions from energy use may peak next year

But even as the arc of global emissions is finally beginning to bend, much more will be required to reach climate justice. First, clean-energy investment must rise from $1.8trn this year to around $4.5trn a year by the early 2030s. And crucially, heavy-emitting industries must begin to make their contributions. These sectors—materials, chemicals, heavy transportation—already generate almost one-third of global emissions. Based on current trajectories those emissions will rise by more than 30% by 2050—putting the world's climate goals out of reach.

The challenges to decarbonising heavy-emitting industries are legion. These parts of the economy are both carbon-intensive and hard to electrify. Getting them to net zero requires building new low-carbon manufacturing facilities, developing sustainable fuels and green-hydrogen supply, and deploying small modular nuclear reactors and carbon-capture and storage capacity. Many of these technologies are nascent and all are uneconomic at small scale. Regulatory barriers are skewing incentives. And given the interconnections between heavy-emitting sectors, slow progress in one sector delays action in another.

As a result, many heavy-emitting companies are caught in transition traps. They know what they need to do but struggle to get financing to cut emissions meaningfully. Without clear paths forward, investors are demanding the return of cashflows today rather than encouraging companies to invest them for a low-carbon tomorrow.

Even financial institutions committed to net zero are facing pressures from stakeholders, including regulators, to measure climate performance by the absolute emissions of assets in their portfolios. This promotes paper decarbonisation—such as a bank that switches lending from a steel company to a software business to reduce its financed emissions—without cutting emissions in the real world.

We must tackle these issues head on, not least because heavy-emitting industries are essential to all economies, and will become even more so if developing economies are to continue to urbanise, industrialise and grow.

To get these emissions down, we must close three gaps: in data, action and investment.

Today, companies frequently lack access to the data on emissions they need to assess the carbon exposures within their supply chains, and financial institutions lack the information they need to accurately assess climate opportunity and risk.

Closing this data gap requires consistent, comprehensive and decision-useful climate disclosure. To that end, the voluntary, private-sector-led Task Force on Climate-Related Financial Disclosures (TCFD) was launched at the COP in Paris eight years ago. Two years ago in Glasgow, building on the TCFD's good work, over 40 countries created the International Sustainability Standards Board (ISSB) to develop a standard that can be applied globally and made mandatory.

The ISSB's final standard has now been endorsed by IOSCO, the international body of securities regulators. It is comprehensive, proportionate and, crucially, includes Scope-3 emissions, which count those generated by suppliers and end-users, thereby aligning incentives across value chains. This is vital to decarbonising carbon-intensive sectors. It is time for countries to implement the ISSB's standards.

Disclosure defines the problem. Action is needed to fix it. Every country, city, company and financial institution needs a credible, science-aligned net-zero transition plan to fulfil its commitments. The Glasgow Financial Alliance for Net Zero (GFANZ) is helping make these mainstream for the financial sector. Within the next year approximately 250 major financial institutions from around the world will develop transition plans, and policymakers in America, the EU, Britain, Japan, Hong Kong and Singapore are recommending others follow.

GFANZ is also stressing that transition finance must mean much more than only financing clean energy, as critical as that is. It must also include financing heavy-emitting companies that are intent on decarbonising. To that end, GFANZ has developed guidance on a common definition of transition finance that includes "going where the emissions are" and backing companies with credible transition plans to get emissions down, and if that is not possible, to fund the managed phase-out of their “stranded” assets: fossil-fuel reserves and infrastructure that are no longer needed as the world pivots to clean energy.

These strategies should be complemented by a consistent method to assess the impact of financing. GFANZ members are developing methodologies for expected emissions reductions which financial institutions can use to quantify the “emissions return” of their activities. After all, the climate’s fate depends on what happens on the planet, not on paper.

GFANZ’s technical consultations are creating the foundation on which standards-setters and regulators can build detailed rules. These can prevent greenwashing and send a clear signal to the private sector about when financing the transition of carbon-intensive companies counts as a sustainable investment.

Finally, closing the investment gap in the most heavy-emitting sectors requires new partnerships between producers, their customers, suppliers and governments. These can deepen collaboration on new technologies, increase demand for sustainable products, and identify and dismantle regulatory barriers. When combined with transition finance focused on emissions reductions, this will help companies in the most carbon-intensive sectors make the necessary investments in decarbonisation.

When world leaders, scientists, civil society and businesses gather in Dubai for COP28, the greening of heavy-emitting industries must be a priority. Financial institutions are often criticised for investing too much in polluting industries. The reality is they are not doing enough. Industries such as steel, shipping and cement receive far too little capital to cut their emissions in line with the world’s climate needs. COP28 must break this cycle to get capital to where the emissions are. That’s the only way to bend the emissions curve in time. ■

Mark Carney is the UN Special Envoy for Climate Action and Co-Chair of the Glasgow Financial Alliance for Net Zero.

COP28: climate action and trade

Ngozi Okonjo-Iweala says open trade is crucial for decarbonisation

Trade amplifies environmental policy action, argues the head of the World Trade Organisation

Nov 21st 2023

LATER THIS month leaders and officials from around the world will gather in Dubai for the COP28 climate-change summit. High on their agenda will be closing the gap between global climate goals and progress towards them. A recent "global stocktake" report from the UN found that global greenhouse-gas emissions are still rising, and that national pledges to cut these collectively fall far short of what is needed to keep average global temperatures within 2°C of pre-industrial levels, as set out in the 2015 Paris agreement, let alone the more ambitious 1.5°C objective.

Delivering deeper emissions cuts will be difficult, even amid record-breaking heat and various government initiatives calling for stepped-up climate action and financing. The International Energy Agency estimates the world can still get there with a massive, policy-driven increase in clean-energy capacity and energy efficiency that will cut demand for fossil fuels by 25% by 2030 and by 80% by 2050, while creating tens of millions of new jobs. This will require global clean-energy spending to rise from $1.8trn this year to $4.5trn annually (in 2022 dollars) by the early 2030s.

But this low-carbon push faces strong headwinds. Higher-for-longer interest rates have raised the cost of capital, weighing on investments towards climate and other sustainable-development goals. Slowing economic growth in developing countries—in many of which output remains well below pre-pandemic trends—is another constraint on governments' spending capacity.

Against this backdrop, countries need to use every tool available to deliver a just transition to a clean energy future. Trade policy is one of these, and it is one of the most under-appreciated levers available for driving emissions reductions. But awareness is growing. COP28 will feature a first-ever "trade day", with a focus on how trade and trade policy can move the world closer to net zero.

Open trade is an indispensable means of pushing clean-energy technologies at speed and scale. In addition, trade is a strong force for increasing what Mark Carney, a former central banker and current UN climate-finance envoy, calls "carbon value for money"—that is, for maximising emissions reduction per dollar spent.

Trade has been a big factor in the strongest cause for climate optimism today: the plummeting costs that have made wind and solar energy increasingly competitive with coal and gas. Research from MIT suggests that about 40% of the recent decline in solar-power costs can be attributed to scale economies, and WTO economists have concluded that this is made possible in part by international trade and cross-border supply chains. One study estimates that if trade in solar photovoltaic modules had been more restrictive over the preceding decade, prices in 2020 would have been 54% higher in China and 107% higher in America. Prices in 2030 would be 20-30% higher than in a scenario with globalised supply chains. Higher prices for renewables would mean less deployment.

Recent research shows, moreover, that trade amplifies the impact of environmental policy action. For instance, if countries with a lot of clean energy can produce more energy-intensive goods and services while importing energy-light products from countries with less of it, and vice versa, global emissions will fall substantially more than they would have in the absence of that trade. In other words, just as individuals and countries can reap economic gains by specialising in what they are relatively good at, the world can reap environmental gains if countries specialise in activities they are relatively green at.

At COP28, the WTO will release a set of “Trade Policy Tools for Climate Action”, offering countries a range of ideas to consider as they ramp up their NDCs—Nationally Determined Contributions—to climate-change action. These include repurposing environmentally harmful subsidies; rebalancing tariff policies that often place higher import duties on low-carbon products than on carbon-intensive goods; using the $13trn in annual government procurement spending to jumpstart markets for emissions-reducing goods and services; co-operating on carbon pricing and green subsidies to minimise negative spillovers and trade tensions; and making food systems more secure and sustainable.

Most of the items on this menu are steps countries can take individually. But realising the full potential of trade and trade policy to drive climate-change mitigation and adaptation requires countries to work together. With geostrategic rifts widening across the world, we risk going in the opposite direction.

Turning away from open global markets would reduce the scale economies and competitive pressures that have lowered the cost of decarbonisation. Trade fragmentation would decrease incentives for the technological innovation we still need. Less trade would slow the spread of new ideas, best policy practices and business strategies for solving the climate challenge. The path towards net zero would become slower and costlier.

In addition, WTO analysis suggests that if the world economy succumbs to protectionist pressures and splits into two isolated blocs, long-term global economic output will fall by at least 5%. Poor countries would suffer the biggest welfare losses, with devastating implications for poverty reduction as well as for their ability to adapt to climate change and invest in the green transition.

That is why, at COP28, governments should use trade as a tool as they step up climate ambition and financing for developing countries. And in February, when trade ministers from the WTO’s 164 members gather in Abu Dhabi for our 13th Ministerial Conference, they can strengthen the WTO, recommit to open, rules-based commerce and bolster the system’s capacity to promote climate progress.■

Ngozi Okonjo-Iweala is the Director General of the World Trade Organisation.

Briefing

Port in a storm

The messier the world gets, the more the UAE seems to thrive

For a tiny country, it has outsize influence

Nov 23rd 2023 | ABU DHABI and DUBAI

FROM NOVEMBER 30th fully 70,000 people from around the world will descend on Dubai for the UN's annual climate summit. The COP, as it is known, is a 12-day jamboree that draws diplomats, businessfolk and activists. Should they have time to escape the crush at Expo City and travel towards the glitzy skyscrapers dotting the coast, they will find a city, and a country, in the middle of an astonishing boom.

One giveaway is the crowds of golden-visa-toting Russian billionaires, Indian businessmen and Western financiers. Another is a property frenzy. In September buyers queued in the wee hours to snap up villas in Dubai's latest ritzy land-reclamation scheme, Palm Jebel Ali, that start at $5m. The properties have yet to be built.

Last year's energy-price spike brought the United Arab Emirates, one of the world's largest producers of oil, over $100bn in revenue. That is about $100,000 for every Emirati citizen. But oil is not the only reason the country is prospering. In a time of war and economic fragmentation, the UAE seems to be a port in a storm. Multinationals are setting up factories and offices at a rate not previously seen in the UAE's five decades of independence. Oil and gas now account for just a third of GDP, and the oily bits of the economy are growing more slowly than the rest of it. The economy as a whole grew by 3.7% in the first half of the year compared with the same period in 2022. Excluding oil and related industries, it grew by 5.9% (see chart 1).

The UAE's standing in the world seems to be growing rapidly, too. Hosting COP28 is one indication. The country is home to just 10m people, of whom only 1m are citizens. But through both its embrace of global business and its foreign investments, including in clean energy and logistics, it is binding itself to other countries around the world. Its economic openness and its apolitical approach to business give it broad appeal: it is one of the few places where Americans, Chinese, Iranians, Israelis and Russians all rub shoulders.

Yet the UAE is not without its challenges. As oil becomes less central to the economy, the social contract is changing. The government does not simply rake in petrodollars and distribute them to citizens in the form of cushy jobs and subsidised goods; it has begun levying taxes and prodding locals to seek more demanding work in the private sector. Since the UAE is an absolute monarchy (or rather, seven of them combined in a federation dominated by the richest, Abu Dhabi), there is little outlet for popular discontent. The lack of checks on the rulers' authority can lead to arbitrary and ill-considered policymaking, especially in foreign relations.

Can-dhow spirit

The country is no stranger to economic transformation. Pearl-diving, the previous mainstay of the sleepy trading outposts along the shores of the Gulf, collapsed in the early 20th century after Japanese researchers worked out how to farm pearls. Oil was discovered in the 1950s; by 1971, when the UAE gained independence from Britain, it was well on its way to becoming a petrostate. It sits atop more oil than Russia, and is the world's seventhbiggest producer, pumping more than 3m barrels a day. Only Guyana and Kuwait have more oil relative to their population.

Despite this bounty, the UAE's rulers were among the first in the Gulf to try to diversify their economy. Dubai, which has little oil of its own, led the way, creating lightly regulated, low-tax economic zones designed to attract multinationals. Although it needed bailing out by Abu Dhabi after a spectacular property crash in 2009, its basic economic formula, of turning itself into a trading entrepot, transport hub and financial centre, remains successful. At the same time, the UAE has invested its oil wealth in strategically important industries and strategically important parts of the world. The intention is to make itself a force in global trade, finance and geopolitics. Much of this approach, locals note with condescension, is being copied by Muhammad bin Salman, the crown prince of neighbouring Saudi Arabia.

Start with the Emirates' role as an entrepot. The fact that it is within easy flying and shipping distance of most of Africa, Europe and Asia makes it a natural hub. DP World, a firm owned by the government of Dubai, runs Jebel Ali, one of the world's biggest container ports. Dubai airport is the busiest in the world for international travel. Logistics have grown to account for nearly 8% of the country's GDP.

But the business climate is as important as geography. In an index of economic freedom compiled by the Heritage Foundation, an American think-tank, the UAE ranks 24th out of 176 countries—one notch above America. Foreigners laud the ease with which offices can be set up, flats rented, visas approved. "Everyone thinks commercially, and no one thinks politically," notes an Israeli entrepreneur with a big office in Dubai. On a trip to the country a few weeks after the war between Israel and Hamas began, he found the UAE just as welcoming as ever. Local governments run "customer happiness centres". The name is cringeworthy, and local services can be expensive, but they work.

In recent years, businesses have set up in Dubai at a frenetic pace: the number of new businesses joining the city's chamber of commerce rose by more than 40% in the first half of the year, compared with 2022. A fifth went to Indian firms; the numbers of companies from China and elsewhere in the

Middle East also grew rapidly. Abu Dhabi, meanwhile, has had some success luring financial firms.

The influx reflects the varied roles the UAE can play for firms from different countries. For Chinese ones, it has become an offshore trading hub. One example is Dragon Mart, a wholesale and retail complex in Dubai that bills itself as the biggest trading hub for Chinese goods outside China. Last year DP World helped set up Yiwu Market, which hopes to eclipse it. For Indian firms, the UAE offers what Hong Kong and Singapore do for China and South-East Asia: an easier place to do business internationally, with more efficient courts, better infrastructure and access to capital and talent. It is also becoming a second home of sorts. Mukesh Ambani, India's richest man, has twice broken Dubai's record for the most expensive residential property, most recently for a $163m beach villa.

Indifference towards Western sanctions has made the UAE a haven for businesses from shunned places. Iranian oil is often exchanged at sea off the emirate of Fujairah, blended with other crude and sold on. After traders in Geneva began shunning Russian crude, Dubai became the place to finance and trade shipments. Russian businessmen, no longer able to live in America or Europe, have relocated to waterfront villas in Dubai. Hong Kong's seemingly never-ending lockdowns during the pandemic, meanwhile, sent some of its professionals fleeing to Dubai, where covid restrictions lasted only three months. Last year more millionaires moved to the UAE than anywhere else in the world, in net terms.

Cohabitation without representation

The welcome for foreign business has become warmer still in recent years—most probably to ensure the UAE retains its edge over Saudi Arabia, which is now also chasing foreign firms. Outsiders once needed to team up with an Emirati to set up shop in the country, providing locals with fat rents and slowing business formation. That "agency" rule has been relaxed. The weekend has been shifted from Friday and Saturday to Saturday and Sunday, to align with most of the rest of the world (the emirate of Sharjah, keen to ensure Friday remains a holiday, has plumped for a four-day week). Personal freedoms have increased a little too: unmarried couples can now live together, for instance.

The Economist

But a small country can attract only so much business, which is why the UAE also ventures abroad. Its various sovereign-wealth funds have assets of more than $1.5trn in all manner of businesses (see chart 2). The varied holdings of Mubadala, one of them, include stakes in Chime, an American fintech firm, XPeng, a Chinese electric-vehicle maker, and Jio, Mr Ambani’s telecom network, among other things.

Many of the investments are in logistics. DP World runs ports everywhere from London to Sydney. All told, no less than a tenth of the world’s container-shipping passes through the firm’s hands.

There is also a focus on developing countries. The UAE is one of the largest investors in capital-starved Africa, albeit mainly in North Africa. “We are replicating Dubai’s success in African countries,” said Sultan Ahmed bin Sulayem, DP World’s boss, in 2020. In 2022 an Emirati consortium including Abu Dhabi Ports signed an agreement to invest $6bn in a port and agricultural project in Sudan. DP World operates on dry land, too: in Rwanda it has invested in a Road Transport Centre that has, according to a report by Knight Frank, a consultancy, reduced domestic shipping times from weeks to days. In India it has invested in railway lines; in southern Africa, in a logistics firm.

Another niche is clean energy. In 2006 the UAE made a prescient bet, setting up a firm called Masdar to diversify its energy supply and build on its energy expertise by investing in renewables (the firm was initially run by Sultan al-Jaber, who now heads Abu Dhabi’s national oil company and is the president of COP28). Masdar is now one of the world’s biggest developers of wind farms and solar power.

Emirati officials hope to pull off a similar feat in another emerging industry: artificial intelligence. Abu Dhabi was quick to try to seize on the technology’s potential, setting up a research institute, making available vast amounts of capital and recruiting talented Western and Chinese researchers. The result was Falcon, an open-source large language model which some technologists consider better than Meta’s offering, Llama 2. The government now wants to use this as the basis for a layer of proprietary models in specific fields, such as health care, which it hopes to sell. It is still too soon to say whether Falcon will take flight, but unlike most governments that blather on about their AI strategy, the UAE actually seems to have one.

The UAE has also tried to advance its commercial interests through a string of bilateral economic and investment agreements. It was one of the first signatories of the Abraham accords, under which several Arab states have established relations with Israel. That was followed by a trade deal with Israel earlier this year. Even as Western carriers suspended flights to Tel Aviv after Hamas's attacks on October 7th, Flydubai and Etihad, two Emirati carriers, have maintained regular services.

India signed a free-trade pact with the UAE last year, its first in a decade. Bilateral trade has since risen by 16% in nominal terms. A similar deal has been agreed with Indonesia; talks with Thailand and Malaysia are under way. Negotiations move much faster than the equivalent efforts of the Gulf Co-operation Council, a grouping of all the oil-rich Gulf states, allowing the UAE to steal a march on its neighbours.

Sometimes, however, it appears to be diplomatic imperatives that dictate commercial decisions, rather than the other way around. The UAE is eager to build influence in its region. Earlier this month it signed a deal with Jordan to jointly invest $2bn in infrastructure and development projects. It has plied Recep Tayyip Erdogan, Turkey's president, with promises of trade and investment. It has also energetically backed Abiy Ahmed, Ethiopia's embattled prime minister, including by initiating big projects involving DP World and Masdar.

The downside of Emirati foreign policy

Indeed, it is in foreign policy that the absolute and sometimes unpredictable power of the UAE’s president and Abu Dhabi’s ruler, Muhammad bin Zayed, is most evident. Sheikh Muhammad is hostile to political expressions of Islam and is keen to reshape the region to increase the UAE's influence. To those ends he has meddled in civil wars in Libya, Sudan and Yemen.

In all three places, however, war rages on inconclusively. What is more, in all three places the UAE finds itself at odds with close allies such as America or Saudi Arabia. Worse, although in each country the UAE has backed the side that seems less inclined to merge mosque and state, its allies are unsavoury in other ways. In Sudan, for instance, the militia backed by the UAE is accused of a genocidal campaign against Black Africans in the province of Darfur.

It does not help that the UAE's disreputable allies often advance its commercial interests. In Sudan they fund themselves in part through their control of gold mines, whose output is sold largely in Dubai. The UAE is also naturally eager to protect Abu Dhabi's big investments in Sudan. At best, however, this is short-sighted: it is hard to imagine that any commercial benefit the UAE gains from such foreign-policy adventures could outweigh the potential damage to its reputation.

It is not just in foreign policy that the Emirates is occasionally let down by ill-judged decisions by its rulers. It has made prescient economic bets, but reckless ones, too. Drive from Dubai to Abu Dhabi, and you pass by desolate stretches of land once meant to house theme parks that were never built. In 2018 the federal government promised to do half of its transactions on the blockchain by 2021; Dubai's officials once promised to become "fully powered by blockchain by 2020". By the same token, the business climate is not perfect. The regime can be arbitrary and harsh, with foreign businessmen sometimes detained without explanation, for instance.

So far such lapses have not been big enough to sow disquiet among the UAE's citizens or investors and thus to undermine its reputation as a haven of political and economic stability. But as its economy grows more diverse and the UAE's foreign entanglements become more complex, managing all the competing interests becomes a more delicate task. The COP, meanwhile, is a reminder that the UAE's seemingly unfathomable riches may in fact be a wasting asset.

Oil money made it possible for the UAE to open its economy to the world without exposing Emiratis to any pain. Abu Dhabi is one of the world's lowest-cost producers, so would remain in the oil business even in a world of declining consumption. But it is preparing for a time when the bonanza may dwindle. In part, that means making the UAE still more attractive to foreign labour and business. But it also means finding alternative revenue streams and cutting costs. The government has introduced a value-added tax and a corporate income tax. Fuel subsidies were phased out in 2015. No one says it out loud, but a personal income tax also seems inevitable.

More Emiratis will need to move from the public into the private sector, but many are ill-qualified, meaning they are unlikely to become richer as a result. Schoolchildren lag far behind their rich-country counterparts in standardised testing, and drop-out rates are high. So far the unpicking of the social contract has led to grumbling but no unrest. To keep it that way will require a more concerted effort at training the labour force, and a delicate touch.

The UAE has been quick to spot the opportunities in a fragmenting world. Yet the new age brings dangers, too. A global transition away from fossil fuels, if it ever materialises, will be a shock. The Emirates' assertive foreign policy will continue to strain its alliances. In particular, its relationship with Saudi Arabia could become more complicated and more competitive. The past 50 years suggest it would be foolish to bet against the UAE, but the hardest tests still lie ahead. ■

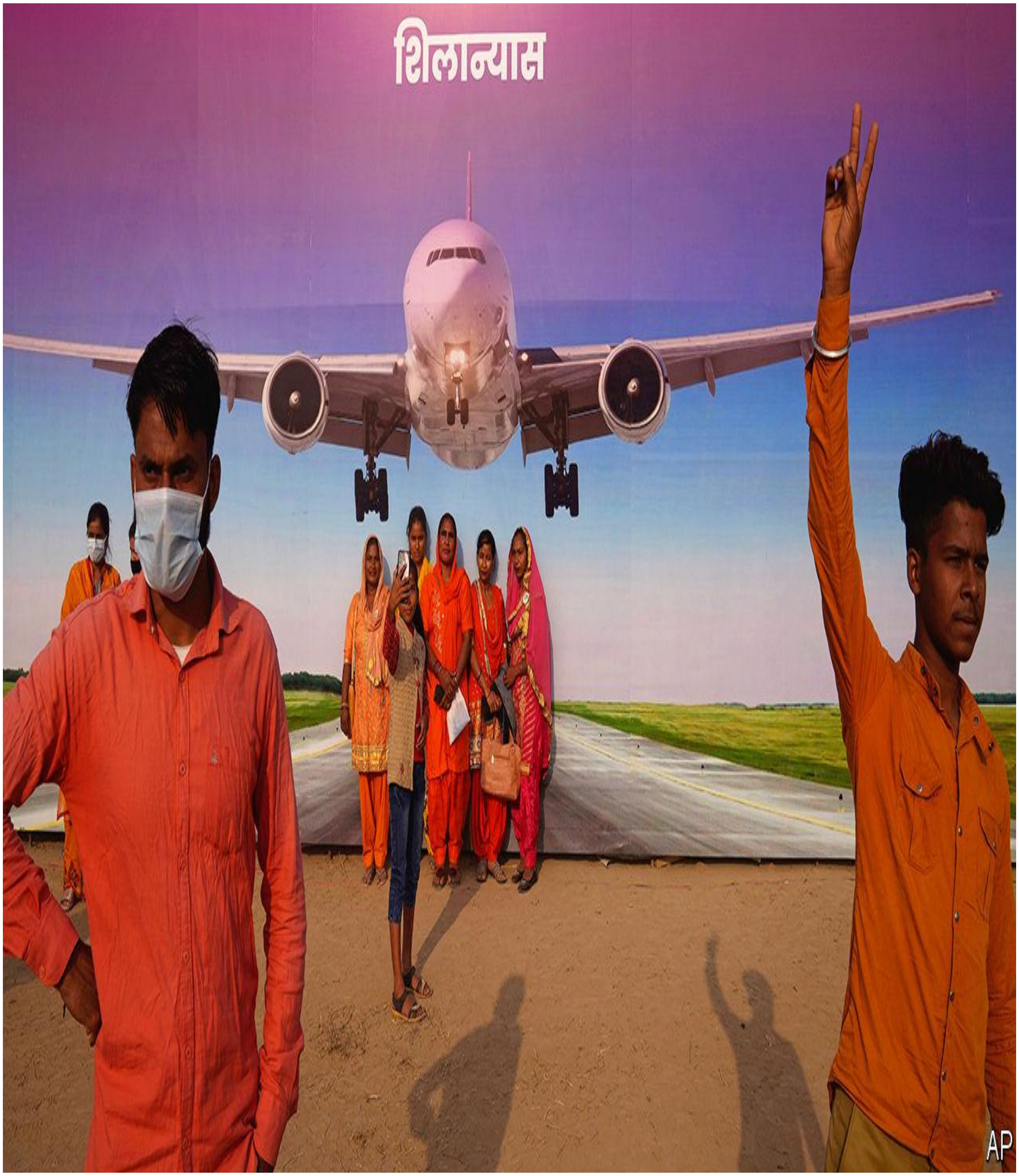
Asia

Taking wing

India is seeing a massive aviation boom

New airports, hundreds of aircraft and millions of new passengers are on their way

Nov 23rd 2023 | NAVI MUMBAI



THE VENOMOUS snakes that infest the new airport rising near Mumbai, India’s commercial capital, are only a minor inconvenience compared with what has already been overcome at the site. Some 8,000 workers, labouring around the clock, have blasted away 55m cubic metres of rock, diverted a river and drained swamps. Seven local villages have been acquired and

3,113 families moved. Work on the airport began in 2021 and is due to be completed by late 2024. That is fast by global standards and in India unprecedented.

The country's entire aviation industry is growing at an astonishing clip. Four new airports and four new terminals have opened in the past 12 months. That gives India 149 operational civil airports, twice the number it had a decade ago. Nine additional airports have been approved and many more are planned. In Jewar, 75km from Delhi, a second airport for the capital is also mushrooming. Officials envisage 15 dual-airport cities by 2040. There is talk of a possible third airport for Mumbai.

Domestic passenger numbers rose from 98m in 2012-13 to 202m in 2019-20. Already the third-biggest domestic aviation market by volume, India is projected to be the third-largest overall by 2026, according to the International Air Transport Association, an industry body. It is likely to see more than 500m passengers by 2030, predicts CAPA India, a consultancy. Airbus, an aerospace firm, thinks the domestic market will by 2042 be more than five times the size it was in 2019. The government wants to create aviation hubs akin to Dubai.

The new airports, part of a broader infrastructure push by the government of Narendra Modi, are expected to support India's 6%-plus annual growth rate. Increased aviation tends to boost growth, according to a paper in *Transport Reviews,* a journal. And India is a vast country, with patchy road and rail links and far-spaced industrial and business centres. Delhi is 1,750km (1,090 miles) from the industrial hub of Chennai. "All you need is an airport," says Aditya Mongia of Kotak, a bank.

India's aviation industry has long been emblematic of the country's economic state. It was founded by a pioneering industrialist, J.R.D. Tata, who was the first Indian to obtain a pilot's licence and used it in 1932 to fly his airline's maiden flight, from Karachi to Bombay (as Mumbai was then called). In 1953 his Tata Air Service, by then rebranded Air India, was nationalised and the industry became a prime example of the lethargy, low standards and state monopolies that characterised India's mixed economy. After the country started liberalising its economy in the 1990s, private airlines proliferated; most—including half-forgotten names such as

Modiluft, Damania and East West airlines—had gone bust by the end of the decade. A bigger boom followed in the 2000s, followed by an epic bust, putting paid to Kingfisher Airlines, Jet Airways and others. Today's boom looks more sustainable.

The industry is still dogged by old problems. On November 8th newspapers carried stories about the miserable punctuality record of SpiceJet, a low-cost carrier; on violations of rules for compensation delays by Air India (back in Tata Group hands after its privatisation last year); and on groundings of dozens of Indigo aircraft because of safety worries. There is a national pilot shortage and regulatory enforcement needs strengthening. Even so, for two reasons this expansion seems durable.

The first reason is a lot of government support for it. The Modi administration is privatising older airports as well as building new ones. Its restructuring and sale of Air India has helped turn a loss-making millstone into a national champion. Under Tata management, the airline has 470 new aircraft on order, with an option for another 370. The government has also loosened a requirement that new airlines must fly for five years before being allowed to operate abroad. It is pushing states to lower taxes on aviation fuel, from as high as 29% down to the low single digits.

A state-subsidised regional connectivity scheme has boosted air links to smaller cities, connecting 72 unserved or underserved airports with 459 routes. The government "has embraced the reality that aviation is not a luxury form of travel", says Salil Gupte, who heads Boeing in India. Jyotiraditya Scindia, the civil-aviation minister, describes the government's aviation policy as a form of "democratisation".

The Economist

The second reason for optimism is soaring demand. Discretionary spending rose from 13% of household consumption in 2000 to 24% in 2020, and could rise to 33% by 2030, according to Macquarie, a bank. There has been "dramatic growth in recent years as per capita income has increased", says Campbell Wilson, Air India's boss. There is a lot more potential growth in store. Air travel is increasingly able to compete on price with first- and second-class long-distance rail. And only 2-3% of Indians have flown, reckons Mr Scindia. Indians make 0.1 trips per person a year; the corresponding figure for Americans is 2.1 and for Chinese 0.5, according to Airbus, which expects that Indian number to triple by 2031.

Air India is not the only airline betting on huge future growth. In June Indigo, India's biggest airline by market share, ordered 500 new planes, the biggest aircraft order ever made. Akasa, which started operations only last year, has 56 aircraft on order and plans to book at least another 100 by the end of the year. "We wouldn't be ordering new aircraft only on the basis of exciting and wonderful demand," says Vinay Dube, Akasa's CEO. "We're ordering aircraft because we also believe we have the infrastructure capabilities to fly them."

The airlines' ambition is also apparent in their travel plans. This year Indigo added routes to Africa, Central Asia and the Caucasus. Akasa plans to start serving the Middle East, South-East Asia, east Africa and Central Asia. Air India's order included 70 wide-body aircraft capable of long distances. This makes the government's hopes for an international hub seem feasible.

Indigo already connects travellers flying between South-East and Central Asia. Air India plans to challenge Emirates and Singapore Airlines—so-called "superconnectors"—for long-haul one-stop connections between East Asia, Europe and North America. "If we want to be aviation giants, we should measure ourselves against some of the largest airlines in the world," says Pieter Elbers, CEO of Indigo. "We should compete with them."■

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Et tu, India?

Did America thwart an Indian assassination plot?

Canada is not alone in worrying about Indian killers

Nov 22nd 2023 | WASHINGTON

JUSTIN TRUDEAU, Canada's prime minister, sparked a furore on September 18th when he announced in Parliament that India was suspected of assassinating a Sikh separatist and Canadian citizen, Hardeep Singh Nijjar, in Vancouver in June. It may not have been the only such case. On November 22nd the *Financial Times* reported that America had foiled an Indian plot to kill another separatist, Gurpatwant Singh Pannun, a dual American-Canadian citizen, in New York.

India's government has long accused Canada of a lax attitude towards those who want to establish a Sikh state, known as Khalistan, in northern India. Canadian Khalistanis blew up an Indian airliner in 1985. Sikh extremists in America were considered a lesser problem, though Mr Pannun, whom India designated as a terrorist three years ago, publishes fiery videos from his wood-panelled office. On November 4th he issued veiled threats against an Air India flight.

The *Financial Times* reported that American officials had issued a "warning" to India over the alleged threat to Mr Pannun. The Justice Department is mulling unsealing a related indictment in a New York district court, though at least one plotter is said to have left America.

The allegations of an Indian plot in Canada surprised many familiar with India's spy agency, the Research & Analysis Wing (RAW), whose station chief was kicked out of Ottawa in September. RAW was suspected of having killed enemies in Pakistan, but not in the West. Yet American and European officials express concern over what they describe as increasingly aggressive tactics by Indian spooks towards the Sikh diaspora.

Mr Trudeau's accusation drew a livid response from Indian officials, think-tankers and journalists. They accused the prime minister of pandering to Canadian Sikhs and being isolated within the Five Eyes, a spy pact that also includes America, Australia, Britain and New Zealand. America cannot be so easily rubbished.

It has been a "blistering year of US-India engagement", boasted an American official this month, referring to many areas of defence and intelligence co-operation. This dispute could complicate, though not derail, that progress. America's warning to India is thought to have come after a visit by Narendra Modi, India's prime minister, to Washington in June. Antony Blinken and Lloyd Austin, America's secretaries of state and defence, have since visited Delhi, and Subrahmanyam Jaishankar, India's foreign minister, Washington. None will have relished discussing Mr Pannun.■

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Spy satellites

Will North Korea’s new spy satellite make the region safer?

The Korean space race has big implications for the peninsula’s security

Nov 22nd 2023 | SEOUL

THE TWO bitterly opposed parts of the Korean peninsula have something in common: stratospheric ambition. After trying and failing twice to put its first military spy satellite into orbit earlier this year, North Korea claimed to have succeeded on November 21st. South Korea plans to put its first spy satellite into orbit on November 30th. This emerging space race has big implications for regional security.

Possessing reconnaissance satellites would improve both Koreas' ability to defend against, or attack, the other. Up-to-date information is crucial to South Korea's "Kill Chain", the pre-emptive strike system it is developing to deter the North from using its nuclear arsenal. Being able to pinpoint the whereabouts of North Korea's leaders would also lend credibility to the South's threat to eliminate them if they ever threaten it. The North, deeply fearful of an American invasion, would for its part get early warning of troop movements against its frontier. If war broke out, satellites could help both sides locate and destroy each other's forces.

A lone satellite would be of limited use, however. Anything resembling real-time monitoring requires a network. South Korea therefore plans to launch five satellites by 2025. Kim Jong Un, North Korea's dictator, said last year he had tasked his scientists with launching "a large number of reconnaissance satellites". Such a constellation would have more resilience against technical failure or attack.

Both Koreas have been developing satellites for decades. Yet they have followed different paths, explains Daniel Pinkston of Troy University in Alabama. Fearing an arms race on the peninsula, America convinced South Korea in 1979 to accept limits on its rocketry technology, which can be used for both satellites and ballistic missiles. South Korea instead focused on satellite and imaging technology. As a result its first spy satellite will probably be more sophisticated than North Korea's, with better capability to see through cloud cover and at night. South Korea's launch capability is relatively rudimentary, even though America began easing the restrictions in 2001 and scrapped them in 2021. SpaceX, an American rocketry firm, will put the South's satellite into orbit.

North Korea's satellite programme was in essence a spin-off from its ballistic-missiles one. The country has now put three satellites into orbit in all. There is scant evidence that the first two are capable of much. But a promise of help from Vladimir Putin, made when Mr Kim went to Russia to visit the country's president in September, may have helped. South Korea's government says Russia is giving the North technical assistance on satellites in return for arms to wage war on Ukraine. If that is right, the North Koreans may have missed an earlier launch deadline, set for October, because they were making Russian-inspired improvements to their latest satellite and its launch vehicle.

How much Russian assistance North Korea can expect for its programme is unclear—and a military space programme is a long-term project. The South has more reliable friends, primarily America. Over the past two years space-based co-operation between the two countries has taken on an increasingly military dimension. In 2022 America deployed a unit of its Space Force service to South Korea. After the defence ministers of America, Japan and South Korea held a rare trilateral meeting on November 12th, South Korea's defence ministry said the three countries would start sharing data on missile launches in real time from December.

The space race seems certain to improve North Korea's military capabilities. Yet it could also increase stability on the peninsula, says Ankit Panda of the Carnegie Endowment for International Peace, a think-tank in Washington. If the North had a better understanding of America's and South Korea's military movements, including frequent training exercises, it might be less likely to mistake innocuous activity for a potential threat. "Given that North Korea has nuclear weapons", says Mr Panda, "I would prefer it to have better eyes and ears than the opposite."■

Money for nothing

Thailand’s new government is handing out cash

But many Thais mostly want a different government

Nov 23rd 2023 | Bangkok

IT HAS BEEN a wild year in Thai politics. After a group of young democrats won more seats than any other political party in an election in May, they were blocked from forming a government by the army establishment that had ruled Thailand for over a decade by rigging the constitution in its favour. Then, the generals teamed up with Pheu Thai, the party of their former rival Thaksin Shinawatra, who was ousted as prime minister in an army coup in 2006 and later fled the country.

As the dust settles, the priorities of the new government, which is led by Srettha Thavisin, a former property tycoon, are clear. It has ignored what the majority of Thais voted for: democratic reform of a country long controlled by a monarcho-military cabal. Instead, Mr Srettha's first few months in office have been defined by populist economic policies. He has cut electricity prices and suspended farmers' debts. Most controversially, he is pressing ahead with Pheu Thai's main campaign promise: a digital wallet scheme to hand out 10,000 baht ($285) each to around 50m Thais, to be spent at businesses located near their registered address. The government plans to launch this stimulus package of around $14bn, roughly 3% of Thailand's GDP, in May next year.

The policies have Mr Thaksin's fingerprints all over them. After Pheu Thai cut a deal with the army in August, the former prime minister returned to Bangkok, ending a 15-year-long, self-imposed exile. Thailand's king promptly reduced the eight-year prison sentence that Mr Thaksin faced for a corruption conviction to a year; he is serving it in the luxury wing of a hospital. His time in office, from 2001 to 2006, was defined by similarly populist policies, including a debt moratorium for farmers and loans to every village. His daughter, Paetongtarn Shinawatra, is the leader of Pheu Thai. In October, Mr Srettha joked that the country had two prime ministers: himself and Ms Paetongtarn.

A former governor of the Bank of Thailand, the country's central bank, Veerathai Santiprabhob, castigates the digital wallet scheme as the latest in a series of spendthrift and distortionary policies. Over 100 former central bankers and economists, including Mr Veerathai, signed a petition opposing the stimulus package, arguing that the costs of the scheme outweighed its benefits. Sethaput Suthiwartnarueput, the current central-bank governor, said the government should prioritise investment over stimulating consumption.

Private consumption grew by 8.1% year-on-year in the third quarter of 2023, even as the economy grew by 1.5%, the slowest rate this year. This caused the National Economic and Social Development Council (NESDC), Thailand's state planning agency, to cut its growth forecast for 2023 to 2.5%. In recent years, Thailand's growth has lagged its neighbours', beset by economic mismanagement under the previous military government, which failed to tackle systemic challenges such as rising income inequality and an ageing population.

Problems abound in Thailand's existing cash-transfer programmes. In 2017 the military government introduced unconditional handouts to the poor. Each month, welfare card holders receive 200-300 baht. According to the NESDC, half of Thailand's poor do not receive this monthly handout and 90% of those who do are not under the national poverty line.

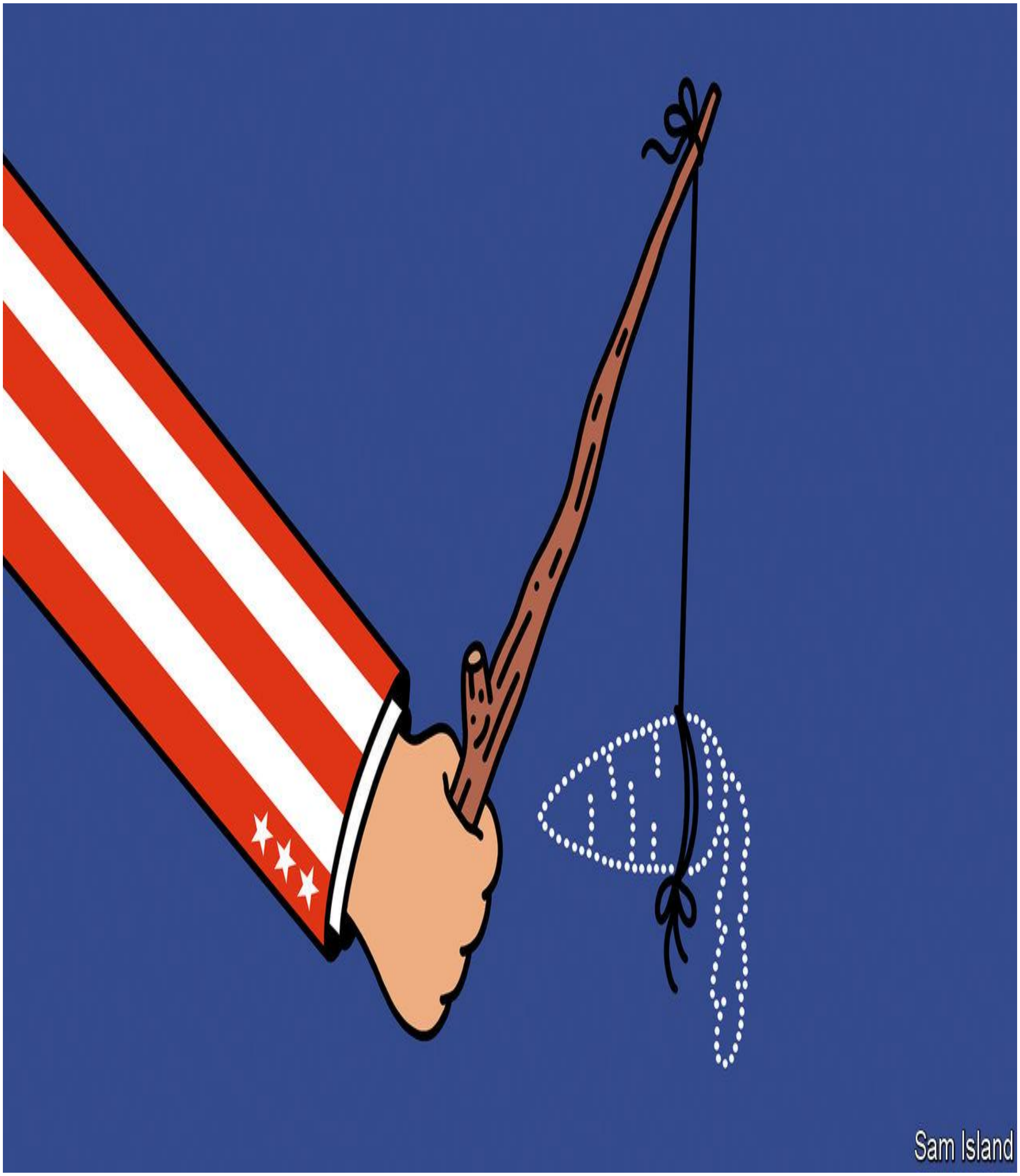
Move Forward, the country's main opposition party, also opposes the digital wallet plan. It wants the government instead to address Thailand's structural woes, especially by breaking up the monopolies that dominate many industries. Given that Pheu Thai depends on establishment backing, this is almost unimaginable. But Pheu Thai did, at least, invite Move Forward to propose an alternative stimulus package, says Sirikanya Tansakul, head of Move Forward's economic team. She suggested the government make smaller investments to boost local economies, such as by improving the quality of Thailand's tap water. The government told her cash giveaways were sexier. ■

IPEF MIA

America’s crumbling trade initiative in Asia

Joe Biden’s limp trade strategy has just got even weaker

Nov 23rd 2023



THERE IS NO lack of American engagement in Asian capitals on security and geopolitics. That is what all the talk of a "free and open Indo-Pacific" is about—seeking friends and allies in a new great-power contest, to China's annoyance. There has been much less evidence of an economic dimension to America's Asian diplomacy—despite a strong desire for one across the region.

Countries in East and South-East Asia thrive on their economic ties with China, but want an American counterbalance. They fear that over-relying on the regional giant would erode their agency and sovereignty. Yet hopes of serious American engagement were dashed when, in one of his first acts as president, Donald Trump in 2017 pulled out of the Trans-Pacific Partnership, a high-grade trade deal with 12 members. What remained of those hopes has just taken another beating. A cornerstone of President Joe Biden's economic initiative for Asia, launched in May 2022 and called the Indo-Pacific Economic Framework for Prosperity (IPEF), has crumbled.

At the initiative's unveiling in Tokyo, Mr Biden called it "an economic vision" that would underpin "new rules for the 21st-century economy". Four pillars were envisaged: that America and its Asian partners would co-operate to promote clean energy; fight tax evasion and money laundering; boost trade, especially of the digital sort; and build resilient supply chains in the face of such things as pandemics. IPEF was emphatically not a trade pact to open markets and cut tariffs. Trade deals need congressional approval, which is a non-starter in Washington these days, given the protectionist turn in both America's main parties. Yet if IPEF looked weaker for that, it was thought to be executive-led, so relatively fleet and flexible. Countries swiftly signed up, including Australia, Brunei, Fiji, India, Indonesia, Japan, Malaysia, New Zealand, the Philippines, Singapore, South Korea, Thailand and Vietnam.

A summit of APEC, the Asia-Pacific trade talking-shop, held in San Francisco on November 16th and 17th, was due to showcase this American initiative. After months of negotiation among IPEF members, agreements on all four pillars were promised. A signed deal to co-operate more on supply chains was announced, along with in-principle agreements on green energy and fighting corruption. Yet the most important pillar, concerning trade, collapsed. At the last minute America dropped plans to announce even a partial agreement on enforceable trade rules.

This has left Asian negotiators (Australian and Japanese above all) and Asian and American business executives utterly dismayed. They had known something was wrong for months. For one, America flipped its negotiating position on digital trade, from pushing to ease access to data to opposing it. That seemed to be in response to pressure from Senator Elizabeth Warren, a left-winger who thinks big tech has conspired to capture government. Additional opposition, it emerged last week, had come from another leftist Democrat, Senator Sherrod Brown, who is up for re-election next year in Ohio, a battleground midwestern state. Last week Mr Brown criticised the proposed trade pillar on the basis that it "lacks enforceable labour standards". That seems to have put the kibosh on it.

The US Trade Representative, Katherine Tai, no avid fan of open trade herself, says the negotiations will continue and a conclusion is possible. That seems unlikely. To develop digital business with America and others, countries such as Indonesia and Vietnam were prepared to allow more scrutiny of their labour and environmental standards and resist their own protectionist impulse to wall off national data. Now, says Deborah Elms of the Hinrich Foundation, a think-tank in Singapore, that carrot is off the table.

China's trade web is meanwhile growing. Asian policymakers have no illusions about the dysfunctional nature of American politics or how long it may last—this week Mr Trump promised to "knock out" IPEF if he is re-elected next year. Even so, there is still Asian goodwill towards America, though dwindling.

Despite their growing sense of frustration, Asian governments want to persist with IPEF. That is partly because, as one South-East Asian diplomat says, the region views the framework as of more strategic than economic value. So it is better to keep America engaged in lengthy discussions about Asian supply chains and standards than to see it wander off altogether. And (who knows?) maybe one day it might even rediscover that trade liberalisation is in its interest.■

Read more from Banyan, our columnist on Asia:
Myanmar's junta suffers startling defeats (Nov 16th)
Australia and China patch things up (Nov 7th)
Narendra Modi has shifted India from the Palestinians to Israel (Nov 2nd)

China

Fuzzy numbers, safer streets

China says it has achieved a miraculously low-crime society

The truth is more complicated

Nov 23rd 2023 | BEIJING

ON SEPTEMBER 22ND, in the north-eastern city of Yanji, a police officer discovered that his pistol had gone missing. Lucky for him, the Chinese police control the world's largest network of surveillance cameras. Video footage showed that the gun had been stolen at a vegetable market. The thief's movements were traced to a rural county some 500km away. Dozens of officers were sent to arrest him. Within 24 hours of the theft the gun was recovered, according to state media.

Such fearsome efficiency, say Chinese officials, has helped their country become one of the safest in the world. The recorded homicide rate per 100,000 people in China is about a tenth of the global average. Only 6,522 people were murdered in 2021, according to the state, down about 80% from two decades ago. During that same period, robberies fell by 97% and assaults by 40%.

The Economist

There are good reasons to believe the government's claims. In recent decades violent crime has declined in many countries. China is unlikely to be an exception. Civilians there cannot own guns. Even buying a knife can involve paperwork. Meanwhile, the public is watched by millions of surveillance cameras (see next story). Surveys suggest that the people of

China feel safer from violent crime than those living elsewhere, including in most Western countries (see chart).

Yet analysts have long viewed China's crime statistics with suspicion. The impressive data are cited by the Communist Party as justification for its rule. State media gleefully portray other countries, notably America, as dangerous and crime-ridden. So it is difficult to separate truth from propaganda. China's numbers may loosely reflect reality, but they often seem too good to be true. And politics is clearly influencing the country's approach to crime.

The situation surrounding homicide is indicative. In 2004 the ministry of public security, under the slogan "murder cases must be solved", began pushing local authorities to quickly achieve at least an 85% success rate in such cases. The numbers suggest that the pressure worked. Within a year, over 40% of counties were claiming 100% success rates in solving new murders. Many cities, such as Beijing, now claim perfection year after year.

Such results raise questions. A study in 2006, for example, showed that over 50% of recorded homicides in Beijing and Shenzhen, a city in southern China, were committed by someone who didn't know the victim. That is fishy, says Børge Bakken, a specialist in Chinese criminology, because victims tend to be killed by family, friends or acquaintances. Wrongful convictions may be a problem. Suspected criminals who end up in court are found guilty 99% of the time. Police have also been accused of failing to register murder cases that are difficult to solve, so that they don't show up in the official data.

Many of the same issues pertain to less serious crimes. China's police have neither the resources nor the incentives to deal with them. Officers are poorly paid, overworked and relatively few in number. (China has about 142 police per 100,000 people, by one estimate, compared with 251 in England and Wales.) Because they are assessed on what proportion of recorded crimes they solve, Chinese police often sweep tricky cases under the rug. A study published in 2021 by Liu Yuchen, a political scientist now at Peking University, found that officers regularly ignored street fights, petty burglaries and even robberies. They also tended to disregard crimes committed against migrant workers.

In some cases economic pressure is the reason cases are overlooked. Mr Liu witnessed a fight between workers from two highway construction companies. Bricks were thrown, tools were swung. Five people had to go to hospital. The police saw it all, but the official in charge kept things out of the courts. He wanted construction to continue, because “all nearby counties have new highways now except us.”

Apart from simply ignoring them, there are several ways to keep cases off the books. Neighbourhood committees, which are run by the party, occasionally manage disputes. Their job is to snuff out trouble before it reaches higher levels of the bureaucracy. Sometimes victims are encouraged to informally seek compensation from perpetrators.

People who report domestic violence are usually directed to mediation bodies run by the All-China Women’s Federation, a state-backed organisation. That rarely leads to justice. The party is more interested in keeping families together for the sake of social stability. Abusers may get scolded, but formal punishment is uncommon. Judges are known to reject divorce requests even when violence is involved (divorced men are viewed by the state as potential troublemakers). The system discourages abuse victims from coming forward.

It is no secret that the state covers up crimes. In a case last year, a mother of eight was found chained to an outhouse in Jiangsu province. Video footage of the woman went viral. Local officials responded to the public’s outrage with a series of statements that amounted to “nothing to see here”. Eventually they were forced to admit that the mentally-ill victim had been sold into marriage and was unlawfully imprisoned. Three people, including the woman’s husband, were arrested. In a collection of speeches published in October, Xi Jinping, China’s leader, conceded that human trafficking is still a serious problem.

Another is fraud. This is one of the few areas where the official data are not so rosy. In the past two decades the number of fraud cases has spiked, such that over a third of the crimes committed in China now fall into that category. Online and telephone fraud are the most common. This type of activity can’t be detected by CCTV cameras. Some of it is carried out by Chinese nationals abroad, often in South-East Asia. In recent years the authorities have persuaded hundreds of thousands of suspects to return to China, according to state media. Police have threatened suspects' families in order to convince them to co-operate with investigations.

Knowing what crimes are rising and falling would enable police to better combat them. But even the government seems to have only a fuzzy sense of what is happening. "I had thought that the police stations actually had accurate data that was different from the reported data," says Suzanne Scoggins, a criminologist at Clark University in Massachusetts. She interviewed officers in cities across China. "Several of my best sources told me that simply wasn't the case," she says.

That fits with an unusually critical article published in 2019 by the Shandong Police College in eastern China. The author of the piece complained that the country's crime statistics were "not detailed enough to reflect the true picture". This made it difficult to run big data analyses that might help the police deploy resources better or come up with tactics and strategies.

For the party, it may be enough that the public feels safe. The crimes it cares most about are those of a political nature. People who criticise the government or accuse officials of malfeasance can be locked up for "picking quarrels and causing trouble". That vague offence is also used to criminalise peaceful demonstrations.

Such activity is never ignored. A year ago, when a group of young people gathered by a river in Beijing to protest against the government's harsh "zero-covid" controls, hundreds of officers, including the chief of police, came out to shoo them away. The authorities then used surveillance tools to track down and punish some of those involved. It is a shame such effort and resources are not devoted to non-political crimes. ■

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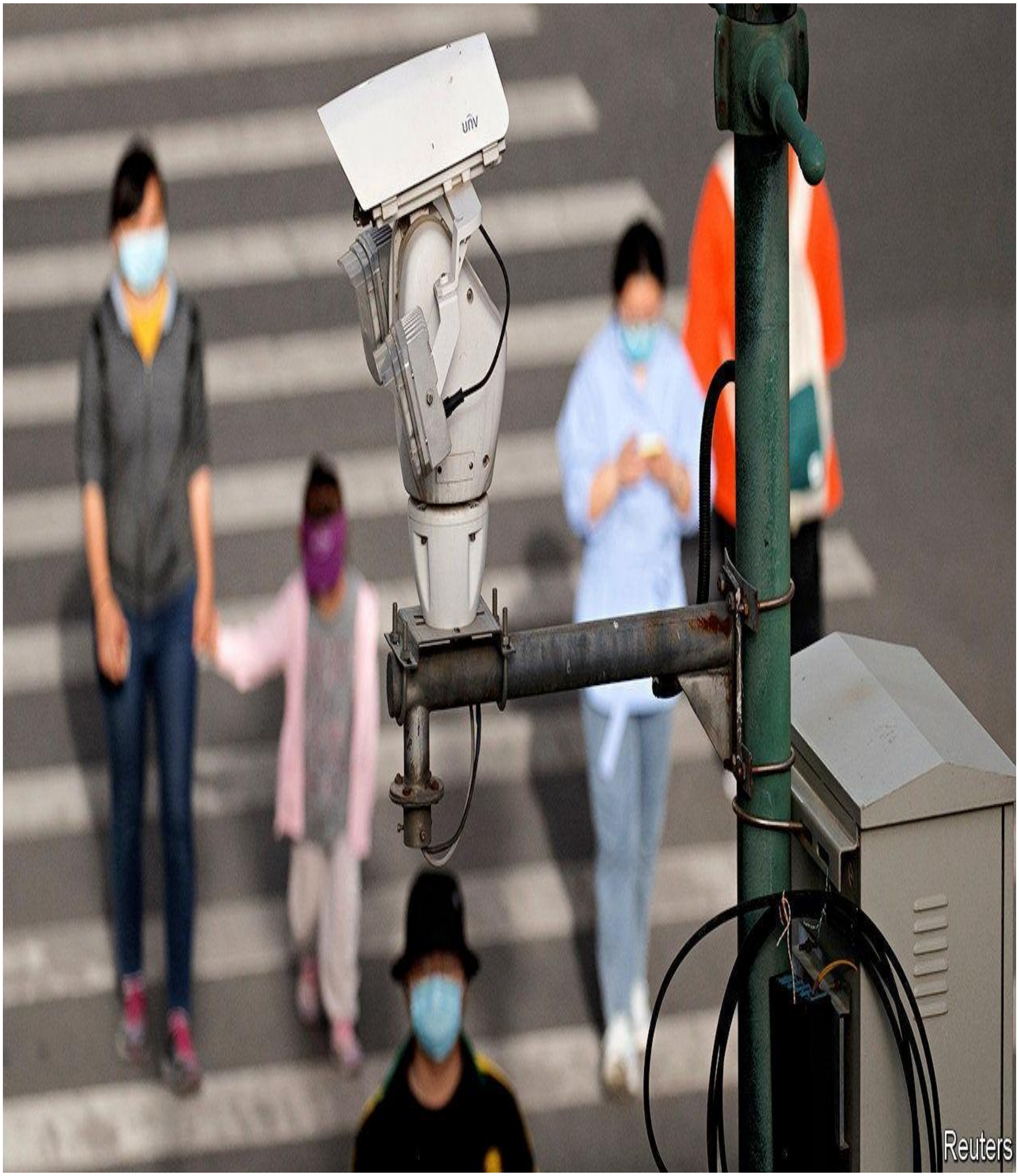
Eyes everywhere

China’s enormous surveillance state is still growing

Its citizens don’t seem to mind

Nov 23rd 2023



THE SLEEPY county of Kaijiang, on the eastern fringes of Sichuan province, is hardly a hotbed of unrest. The authorities there seem intent on keeping it that way. They are hoping to upgrade the county's portion of China's "Skynet" surveillance system. According to a procurement notice from August, officials in Kaijiang want cameras that "support detection of more than 60 faces simultaneously". The local system should be fast enough to analyse up to 100 faces per second and have the capacity to store up to 1.8bn images (Kaijiang has a population of 410,000). There must be "no blind spots", says the document.

Officials argue that such measures protect the public. China's abundance of CCTV cameras, many equipped with facial-recognition technology, "leave criminals with nowhere to hide", boasts the *People's Daily*, a Communist Party mouthpiece. Chinese people report feeling safe from violent crime, so there is merit to these claims. But the cameras also protect the party. Dissidents and demonstrators can be tracked as easily as burglars. Step out of line and the government will probably know.

Measuring the size and growth of China's surveillance state is hard, owing to the government's secrecy, but analysts are trying. A team led by Martin Beraja of the Massachusetts Institute of Technology collected 3m public-sector procurement contracts issued between 2013 and 2019. Using their data, we tallied up the number of surveillance cameras bought by the authorities in 139 cities. Data are missing for some important places, such as the regions of Tibet and Xinjiang, where CCTV cameras are ubiquitous. That helps explain why there were only 8.5m surveillance cameras in the contracts. The *People's Daily*, in 2017, said Skynet had 20m cameras. Others have put the number in the hundreds of millions.

The Economist

As big as it already is, China's surveillance network appears to be growing. ChinaFile, an online magazine published by the Asia Society, a think-tank in New York, has gathered tenders issued by the Chinese government. They provided us with ones that included the word "Skynet" or "surveillance". The number of tenders that mentioned either term spiked between 2010 and

2017. The pace slowed during the covid-19 pandemic, but has since picked up again (see chart).

Surveillance in China is not limited to cameras. A wide range of activities, from buying train tickets and SIM cards to hailing a DiDi (China's version of Uber), require citizens to use their identity cards—and, therefore, make them susceptible to tracking. A state ID is also required to sign up for WeChat, the messaging app used by nearly everyone and which is policed by the authorities. During the pandemic, state surveillance rose to a whole new level, with citizens required to download an app that tracked and restricted their movements. Though it was meant to curb the spread of covid, the app was used by authorities in the city of Zhengzhou to stop protesters from assembling.

Many places in the West are also studded with surveillance cameras, while private firms track the virtual movements of app users. But Westerners tend to view these things with more suspicion than the Chinese. In fact, the Chinese public appears to be broadly supportive of government monitoring. A survey of 3,000 people in 2018 found that 82% favoured CCTV surveillance. Even state snooping on emails and internet usage received 61% support.

It may be that Chinese people are basing their views on incomplete information. The government censors news, such as the story from Zhengzhou, that might cast its surveillance efforts in a negative light. A study from 2022 found that when university students were told about surveillance being used for political repression, support for it declined. The pandemic and the state's draconian covid controls may have also soured the public's mood towards monitoring.

The government, meanwhile, is pushing ahead. On top of cameras, it has deployed phone-tracking devices and is collecting voice prints from the public. If support for such intrusiveness has dimmed, the state will have little trouble finding those who speak out against it. ■

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When China shook

A year on from the white-paper protests, China looks much different

A participant considers their impact

Nov 23rd 2023

IT WAS A year ago this month that China experienced the biggest wave of unrest since the Tiananmen Square protests of 1989. Thousands of people, mostly students and youngsters, gathered in cities across China to show their displeasure with the government's exceptionally harsh covid-19 controls. The public was fed up with the constant testing, the brutal lockdowns and the restrictions on movement. Some of the demonstrators chanted slogans. A few called for Xi Jinping, China's leader, to step down. Many held up blank pieces of paper, a wry critique of China's stifling censorship regime. The events thus became know as the "white-paper protests".

They were effective—or appeared to be. Within weeks the government abruptly changed course, ending its "zero-covid" policy. It may have been an accumulation of pressure, not least economic, that forced the government's hand. Chinese officials would never acknowledge the demonstrations as a turning point, lest they encourage more like them. But reports suggest that the country's leaders did have the protesters in mind, along with other considerations, when they began lifting restrictions in early December of last year.

One person who is sure that the demonstrations had an effect is Huang Yicheng. The 26-year-old student joined a protest in Shanghai. He points to the government's haphazard dismantling of zero-covid infrastructure and its failure to stockpile basic fever medication as evidence that, until last November, it had not been planning to change its policy. Regardless, the authorities have shown little mercy to the protesters. Using facial-recognition technology and mobile-phone data they identified, interrogated and arrested some of them.

Mr Huang himself was detained, along with others, on the night of the protest in Shanghai. He managed to exploit a moment of chaos to escape the bus where he was being held. Earlier this year he made his way to Germany, where he is attending university. But he remains worried about his parents back in Shanghai. They have been harassed and threatened by the police, he says. Security officials told his mother that he could face seven to ten years in prison if he were to return to China.

Little wonder then that Mr Huang is not optimistic about China's near-term future. He laments its lack of freedoms and the government's crackdown on civil society. The pandemic, he says, was a kind of a test for the country. In the first two years China passed, controlling the virus better than most countries. But in 2022 it failed in a way that, he argues, revealed the flaws in a one-party system where Mr Xi reigns supreme.

Over the longer term, though, Mr Huang is more optimistic. “Even the desert has a little bit of grass,” he says. “China is a desert and the white-paper movement is that little piece of grass.” He believes that in 20 or 30 years people will come to understand its importance. ■

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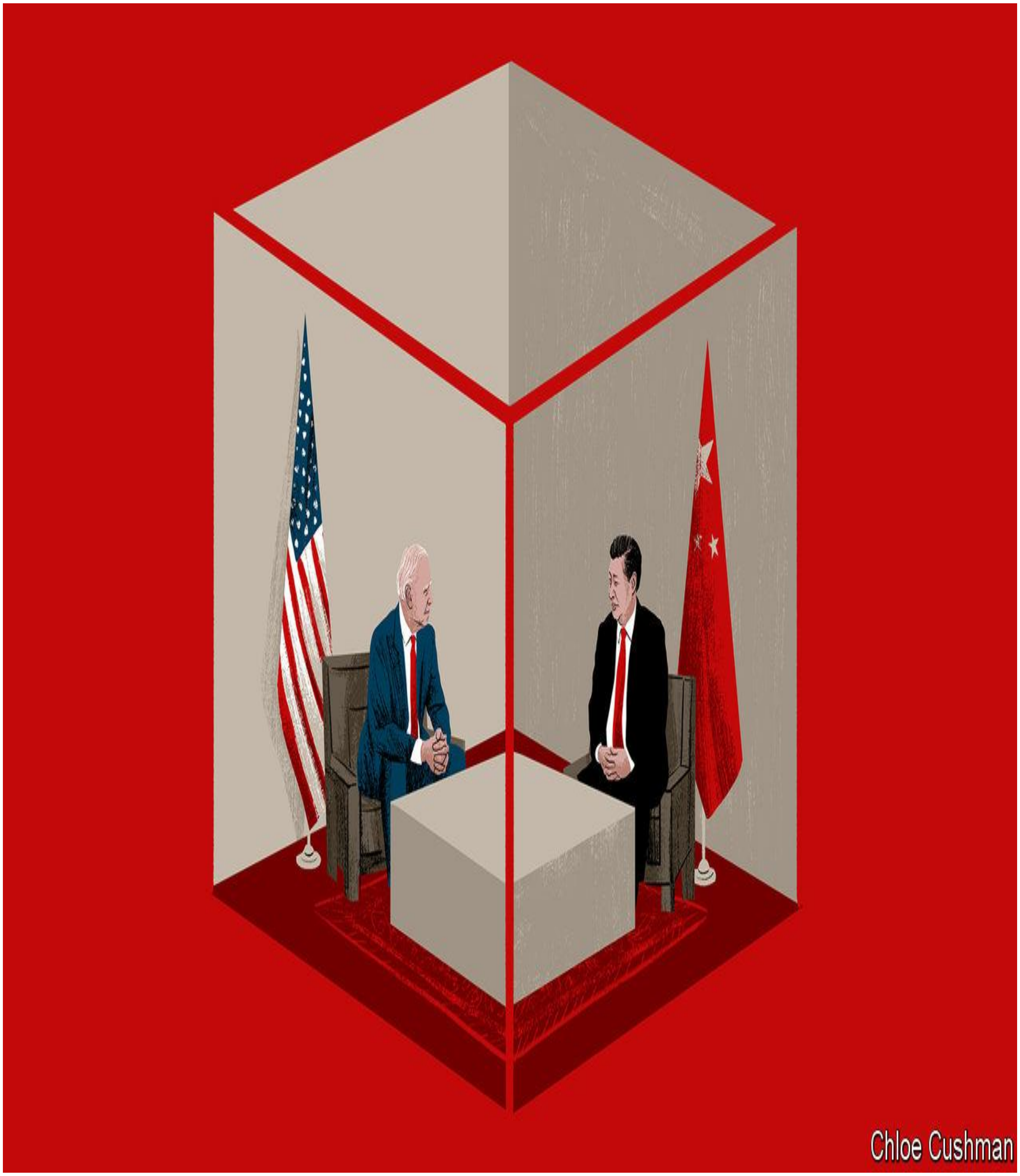
Chaguan

Why Xi Jinping sounds friendlier to America

A tactical move to boost China's economic and diplomatic interests

Nov 23rd 2023



WHEN INVITED to sum up the state of China's relations with America, a close observer in Beijing drops a surprising literary reference, comparing the countries to damned souls sent to Hell in "Huis Clos" ("No Exit"), a play by Jean-Paul Sartre. In the gloomy Frenchman's masterwork, Hell turns out to be an antique-filled sitting room peopled by unlikeable strangers. These wretches come to realise that they must endure each other's company, and mutual contempt, for all eternity. The afterlife needs no red-hot pokers to be a torment, gasps one of Sartre's sinners: "Hell is—other people!" The reference to existential angst by the observer in Beijing is more than startling. It is meant to be encouraging.

The case for optimism runs as follows. For two years Sino-American relations were dangerously dysfunctional. To protest, successively, against a visit to Taiwan by the then-speaker of the House of Representatives, Nancy Pelosi, and America's shooting down of a Chinese spy balloon, China suspended high-level contacts for months. Both governments now accept that they are doomed to manage differences responsibly, as the world's greatest economic and military powers, largest emitters of greenhouse gases and interdependent trading partners. That duty to co-exist is dictated by the judgment of history and by the expectations of other countries—even if leaders in Beijing and Washington have come to believe that their core value systems, and many of their most cherished ambitions, are incompatible.

Evidence to support optimism comes from a recent summit between the two countries' presidents, Xi Jinping and Joe Biden, in an antique-filled mansion near San Francisco. At that meeting Mr Xi notably softened his tone towards America. The party chief has spent years declaring that the East is rising and the West is declining. In March of this year, Mr Xi told a meeting in Beijing that "Western countries led by the United States have contained and suppressed us in an all-round way." In California he came close to conceding, for the first time, that China is engaged in an economic, technological and geopolitical contest with America, and has an obligation to agree on a set of rules and guardrails that might prevent that competition from veering into disaster. An official Chinese readout talks of the two powers "co-operating in areas of shared interest, and responsibly managing competitive aspects of the relationship". That may seem arcane, but it is quite a concession. After all, Chinese envoys have spent the past few years declaring it illegitimate and intolerable for America to cast bilateral relations as a competition.

That grumbling has long reflected a bleak view of great-power competition. Rather than some sort of gentlemanly sparring, Chinese officials portray America's intentions as closer to a gladiatorial fight to the death. Behind closed doors, they talk of their country's right to hit back as it is being choked. They note that in the contest for ideological and geopolitical influence, America has strengthened alliances and partnerships with countries in China's neighbourhood, from Japan and South Korea to the Philippines and Australia. In the eyes of Chinese officials, Mr Biden is stoking cold-war-style divisions.

But it has been a while since state media have bragged about the rising East and declining West. Mr Xi presides over a slowing economy and foreign direct investment flows were negative in the most recent quarter. In that context, Mr Xi has incentives to stabilise ties with rich countries, starting with America. That explains confidence-building moves in California, including China's resumption of military-to-military communication and its restarting of law-enforcement co-operation to curb the export of chemicals used to make fentanyl, a synthetic opioid that kills so many Americans. As recently as September, China's foreign ministry blamed those drug deaths on American "incompetence".

Leading Chinese scholars think this is an uncertain kind of stability. America continues to tighten export controls on semiconductors and other technologies, to sail warships and fly military aircraft close to Chinese territory, and to generally treat China as "its primary competitor", says Wu Xinbo of Fudan University. If China has shifted its foreign-policy posture to improve relations with America, the explanation lies in its financial and diplomatic interests, says Professor Wu. Warmer ties "send positive signals to the markets, which is good for the economy," he says. Such diplomacy also reassures neighbouring countries important to China, such as Japan or Australia.

Imagining a future with Trump

Da Wei of Tsinghua University sees an evolution in his country's thinking. China was "angry and disappointed" when it realised that the Biden administration was bent on maintaining Donald Trump's get-tough policies. But Chinese officials came to accept that America was not going to change its fundamental strategy. This sense of realism has led to an "interesting new equilibrium", observes Professor Da, even if China cannot formally accept America's framework of a strategic competition with guardrails. "The two sides' understanding of bilateral relations is much closer than it was two years ago," he says.

Next year's presidential election in America may test that stability. For those Chinese who see a national interest in constructive bilateral relations, "a Trump victory would be a disaster", says Professor Da. Others believe Trump-induced chaos would help China prevail in the contest of political systems. Still, great turmoil in America would be disruptive for China: a lose-lose situation. "That kind of victory is not meaningful," argues Professor Da.

With luck, Americans are equally focused on the risks of turmoil in China. The two countries are in competition, and it is high time that Chinese leaders admitted it. But each is too large to wish the other away. Theirs remains the most important bilateral relationship in the world. From that fate, there is no exit. ■

Read more from Chaguan, our columnist on China:
Xi Jinping repeats imperial China's mistakes (Nov 16th)
A Chinese dispute with the Philippines is a test of America (Nov 9th)
Why Chinese mourn Li Keqiang, their former prime minister (Nov 2nd)

Also: How the Chaguan column got its name

United States

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- [Univision, America's Spanish news giant, reaches out to Donald Trump]
- [An accidental discovery in rural California raised biosecurity fears]
- [How confusing fetal-personhood laws in America affect hospitals]
- [What survey data reveal about antisemitism in America]
- [Does a civil-war-era ban on insurrectionists apply to Donald Trump?]
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Infrastructure weak

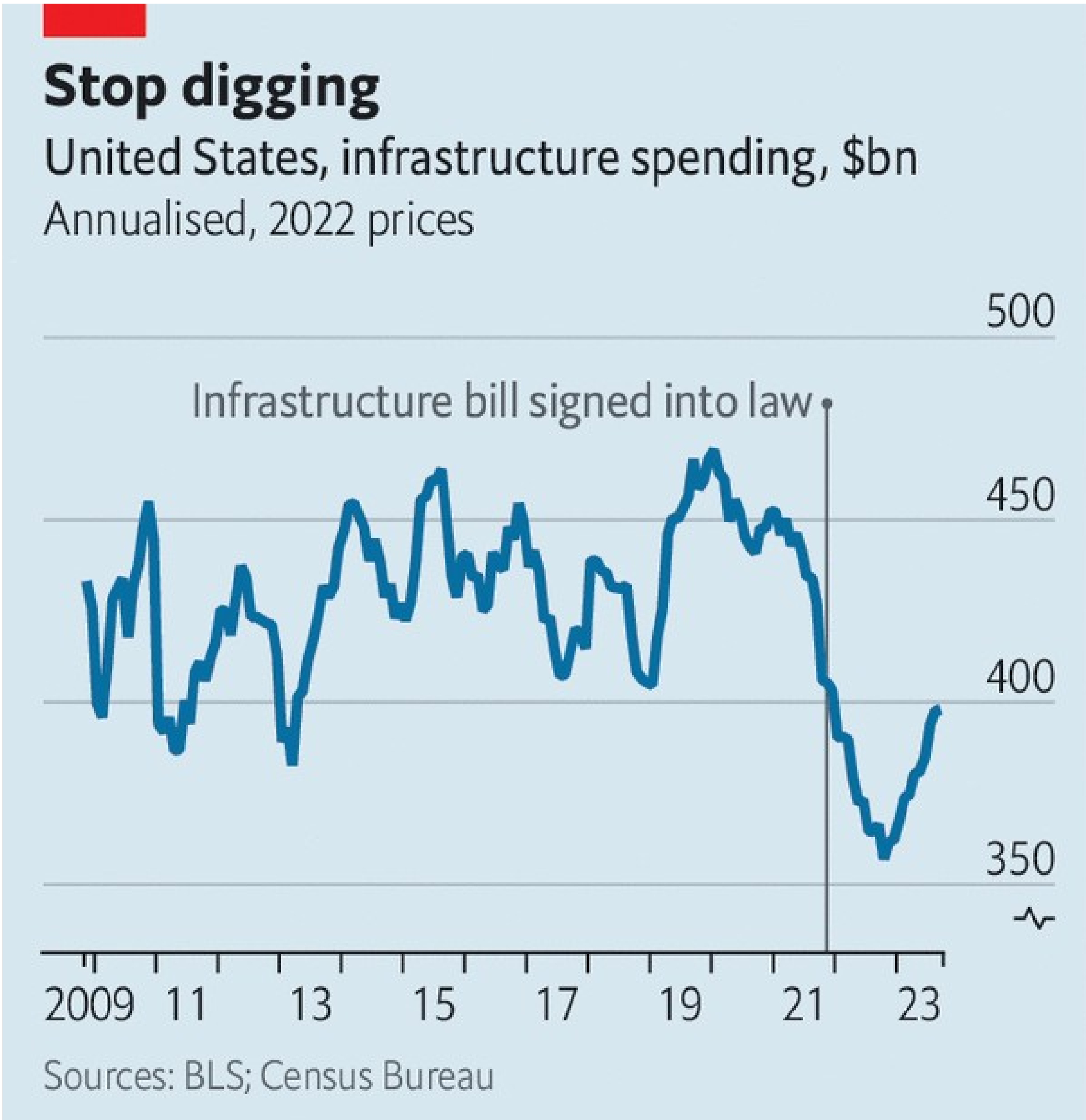
Spending on infrastructure has fallen in real terms in America

That is despite a huge push by the Biden administration

Nov 22nd 2023 | BURLINGTON, VERMONT

IT IS EASY to take internet connectivity for granted these days. But when stringing up fibre-optic cable in the woods of Vermont, not much comes easily. Some homes are a mile back from the road, requiring thousands of dollars and much tree-pruning to link them to the network. In remote areas new poles are needed to replace ones that date back to the introduction of electricity. The wait for these can run to two years. The local broadband group responsible for Vermont's north-east corner brought high-speed internet access to about 2,500 homes in 2023. If not for the delays, it could have reached 7,000.

Bringing broadband to under-served parts of rural America is one element of a giant infrastructure programme that began two years ago when President Joe Biden signed it into law. It was hailed as a historic opportunity to repair America's bridges, rebuild its roads for electric vehicles and update its power grid and communications technology. With headlines proclaiming its $1.2trn in investments, worth about 5% of GDP, it was easy to get caught up in the excitement. That makes the current state of the big dig all the more disappointing. Instead of the anticipated surge, total infrastructure spending has fallen by more than 10% in real terms since the passage of the law (see chart).



The Economist

The most charitable explanation is that it takes time for big projects to get going. There are lags as money goes from being authorised by Congress to being doled out by the federal officials to actually being spent by state and local officials. Moreover, as anyone who has ever renovated a home knows, construction is always behind schedule. Many of the biggest expenditures will come near the end of the infrastructure law's five-year term. John Porcari, a transport official in both the Biden and Obama administrations, draws a distinction with stimulus spending in 2009 during the global financial crisis. “The primary criterion then was getting people back to work. But with the infrastructure law, the primary criterion is the projects. We’re replacing what our parents and grandparents built and paid for,” he says.

The problem is that inflation has been rampant in the construction sector, making delays that much more pernicious. The single biggest component of the infrastructure package was a 50% increase in funding for highways to $350bn over five years. But highway construction costs soared by more than 50% from the end of 2020 to the start of 2023, in effect wiping out the extra funding. “A lot of the cost estimates that states and local agencies have are from three to five years ago, and they are just totally off now,” says Santiago Ferrer of BCG, a consultancy. This, he adds, leads to two outcomes: either authorities get no bidders because contractors think their prices are too low; or they revise their cost estimates, which takes yet more time.

Delays are also a product of the infrastructure law itself. It included strict “Buy America” rules, requiring builders to source things at home to boost domestic manufacturing. It also loaded on requirements to promote racial equity, environmental sustainability and fair wages. Laudable as these goals are, they have slowed things down. “The administration is at war against itself. It wants to advance these projects aggressively. But some of its requirements just preclude their delivery,” says D.J. Gribbin, a consultant and former general counsel in the Transportation Department. The law also included more than 100 new competitive grant programmes, which require new application systems and new compliance procedures. “These are a nightmare to set up and run,” Mr Gribbin says. Some state and local officials are not even bothering to apply for funding.

Beyond the structure of the law, infrastructure programmes inevitably run into headwinds in America. There is a substitution effect as the arrival of federal money allows states to step aside and spend less on construction. A recent wave of tax cuts by states has been made possible in part by the gusher of federal cash.

America’s federal system also presents a fiendishly difficult exercise in co-ordination. Broadband spending is one example. Before disbursing most of its funds, the federal government wanted to assess which states needed exactly how much, so it drew up detailed maps of nationwide internet connectivity. It was only this summer—18 months after the law was passed—that the state-by-state allocations were announced. Now, states are going to have to develop their own systems for spending the funds and monitoring progress. “It’s been a wild panoply of states at different stages and needs,” says Shirley Bloomfield, head of an association that represents 850 independent telecoms companies.

Another familiar obstacle is getting permits. The Biden administration has created a special action plan to try to speed up approvals for infrastructure and clean-energy projects. At the same time, though, its appointees in the Environmental Protection Agency have given states more power to block infrastructure projects because of fears about water quality. “The administration’s record on permitting is mixed at best,” says Ken Simonson of the Associated General Contractors of America. An example of states’ willingness to wield vetoes came in September, when regulators in South Dakota rejected a $3.5bn carbon-dioxide pipeline that would have run through five states in all. It was a setback for those hoping to see America capture more of its carbon emissions.

Despite the many frustrations, there are some bright spots. Several long-delayed projects are in motion. On November 3rd construction began on a rail tunnel under the Hudson river between Manhattan and New Jersey, though with a cost estimate of $16bn, about a third higher than just two years ago. A nearly $4bn expansion of a bridge linking Kentucky and Ohio is supposed to start next year. In all, the White House says that funding has been announced for more than 40,000 projects around the country. And just in time for all this work, inflation may be coming to heel at last. Construction prices have mostly stopped rising since the start of the year.

Some also think that the infrastructure law may pay other dividends. To manage all the grant applications and the funding, the federal government asked states to establish infrastructure co-ordinators, leading to more joined-up planning for water, roads, energy and more. “It goes against a hundred years of how states have worked,” says Mr Ferrer. “It’s been hard and awkward for them. But it is a better way to do things.”

It is also important to recall the recent historical context: for decades American presidents failed to pass any significant infrastructure legislation.

Donald Trump's repeated pledges of "infrastructure week" when he was in the White House became a running joke. That makes the Biden administration's efforts akin to "an athlete warming up to the game", says Adie Tomer, an infrastructure wonk with the Brookings Institution. "It takes time to get it right but they are absolutely doing it."

If funding does soon start to flow in greater volumes, new challenges will emerge. In rural Vermont, Kurt Gruendling of Waitsfield and Champlain Valley Telecom, a local company, is palpably excited at the prospect of bringing high-speed internet to all its 15,000 customers. He also knows that the next tranche of federal funding for broadband connectivity will be the biggest ever, at $42.5bn nationwide, and is bracing for shortages of both workers and parts. "Everybody is going to be building all at once, in all 50 states," Mr Gruendling says. Then again, after a slow start to America's big infrastructure push, that would be a good headache to have. ■

Mexican airwaves

Univision, America's Spanish news giant, reaches out to Donald Trump

Under the network's new owners, nobody expects the Spanish Inquisition

Nov 23rd 2023

THE LAST time Donald Trump took questions on camera from Univision, America's biggest Spanish-language television network, the reporter ended up being bundled out of the room by Mr Trump's security. "Go back to Univision!" jeered Mr Trump, as Jorge Ramos, the channel's star anchor, refused to stop asking questions at a press conference in 2015. Univision, then owned by a big Democratic Party donor, was seen as hostile by many Republicans.

No longer. On November 9th Mr Trump sat down with Univision for an hour-long, primetime interview with notably soft questions. A rebuttal interview with the Democrats was cancelled. Democratic ads bought to fill breaks in the broadcast were also canned. Mr Trump, who once described Mexican immigrants as rapists, called Latinos “incredible people”. “All you have to do is look at the owners of Univision,” he said. “They’re unbelievable, entrepreneurial people. And they like me.”

That remark raised eyebrows. Last year Univision merged with part of Televisa, Mexico’s leading broadcaster, which has historically maintained cosy relations with politicians. In the 20th century it was a “soldier” of Mexico’s ruling party, in the words of its then boss. It has since warmed to Andrés Manuel López Obrador, Mexico’s left-wing president. Televisa executives were present at the interview with Mr Trump, along with Jared Kushner, his son-in-law, who is friendly with Televisa’s top brass and helped to arrange the interview, according to the *Washington Post*.

Foreign ownership of American TV stations is limited by law, but regulators granted Univision an exception. Its Mexican partners now seem to be shaping the newsroom. A few days after the Trump interview the station abruptly parted company with León Krauze, an anchor who had been singled out for criticism by Mr López Obrador for his coverage of a recent hurricane in Acapulco. On November 17th Univision’s American boss, Wade Davis, assured staff that “we hold Univision News to the highest standards of journalism”.

The behind-camera drama could be consequential. Half of America’s 60m Latinos get their news from Univision—as many as tune in to Fox News—according to polling by the Pew Research Centre. They trust it more than any network bar CNN, Pew finds. And as Latinos spread into swing states, politicians are eager to court them. Mr Trump, who won about 28% of the Latino vote in 2016, won 38% in 2020 and is polling strongly this year.

Reaching them depends less on Spanish-language media than in the past. Two-thirds of America’s Latinos were born in America, up from 60% at the turn of the century, and a quarter of Hispanics now say they can speak Spanish only a little. This is reflected in their media habits. Since 2008 they have been more likely to consume news in English than Spanish, finds Pew. Univision's evening news has lost 40% of its audience in the past six years, according to Comscore, a data company (during the same period, English-language rivalssaw viewership rise).

Mainstream media are catering more to Latinos, too. Newspapers such as the *New York Times* have Spanish-language editions and podcasts. And Latin culture is in demand from all audiences. Last month Bad Bunny, a Puerto Rican singer, presented "Saturday Night Live" partly in Spanish (with subtitles reading: "SPEAKING A SEXIER LANGUAGE"). Hispanic staff these days make up nearly a tenth of America's TV news workforce, double the share in 1995.

At the margins, however, Spanish-language media can still play a decisive role. Univision is particularly influential in swing states where the Hispanic population is insufficient to support more than one Spanish station, points out Chuck Rocha, a Democratic strategist. And though its audience is ageing, older viewers are reliable voters. "There are little old Mexican ladies every night, who watch [Jorge Ramos on Univision] and think of him as the voice of God," says Mr Rocha. Mr Ramos began his career with Televisa in Mexico, but left for America after it censored his stories. So far, regarding the Trump interview, the voice of God has yet to speak.■

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Just a small-town lab

An accidental discovery in rural California raised biosecurity fears

Now Congress is getting involved

Nov 23rd 2023 | NEW YORK

ON A DECEMBER day in 2022, Jesalyn Harper went to a vacant warehouse to check out some suspicious parking. She was the only full-time code-enforcement officer in the town of Reedley, California, and while she was there, she noticed a green garden hose sticking out of a wall—a violation she ought to investigate. To her surprise, when she was let inside, she encountered three women in lab coats saying they were Chinese. As Ms Harper entered the building she discovered "Biohazard" signs; vials labelled in a mix of English, Mandarin and some kind of cipher; and hundreds of caged white mice.

She had found an "invisible" biolab: a privately operated and funded lab that can avoid government oversight. It was run by Jia Bei Zhu, a man with alleged ties to the Chinese Communist Party (CCP) and who is wanted in Canada, from which he is said to have fled after he was ordered to pay 330m Canadian dollars for stealing American intellectual property on dairy-cattle breeding. Mr Zhu was arrested in October for selling Chinese covid tests rebranded as American in the lab (which he denies), but it was unclear whether anything more sinister had taken place there. Kevin McCarthy, the recently ousted House speaker and a California representative, had already asked the select committee on the CCP to investigate. On November 15th, the committee published its report.

The findings were discombobulating. Inspections by local officials and the Centres for Disease Control and Prevention (CDC) found a number of vials, the labels of which suggested they contained pathogens, including malaria, SARS-CoV-2 and HIV. But the report said the CDC refused to test the vials, including those without labels or labelled in code, a decision it called "baffling". The local authorities consequently destroyed all this without knowing exactly what they had. "Because of this, the select committee—and, more importantly, the American people—can't resolve what pathogens Zhu and the Reedley Biolab possessed," the committee wrote.

A CDC official with knowledge of the investigation says the CDC "strongly disputes" the report's critical conclusions, and that it does not have the authority to just seize and test samples. That disagreement highlights that there is no obvious agency in charge, says Kevin Esvelt, a biologist at Massachusetts Institute of Technology. While he does not think the evidence overall points to nefarious activity at the Reedley lab, it is unclear whose job it is to find and check other labs that may be less benign. Jassi Pannu from Stanford University agrees. "It certainly demonstrates that there's no oversight of these private labs to prevent that from happening in the future," she says.

Part of the solution could be to make biological suppliers check that their customers are legitimate, suggests Allison Berke, who studies non-proliferation at Middlebury College. Mr Zhu, whose alias was David He, was able to acquire pathogens from American suppliers. That suggests others could equip their own invisible labs, which Dr Berke is sure exist. "I would be very surprised if [Reedley] were the only one," she says. Not all will leave mysterious garden hoses around to raise the alarm. ■

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Abortion laws in Georgia

How confusing fetal-personhood laws in America affect hospitals

In Georgia, one big hospital has interpreted state law to mean periviable babies must be kept alive

Nov 23rd 2023 | ATLANTA

SINCE THE Supreme Court dissolved the federal right to abortion in June 2022, those who believe that life begins at conception have won big across America. In Georgia, where a six-week abortion ban swiftly snapped into effect, respect for the unborn has led to some strange policies. A pregnant woman can now declare a fetus with a detectable heartbeat a dependant on her state tax form, drive alone in the carpool lane on the motorway and demand child-support payments from the father of her unborn baby.

Another result has been confusion about when and how doctors should treat periviable babies. Periviability is the period of a pregnancy between 21 and 24 weeks. Babies born at that point have a 10-40% chance of living if given intensive care (many factors complicate the calculation—for example, girls mature a week ahead of boys). Those who make it tend to develop serious disabilities. The standard of care is for neonatologists to work with the parents of periviable babies to decide whether to resuscitate or let them die.

Tucked into Georgia's Living Infants Fairness and Equality (LIFE) Act is a provision about what happens in the very unlikely event that a baby survives a legal abortion. In Georgia the six-week ban has exceptions in cases where a mother's life is at risk, for rape and incest, or if the fetus is not expected to survive the pregnancy. "If the child is capable of sustained life", the law reads, "medical aid then available shall be rendered". Doctors who disobey can be prosecuted. The general counsel at a big Georgia hospital has declared that the law could apply not just to aborted fetuses but to other pre-term babies too.

Under the new hospital rule, which has already gone into effect, neonatologists must resuscitate periviable babies even against the will of the parents. That could look something like this: a woman gives birth after five months of pregnancy. The doctor says her baby boy is likely to die, even if they do everything they can. He is roughly the size of a sweet potato and so fragile that touching him with too much pressure can tear his skin. Bleeding will leave him with brain damage if he survives—he could also develop cerebral palsy and vision and hearing problems. The hospital may not even have tubes small enough to intubate him to help him breathe. The doctor tells her she has no choice but to try to keep the baby alive, and that she will be billed for the cost.

A study published in the *Journal of Perinatology* found that a six-month stay for a 24-week-old costs on average $604,000, equivalent to over $3,300 per day. Even so, doctors at the Georgia hospital must now comply with the policy or risk losing their medical licence. April Dworetz, a neonatologist at Emory University and bioethicist at the Georgia branch of the American

Academy of Pediatrics, says that if her hospital adopted the policy she would resign, after 40 years in the field. “Forcing me to do something that would not be in the best interests of the patient or the parents in my ethical, moral understanding of the situation—I just couldn’t do it,” she says.

This is just one lawyer’s reading of the law. Other lawyers disagree with it. One way to get clarity would be for the state to actually prosecute a neonatologist for failing to resuscitate periviable babies under the LIFE Act, or to obtain an opinion from the state’s attorney-general’s office. Asking for one comes with its own risks though, says Allison Whelan, a law professor at Georgia State University. If the state’s top lawyer decides that it does apply, even if he had not previously considered it, every hospital in Georgia would have to adhere to that interpretation. ■

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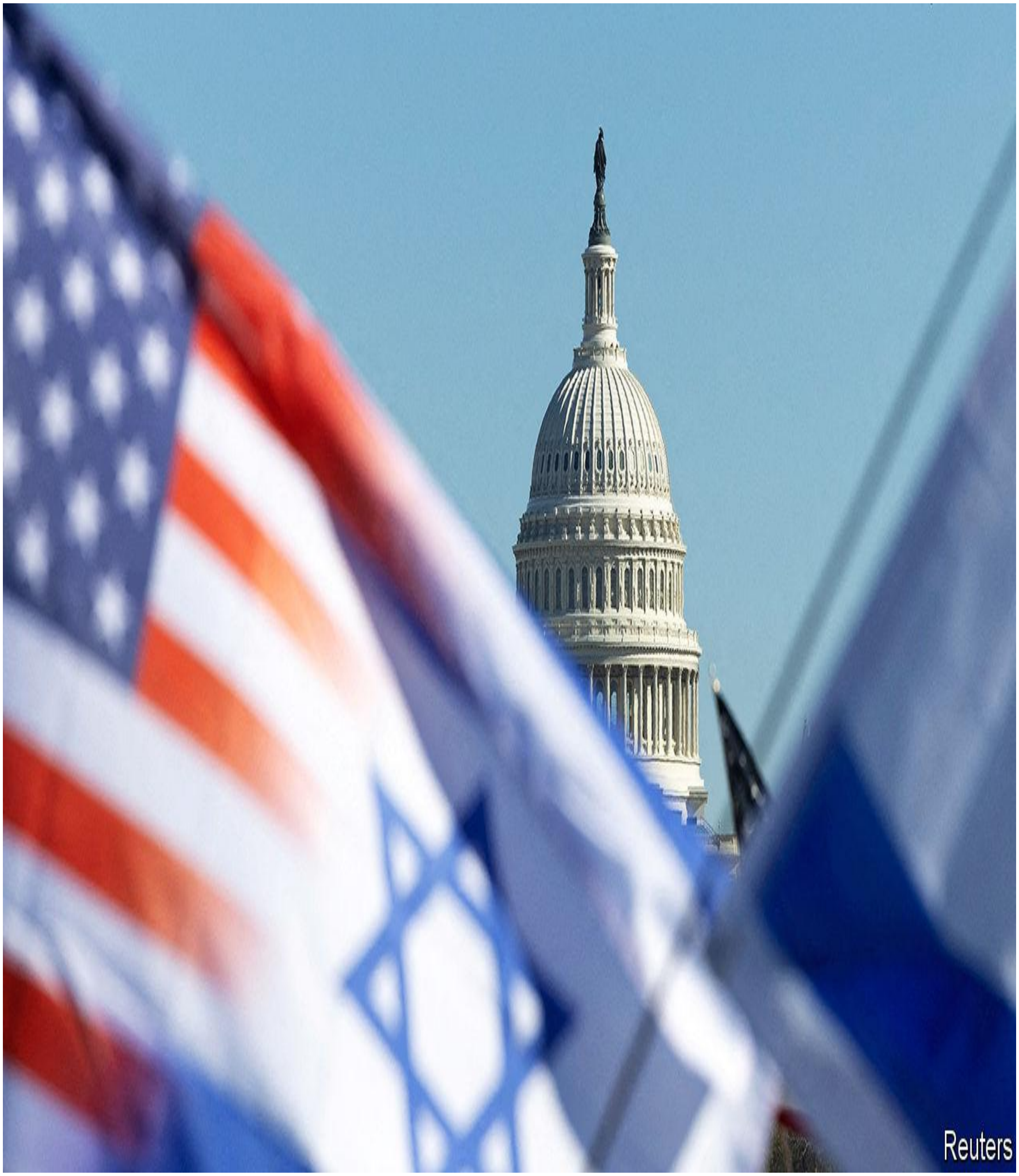
X, rated

What survey data reveal about antisemitism in America

The views expressed by Elon Musk in a short message are more widespread than you think

Nov 23rd 2023 | WASHINGTON, DC



“JEWISH COMMUNITIES have been pushing the exact kind of dialectical hatred against whites that they claim to want people to stop using against them,” a man wrote on X, formerly known as Twitter, on November 15th in response to a call for people who think “Hitler was right” to speak up. Elon Musk, X’s boss, replied; “You have said the actual truth”.

When Mr Musk acquired X, or "freed the bird" as he put it, he sacked the team that monitored hate speech. The Brookings Institution, a think-tank, found that antisemitic posts then went viral. After Mr Musk's tweet, Media Matters, a watchdog group, reported that X was placing big brands' ads alongside neo-Nazi posts. Comcast and Disney, among others, briskly pulled ads from the platform. The tech mogul fired back with a defamation lawsuit, accusing Media Matters of sparking the exodus to "destroy X Corp".

Since Hamas's October 7th attack on Israel antisemitism has surged in America. The number of incidents in just 40 days amounts to one-third of last year's total, according to the Anti-Defamation League, an advocacy group. A college student was arrested for threatening to slit Jews' throats on campus; your Jewish correspondent was berated by a woman who suggested calling in bomb threats to stop Jews from voting. The FBI's boss says the number of anti-Jewish hate crimes is reaching historic highs.

For the past month, much attention has been paid to antisemitism among left-wing college students. Survey data, though, show that antisemitic attitudes in America are concentrated on the far right. The conspiracy that Jews plot to replace whites motivated the Pittsburgh synagogue shooter and the neo-Nazis who marched in Charlottesville. Yet an extreme double standard has also been seen on the left. Many American Jews feel abandoned by progressive friends who seem quick to tag Jews, even ones disconnected from Israel, as oppressors.

Will antisemitism wane? A study by Eitan Hersh of Tufts University and Laura Royden of Harvard University found that although young non-white Americans are generally less prejudiced than older ones, they are considerably more likely to agree with statements such as that Jews have too much power in America. Black and Hispanic youngsters, regardless of their politics or religion, are just as antisemitic as those on the alt-right. Those minorities with college degrees expressed even more suspicion of Jews. There is little reason to believe they will grow out of it. Mr Musk's views have more likes than you think. ■

Deus ex constitutione

Does a civil-war-era ban on insurrectionists apply to Donald Trump?

So far, America's judges have been reluctant to involve themselves in the 2024 election

Nov 21st 2023 | WASHINGTON, DC

THE BOOK OF LEVITICUS prohibits wearing cloth woven of different kinds of material; Britain’s Parliament forbids entry to anyone wearing armour; and America’s constitution bans oathbreakers who have committed insurrection or rebellion from holding office again. Such antiquated restrictions are mostly just historical oddities. But sometimes they can be resurrected centuries later. That ignored section of the 14th Amendment to the constitution, written after the civil war to bar officials who had joined the Confederacy in order to break up the republic, is suddenly getting a lot of attention. Here it is:

"No Person shall be a Senator or Representative in Congress, or elector of President and Vice President, or hold any office, civil or military, under the United States, or under any State, who, having previously taken an oath, as a member of Congress, or as an officer of the United States, or as a member of any State legislature, or as an executive or judicial officer of any State, to support the Constitution of the United States, shall have engaged in insurrection or rebellion against the same, or given aid or comfort to the enemies thereof. But Congress may by a vote of two-thirds of each House, remove such disability."

You may be able to see where this is going. Donald Trump took an oath of office when he became president. His supporters staged a violent insurrection on January 6th 2021. This violence was not just aided and comforted by Mr Trump—who even in the aftermath of the attack could not prevent himself from saying "We love you, you're very special" to the rioters—but begotten by his campaign to undermine faith in America's elections. And Mr Trump, the front-runner in the Republican presidential primary, is certainly seeking to take office again. Does constitutional language meant to bar from office the likes of Jefferson Davis—a former Mississippi senator who was the Confederate States of America's first and only president—also prohibit Mr Trump from doing so?

Lawsuits making that argument have been filed in 28 states, according to a tracker compiled by Lawfare, a non-profit. Twenty are still pending. Many of them have been filed by John Anthony Castro, a lawyer from Texas who is himself running, unnoticed, for the Republican presidential nomination. His quixotic efforts are making little headway with judges. But more credible plaintiffs are bringing challenges that force judges to reckon with uncomfortable questions of constitutional law.

So far, they seem reluctant to intervene in the 2024 election if they can possibly avoid it. For one example, look to a 100-page ruling by Sarah Wallace, a state judge in Colorado, issued on November 17th. Although

Judge Wallace was convinced that "Trump engaged in an insurrection on January 6, 2021 through incitement, and that the First Amendment does not protect Trump's speech," she concluded that he should not be removed from the ballot.

That, she writes, is because the presidency is not mentioned in the list of offices in the relevant section of the 14th Amendment, and the president might not be one of the "officers of the United States". She also writes, in a remarkable feat of hairsplitting, that the section covers those who "support" the constitution, whereas the presidential oath is to "preserve, protect and defend" it. Huh?

The legal controversy is not going to abate. The Colorado case is being appealed to the state supreme court. On November 8th the Supreme Court of Minnesota dismissed a challenge to Mr Trump's candidacy by pointing out that the constitutional prohibition did not apply to the forthcoming primary ballot—calling it "an internal party election to serve internal party purposes"—but said that it could be raised again ahead of the general election. On November 14th a Michigan judge rejected a challenge on similar grounds.

Such challenges may have more success as the general election nears—and if the federal or state prosecutors trying the former president for subverting the 2020 election manage to secure a conviction. A single state or federal judge agreeing to strike Mr Trump from the ballot would increase the chance that the Supreme Court would step in to settle the matter.

Among opponents of Mr Trump, the idea that the prosecutors or the courts might intervene to save the country has become a bit worn. This hope was placed in Robert Mueller's investigation into possible campaign co-ordination with Russia during the 2016 election; then in Mr Mueller's expanded inquiry into the firing of FBI director James Comey; then in an impeachment inquiry in 2019 over Mr Trump's withholding of money to Ukraine to further his own political interests; then in the second impeachment over the January 6th attack. At all these points, Mr Trump's party or his supporters could have ended his career by turning against him.

Don't Mencken it

Of course, Mr Trump is now in the greatest legal jeopardy of his career, facing four criminal trials and 91 indictments. Even this would not be enough to end his political career if Republicans circle the wagons. There is no constitutional prohibition on a felon running for office. In fact in 1920 the Socialist Party candidate, Eugene Debs, ran from prison and won 3.4% of the popular vote. America's judiciary is understandably reluctant to be accused of deciding the next election. But by standing back, they could affirm H.L. Mencken's jurisprudence: "Democracy is the theory that the common people know what they want and deserve to get it good and hard." ■

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Lexington

The (sort of) isolationist case for backing Ukraine

Or: What America can learn from Sparta

Nov 23rd 2023

J.D. VANCE, a senator from Ohio, is tired of having Neville Chamberlain and Munich thrown in his face. A member of the Republicans' sort-of-isolationist faction (it depends on the conflict), Mr Vance rose recently in the Senate chamber to scold some of his colleagues not only for seeking military aid for Ukraine but also for lacking his erudition. "What happened to our education system that the only historical analogy we can use in this chamber is World War Two?" he asked, not without petulance.

Mr Vance preferred to point to the first world war, when, in his telling, "We didn't de-escalate conflict when we had the opportunity." Sure, Mr Vance acknowledged, Russia's president is a "bad guy", but, "Why is it that we think Vladimir Putin, who has struggled to fight against the Ukrainians, is somehow going to be able to march all the way to Berlin when he can't conquer a country immediately to his east?" (Ukraine is mostly to the west of Russia.)

Mr Putin's failure so far to march farther, at least according to the Ukrainians, is in no small part a consequence of American help. Mr Putin has made his ambitions plain. One of his close allies, Dmitry Medvedev, a former Russian president who is now deputy chairman of Russia's security council, warned in early November of "the death of Polish statehood" if that country continued to oppose Russia. "History has more than once delivered a merciless verdict to the presumptuous Poles," he observed. Count Mr Medvedev in the second-world-war analogy camp.

The first world war itself is a cautionary study in Russia's imperialist ambitions, since they helped ignite that conflict, notes Paul Rahe, a professor of history at Hillsdale College in Michigan. "I don't think he knows his history very well," he says of Mr Vance. (His geography is not so hot, either: Ukraine is west of Russia.) For his own analogy for America's support of Ukraine, Mr Rahe prefers to reach further back, to Sparta's successful manoeuvring to kneecap an imperialist rival, Athens, starting in 415BC.

Having allied with Athens in the past, enlisting its greater maritime power to hold off the Persians, Sparta had grown anxious that the Athenians might threaten its own grip on the Peloponnese. Then, in its hubris, Athens chose to attack Sicily, a vigorous 800-mile trireme-row away. As Mr Rahe recounts in a new book, "Sparta's Sicilian Proxy War", the Spartans saw an opportunity, without risking their own soldiers, "to do Athens great and perhaps irreparable damage—and that is precisely what they did". The Spartans smuggled in a general, Gylippus, whose leadership not only changed the course of the conflict in Sicily but "profoundly shaped subsequent developments in the larger Greek world".

In Mr Rahe's telling, Sparta was an isolationist power. It was not out to conquer territory, but in order to protect itself it developed a grand strategy to form alliances and play other powers off against each another. America's new isolationists are not quite so strategic, or even so consistent. They want to confront China and they are eager to send more military aid to Israel as it fights Hamas and Hizbullah, the proxies of Iran. Yet they do not perceive any benefit in aiding America's European allies by stymying Iran's ally, Russia. To Mr Rahe, the Ukrainian conflict is already delivering the benefits of a classic, successful proxy war, weakening a rival at minimal American cost. "It strikes me as a no-brainer," he says.

Rather than trashing President Joe Biden's low-cost, high-yield policy toward Russia, Donald Trump, the leading Republican isolationist, could easily be claiming credit for it. As president, he told the United Nations General Assembly in 2017 that "We must reject threats to sovereignty, from the Ukraine to the South China Sea." He sent lethal American aid to Ukraine after President Barack Obama resisted doing so, fearing it would provoke Russia; he warned that Germany was too dependent on Russia for its energy; he demanded that other NATO countries should meet their obligations to spend 2% of their GNP on defence. (Poland is on track to double that proportion, while France has approved its biggest military investment in 50 years.)

There are reasons to cavil about Mr Trump's actual contribution in each of these areas. (He did, for example, suspend aid to Ukraine while pressuring it to dig up dirt on Mr Biden). But when it comes to many other matters, a fastidiousness about accuracy has not restrained Mr Trump from taking far more credit with far less justification. America's new isolationists seem to have a particular disdain for Europe's fears or—if that description has too much of a pre-second-world-war echo for certain senators—a particular indifference to Russia's desires.

Time’s error

These neo- or proto- or sorta-isolationists do not dominate the Republican Party, at least not yet. In explaining his own support for arming Ukraine, Mitch McConnell, the Republican leader in the Senate, told the *Wall Street Journal* in mid-November that “the country’s future, and the Western world’s future, depends upon winning this.” The new House speaker, Mike Johnson, has said he would support legislation that coupled more Ukraine aid with enhanced border security. President Biden, who wants $60bn in additional aid, may need to be seen by progressives to be resisting the Republicans’ border demands, but he should privately welcome them as addressing one of his biggest political liabilities.

For 30 years American foreign policy has struggled with delusions that the end of the cold war meant the world was somehow overcoming history. It has turned out, to Washington’s sorrow, that the internet and capitalism did not make liberal values self-actualising in China or Russia. They did not guarantee democracy in Afghanistan or in Arab countries, even when backed up by American might. Now it appears that some nations still harbour revanchist ambitions. That was as true in the second world war as it was in the first, and in the Peloponnesian war, too. Only a fool would choose to keep learning these hard lessons all over again. ■

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Why America struggles to make friends abroad (Nov 16th)
The Gaza war could help set speech free again (Nov 2nd)
Mitt Romney is the fixed point revealing the Republicans’ slide (Oct 26th)

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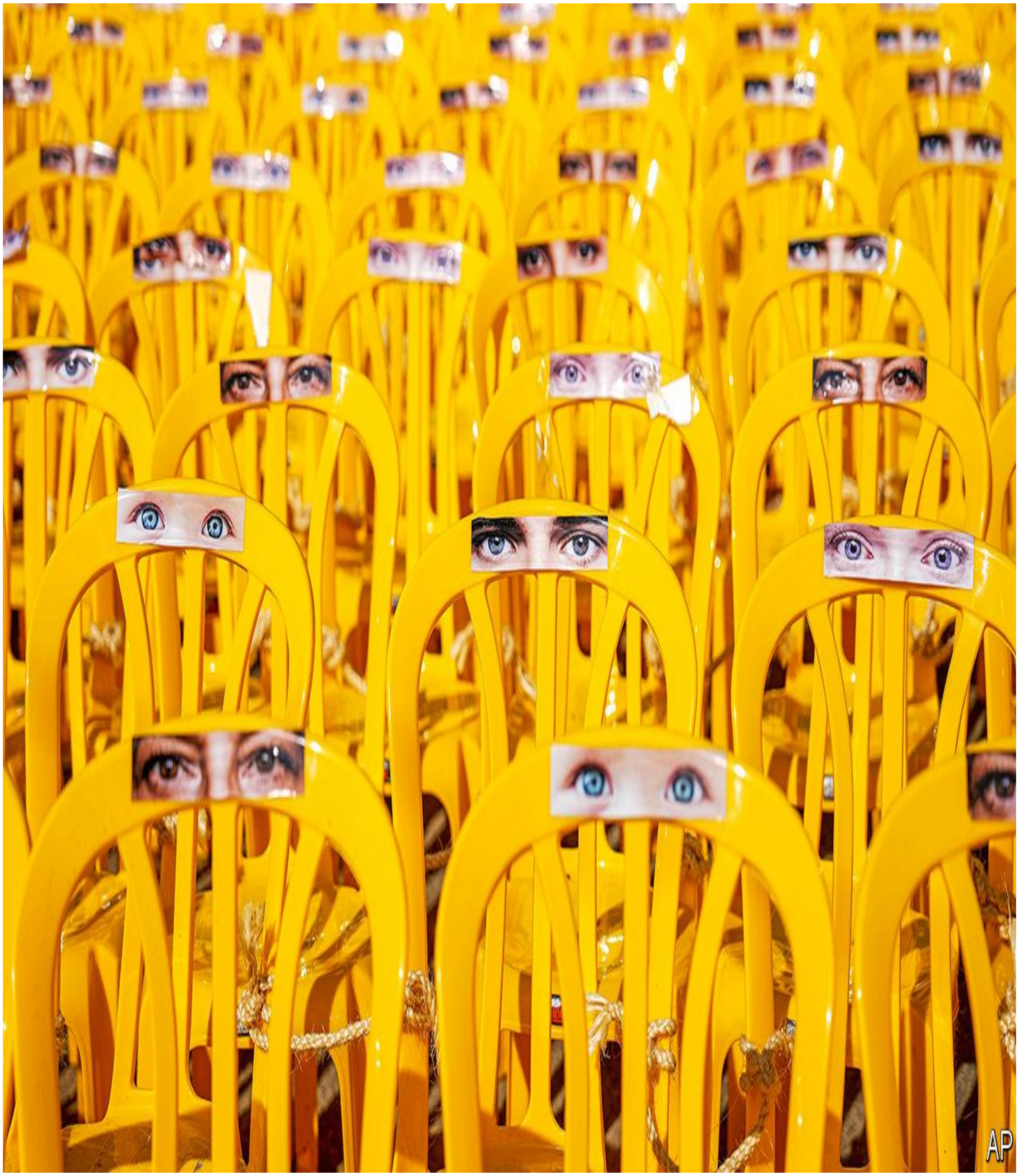
Middle East & Africa

A break in the bloodshed

Israel strikes a hostage deal, but says the Gaza war isn't over

Hamas is desperate to split Israel and turn a pause into a ceasefire

Nov 23rd 2023 | DUBAI AND JERUSALEM



SINCE IT BEGAN seven weeks ago, Israel's war in Gaza has had two main objectives: to remove Hamas from power in the enclave, and to free the hostages Hamas abducted during its murderous rampage on October 7th. At times those goals have been in conflict. Air strikes meant to damage

Hamas's network of underground tunnels, for instance, risked killing the hostages held in those same tunnels.

The war now faces perhaps its biggest contradiction yet. On November 22nd, after weeks of indirect talks, the Israeli cabinet approved a deal that would see Hamas free 50 women and children out of the roughly 240 hostages in Gaza. But Israel will temporarily have to halt its war and will face strong pressure not to resume it.

For the 2.2m Palestinians trapped in Gaza, meanwhile, the truce will bring a different dissonance. A few days of calm, and a promised influx of humanitarian aid, will be a small respite. But few will be able to savour it, crammed as they are into dirty, overcrowded shelters—and fearing that, when the truce ends, another round of fighting is likely to follow.

The prisoner swap and four-day truce were set to begin on November 24th, after *The Economist* went to press. Hostages would be released in phases: about a dozen each night, sent from Gaza to Egypt and then to Israel. For each hostage freed, Israel was to release three Palestinian prisoners (women and teenagers) from its jails.

Israel also agreed to allow 300 lorries carrying humanitarian aid to enter Gaza each day during that period—a significant increase over the previous month, when the daily average was just 45 lorries. President Joe Biden welcomed the pact, but cautioned that "it is important that all aspects of this deal be fully implemented".

Polls have shown Israelis are divided over such a scheme. The Israel Democracy Institute, a think-tank, found that 45% of Israeli Jews opposed a prisoner swap, while 40% supported it. Itamar Ben-Gvir, the far-right national-security minister, called it a "very, very big mistake". The limited number of hostages Hamas agreed to release and its demand for a temporary truce are meant to exploit such divisions in Israel.

Negotiations began almost immediately after the massacre on October 7th. Israel and its allies applied pressure on Qatar, which hosts some of the Hamas leaders. They warned Qatar that ties with the West could be harmed if it did not produce a deal. That led to the freeing of four female hostages, proving that Qatar could serve as a go-between with Hamas, which received nothing in return.

Four days after the release of the second pair of women, however, Israel sent troops into Gaza. That reshaped the negotiations. Hamas indicated that it could release a larger number of hostages—but only in return for a pause in fighting. At that point it became a question of numbers and the length of a truce, with Israel unwilling to suspend the war for any fewer than 100 captives. Hamas officials in Qatar and Lebanon signalled their initial agreement. But it soon became clear that Yahya Sinwar, the Hamas leader in Gaza, would not accept that number. As pressure mounted, Mr Sinwar did not answer his phone for days.

The Israeli war cabinet was also split. Some members wanted to continue negotiating over a smaller number. Others thought Israel should press ahead with its ground offensive and wait for Hamas to soften its position. Binyamin Netanyahu, the prime minister, failed to come down on either side of the debate. “Netanyahu’s dithering meant Israel wasn’t making any decisions, either on the next stage of the ground campaign, or on the hostages,” says an Israeli security official. It took goading from both the families of hostages and from the Biden administration to convince Israel to accept a scaled-down deal.

The Economist

Under the terms of the agreement, Hamas also has the option of offering to release more hostages at the end of the four-day period. Each ten additional captives it sets free will buy another 24 hours of truce. Israel fears this will give Mr Sinwar some control over events. The Israel Defence Forces (IDF) has sent four divisions, more than 10,000 soldiers, into northern Gaza to destroy Hamas's military infrastructure. They have not finished doing so. More crucially, they have yet to start a serious campaign in southern Gaza, where Israel believes Hamas's leaders—along with almost the entire population of Gaza—have fled.

The pause will give Hamas fighters, many of them holed up in tunnels, a chance to regroup and resupply. Israel will also face pressure to extend the truce, both from some Western allies and from the relatives of those hostages still in captivity. A few days of calm could give the world a more detailed picture of the humanitarian disaster in Gaza, which would add to the international outcry.

Still, both of Israel's war objectives remain intact. "The war will continue until we achieve all of our goals," Mr Netanyahu said before the cabinet vote. And although much of the world is united in calling for a permanent ceasefire, Mr Biden argues it would leave Hamas intact to menace Israel again. For Hamas, meanwhile, survival is victory: it need not defeat the IDF, merely endure until a ceasefire.

That would not feel like victory for most Gazans, who are furious with Hamas for inviting devastation upon them. Gaza's health ministry stopped updating the death toll on November 10th, when it stood at 11,078. Officials said it is no longer possible to count the dead: many hospitals are not functioning, communications are often cut and bodies cannot be retrieved. The real toll is undoubtedly much higher.

The paltry flow of aid through Egypt has left many struggling to find food, medicine and clean water. Fuel deliveries are limited to the two tankers a day that Israel allows the UN to import. "Even if we get fuel, what would we do with it?" asks Umm Muhmmad, a resident of Gaza city now staying in Rafah. "Our homes are gone. Our cars are gone. What would we do with the fuel?"

An estimated 1.7m Gazans, 77% of the population, have been displaced. More than half are crammed into teeming shelters run by the UN, where 160 people share each toilet and 700 people must use each shower. Skin diseases and diarrhoea are rife. A brief pause in the fighting will not offer Gazans much respite from this miserable existence. "The truce is empty talk," says Alaa Labad, who was displaced from northern Gaza to a UN school in Khan Younis in the centre. "Israel will not allow us to return to our homes during it."

Many no longer have homes to return to: satellite imagery suggests that perhaps half of the buildings in the northern part of the enclave have been destroyed or badly damaged. Instead of going home, they may be displaced again. Before the pause in fighting the IDF warned some residents of Khan Younis to evacuate, suggesting that it planned to intensify air strikes—a likely prelude to a ground offensive.

On November 22nd, as the truce grew closer, there was also little sign of a lull in Rafah, the southernmost city in Gaza. A group of young men carried a body, shrouded in an old curtain, from the rubble of a house as rescue workers clambered through the debris of the ruined building. Witnesses said 20 people had been living there: many houses in Rafah and Khan Younis are packed with multiple families who have fled from the north.

A major Israeli offensive in the south would almost certainly have a horrific cost for Palestinians—one reason why so many want a ceasefire. That was certainly the message at the Manama Dialogue, an annual security pow-wow that began in Bahrain on November 18th. One after another, officials from Egypt, Jordan, Saudi Arabia and other Middle Eastern countries demanded an end to the war.

From Manama, Arab foreign ministers then set out on a tour of world capitals to push for a ceasefire, starting with stops in Beijing on November 20th and Moscow the next day. Some observers in Washington took this as a strong rebuke: America's Arab allies visiting its geopolitical rivals to urge a shift in its Middle East policy. Seen another way, though, it was a sign of their impotence. Neither China nor Russia has any leverage to impose a ceasefire.

Many Arab leaders are keen to distance themselves from playing a major role in post-war Gaza. They have tried to swat down talk, for example, of an Arab peacekeeping force in the enclave. “Let me be very clear,” said Ayman Safadi, Jordan’s foreign minister, at the conference. “There will be no Arab troops going to Gaza. None. We’re not going to be seen as the enemy.”

Their reluctance is understandable. Arab leaders do not want to clean up Israel’s mess and help it police their fellow Arabs. But they also do not wish to see Israel reoccupy the enclave, and they admit, at least in private, that the Palestinian Authority (PA) is too weak to resume full control of Gaza. But if none of those options is realistic or desirable, it is not clear what is.

Officials in wealthy Gulf states also say they are loth to pick up the tab for rebuilding Gaza. It is too early to put a price tag on the damage, but it could easily run into the tens of billions of dollars: after a far less devastating war between Israel and Hamas in Gaza in 2014, donors pledged $5.4bn for reconstruction. Diplomats from Saudi Arabia and the United Arab Emirates say they should not be expected to write cheques unless Israel commits to a serious peace process with the Palestinians and until the PA, notorious for corruption, is reformed.

After nearly two months of war, there is little optimism. Some Israelis will be reunited with their loved ones; others will have their hopes dashed. Civilians in Gaza will probably have just a short break from bombardment. A ceasefire seems far off; a happier post-war order for Gaza, further still. After a few days the truce will end, and the fighting will resume. ■

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Israel’s non-Jewish minorities

How the Gaza war affects Israel’s minorities in different ways

For Muslim Arabs it is especially traumatic and conflicting

Nov 23rd 2023 | Peki’in and Rahat

ABOUT A QUARTER of the population of the world’s only Jewish state are not Jewish. The different experiences of Israel’s minorities during the war in Gaza highlight the complexities of their position.

It was impossible, on November 19th, to drive through the small hillside town of Peki'in in Galilee. Blue-and-white Israeli flags and the multicoloured banners of the Druze flew side-by-side on lamp-posts on the winding street leading to the main square and its statue of a mustachioed Druze warrior. Thousands had come to pay their last respects to Major Jamal Abbas, a 23-year-old paratrooper in the Israel Defence Forces (IDF) who was killed in action. In the heartland of Israel's Druze community, which numbers 150,000, half a dozen military funerals have been held since October 7th. The IDF's highest-ranking officer killed in the ground campaign inside Gaza was a Druze. Over 80% of Israel's Druze men enlist, many in combat units.

Other non-Jewish Israelis have been on the front lines too. Hamas is reported to have killed 21 Bedouin Arabs on October 7th, many of them at their places of work on Jewish farms near the border. Six Bedouin are among the 240-odd hostages taken by Hamas into Gaza. In the days after the attack, an alliance of Jewish and Bedouin NGOs jointly set up a hub in Rahat, a mainly Bedouin Israeli city east of Gaza, where volunteers from different communities have been making food packages for families hit by the war. The predicament of the Bedouin hostages held by fellow Muslims in Gaza is delicate. Many Bedouin have relatives there, under Israeli bombardment. Some in Rahat are suspected of sheltering Hamas attackers on the run.

Three-quarters of Israel's 2m Arabs are Muslim Palestinians, and for them the war is especially traumatic and conflicting. Many condemn Hamas but are horrified by the violence in Gaza. "There is widespread revulsion among Arab and Muslim citizens over what Hamas did on October 7th," says Wurud Jayusi, the head of the Arab Academic Institute at Beit Berl College, north of Tel Aviv. "The murder of civilians, of children, the barbarity of it, is something we can never accept. But at the same time we watch the Arab TV channels showing the terrible destruction in Gaza where many of us have family, something our Jewish friends are less concerned about."

A survey by the Israel Democracy Institute, a think-tank in Jerusalem, reported that the proportion of Arab-Israelis saying that they identify with the state was at its highest ever in the first weeks of the war. Yet as fighting continues, relations may come under strain. In the last outbreak of fighting in Gaza, in 2021, riots erupted in many of Israel's mixed Jewish-Arab towns.

Disturbances have not so far occurred during this one, but that may be because Arab-Israelis are afraid of the current right-wing government. Dr Jayusi says she is "cautiously optimistic" about the prospects for coexistence, but fears a chauvinistic trend among Jewish Israelis in the wake of the Hamas attack and warns against heavy-handed policing of Arab-Israeli dissenters. The Arab Centre for Alternative Planning, an advocacy group based in Eilaboun, a mainly Arab Christian village in Galilee, has so far recorded more than 200 arrests of Israeli Arabs, mainly for alleged "incitement" on social media.

The domestic agenda of Israel's right-wing politicians is also unhelpful. Two laws, passed by previous governments led by Binyamin Netanyahu, the present prime minister, have challenged non-Jews' official status as citizens. One was a law to stiffen sentences on people who build homes without a permit, a sore point for Israel's non-Jews, who are often discriminated against in land-allocation and planning permits, among other issues. The other—the Nation State Law—deemed an affront by minorities, states that "the right to exercise national self-determination in the State of Israel is unique to the Jewish People." At the end of the funeral for Major Abbas, the fallen Druze officer, his grandfather, also a colonel (retired), called for those two laws to be abolished. ■

It’s in the posts

Why African businesses take a DIY approach to selling online

Social media, not online marketplaces, dominate e-commerce on the continent

Nov 23rd 2023 | KAMPALA

ONE OF THE few things that Charlyn Kentaro cannot share on Instagram is the scent of her workshop, fragrant with eucalyptus, peppermint and shea butter. Almost everything else she posts online, where she shows off her natural hair products and swaps styling tips with other women in Uganda and beyond. Most of her sales come from social media, which she describes as a “godsend”. Orders come in through direct messages or by WhatsApp. She ships them out herself in packaging inspired by colourful African kitenge cloth.

This way of using social media to sell products is called “social commerce” by business wonks. It might also be thought of as the do-it-yourself (DIY) approach to online business. Everything from marketing to delivery and payment is managed by the vendor through his or her smartphone. That is no easy task in many African countries, which lack functioning postal systems and where most people do not have bank accounts or even a postal address.

Social commerce prompts the same question as all DIY: why not get someone else to do it? After all, Africa has several Amazon-style retail platforms which can handle logistics and simplify payment. But those are not very popular, finds a recent survey by the GSMA, an association of mobile-phone operators, that tracked small businesses trading online in six African countries. In Ghana and Ethiopia, three-quarters of respondents sell exclusively through social media; only in South Africa do a majority use online marketplaces too.

Many entrepreneurs start with WhatsApp, where they create chat groups advertising their wares to friends. They might use the status bar to promote new products or their contacts list to keep track of customer preferences, says Mark Wensley of Caribou Digital, a research firm. As business grows they can find a wider audience on Facebook or Instagram. A trusted motorbike driver might deliver goods. Payment is sometimes done through a bank transfer or mobile money, although cash-on-delivery is the most popular choice.

One reason to do it yourself is that it is free. Online marketplaces charge commission, typically around 5-20% of the sale price. Services like WhatsApp and Facebook are also familiar to potential customers. But perhaps the most important motive to use social media is trust, which small businesses identify as the biggest barrier to customers shopping online. Many Africans are wary of buying from strangers, especially in countries where consumer protection is weak. Social media have a personal touch that faceless retail platforms lack.

Some startups are trying to build on that appeal. "People buy based on trust and relationships, not necessarily based on brands," says Felix Manford, a Ghanaian entrepreneur who co-founded Tendo, a platform that connects suppliers to traders, in 2021. Users of its app select a product they wish to sell, then receive images and a personalised payment link which they can post on their social media. Another example is Vendorstack, in Nigeria, which helps small businesses create their own web page to chat with customers and sell online, backed by verification and escrow accounts to reduce fraud. If social commerce is DIY, then these apps are like flatpack furniture, offering ready-made parts that anyone can assemble.

Meanwhile online marketplaces in Africa are still searching for the right model. The biggest is Jumia, which listed on the New York stock exchange in 2019, but has never turned a profit. Its third-quarter results, out earlier this month, showed a $15m loss on revenue of just $45m. One way it is trying to turn things round is by pushing into smaller cities, helped by agents who sell on commission, often using WhatsApp or Facebook. "We don't see social commerce as competition against our marketplace," says Francis Dufay, its chief executive, arguing that Jumia's reach allows successful businesses to expand.

Whatever their size, Africa's online vendors must grapple with expensive data, potholed roads and officious politicians. In Uganda the government has blocked Facebook since a contentious election in 2021. An association of traders is threatening to sue the government for lost earnings. One of them is Justus Agaba, a carpet salesman, who was doing a roaring trade on the site but says that business has now "reduced to zero". Doing-it-yourself is difficult when the government takes away your toolbox. ■

The last outpost

Will Chad be the next Western ally in Africa to fall?

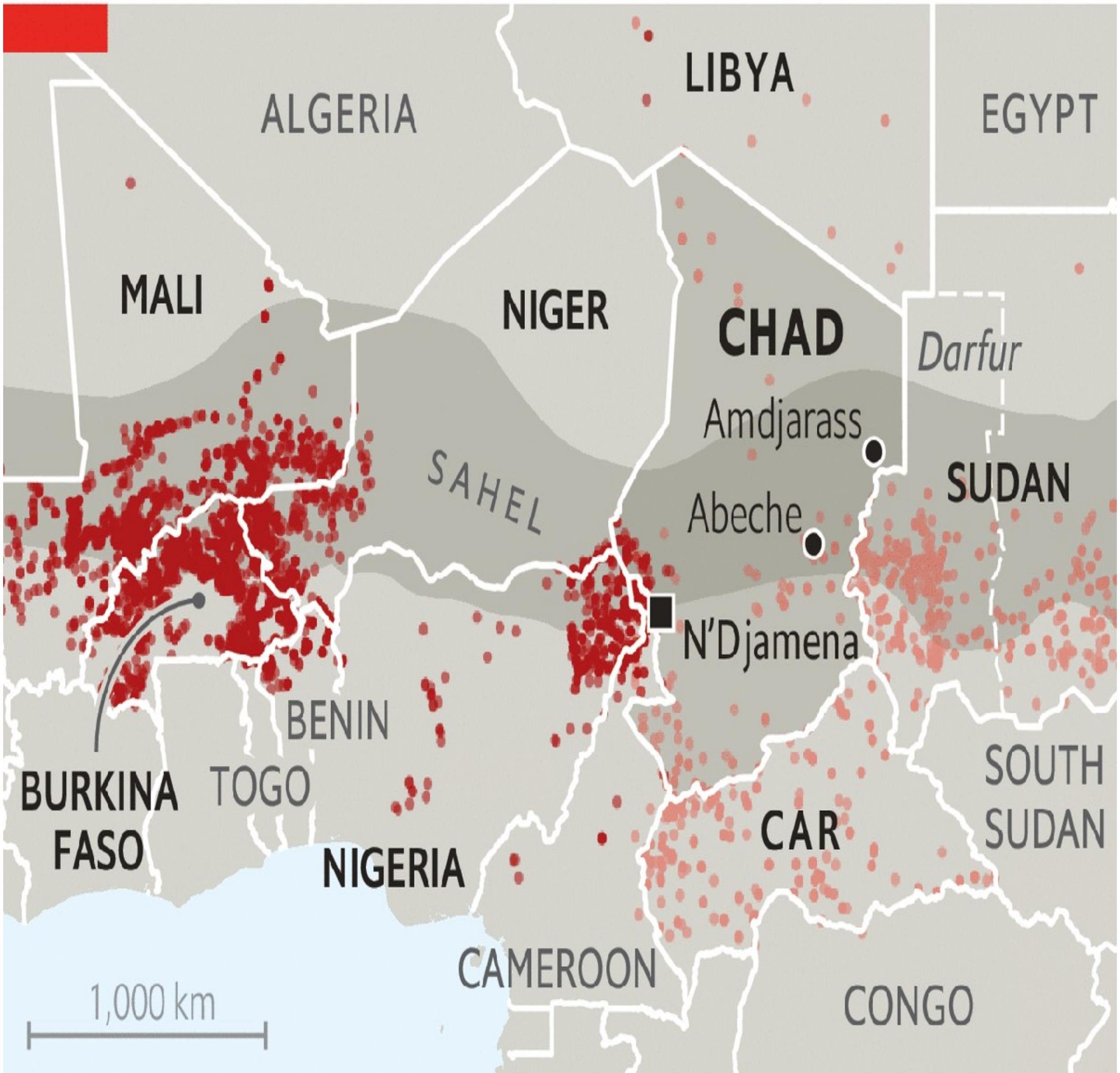
Democracy v realpolitik

Nov 23rd 2023 | ABECHE

JUST OUTSIDE the French army base in Abeche, a dusty city in eastern Chad, Mohamed Adam waits for his two toddlers. They had spots all over their faces so he took them to the French base, he says. “If you are sick sometimes they help.” Mr Adam, a taxi driver, is grateful. But even he questions France’s role in Chad. “We are not fully independent,” he says.

"It's 50% for us, 50% for France." But he demurs when asked if all French troops should leave. Many others in Abeche are more hostile. Last year protesters tried to break into the base and ripped down the French flag, replacing it with Chad's.

Anti-French feeling has grown sharply in the Sahel, the arid strip south of the Sahara, after a long French military intervention failed to stem jihadist violence in Mali, Niger and Burkina Faso. Deaths in conflict increased from about 800 in 2016 to almost 6,000 in 2021, the last full year of French operations in Mali. A spate of coups has swept across the region since 2020, hitting Mali, Burkina Faso and Niger. Those mounting them tried to justify their actions as necessary for security; each scapegoated France to bolster their popularity on the street. French soldiers, who had been invited in, were quickly pushed out, though that has not improved security. The headquarters for France's operations in those countries is located in a permanent base in Chad's capital, N'Djamena, long its closest ally in the region. Large French army convoys retreating from Niger are now arriving in the city.



Violent events, 2022-23*

Involving

● Jihadist groups & affiliates ● Gov't forces, militias & others

Source: ACLED

*To Nov 21st

The Economist

Yet many worry that France may be pushed out of Chad, too. Recent polling shows support for France falling and popularity for Russia rising, says a Western official. Others fear that political tension and threats on Chad's border could burst into civil war. "It's a powder keg that's going to blow," says Cameron Hudson of the Centre for Strategic and International Studies, a think-tank in Washington. That would be a geopolitical nightmare because Chad is a firebreak between several conflagrations in the wider region: civil war and genocide in Sudan; jihadist violence in the Sahel; and strife in the Central African Republic (CAR) and Libya, where the Russian mercenaries of the Wagner Group are operating in both countries (see map).

Chad has been run by Mahamat Idriss Déby since April 2021, when his father, Idriss Déby, was killed on the battlefield by rebels. The older man had seized power in an armed rebellion in 1990. That his son's takeover was unconstitutional did not bother France. Its president, Emmanuel Macron, promptly flew in for the funeral and publicly emphasised that France would intervene to stop future rebel attacks. His country has long backed dictators in Chad in exchange for Chadian soldiers fighting alongside France in the region and for French bases in the country. That support has extended to French jets bombing rebel columns. In 2019 they pulverised one such rebel advance. It is understood that in 2021 France provided intelligence on rebel movements and made threatening overflights but was never directly asked by Chad's rulers to strike.

The younger Mr Déby at first promised an 18-month transition to elections and that he would not stand in the poll. Yet in October 2022 he extended the transition for another two years and declared that he was eligible to run after all. Outraged opposition groups took to the streets. Chad's security forces gunned down at least 128 people in a day and locked up hundreds more.

A constitutional referendum is now scheduled for December and elections late next year. Yet it is highly unlikely that Mr Déby would lose an election. The main opposition leader, Succès Masra, who left Chad after the bloodshed last year and was pursued by the regime with an international arrest warrant, returned in early November after signing an agreement with Mr Déby's government.

Many fear that Mr Masra, short of cash and with little backing in Washington or Paris, has been co-opted by the regime, possibly with the promise of a government post. “When Nelson Mandela signed an agreement with the apartheid regime, does this mean Mandela was co-opted?” says Mr Masra when the allegation is put to him, adding that it is a “pro-democracy agreement”. Even so, few expect a free election.

A palace coup may be a greater threat to Mr Déby than the ballot box. The president was not the unanimous choice to take over when his father died. The ruling clique in Chad is from the Zaghawa tribe in the east, who make up only a tiny proportion of Chad’s population. Yet Mr Déby’s mother is not Zaghawa, causing some jitters. His half-brothers almost certainly have their own presidential aspirations. He has also ruffled feathers by retiring a slew of generals. And though officially neutral in Sudan’s civil war, Mr Déby has implicitly backed the Rapid Support Forces (RSF) and has reportedly allowed the United Arab Emirates (UAE) to fly in weapons to the group via an airport in Amdjarass, the Déby family’s home town. At the same time the UAE, which maintains that the flights carry humanitarian aid and not arms, has evidently provided loads of financial support to Mr Déby’s government.

Yet many among Chad’s ruling elite have close family and tribal connections to Zaghawa rebel groups in Sudan’s Darfur region. In mid-November the strongest of them declared war on the RSF. This will ratchet up tensions within Zaghawa ruling circles in N’Djamena. “This [backing the RSF] threatens to divide the family and to divide the army,” says a Western diplomat.

“I don’t think Déby’s leadership will last a year,” says Mr Hudson. Not everyone is so sure. He faces many threats but is proving to be a surprisingly deft political operator, says Enrica Picco of International Crisis Group, a Brussels-based think-tank.

A palace coup would not necessarily mean a civil war or force the French to leave, though it would raise the risk that either could occur. A military coup by non-Zaghawa officers would be more likely to lead to widespread bloodshed and the French being booted out. Some Arabs even within the ruling coalition are unhappy with Mr Déby’s leadership, notes Ms Picco.

It is also possible that rebels could invade from abroad to overthrow Mr Déby. It was insurgents from Libya who killed his father in 2021, while earlier this year leaked American intelligence cables suggested that Wagner mercenaries were helping southern Chadian rebels in the CAR in yet another plot to topple Mr Déby.

Such threats may explain why Mr Déby may be looking for new ways to consolidate power. In November Hungary's parliament approved the deployment of up to 200 soldiers to Chad, supposedly to counter terrorism and illegal migration. Some analysts suspect that this deployment is actually about helping Mr Déby secure gold fields in the restive north or perhaps even to protect him from a coup.

An agreement with Khalifa Haftar, a warlord who controls eastern Libya, recently led to attacks by Mr Haftar's men on Chadian rebel bases in Libya. Mr Déby also has warm ties with Mr Macron, whom he recently visited in Paris. That relationship, along with Chad's status as France's last ally in a vast and volatile region, suggests that France would again use air power against rebel columns attacking from Libya. To Chad's south, despite Wagner's alleged scheming, Mr Déby seems to have fostered surprisingly good relations with Faustin-Archange Touadéra, the CAR's president, who agreed to let Chadian forces pursue rebels into his country.

Another worry for Mr Déby is the prospect of blowback from Sudan's civil war, which is already giving him a headache. Yet the end of the war in Sudan could bring even more problems. Many RSF fighters have ties to Chad and axes to grind, despite Mr Déby's recent implicit support. Should the RSF defeat Sudan's official army, some of its men could try to settle scores in Chad. They would almost certainly go after refugees or fighters who have fled across the border. Yet should the RSF lose, large numbers of armed fighters could flood into Chad. They might even head straight for N'Djamena to seize power.

Western governments have turned a blind eye to Mr Déby's bloody authoritarianism, just as they did to his father's, because they fear that the regime's collapse could lead to civil war or a pro-Russian regime. After the debacles in Niger and Mali, France thinks pushing Mr Déby to honour his promise not to run and to hold a free election is "a luxury we cannot afford", says a Western diplomat. This attitude frustrates Mr Masra, who says that France and America have only ever regarded Chad as useful for security. What about the expectations of our people, he demands? ■

The Americas

From cosplayer to president

Javier Milei will be Argentina’s first libertarian president

But how much can he actually do?

Nov 23rd 2023 | Buenos Aires

HE HAS DABBLED in tantric sex and cosplay and performed in a Rolling Stones tribute band. He has smashed a *piñata* shaped like the central bank on television and performed an opera about public spending, while dressed as a superhero. Now Javier Milei, a self-described “anarcho-capitalist”, will try his hand at running Argentina. In a presidential election on November 19th he took 56% of votes, compared with 44% for Sergio Massa, the current economy minister and candidate from the Peronist movement, which has governed Argentina for 16 of the past 20 years. Mr Milei, who has been a legislator only since 2021, created his coalition, Liberty Advances, two years ago. Yet it won in 21 of Argentina's 24 provinces.

Mr Milei's notion that a privileged "caste" of politicians steals from ordinary folk struck a chord with many voters. Last December the current vice-president, Cristina Fernández de Kirchner, was convicted in a $1bn fraud case (she denies wrongdoing). In September, the mayor of a poor district resigned after an escort posted pictures of him on a luxury yacht.

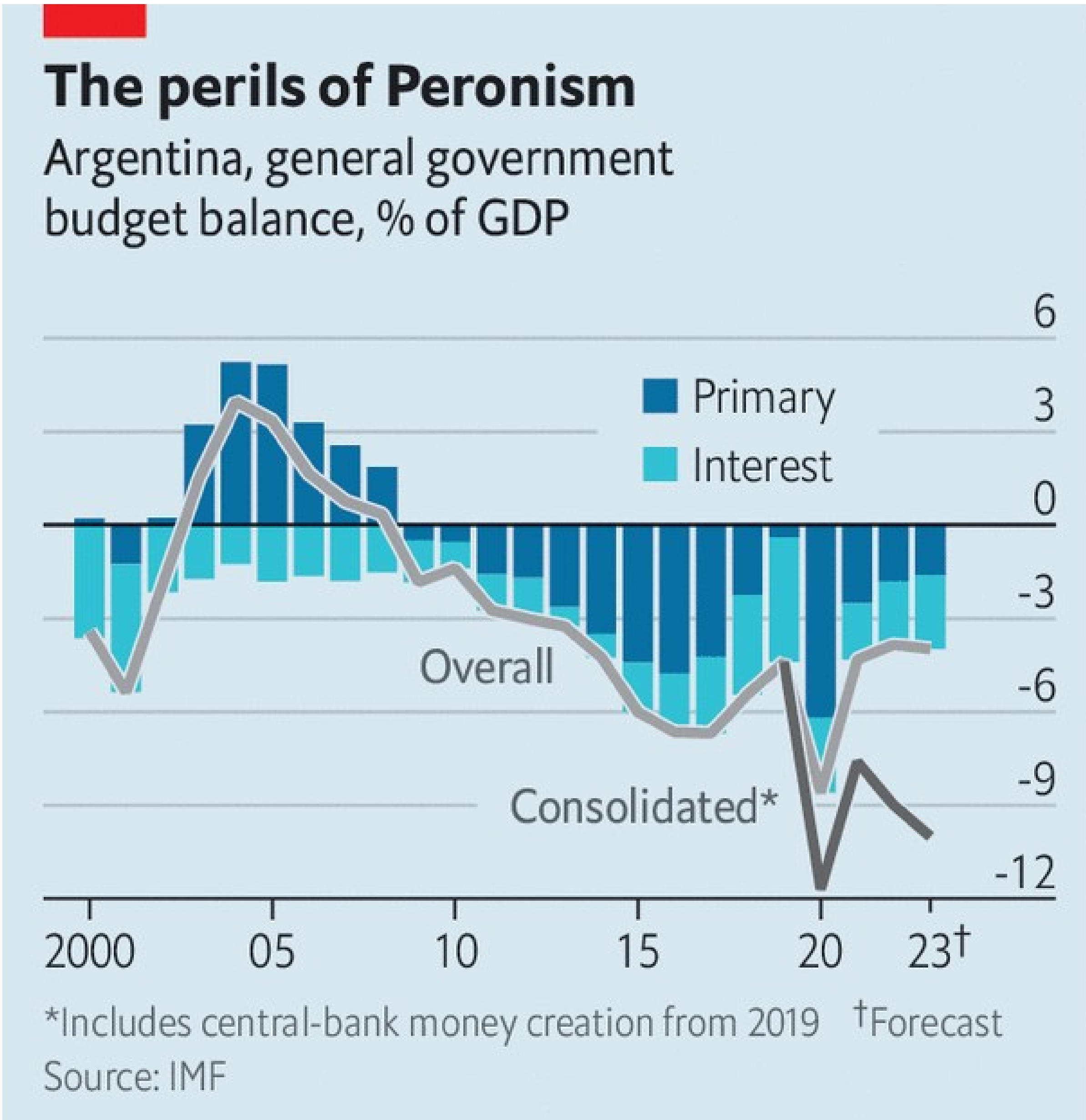
The Peronists tried to splurge their way to victory. In the weeks leading up to the poll, Mr Massa spent 1% of GDP on handouts to pensioners and the self-employed. Congress scrapped income taxes for 99% of workers. But even this was not enough to swing it in the Peronist's favour. A pre-election survey showed that Mr Milei particularly appealed to men under 30, informal workers, and the self-employed. The number of registered self-employed people has swelled to 1.8m in two decades.

A large share of those who plumped for Mr Milei did so out of frustration with economic mismanagement. "I don't like Milei," says Fabio, a 55-year-old doctor. "But I want a change." Annual inflation is above 140%. There are at least 15 different exchange rates and a host of complex capital, price, import and export controls, which make it impossible to invest. The country has defaulted so many times on its sovereign debt that it has no access to external financing except from multilateral lenders. It resorts to central-bank money-printing to cover its deficit.

Since the current Peronist government assumed power in 2019, the money supply has rocketed. Argentina owes the IMF $44bn and the central bank's net reserves are $10bn in the red (after deducting central-bank swap lines and other liabilities).

You can't always get what you want

"Argentina's situation is critical," Mr Milei said in his victory speech. "There is no place for gradualism." The first thing Mr Milei needs to do is cut spending, which has ballooned from 22% of GDP in 2003 to 38% today. Estimates of the fiscal deficit vary widely, but economists believe it is between 5% and 10% of GDP when the government's accounting trickery is excluded and some central-bank liabilities are included (see chart).



The Economist

In order to reduce the deficit, Mr Milei could start by scrapping most subsidies on transport, water, gas and electricity, which cost around 2.5% of GDP each year. He could cut down the bloated pension system, which eats up almost 12% of GDP. This share is on par with Germany and Finland, despite those countries being significantly greyer and richer. Mr Milei has already signalled that he will try to privatise most of Argentina's 33 state-owned companies, almost all of which are in deficit and cost the state over 1% of GDP a year. The public airline, for example, has 147 employees for every plane it flies. By contrast British Airways, which flies three times as many passengers a year, has 122 per plane.

Another problem for Mr Milei is the country's bewildering range of exchange rates. The official one, of 365 pesos to the dollar, is overvalued and the central bank bleeds reserves to prop it up. This cheapens imports but hurts exports. To protect scarce dollars, the government imposes capital controls, prohibiting Argentines from buying more than $200 a month, even though the greenback is the currency most people save in. Capital controls have led to a massive black market, where one dollar currently fetches 1,000 pesos. To normalise the currency system, Mr Milei needs to devalue the official exchange rate, which will probably reach an equilibrium between the official rate and the black-market one. Only then could he lift capital controls, to avoid a run on the peso.

Alongside this, Mr Milei should promote growth and investment. This will require untangling the morass of red tape and taxes that currently burden business. According to the World Bank, the total tax and contribution rate as a share of profit for an average medium-size company in Argentina was 106% in 2019, compared with 40% in the OECD, a club of mostly rich countries. Private-sector employment has not grown in a decade, while the share of public workers has risen from around 15% in 2003 to over 20% today, says Rafael Rofman, an employment specialist. Since the pandemic almost seven out of ten new jobs created were in the informal market. Because of a host of complicated import and export restrictions, it takes businesses on average 166 hours to fill in customs forms to import goods, compared with three hours on average in the OECD.

Mr Milei may have some luck. This year Argentina was hit by a blistering drought, which reduced exports of soyabeans, wheat and maize from $39bn in 2022 to $23bn. Next year exports could be up to $40bn. And recent investments in a huge shale oil and gas field will allow Argentina to reduce energy imports. It could save between $3bn and $4bn in energy imports in 2024, thinks Andrés Borenstein, an economic consultant.

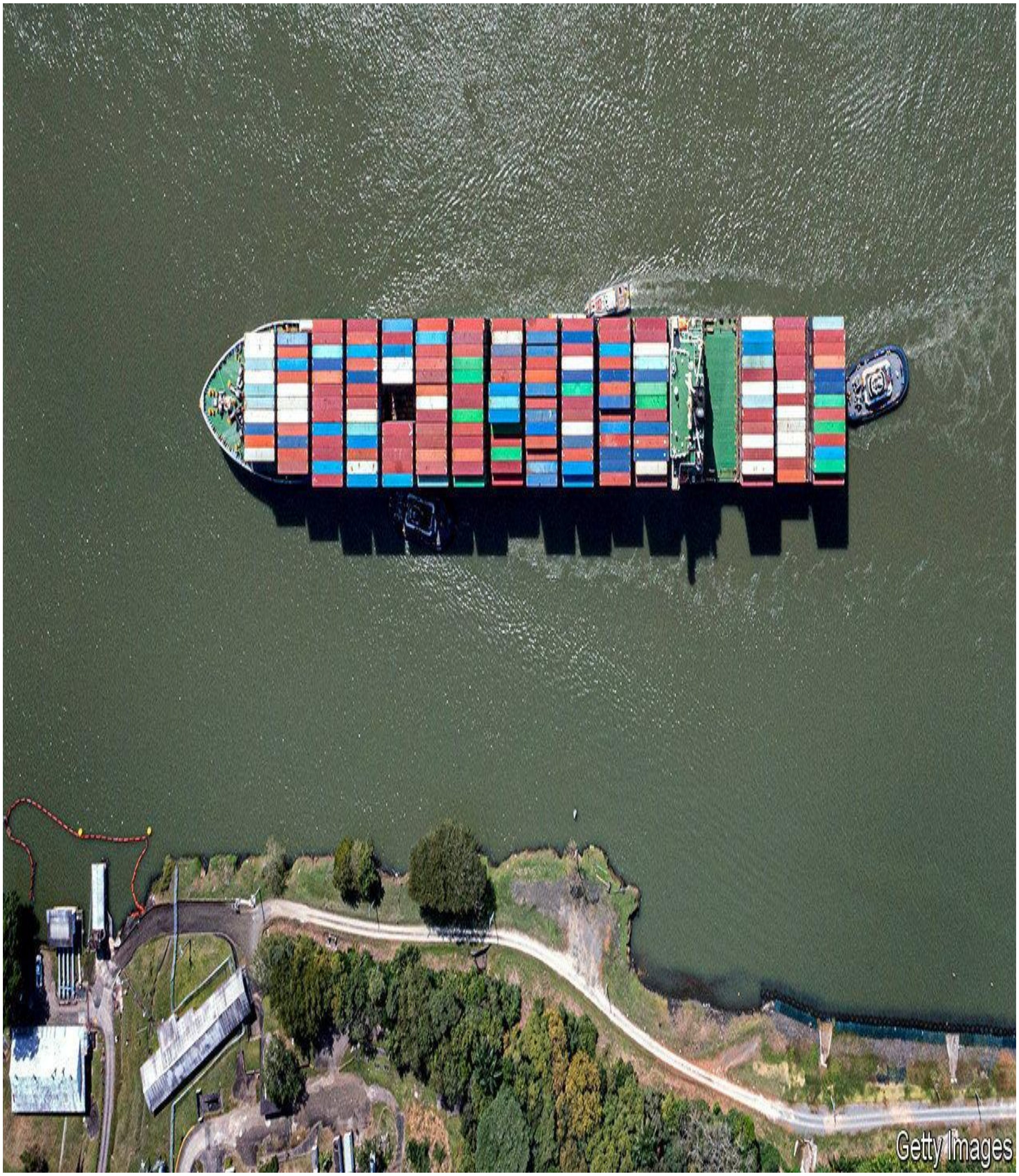
But this will not be enough to turn Argentina around. In order to pass difficult reforms, Mr Milei will need the support of Congress. His coalition currently has only 10% of seats in the Senate and 15% of seats in the lower house. He will have to negotiate with Together for Change, a centre-right coalition, and with moderate Peronists. Lifting subsidies and devaluing the peso will initially increase inflation. Belt-tightening could prompt protests. “He needs to start to do this even if it is extremely painful in the short term,” says Alberto Ramos of Goldman Sachs, a bank. Argentines voted for change. Will they accept the consequences of it? ■

Cry me a river

Severe drought is constraining the Panama Canal

Costs for ships to go through it are spiralling. Consumers will feel the pinch

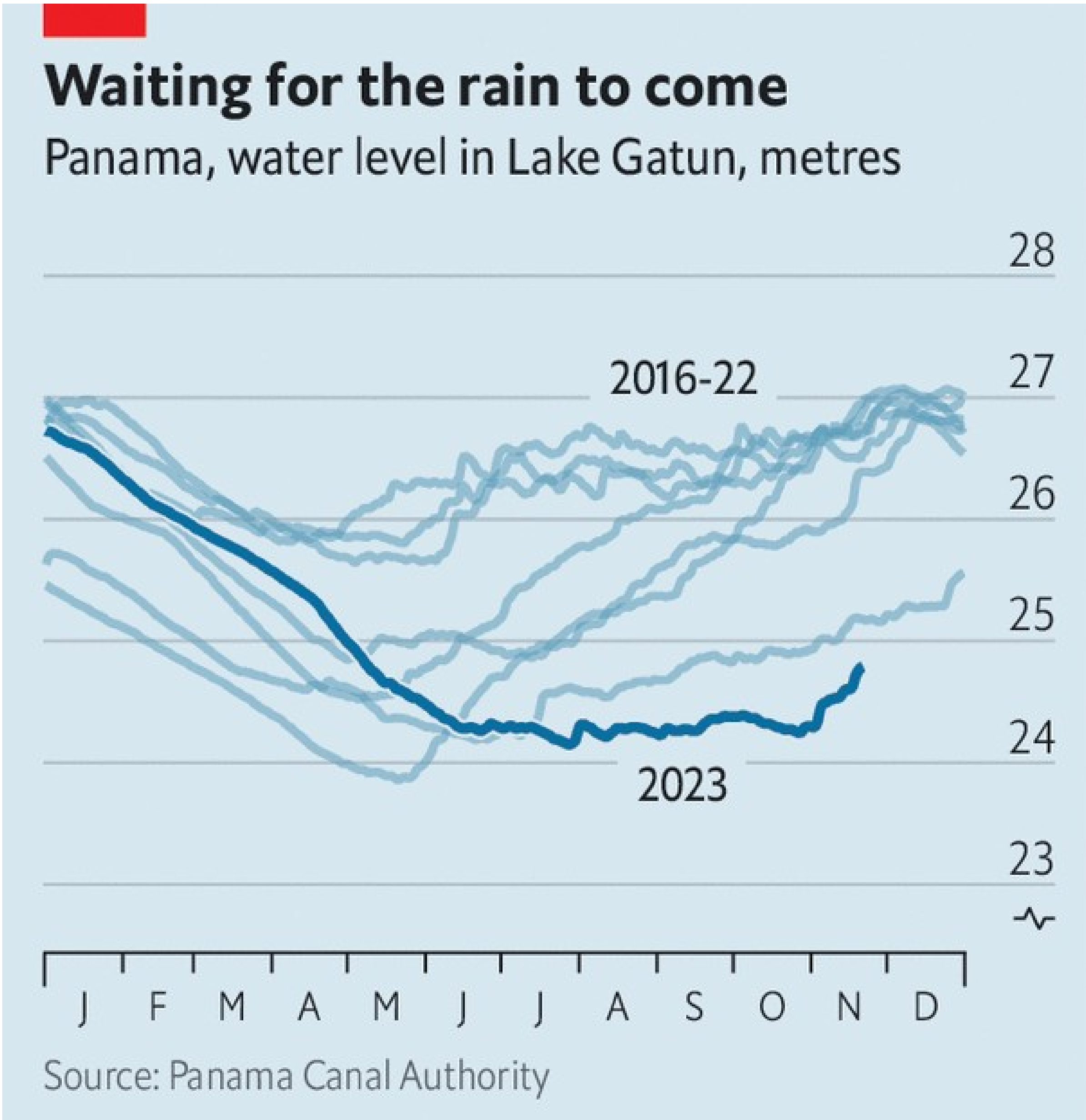
Nov 23rd 2023



THE PANAMA CANAL provides a short cut between the Atlantic and Pacific oceans for 6% of the world's maritime commerce. At its maximum capacity between 38 and 40 ships can pass through the canal each day. But over the past few months far fewer ships have made the voyage. The Panama Canal Authority (ACP), which allocates reservations, has slashed this number to 24. On December 1st it will go down to 22, and from February onwards only 18 ships will be able to cross each day.

Many of these slots are available to book well in advance at a fixed price, but a small number of last-minute options are held back and sold to the highest bidder. From November 1st, any carrier hoping to secure a slot within the next week has had to use the auction system.

Scaling back on traffic and driving up auction earnings is not a deliberate money-spinner by the ACP. Instead, it has been forced into action following a prolonged bout of unusually dry weather this year. Rainwater is essential to the functioning of the canal: it is situated 26 metres (85ft) above sea level and it needs fresh water to operate the series of locks that lift ships so that they can enter and leave it. Each transit uses on average 200m litres of water, equivalent to the contents of 80 Olympic-size swimming pools.



The Economist

Most rain falls during a wet season that runs from mid-May to mid-December, caused by a weather system known as the Intertropical Convergence Zone (ITCZ) moving across Panama. This rainfall normally refills several man-made reservoirs, the largest of which is Lake Gatun, which in turn feed the canal locks. But the ITCZ has been stuck south of Panama. Water levels at Gatun usually rise by 1-3m during the wet season, but this year they have flatlined (see chart). October was the driest one since 1950.

In addition, once water levels fall below a certain point, measures are needed to stop huge Neopanamax container vessels (which can carry 120,000 tonnes or 14,000 containers) from running aground. As well as curbing daily transits, the ACP has also had to reduce the minimum distance from the bottom of a ship's hull to the waterline. These ships have to reduce their loads by up to 40% so that they sit higher in the water. Restrictions for smaller vessels also look likely.

The Economist

That all spells trouble for trade routes reliant on the Panama Canal, particularly between the east coast of the United States and East Asia. As transit numbers fall, auction prices will increase. On November 8th, Japan's Eneos Group paid nearly $4m, in addition to the usual transit fees of around $400,000, to expedite passage for one of its liquefied petroleum gas carriers.

That was a record fee. Some carriers may consider rerouting through the Suez Canal or around Cape Horn. Others may opt to unload cargo at one end of the canal, and transport it by land across Panama, before reloading at the other end. But such options are potentially far more costly.

There is no quick fix. The canal authorities are rolling out measures to increase efficiency. Lake Gatun also provides drinking water for the country's big cities, so the government is looking at ways of cutting public consumption, which is thought to be the highest per person in Latin America. But such efforts will have little impact.

The ACP is considering the more drastic option of constructing a new reservoir. But this would require building a new dam and flooding land in a biodiverse area. Seething discontent about a massive copper mine in Panama has spilled onto the streets in recent months; one of the main public gripes is the mine's ecological impact, making a new dam unlikely. In the meantime, higher transit costs may become the new normal. These costs, in turn, are likely to be passed on to consumers. Damn! ■

Blow up

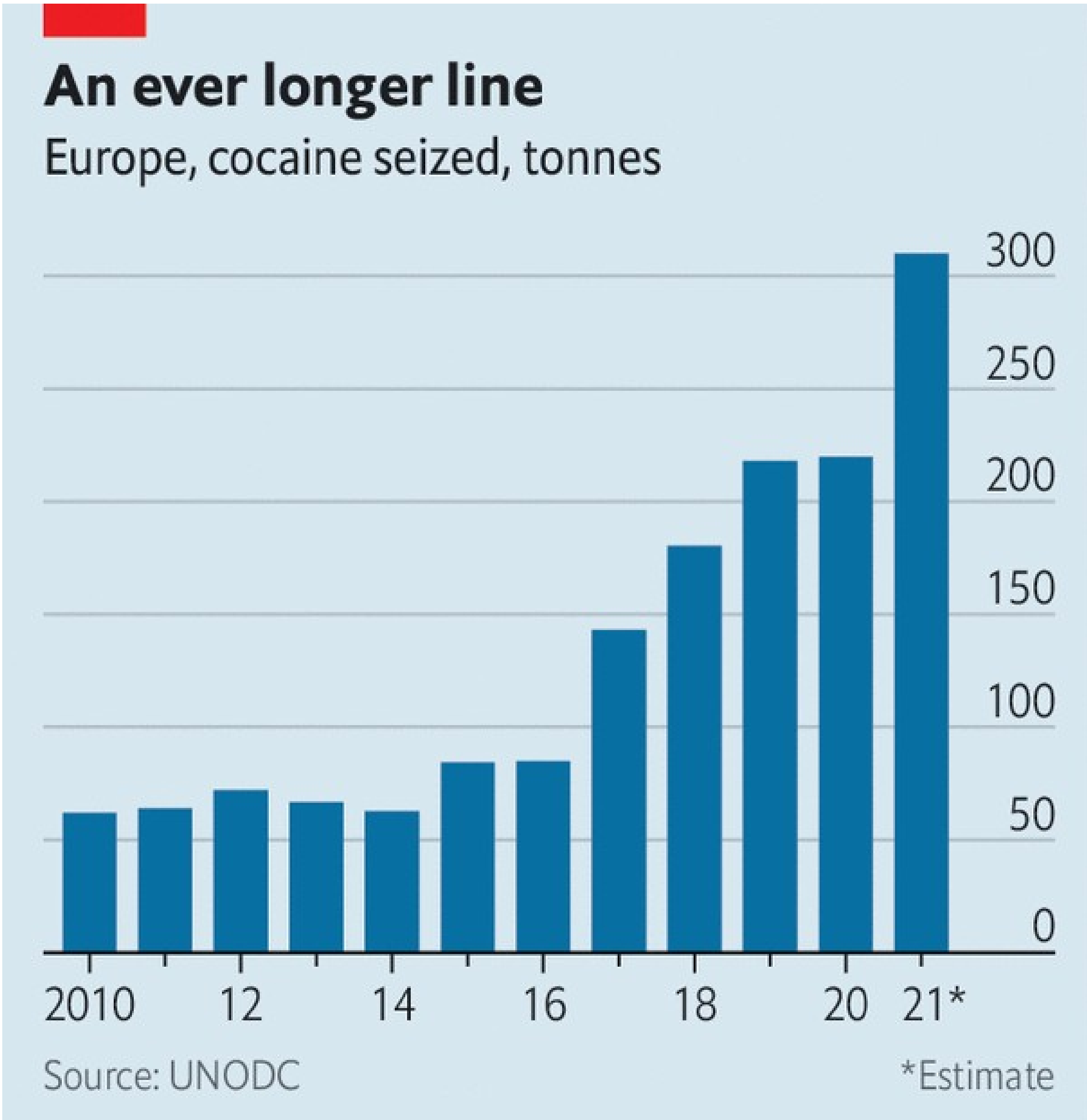
Brazil’s biggest drug gang has gone global

The First Capital Command is now a mafia with links throughout Europe

Nov 23rd 2023 | São Paulo

FOOTBALL MATCHES are tense affairs in Brazil. That is doubly true when they take place in prisons. In August 1993 a game in a São Paulo jail ended in horrific fashion. Eight inmates attacked their opponents, killing at least two. Covered in blood, they proclaimed the birth of a new gang: the First Capital Command (PCC). Thirty years later the PCC is Latin America's biggest gang, with estimates suggesting it has 40,000 lifetime members and another 60,000 "contractors". That would make it one of the world's largest crime groups. And on November 6th a leaked report by Portugal's security services claimed the group has 1,000 associates in Lisbon, the capital. The PCC is going global.

The gang's network of allies began in South America. A decade ago the PCC formed an association with some of the world's biggest cocaine-traffickers. Based in the Bolivian city of Santa Cruz, this "super gang" is dedicated to joint ventures in drugs and money-laundering. Local media thought it sounded like Mercosur, the regional trading bloc. They named it "Narcosur". The PCC has separate relationships with Venezuela's Tren de Aragua, a human-trafficking group, too.



The Economist

But in recent years, the PCC has concentrated on building ties with Europe. In 2021 a record 303 tonnes of blow were seized in the European Union (see chart). The farther it is shipped, the bigger the margins. Previously the PCC bought coke wholesale in Bolivia for $1,500 per kilogram, got it onto a ship in a Brazilian port, and sold it on for $8,000 per kilogram. By setting up a base in Europe, members can sell that kilogram for over $30,000.

Members of the PCC are thought to be present in half a dozen European countries, including Britain. The gang runs over 50% of Brazil's drug exports to the continent, says Lincoln Gakiya, an organised-crime prosecutor from São Paulo. It mostly works with Italy's 'Ndrangheta, Europe's biggest mafia. The two syndicates have partnered for years. 'Ndrangheta brokers are regularly arrested in Brazil, where they make hefty deals. In May an investigation by Europol, the EU's police agency, revealed that the 'Ndrangheta was shipping the PCC guns from Pakistan. It collaborates with Albanian and Serbian drug gangs, too.

Another area the gang is expanding in is west Africa, a major transit zone for the white stuff. The PCC has become a central player pumping drugs through the region, according to a recent report by the Global Initiative against Transnational Organised Crime, a Swiss-based think-tank. It is also probably behind a reverse route, where Moroccan cannabis is smuggled to Brazil.

According to Christian Azevedo, of Brazil's federal police, in Nigeria PCC gangsters brazenly walk the streets of Lagos and Abuja. "They even control neighbourhoods there, the same way they do in São Paulo," he says, citing intelligence from his Nigerian counterparts. The Nigerian connection has helped the gang push into southern Africa, too. South Africa is a key point for sending coke to emerging markets in India and China.

Criminal clout is not merely about powerful friends or geographic range. Territorial and social control are important as well. The PCC is no slouch there. "They exert a type of control that no other group has ever exerted, except Colombia's FARC at their apex," says Steven Dudley of InSight Crime, an investigative outlet. The gang is a parallel state in Brazil's *favelas*, governing the lives of tens of millions. In the 2000s it even ordered a reduction in urban violence, converting São Paulo from one of Brazil's most dangerous cities to one of its safest. Even so, if its interests are threatened the group will employ extreme violence, notes Mr Gakiya. In 2019 he ordered the transfer of 22 PCC leaders to maximum-security jails. As a result, the gang put him on a kill list. He now lives under police protection. When being interviewed, he warned that the call might drop out: his armoured doors interrupt the signal.

The final stage of a transition into a global mafia is the penetration of politics and the legal economy. The PCC is starting to do that, thinks Mr Gakiya. The attorney-general's office in the state of São Paulo has investigated mayors and councillors. It found PCC involvement in everything from rubbish disposal and public transport to construction projects and hotels. ■

Europe

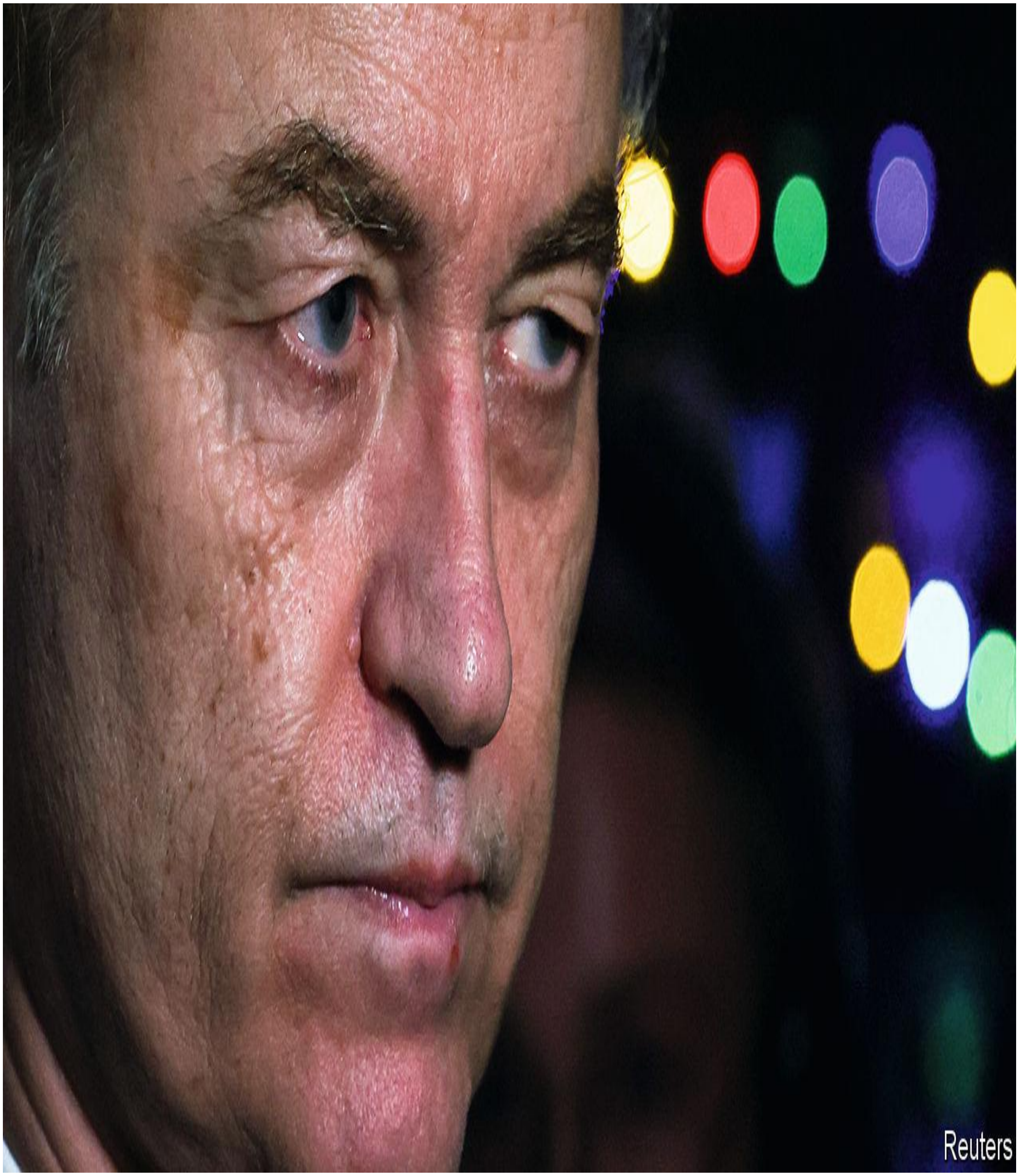
- Geert Wilders's election win leaves the Dutch in an awful quandary
- Why German bosses are heaping unexpected praise on France
- Russia is starting to make its superiority in electronic warfare count
- Turkey's sluggish post-earthquake reconstruction
- Tyrant, liberator, warmonger, bureaucrat: the meaning of Napoleon

Right turn

Geert Wilders's election win leaves the Dutch in an awful quandary

Will the cordon sanitaire against the far right hold?

Nov 23rd 2023 | Scheveningen



ON NOVEMBER 22ND voters awarded a whopping 37 of the 150 seats in the Dutch parliament to the anti-Muslim, anti-immigration, anti-EU Party for Freedom (PVV), led by Geert Wilders. It was a bombshell, putting the PVV far ahead of any other outfit, and it leaves the Netherlands in a quandary. For years, most major parties have ruled out a coalition with Mr Wilders. But the results make it nearly impossible to form a government without him. The Netherlands, whose politicians were among the first to turn to anti-Muslim populism in the early 2000s, may now get its first populist prime minister.

The size of the PVV's victory came as a shock to everyone in Dutch politics, including Mr Wilders. In a cheering crowd of party members at a small bar in Scheveningen, a seaside neighbourhood of The Hague where his support is strong, he proclaimed that he intends to be part of the next government, whether as prime minister or otherwise. "The Dutch people sent a very clear signal," he said. "They can't go around us." He may well be correct. The second-biggest outfit, an alliance of the Labour and GreenLeft parties, got 25 seats. The Liberals (VVD) of the incumbent prime minister, Mark Rutte, took just 24, and New Social Contract (NSC), a brand new centre-right party, won 20. The three parties are not enthusiastic about co-operating with each other, and would need at least one smaller party to form a majority.

Mr Rutte has led the Netherlands for 13 years. When he announced his departure in July over environmental and immigration scandals, saying he would not run in the snap election he called, it left a vacuum. Initially the big winner seemed likely to be the Farmer Citizen Movement, or BBB, a four-year-old party that benefited from farmers' protests in recent years. But over the summer it lost many supporters to the NSC, founded in August by Pieter Omtzigt, a bureaucracy-fighting MP who had been a thorn in the side of the government.

By last week the contest seemed to have settled into a battle between four main players. The first was Mr Omtzigt, whose focus on responsive government appealed to voters exhausted by scandals. The second was Dilan Yesilgoz, the justice minister, who took over as leader of Mr Rutte's VVD. The third was Frans Timmermans, who left his job as the EU's climate commissioner to run at the head of the Labour-GreenLeft alliance. The fourth, unexpectedly, was Mr Wilders, whose PVV surged in the polls only in the campaign's final week.

Mr Wilders is hardly a newcomer. He rose to prominence in 2006 as one of Europe's first generation of anti-Muslim populists, quitting the VVD to found the PVV. In 2010, after winning 16% of the vote, he struck a confidence-and-supply deal to support Mr Rutte's first government, but withdrew less than two years later over proposed austerity measures. Since then every other party has shunned him, in part because of his unreliability but mostly over his radical anti-Muslim stance. In 2016 he was convicted of inciting hatred for a speech calling for "fewer Moroccans" in the Netherlands. His platform calls for banning mosques and the Koran.

During Mr Rutte's long tenure in power, Mr Wilders came to be seen as a somewhat marginal figure, unable to exercise much influence. That changed with Mr Rutte's departure: voters were uncertain whether Mr Omtzigt or Ms Yesilgoz might abandon the cordon sanitaire. Mr Omtzigt insisted he would not. Ms Yesilgoz was more equivocal. Her refusal to condemn the PVV outright may have sent a signal that a vote for it might not be wasted.

Mr Wilders moderated his tone during the campaign, saying he would put his anti-Muslim policies "in the refrigerator" in order to join government. In the final campaign debate on November 21st Mr Wilders vowed to become a prime minister "for all [citizens of the Netherlands], without classes, regardless of what you believe or what your background is".

Polling during the campaign showed that Dutch voters were most concerned with health care, integrity in government and economic security. But antipathy towards immigrants was also high on the list. Many Dutch blame immigrants for exacerbating a housing shortage. Almost no parties challenged the consensus. Few seem to have reflected that immigration is an issue which the PVV owns, and that persuading voters that it was a crisis might drive them towards Mr Wilders.

A Dutch government with the PVV as its leading member would be a blow to Europe. Mr Wilders wants the Netherlands to exit the EU and grumbles about aid to Ukraine. He is closer to hard-right Europhobes such as Hungary's Viktor Orban than to hard-right Europhiles such as Italy's Giorgia Meloni. The country would again become a foot-dragger, as it was during the euro crisis, rather than playing its more constructive recent role.

On election night, Mr Omtzigt declined to rule out a coalition with the PVV, despite having done so during the campaign. Ms Yesilgoz said the question was unlikely to come up since Mr Wilders could not get enough other partners for a coalition. Fleur Agema, a PVV MP, made the opposite argument: no one else can realistically form a coalition without them. “They’d have to have ten parties,” Ms Agema said.

In fact a coalition of Labour-GreenLeft, VVD, NSC and one or two other parties is mathematically possible, though politically improbable. Continuing to reject his party would be undemocratic, Mr Wilders said. “The voter has spoken. The voter has said: we’ve had enough. We’re going to make sure Dutch people come first again.” But many of the country’s citizens feel that when Mr Wilders talks about Dutch people, he is not referring to them. ■

Cross-Rhine rivals

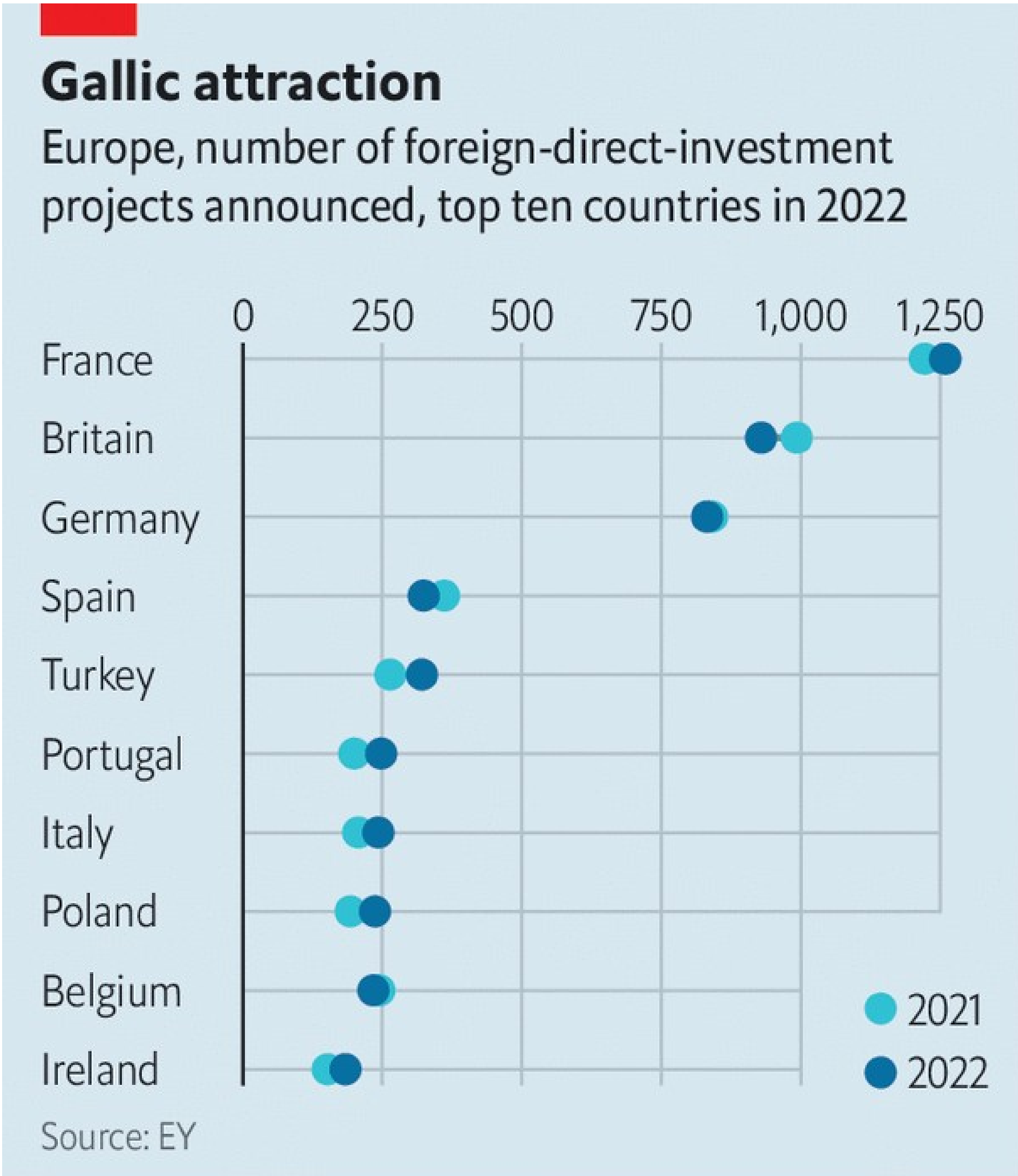
Why German bosses are heaping unexpected praise on France

It is not how things used to be

Nov 21st 2023 | BERLIN AND PARIS

A DECADE AGO French business leaders tended to gaze across the Rhine with envious eyes. The German economic model, with its strong exports, conciliatory workforce, low unemployment and productive industry, was a source of widespread admiration. French publishers put out books with such titles as “Should we follow the German model?” Newspaper headlines asked

“But how do the Germans do it?” French business chiefs and policymakers alike lamented their country’s inability to emulate their bigger European neighbour.



The Economist

Today the talk among business leaders in Berlin would make French ministers blush. German bosses, frustrated by the country's dysfunctional three-party ruling coalition, glance admiringly at the French government, which prioritises business, courts corporate leaders and aggressively promotes France as a place for investment and innovation. Many business types support Christian Lindner, the finance minister and boss of the free-market FDP, who wants corporate tax cuts and less red tape, but the FDP is by far the weakest of the three parties in the government coalition. Meanwhile France is harvesting the fruits of President Emmanuel Macron's pro-business reforms. In 2022, for the fourth consecutive year, France attracted more foreign direct investment projects than any other European country, according to EY, a consultancy. Paris is also winning the EU race to lure financial services from post-Brexit Britain. "France—the better Germany," ran a recent headline in *Der Spiegel*, a German weekly. "The roles have been reversed," says Klaus Schweinsberg, a German who teaches at ESCP, a leading French business school.

The reason German business leaders are heaping praise on France just now goes well beyond their difficulties at home dealing with the transition from dependence on Russian gas and Chinese exports, which has battered the German economy but left less-reliant France relatively unscathed. It comes down to a sense in Germany that the French have transformed the way they deal with investors and entrepreneurs. A country often criticised for its *dirigisme* seems to have found a way to use its centralised institutional structures not to control things but to support private-sector firms, lure investors and nurture entrepreneurs.

Take Pfeiffer Vacuum, a German maker of vacuum pumps, which announced in May that it would invest €75m ($82m) in its factory in Annecy, in south-eastern France. Britta Giesen, the company's chief executive, says she was personally wooed by the team around Mr Macron, promised a subsidy of around €20m, and given help with paperwork. To top it off, she was invited to make the announcement at "Choose France", an annual pow-wow of top politicians and foreign investors which has no German equivalent, hosted this year by Mr Macron at the Château de Versailles. As the boss of a midsize *Mittelstand* firm, Ms Giesen was tickled to be seated next to Elon Musk, the boss of Tesla, and Lakshmi Mittal, a steel tycoon.

One difference, notes Ms Giesen, is that Mr Macron, a former investment banker, puts people with a business background in government. Roland Lescure, the industry minister, for example, is a former investor. Indeed the president is regularly lambasted by his political opponents, on the hard left and hard right, for being too pro-business. But such types know what firms need, and the investments they help attract can be politically useful when new factories hire staff in the French rust belt and other regions that tend to vote for the extremes. In Germany virtually no member of parliament or top civil servant has such experience, with the exception of Jörg Kukies, a former boss of Goldman Sachs in Germany, one of the German chancellor's closest advisors.

More broadly, France is quietly reinventing the nature of *dirigiste* industrial planning. Under Georges Pompidou in the 1970s the state drew up the plan (fast trains, nuclear energy) and its civil servants put it into place. Today, there is still a plan, called France 2030, which involves investing €54bn in future and green technologies, including green-hydrogen production, new modular nuclear reactors, battery and semiconductor production and low-carbon aircraft. But, says Mr Lescure, "It's in no way a return to the *dirigisme* of the past. It's not about doing it all ourselves in the ministry, but facilitating the job for private investors and entrepreneurs." Verkor, the firm currently building a €2bn battery plant in Dunkirk, for example, as part of France's planned "Battery Valley", is a startup. Rather, the state builds infrastructure and pays to tackle externalities. On November 22nd the government signed agreements to subsidise emission reductions with the 50 factories that between them account for a tenth of all France's carbon emissions. It also speeds up the paperwork. A new "green industry" law aims to reduce the average time to acquire all building and official permits for a new factory from 17 months to nine.

France is now better than Germany at using state policies to support the market economy, says Sven Janssen, a German venture capitalist. "Mr Macron understands in particular the promotion of innovation and startups," he notes. La French Tech is a cleverly branded networking platform that France's economy ministry uses to market tech firms abroad; Germany has no real counterpart. French startups, such as Doctolib, an online booking service for medical appointments, or PayFit, a maker of payroll software, are now household names in Germany. The French public investment bank, Bpifrance, has also turned out to be a linchpin for France's entrepreneurs. When it was set up in 2013, sceptics feared it would grow into an unwieldy bureaucracy, under political orders to prop up ailing firms. Today it manages assets worth €50bn, and in 2022 made net profits of €1.5bn.

The philosophy, says Nicolas Dufourcq, Bpifrance's head, is "to invest as much money as possible into the reinvention of the French economy by entrepreneurs." This means fostering a culture of risk-taking and crushing bureaucracy. The bank, among other things, has invested heavily in the development of a generation of French venture-capital funds; it also takes direct stakes and helps its clients negotiate red tape. None of the bank's staff of 3,500 are civil servants; Mr Dufourcq himself is a former technology consultant. Bpifrance's German counterpart, the KfW, by contrast, finances entrepreneurs indirectly via their banks.

Germany remains Europe's industrial powerhouse, of course. It is also still home to more of the continent's biggest 20 startups than is France. France got serious about a new industrial policy after being spooked by Germany's decision in 2022 to splurge on its own industrial transition. Nor have the French given up on the old-style subsidy race. When Tesla recently chose Germany over France (and other places) for a huge expansion, it was only after heavy lobbying and the dangling of state subsidies by the French. In any case the draw of France is underpinned by a broader record of getting the big things right, from nuclear-energy and top-class infrastructure to state-provided child care and *la gastronomie*.

Ultimately, France's dream of greater industrial and economic autonomy for Europe depends on Germany's ability to get it right too. But as German bosses voice an unexpected admiration for their French neighbour, the country has learned a lesson in humility too. In the German press at least, there is no more talk about *Krankreich* (sick France). ■

Hidden battle

Russia is starting to make its superiority in electronic warfare count

There may not be much the West either can or will do to help Ukraine

Nov 23rd 2023


mil.ru

MOST OF THE attention to what Ukraine needs in its protracted struggle to free its territory from the invading Russian forces has focused on hardware: tanks, fighter jets, missiles, air-defence batteries, artillery and vast quantities of munitions. But a less discussed weakness lies in electronic warfare (EW); something that Ukraine's Western supporters have so far shown little interest in tackling.

Russia, says Seth Jones of the Centre for Strategic and International Studies, a think-tank in Washington, has for many years placed a "huge focus" on using its military-industrial complex to produce and develop an impressive range of EW capabilities to counter NATO's highly networked systems. But Ukraine, according to its commander-in-chief, General Valery Zaluzhny, found itself at the beginning of the war with mainly Soviet-era EW systems. Initially the discrepancy had only limited impact, but as relatively static lines of contact have emerged Russia has been able to position its formidable EW assets where they can have the greatest effect.

Ukraine discovered in March that its Excalibur GPS-guided shells suddenly started going off-target, thanks to Russian jamming. Something similar started happening to the JDAM-ER guided bombs that America had supplied to the Ukrainian air force, while Ukraine's HIMARS-launched GMLRS long-range rockets also started missing their targets. In some areas, a majority of GMLRS rounds now go astray.

Even more worrying has been the increasing ability of Russian EW to counter the multitudes of cheap unmanned aerial vehicles (UAVs) that Ukraine has been using for everything from battlefield reconnaissance and communications to exploding on impact against targets such as tanks or command nodes.

Ukraine has trained an army of some 10,000 drone pilots who are now constantly engaged in a cat-and-mouse game with increasingly adept Russian EW operators. The favoured drones are cheap, costing not much more than $1,000 each, and Ukraine is building enormous quantities of them. But losses to Russian EW, which either scrambles their guidance systems or jams their radio-control links with their operators, have at times been running at over 2,000 a week. The smitten drones hover aimlessly until their batteries run out and they fall to the ground.

Neither hardening them against jamming nor investing them with artificial intelligence to fly without a live link to a human operator are feasible options yet, at least for mini-drones. Quantity still wins out over quality, but Russia may have an advantage there too. The skies over the battlefield are now thick with Russian drones. Around Bakhmut, Ukrainian soldiers estimate that Russia is deploying twice the number of assault drones they are able to.

Growing Russian success in the drone war is partly explained by the density of EW systems it is able to field, thanks to those years of investment. A report published in May by Jack Watling and Nick Reynolds of RUSI, a think-tank in London, reckoned the Russians are fielding one major EW system every 10km along the frontline. They think that among many Russian EW systems the truck-mounted Shipovnic-Aero (pictured) is proving especially deadly to Ukrainian drones. The system has a 10km range and can take over control of the drone, while acquiring the co-ordinates of the place from where it is being piloted, with an accuracy of one metre, for transmission to an artillery battery.

Starting from a much lower level of technical and operational skill, Ukraine is struggling to develop home-grown EW capabilities to match those of the Russians. Some progress is being made. The nationwide Pokrova system is being deployed. It can both suppress satellite-based navigation systems, such as Russia's GLONASS, and spoof them by replacing genuine signals with false ones, making the missile think it is somewhere it is not.

Pokrova should be highly effective against the Iranian-designed Shahed-136 loitering munition, but less so against cruise missiles that rely more on terrain-matching systems, which compare the ground below to a library of stored images rather than being guided all the way in. As well as Pokrova, so-called "Frankenstein" systems, cobbled together with typically Ukrainian ingenuity by combining Soviet systems with more modern technology, are also making an appearance.

But what is missing is much in the way of help from Ukraine's Western allies when it comes to the EW contest with Russia. Mr Jones says that, as far as America is concerned, that is not likely to change. EW falls into a category of technology transfer restricted by an export-control regime that is rigidly policed by the State Department.

Nico Lange, an expert on Ukraine with the Munich Security Conference, is similarly pessimistic. For one thing, he suspects that NATO's capabilities may not be as good as Russia's. Worse, when it comes to the latest systems, he thinks that there is also some reluctance, especially on the part of the Americans, to show Russia its hand because actionable information, for instance on the frequencies and the channel-hopping techniques employed, is likely to be passed on to the Chinese.

Where the West could help directly, says Mr Lange, is to use its long-range surveillance drones for more systematic collection of data on Russian jamming and spoofing techniques and to work with the Ukrainians on developing counters to them. Otherwise, it looks as though Ukraine is fated to have to meet its urgent EW challenge largely on its own. ■

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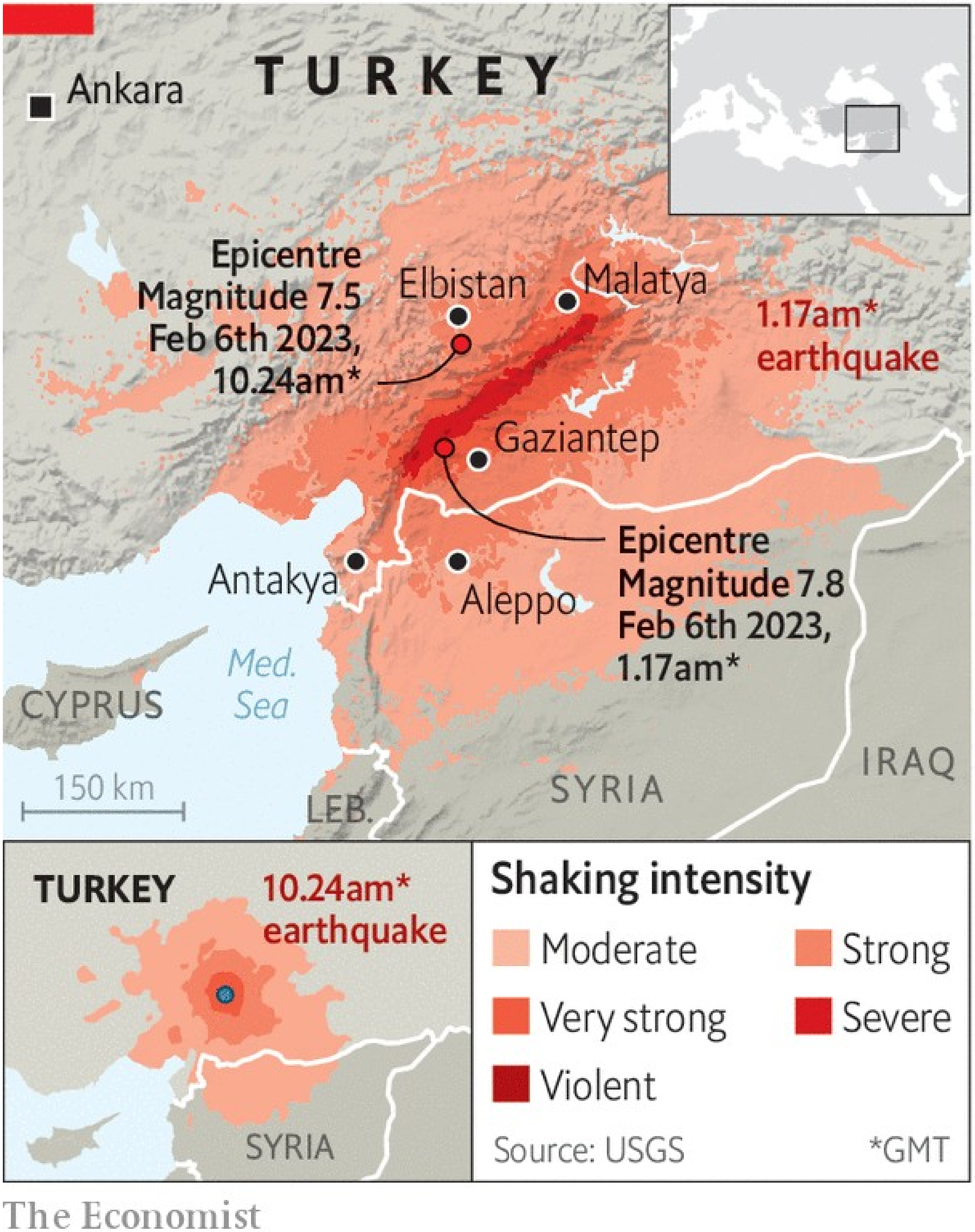
Life in containers

Turkey’s sluggish post-earthquake reconstruction

Before elections in the summer, rebuilding was speedy. But it has slowed since then

Nov 23rd 2023 | ELBISTAN

FOR TEN months Esra Yildirim and her husband Mehmet have been living with their six children in a temporary container home in the town of Elbistan, three hours north of Gaziantep (see map). They share communal bathrooms with dozens of other families and are surviving on money that Mehmet, who is unemployed, borrowed from a bank. They have no idea when they will be able to return to their real home, which was damaged in the huge earthquakes on February 6th that struck southern Turkey and Syria.



The Yildirims are among 3.3m people in Turkey displaced by the disaster, in which more than 50,000 people died. Many of them have yet to return home. Around 400,000 are still living in container camps organised by the Turkish government and charitable foundations, with around the same number in informal camps and tents, say aid organisations. Tens of thousands more are living in rented accommodation or staying with friends and relatives.

The task of rebuilding is huge. Nearly 300,000 buildings collapsed or were assessed as damaged beyond repair. In the immediate aftermath President Recep Tayyip Erdogan pledged to rebuild 319,000 homes within a year. Until elections in May, which he and his party won, reconstruction seemed to be moving speedily ahead. New homes in three villages were even completed in time for Mr Erdogan to include them on his campaign trail. But since then reconstruction has slowed, and only 40,000 homes are expected to have been finished by the end of this month. Work on another 200,000 has begun, according to the urbanisation minister.

Part of the problem is that the sums no longer add up. In March the government calculated that rebuilding costs would run to $56.9bn. But since then costs have soared, with the price index of Turkey's building materials showing a rise of 18% between March and July. The cost of imported materials has been pushed up by the Turkish lira's fall of 32% against the dollar since March. Other expenses are rising, too. In September, the government put up industrial electricity prices by 20%, hitting steel producers.

Last month a government official told Reuters that there was insufficient funding in the budget to open new tenders. Turkey's economy, already weakened by years of Mr Erdogan's unorthodox economics, simply "does not have the financial means to withstand the devastation caused by the earthquake", said Veysel Ulusoy, director of ENAG, an independent Turkish research group that monitors inflation.

In Elbistan, close to the epicentre of one of the earthquakes, the impasse is clear. Gaps still yawn where buildings fell or have been pulled down, but rebuilding is yet to start. Other blocks have been stripped of their fittings but are still standing as the courts are still hearing appeals; some initial damage assessments are being challenged by the owners. Other obstacles to rebuilding are even more complicated. The city of Antakya, which suffered huge damage, is an open museum of valuable historic sites that belong to a patchwork of religious foundations. Last month a consortium of 13 international architecture firms led by Foster + Partners was appointed to design a new Antakya, including the restoration of damaged historic sites. The plan will be unveiled in 2024.

The effects are trickling down. Rental prices are soaring everywhere in Turkey, but areas affected by the quake saw sudden sharp increases between January and March, just as the number of available units dropped. Malatya, one of the worst-hit cities, saw such steep rises that in March it topped the annual table, with year-on-year rental prices jumping more than three-fold. The continuing displacement has reduced the region's vital farming output, pushing the price of food up even higher.

The humanitarian crisis will increase as the region's bitter winter draws in. Container roofs are being reinforced but some units have already flooded. Heating units have not yet been distributed. "In the first six months, tents were on the field as a temporary shelter solution," says Rukiye Daghan Cetin, field co-ordinator for Support to Life, a Turkish organisation. Aid workers now predict that some people may be living in them for years to come. ■

Charlemagne

Tyrant, liberator, warmonger, bureaucrat: the meaning of Napoleon

It's his continent, and Europeans are just living in it

Nov 22nd 2023

EVER WATCHED a film about how important bureaucratic reforms are devised? Ever wanted to? Hopes were high among a certain type of nerd that a Hollywood blockbuster out this week would provide just those thrills. Alas, “Napoleon”, a big-budget biopic, serves up rather more predictable fare: the manner in which a Corsican upstart seized absolute power as

French emperor, fought endless battles and bonked a slew of mistresses. Thrilling as blood, sweat and courtship can be, it misses the point of Napoleon. For whereas many tyrants over the course of European history have fought wars and ruled impetuously, not to mention imperiously, few have marked modern Europe—and the world beyond—so enduringly. Forget Bonaparte the general, the Napoleon that really matters was the fellow who held dozens of administrative gatherings from which emanated the laws and institutions that hundreds of millions of people still live by today.

Europeans are unsure about where to place Napoleon, who ruled France from 1799 to 1814 (a bit less long than Angela Merkel ran Germany two centuries later) before a brief return in 1815. To many he is one of those figures from distant history, a latter-day Julius Caesar or Charlemagne, who came to rule vast swathes of the continent. Detractors paint him as a tyrant whose personal ambition led to ruin and death, a prelude to the madmen who came to wield totalitarian power in the 20th century. Indeed, Napoleon and his *Grande Armée* killed millions. Adjusted for population, that is perhaps no less murderous than an Adolf Hitler or Joseph Stalin. But, unlike them, his reign also bequeathed institutions, laws and reforms that left Europe more free and better run.

The continued import of Napoleon to France is visible across daily life there: teenagers study for the *baccalauréat* he devised in *lycées* he introduced, tourists stream to his imposing mausoleum, lawyers study the thick *Code Civil* of rules he brought in. Unsurprisingly, Napoleon is less often feted in the places he came to control by dint of his cavalry and artillery. And yet it is those areas, stretching from Amsterdam to Naples, Warsaw and Madrid, where he perhaps counts most of all. For by the time Napoleon rose to power, France had already had its revolution, in 1789: the *ancien régime*, the political order controlled by nobility, guilds and the clergy, had been overthrown. The importance of Napoleon is as an export agent for this enlightened approach. The French revolutionary model—blended with others, and infused with democracy among other changes—is arguably the dominant political system of the day in Europe, even in the bits he did not conquer.

Napoleon fell far short of being qualified to be a liberal hero. Critics note that he diluted the rights that the revolution had granted women, and reimposed slavery in the West Indies. What "plebiscites" were held were rigged in a manner that would make today's North Koreans blush. There was at least one political assassination, and men were sacrificed on the battlefield willy-nilly. But the introduction of the civil code that Bonaparte championed—he chaired many drafting sessions personally, and in time called it the *Code Napoléon*—was a turning point for Europe. Opaque customary laws that were imposed by local grandees on some citizens but not others were replaced by transparent statutes written so as to be understood by the (educated) public. Superstition and tradition were replaced by "sublimated common sense", perhaps the most French thing ever. Forget the privileges accorded to nobility or the church: the only source of authority was to be the state. The landed gentry lost their privileges (plenty had already lost their heads), as did the clergy and the urban oligarchy of guildmasters who throttled innovation and kept the little people in their place. In the administration meritocracy flourished.

Napoleon did not invent the European state, but he showed how it could be cast forward to the modern era. Even a brief invasion by France often resulted in rapid reforms that were never entirely undone after its troops were booted out. In many bits of Germany controlled by France, the old elites only partly regained their grip. Clearing the cobwebs of feudalism and imposing predictable laws allowed those places that had been visited by French troops to grow faster, economists have found: the parts of Europe that fell under Napoleon's spell went on to industrialise more rapidly, come 1850. And Napoleonism's reach extends beyond his home continent: the legal systems in much of Latin America and the Middle East are variations of the code he created.

Just don't mention Russia

Can Napoleon be termed one of Europe's founding fathers, a stepping stone between Charlemagne and Jean Monnet? History buffs remember him as the destroyer of the Holy Roman Empire, that 1,000-year-old continental endeavour. But what replaced it was one step closer to today's quasi-federalism. The pan-European military coalitions devised to counter Napoleon later morphed into recurring diplomatic gatherings, held to maintain a balance of power in Europe. In a precursor to today's EU summits, national leaders and their emissaries started meeting regularly from

1814 to 1825 (with varying degrees of British interest, another constant). The end result, after a few more wars, was a variant of the United States of Europe that Napoleon himself had in mind, with its unified laws and currency. (Detractors will instead point to the way nationalism in Germany and Italy emerged, the cause of quite a few nasty problems down the line.)

Hollywood producers are not the only ones to remember Napoleon as a warmonger rather than a reformist. Paris is full of streets named for his generals, while the authors of his civil reforms are all but forgotten. The man himself said: “My true glory is not the 40 battles I won…what will live for ever is my civil code.” People turn out to have remembered the wrong lessons from the Napoleonic era. An enlightened film mogul might try to fix that with a sequel, “Napoleon 2: Bureaucrat extraordinaire”. ■

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Fentanyl kills thousands every year in America. Will Europe be next? (Nov 16th)
The outsize influence of small states is fading in the EU (Nov 9th)
What markets are trying to tell Europe—and why it should listen (Oct 26th)

Also: How the Charlemagne column got its name

Britain

Mixed picture

Britain’s chancellor offers tax cuts and fiscal trickery

A pre-election giveaway from Jeremy Hunt

Nov 22nd 2023

DELIVERING HIS autumn statement on November 22nd, Jeremy Hunt, the chancellor of the exchequer (pictured), argued that Britain's economy has turned a corner. Declaring victory in the battle against inflation, he unveiled a fiscal loosening worth £18bn ($22.5bn), or 0.7% of GDP, mostly comprising cuts to business and personal taxation. According to Mr Hunt lower inflation has given him the space to cut taxes. In reality that space has come from higher, not lower, inflation and from some questionable accounting.

The Economist

The most material change in the new forecasts from the Office for Budget Responsibility (OBR), the government's fiscal watchdog, was a large upward revision to expected inflation over the coming years (see chart). At the budget in March the OBR expected inflation to be just 0.5% by the end of 2024. They have now pencilled in a rate of 2.8%. Like the Bank of England, then, although the OBR does believe that British inflation has peaked, it expects it to remain higher for longer.

Faster price and wage growth feed through into higher-than-expected tax receipts for the government, but they represent an actual improvement in the government's budgetary position only if you assume that higher inflation will have few consequences when it comes to government spending. That is the assumption the chancellor has made. Departmental spending totals have been left unchanged, implying deep real-terms cuts in public spending in the coming five years to fund a tax giveaway now.

The centrepiece of that giveaway, with a price tag around half that of the total package, was a tax cut on corporate investment. Full expensing, which allows firms immediately to deduct all of their spending on machinery, plant and computer equipment from their taxable profits, was introduced by Mr Hunt at the budget in March but had been due to expire in 2026. It will now become permanent.

The single largest business tax cut in modern British history represents a sensible, pro-growth step towards increasing private capital spending. In the short run the measure is actually likely to lower business investment as firms feel less need to bring planned spending forward to benefit from a temporary tax break. But over the longer term it should reduce the cost of capital for British firms and raise investment. The OBR reckons it will raise the capital stock by 0.2% by 2028-29.

This measure was part of a larger package of supply-side reforms that varied from the trivial to the substantial. Perhaps the most meaningful, beyond the change to expensing, was a new effort to tackle Britain's particular problem of rising economic inactivity. The work-capability assessment test, which governs Britons' access to incapacity benefits, will be tweaked and new conditionality imposed on some benefit recipients. This should raise employment levels over the medium term.

Reforms to the planning system for infrastructure developments are another step in the right direction. Business groups praised a freeze on business rates, a type of property tax, for small firms and simplification of the method for claiming R&D tax relief. In total the OBR reckons that the chancellor's battery of 110 pro-growth measures could increase the level of GDP by 0.3% by 2028. As important, a bipartisan consensus has now developed between the Conservative government and the opposition Labour Party on the importance of growth. This is political competition of the healthy kind.

Other bits of the autumn statement are less healthy. Mr Hunt's second eye-catching move was a two-percentage-point cut in employee national-insurance contributions (NICS), a payroll tax. For median earners that will amount to a tax cut of around £450 a year. With an eye on a possible general election in May, it will take effect in January 2024 rather than at the start of the next financial year in April.

It is hard to regard this as anything other than a pre-election giveaway, and an especially strange one given that Rishi Sunak, when he was chancellor two years ago, wanted a rise in NICS. The savings from lower NICS are anyway dwarfed by the impact on taxpayers of a freeze on income-tax thresholds put in place in 2021. Even after Mr Hunt's tax cuts, the overall tax burden is set to rise as a share of GDP each year over the five-year forecast period to levels not seen since the 1940s.

The fiscal space for these giveaways comes principally from deep implied cuts to public services. The OBR calculates that the numbers underpinning the autumn statement entail a £19.1bn real-terms cut in public spending. Outside the protected departments of health, education and defence that would mean the kind of spending cuts last seen in the early 2010s, but with far less fat to cut than there was back then. The public-sector capital budget will also fall in real terms in the years ahead, offsetting some of the hoped-for rise in private investment.

Even after plugging these implausible spending cuts into the forecasts, the chancellor's room for fiscal manoeuvre is small—just £13bn to meet his fiscal target of getting the debt-to-GDP ratio to fall by the end of the five-year forecast period. That number is premised, among other things, on the assumption that fuel duty, which has been frozen since 2011, will rise by 5p plus inflation. Another freeze, which is what everyone expects, would take away 43% of Mr Hunt's wriggle-room.

As for the politics, not even a £450 tax cut for the median voter is likely to generate much of a feel-good factor. The OBR revised down its forecast for growth in 2024 from 1.8% in March to just 0.7%. Real disposable household income is expected to fall by 0.9% and house prices by 4.7%. Higher and more persistent inflation gave Mr Hunt the room to announce one useful tax cut and indulge in lots of fiscal trickery. It does not mean less pain for voters. ■

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Flat-lining

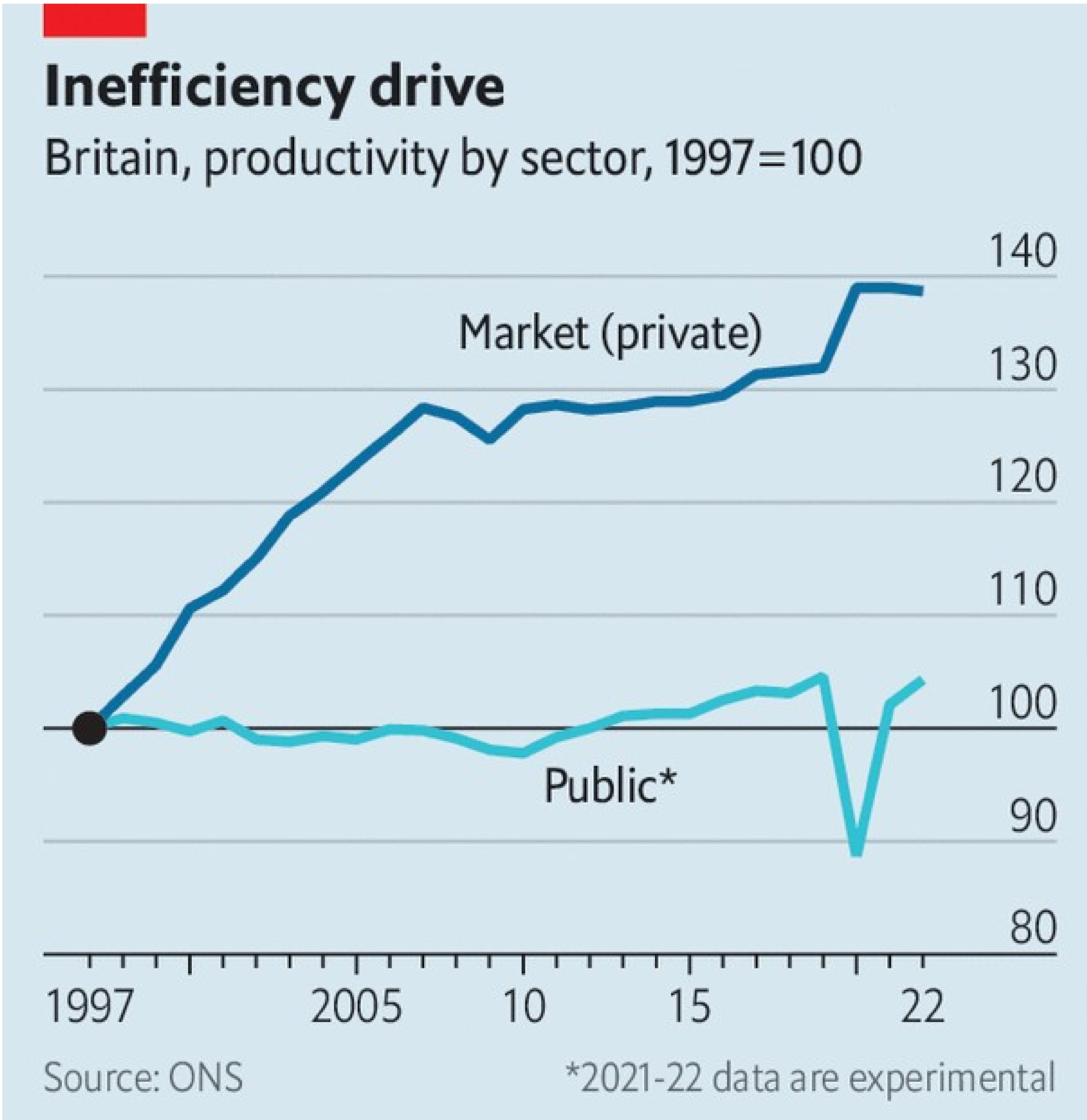
Jeremy Hunt wants to improve Britain's public-sector productivity

AI and hybrid working might help, but how quickly?

Nov 20th 2023

FOR MORE than a decade economists have been debating Britain's "productivity puzzle", an alliterative way of noting that British productivity growth has been peculiarly weak since 2008. The problem is especially chronic in public services (see chart), where productivity grew by just 0.2%

a year on average between 1997 and 2019, according to new data released by the Office for National Statistics (ONS).



The Economist

There are plenty of reasons to expect productivity growth to be weaker in the public sector than in what the ONS calls the “market” sector (broadly, the private sector). The activities that the state engages in are disproportionately labour-intensive. Private firms always have the option to quit low-productivity lines of business; the state cannot decide that it is getting out of, say, criminal justice. That leaves the public sector particularly exposed to "Baumol's cost disease", a phenomenon first identified by William Baumol, an American economist, in the 1960s. The need to recruit and retain staff who have the option to work in more productive, better-paid industries causes wages to rise by more than underlying productivity, pushing up costs.

Jeremy Hunt, the chancellor, has made it a priority to improve this grim record. A review of the problem was announced in June; it featured again in the autumn statement on November 22nd. For Mr Hunt, improving public-sector productivity is not only a worthwhile aim in itself but also offers a way to square the circle of weak public finances, Britons' dissatisfaction with public services and the desire for pre-election tax cuts. Improving productivity tends to be a slow process, however. The standard solutions focus on improving management quality or increasing the stock of capital available to each worker. That takes time, and money upfront.

One particular affliction of the public sector since 2010 has been a shortage of administrators. With budgets squeezed by a decade of tight spending, the onus has been on cutting back-office staff and protecting services. This has in turn led to supposedly front-line staff spending ever more time on form-filling. A government report found that some public servants are spending up to one day a week on admin.

The government is hoping that better technology can fill the gap left by fewer support staff. A review of police productivity, released on November 20th, claimed that a combination of new technology and reduced bureaucracy could free up over 38m policing hours per year. The government reckons that it can cut the admin burden on teachers by five hours a week over the next three years. But excited talk about artificial intelligence jostles with the reality of glitching government IT systems; many public-sector workers are sceptical that better tech can substitute for people.

There is one area where changes can be made quickly. Home-working has taken a firmer hold in the civil service, where over a third of staff have a hybrid workweek, than in private-sector firms, where the proportion is more like a quarter. Treasury officials reckon that these public servants typically spend more days at home each week than hybrid workers in the private sector. Although research suggests that hybrid work does not generally dent productivity, it may hurt performance in jobs with lots of face-to-face work or with high turnover. The government may push civil servants to be in the office more often.

Even so, don't expect surging efficiency. Improving the productivity of the public services is a vital task. Like most such tasks it is not conducive to easy fixes.■

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Old people and young firms

The government tries to unlock growth capital for British firms

A welcome push to get pension funds to invest in British startups

Nov 23rd 2023

IF TAX CUTS are manna to many Tories, pension reforms are duller fare. No surprise then that Jeremy Hunt's announcement of a "comprehensive package" on pensions, which aims to boost growth capital for British firms and returns for savers, got fewer cheers from MPs than some other measures he announced in his autumn statement on November 22nd. Yet problems with pension investment in Britain have been allowed to fester too long. The chancellor's interest in them is welcome.

One issue preoccupying Mr Hunt is that startups in Britain struggle to access domestic growth capital. Retirement savings make up just 10% of Britain's venture-capital pool, compared with 72% in America, according to Onward, a think-tank. British pension funds invest 15 times less in startups than their equivalents in Canada. Risk aversion among British fund managers stems partly from regulations dating back decades. Some eschew equities altogether.

The Economist

The second, related problem is that British savers get a bad deal compared with their counterparts in other countries (see chart). Many British pension funds are tiny; more than 25,000 defined-contribution schemes have fewer than 12 members. Schemes in America, Australia and Canada tend to be much bigger. This cottage industry persists partly thanks to weak regulations. A "large and highly interested ecosystem" of advisers and trustees also creates a bias against changing things, says William Wright of New Financial, a think-tank. As Mr Hunt notes, scale makes it easier to drive down costs for savers and diversify into growth equity, an asset class which charges higher fees but can lead to higher returns.

The chancellor set out some initial pension-reform proposals in a speech in July. Nine large funds signed up to the "Mansion House compact", voluntarily committing to allocate 5% of their assets to unlisted equities. He has now fleshed out a plan. To accelerate consolidation, small funds will be forced to compare themselves with larger schemes and demonstrate whether they provide value for money. The Treasury will also consult on introducing a "lifetime pot", meaning people will be able to move their pension between employers rather than building up multiple "small pots" as they switch jobs.

Mr Hunt also wants to cajole funds into financing promising businesses. Several more large schemes have joined his compact. Local-government pension funds will be asked to allocate 10% of their assets to private equity. That alone could unlock around £30bn ($37bn) in new capital. The establishment of a "growth fund" within the British Business Bank, a development bank, will give pension funds another way to invest in young firms.

How much of a difference will all this make? Nudging funds to invest a bit more in unlisted equities will not transform the investment environment in Britain overnight. Nor is it likely to turn around the country's ailing stockmarket. But these various changes do point in the right direction. Rachel Reeves, the shadow chancellor, promises a similar package of reforms. Pensions may not bring MPs to their feet, but the fact they have snagged both main parties' attention is a good thing. ■

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Personal therapy

The world's first pathway for individually designed drugs

Britain commits to finding a regulatory route for customised genetic medicines

Nov 22nd 2023

THE HEADLINES about the autumn statement from Jeremy Hunt, the chancellor, this week focused on tax and spending. But tucked away in the written documents was news that could hone the cutting-edge of medicine. The Medicines and Health-care products Regulatory Agency (MHRA) is working with Genomics England, Oxford University and Mila's Miracle

Foundation, a charity, to develop a regulatory pathway to allow one-off drugs to be designed and approved for use in individual patients in less than a year.

Medicines currently travel a well-worn route to market comprising two or three phases of trials in large groups of patients. But this approach is impossible for the vast majority of genetic disorders, which are often vanishingly rare or even unique. The technology to customise medicines for people with such conditions exists but the regulatory route they must take is rocky.

In America this pathway is known as "compassionate use". In 2018 Mila, a girl with Batten's disease, a condition affecting the nervous system, became the first person to receive a personalised medicine known as *milasen*. But the process took a year; although the treatment helped Mila, it arguably came too late to save her life. Only a few patients have followed suit. Campaigners, including Mila's mother, Julia Vitarello, have been pushing regulators to go faster. The MHRA and its partners will be the first to try.

The goal of the Rare Therapies Launch Pad is to generate evidence for a new regulatory pathway. In doing so it will also offer customised drugs to between ten and 15 children with fatal genetic brain diseases. The technology that will be used involves "anti-sense oligonucleotides"; these molecules can be customised to block the production of a faulty protein. The project consortium will find specific patients, figure out the steps involved in treating them and then identify which ones the MHRA would need to focus on in a standardised approval process. If successful, the pilot would create a pathway that gives customised drugs a legal basis for sale and use.

Ms Vitarello, who had lobbied America's Food and Drug Administration to try something similar, says her country has been "too conservative" and that Britain is the "right place at the right time to do this". That is partly because the MHRA is keen to make use of its post-Brexit freedom. Earlier this year the government gave the MHRA £10m ($12.5m) to speed up approvals of cutting-edge medicines. On November 16th it was the first to approve a treatment based on CRISPR, a gene-editing technology.

Another problem lies in finding patients early enough in life to treat them, says Parker Moss of Genomics England. Here, too, Britain has an advantage. Genomics England already helps the National Health Service identify rare genetic diseases in children. Its ability to find such patients will only grow when, at the end of this year, it is due to launch its broader newborn-gene-sequencing programme.

Whether the pilot project will be able to work quickly enough to benefit the individual children it identifies is unclear. Matthew Wood, a professor of neuroscience at Oxford University, cautions it will still take at least a year to develop the customised drugs. But Dr Wood says that within a decade such customised drugs could be produced in less than a month. Newborn sequencing will also routinely identify patients at birth. First, though, the regulators have to find a way to move faster. ■

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The price is finally right

The National Health Service has a new drugs deal

Patients and pharma firms will be relieved. But it is not yet clear who benefits most

Nov 23rd 2023

TWO DAYS, TWO deals for the National Health Service (NHS). On November 21st the NHS announced that it had awarded a contract worth up to £330m ($414m) to Palantir, a controversial American firm, to help it join up patient data in England and thereby, it hopes, to improve care for millions. This followed the announcement a day earlier of a new drugs deal, after months of wrangling with the British government, which funds the service, and the Association of the British Pharmaceutical Industry (ABPI), representing drugmakers.

The deals show two different faces of the NHS. The Palantir agreement, a contract dogged by privacy concerns, is designed to alleviate some of the service's maddening IT inefficiencies. The new pharma deal, which continues to secure Britain some of the lowest drug prices in the rich world, is a reminder of the NHS's negotiating power.

Britain has two main ways of controlling its pharmaceutical spending. One is through a mechanism to evaluate the cost-effectiveness of new medicines, which incentivises firms to discount their products to be considered for approval. The other is through something called the voluntary scheme for branded medicines pricing and access, handily abbreviated to VPAS. More than 90% of eligible pharma firms belong to this scheme.

Under the existing VPAS, which expires at the end of this year, the total sales growth of branded medicines could not exceed more than 2% a year; any additional revenue above the cap was returned to the NHS. For a while, this rebate rate remained relatively stable, hovering around 7% of total sales revenue from branded medicines. Recently, however, things have started to get out of whack; in 2023, 26.5% of firms' total sales revenue, or £3.3bn, was clawed back. Some firms have threatened to withdraw medicines from the market.

The new deal, a five-year agreement, is an easier pill for many in the industry to swallow. The main change is that it doubles the allowed sales growth of branded drugs to 4% by 2027. Accordingly, VPAS has been rebranded as VPAG, with the "G" a nod to increased growth. Though falling far short of the ABPI's own proposals, the deal actually seems "quite generous", says Olivier Wouters, an assistant professor at the London School of Economics who studies pharmaceutical markets.

It also does more to encourage innovation. Drugs are already exempt from the clawback for the first three years after they are authorised. Under the new deal, more generous terms will be extended to medicines that have been available for more than three years but are still relative newcomers. A higher rebate rate will apply to older drugs; the precise amount will reflect how far their prices have fallen over time.

Pharma firms are still crunching the numbers on what it all means for them. Initial reactions have varied. “For us it’s a good thing,” says one pharma boss whose firm largely makes innovative therapies—the ABPI projects that the rebate rate for younger medicines will fall to around 7% by 2028. Eli Lilly, an American firm which left VPAS very publicly earlier this year, is now hinting that it might rejoin the scheme. Others whose portfolios skew towards older medicines are less happy. For them the ABPI reckons that rebate rates may end up between 10% and 35%.

The NHS cannot ignore rising prices. Despite the VPAS cap, exemptions mean that its spending on branded medicines has been growing by more than 5% per year since 2018, excluding money spent on covid-19 vaccines and treatments. Hospitals alone spent £9.1bn on prescribing medicines in 2022, 35% more than in 2018. Much of this rise stems from a few exorbitant treatments for cancer and respiratory diseases. As Britons age and therapies become more customised, striking the balance between cost control and providing the best treatment is only going to get harder. ■

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Asylum and the law

Is Britain’s plan to send asylum-seekers to Rwanda salvageable?

Spoiler alert: almost certainly not

Nov 23rd 2023

BRITAIN’S SUPREME COURT is sometimes criticised for being too deferential to the government. The government might well disagree. In 2017 the court ruled that fees for employment tribunals impeded access to justice. In 2019 it said Boris Johnson’s suspension of Parliament during the Brexit saga was unlawful. And earlier this month it delivered a sucker punch to

Rishi Sunak's ailing government when it ruled against the Conservatives' cherished policy of sending asylum-seekers to Rwanda.

The court's demolition of the plan, on the ground that Rwanda was unsafe, was so meticulous the policy was "probably dead", reckoned Jonathan Sumption, a former Supreme Court judge. Yet Mr Sunak has sworn he will revive it. How?

The Supreme Court ruled Rwanda was unsafe because of the risk of refoulement—the danger that asylum-seekers would be sent from there to unsafe countries. This is prohibited by several laws. The first part of the government's solution is to sign a new treaty with Rwanda. James Cleverly, the new home secretary, has said this would ensure that asylum-seekers sent to Rwanda "cannot be sent to another country than the UK". Since Rwanda has agreed to settle those who win their asylum claims, he presumably meant those whose claims fail.

This creates a couple of obvious problems. The first concerns the point of the scheme, which is to deter migrants from crossing the English Channel in small boats. There is no evidence it would have this effect, especially given that the government in Kigali has said it can take only a few hundred asylum-seekers a year (compared with the thousands who make the crossing). But if the scheme is to stand any chance of being a deterrent, a Rwandan promise to return people only to Britain would diminish it.

A bigger problem concerns the courts. The Supreme Court accepted that Rwanda had signed its original agreement with Britain, a memorandum of understanding (MoU), "in good faith". But that did not change its opinion that the country was unsafe. Although MOUs and treaties are different—the former are not legally binding and the latter are—this distinction does not change the grounds for the Supreme Court's judgment, and therefore seems unlikely to make any future court look more favourably on the scheme.

The court said that, although Rwanda had made "great progress" since 1994, when over 500,000 Tutsi were slaughtered by Hutu, it had a "poor human-rights record". In 2021, the court said, the British government had itself criticised Rwanda for "extrajudicial killings, deaths in custody, enforced disappearances and torture".

The court's description of the problems with Rwanda's asylum system ought to shame the scheme's champions. The UN had documented numerous cases of refoulement, it said, and at least one had occurred after Britain and Rwanda signed their MoU. Rwanda's legal system has some big holes, too. This matters, the court said, because the right to appeal is crucial in an asylum process and Rwanda's courts had never heard a single such appeal.

Given all this, the second part of the government's plan, to pass legislation that would declare Rwanda safe, makes little sense. The House of Lords seems unlikely to pass a law that breaches numerous others. The government no longer has time to use the Parliament Acts, which limit the role of the Lords in passing laws, because these acts also allow the Lords to delay such bills for a year. The legislation has not yet been introduced and Britain must hold its next general election (and the campaigning that precedes it) by January 2025.

Even if this law somehow made it through Parliament, it would still violate international conventions. That has prompted some Tories to argue that Britain should just ditch them. The Supreme Court explained that refoulement is prohibited by several UN conventions as well as the European Convention on Human Rights (ECHR). Withdrawing from them all would be a tortuous process that would threaten the Good Friday agreement on Northern Ireland, which refers to the ECHR repeatedly, and damage Britain's global standing.

Short of that, the only way the scheme seems likely to get the go-ahead is if Rwanda provably cleans up its asylum system. That would take time. And Britain may not be up to the task of making it happen. "The British government needs to fix its own asylum system," says Adam Wagner, a human-rights barrister, pointing to its huge case backlog. "The idea that we can also fix a much worse asylum system, halfway across the world, in a country which only 30 years ago suffered the worst genocide in modern history, is for the birds." ■

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Saving your bacon

Britain’s native farm animals can be rarer than giant pandas

To survive, some must be eaten

Nov 21st 2023

BRITAIN'S ONE-PIG policy was a success. In 1955 the government endorsed an "improved bacon pig" to help revive the ailing pork industry. A few breeds competed for the role but the portly Large White, which piles on weight quickly and does well indoors, prevailed. Today, an even-plumper descendant of the Large White feeds industrial pig farms up and down the land.

The dominance of the Large White spelled disaster for other swine. Dorset Gold Tips and Lincolnshire Curly Coats went extinct. Others are clinging on by their trotters. The Middle White, a smaller sibling of the Large White, is five times rarer than the giant panda. Only 56 sows had litters of registered piglets in 2022.

Such rarity is not unusual among Britain's native farm animals. The logic of industrialisation and efficiency means that a few breeds thrive and others suffer. Around 80% of Britain's native livestock are at risk of being lost for ever. Populations of breeding females are often tiny: 63 Hampshire sows; 22 Vaynol cows; 13 Old English nanny-goats. The survivors live on a handful of farms.

But their fortunes may be looking up, as a result of diet, day-trippers and demands for diversity. For rare-breed numbers to rise, they need to be eaten again. Chefs seem excited: they rave over the "nutty, grassy, blue-cheese notes" of Longhorn beef and "fat dripping off everything" as they cook Middle White pork. Heston Blumenthal, a restaurateur, declared Longhorn steak the best in Britain in 2006; his fans feasted so merrily that numbers almost doubled by 2012.

Other bits of rare breeds can also have monetary value. James Rebanks, a Lake District shepherd, weaves tweed from the wool of Herdwick sheep. Their magnificent horns are made into walking sticks and buttons. Smart farmers are turning native breeds into brands, notes Christopher Price, head of the Rare Breeds Survival Trust (RBST), a charity.

That attracts day-trippers. The Chillingham Wild Cattle Association, a charity in Northumberland, offers private tours of its herd. Neil Storer gets half his profits from visitors to Baylham House Farm in Suffolk, where he breeds White Park cattle, which have been kept in Britain for more than 2,000 years. On the Knepp Estate, a 1,400-hectare wilderness project in Sussex, Longhorn cattle and Tamworth pigs graze freely. Agricultural policy ought in time to encourage further rewilding: the government is haltingly winding down per-hectare subsidies and paying more for public benefits such as conserving native livestock.

Genetic diversity is one reason why such conservation is valued. Herds of identical pigs may be efficient but they are vulnerable to disease: if one animal gets infected, the whole population can be lost. China's farmers were reminded of that in 2019 when African swine fever killed 180m pigs (a quarter of the world's population). The RBST has created a gene bank, a giant freezer of semen and embryos, to preserve most native breeds as a safeguard against future disease. With luck, it won't be needed. ■

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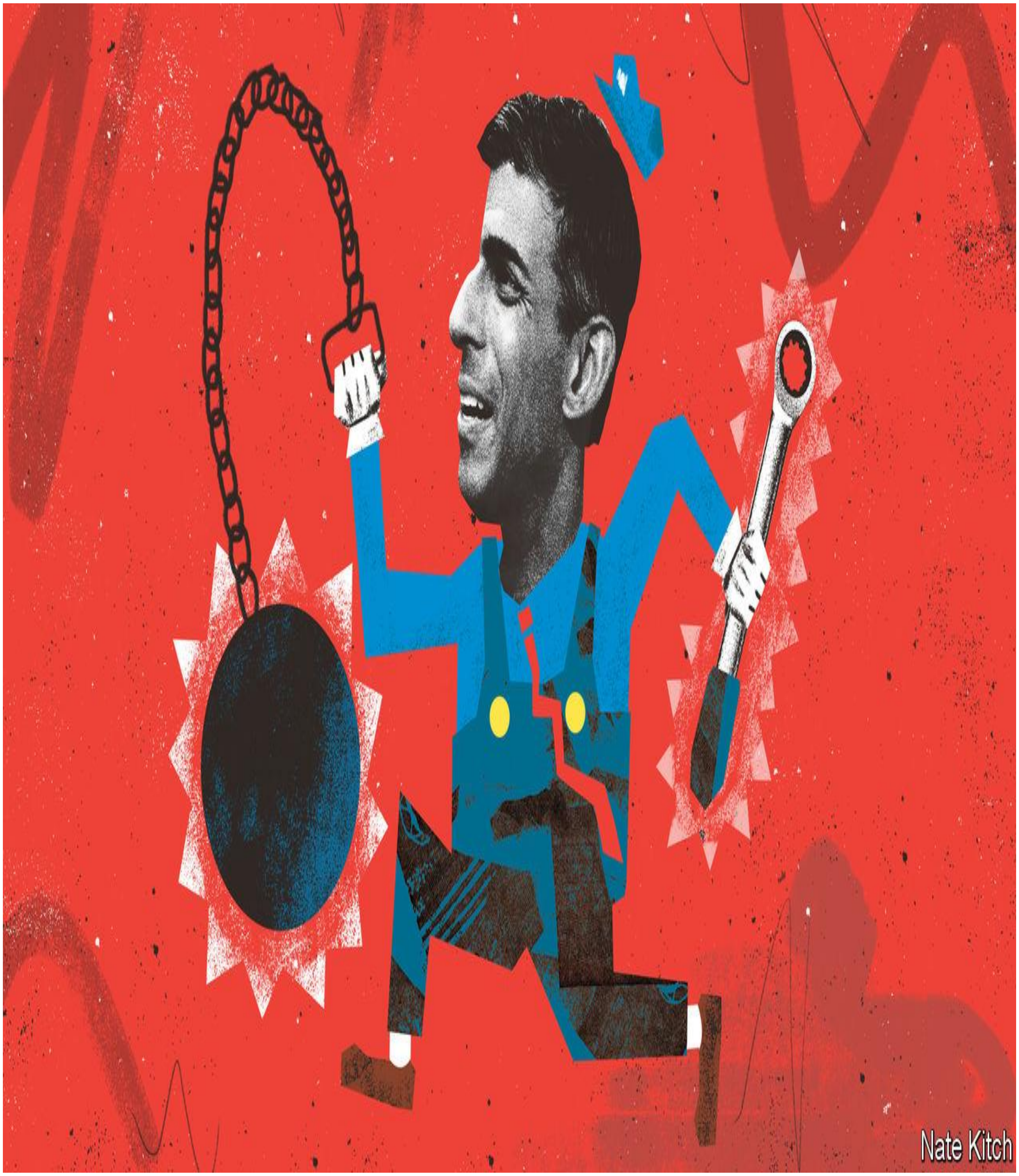
Bagehot

What kind of legacy does Rishi Sunak want to leave behind?

Outgoing British governments can bequeath a total mess or embed their preferences

Nov 23rd 2023



IN BRITISH POLITICS, last impressions count. Governments are remembered as much for how they leave office as for how they arrived. With a 20-point deficit in the polls, both Rishi Sunak, the prime minister, and Jeremy Hunt, the chancellor, know that they are probably doomed. Running an outgoing government mixes immense responsibility with immense temptations. Cynical ministers merely make life harder for incoming governments; canny ones embed their preferences so their politics long outlives them. The choice is a simple one: to wreck or to ratchet.

Messrs Sunak and Hunt have a range of examples to copy. After all, each tactic has a long history. Wrecking can come in many forms. Gordon Brown, a former Labour prime minister, mangled the tax system on his way out in 2010. Labour managed 13 years in power without increasing the highest rate of tax to 50%. The party introduced it a month before they left office. At the same time Mr Brown withdrew the personal allowance from high-earners, leaving those who earned over £100,000 with a 60% marginal rate. When the Tories reduced the rate, to a level still higher than it had been for most of New Labour's term, the Conservatives were pilloried. The distortionary 60% rate remains.

Spending plans are a favoured weapon of the wrecker. Ken Clarke, the Tory chancellor under Sir John Major, is hailed for leaving behind a "Rolls-Royce" economy in 1997. But he still laid a trap for Sir Tony Blair's incoming Labour government in the form of absurdly tight spending plans, to which he cheerfully admitted later he had no intention of sticking. Labour walked into the trap, in the name of credibility. As a result cash-starved public services remained starved for half of Labour's first term; when the cash did come, it arrived as a flood rather than a careful irrigation. It was an effective act of wrecking.

Ratchets are just as common. Rather than merely clog up the tax system with absurdities, the last Labour government also passed substantial legislation in its dying days. The Equality Act, which toughened up social rights in Britain, was a long-standing goal of Labour. Yet it was approved in Parliament only on the very day Mr Brown called an election, making it the final piece of legislation that Labour passed. Conservative right-wingers griped about it at the time, comparing it to something out of the Soviet Union. Yet after 13 years of Tory rule, it is still there.

Even seemingly inconsequential prime ministers can generate a legacy in their final moments. Theresa May achieved little in her three years in Downing Street. Yet in 2019 she was responsible for arguably the single most important law in a generation. Mrs May had already pledged to resign after trying and failing to pass her version of Brexit. Her party was polling at an apocalyptic average of about 20% (ie, roughly the same as now). Yet after a mere 90 minutes of debate, Britain bound itself to reaching net-zero carbon emissions by 2050. An outgoing administration can shape a nation for a generation.

For much of Mr Sunak's final year in power, the prime minister has been too keen on wrecking. Scrapping the northern leg of HS2, a high-speed rail line, is the most obvious example. Cutting the leg between Birmingham and Manchester supposedly freed up nearly £40bn ($50bn) of capital spending to be splashed elsewhere; in reality, this funding will probably evaporate. Officials are pushing on with flogging land bought for the cancelled leg; job losses loom. It is still possible for Labour to build HS2—but it would be a slower and more expensive process because of Mr Sunak.

Acts of wrecking can be small but telling. When the National Health Service (NHS) begged the government for an extra £1bn to cover the costs of strikes, the government refused. The result was an age-old story: the NHS raided its IT and capital budget to cover the shortfall. The short-term problems will be alleviated; the long-term problems will grow. But from the Tories' point of view, it has made the problem harder—and more costly—for Labour to fix.

In the autumn statement on November 22nd, Mr Hunt aped Lord Clarke by putting forward preposterous spending plans for the years after the election. Inflation has swelled the tax take. But the government refuses to admit that inflation will also lead to higher costs across public services. The Office for Budget Responsibility, which is obliged to take government plans at face value, suggests this would knock £20bn off departmental spending power. A serious government would admit this is implausible and stop engaging in absurd accounting. A cynical government would use it as a budgetary landmine, poorly hidden under the doormat of 11 Downing Street for its next occupant to tread on. Mr Hunt and Mr Sunak have chosen the doormat.

Yet on the same day Mr Hunt also demonstrated that ratchets are still possible. Allowing firms to write off investment against their tax bill is a far-sighted policy that will help Britain in the long run. At £11bn, it is an expensive policy with few immediate political benefits (compared with the cut in employees' national-insurance contributions that Mr Hunt also unveiled). But it is a welcome change for a pro-business party that, too often, hurts business. Rachel Reeves, Labour's shadow chancellor, will not unpick it if she takes power. In short, it is a ratchet. If it works, Britain will be better off and the Tories can take the credit.

Remember me?

Come 2024, with the general election looming, Mr Sunak and Mr Hunt will face further temptations. Promises of irresponsible tax cuts could be added to already impossible spending plans. The temptations Mr Hunt wisely avoided—axing inheritance tax, say, or cutting the basic rate of income tax—will become even more enticing. The Conservative Party has little control over its destiny: only a colossal screw-up by Labour will stop it entering government. But Mr Sunak and Mr Hunt can still shape their legacy. A few more ratchets, and much less wrecking, would be welcome. ■

Read more from Bagehot, our columnist on British politics:
What David Cameron's return says about British politics (Nov 13th)
To understand Britain, watch "Homes Under the Hammer" (Nov 9th)
Labour's screw-ups reveal how the party will govern Britain (Nov 2nd)

Also: How the Bagehot column got its name

Special report

The lost heart of net zero

Carbon-dioxide removal needs more attention

It is vital to climate stabilisation, remarkably challenging and systematically ignored

Nov 20th 2023

THE EARTH is isolated, ancient and the site of ceaseless change. This means that everything that happens on and below its surface is part of a cycle. For every change which uses things up, there must be another which supplies those things anew. The basic elements of life, such as carbon and nitrogen, cycle endlessly in and out of living things, the seas, the land and the atmosphere. Even the planet's crust is recycled.

New crust is created where tectonic plates move away from each other, normally in the middle of an ocean, and molten rocks rise from the mantle below to fill the gap. Old crust is destroyed where two plates are pushed together and one is overridden by the other, sinking back into the mantle.The wheels of this great cycle have been turning slow and steady for billions of years. But there is the occasional glitch. The rocky peaks of the eastern Arabian peninsula bear witness to one.

Most geologists looking at the Arabian peninsula concentrate on the deep and extensive sedimentary basin that underlies the Persian Gulf and the lands around it. Organic matter in this basin's depths has been cooked by heat and pressure into vast amounts of oil and gas which, having percolated upwards, now sit in rocks near the surface. They are very profitable rocks to study. Unfortunately their exploitation, along with that of carbon-rich rocks in other places, has destabilised the climate. On November 30th the governments of the world will meet in Dubai, a city built with the wealth from those rocks, to further negotiate their response to that destabilisation at the 28th Conference of the Parties (COP28) to the UN Framework Convention on Climate Change.

For those interested in tectonic glitches, though, it is the Hajar mountains to the east that matter. In an early stage of the collision between the Arabian plate and the Eurasian plate to its north a slab of ocean floor was caught between the two encroaching land masses in the sort of circumstances which would normally see it pushed down into the mantle. On this occasion, though, the rocks went not down, but up, lifted like a curl of wood by a carpenter's plane. The ancient sea floor, mostly basalt, and some of the mantle it had rested on, a related rock called peridotite, ended up exposed to the open sky. In time, the sea floor formed the mountains.

Like all mountains the Hajar range is being eaten away by erosion; it is another part of the great recycling. The erosion endlessly exposes fresh rock, and that rock takes up carbon dioxide from the atmosphere through what is called "chemical weathering". The alkaline minerals in the rocks react with rain and groundwater made slightly acidic by dissolved carbon dioxide to produce carbonate minerals of the sort that make up limestones. The peridotites in the Hajar are particularly susceptible to this weathering. Their dark stone is shot through with white veins of carbonate.

Chemical weathering is not the fastest of the natural processes which draw down carbon dioxide. Photosynthesis, carried out on land by plants and in the sea by algae and bacteria, operates on a far larger scale, removing more than 300 times as much carbon dioxide from the atmosphere every year. But it does not stay removed for long. The carbon is recycled to the sky by the plants themselves, the creatures that eat them and the soil into which they decay over timescales from days to centuries. The geological carbon cycle is far slower. Carbonates in places like the Hajar will be stable for hundreds of millions of years.

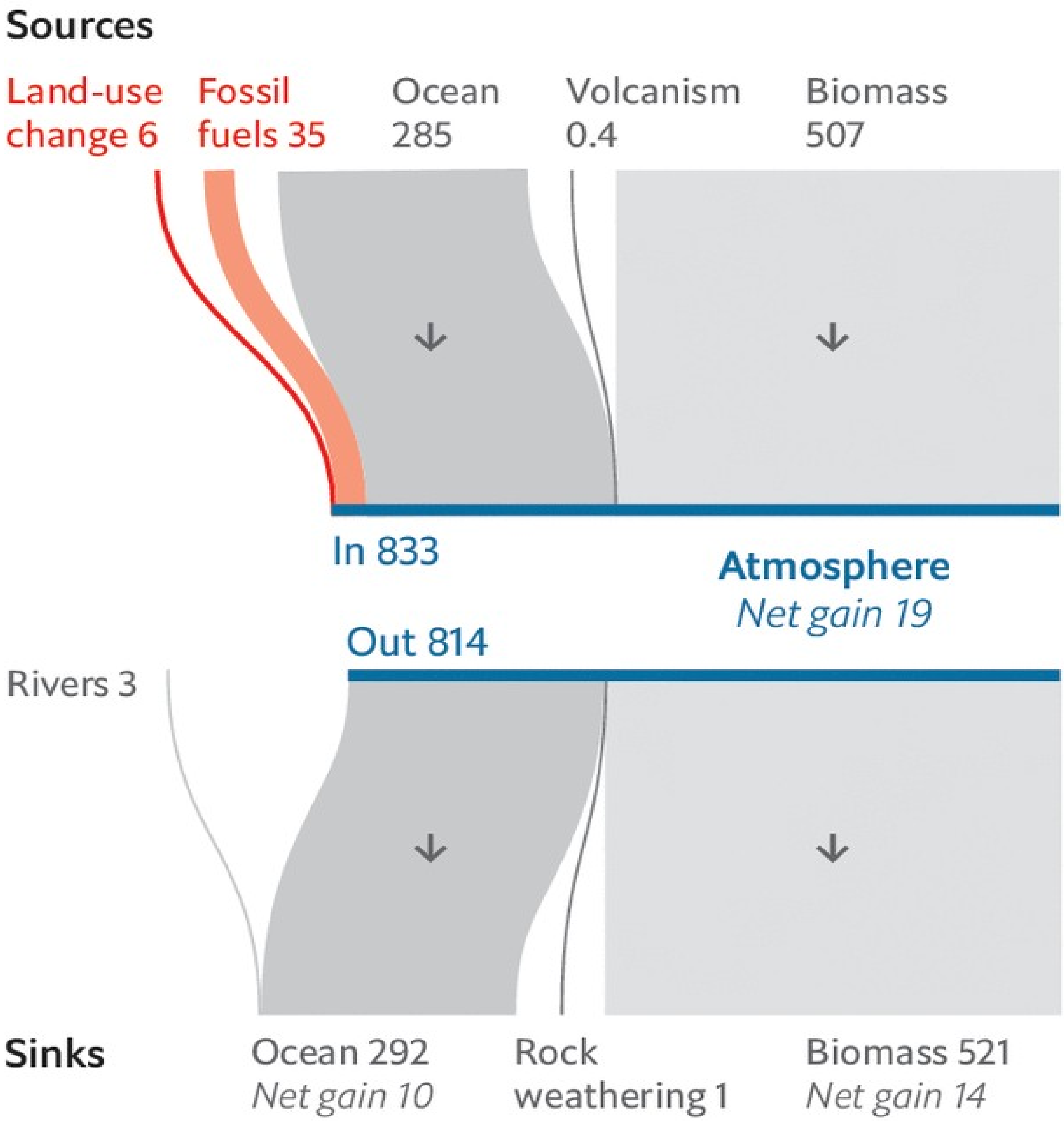
Until recently, ADNOC, the national oil company of the United Arab Emirates (UAE), concentrated its geological thinking on bringing carbon-rich oil and gas up from the bountiful sediments of the Gulf. Now, though, it has turned its eyes to the peridotites of the Hajar, and to pumping carbon dioxide down. In the hills above Fujairah, a city on the Gulf of Oman, ADNOC and 44.01, an Omani startup, are working on a pilot plant at which 44.01 will inject carbon dioxide deep into the rock in a way that encourages its mineralisation into inert carbonate. Musabbeh Al Kaabi, head of "low-carbon solutions" for ADNOC, sees his firm's investments in this rapid mineralisation as part of a comprehensive decarbonisation strategy for the oil industry, one that aims to deliver its "very vital commodity in the most sustainable way".

The Fujairah experiments are part of a nascent planet-wide effort to undo another glitch in the world's great cycles: humankind's transfer of fossil-fuel carbon from its quiet rest in the solid Earth to the hurly-burly of the atmosphere. Roughly 1trn tonnes of carbon dioxide have accumulated there thanks to human activity. The total is growing by a bit less than 20bn tonnes a year.

For a sense of scale, compare that with other planetary flows. It is about 60 times faster than carbon dioxide is removed by the weathering of the Earth's rocks. It is around a tenth of the rate at which photosynthesis makes new biomass. That an accidental by-product of industry should be remotely comparable in its carbon flux to the process which powers all life on Earth is extraordinary.

More in than out

Average annual flows of CO_2, gigatonnes
2010-19



Source: IPCC AR6

The Economist

It might also seem comforting; large though the human flow is, the biological one is comfortably larger. Can it not simply increase to accommodate humankind's imposition? Alas, no. The biological carbon cycle is big, but it is also balanced; the rate at which the world's biosphere photosynthesises is almost exactly the rate at which life's other processes return carbon dioxide to the atmosphere. With carbon dioxide from fossil fuels added to the natural emissions, photosynthesis has valiantly tried to keep up, sucking back down as much as it can. But it cannot do enough. It only absorbs about a third of the emissions from human industry and agriculture (see chart).

The build-up of carbon dioxide in the atmosphere has raised the planet's temperature by about 1.2°C (2.2°F). The temperature will go on rising until the accumulation stops, which is to say until annual additions are reduced to more or less zero. That is why the governments of the world agreed to work towards that end at the Paris climate conference of 2015.

For the most part, that means cutting emissions of carbon dioxide and other greenhouse gases. But some emissions—those from transport across oceans, from some types of farming, from a variety of industrial processes and more—seem highly unlikely to be entirely eliminated any time soon. So the Paris agreement specified that stabilisation need not be a matter of no emissions at all; instead it could be achieved by means of "a balance between anthropogenic emissions…and removals". Residual, "hard to abate" emissions of greenhouse gases were to be balanced by the withdrawal of carbon dioxide already in the atmosphere. The project at Fujairah aims to show one of the ways in which what went up can come down, and the way of the world be righted.

This is the logic of "net zero". Back in 2015 only one country had enunciated a net-zero target for its economy: Bhutan. Now the number is 101, and between them they account for just over 80% of global greenhouse-gas emissions. The increasingly vocal opponents of these net-zero targets on the political right say many of the domestic policies associated with cutting emissions are too expensive, or irksome, or both. Those focused on keeping global warming since the Industrial Revolution well below 2°C, as per the Paris agreement, know those steps being taken to reach net zero are also not yet ambitious enough. As the "emissions gap" report issued by the UN

Environment Programme in the run up to the Dubai COP points out, none of the G20 countries is reducing emissions at a pace consistent with its net-zero target.

Business not-as-usual

There is a lot less concern about the burgeoning removals gap. Few of those who have mouthed commitments to net zero appreciate how central greenhouse-gas removal is to the notion; of those who do, few recognise quite how vast the challenge is. Emission cuts of 90% would still see enough gas entering the atmosphere for a balancing level of removals to be a huge undertaking.

Studies by the Intergovernmental Panel on Climate Change suggest that if the planet is to stand a decent chance of staying below the 2°C limit on warming it would be wise to plan on removing an additional 5bn tonnes of carbon dioxide from the atmosphere every year. According to a report published in 2023 by an international team of academics, if you do not count managed forests, which have only limited room for expansion, the amount of carbon dioxide squirrelled away in durable storage in 2020 was 2.3m tonnes, or around a two-thousandth of that 2050 target. The Fujairah plant's pilot phase runs at just 1,000 tonnes a year.

Humans must be integrated into the planet's great cycles of renewal

New forms of durable removal need to be scaled up far more quickly than is happening. And they need to earn trust. At the moment, many who realise that removals are needed remain sceptical of the technology, not least because it is championed by the oil industry. Mr Al Kaabi's vision of a world free to produce and use oil "in the most sustainable way" does not sit well with those who think it necessary to stop the burning of all fossil fuels. The location of COP28 will bring such questions to the fore.

One reason oil companies are making the running is that they have expertise moving fluids in and out of the Earth's crust. They also have lots of money, and carbon-dioxide removal currently looks very pricey. The obvious way to fund it efficiently is through markets. But none of the carbon markets around today is up to the job. This means that the net-zero strategies most of the world has embraced depend not just on inchoate technologies which can pull carbon dioxide out of the atmosphere and store it away, but on the creation of a carbon economy which makes doing so worthwhile. Climate policy insists that humans, their governments and their economy can and must be integrated into the planet's great cycles of renewal. But how is that to be done? ■

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St Augustine’s climate policy

The temptations of deferred removals

Carbon dioxide removals must start at scale sooner than people think

Nov 20th 2023

THE REALISATION that carbon-dioxide removal (CDR) had been seriously neglected, say many of those in the field, dates back roughly five years: it was a reaction to a provision of the Paris agreement of 2015 which took a few years to sink in.

Developed countries wanted the Paris agreement to set a limit on global warming of no more than 2°C above the pre-industrial temperature. Some developing countries, particularly those on small islands, wanted a more stringent limit: "1.5 to stay alive", as the hallway chant had it. The final compromise strengthened the main goal to "well below 2°C" and advocated "pursuing efforts" towards 1.5°C.

To sweeten things for the 1.5°C brigade, the agreement also asked the Intergovernmental Panel on Climate Change to go and work out how much better the lower target would be. The IPCC reported back three years later: it would be a great deal better—but also much harder. One set of figures jumped out from its report: the four "pathways" found to offer a good chance of 1.5°C foresaw the removal of between 100bn and 1trn tonnes of carbon dioxide from the atmosphere before 2100. Those numbers saw CDR go "from a completely niche, academic, propeller-headed discussion to central policymaking," says Julio Friedmann of Carbon Direct, a carbon-management company.

The trillion-tonne pathway in that 2018 report was particularly arresting. It was the only one based on the assumption, subsequently proved correct, that carbon-dioxide emissions would not peak before the mid-2020s. According to the models used to produce such pathways, that late a peak meant there was no longer any chance of getting to net zero in time to have a 50:50 chance of staying below 1.5°C. Instead the pathway showed an "overshoot" trajectory in which, after the temperature broke the 1.5°C barrier, it was brought back down by "net-negative" emissions which significantly reduced the amount of carbon dioxide in the atmosphere. That required heroic levels of CDR: as much as 20bn tonnes a year.

Pathways or slippery slopes?

The requirements for a 2°C limit are not so insanely demanding. Indeed, at the time of the Paris agreement, it was still just about possible to imagine that it might be achieved with very little CDR, should emissions start dropping immediately. Instead, though, they rose; in the eight intervening years the world has emitted 300bn tonnes of carbon dioxide, more than the United States emitted over the entire course of the 20th century. Even if, when emissions do start to fall, they fall considerably faster than was envisaged in 2015, the world will still need a fair bit of CDR.

This is a good example of an aspect of CDR which is particularly disturbing. The possibility of removals allows climate policy to take the form of a deal similar to that which St Augustine asked of God: “Oh, Lord, make me chaste and celibate—but not yet.” The possibility of marginally more CDR tomorrow is too easily taken, in the world of scenarios and pathways, as licence to reduce emissions marginally more slowly today. The peak isn’t coming soon enough? The reductions aren’t steep enough? Clean it up later!

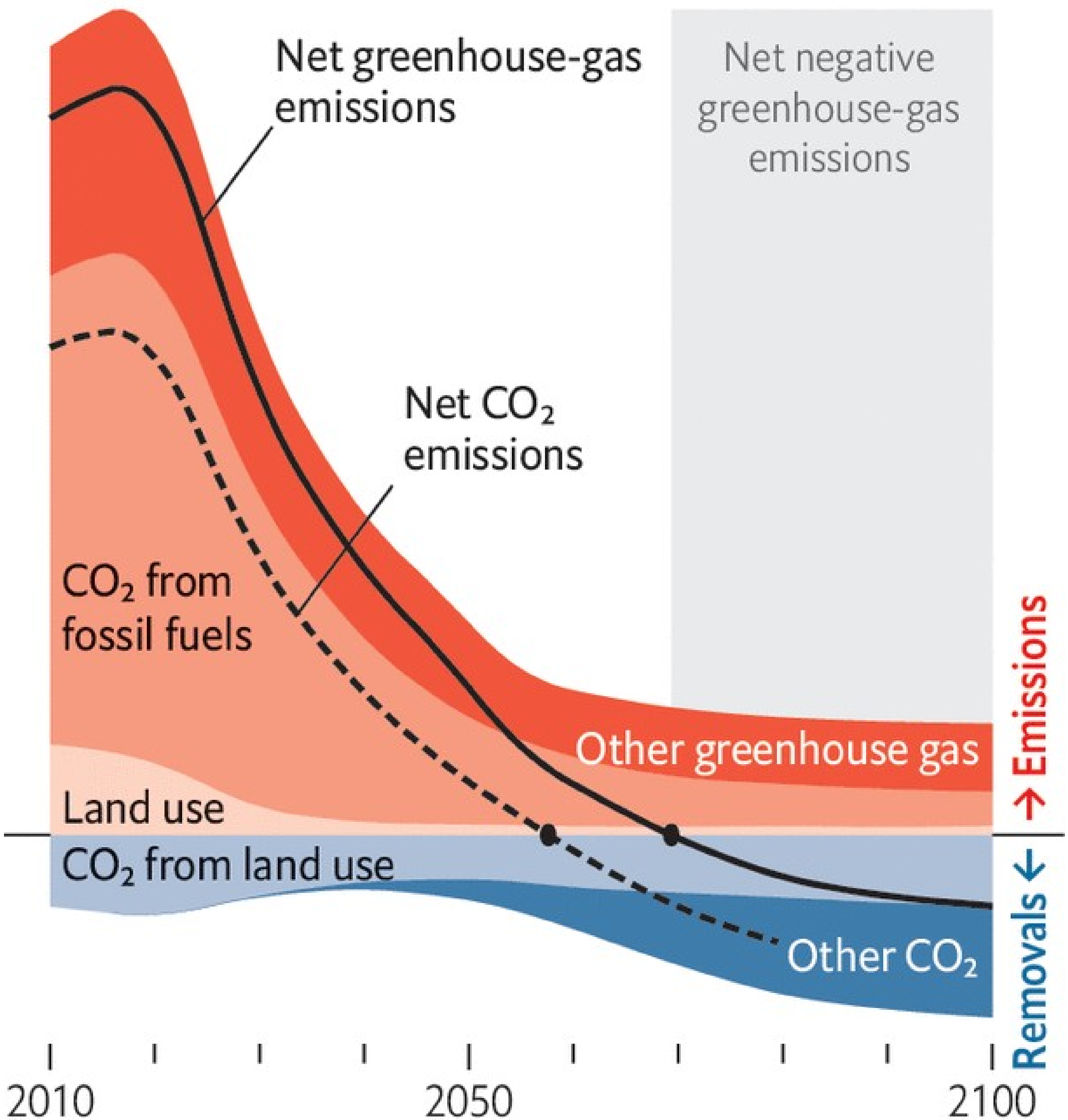
For 1.5°C this planetary procrastination has run its course; when you are talking about both breakneck emissions-reduction and a trillion tonnes of CDR, the game is clearly up. For 2°C it is a work in progress. Currently, pathways offering a decent chance of stabilisation at 2°C require an additional 1bn-13bn tonnes of CDR a year by 2050. The longer emissions stay high before their eventual fall, the bigger that number will get.

In a world where every delay in emissions reduction was accompanied by compensating investments in CDR designed to make sure the technology would be available at the appropriate scale by the time it was needed, that temporal trade-off might make some sort of sense. This is not that world. It is, instead, a world with significant experience of imagined future solutions which, in practice, prolong the status quo.

The technology of carbon capture and storage is a pertinent example. In the early 2000s people imagined that taking carbon dioxide from the smokestacks of power stations and industrial plants and burying it might be a large part of the response to climate change. Many in the fossil-fuel industry were keen to foster an idea which appeared to offer them a future. Despite some progress, it remains, 20 years on, largely a technology of tomorrow. That experience is one of the reasons some fear the same will be true of CDR. (The two approaches, while similar in some ways, are conceptually quite distinct. Carbon capture and storage is a way of greatly reducing the emissions from burning fossil fuels; CDR is a way of reducing the level of carbon dioxide in the atmosphere.)

As it could be

Global greenhouse-gas emissions, stylised pathway



Source: IPCC AR6

The Economist

The scale of what needs to be done if CDR is to be a useful part of climate action, rather than an excuse for inaction, is vast. "The State of Carbon Dioxide Removal", a report published by an international team of academics earlier this year, shows that there is a lot of carbon dioxide being stored by managed forestry and some more as a result of industrial biomass use, mostly as a by-product of ethanol fermentation. But the more radical technologies being focused on for durable storage today hardly register. Added together they come up to less than 1m tonnes: a megatonne. The burden put on them in net-zero plans requires them to work at a scale a thousand times larger: that of the gigatonne.

A gigatonne (Gt) is not a measure that is easy to grasp. It is the weight of 3,000 Empire State Buildings: enough to put one on each block of Manhattan and still have a good few left to scatter over the other boroughs. It is half again as much as the weight of all the world's livestock.

There are, remarkably, some human activities that already move things around by the gigatonne. The 4trn cubic metres of natural gas the world uses each year weighs about 3Gt; the oil fix comes in at 5Gt. Such figures suggest that capturing and storing carbon dioxide by the gigatonne is a plausible thing for the world economy to do. But it also suggests that it will require a huge industry devoted to doing something for which, today, people are unwilling to pay.

If the scale of the eventual endeavour is not quite unprecedented but still daunting, so is the challenge of creating an appropriately sized industry in just a couple of decades. It is hardly commonplace, but the challenge posed by the climate crisis has already seen the world do just such a thing. In 2000 worldwide solar-power capacity was about a gigawatt. Today the total has three more zeroes—a terawatt. Solar companies and projects attracted $350bn of investment in 2022, according to Jenny Chase of BloombergNEF, a data company.

Ain't no sunshine...

But the solar industry had two advantages. One was really large subsidies early on: between 2004 and 2012 Germany alone spent over €200bn ($270bn) on the deployment of solar panels. The other was that the boom was centred on scaling up a single already-understood industrial process—turning semiconducting silicon into photovoltaic cells. Doing something a lot makes it cheaper, a phenomenon that is captured in what management textbooks call an experience curve. Solar's experience curve has seen cells become 20-30% cheaper for every doubling of installed capacity.

The situation for CDR is far less promising. Governments are not supporting the technology anything like as much as they did solar. A recent report by the Boston Consulting Group (BCG) calculated that $1.7bn was invested in "durable" CDR last year, where durable normally means that the carbon dioxide ends up underground as a stable mineral, or tucked away in depleted oil- and gasfields, or dissolved in aquifers the water from which is never used. The authors reckon that is about 10% of what solar was getting at a comparable stage in its development.

And CDR will probably not benefit from experience curves to the same extent that solar did. Processes which involve dealing with straightforward things in bulk, often out in the field, are much less easily cheapened than the mass production of semiconductors in factories.

What is more, there is an increasingly bewildering range of CDR technologies on offer. Some will doubtless fall by the wayside. But few in the field expect a single technology to become dominant in the way that silicon photovoltaics have. This is in some ways a good thing—different technologies will allow different sorts of application in different situations. But doubling the installed capacity of each of ten separate technologies just once gets you much less by way of savings than doubling the installed capacity of one technology ten times in a row.

And some sort of cheapening is vital. Today's gold standard in CDR is direct-air capture, or DAC: large banks of fans are used to pull air through machines which strip it of its carbon dioxide through a chemical-engineering process before storing it away. Two companies dominate the field: Carbon Engineering, a Canadian startup which Occidental Petroleum, an American oil company, has announced that it will buy; and Climeworks, a Swiss startup. Both companies are working on facilities in the 100,000-1m-tonnes a year range.

For now, though, the biggest on offer is Climeworks' Orca, in Iceland. It removes 4,000 tonnes of atmospheric carbon dioxide every year; an Icelandic company called Carbfix then pumps that carbon dioxide down into the island's basalt to be mineralised. Iceland, being on one of the boundaries where tectonic plates are pulling apart and new crust is being made, has both plentiful fresh basalt and lots of carbon-free hydrothermal power. It hopes that those endowments and some subsequent first-mover advantage will make it a centre for CDR development.

Buy the change you want to be

Early adopters have paid in the range of $1,000 a tonne for carbon dioxide to be removed and stored at Orca. At that price a gigatonne of carbon dioxide is a trillion-dollar proposition; ten gigatonnes a year would represent a tenth of the world economy. And that would not be a capital investment, like the additional $2trn the International Energy Agency sees as being needed to get emissions reduction on track over the current decade. It would largely be an operating expenditure for keeping the planet running.

As Climeworks grows, its prices will presumably drop. Nevertheless, a lot of entrepreneurs motivated by both idealism and ambition think they can do better sooner, and they are beginning to attract investment. BCG reckons that between 2017 and 2022 investment in companies offering durable CDR rose from $28m to $1.1bn. Frontier, a buyers' club for durable carbon removals, estimates that the number of projects which might offer them such services has now topped 100.

This is in part because a few large companies have stepped up to provide demand. In 2019 Stripe, an online payments company, said it would start paying for durable removals. In 2020 Microsoft started to solicit bids for removals to help it reach its newly announced goal of becoming "carbon negative".

In 2022 Stripe created Frontier with its fellow tech companies Alphabet, Meta and Shopify and with McKinsey, a consultancy. Like the "advance market commitments" pioneered in vaccine development in the 2000s, Frontier is a means of incentivising R&D by promising to buy its fruits. The companies can then borrow against these "offtakes". Frontier has purchases agreed with 15 companies, and its members have committed to spending $1bn on removals to be delivered by 2030.

The magic number on which this industry is focused, perhaps fixated, is $100 per tonne of carbon dioxide. A gigatonne of removals becomes $100bn of revenue, a number that both makes much more economic sense as a running cost to be paid for climate stability and sounds like a healthy global business. What is more, it is not much higher than the price some companies are already paying for their carbon-dioxide emissions.

In the EU's Emissions Trading System companies which emit carbon dioxide at power stations and some sorts of industrial plant—the scheme covers over 11,000—need to surrender allowances to do so. At the moment the market price of these allowances is €80 ($85) a tonne. Prices in other so-called compliance markets are not as high. But in all of them it is assumed that they will rise. And compliance markets cover a quarter of the world's greenhouse-gas emissions.

This suggests the possibility, somewhere down the road, of a net-zero economy run in a way to delight any free-market economist: for every tonne emitted, the emitter would pay for a tonne to be removed. Rather than being set by governments, the cost of carbon would be a fact of the market, and a signal around which the economy could organise itself with maximum efficiency.

No achievable system will be as simple as that. But if net-zero economies are to be viable, the removals they require will have to be paid for somehow; other things being equal, the greater the role for markets in that system the better. ■

On the other hand...

The many prices of carbon dioxide

Not all tonnes are created equal

Nov 20th 2023

ASK AN ECONOMIST what something scarce should cost and they will normally say whatever someone is willing to pay for it. They will go on to say that the best way to establish that willingness is through markets. There are various systems that price carbon dioxide that way. But they do not provide the same answers. And nor do they tally with what economists think might actually be the right answer.

To most people the cost of emitting a tonne of carbon dioxide appears to be nothing. They have to pay for fuel, they have to pay for whatever burns it, but once it is an exhaust gas they can just let it go. In a few cases, they might even find someone to buy it—a fizzy-drink maker, say, or a DJ who wants dry ice.

But though the emissions may not cost the emitter anything, economists insist that they still have a value, and that it is a negative one. This is because the emitted carbon dioxide does harm to the environment, almost all of which is felt by people other than the emitter. To take into account those externalities means taking into account everything from the loss of seafront property and farm productivity to deaths caused by heatwaves (as well as those avoided in cold snaps).

This “social cost of carbon” is estimated through modelling. Those models must make assumptions, such as how much the effects of a future loss should be discounted and what to do about the uncertainty inherent to estimates of climate damage. Different assumptions yield wildly different costs.

In many places the outputs of such models are used to guide policy. In America, for example, cost-benefit analyses which make use of the social cost of carbon feed into decisions about fuel standards. The government currently estimates the social cost at $51 for every tonne of carbon dioxide (or for an amount of some other greenhouse gas which provides the same warming). If the administration heeded the advice of its own Environmental Protection Agency, which approaches modelling in a different way, the cost would increase to $190. During Donald Trump’s administration, when only costs on other Americans were considered, it fell to $5.

The social cost of carbon is notional, if sometimes consequential. The costs charged in carbon-pricing schemes are real. Such systems typically place a cap on emissions from a certain sector, and then distribute (often by auction) permits to emit that are equal to that cap. Firms then trade permits in a "compliance market".

Economists like these market-based "cap and trade" schemes because they discover the firms most willing to make cuts. That spreads the burden in an efficient way and lowers the total cost of keeping emissions below the cap. But even when efficiently spread, the total cost is something which most of the governments experimenting with such schemes have wanted to keep low: the average price charged in the world's emissions-trading systems is about $20. The IMF estimates that for Paris-compliant decarbonisation the price per tonne would have to reach $280 on all emissions by 2050. That, the fund drily notes, "might be politically unpalatable in many countries, despite carbon pricing's effectiveness".

A third way to establish a price is to find people willing to be paid not to emit, thus "offsetting" the emissions of those who do. This has various practical drawbacks and two fundamental flaws. One is that offsetting is voluntary; no one has to do it. The second is that offset emissions are still emissions. They still warm the planet.

CDR avoids the second problem. If a tonne of carbon dioxide is removed from the atmosphere in one place at the same time as another is emitted somewhere else, the harm done is pretty much zero.

Unfortunately, the costs of removal are currently a lot higher than the estimates of the social cost of carbon favoured by governments or the prices charged in cap-and-trade schemes; they outstrip offset prices over a hundred-fold. The idea of a market where the cost of emitting carbon dioxide is the price you have to pay to have it removed is very appealing. Actually creating one will be very hard.■

Thy axe shall harm it not

Trees alone will not save the world

But better markets and better monitoring will let them do more

Nov 20th 2023

“EVERYTHING YOU see, as far as the eye can see, belongs to us,” says David Beleznay. “Us” is Mosaic, a forest-management company that looks after the upkeep and logging of much of Vancouver Island; Mr Beleznay is its director of climate and watersheds. “As far as the eye can see” takes in a long, deep valley whose forested flanks rise to the rocky top of Mount Arrowsmith. Towering evergreens—Douglas fir, cedar, hemlock—drape the island from its central peaks to the water’s rocky edge.

This drapery is, though, a bit patchy in places. Directly behind Mr Beleznay’s parked pickup are some “polygons”, as the industry calls them, where the trees have been clear-cut, leaving behind jumbled soil, stumps and woody debris; tiny saplings poke through it higgledy-piggledy. Mosaic has an eye to water quality in forest streams, to maintaining biodiversity, to being a partner to the island’s first nations. But the forest it manages is also the basis of a timber business.

When trees are cut down a lot of the carbon they have stored up over decades or even centuries of growth is returned to the atmosphere. In the 2010s, according to the Global Carbon Project, an academic consortium, deforestation was responsible for 5Gt-8Gt of carbon-dioxide emissions a year. The loss from a carefully felled and soon replanted polygon in a well-tended forest is less than when the same sort of area is slashed and burned. But it is all loss.

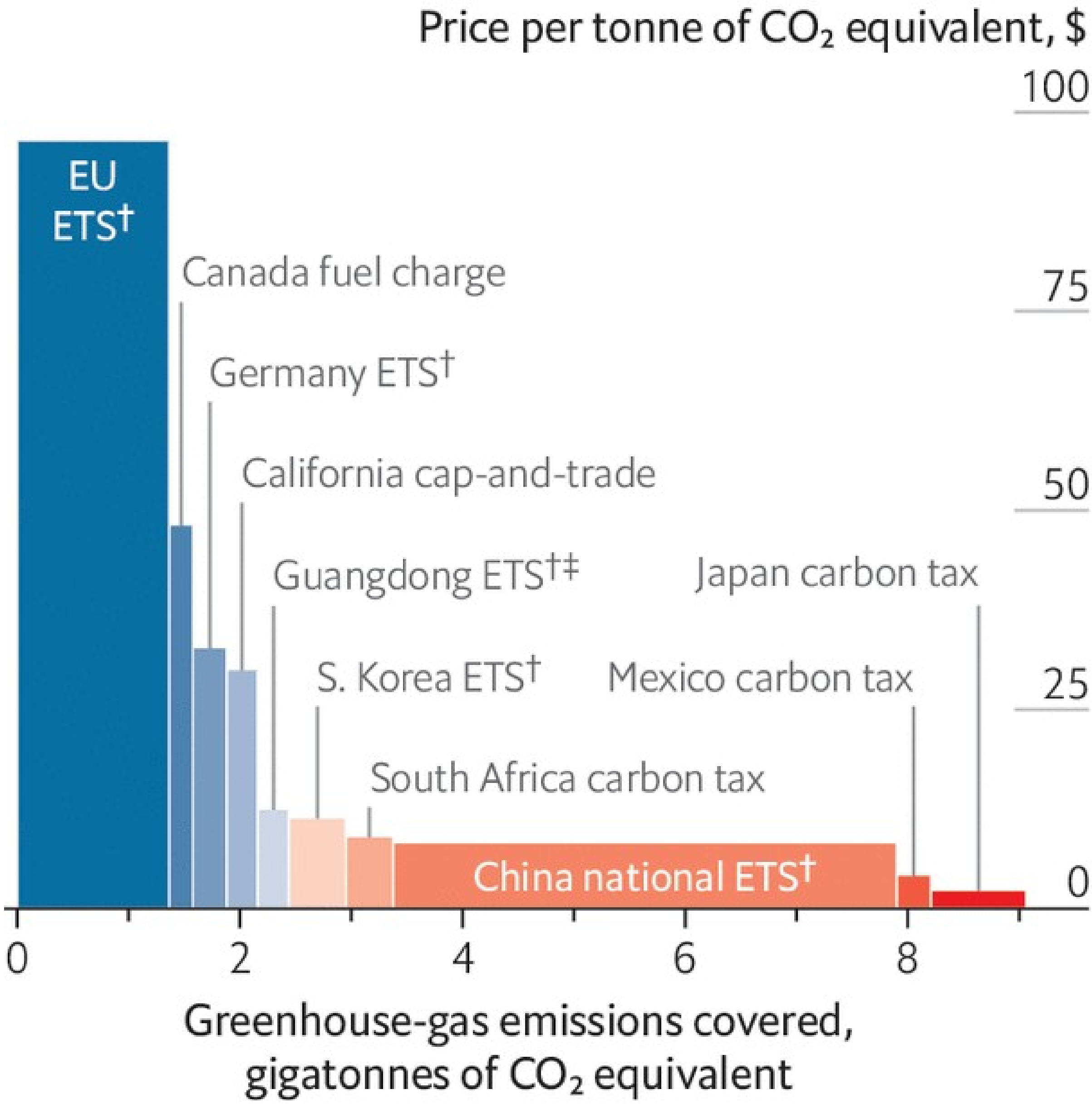
Hence Mosaic’s new business. In 2022 it announced it would forgo tree-cutting on 40,000 hectares of mostly old-growth forest on Vancouver Island and Haida Gwaii, an archipelago to the north, for 25 years. Instead its BigCoast Forest Climate Initiative will sell “offset” credits based on the idea that the emissions it is not making can now be made by someone else.

To sell such offsets a project like BigCoast has to follow a pre-existing methodology that has been agreed to define a particular type of offset. That it has done so has to be certified by companies who, themselves, have to be accredited so that another company can issue the relevant carbon credits. Buyers of those credits can then either sell them on exchanges or retire them; when they retire them, they claim that the emissions avoided or reduced elsewhere have served to offset emissions they themselves have made.

The tall and the broad of it

Largest carbon-pricing systems by emissions covered*

March 31st 2023



*Excludes Indonesia, no price data †Emissions trading system

‡Pilot Source: World Bank

The Economist

If you have ticked an "offset my carbon-dioxide emissions" box while booking a flight online, or bought a product that claims to have been certified climate neutral, you have participated in such a market. And you have probably not paid much of a premium in order to do so. Credits in some voluntary markets are currently trading at under $1 a tonne.

Compared with what permits cost in some cap-and-trade markets, let alone the hundreds of dollars per tonne that durable CDR costs, this seems incredibly low. That is in part because, even at their best, voluntary credits do not lead to emissions staying under a specific cap, and few remove anything from the atmosphere. They merely limit emissions someone else might have made.

Organisations establishing standards for companies aiming at net zero, such as the Science Based Targets Initiative, do not allow offsets based on avoided emissions elsewhere to be counted as a reduction in a firm's emissions. Though some compliance schemes allow such carbon offsets into their cap-and-trade systems, most do so only to a limited degree; Australia's "Safeguard Mechanism" is a controversial exception. The European Emissions Trading System banned the use of offsets in 2013.

Within these limits the voluntary carbon market has a volume of about $2bn a year. The biggest sources of credits, according to a study published last January by Shell, an oil company, and the Boston Consulting Group, are projects in which renewables replace fossil fuels. As renewables get cheaper, it becomes ever harder for such projects to demonstrate that the reduction in emissions is not just something which would have happened anyway, a quality known as "additionality".

The second biggest source of offsets is avoided deforestation, a sector which has recently seen a very poor press as a result of independent analysis of some projects' claims. A recent study by the Berkeley Carbon Trading Project, funded by Carbon Market Watch, an NGO, suggested widespread over-crediting. It cited unrealistically high estimates of the level of deforestation being avoided, unrealistically low estimates of the degree to which deforestation was being displaced to other places rather than stopped, and exaggerated assessments of the carbon stock in the areas involved.

Woodman, let it stand—thy axe shall harm it not

Concerns about the quality of such offsets saw overall issuance drop in 2022; despite less supply, prices have continued falling. A number of companies that had previously been keen consumers of offsets have this year announced that they are quitting the market. In August Bloomberg, a news and data outfit, reported that Shell was scaling back its previously ambitious plans in the area.

One response to this is a new interest in credits certified not as offsets, but as removals. At the moment this segment of the voluntary sector is small—under 100m tonnes between 2015 and 2021, compared with 800m tonnes for offsets. But both project developers and customers expect it to grow quickly both in absolute terms and as a share of the market. At voluntary-market prices this new demand will not be met by the sort of novel and durable CDR technologies into which entrepreneurs are rushing. Instead the credits will mostly be based on restoring degraded forests, creating new forests, planting mangroves along coasts, improving soils and so on. Such schemes are often called "nature-based solutions".

Mosaic is pursuing this avenue, too. The credits sold by its BigCoast project are mostly offsets produced by convincing a certifier that it really was planning to log the land now set aside. But some should be granted on the basis of the carbon removed from the atmosphere by the continued growth of those standing trees.

According to the "The State of Carbon Dioxide Removal", published this summer by an international team of academics, the amount of carbon dioxide removed from the atmosphere and stored away by growing and expanding forests is roughly 2Gt a year. That is something like a thousand times the amount of CDR being delivered by other means, according to the report, and more than a hundred times the amount of forest-carbon removal currently generating credits.

This does not mean a huge untapped source of carbon credits. What is being done on those hectares is already being done; the principle of additionality means new actions that would not be taken otherwise are needed for credits. But it does seem to suggest future potential. Novel methods of CDR need to be scaled up a thousand-fold to reach the gigatonne scale. Forests are already there. Alas, it is not that simple.

Here shall the wild-bird sing

The 2Gt of carbon removal achieved by these trees takes up a great deal of land. The world's 500m hectares of managed forest represents an India-and-a-half. Removals could undoubtedly be done more efficiently than they are at the moment. Even so, researchers looking at afforestation (adding new trees) and reforestation say it requires minimum of 80m hectares of forest to draw down 1Gt of carbon dioxide a year. That is 25 Vancouver Islands, or a little less than a France-and-a-half.

If forests are fragile now, things will only get worse with climate change

That has to be land which is not already forested and not used for agriculture; its inhabitants have to be happy to have it turned into woodland. It has to have enough rainfall to support the trees. It should also be in a temperate or tropical climate; forests nearer to the poles darken the surface of the planet during winter, a warming effect which counters at least some of the cooling provided by sucking up carbon. The world does not have many, if any, country-sized tracts of such land going spare.

Even if it did, there is another problem: the quality of the storage. Forests are more fragile than they look from the foot of a 50-metre Douglas fir. The Berkeley study of projects based on avoiding deforestation found they greatly underestimated the risks of trees being lost to nature anyway. And if forests are fragile now, things will only get worse with climate change. This summer fires swept across 18m hectares of Canada. As temperatures rise, the effects of drought get worse; so do insect infestations, which in some places are reaching biblical proportions.

These arguments lead many people serious about CDR to see forests as a sideshow, at best. Bill Gates has invested in a number of CDR companies, including two already mentioned in this report, 44.01 and Carbon Engineering; he buys removals from Climeworks, too. When asked by a *New York Times* journalist whether, instead, the problem might be solved by simply planting enough trees he dismissed the idea as "complete nonsense".

“Are we the science people,” Mr Gates went on to ask, “or are we the idiots? Which one do we want to be?” It is not a surprising response from a man of Mr Gates’s qualities who has informed himself about the subject. It is, though, a little too dismissive. There are some good science people giving forest-carbon removals a new opportunity to show how best they can work.

Chris Anderson, an ecologist from Stanford was one of the founders of Salo Sciences, a startup which developed machine-learning algorithms to turn pictures of forests into quantified estimates of the amount of carbon stored in them. Earlier this year Salo was acquired by Planet, a data provider based in San Francisco. With some 200 satellites in orbit, Planet is able to take a detailed picture of every part of the Earth’s surface every 24 hours. The combination of this constant flood of machine-readable data and algorithms like Salo’s is a ridiculously powerful one.

In a meeting room 1,250km (780 miles) south of Mount Arrowsmith, Mr Anderson toggles back and forth between carbon maps of Vancouver Island. The patchwork of managed polygons is clearly visible on the screen. When he subtracts a past map from a present one some of the polygons turn red, with the precise hue revealing not just that carbon has been lost in a clearance, but also how much. He is looking at Vancouver Island because your correspondent has asked him to. He could display almost any tract of the Earth’s 4bn hectares (15m square miles) of forest in the same way. Next year Planet will start selling quarterly updates on carbon storage using this product for 25 cents a hectare.

The mixture of granularity, global coverage and timeliness typifies the ways satellite-based measurement can improve planetary management. Satellite data are already widely used in the fight against deforestation; daily high-resolution observations scanned for changes by AI will take that to a new level in both precision and timeliness, protecting not just the climate but also biodiversity and the interests of indigenous people.

Such systems cannot do everything. They can pick up point sources of methane and, increasingly, of carbon dioxide; they cannot yet measure the fluxes of greenhouse gases in and out of farmed or natural landscapes. Measuring the carbon content of soils is beyond them. And they do not in themselves create more land or make forests fire-resistant. But merging insitu measurements and satellite observations with machine learning will make the flows and stocks of carbon across the planet visible and quantifiable in a way they never have been before. And that should spur action of many sorts.■

All the myriad ways

Carbon-dioxide-removal options are multiplying

Many are intriguing; none is cheap, scalable and easily verified

Nov 20th 2023

Ben Denzer

IN WHAT USED to be a fish-processing plant in Akranes, a small port in Iceland, fragments of seaweed rise and fall in glass columns lit by LEDs. Running Tide, the Maine-based company which runs the facility, is trying to work out how best to get them to sporulate. The company needs spores in abundance to embed in the biodegradable buoys it is developing as a form of CDR. Once the buoys, made in part from biomass, are in the ocean, the spores will grow into deep-green fronds; after a certain amount of weed-growth and buoy-degradation, the whole kit and caboodle will become waterlogged and sink, transporting the carbon the seaweed has sucked up through photosynthesis to the bottom of the ocean.

In Brisbane, just south of San Francisco, an industrial building leased by Heirloom, another startup, has an oddly similar vibe: that of careful experiments aimed at optimising a pretty run-of-the-mill process about which no one has previously cared very much. Floor-to-ceiling racks like those you might see in a bakery are filled with trays of slaked lime, an alkaline compound made by first heating up limestone, a carbonate rock, so as to produce carbon dioxide and calcium oxide, or quicklime, and then reacting the quicklime with water. Expose this slaked lime to air and it absorbs carbon dioxide, turning back into limestone.

Heirloom is working on how to process that slaked lime and spread it on the trays so as to accelerate its regression to limestone. That limestone will then be fed into a type of oven called a calciner to be turned back into carbon dioxide (for storage) and quicklime that is ready to be slaked, trayed and fed through the whole process again. Sitting next to the calciner is a gas cylinder which contains the very first carbon dioxide to have been removed from the air this way. It is emblazoned with the proud signatures of most of the workforce.

There are scores of such companies currently scaling intriguing CDR ideas up into commercial propositions. Their number reflects a lot of idealism, interest from governments, venture capitalists and big tech, and the sheer number of ways in which CDR might be done. These myriad ways, though, are all prey to the CDR trilemma. An ideal CDR technique should store carbon in a way that is easily monitored and verified, so people can know how much carbon is stored; it should be able to work on a large scale; and its costs should be low. As is the way with trilemmas, achieving more than two out of three is hard.

In the scalable, verifiable but expensive camp sit the two companies which, in terms of investment, are the giants of the field, Climeworks and Carbon Engineering. These direct-air-capture (DAC) companies use banks of fans to pull air over a substance which sucks out the carbon dioxide (the firms each use a different substance). The amount of carbon dioxide such plants remove can be easily measured; just look at how much gas they are pumping into storage. Scalability seems to follow from the relatively small area involved. Facilities capable of a gigatonne a year would be very big, but city-sized, not country-sized.

But then there is price. In climate terms, today's carbon-dioxide level of 417 parts per million is alarming; in chemical-engineering terms, removing something that represents just 0.04%, or one part in 2,400, of what you start with is hard. It means moving a lot of air and using a lot of energy. An overview published last year by Andrew Bergman and Anatoly Rinberg of Harvard University puts the energy needed to provide a gigatonne of pure carbon dioxide with DAC at 1-1.3% of humankind's total energy use in 2019.

Climeworks has in the past claimed that its system can remove carbon dioxide for $600 a tonne. Academic studies have suggested it may be a little higher. In 2018 the founder of Carbon Engineering, David Keith, and some colleagues published an academic paper arguing that, in principle, the cost of producing a tonne of pure carbon dioxide ready for geological storage using the company's approach might be in the range of $90-230. But there is no indication that such costs have yet been achieved.

Why then is DAC so attractive that, in 2022, Climeworks drew in $650m of equity investment; that, in August 2023, Occidental Petroleum announced it was buying Carbon Engineering for $1.1bn; and that, in November, BlackRock, an investor, put $550m into Occidental's development of a 500,000-tonne-a-year DAC plant outside Odessa, Texas? In the Carbon Engineering case a big part of the story is that pure carbon dioxide has a specific use in the oil industry. In some depleted oil reservoirs, pumping in carbon dioxide is the only way to get more oil out. Occidental has a lot of wells in the Permian basin that will not produce oil without "enhanced recovery" of this sort.

Giant sucking sounds

What is more, if it does it with carbon dioxide from its plant outside Odessa and can show that the gas stays buried after the oil comes out, then it will be paid handsomely for doing so. Section 45Q of America's tax code provides a tax credit for every tonne of carbon dioxide a company can show it has put into permanent storage. In 2022 the oddly named Inflation Reduction Act raised the 45Q credit for carbon dioxide from DAC to $180 a tonne.

America's Department of Energy also has $3.5bn to spend on furthering CDR. It is using those funds to bring into being two new 1m-tonne-a-year DAC "hubs", a Climeworks-centred one in Louisiana and an Occidental/Carbon Engineering-centred one in south Texas. Each is getting up to $600m. Heirloom will be participating in work at the Louisiana hub.

This support is quite modest compared, say, with the support received by solar power 20 years ago. It is huge compared with what is going into other forms of CDR. Yet the other forms still attract interest. Some think the challenge of separating carbon dioxide from the air will never allow DAC to come in at $100 a tonne, the Department of Energy's target.

Stockholm Exergi plans to capture 800,000 tonnes of carbon dioxide

One alternative approach is to take the carbon dioxide not from the air, but from water. When air sits over water, the amount of carbon dioxide dissolved in the water is in equilibrium with the amount in the air. If you put more carbon dioxide into the air some goes into the water, maintaining the equilibrium; if you take some out of the water, the level in the air goes down. Various companies are looking at ways of capturing carbon dioxide by processing a continuous flow of sea water chemically or electrically so as to extract its carbon dioxide; some see a synergy with desalination plants. As with DAC, though, a lot of energy will be required.

Another alternative is to let photosynthesis do the hard work of taking the carbon dioxide out of the air and then treat the biomass thus produced in a way that makes its carbon suitable for durable forms of storage. The best established approach to doing this is BECCS—bioenergy with carbon capture and storage. Grow a crop, get some energy out of it (most often by burning it) and then store the carbon dioxide given off in the process. This is already done in some American biofuel refineries; there are lots of plans for using it more broadly. Stockholm Exergi, which provides electricity and heating for most of Sweden's capital city, has plans to capture 800,000 tonnes of carbon dioxide a year from its biomass-fired boilers.

The fact that BECCS provides energy as well as storing carbon has been seen as one of its charms. But to some it is a distraction. Even at a CDR price per tonne well below $100, the carbon content of biomass is worth much more than the energy to be gained from burning it. Store the carbon without building a power station and you lose some secondary revenue. But you also lose the considerable capital cost of building a power station and fitting its chimneys with carbon-capture technology.

Hence the interest in alternative ways of biomass with carbon removal and storage, or BiCRS (pronounced "bikers", rather than "bickers"): find some biomass, treat it a way that prevents decomposition and dispose of it permanently. A London-based company called Brilliant Planet has operations in Morocco and Oman whose aim is pumping seawater into big ponds in coastal deserts, growing algae with it, drying the algae out and burying it. Charm Industrial, based in San Francisco, raised $100m this June for a system which turns biomass into a sort of carbon-rich oil and pumps it into geological storage. Graphyte, a startup which broke cover this November, plans to process biomass into dense bricks wrapped in a resistant polymer for burial. Backed by Breakthrough Energy Ventures, a fund set up by Bill Gates, it says it can operate at $100/tonne. It plans to start making bricks from timber- and rice-mill waste in Arkansas next year.

Woody waste also has a role in many schemes using biochar, an approach with a lot of supporters. As charcoal-makers have known since antiquity, if you burn wood without much oxygen you get a carbon-rich char. Plough this into the soil and it will often do the soil good while only slowly breaking down into a form bacteria and fungi can turn back into carbon dioxide. The carbon benefit is not just the carbon stored in the char, but also the carbon stored in the richer, healthier soil.

This has great appeal, but also two problems. Attempts to store more carbon in soil cannot be guaranteed to endure, especially since storage in soils, as in forests, will become less dependable as the world warms. The other is the durability of the biochar itself. Some particles of biochar stay charry for centuries; but how much of it will do so is not easy to say.

Spread it wide

Biochar does not provide the sort of durable storage a DAC system pumping carbon dioxide into an oil well or a borehole in basalt would. But other forms of BiCRS, such as those offered by Charm's oil and Graphyte's bricks, might well do. That would go a long way to making their removals verifiable, and thus marketable. But more is needed, because, as Bodie Cabiyo of Carbon Direct puts it, "All biomass has a counterfactual."

Land growing biomass for BiCRS is not doing something else; and that something else would, itself, have done some, albeit temporary, carbon storage. Your carbon accounting has to consider that removal which didn't happen as well as the removal which did. It is in part because of the difficulty of accounting for such counterfactuals that the methodologies used for forest-offsetting programmes run to hundreds of pages. How a scheme deals with these things can make a big difference to the amount of carbon it is certified as having removed.

Using waste products makes this accounting easier; there is no land-use change to consider. It should also help reduce the amount of land needed, which may be the biggest barrier between BiCRS and the big time. Raising crops so that their carbon content can be harvested and stored should be a considerably less land-intense form of CDR than growing trees. But if you are going to store away gigatonnes you will probably still need a great deal of land.

This leaves a third type of scheme: enhanced weathering. Take substances which react with carbon dioxide; spread them over the land or scatter them over the ocean; let nature's chemistry take its course. On land you might use ground-up peridotites, like those found in the Arabian peninsula's Hajar mountains, or basalt; in the ocean, limestone. When limestone dissolves the calcium ions released lead to bicarbonate ions being formed from the carbon dioxide already dissolved in the water, providing a removal.

Enhanced weathering means moving a lot of mass around. To get rid of 1Gt of carbon dioxide by scattering finely powdered limestone over the oceans you would need to load at least 2.3Gt of the stuff on board the ships doing the spreading. In 2020 David Beerling, of Sheffield University, and many co-authors looked at what the weathering of powdered basalt applied to croplands might achieve. They found that removing 1Gt of carbon dioxide a year would mean spreading 6Gt of basalt over roughly a quarter of the cropland in large farming nations.

But humans already move a lot of mass around; weigh up all the stuff extracted from the crust in a year and you get over 50Gt. Coal alone accounts for 8Gt. As those mines close, as close they must, could some of that effort be put towards upping limestone production (about 7Gt a year, mostly for cement)? If CDR is valued at $100 a tonne and one tonne of CDR requires 2.3 tonnes of limestone, the back of an envelope values a properly distributed tonne of limestone at $44. In 2021, the average price per tonne the coal industry was getting from power generators in America was $41.

The cost of crushing and distributing the rock would make things more complex and expensive. But the biggest problem with enhanced weathering may not be cost or scale, but verification. Empirical rules of thumb for how much CDR a certain sort of application to a certain sort of soil in a particular climate might be good enough to compare overall benefits with costs. Actually tracking the carbon stored thanks to a particular application of rock dust will not be possible.

That is bad news if you want to sell CDR credits. But farmers already spread many things on their fields, including, where soil is acidic, limestone. Especially if minerals weather in a way that enhances the soil, the carbon-removal benefit provided might be worth the cost of subsidising farmers to spread them. Some benefits really are best bought publicly. ■

A net-zero world needs new markets and institutions

It is just possible they will be built in time

Nov 20th 2023

THE EARTH'S great cycles are mostly driven by the sun. Sunlight evaporates water to create rain, thus powering the water cycle; it heats the tropics more than the poles, thus driving the ocean's gyres; it is used by plants and algae to turn carbon dioxide into wood and frond, food and fibre, mulch and decay, spinning the biological carbon cycle. Plate tectonics is the great exception, driven instead by the heat of the inner Earth.

Any anthropogenic addition to the roster of great recyclings will have to be driven, too, and the immediate motive force will be money. At the moment, the money driving durable carbon removals is coming mostly from investors willing to provide companies with the money needed to develop their technology and build their businesses and from rich firms and people willing to pay handsomely for the so far small amounts of removal on offer.

Over the past five years that money has spurred a boom in the sector, albeit from a base so low that even the boom is small. But in the medium term would-be carbon removers will find themselves moving beyond technological uncertainties—what methods are viable? how low can costs for different methods get?—to more fundamental ones. Where is the demand? Who will actually be willing, or required, to buy their services, and for how much?

Some governments are helping. By far the most generous is America's, offering a $180-a-tonne tax credit for direct-air-capture projects under way by the end of 2032; there is also support for carbon-storage hubs and a small programme for buying removals directly. But "tax credits are not a long-term policy for the level of CDR deployment we'll need to remove carbon dioxide from the atmosphere and meet our net-zero targets," says Brad Crabtree, the assistant secretary for fossil energy and carbon management at the Department of Energy. "There will need to be longer-term policies that reward those actions in the marketplace."

The obvious marketplaces are those of cap-and-trade systems. The inclusion of removals in such markets would mean that emitters could mix allowances issued under the scheme and credits for durable CDR when working off their carbon debt. Net zero would be the point where permits were no longer issued, and removals did all the work.

An obligation to the future

Some emissions-trading schemes (ETS) are open to the idea of allowing carbon-removal credits. But the political economy is treacherous. For such schemes to work in terms of net emissions, any credits added to the allowances must have a real effect on what is in the atmosphere. For schemes to be palatable to the industries operating under them, the credits need to be cheap and plentiful, which experience suggests means dodgy. Thomas Gresham, a 16th-century merchant, held that bad money drives out good. The same would prove true of carbon credits.

The European Union, which has the most advanced ETS, currently allows no outside credits into its workings. It has said that by 2026 it will have reached a position on integrating removals into the scheme; first, it is concentrating its efforts on an official carbon-removal certification scheme. The California ETS allows companies to meet a small portion of their obligation with officially sanctioned offsets that are overwhelmingly based on storing carbon in forests. The South Korean ETS and the Colombian carbon tax have similar provisions.

If well monitored, these provisions may bring in some reputable "nature-based" schemes that make use of forestry, coastal mangroves and the like. But the price of the allowances in cap-and-trade markets looks far too low to cover more durable forms of CDR. Hence the attraction of creating a separate mechanism for removals, at least as an interim measure.

One option is a reverse auction: the government sets a target for removals and awards contracts for the companies with the cheapest bids. Sweden is taking this route for bioenergy with carbon capture and storage; Britain is thinking about auctions with a "contract for difference" mechanism like the one it uses to encourage offshore wind and nuclear power: the government would pay not for the whole removal, but for the difference between the price of the removal and the carbon price.

The fossil-fuel industry has a record of being duplicitous and unreliable

Such an auction system could, in time, develop into a market for removals that operated in parallel with a market for emissions. Companies in some sectors would be required to buy removals to cover a fraction of their emissions. One version of this, championed by Myles Allen of Oxford University and his colleagues, would be a "carbon take-back obligation" under which the fossil-fuel industry would be required to cover an increasing fraction of its production with an equivalent amount of removals. When the fraction reached 100%—perhaps in 2050—the industry would be carbon-neutral. Such a predictable long-term increase in demand would motivate innovation.

The problem is trust. Could governments be relied on to ratchet up the obligation to buy removals? The fossil-fuel industry has a record of being duplicitous and unreliable when it comes to emissions reduction; its sheer size makes it a big influence on governments and its well-oiled lobbying operations amplify that. It is disturbingly easy to imagine the fossil-fuel industry contriving to have its removal obligations frozen at a fairly low level while continuing to make possible a lot of emissions.

That makes the case for institutions which build trust. Ottmar Edenhofer, a German economist, and colleagues have suggested that the EU might create a central bank for carbon to supervise the use of removals, preventing politicians from debasing the currency or breaking commitments. Most of the EU's members have surrendered monetary policy to an independent bank. Perhaps they could do the same for carbon policy. But what other states, or groups of states, might do the same?

The Earth, isolated and ancient, recycles everything. It also brings forth novelties, such as apes ingenious enough to replumb fundamental flows of matter and energy at the level of the planet itself. It is strange to imagine institutions based on agreement and trust acting on a similar giga-scale. But the energy transition is showing that such things can be done, albeit too slowly and too late. If that transition continues in the way it needs to, the experience and planetary perspective gained could be the basis for concerted efforts to fix the remaining leaks in the carbon cycle. ■

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OpenAI v CloseAI

Sam Altman's return marks a new phase for OpenAI

The industry seems set to move from academic idealism to commercial pragmatism

Nov 23rd 2023 | San Francisco

EVEN BY TECH'S fast-moving standards, the past week in the world of artificial intelligence (AI) was head-spinning. On November 17th the board of OpenAI booted out Sam Altman, the ChatGPT-maker's boss. By November 20th Mr Altman had been offered refuge at Microsoft, the startup's biggest backer. The same day nearly all of OpenAI's 770 employees signed a letter threatening to quit unless the board members who dismissed Mr Altman reinstate him and resign. On November 21st Mr Altman was back in his old job. Heads have, then, spun back more or less to where they started. Or have they?

In fact, the OpenAI saga marks the start of a new, more grown-up phase for the AI industry. For OpenAI, Mr Altman's triumphant return may supercharge its ambitions. For Microsoft, which stood by Mr Altman in his hour of need, the episode may result in greater sway over AI's hottest startup. For AI companies everywhere it may herald a broader shift away from academic idealism and towards greater commercial pragmatism. And for the technology's users, it may, with luck, usher in more competition and more choice.

To understand all these implications, start with what happened. OpenAI's board fired Mr Altman for not being "consistently candid in his communications'‘. One factor that may have influenced the decision was disagreement over whether OpenAI had struck the right balance between the speed and safety of its products. Insiders say that OpenAI had made a breakthrough that enabled models to get better at solving problems without additional data. This spooked Ilya Sutskever, a co-founder and board member. Helen Toner, a board member affiliated with Georgetown University, had published an academic article that laid out what she saw as flaws in OpenAI's approach to AI safety. On November 21st the *New York Times* reported that Mr Altman, worried about the negative press, had moved to oust Ms Toner. There were also concerns over Mr Altman's side-projects, including a planned AI-semiconductor venture that sent him to the Persian Gulf to court billions in Saudi money.

In the end it was Ms Toner and three other board members that ousted him instead. The sixth director, Greg Brockman, was also stripped of his board seat and then quit in solidarity with Mr Altman. The two of them found succour at Microsoft, which said it would create a new in-house AI lab which they would run. Microsoft also pledged to hire the rest of OpenAI's team. Whether or not this was ever a serious plan may never be known. But it lent Mr Altman huge bargaining power when negotiating his return to OpenAI. On November 20th, as those negotiations were under way, Satya

Nadella, the tech giant's chief executive, declared that "Irrespective of where Sam is, he's working with Microsoft."

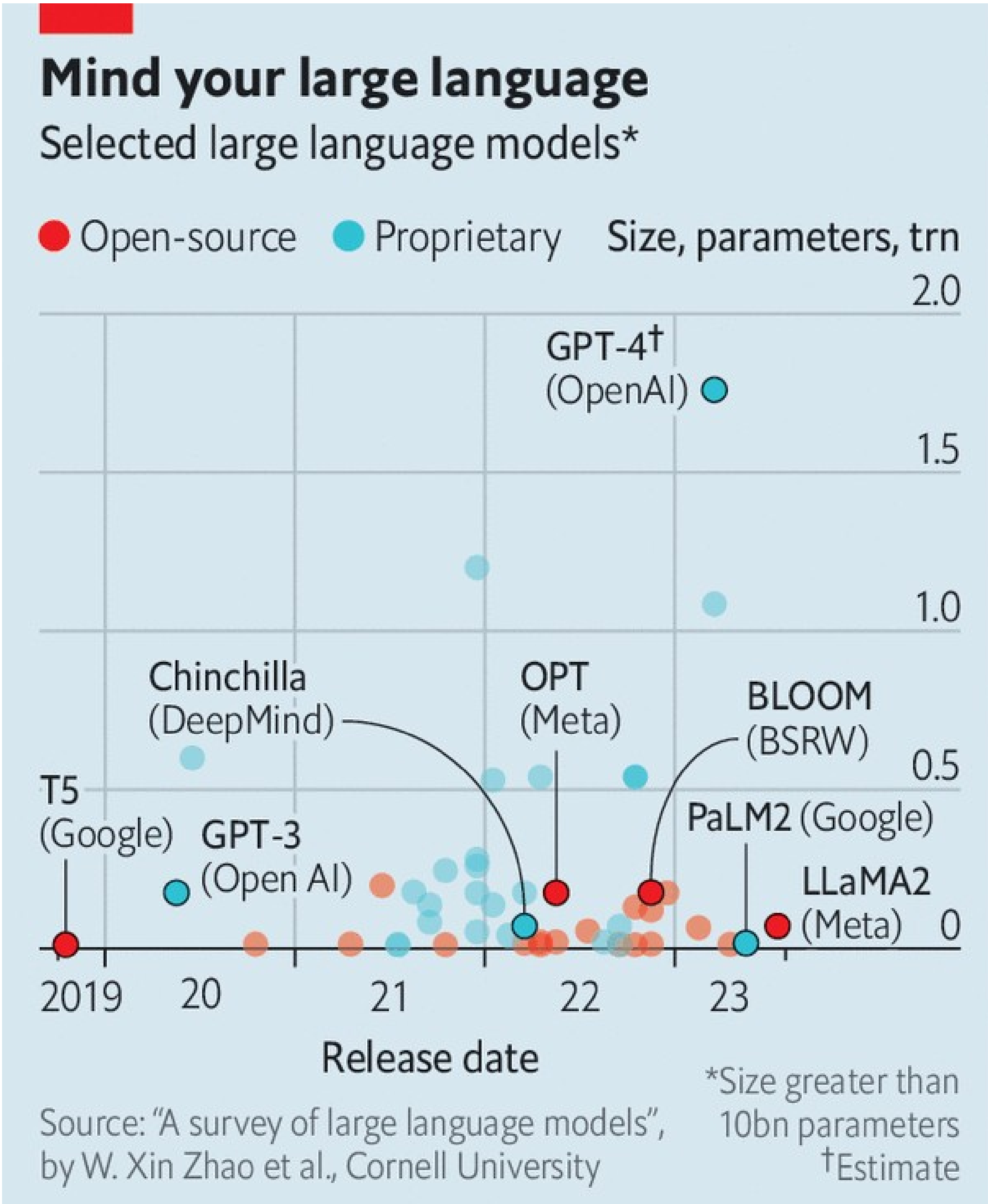
The deal struck by Mr Altman and those who ousted him will transform OpenAI, starting with the board. Ms Toner and Mr Sutskever are out. So is Tasha McCauley, a tech entrepreneur. All three backed Mr Altman's dismissal. Mr Brockman and, for the time being, Mr Altman will not be returning. Of the pre-chaos six only Adam D'Angelo, the founder of Quora, a question-and-answer site, stays on. He will be joined by heavyweights, starting with Bret Taylor, a former co-CEO of Salesforce, another big software firm, and Larry Summers of Harvard University, who served as Bill Clinton's treasury secretary. The *Verge*, an online publication, has reported that the new board will aim to expand to nine members; Microsoft is expected to get a seat and Mr Altman may get his back.

The new directors are likely to make OpenAI, which is structured as a for-profit entity within a non-profit one, more business-minded. Mr Taylor and Mr Summers are well-regarded figures with plenty of boardroom experience. Their views on AI safety are not known. But they may be more receptive than Ms Toner and Ms McCauley to Mr Altman's empire-building ambitions. The same already seems to be true of OpenAI's workforce. One employee reports that the startup's staff, which "trauma-bonded" during the upheaval, will become even more loyal to Mr Altman and, possibly, readier to pursue his commercial vision. Work on the firm's most powerful model yet, GPT-5, which appeared to have slowed for a few months, will now probably go full speed ahead.

The sour taste left by the imbroglio may nevertheless linger. It was not, in the words of a prominent AI investor, a "confidence-inducing event". That is putting it mildly. On the morning of November 17th OpenAI was poised to close a tender offer led by Thrive Capital, a venture-capital firm, that would value the startup at $86bn. The offer was suspended. Though it is reportedly back on, investors in the secondary market for startup shares remain cautious. Worse, if Mr Altman and Mr Sutskever do not reconcile, OpenAI could lose one of the world's most respected AI minds.

Microsoft's fortunes look more secure. Whereas OpenAI's brand has taken a hit, Microsoft's has not. The software giant probably prefers having OpenAI at arm’s length rather than Mr Altman and his boffins close to its chest. By temperament, Mr Altman and Mr Brockman are not a natural fit for one of the world’s biggest companies; many observers doubted that either would have stayed at Microsoft for long.

Recreating OpenAI in-house would also have slowed the progress of the technology in the short term, argues Mark Moerdler of Bernstein, a broker. Many OpenAI employees said in private that they would rather move to a different firm than Microsoft, even though they signed the petition threatening to follow Mr Altman there. Mr Nadella did not seem terribly disappointed with the outcome. Microsoft’s share price, which dipped by 2% on the news of Mr Altman’s sacking, has clawed back all those losses. On November 22nd its market value reached an all-time high of $2.8trn.



The Economist

What about the rest of the AI industry? OpenAI is the undisputed leader in the AI race (see chart). A survey by Retool, a startup, found that 80% of software developers said that they used OpenAI's models more often than those of rival model-makers. ChatGPT, a chatty app whose launch one year ago turned OpenAI into a household name, receives 60% of web traffic to the top 50 websites for such “generative” AI. In October the firm was earning revenues at an annualised rate of $1.3bn.

Even if OpenAI moves faster under new leadership, it will face more competition. An AI-focused venture capitalist likens the moment to the implosion earlier this year of Silicon Valley Bank, which taught many startups not to put all their eggs in one basket. As the Altman drama was unfolding, more than 100 OpenAI customers contacted Anthropic, a rival model-maker, according to the *Information*, an online publication. Some tapped Cohere, another startup, and the cloud unit of Google, which has invested in Anthropic. The cloud arm of Amazon, another Anthropic-backer, set up a team to work with switchers.

The events at OpenAI are a dramatic manifestation of a wider divide in Silicon Valley. On one side are the “doomers”, who believe that, left unchecked, AI poses an existential risk to humanity and hence advocate stricter regulations. Opposing them are “boomers”, who play down fears of an AI apocalypse and stress its potential to turbocharge progress. The split reflects in part philosophical differences. Many in the doomer camp are influenced by “effective altruism”, a movement worried that AI might wipe out humanity. Boomers espouse a worldview called “effective accelerationism”, which counters that the development of AI should be speeded up.

Mr Altman seemed to have sympathy with both groups, publicly calling for “guardrails” to make AI safe while pushing OpenAI to develop more powerful models and launching new tools, such as an app store for users to build their own chatbots. Today he looks decidedly more boomerish, as do the majority of OpenAI’s workers who wanted him back. The doomers are on the back foot.

That will worry politicians, who are scrambling to show that they take the risks seriously. In July President Joe Biden’s administration nudged seven leading model-makers, including Google, Meta, Microsoft and OpenAI, to make “voluntary commitments” to have their AI products inspected by experts before releasing them to the public. On November 1st the British government got a similar group to sign another non-binding agreement that allowed regulators to test their AIs for trustworthiness and harmful capabilities, such as endangering national security.

Days earlier Mr Biden issued an executive order with more bite. It compels any AI firm building models above a certain size—defined by the computing power required—to notify the government and share its safety-testing results. As boomers gain the upper hand in Silicon Valley, the White House's model-inspectors should expect to have their hands full. ■

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Non-profit motives

Inside OpenAI's weird governance structure

Why investors had no say in Sam Altman's sacking

Nov 21st 2023

Jim Wilson/New York Times/Redux/Eyevine

"WHICH WOULD you have more confidence in? Getting your technology from a non-profit, or a for-profit company that is entirely controlled by one human being?" asked Brad Smith, president of Microsoft, at a conference in Paris on November 10th. That was Mr Smith's way of praising OpenAI, the startup behind ChatGPT, and knocking companies like Meta, Mark Zuckerberg's social-media giant. Events of the past week, which began on November 17th with OpenAI's board firing its boss, Sam Altman, and ended four days later with his return to the startup he co-founded, have made the non-profit setups look rather less attractive. They have also thrown a spotlight on AI darlings' unusual governance arrangements.

OpenAI is not the only firm in its industry with an odd structure. Anthropic, created by rebels from OpenAI, and Inflection AI (whose co-founder, Mustafa Suleyman, is a board member of *The Economist's* parent company) were formed as public-benefit corporations, which balance investor returns with social good. Anthropic also has a "long-term benefit trust" with power to elect new directors to a gradually expanding board. Even so, OpenAI is an outlier.

The firm was founded as a non-profit in 2015 by Mr Altman and a group of Silicon Valley investors and entrepreneurs including Elon Musk, the billionaire behind Tesla, X (formerly Twitter) and SpaceX. The group collectively pledged $1bn towards OpenAI's goal of building artificial general intelligence (AGI), which would outperform humans on most intellectual tasks.

After a few years OpenAI realised that in order to attain its goal, it needed cash to pay for expensive computing capacity and top-notch talent—not least because it claims that just $130m or so of the original $1bn pledge materialised. So in 2019 it created a for-profit subsidiary. Profits for investors in this venture were capped at 100 times their investment (though thanks to a rule change this cap will rise by 20% a year starting in 2025). Any profits above the cap flow to the parent non-profit. The company also reserves the right to reinvest all profits back into the firm until its goal of creating AGI is achieved. And once that is done, the resulting AGI is not meant to generate a financial return; OpenAI's licensing terms with Microsoft, for example, cover only "pre-AGI" technology.

If and when AGI has been attained is determined by the board of directors. Instead of representing OpenAI's financial backers, the norm at most companies, OpenAI's charter tasks directors with representing the interests of "humanity". Until the events of the past week, humanity's representatives comprised three of OpenAI's co-founders (Mr Altman, Greg Brockman and Ilya Sutskever) and three independent members (Adam D'Angelo, co-founder of Quora; Tasha McCauley, a tech entrepreneur; and Helen Toner of Georgetown University). They wielded wide-ranging powers granted to the board by OpenAI's bylaws. This includes the right to add or remove board members, if a majority of directors concur. Most important, the board remains answerable only to itself.

This structure was designed to ensure that OpenAI could resist outside pressure from investors, who might prefer a quick profit now to safe AGI for humankind later. In the wake of the Altman fiasco, that now seems unworkable. Of the old guard, all but Mr D'Angelo have gone. Instead, he is joined by Bret Taylor, former co-CEO of Salesforce, a big software firm, and Larry Summers, a former treasury secretary. The plan is to bring in six more heavy-hitters, including a representative of Microsoft and, possibly, Mr Altman. They are likely to be more attuned to investors' interests. Yet without deeper reforms to OpenAI's governance, the new lot will retain the same unchecked powers. "The structure defies corporate physics," says an AI investor. Sooner or later it will need shoring up. ■

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Soap power

ReelShort is the latest Chinese export to conquer America

A producer of soapy micro-series is a surprise hit

Nov 23rd 2023 | Shanghai

A SHOW CALLED "Never Divorce a Secret Billionaire Heiress" dives head first into a seedy melee of passion and betrayal. Within the first 30 seconds of the micro-series, which consists of 55 two-minute episodes, a woman named Joyce is forced to give her husband's lover a blood transfusion in order to save the mistress's life. The first ten minutes depict coerced marriages, inheritance battles and sundry infidelities. The storyline is choppy and nearly impossible to follow. To say the acting is hammy would be generous.

American viewers can tune in to dozens of similar rapid-fire dramas, with titles such as “The Double Life of My Billionaire Husband” and “Son-in-Law’s Revenge”, on an app called ReelShort. If it all seems a bit foreign, then that is because it is. ReelShort is owned by COL Group, a digital publisher based in Beijing. Some of its shows are adapted by Chinese teams at COL’s Californian subsidiary, Crazy Maple Studio, from Chinese scripts that were first written and produced for audiences in China.

That does not stop Americans from lapping them up. On November 11th ReelShort briefly surpassed TikTok to become the most popular entertainment app in Apple’s American App Store. According to Sensor Tower, a data firm, it has been downloaded almost 2m times in the past month. COL’s market value has more than doubled since the start of November, to 22bn yuan ($3bn).

Apps that trace their roots to China have become wildly popular in America in recent years. The cheap products sold by Shein and Temu have found deep markets in America, as have video clips created by TikTok’s mostly Western users. ReelShort builds on earlier Crazy Maple apps, such as Chapters (a story-game launched in 2017, which lets readers choose their own adventure) and Kiss (which offers a wide selection of romance and mystery stories, and now ranks 14th in the App Store’s books category). The trend contradicts the idea that Chinese cultural products do not translate well for Western audiences.

ReelShort has followed a path trodden by other Chinese apps in America. For a start, it uses a business model that first succeeded in China. During the covid-19 pandemic, when cinemas were closed, many big film studios began instead to produce micro-series. Local apps such as Miyou Short Drama and the state-backed Hema Theatre offer viewers many episodes of a series free of charge and then ask them to pay often as little as one yuan to watch further instalments. Viewers, most of whom are blue-collar workers, often end up forking over the equivalent of a cinema ticket to complete the series, says Malik Naibi of Duke 65, a social-media marketing agency. ReelShort has brought this concept, and the storylines for some of its Chinese shows, to its target audience in America: middle-aged women.

Second, like other Chinese-linked apps that are popular in America, ReelShort does not advertise its Chinese roots. The Crazy Maple website makes no mention of China. Similarly, Temu, which is owned by PDD, one of China's biggest e-commerce groups, describes itself as being "founded in Boston". TikTok, whose owner, ByteDance, is based in Beijing, and Shein, which was founded in China and relies on Chinese garment-makers, have both moved their headquarters to Singapore.

The apps have something else in common—they have all targeted foreign markets in part to get around challenges in China. Although Shein and Temu sought their luck abroad from their inception, that may be in part because the domestic market has been looking weak. TikTok is a way for ByteDance to hedge against periodic value-destroying tech crackdowns by the communist authorities (though it has run into other problems in America, where some politicians are calling for a ban owing to its Chinese ties).

COL's bet on America, too, may be a response to problems at home. By the end of February Chinese censors had purged the web of 1.4m micro-series episodes and shut down 2,420 mini-shows deemed to be explicit or vulgar. America has no government censors—and explicit vulgarity may be a selling-point. ■

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The southern strategy

Why Chinese companies are flocking to Mexico

The country offers a back door to the United States

Nov 23rd 2023 | Mexico City

CHINESE INVESTMENTS have been pouring into Mexico lately. Last month alone brought two notable ones. The government of Nuevo León, a northern state bordering the United States, announced that China's Lingong Machinery Group, which makes diggers and other construction equipment, would build a factory that it estimates will generate $5bn dollars in investment. The same day Trina Solar, a solar-panel manufacturer, said it would invest up to $1bn in the state. Both companies and their corporate compatriots can now find a home away from home at Hofusan, a Chinese-Mexican industrial park in Nuevo León.

Chinese companies' heightened interest in Mexico dates to 2018 when Donald Trump, America's president at the time, launched a trade war that included raising tariffs on imports from China. His successor, Joe Biden, has kept the tariffs in place. Mr Biden's own America-first policies, such as the Inflation Reduction Act, are encouraging companies to consider "nearshoring" in North America, in large part to thwart China. The pandemic and the snarl-ups in supply chains it caused also pushed manufacturers to move closer to the American market. And setting up in Mexico has begun to look cheaper, as wages and other costs in China rise.

Mexico has tried to lure Chinese money before. The Mexico-China Chamber of Commerce and Technology organised events in 2008 to encourage the flow of capital but they were unsuccessful, says the chamber's César Fragoz; back then China had no need to use Mexico as a way into America, which had yet to turn its back on Chinese companies. "The irony is that the first to react positively to an explicit policy against China are Chinese firms," says Enrique Dussel Peters of the Centre for Chinese-Mexican Studies at UNAM, a university in Mexico City.

China gets a back door into America because Mexico is part of a free-trade agreement with the United States and Canada. Depending on what components they use, Chinese companies based in Mexico cannot enjoy all the benefits of the trading bloc, whose rules dictate what percentage of a product must originate in North America. But, Mr Dussel Peters notes, the average American tariff on imports from Mexico in 2021 was 0.2%, far lower than on those from China.

The Economist

Accurate statistics are hard to come by but, according to some estimates, Chinese foreign direct investment in Mexico increased from a total of $500m in 2000-04 to $2.5bn in 2022 alone. That is below a peak of nearly $6bn in 2016, but more than twice the figure in 2018—and rising (see chart). The nature of these investments differs from how China spends its money in the rest of Latin America. In countries such as Brazil and Chile most Chinese investments are in raw materials or infrastructure, often courtesy of Chinese state-backed companies. In Mexico, Chinese investment is in services and manufacturing, including of electronics, cars and home appliances.

In the 1990s and 2000s Mexican exports to America lost out to Chinese competition. Now Chinese investments are helping Mexico's exporters. In September Mexico overtook China for the first time since the early 2000s to become the leading exporter of goods to the United States. Net trade with China generated 6.8m jobs in Latin America between 1995 and 2021, compared with 6.7m for the region's exchange with the United States. Chinese investors are also less particular about environmental and human rights. And they have learned to deal with the challenges of working in Mexico, such as insecurity and poor infrastructure.

A growing Chinese presence in Mexico could backfire if it raises tensions with the United States. Most Chinese manufacturing and assembly in Mexico seems to be aimed at exports, observes Mr Dussel Peters—especially to America. This is alarming some lawmakers across the border. In a recent letter to Katherine Tai, the US Trade Representative, four members of Congress warned of Chinese carmakers in Mexico trying to take "advantage of preferential access to the US market through our free-trade agreements and circumvent any [China-specific] tariffs". If China is too successful in skirting tariffs it may find its back door as well as the front entrance slammed shut. ■

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Sun, sea and lots of sand

Riyadh Air is betting on a tourist surge to Saudi Arabia

But does the country need two national airlines?

Nov 23rd 2023

THE DUBAI air show ended on November 17th with bumper orders for a total of 399 airliners. Emirates, the local giant, is buying 95 long-haul jets from Boeing with a list price in excess of $52bn. Yet the deal which made the biggest waves was one that did not materialise. Riyadh Air, a carrier with a single borrowed aircraft but lofty ambitions, had been expected to place a big order at the jamboree. Riyadh Air says that it will now order narrow-body jets in the coming weeks, to add to 39 wide-bodies which it agreed in March to purchase from Boeing, with an option to buy 33 more.

The airline will not take passengers until 2025 but its boss, Tony Douglas, formerly in charge of Etihad, Abu Dhabi's flag carrier, has teased at what is to come from an airline that promises a new standard for "reliability, comfort and hospitality". Aviation is a pillar of Saudi Arabia's "Vision 2030", a mammoth scheme to diversify its economy away from oil.

Many of the trappings of a new airline are in place. In Dubai, against a backdrop of the 787 Dreamliner on loan from Boeing, painted in a striking purple livery, Mr Douglas showed off a picture of a second, more sober, mostly white paint job, the better to reflect the baking desert sun. A partnership announced in Dubai with Lucid, a Saudi-backed electric-vehicle startup, was meant to symbolise the promise of world-beating sustainability practices. A shirt-sponsorship deal with Atlético Madrid, one of Spain's leading football clubs, ensures that Riyadh Air is in the public eye.

There is one niggle. Saudi Arabia already has a national airline, Saudia. So why would the country's deep pocketed sovereign-wealth fund back another? And why would the kingdom spend huge sums on a new airport in Riyadh, its capital, that will accommodate 120m passengers by 2030?

Mr Douglas denies suggestions that his airline has its eye on competing with Emirates and the other Gulf carriers, also usefully based midway between Europe and Asia, for connecting passengers. Instead it is intended to serve customers with the desert kingdom as their destination. Saudia will not be relegated, as some suggest, to serving religious tourists from its base in Jeddah. It, too, is being spruced up and has new planes on the way. The hope is that two airlines will be required to serve a tourist industry that hopes to welcome 75m international visitors a year by 2030, up from 17m in 2022. Besides diversifying Saudi Arabia's economy, this hoped-for bonanza is meant to burnish the country's image abroad.

Mr Douglas enthuses about Al Ula, a UNESCO world heritage site that he says rivals Petra in Jordan, and about planned eco-resorts on the Red Sea that will make the Caribbean "look a bit shoddy". But these delights, and even a rumoured partial relaxation of the country’s strict ban on selling alcohol, may not be enough to lure visitors. Mr Douglas does not discount the idea of serving significant numbers of transfer passengers, but calls it a “high-class problem for the future”. If visitors fail to come in the anticipated droves, that future may come sooner than he thinks. ■

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Bartleby

How not to motivate your employees

Douglas McGregor’s prescient writing on management and motivation

Nov 20th 2023

HERE ARE some handy rules of thumb. Anyone who calls themselves a thought leader is to be avoided. A man who does not wear socks cannot be trusted. And a company that holds an employee-appreciation day does not appreciate its employees.

It is not just that the message sent by acknowledging staff for one out of 260-odd working days is a bit of a giveaway (there isn't a love-your-spouse day or a national don't-be-a-total-bastard week for the same reason). It is also that the ideas are usually so tragically unappreciative. You have worked hard all year so you get a slice of cold pizza or a rock stamped with the words "You rock"?

This approach reveals more about the beliefs of the relevant bosses than it does anything about what actually motivates people at work (the subject of this week's penultimate episode of Boss Class, our management podcast). In a book published in 1960, called "The Human Side of Enterprise", Douglas McGregor, a professor at MIT Sloan School of Management, divided managers' assumptions about workers into two categories. He called them theory X and theory Y.

McGregor, who died in 1964, was a product of his time. The vignettes in the book feature men with names like Tom and Harry. But his ideas remain useful.

Theory X managers believe that people have a natural aversion to work; their job is to try and get the slackers to put in some effort. That requires the exercise of authority and control. It relies heavily on the idea of giving and withholding rewards to motivate people. Perks and pizza fit into this picture but pay is critical to theory X; work is the price to be paid for wages.

Theory Y, the one McGregor himself subscribed to, is based on a much more optimistic view of humans. It assumes that people want to work hard and that managers do not need to be directive if employees are committed to the goals of the company. It holds that pay can be demoralising if it is too low or unfair, but that once people earn enough to take care of their basic needs, other sources of motivation matter more. In this, McGregor was a follower of Abraham Maslow, a psychologist whose hierarchy of needs moves from having enough to eat and feeling safe up to higher-order concepts like belonging, self-esteem and purpose.

Theory X is not dead. It lives on in low-wage industries where workers must follow rules to the letter and in high-wage ones where pay motivates people long after they can feed themselves. It surfaces in the fears of managers that working from home is a golden excuse for people to do nothing. It shows up in the behaviour of employees who phone in and bosses who bully and berate.

Nevertheless, theory Y is in the ascendant. You cannot move for research showing that if people think what they do matters, they work harder. A meta-analysis of such research, conducted by Cassondra Batz-Barbarich of Lake Forest College and Louis Tay of Purdue University, found that doing meaningful work is strongly correlated with levels of employee engagement, job satisfaction and commitment. Trust is increasingly seen as an important ingredient of successful firms; a recent report by the Institute for Corporate Productivity found that high-performing organisations were more likely to be marked by high levels of trust.

Firms of all kinds are asking themselves Y. Companies in prosaic industries are trying to concoct purpose statements that give people a reason to come into work that goes beyond paying the rent. The appeal of autonomy and responsibility permeates the management philosophy not just of creative firms like Netflix but also of lean manufacturers that encourage employees to solve problems on their own initiative. Some retailers have raised wages in the theory Y belief that reducing workers' financial insecurity will improve employee retention and organisational performance.

McGregor himself wrote that the purpose of his book was not to get people to choose sides but to get managers to make their assumptions explicit. On this score he is less successful. It is still possible to run financially viable firms in accordance with theory X. It is impossible to admit it.■

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The curse of the badly run meeting (Nov 13th)
How to manage teams in a world designed for individuals (Nov 6th)
How to get the lying out of hiring (Oct 30th)

Also: How the Bartleby column got its name

Investment screaming

Every country wants its own investment-screening regime

Pity the world's dealmakers

Nov 23rd 2023

SINGAPORE BECAME the latest country to erect barriers to investment in the name of national security on November 3rd. It plans to review, and potentially block, investments in entities "critical to Singapore's national-security interests". That should come as little surprise to dealmakers from the free-trading city-state who have watched the proliferation of similar policies abroad. Last year Singaporean firms filed more notices with the Committee on Foreign Investment in the United States (CFIUS), America's powerful inbound-investment watchdog, than investors from any other country. That includes China, whose globetrotting companies have been the primary target of efforts to beef up existing investment-screening regimes and adopt new ones. A report from the OECD, a club of mostly rich countries, calls this protectionist turn "historically unprecedented".

Companies of all nationalities must now navigate a complex patchwork of broad rules and opaque decision-making much more novel than the antitrust regimes which have historically caused them grief. Plenty are getting caught. On November 20th Safran, a French engine-maker, said the Italian government had exercised its "golden power" to oppose the firm's acquisition of an Italian subsidiary of Collins Aerospace, an American firm. Safran's biggest shareholder is the French government, which last month scuppered an attempt by Flowserve, an American industrial firm, to purchase Velan, a Canadian business that helps kit out its submarines.

Investment watchdogs are working overtime even in the midst of a dealmaking drought. Start with CFIUS. Foreign investment flowing into America fell by half last year compared with the year before, yet CFIUS reviewed a record 286 notices from companies hoping to have their deals rubber-stamped. That is hardly surprising given the committee's expanding brief. In September 2022 President Joe Biden directed it to focus its attention on the security of supply chains and technological leadership. Foreign ownership of real estate is also increasingly in the cross-hairs—two months ago eight military installations were added to a list of sensitive properties where purchasing nearby land can be subject to CFIUS approval (many states have also tightened their own property-ownership rules).

The Economist

CFIUS is not just busier, but tougher, too. When it does approve a deal, it is more often doing so with strings attached (see chart 1). Mitigation agreements can involve a company agreeing to anything from controlling who has access to certain technology to excluding sensitive assets from a deal entirely. Better staffing and a greater focus on the “vulnerability” of firms when assessing national-security risks mean CFIUS is now more likely to impose conditions, says Aimen Mir, a lawyer who previously oversaw the body.

Some younger watchdogs have been busier still. Britain's investment-screening regime, which came into force in January 2022, reviewed a whopping 866 transactions in its first full reporting year to March. Some are also even keener to impose conditions—France's regulator did so for over half of the deals it examined.

The Economist

After a period of furious rulemaking, screening mechanisms will mature. That could involve lawmakers honing their policies and tweaking their long lists of “sensitive” sectors. British lawmakers are now doing just that. On November 13th the government announced a wide-ranging review of its investment policy. In some areas, it is undoubtedly worth a trim. Last year 93% of deals reviewed were waved through within a month, implying that few transactions which triggered the requirement to notify officials posed any real national-security threats. Investments by Chinese firms contributed a far larger share of detailed “call-in” reviews than of initial filings (see chart 2).

Britain’s government says the review will make rules business-friendlier. In a green and pleasant echo of America’s “small yard and high fence”, it promises a “small garden, high fence”. It could exempt transactions which involve no real change to corporate control. Fiercer debates may erupt over the British regime’s list of 17 sensitive sectors in which deals trigger mandatory filings. For every item the government is considering axing from the rule book—by refining the definitions of sectors including artificial intelligence and defence, for example—it might add more elsewhere. The vague category of “suppliers to the emergency services” could be expanded to include subcontractors.

The EU is considering changes to its investment-screening regulations, too. Since 2020 the European Commission has strongly encouraged member states to adopt their own regimes. It has also established a system for countries to share information about their reviews. Today 21 of the bloc’s 27 members have a regime of their own. Laggards are catching up: Sweden’s broad new policy will come into force in December and Ireland is expected to follow with its own shortly after. In aggregate, EU member states received more than 1,400 notices from dealmakers last year.

Further reforms are likely to raise fundamental questions about the relationship between economic policy and national security in the EU. The commission is already concerned that different governments enforce prohibitions on different types of investment and conduct their business at varying speeds. In July the European Court of Justice, the EU’s highest court, ruled that a decision by Hungarian authorities to block a deal breached freedom of establishment within the bloc, even though the unlucky buyer was owned by a non-European company.

It is possible that rules in various European countries may grow more similar over time. But any attempt by the commission to force greater harmonisation is likely to be strongly resisted by individual countries. In Europe, like everywhere else, the rules are likely to remain a mess. ■

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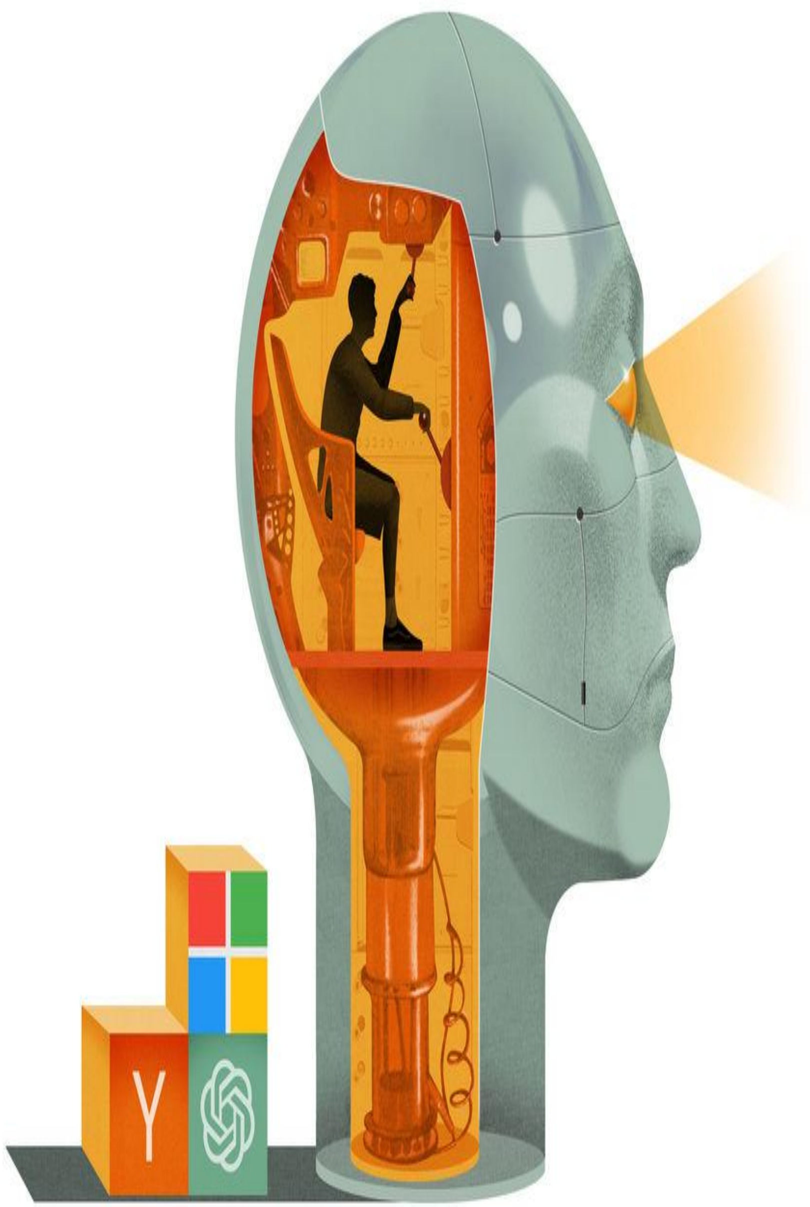
Schumpeter

The many contradictions of Sam Altman

Is the boss of OpenAI a genius or an opportunist?

Nov 22nd 2023



Brett Ryder

CALL IT THE “Burning Man” theory of tech. Every so often, the hopes and dreams of a technological visionary are almost torched by those who surround them. In 1985 Steve Jobs was fired from Apple, the company he fathered, and did not return for 11 years. In 2000 Elon Musk’s co-founders ousted him as CEO of X.com, the firm that went on to become PayPal, a digital-payments platform. In 2008 Jack Dorsey’s fellow creators of Twitter ended his short reign as chief executive of the social-media app. On November 17th Sam Altman looked like he would become the Bay Area’s next burnt effigy, ousted from OpenAI, the artificial-intelligence (AI) firm he co-founded in 2015, by a board that accused him of lacking candour. But on November 21st, after four days in which he, his employees and OpenAI’S investors, such as Microsoft, wrangled feverishly for his reinstatement, he was back in control of the firm. “Wow it even took Jesus three days,” one wag tweeted in the midst of the drama. Instead of Mr Altman, three of the four board members who gave him the boot are toast.

It is not the first time in his 38 years on Earth that Mr Altman has been at the centre of such an imbroglio. He is a man of such supreme self-confidence that people tend to treat him as either genius or opportunist—the latter usually in private. Like Jobs, he has a messianic ability to inspire people, even if he doesn’t have the iPhone creator’s God-like eye for design. Like Mr Musk, he has ironclad faith in his vision for the future, even if he lacks the Tesla boss’s legendary engineering skills. Like Mr Dorsey, he has shipped a product, ChatGPT, that has become a worldwide topic of conversation—and consternation.

Yet along the way he has irked people. This started at Y Combinator (YC), a hothouse for entrepreneurs, which he led from 2014 until he was pushed out in 2019 for scaling it up too fast and getting distracted by side hustles such as OpenAI. At OpenAI, he fell out with Mr Musk, another co-founder, and some influential AI researchers who left in a huff. The latest evidence comes from the four board members who clumsily sought to fire him. The specific reasons for their decision remain unclear. But it would not be a surprise if Mr Altman’s unbridled ambition played a role.

If there is one constant in Mr Altman’s life, it is a missionary zeal that even by Silicon Valley standards is striking. Some entrepreneurs are motivated by fame and fortune. His goal appears to be techno-omnipotence. Paul Graham, co-founder of YC, said of Mr Altman, then still in his early 20s: "You could parachute him into an island full of cannibals and come back in five years and he'd be the king."

Forget the island. The world is now his domain. In 2021 he penned a Utopian manifesto called "Moore's Law for Everything", predicting that the AI revolution (which he was leading) would shower benefits on Earth—creating phenomenal wealth, changing the nature of work, reducing poverty. He is an ardent proponent of nuclear fusion, arguing that coupled with ChatGPT-like "generative" AI, falling costs of knowledge and energy will create a "beautiful exponential curve". This is heady stuff, all the more so given the need to strike a careful balance between speed and safety when rolling out such world-changing technologies. Where Mr Altman sits on that spectrum is hard to gauge.

Mr Altman is a man of contradictions. In 2016, when he still led YC, Peter Thiel, a billionaire venture capitalist, described him to the *New Yorker* as "not particularly religious but…culturally very Jewish—an optimist yet a survivalist" (back then Mr Altman had a bolthole in Big Sur, stocked with guns and gold, in preparation for rogue AIs, pandemics and other disasters). As for his enduring optimism, it rang out clearly during an interview he recorded just two days before OpenAI's boardroom coup, which he did not see coming. "What differentiates me [from] most of the AI companies is I think AI is good," he told "Hard Fork", a podcast. "I don't secretly hate what I do all day. I think it's going to be awesome."

He has sought to have it both ways when it comes to OpenAI's governance, too. Mr Altman devised the wacky corporate structure at the heart of the latest drama. OpenAI was founded as a non-profit, in order to push the frontiers of AI to a point where computers can out-think people, yet without sacrificing human pre-eminence. But it also needed money. For that it established a for-profit subsidiary that offered investors capped rewards but no say in the running of the company. Mr Altman, who owns no shares in OpenAI, has defended the model. In March he told one interviewer that putting such technologies into the hands of a company that sought to create unlimited value left him "a little afraid".

And yet he also appears to chafe against its constraints. As he did at YC, he has pursued side projects, including seeking investors to make generative-AI devices and semiconductors, which could potentially be hugely lucrative. The old board is being replaced by a new one that may turn out to be less wedded to OpenAI's safety-above-all-else charter. The incoming chairman, Bret Taylor, used to run Salesforce, a software giant. On his watch the startup could come to resemble a more conventional, fast-scaling tech company. Mr Altman will probably be happy with that, too.

Mercury rising

If that happens, OpenAI may become an even hotter ticket. With the latest version of its AI model, GPT-5, and other products on the way, it is ahead of the pack. Mr Altman has a unique knack for raising money and recruiting talented individuals, and his task would be all the easier with a more normal corporate structure. But his ambiguities, especially over where to strike the balance between speed and safety, are a lesson. Though Mr Altman has been welcomed into the world's corridors of power to provide guidance on AI regulation, his own convictions are still not set in stone. That is all the more reason for governments to set the tone on AI safety, not mercurial tech visionaries. ■

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The Bob Iger v Nelson Peltz rematch (Nov 9th)
Chinese apps are a mixed blessing for American big tech (Nov 2nd)

Also: If you want to write directly to Schumpeter, email him at schumpeter@economist.com. And here is an explanation of how the Schumpeter column got its name.

Finance & economics

The sinews of war

Inside Hamas's sprawling financial empire

Why Israel is powerless to dismantle the group's finances

Nov 20th 2023 | Istanbul


Carl Godfrey

VIEWED FROM one of Istanbul's glitziest restaurants, the Bosporus looks sublime. The venue is a favoured haunt of mandarins, businessmen, minor celebrities—and Hamas's financiers. A man on whom America has imposed sanctions for funding the Islamist group describes his various board seats. "It's ridiculous," he says of America's accusation. Eventually, though, comes an admission. "Now, if you're asking what our employees do with their own money, why would I know?"

Hamas has three sources of power: its physical force inside Gaza, the reach of its ideas and its income. Since Hamas's attacks on October 7th, Israel has killed more than 12,000 Palestinians in Gaza in seeking to wreck the first. But Israel's declared goal of destroying Hamas for good requires its financial base to be dismantled, too. Very little of this sits in Gaza. Instead, it is overseas in friendly countries. Furnished with money-launderers, mining companies and much else, Hamas's financial empire is reckoned to bring in more than $1bn a year. Having been painstakingly crafted to avoid Western sanctions, it may be out of reach for Israel and its allies.

Hamas's income pays for everything from schoolteachers' salaries to missiles. Around $360m each year comes from import taxes on goods brought into Gaza from the West Bank or Egypt. This is the easiest source of cash for Israel to strangle. After withdrawing from the strip in 2005, it strictly limited the movement of goods and people across the border. Now it stops even most basic necessities, such as food and fuel, from getting in.

A much larger income stream, though, comes from abroad. Israeli officials reckon this amounts to around $750m per year, making it the main source of funding for Hamas's current stockpile of arms and fuel. Some of the money comes from friendly governments, the biggest of which is Iran. America reckons that the ayatollahs provide $100m a year to Palestinian Islamist groups, mainly in military aid. The task for Hamas's financiers is to move this money around without falling prey to America's sanctions. In the past month alone, American officials have imposed three rounds of restrictions on people and companies for funding Hamas.

Dodging American sanctions requires some ingenuity. Millions of dollars flow to Hamas through crypto markets. "You'd be surprised how much of the market's activity comes back to [Hamas]," says Firuze Segzin, an economist at Bilkent University in Turkey. America's Treasury Department says Hamas has smuggled more than $20m through Redin, a currency exchange crammed among tourist shops deep in Istanbul's run-down Fatih neighbourhood. The department also says Binance, the world's biggest crypto exchange by trading volume, has allowed its users to carry out transactions with Hamas.

But the lion's share of Hamas's money—at least $500m a year, say Israeli officials—comes from its investments, some of which are firms registered in countries across the Middle East. These are run by Hamas's investment office and employ its members. American officials say the firms donate to charities which in turn funnel funds to Hamas; Turkish officials say profits are sometimes taken directly.

Untangling these revenue streams is tricky for Western regulators. One such firm built the Afra Mall, Sudan's first shopping mall, while another has mines near Khartoum, its capital. A third built skyscrapers in Sharjah, in the United Arab Emirates (UAE). Many of these companies boast of their business deals, but deny any affiliation with Hamas.

Can the revenue streams still flowing to Hamas be stanched? That depends on the countries they pass through. Since 1989, when Israel arrested a handful of Hamas's top brass in Gaza and the West Bank, its bankers have lived abroad. Over time, though, geopolitical shifts have forced them to keep moving. Hamas abandoned its first financial hub, in Amman, Jordan's capital, under pressure from America.

Today, while Hamas's politicians favour Doha, the capital of Qatar, and its companies range from Algeria and Sudan to the UAE, its financiers live in Istanbul. Zaher Jabarin, accused by Israel of running Hamas's finances (which he denies), is based there, as are several other individuals under sanctions by America for funding the organisation. Eager to garner regional influence by supporting the Palestinian cause, Recep Tayyip Erdogan, Turkey's president, offers shelter. Israel says that the Turkish government hands out passports (which it denies) and lets Hamas keep an office in the country.

Meanwhile, Turkey's banking system helps Hamas dodge American sanctions by conducting complex transactions across the world. A booming, lightly regulated crypto market makes things even easier. Many of Turkey's biggest banks, including Kuveyt Turk, have been accused by Israel and America of knowingly storing Hamas's cash. Some murmur that Mr Erdogan quietly approves. In 2021 the Financial Action Task Force, a G7 watchdog, placed Turkey on its "grey list" of countries doing too little to freeze terrorists' assets.

No one benefits more than Hamas's businessmen. The Turkish government's tacit approval "opens doors and makes things smooth in business", says one of the group's finance employees. Trend GYO, an Istanbul-listed firm that has been placed under sanctions by America for funnelling funds to Hamas, won an official contract to build Istanbul Commerce University. Construction companies, which feature heavily in Hamas's portfolio, can quietly swallow huge lumps of cash and often receive large loans. All this enables Turkish officials to protest that they are not directly lining Hamas's pockets.

So far Hamas seems financially bulletproof. Israel has managed to inflict little harm on either its income or its savings; Turkey's banks have been unco-operative. America's numerous sanctions are less effective if their targets can keep cash outside its banking system. And Hamas hides its companies well. "Every time you think you've got a big fish, it changes its name," despairs one ex-Treasury official.

In fact, the risk is that Hamas's finances will improve. As Israel steps up its attacks on Gaza, countries with pro-Palestinian populations may make life even easier for Hamas's bankers. For months rumours have circulated that some civil servants in Mr Erdogan's economic ministry are co-ordinating with Hamas's finance office.

For Israel, the prospect of Hamas growing richer despite the war would be a bitter failure. With its wealth and financial roots intact, Hamas—or a similar organisation—might re-emerge and flourish anew from the destruction. While Gazans have been plunged into tragedy, Hamas's money is safely ensconced elsewhere—and its financiers can eat lobster as they gaze across the Bosporus. ■

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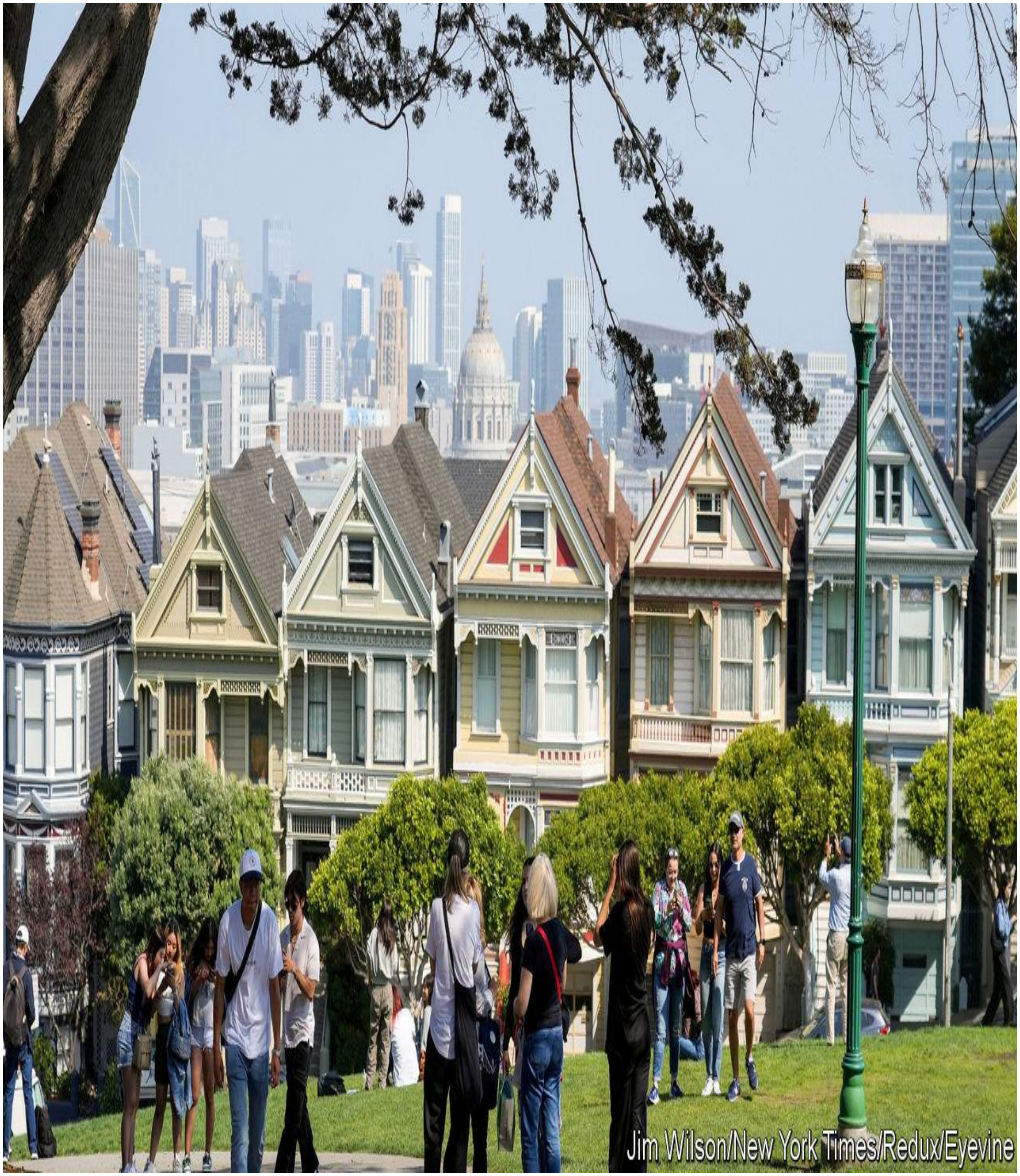
Walking on air

Why house prices have risen once again

Across the rich world, they have brushed off higher rates. Can that last?

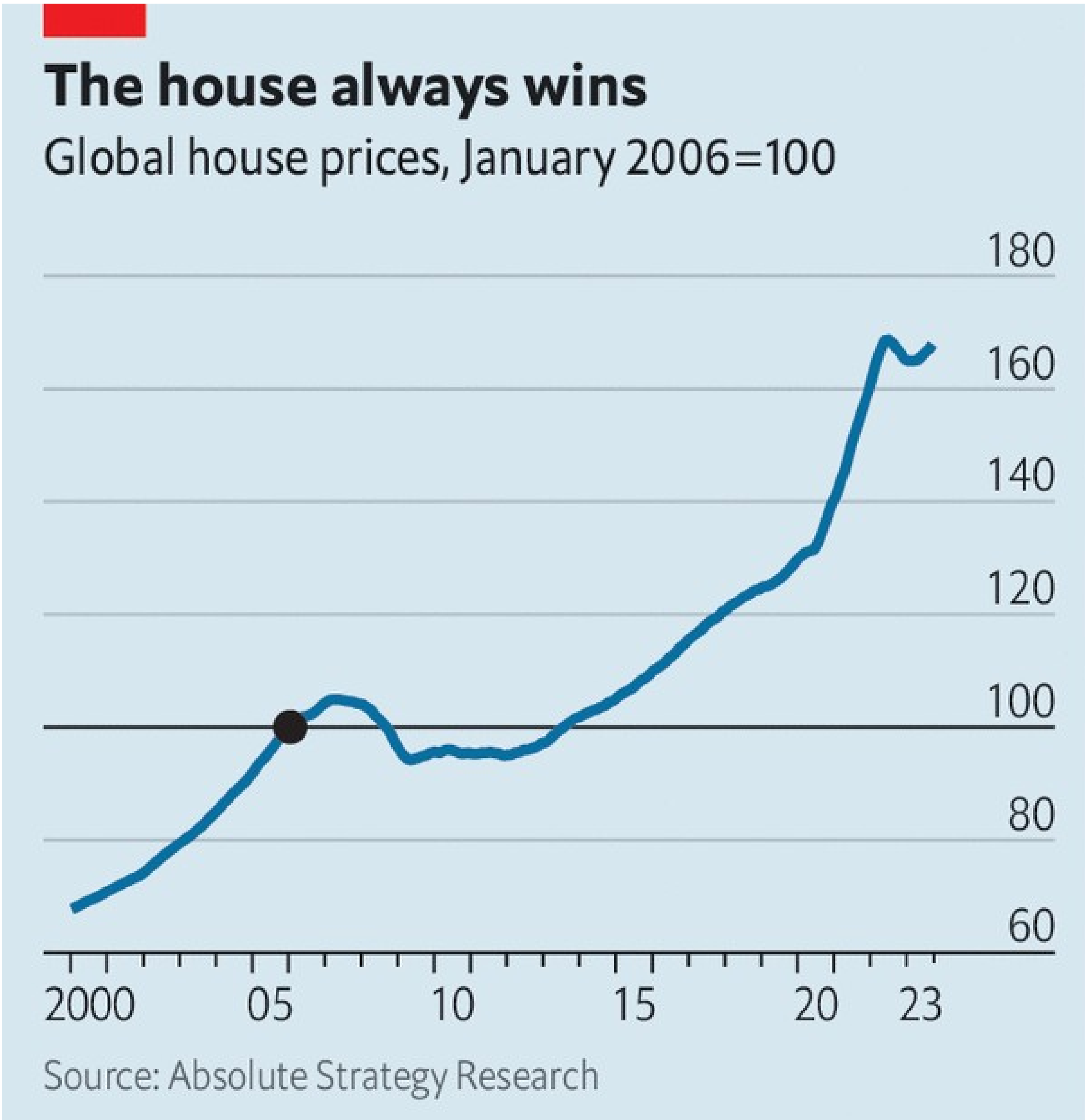
Nov 21st 2023 | San Francisco



Jim Wilson/New York Times/Redux/Eyevine

IN PARTS OF San Francisco, the housing market is in dire straits. Consider the example of one swish apartment close to City Hall, with quartz countertops and a rooftop deck, which in 2019 sold for $1.25m. Not today. After the chaos of the covid-19 pandemic, City Hall now overlooks the locus of the city's drug problems. Biblical scenes of lawlessness and human suffering play out every night. The flat is now listed for $769,000—and has yet to sell.

Away from its troubled districts, though, San Francisco's housing market is once again robust. Prices have risen by 3% from a trough reached earlier this year. Property in swankier parts of town fetches well above the asking price. In nearby San Jose, in Silicon Valley, house prices are up by 8% from the trough. The story is similar across the rich world: pockets of weakness, but surprising overall strength.



The Economist

Figures from the Dallas branch of the Federal Reserve suggest that global house prices rose by 1.3% between the first and second quarters of 2023. Estimates for more recent months point to a further rise (see chart). In cash terms this puts them in line with the previous peak reached in 2022. Adjusted for inflation, they have fallen by less than 5%. That pales in comparison with the 13% peak-to-trough decline which followed the financial crisis of 2007-09, and which also lasted a lot longer.

Even in places where the housing market went bananas during the pandemic, leading people to expect a crash, prices are now higher than many had feared. In Britain, a house-price index produced by Halifax, a building society, rose by 1.1% in October, defying economists' expectations of a 0.4% monthly drop (though the number of transactions is unusually low). Data from Zillow, a housing website, indicate that American house prices are nearly 2% higher than they were a year ago. A recent survey by Bloomberg, a financial-data firm, suggests that Australian house prices may rise by 7.7% this year.

All this has taken most economists by surprise. Since the start of 2022 the rich world's central banks have raised interest rates by an average of five percentage points. Economists thought house prices would crash as buyers' purchasing power declined, mortgage-holders struggled to repay their debts and the economy slowed.

Three factors, however, explain why housing markets have so far brushed off higher rates. The first is a shift in preferences. The pandemic seems to have made people more hermit-like: they work from home more and spend more time on home entertainment than on going out. People thus place a higher value on their living space, raising demand for housing. This arrests price declines.

The second factor is a changed mortgage market. In some countries, such as America and Denmark, it has long been common to borrow on fixed rates, allowing people to insulate themselves from central-bank rate rises. In the years before 2022 households in other countries shifted in the same direction. Between 2011 and 2021 the share of mortgages in EU countries on variable rates fell from nearly 40% to less than 15% (although some of the rest are fixed for only a few years). The effect has been to delay the impact of rate rises. Since 2021, the average mortgage rate across the rich world has only risen by half as much as the average central-bank policy rate.

Household finances also make rising interest costs more manageable—the third factor supporting house prices. Following the property crisis that began in 2007, many governments introduced tougher regulations, shutting out less creditworthy borrowers. Richer folk find it easier to weather higher interest bills. In addition, many borrowers are still sitting on large "excess savings" accumulated during the pandemic, which they can use to make their repayments. The latest estimates suggest that, in the average rich country outside America, these savings still amount to 14% of yearly disposable income.

Could housing-market pain merely be delayed? Mortgages with short-term fixes will soon expire. Households will then need to refinance, possibly at the high rates of today; if inflation remains sticky, central bankers may need to raise rates even further. Excess savings will run out eventually, and a rise in unemployment, linked to a weak economy, would also imperil some homeowners. But for now the rich world is a long way from City Hall. ■

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Buttonwood

Investors are going loco for CoCos

Thanks to miserable yields in stocks, AT1 bonds have gone from death-blow to go-go

Nov 23rd 2023

IN A DISTANT and forgotten era, around eight months ago, tremors were rippling through the global banking system. Three mid-sized American lenders collapsed in a week. In Europe the venerable Credit Suisse almost went under, before being bought by its rival, UBS. The scramble to merge them threw a cloud over an entire class of bank debt, $1trn of which has been issued over the past decade.

AT1 bonds were supposed to make banks safer after the financial crisis of 2007-09. In good times, they work like normal bonds. But if the issuing bank's capital falls far enough, some (dubbed contingent convertible notes, or "CoCos") convert to equity. Some others are written off. AT1s are usually described as being senior to shares and junior to bonds in a liquidation. But when Credit Suisse fell apart, AT1 bondholders were wiped out before shareholders.

The CoCo crowd howled, even as regulators insisted they were following the bonds' contracts. It looked as if the entire asset class might be done for, with investors everywhere poring over fine print to see how they would be treated in a similar scenario. AT1 yields rocketed.

Yet today the market for AT1s is not just alive, but thriving. By November 20th the month was already the third-strongest for issuance over the past two years, according to Dealogic, a data provider. Mitsubishi UFJ sold $750m in dollar-denominated AT1s in October. This month both Barclays and Société Générale have issued their own. Even UBS recently sold $3.5bn in AT1s—under the same Swiss regulatory regime that annihilated those of Credit Suisse.

An unkind columnist might wonder if all this is because investors have the recall capacity of goldfish. Amnesia is certainly tempting when such tasty returns are on offer. Euro-denominated AT1 bonds currently offer yields of around 9.6%, up from a nadir of 2.8% in late 2021. Feeling the warm glow, many seem keen to put their hands to the hot stove again.

The more charitable view is that investors have decided the Swiss blow-up was idiosyncratic. Regulators elsewhere in the world rushed to insist that their banks' AT1s would never be subordinated to shares. And the market seems to be functioning well despite its springtime panic. The vast majority of AT1s facing call dates—when banks can, but do not have to, redeem and repay the bond—have been repaid. That indicates good financial health, and an ability to issue more bonds. According to GAM Investments, an asset manager, 92% of AT1 bonds with a call date in 2023 have been redeemed, barely down from the long-run rate of 94%.

The phoenix-like recovery of the AT1 market also says something about the state of financial markets more broadly. On both corporate bonds and stocks, the compensation on offer for exposure to losses is miserable. For American shares, the equity-risk premium—a measure of the excess expected return for buying risky stocks instead of "safe" government bonds—has slumped to its lowest level in decades. That does not mean that stocks will fail to beat bonds in the long run. But it does mean that the earnings that analysts currently expect offer paltry yields in return for risk.

Something similar is true in the credit market. Corporate debt currently offers measly returns in exchange for the risk of default. In both the investment-grade and junk-rated markets, spreads—the extra yield investors receive above those of Treasury bonds—are below the average level over the past ten years. As recently as the beginning of 2022, American junk bonds offered marginally higher yields than dollar-denominated AT1 bonds. But today, at 10.1%, the yield on a dollar AT1 is 1.6 percentage points above the yield on the equivalent junk debt.

Banks have sold $51.3bn-worth of AT1 bonds so far in 2023. If they issue another $3bn before the year is out, that will beat the total issuance figure for 2022, despite the seizure the market suffered in March. If the rewards for taking risk in other asset classes were less stingy, it is difficult to imagine that demand for AT1 bonds would have recovered so rapidly. It might not have recovered at all.

The next year will be a pivotal one for the market. Around $30bn of AT1 bonds face their first call dates in 2024. But if surprisingly low corporate-bond spreads and an eye-wateringly expensive stockmarket persist, the instruments are likely to remain in demand among investors searching for returns. A sober assessment of how AT1 bonds would fare in another bank collapse may have to wait until the alternatives look a little less dispiriting. ■

Read more from Buttonwood, our columnist on financial markets:
Ray Dalio is a monster, suggests a new book. Is it fair? *(Nov 16th)*

Forget the S&P 500. Pay attention to the S&P 493 (Nov 8th)
What a third world war would mean for investors (Oct 30th)

Also: How the Buttonwood column got its name

Economies of scales

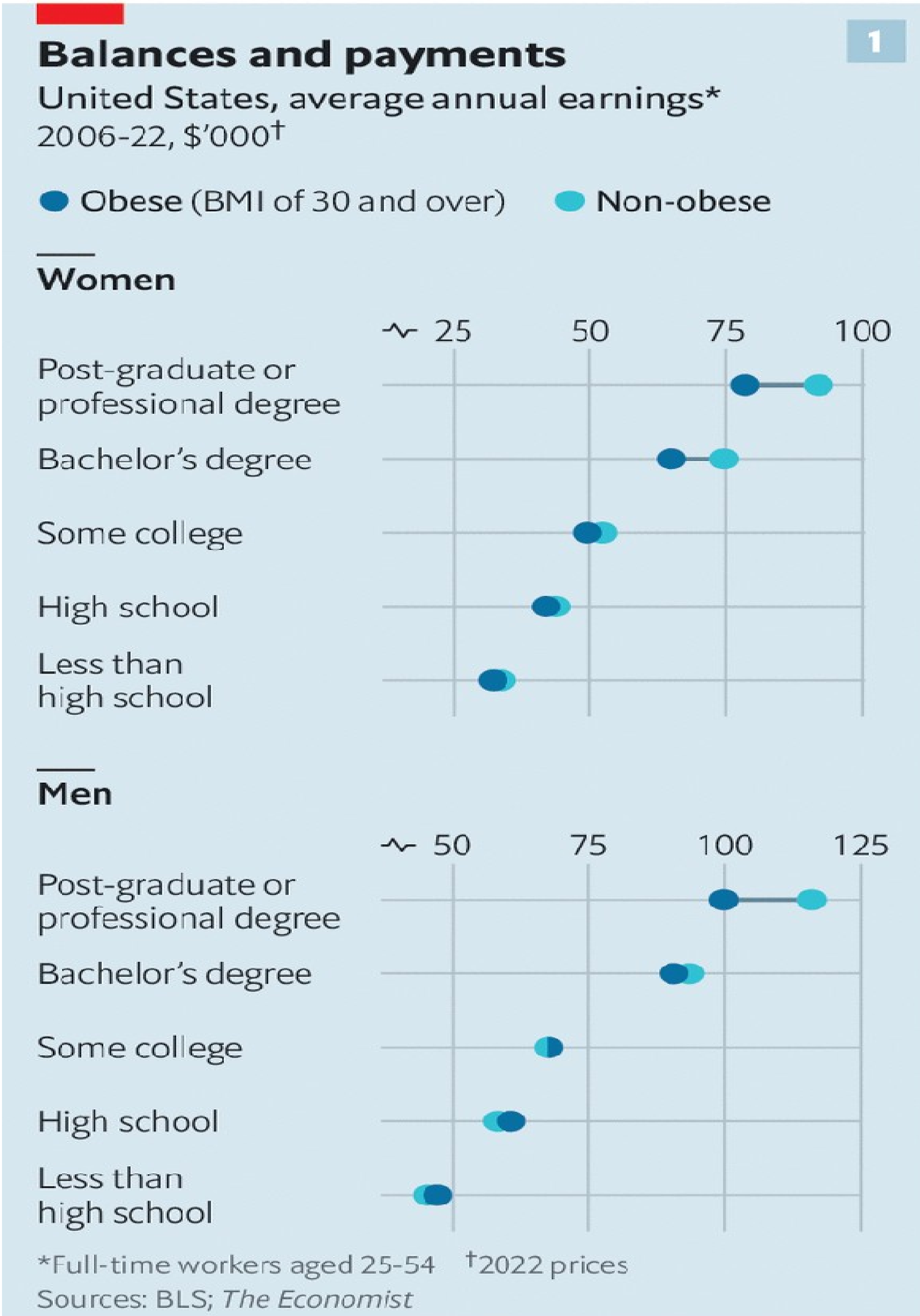
The obesity pay gap is worse than previously thought

It affects men as well as women, and is wider for the well-educated

Nov 23rd 2023

OBESE PEOPLE experience discrimination in many parts of their lives, and the workplace is no exception. Studies have long shown that obese workers, defined as those with a body-mass index (BMI) of 30 or more, earn significantly less than their slimmer counterparts. In America, several state and local governments are contemplating laws against this treatment. On November 22nd, one such ban came into force in New York City.

Yet the costs of weight discrimination may be even greater than previously thought. “The overwhelming evidence,” wrote the Institute for Employment Studies, a British think-tank, in a recent report, “is that it is only women living with obesity who experience the obesity wage penalty.” They were expressing a view that is widely aired in academic papers. To test it, *The Economist* has analysed data concerning 23,000 workers from the American Time Use Survey, conducted by the Bureau of Labour Statistics. Our number-crunching suggests that, in fact, being obese hurts the earnings of both women and men.



The Economist

The data we analysed cover men and women aged between 25 and 54 and in full-time employment. At an aggregate level, it is true that men's BMIs are unrelated to their wages. But that changes for men with university degrees. For them, obesity is associated with a wage penalty of nearly 8%, even after accounting for the separate effects of age, race, graduate education and marital status. When we re-ran our analysis, using a different dataset that covers nearly 90,000 people, from the Department of Health and Human Services, we got similar results.

The conclusion—that well-educated workers in particular are penalised for their weight—holds for both sexes (see chart 1). Moreover, the higher your level of education, the greater the penalty. We found that obese men with a bachelor's degree earn 5% less than their thinner colleagues, while those with a graduate degree earn 14% less. Obese women, it is true, still have it worse: for them, the equivalent figures are 12% and 19%, respectively.

The Economist

Your line of work makes a difference, too (see chart 2). When we crunched the numbers for individual occupations and industries, we found the greatest disparities in high-skilled jobs. Obese workers in health care, for example, make 11% less than their slimmer colleagues; those in management roles make roughly 9% less, on average. In sectors such as construction and agriculture, meanwhile, obesity is actually associated with higher wages.

These results suggest that the aggregate costs of wage discrimination borne by overweight workers in America are hefty. Suppose you assume that obese women, but not men, face a wage penalty of 7% (the average across all such women in our sample) and that this is the same regardless of their level of education. Then a back-of-the-envelope calculation suggests that they bear a total cost of some $30bn a year. But if you account for both the discrimination faced by men, and for the higher wage penalty experienced by the more educated (who also tend to earn more), the total cost to this enlarged group more than doubles, to $70bn per year.

What can be done? Several cities, such as San Francisco and Washington, DC, already ban discrimination on the basis of appearance. A handful of states—including Massachusetts, New York, New Jersey and Vermont—are considering similar bills. The ban New York City began to enforce on November 22nd prohibits weight-based discrimination in employment, housing and public accommodation such as hotels and restaurants. Alas, it is unlikely to accomplish much. When we restricted our analysis to workers in Michigan, where a similar ban has been in place for nearly 50 years, we found the obesity wage penalty to be no lower than for America as a whole. Outlawing prejudice is one thing. Ironing it out of society is quite another. ■

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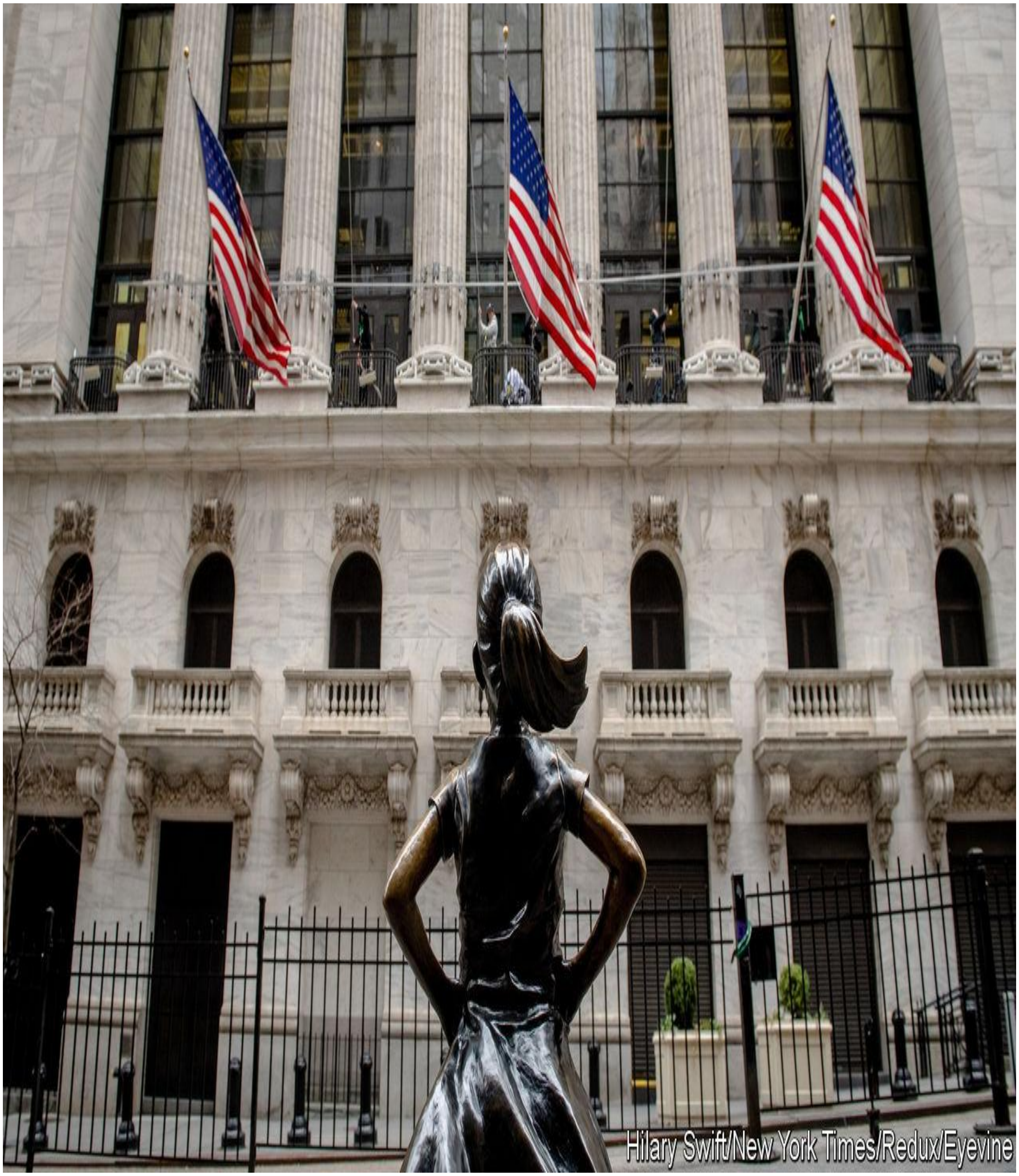
Ask again later

How will America's economy fare in 2024? Don't ask a forecaster

The consensus is that there is no consensus

Nov 23rd 2023 | WASHINGTON, DC



NOVEMBER BRINGS with it the beginning of the end of the year. The first frost signals winter has arrived. Thanksgiving marks the start of the holiday season. And from the hallowed halls of every large investment bank come pages and pages of “outlook” research. Their arrival means this year’s economic story is mostly written. Next year is what matters now.

The Economist

Often an investor thumbing through all these will experience a sense of déjà vu. With all the vanity of small differences, researchers will elaborate on why their forecast for growth or inflation deviates by perhaps 30 or 40 hundredths of a percentage point from the "consensus" of their peers. (Your correspondent once penned such outlooks herself.)

Yet this year's crop did not deliver soporific sameness. Goldman Sachs expects growth in America to be robust, at 2.1%, around double the level that economists at UBS foresee. Some banks see inflation falling by half in 2024. Others think it will remain sticky, only dropping to around 3%, still well above the Federal Reserve's target. Expectations for what the Fed will end up doing with interest rates range, accordingly, from basically nothing to 2.75 percentage points of rate cuts.

The differences between these scenarios come down to more than simple disagreement over growth prospects. Economists at Goldman might think growth and inflation will stay hot whereas those at UBS think both will slow down sharply. But Bank of America expects comparative stagflation, combining only a modest reduction in inflation with a pretty sharp drop in growth (and therefore little movement in the Fed's policy rates). Morgan Stanley expects the opposite: a version of the "immaculate disinflation" world in which inflation can come back to target without growth dropping below trend much at all.

That each of the outcomes bank economists describe feels eminently plausible is a testament to the sheer level of uncertainty out there. Almost everyone has been surprised in turn by how hot inflation was, the speed of rate rises required to quell it and then the resilience of the economy. It is as if being repeatedly wrongfooted has given economic soothsayers more freedom: if nobody knows what will happen, you might as well say what you really think.

The result is a bewildering array of analogies. Economists at Deutsche Bank think the economy is heading back to the 1970s, with central bankers playing whack-a-mole with inflation. Those at UBS expect a "'90s redux"—a slowdown in growth as rates bite, followed by a boom as new technology drives productivity gains. Jan Hatzius of Goldman thinks comparisons with decades past are "too simple" and may lead investors astray.

There is one similarity in the stories economists are telling, however. Many seem to think the worst is over. "The last mile" was the title of Morgan Stanley's outlook document; "The hard part is over," echoed Goldman. They might hope that this applies to both the economy and the difficulty of forecasting. In 2024 the contradictions in America's economy should resolve themselves. Perhaps in 2025 there will be consensus once more. ■

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A day late and a dollar short

The rich world claims it has paid its overdue climate debts

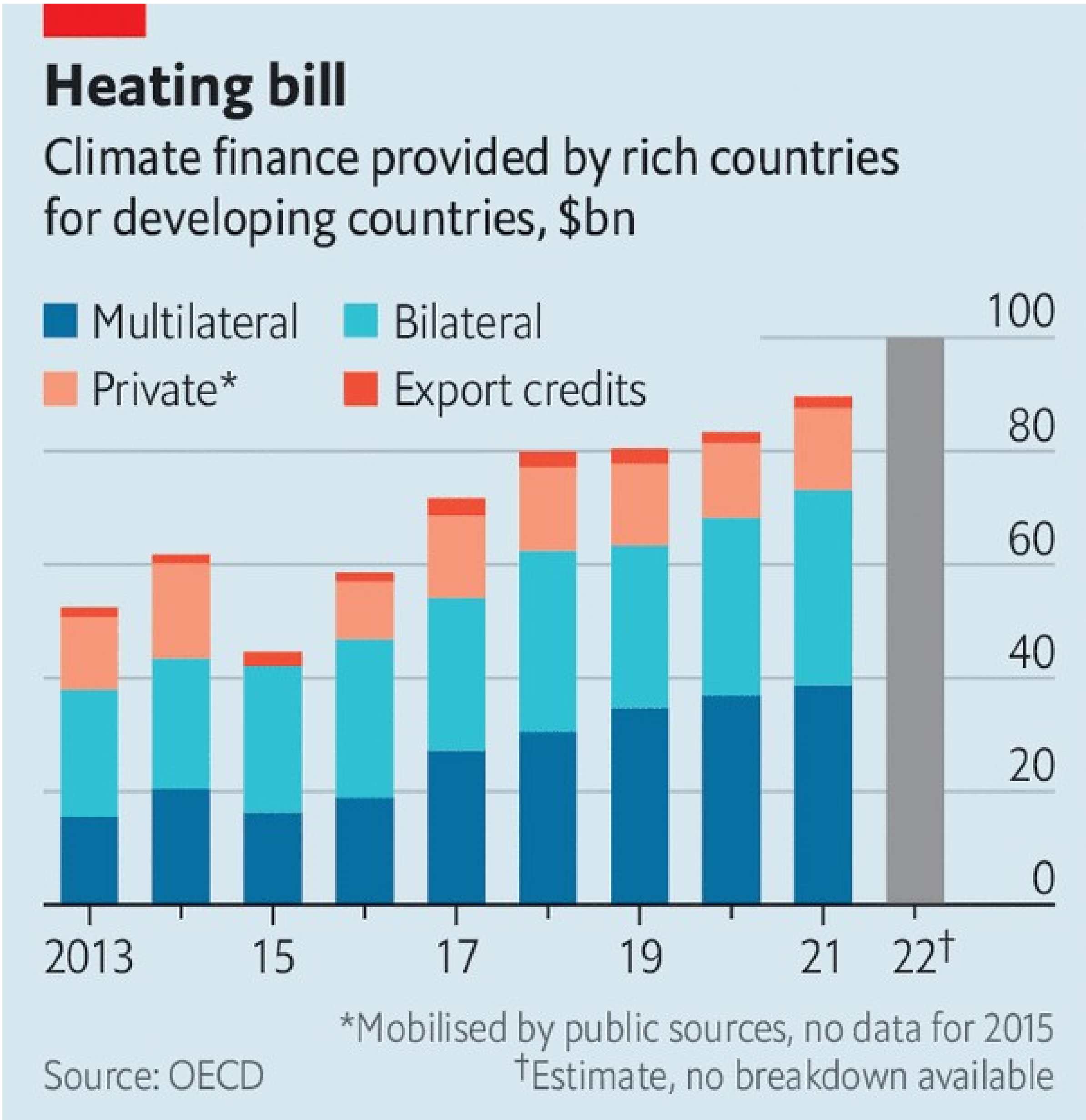
That will not stop countries squabbling over the bill for a hotter planet

Nov 23rd 2023

MISSION ACCOMPLISHED? Rich countries have at last met a promise to provide $100bn a year of climate finance to poorer ones, according to estimates for 2022 from the OECD, a club of mostly rich countries. That is two years late: the amount was originally pledged in 2009, when it was supposed to arrive by 2020. It is also not a sure thing. The OECD‘s figures are preliminary and may be revised.

Still, the estimates may ease tensions between rich countries and poor ones ahead of COP28, this year’s UN climate summit in Dubai, which begins on November 30th. The missed pledge had become a symbol of rich-world hypocrisy: urging poor countries to forgo fossil fuels without providing the finance to help them achieve that, or to help them adapt to the warmer planet brought about by its own coal-and-oil-fuelled development. An indication, however tentative, that rich countries have at last met the goal is better than none.

Developing countries will take a “trust but verify” approach, reckons Joe Thwaites of National Resources Defence Council, an environmental pressure group. The estimates are based on OECD projections published at the Glasgow climate summit in 2021. Since then, the spending data from multilateral development banks (MDBs) and governments have been at the top end of those forecasts. And so the OECD judges it likely that the $100bn pledge has been met. “I doubt they would say that without feeling really confident,” says Mr Thwaites.



The Economist

Even so, any self-congratulation by rich countries will be poorly received. As well as being late, much of the money has come in the form of loans from MDBs that poor countries must pay back, and that will take priority in any debt restructuring. Poor countries will argue at this year's COP that borrowing to fund climate investments will make their debt burdens less sustainable, as they already struggle with high food and energy prices and a strong dollar. At the Africa Climate Summit, where African nations hashed out a common position ahead of COP, they called for a "comprehensive and systemic response to the incipient debt crisis", beyond the existing system of dealing with national defaults.

Nor do the rich countries appear to have done well at "unlocking" private finance, which they have often promised to do. Estimates of the amount of external finance that countries in the global south will need to adapt to climate change tend to be in the trillions of dollars. Stretched finance ministries in the global north suggest that they will use scarce aid money to "crowd in" private finance rather than provide everything themselves. The OECD, however, found that the amount of private-sector funding mobilised by such wheezes amounted to just $14bn in 2021.

Rich countries will hope to avoid fraught arguments over money in Dubai. A deal over climate pledges agreed by America and China last week has raised hopes of a breakthrough. A similar bargain between the world's two largest polluters preceded the Paris climate agreement in 2015. Last year's COP was dominated by negotiations over "loss and damage", or funding to compensate poor countries for the impact of climate change rather than help them mitigate or adapt to it. The conference thus failed to produce any commitment to a more ambitious reduction of the pace of global warming. Ahead of this year's COP, the EU has said it will make a "substantial" contribution to a loss and damage fund, while John Kerry, America's climate negotiator, has said the country will pledge "millions". That, along with rich countries having finally met their $100bn pledge, could take the heat out of arguments.

Yet now rich countries must agree on a new pledge by 2025, since the framework they are currently following expires then. Technical discussions have so far been "rudderless", says Michai Robertson of the Alliance of Small Island States, a group of countries that are vulnerable to climate change. There is no consensus on what should count as climate finance, the period for which the new target should run or who should contribute. Established in 1992, the group of donor nations excludes big emitters such as China and fossil-fuel producers such as Saudi Arabia and the UAE. Rich countries sometimes venture that these countries, too, should cough up.

Disagreement also persists over the use to which any new money should be put. In 2021 rich countries pledged to double the amount of finance they provide for adapting to climate change, as opposed to for reducing emissions. Such adaptation is a priority for the poorest countries that emit little but are highly exposed to the risks of a warmer planet. Meanwhile rich countries, accountable to climate-conscious voters at home, are often more focused on getting middle-income countries to stop using coal. The headline announcement at last year's conference was a deal for $20bn between a small group of rich countries and Indonesia to do exactly that. Making good on overdue promises is a start. But there is no end in sight for the rows over the bill for a hotter planet. ■

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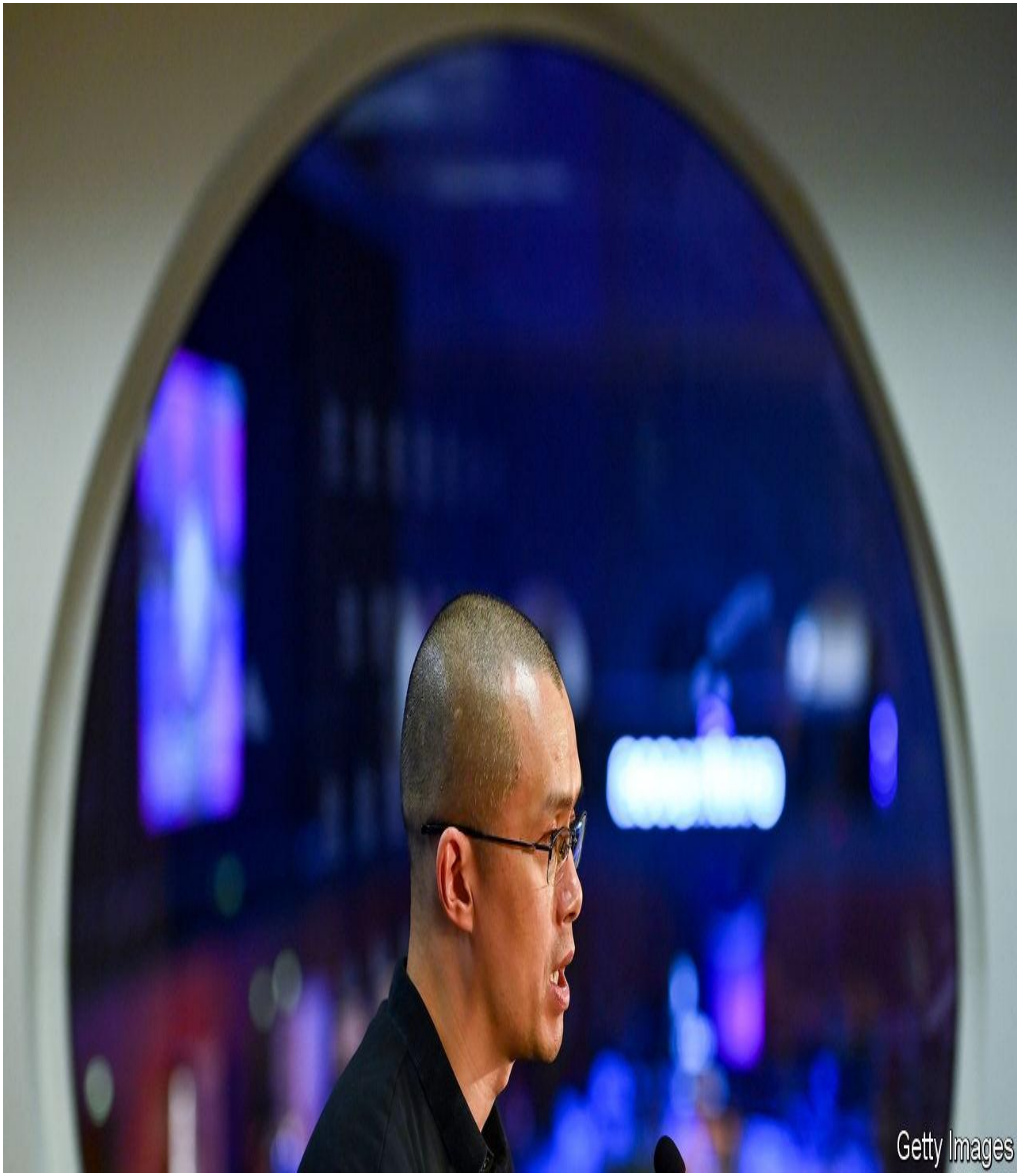
Do not pass go

Another crypto boss falls

Changpeng Zhao may face jail, while his firm pays a $4.3bn fine

Nov 22nd 2023 | WASHINGTON, DC



FICTIONAL MONEY, a shot at inordinate riches and a good chance of landing in jail at some point. That, in a nutshell, is the popular board game of Monopoly. But it describes just as accurately the experience of those who have founded some of the world's biggest cryptocurrency exchanges.

On November 21st Changpeng Zhao, boss of Binance, resigned after pleading guilty to criminal money-laundering charges. He becomes the third founder of a major crypto exchange to be convicted of crimes. In May 2022 Arthur Hayes, who set up BitMEX, was sentenced to six months under house arrest for violating anti-money-laundering laws. And on November 2nd this year Sam Bankman-Fried, the founder of FTX, was convicted on seven counts of fraud. He may face decades in prison.

Mr Zhao will pay a $50m fine. He may also go to jail—probably for up to 18 months—after he is sentenced in Seattle in February. In the meantime he has been released in return for posting a $175m bond. Binance also pleaded guilty to violating money-laundering laws and the International Emergency Economic Powers Act, the legislation under which America imposes sanctions. As part of the plea agreement, Binance will be allowed to continue operating under the supervision of a government compliance team. It will also pay a $4.3bn fine. Janet Yellen, the treasury secretary, called the enforcement action "historic". It will be the largest such settlement the Treasury has ever been paid.

The indictment, which was unsealed on November 21st, does not allege that Mr Zhao intentionally set up a platform that criminals or those under sanctions could use to evade scrutiny. Instead, it says that he put his relentless pursuit of market share, growth and profits ahead of all else.

There are all kinds of people with whom the law forbids financial institutions from doing business. This means they must carry out a reasonable amount of vetting of potential clients. Yet between 2017 and 2021 most of Binance's users could sign up with just an email address. Letting everyone trade freely probably helped Binance create a deep, liquid market—the most useful sort for customers—and thus build market share. But allowing American citizens to swap bitcoin with anonymous accounts linked to Iranian phone numbers is bound to land you in trouble eventually.

There are countless examples in the indictment showing Binance either did not care about these kinds of problems, or thought that existing financial rules might not apply to the novel crypto business. But there are also instances of deliberate rulebreaking. Binance’s compliance team at times identified users who appeared to be using the platform for illicit activity, like moving funds from Hydra, a Russian dark-web marketplace. They were told, before banning such users, to check their “VIP” status, a designation for high-value accounts. VIPs whose accounts were closed were then told they could open a new one. “Let him know to be careful with his flow of funds,” a former Binance executive said about one dark-web user; “He can come back with a new account...but this current one has to go, it’s tainted.”

Mr Zhao and other Binance executives discussed blocking accounts with IP addresses, or internet location markers, from Iran or North Korea. They do not seem to have done much more than talk. The indictment claims that 12,500 users with Iranian phone numbers were active on Binance in 2019. Some 7,000 customers provided identity documents issued by countries under sanctions. In the end Binance processed almost $1bn-worth of trades between American and Iranian accounts.

“Binance became the world’s largest cryptocurrency exchange in part because of the crimes it committed,” said Merrick Garland, America’s attorney-general, at the press conference announcing the exchange’s plea agreement. Ms Yellen said Binance allowed money to flow to cybercriminals and terrorists—including Hamas, al-Qaeda and Islamic State.

Eventually, the exchange did at least attempt to clean up its act. It put full “know-your-customer” procedures into place in 2021. By May 2022, even users with pre-existing accounts could not trade unless they had uploaded identification documents first. As crypto regulation has been written around the world, Binance has applied for licences to operate a fully regulated and compliant exchange. Speaking to *The Economist* in October, Mr Zhao called Binance “the most licensed crypto firm in the world”. But it is clearly too little too late for Mr Zhao, who will probably not be allowed to work in a financial institution again.

In a long post on X (formerly Twitter) Mr Zhao said he had “made mistakes’‘ and “must take responsibility”. He announced that Richard Teng, a Singaporean career regulator, would replace him as Binance's boss. As for Mr Zhao himself, he will now "take a break", having not had a "real (phone off) break for the last six and a half years". But the length of that break may not be entirely up to him. ■

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Free exchange

How to save China's economy

Lessons from the last stimulus for the next one

Nov 23rd 2023

EARLIER THIS year a Chinese publisher released a translation of "In Defence of Public Debt", a book by Barry Eichengreen of the University of California, Berkeley, and several others. Reaching deep into history, the book seeks to restore balance to the debate on government borrowing by emphasising its neglected benefits. Mr Eichengreen argues that indebted countries can get into trouble when they turn to fiscal restraint too soon, neglect growth or succumb to deflation, which only makes debt harder to service. The arrival of the translated edition was timely. Many economists believe the Chinese government's fiscal caution this year has contributed to disappointing growth and the danger of falling prices.

Thankfully, China's government has now begun to loosen the purse strings. It has taken the rare step of revising its budget-deficit target from 3% of GDP to 3.8%. It has allowed provinces to issue "refinancing bonds", which will help them repay some of the more expensive debt owed by affiliated infrastructure firms known as local-government financing vehicles. Financial regulators have urged banks to meet the "reasonable" financing needs of the less rickety property developers, without discriminating against private ones. Officials also talk more often about "three major projects": affordable housing; leisure facilities that can also help China cope with disasters and emergencies; and efforts to renovate "urban villages", or formerly rural enclaves.

But these steps by themselves will not be enough. Houze Song of MacroPolo, a think-tank, worries that the "stimulus is not big enough to reflate the economy". The government seems to fear an excessive response more than it fears an inadequate one. Many in China view public debt as suspect despite the arguments in its favour. Even defenders of public borrowing are careful not to appear too strident. The Chinese edition of Mr Eichengreen's book is not called "In Defence of Public Debt". It carries the more anodyne title "Global Public Debt: Experience, Crisis, Response".

What explains the government's fiscal reticence? It may be ideology. But it may also be recent history. Fifteen years ago this month, China's government announced a fiscal stimulus worth about 4trn yuan (or $590bn) in response to the global financial crisis. Financial regulators also gave their blessing to local governments to sidestep restrictions on their borrowing by setting up financing vehicles that could issue bonds and borrow from banks.

Local governments responded with “frenzied enthusiasm”, as Christine Wong of the University of Melbourne put it. With the extra borrowing, the initial 4trn yuan ballooned into 9.5trn yuan (or 27% of 2009 GDP) spread over 27 months.

The frenzy successfully revived growth. But in the years since, stimulus has acquired a stigma in China. Chinese officials have repeatedly warned of the dangers of a similar “flood-like” response to economic slowdowns. The lending spree has been accused of privileging state-owned enterprises, crowding out manufacturing investment, and impeding spending on industrial R&D.

Drawing on confidential loan data from 19 banks, Lin William Cong, now of Cornell University, and co-authors have shown that the increased supply of credit in 2009 and 2010 favoured state-owned enterprises over private firms. And among private firms, it favoured those making less productive use of their capital. The authors guess that in a crisis, banks prefer to lend to companies that enjoy the backing of local governments, whether they be state-owned enterprises or well connected but inefficient private firms. Jianyong Fan of Fudan University and co-authors argue that spending on R&D by industrial firms was squeezed by higher capital costs in parts of the country where local governments borrowed most heavily. These localities were often led by newly promoted party secretaries who were eager to shine.

It is easy to read these studies and conclude that the 2008 stimulus was a mistake. But the flaws of that response do not mean that it was worse than nothing. The paper by Mr Cong, for example, does not show that the increased supply of credit hurt borrowing by private firms, merely that it benefited them less than it helped state-owned firms. The study of R&D by Mr Fan and his colleagues also controls for each locality’s growth rate. That means that if the stimulus boosted growth, and growth boosted R&D, this beneficial effect will be stripped out of their results.

Since the stimulus amounted to a “flood” of lending and investment, it would be surprising if private firms were parched of credit. Indeed, lending to them grew briskly in 2009 and 2010, show figures compiled by Nicholas Lardy of the Peterson Institute for International Economics, a think-tank. Investment by private manufacturers was also strong. Instead stimulus spending crowded out China's accumulation of foreign assets, including the American Treasury bonds bought by its central bank, argues Zheng Song of the Chinese University of Hong Kong, co-author of another influential paper on China's fiscal expansion.

Stimulus check

Looser financial limits on local governments nonetheless cast a "long shadow", as Mr Song's paper put it. Their financing vehicles continued to borrow long after the crisis. Some of the debts these vehicles have accumulated now look impossible for local governments to repay, adding to the gloom hanging over China's economy. Like many economists, Mr Song believes the next stimulus should adopt different fiscal machinery, providing handouts to households. Mainland China could, for example, copy the electronic consumption vouchers distributed in Hong Kong, which are forfeited if they are not spent within a few months.

Fifteen years on, the side-effects of China's 2008 lending spree are an argument for better stimulus, not zero stimulus. Public borrowing to rescue an economy can leave a difficult financial legacy, as Mr Eichengreen's book points out. But that is different from saying that "not borrowing would have been better". ■

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The Middle East's economy is caught in the crossfire (Nov 2nd)

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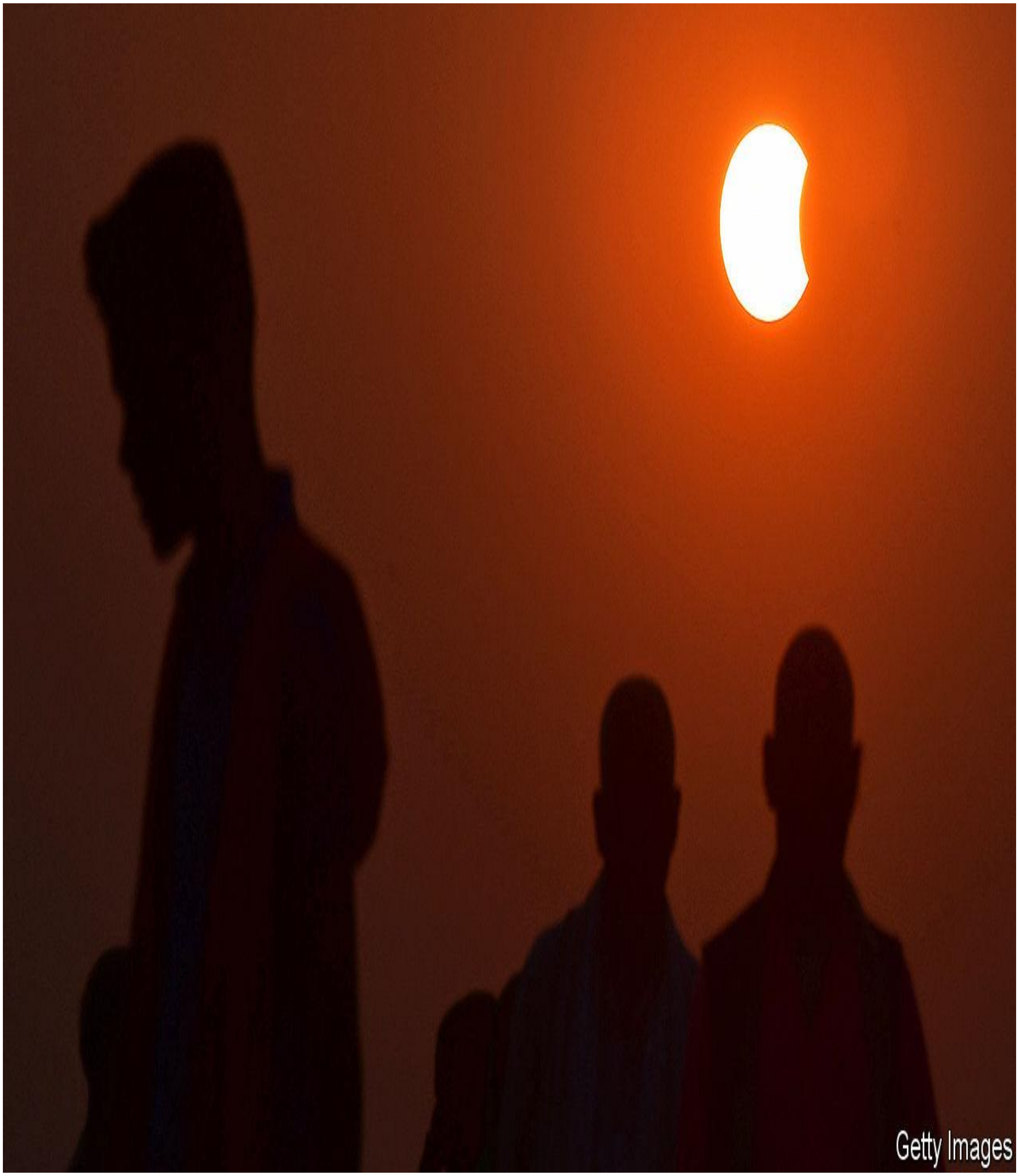
Science & technology

Dimming the sun

Solar geoengineering is becoming a respectable idea

One way to fix an accidentally altered climate is to alter it again deliberately

Nov 22nd 2023 | Kigali



WHAT A DIFFERENCE a decade makes. That, roughly, is how often the Open Science Conference, run by the World Climate Research Programme (WCRP), comes along. At the previous get-together in 2011, says Jim Hurrell, a climate scientist and WCRP member, almost no one was talking about geoengineering. This is the idea of deliberately meddling with the

Earth's climate to try to make it cooler, and thus to offset the worst effects of another type of climatic meddling—namely greenhouse-gas-driven global warming.

At this year's event, held in Rwanda, Dr Hurrell gave a keynote address on the subject. There were "hundreds of papers and talks and posters", he says. That reflects a broader shift in thinking. Although geoengineering has for many years been the subject of serious, albeit small-scale, scientific interest, it has been largely shunned by environmental NGOs and politicians. Now that is starting to change.

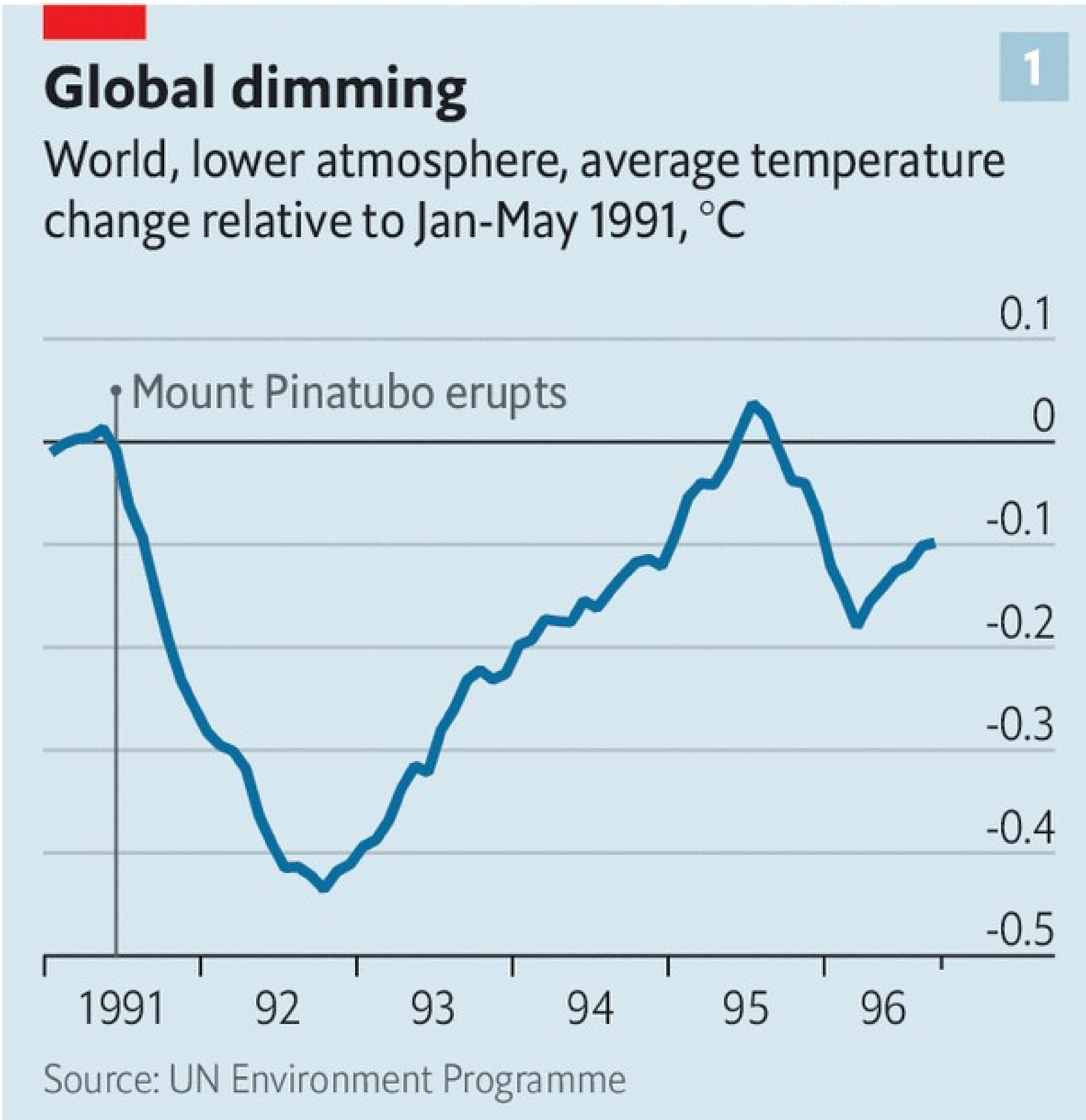
Since the start of this year, solar geoengineering, sometimes known as solar radiation modification (SRM), has been the whole or partial focus of reports published by the European Commission and Parliament, America's government, the Climate Overshoot Commission (COC; a collection of global bigwigs and worthies), and four separate bits of the UN. A common thread in all of them was that, given the world's failure to cut greenhouse-gas emissions fast enough, the risks and benefits of SRM should be properly examined.

Understanding how humans might tweak the climate to their benefit starts with understanding how they have already done so to their detriment. When light from the sun reaches Earth, about 70% of it is absorbed (the rest is reflected back into space by clouds, ice and the like). That absorbed energy is eventually re-emitted as infrared radiation. But not all of it makes it back into space. Greenhouse gases such as carbon dioxide absorb infrared radiation, trapping some of the re-radiated heat.

At first unwittingly, then knowingly, humans have been thickening that atmospheric blanket. The amount of carbon dioxide—the most important greenhouse gas—in the atmosphere has risen from around 280 parts per million before the Industrial Revolution to 417 parts per million last year. That has trapped more heat, raising average temperatures by around 1.2°C over the same period.

The great dimmer switch in the sky

Most plans to tackle climate change aim to fix the problem at its source by replacing fossil fuels with sources of energy, like wind, solar and nuclear power, that do not produce greenhouse gases. Solar geoengineering aims at the other side of the equation. Rather than allowing more energy to escape from the Earth's surface, it aims to stop quite as much from arriving in the first place, by increasing the planet's albedo—that is, its tendency to reflect sunlight.

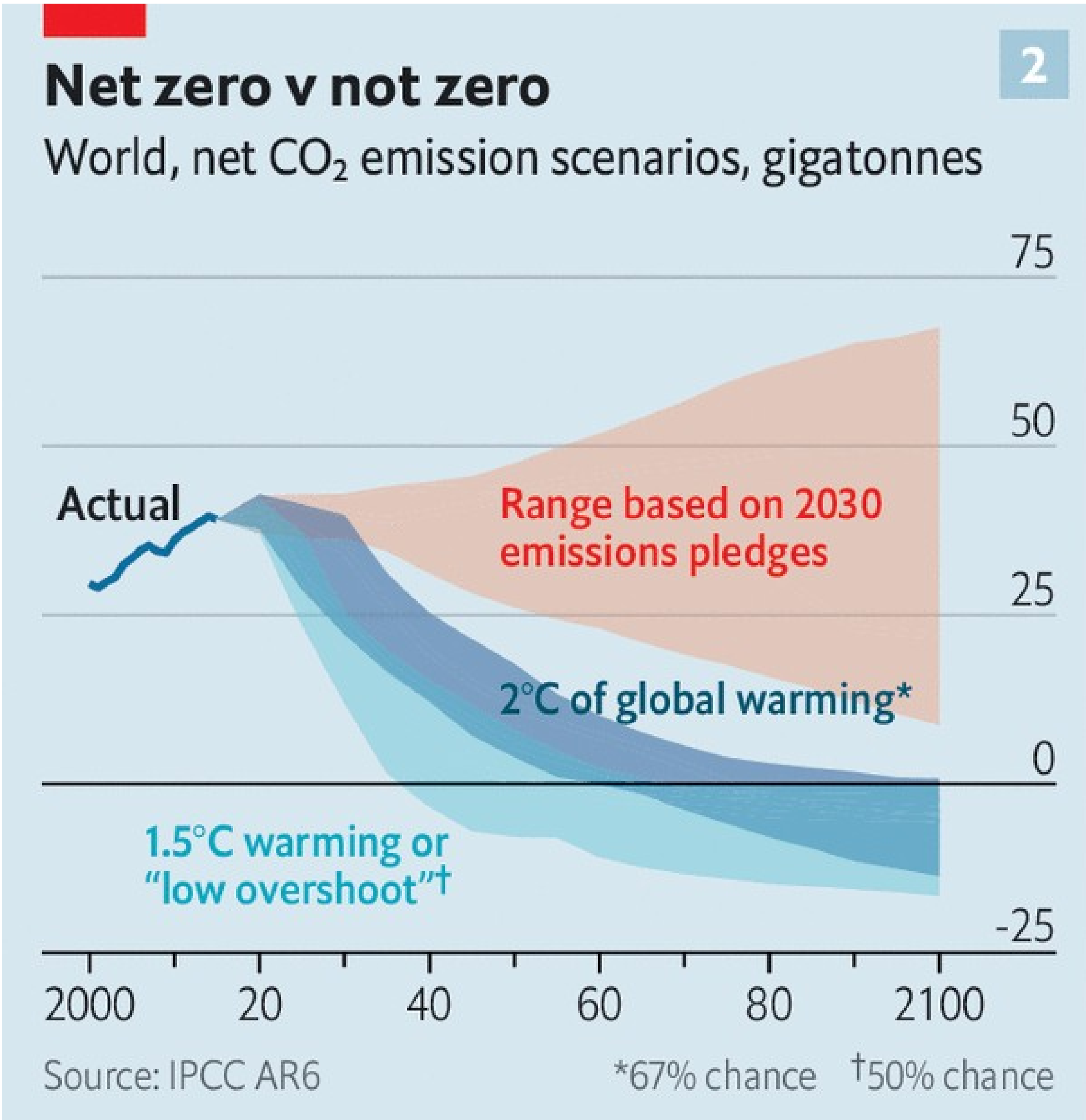


The Economist

Nature has already done the proof-of-concept work. The Earth's albedo can be temporarily altered by volcanic eruptions, which spew particles and gases into the air. Sulphur dioxide is particularly influential because of how it combines with water to form sulphuric aerosols—a light-scattering haze which hangs in the sky. In 1991 Mount Pinatubo, a volcano in the Philippines, sent 15m tonnes of the stuff into the atmosphere. That was enough to cool the planet by up to about 0.5°C for well over a year (see chart 1).

Humans already do something similar by burning fossil fuels that contain sulphur, such as coal or the heavy fuel oil that powers big ships. Since these emissions happen near ground level, the resulting particles are trapped in the troposphere, the lowest layer of the atmosphere. Humanity's emissions have a cooling effect on the planet of perhaps a few tenths of a degree Celsius. But they are also toxic, and are thought to cause hundreds of thousands of deaths each year.

The best-researched version of SRM relies on the same mechanism. The idea is to inject sulphur dioxide—or perhaps other chemicals such as calcium carbonate or powders made of aluminium or diamonds—not into the troposphere, but the stratosphere, which begins up to 20km above the surface. Such high-flying particles would end up distributed more widely than those from ships or volcanoes, and would hang around for longer. That means much less would be required for a given level of planetary cooling.



The Economist

By some estimates, reflecting enough extra sunlight to suppress average temperatures by 1°C would require the injection of roughly 2m tonnes of sulphur into the stratosphere annually. That is far less than is produced by volcanic eruptions and fossil-fuel burning, and might cost a few tens of billions of dollars annually. Estimates of the cost of decarbonising the world economy, by contrast, run into the trillions of dollars each year.

Put that way, solar geoengineering sounds like a bargain. But worries abound. Although it argued for doing more research, the European Commission said earlier this year that, given the current state of development, SRM "represents an unacceptable level of risk for humans and the environment". The COC recommended that countries should put a moratorium on the deployment of SRM, including any large-scale outdoor experiments or any activity with a "risk of significant transboundary harm" (that is, that could do damage across national borders).

Some of the worries are about SRM's potential effects on the weather. Early attempts to study the mechanisms of solar geoengineering assumed an enormous level of sulphur injection. That made good scientific sense: a nice strong signal makes a phenomenon easy to understand. But the modelling suggested that such drastic changes in the energy balance in the upper atmosphere could play havoc with tropical monsoons, the seasonal rains on which the agriculture and economy of many countries depend.

Later research, using more realistic numbers, was more reassuring. In 2020 academics at Harvard University concluded that dimming the sun by less than necessary to completely offset the existing level of warming would not significantly alter rainfall in most places in the world. In the areas where it did, it seemed to result in more water rather than less.

The effect that spraying aerosols might have on stratospheric chemistry is also unclear. It could, for instance, amplify chemical reactions that break down ozone molecules, slowing the recovery of the ozone layer and allowing more cancer-causing ultraviolet radiation to reach the ground. And rising carbon-dioxide levels do more than just heat the planet. A good deal of the gas is absorbed by the oceans, where it forms carbonic acid. As a result, Earth's oceans are more acidic than they have been for at least 2m years. Since SRM does not reduce carbon-dioxide emissions, it would do nothing to solve that problem.

The same cheapness that makes solar geoengineering attractive is also a source of worry. One analysis, by Wake Smith, a geoengineering researcher at Yale University, tried to model the cost of SRM in 2100. The researchers assumed that the world would not cut its greenhouse-gas emissions fast enough to adequately suppress global temperatures for the rest of the 21st century. Even so, they concluded it might cost around $30bn a year in 2020 dollars to hold temperatures at the levels they would have reached in 2035.

That, as Dr Smith points out, is roughly what Americans presently spend on pet food each year. Even today, such a sum is easily within reach of a single big economy, and probably even a coalition of smaller ones. That raises the spectre of a country keen for the cooling consequences of SRM trying to deploy the technology against the wishes of others.

Perhaps the most pervasive fear around SRM, though, is of its "moral hazard"—that by offering a cheaper alternative, it could undermine attempts to fix climate change by cutting greenhouse-gas emissions. Those attempts are already falling short (see chart 2). On November 20th the UN announced that the greenhouse-gas reductions planned around the world for 2030 would lead to between 2.5°C and 2.9°C of warming by the end of the century. Keeping temperatures to 2°C—the higher of the two targets laid out in the Paris Agreement in 2015—will require extra greenhouse-gas cuts of at least 28% by 2030.

Don't mention the G-word

Critics argue that the example of sucking carbon dioxide directly from the air—another technology which does not yet exist at any useful scale, but which nevertheless underpins almost all long-term emission-reduction plans—shows that countries will seize on anything that allows them to avoid painful emissions cuts. People more open to the idea retort that geoengineering could be used to buy more time for those emissions reductions to happen, and keep temperatures lower in the meantime, an idea they refer to as "peak shaving".

All this explains SRM's radioactive reputation among climate wonks. Those opposed to the recent interest have redrawn their own battle lines more strongly in response. An experimental test of delivery mechanisms for sulphur particles, due to take place in Sweden in 2021, was cancelled after lobbying from environmental activists. In 2022 Make Sunsets, an American startup, carried out an unauthorised experiment in northern Mexico, releasing small amounts of aerosols from a balloon to study how they reflected sunlight. The Mexican government banned anything similar from happening again.

In January 2022 more than 400 well-respected academics (many of them social scientists, rather than climate researchers) signed an open letter objecting to the idea that solar geoengineering was an issue worth studying or a legitimate research topic. They urged governments to commit to an "international non-use agreement" on anything relating to the idea, including all outdoor experiments as well as research programmes and assessments, even by outfits such as the Intergovernmental Panel on Climate Change (IPCC).

Whether the signatories will get their way is far from clear. Other climate-change taboos have weakened with time. As recently as the 2000s the concept of adaptation—protecting oneself against a changing climate by, for instance, building higher sea walls—was controversial for similar reasons that SRM is today. Opponents worried that thinking too much about adapting to a hotter world would divert resources from efforts to prevent it from heating up in the first place. But vulnerable countries, particularly small island states, carried out their own assessments nevertheless. Combined with the difficulty of cutting emissions, the case for adaptation gradually became unanswerable. These days it is part of the IPCC's remit.

Something similar may be happening with SRM. This year will almost certainly be the hottest on record. Berkeley Earth, an American research group, sees a more than 90% chance of 2023's average temperature exceeding 1.5°C above pre-industrial levels—making it the first year hotter than the lower of the two Paris Agreement temperature targets. Dr Hurrell says that what is needed is a serious research programme into the feasibility of SRM, run by an institution like the IPCC or the World Meteorological Organisation. He thinks such an endeavour would probably form the basis of a strong argument against SRM, rather than support for deploying it.

Policymakers, too, seem increasingly keen to explore SRM's pros and cons. Janos Pasztor runs the Carnegie Climate Governance Initiative, which encourages discussions about various climate technologies, including SRM. Initially, he says, SRM was seen as unpalatable. Now, politicians and officials discuss whether it might have a role in climate policy after all. None of those the CCGI has spoken with are opposed to further research into the idea.

Perhaps the biggest shift has come in poor countries, which have the most to lose from both rising temperatures and any unintended consequences of SRM. Anote Tong is a former president of Kiribati, a low-lying Pacific island state menaced by rising sea levels. Last year he told *The New Yorker* that, should the world continue on its current path, it would soon reach the point where “it has to be either geoengineering or total destruction”. Those are not the words of a man who believes that countries like his have many other options. ■

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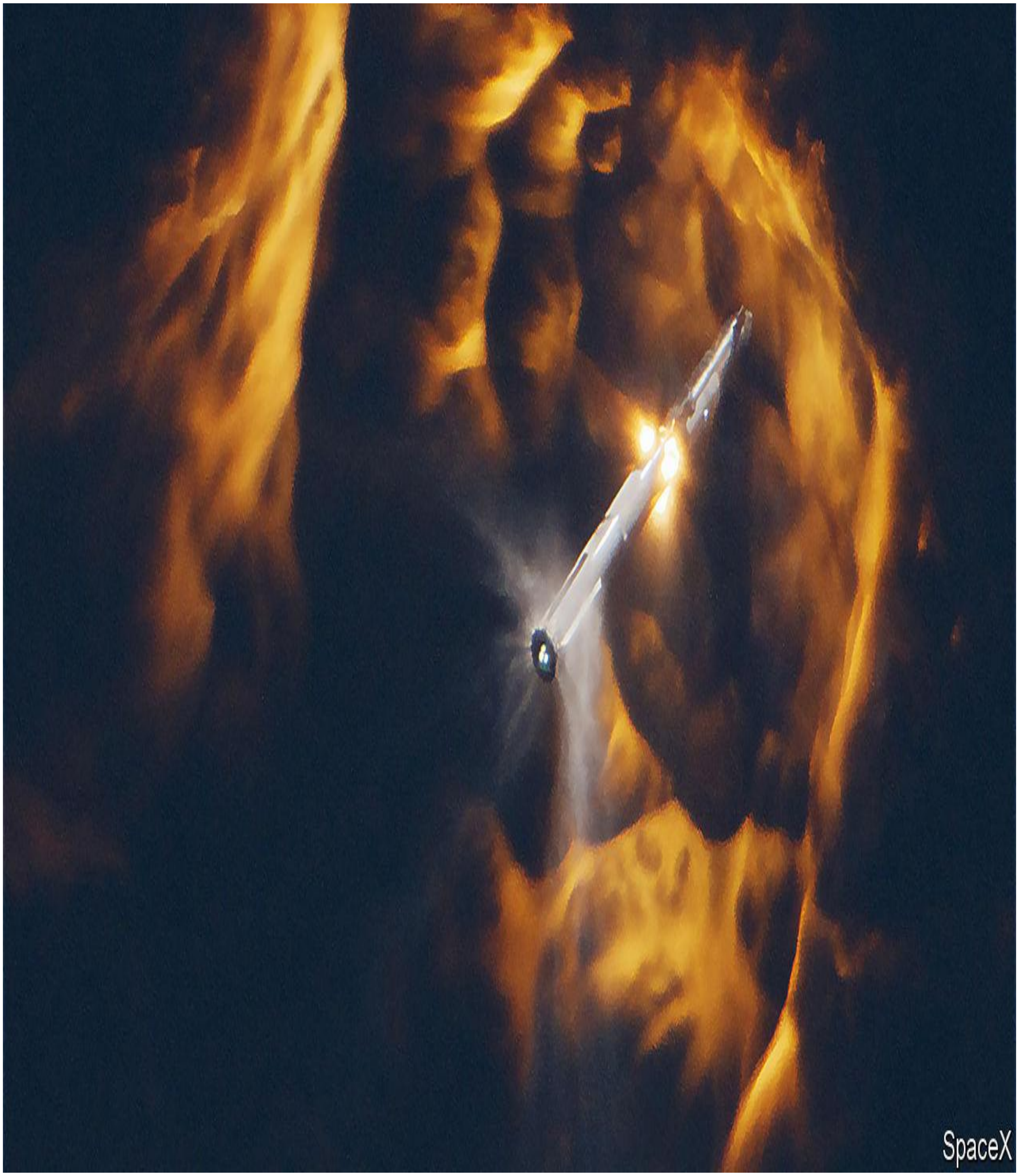
Big rockets and big rivers

SpaceX tests Starship, and prepares to face down Amazon

Elon Musk’s Starlink business could soon be competing with Jeff Bezos’s Kuiper

Nov 22nd 2023



IN THE 21 years since it was founded, SpaceX, a rocketry firm set up by Elon Musk, has become the world's space superpower. Its cheap, reusable Falcon 9 rocket dominates the launch industry. Thanks mostly to its Starlink satellite-internet business, the firm sends more mass into orbit each year than every other company and country on Earth combined.

It has bigger ambitions still. November 18th saw the second test flight of its Starship rocket, the biggest ever built. The first test, in April, ended with a damaged launchpad and a rocket that self-destructed after trouble with several of the first stage's 33 engines and the failure of its second stage to separate properly.

The second launch was a big improvement. A new water-dampening system stopped the rocket from wrecking the rebuilt launch pad. All the first stage's engines stayed lit. A new "hot staging" separation system, which required the second stage to begin firing its engines while still attached to the first, seemed to perform well (pictured). The firm had hoped the first stage might fly itself back to sea level for a landing test, but it blew up shortly after separation. The second stage, meanwhile, reached an altitude of 148km before some kind of malfunction activated its own self-destruct system.

Such fireworks are par for the course. Unlike its older rivals, SpaceX puts its faith in "iterative design"—trying often and learning from the failures, rather than trying to foresee every problem in advance. The lower stages of its Falcon 9 rockets crashed and burned many times before the firm mastered the art of landing and re-using them, something that had not been done before. These days, with more than 250 successful missions, the Falcon 9 is the most reliable rocket ever made. One of its boosters has flown 18 times.

If Starship can likewise be made to fly reliably, it could transform the space business. It is designed to lug up to 150 tonnes into orbit, more than six times as much as a Falcon 9—and, thanks to being fully reusable, to be much cheaper to boot. NASA is relying on a modified version as part of its plan to return astronauts to the Moon. Astronomers are getting giddy at the prospect of flying enormous space telescopes, or sending fleets of rovers to Mars at once.

A more immediate use will be to boost Starlink. The service beams internet access all over the world using thousands of cheap, low-flying satellites. In September SpaceX said it had 2m subscribers. It has attracted military interest after its unplanned role providing battlefield communications to Ukraine's army in its war against Russia. Excitement for its future is the main reason for SpaceX's giddy $150bn valuation. But the business depends on launching enormous numbers of satellites (SpaceX plans at least 12,000).

Each Falcon 9 flight launches around 22. Starship might manage a hundred or more at a time, and cost less while doing it.

Competition is heating up. OneWeb, a rival, operates its own fleet of 630 low-flying satellites. And two days before Starship's second test Amazon, an internet giant, announced that two prototype satellites for its own "Kuiper" satellite-internet system had passed their own in-orbit tests. That should clear the way for the firm to begin manufacturing the satellites in bulk at its factory in Washington state. If all goes well, Kuiper could begin beaming internet service from space late next year.

Big rockets v big river

Satellite broadband is not an obvious market for Amazon, a firm best known for running an online department store and the world's biggest cloud-computing operation. And SpaceX's ultra-cheap rockets give it a big advantage. Kuiper has bought launches from Blue Origin, a rocketry firm established in 2000 by Jeff Bezos, Amazon's founder. But although Mr Bezos is just as much of a space enthusiast as Mr Musk, Blue Origin is far behind SpaceX. It has yet to fly its rockets into orbit. That leaves Kuiper reliant, for now, on launches from United Launch Alliance, an American consortium, and ArianeSpace, a European one. Both cost far more than SpaceX.

Amazon hopes it can gain an advantage in consumer hardware instead. One problem with satellite internet is the cost of the dishes that consumers must buy to use it. Starlink's standard dish sells for $599, far less than it costs the firm to produce. Amazon reckons it can manufacture its own dishes for $400, a price that Caleb Henry of Quilty Analytics, a space-industry consultancy, describes as "a revolution". (SpaceX's manufacturing costs, says Mr Henry, are perhaps three times higher.)

Amazon also says Kuiper will work well with Amazon Web Services, its cloud-computing arm. It could provide redundant links between data centres if their ground connections fail. And having its own private, globe-spanning network will, says the firm, help it comply with privacy and "data sovereignty" laws, ensuring that sensitive customer data does not pass through prohibited countries.

And Amazon may be banking on customers feeling wary of SpaceX's dominant position. Despite American military interest in Starlink, Kuiper has already signed one exploratory contract with the Pentagon. In any case, says Mr Henry, Starlink's success among both consumers and soldiers has helped spark a "gold rush" in satellite internet. Low-earth orbit is about to get even more crowded. ■

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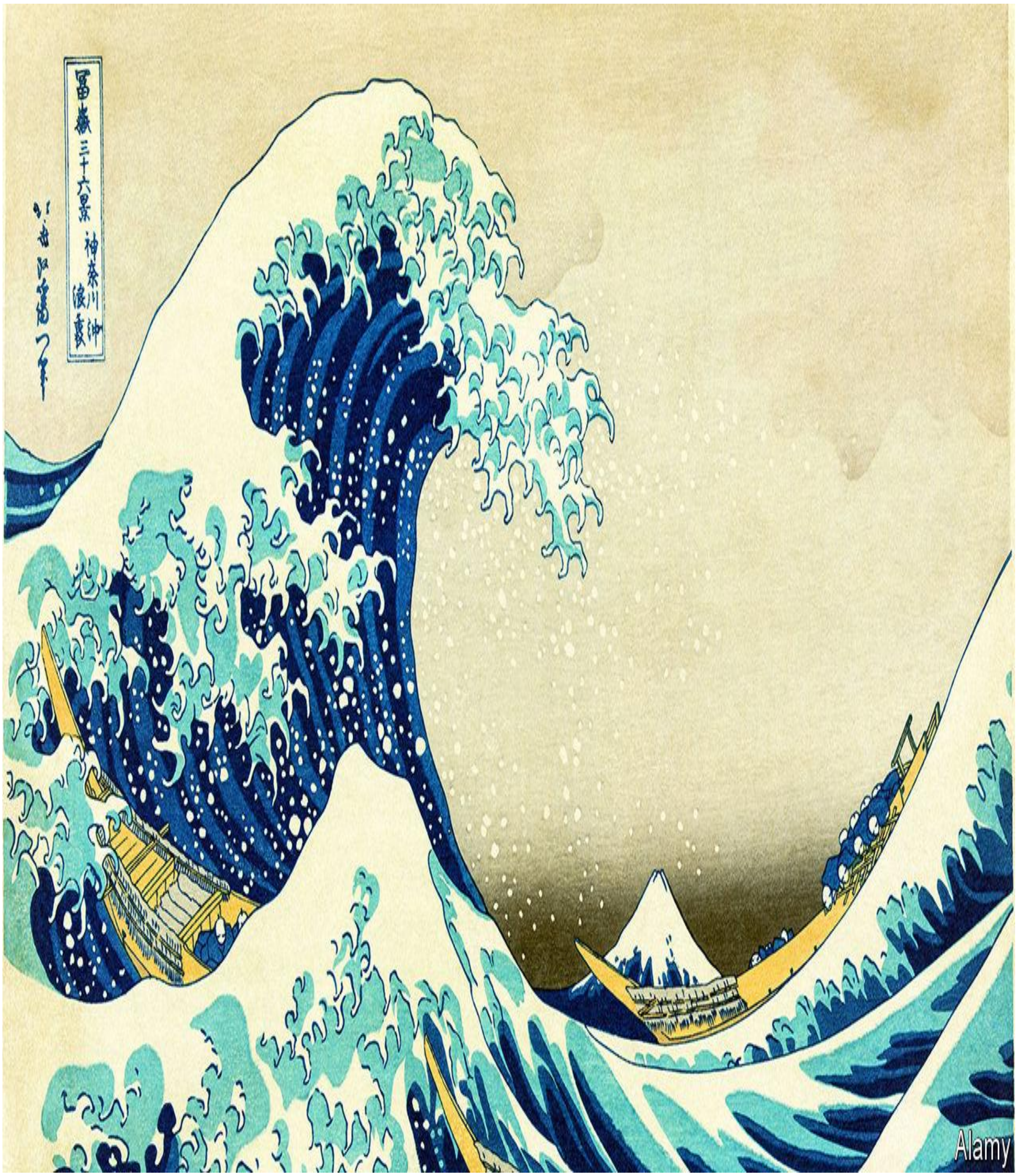
Explaining the wave function

A new way to predict ship-killing rogue waves

And a way to figure out how, exactly, AI works its magic

Nov 22nd 2023



ARTIFICIAL-INTELLIGENCE (AI) models are modern oracles. The neural networks that power them are flexible mathematical tools, capable of finding any pattern, fitting any shape and drawing any line. They are used to forecast the weather, anticipate road maintenance and diagnose diseases. The problem is, since they train themselves to accomplish those tasks, no one really knows exactly how they do it.

This “black-box problem” makes it hard to rely on such models, especially when, as in health care, they are making high-stakes decisions. It makes them less useful for scientists, too, who are interested not only in predicting an outcome but also in understanding why that outcome happened.

In a paper in *Proceedings of the National Academy of Sciences*, a group of researchers led by Dion Häfner, a computer scientist at the University of Copenhagen, describe a clever way to make AI more understandable. They have managed to build a neural network, use it to solve a tricky problem, and then capture its insights in a relatively simple five-part equation that human scientists can use and understand.

The researchers were investigating “rogue waves”, those that are much bigger than expected given the sea conditions in which they form. Maritime lore is full of walls of water suddenly swallowing ships. But it took until 1995 for scientists to measure such a wave—a 26-metre monster, amid other waves averaging 12 metres—off the coast of Norway, proving these tales to be tall only in the literal sense.

Scientists have a few ideas about what causes rogue waves, but not a complete picture. Waves can merge and stack, or break in ways that make them unusually big. Currents, the wind and the shape of the sea floor matter too. All those factors mix in chaotic ways, in the mathematical sense of the word: a small change in one can lead to a drastically and unpredictably different outcome.

A good problem, then, for AI to get its teeth into. To produce something a human could follow, the researchers restricted their neural network to around a dozen inputs, each based on ocean-wave maths that scientists had already worked out. Knowing the physical meaning of each input meant the researchers could trace their paths through the network, helping them work out what the computer was up to.

The researchers trained 24 neural networks, each combining the inputs in different ways. They then chose the one that was the most consistent at making accurate predictions in a variety of circumstances, which turned out to rely on only five of the dozen inputs.

To generate a human-comprehensible equation, the researchers used a method inspired by natural selection in biology. They told a separate algorithm to come up with a slew of different equations using those five variables, with the aim of matching the neural network's output as closely as possible. The best equations were mixed and combined, and the process was repeated. The result, eventually, was an equation that was simple and almost as accurate as the neural network. Both predicted rogue waves better than existing models.

The first part of the equation rediscovered a bit of existing theory: it is an approximation of a well-known equation in wave dynamics. Other parts included some terms that the researchers suspected might be involved in rogue-wave formation but are not in standard models. There were some puzzlers, too: the final bit of the equation includes a term that is inversely proportional to how spread out the energy of the waves is. Current human theories include a second variable that the machine did not replicate. One explanation is that the network was not trained on a wide enough selection of examples. Another is that the machine is right, and the second variable is not actually necessary.

Better methods for predicting rogue waves are certainly useful: some can sink even the biggest ships. But the real prize is the visibility that Dr Häfner's approach offers into what the neural network was doing. That could give scientists ideas for tweaking their own theories—and should make it easier to know whether to trust the computer's predictions. ■

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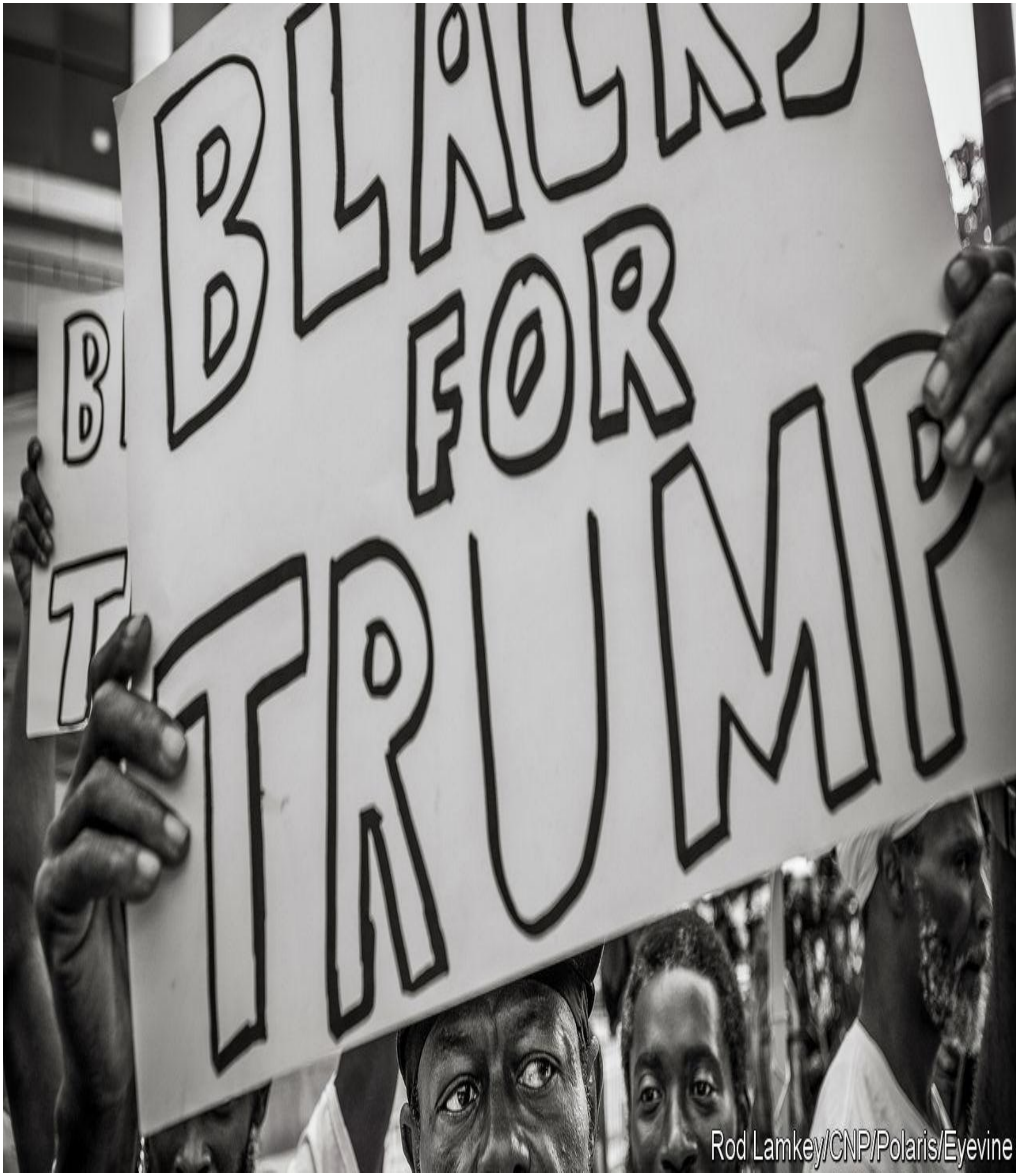
Culture

Poll position

Why non-white voters are abandoning the Democratic Party

America’s demographic changes are not playing out as anticipated

Nov 17th 2023



Party of the People. By Patrick Ruffini. *Simon & Schuster; 336 pages; $30*

Where Have All the Democrats Gone? By John Judis and Ruy Teixeira. *Henry Holt; 336 pages; $28.99*

TEN YEARS ago, as the Republican Party smarted from its second defeat by Barack Obama, a committee of grandees released an “autopsy” analysing what went wrong. One particular worry was the party’s inability to attract non-white voters who were—and still are—in a demographic upswing. The report’s assessment was unsparing and self-flagellating: the voters who described the party as “scary, narrow-minded and out of touch” and labelled it as full of “stuffy old men” had a point.

The Republican Party’s problems winning over Hispanics meant that candidates ought to quash their nativist talk and “champion comprehensive immigration reform”, the report suggested. The party did not take its own advice. Its next nominee was, of course, Donald Trump, who said that Mexico was intentionally sending “criminals, drug dealers, rapists” to America and pledged to build a wall. His message has not moderated. In October Mr Trump accused illegal immigrants of “poisoning the blood of our country”.

But the party realignment has not played out as experts expected. Working-class and non-white voters, once steadfast Democratic supporters, are shifting to the Republican Party in droves. Between 2018 and 2022, Republican margins among the white working class, already large, grew by seven percentage points. Among the non-white working class, the swing was more than double that.

Meanwhile, in those four years non-whites’ support for Democrats has flagged significantly—by six points among African-Americans, by 11 points among Hispanics and by 19 points among Asians. Greater backing among college-educated whites, who are repelled by Mr Trump’s inflammatory outbursts about race, gender and immigrants, is the main way the Democratic Party has stayed competitive.

Race was once the most important dividing line in American politics; now it is education. A great inversion is under way: Democrats, once the party of workers, are attracting the poor and the professional elite; Republicans, once the party of the country club, are appealing to the racially diverse working and middle class. How did this happen?

Two new books offer answers. “Where Have All the Democrats Gone?” is an effort by John Judis and Ruy Teixeira, left-leaning observers who are a celebrity duo in political-science circles. Their influential book from 2002, “The Emerging Democratic Majority”, argued that growing numbers of non-whites and Democrats’ rising strength among city-dwellers and those with university degrees set the stage for an enduring majority. When Mr Obama first won the presidency in 2008, the two men were hailed as seers. When Hillary Clinton lost in 2016, they were castigated as false prophets. “We were dead wrong about the Democrats’ ability to hold on to the working-class whites,” they write.

The defection has now spread to working-class voters of all colours. Mr Judis and Mr Teixeira blame “the cultural insularity and arrogance” of the Democratic Party, which began during Mrs Clinton’s presidential campaign. In their view, zealots of transgenderism, critical-race theory, climate eschatology and lack of immigration enforcement seized control of a party that was previously centred on the everyman.

Mr Judis and Mr Teixeira are old-school organised-labour Democrats, with little patience for the newfangled progressives who speak in the language of the faculty lounge. With the exception of abortion, the Democrats are simply out of touch with most Americans on cultural matters. The authors’ critique is of “a combination of neoliberal economics and social liberalism that has alienated working-class voters”. In this story, the demise of unions and rise of free trade sowed the seeds of voters’ discontent with Democrats. The gentrification of the party’s shadow institutions, including mainstream media outlets, meant that a strange ideology that gave primacy to oppression supplanted old-fashioned class consciousness. The working-class revolt commenced soon after.

This is a critique so familiar that both major American parties now subscribe to it. And yet the theory may be incomplete. Economic explanations of voting behaviour look increasingly inadequate at a time when culture wars predominate. (Why else would working-class voters turn towards the party of tax cuts for the wealthy, while the rich and the near-rich are shifting to the party that champions progressive taxation?) President Joe Biden believes in massive doses of industrial policy, rules to boost goods made in America and support for organised labour. And yet he does not seem to have altered the ongoing realignment. The authors think this is because of his unpopular cultural stances, such as endorsing "gender-affirming care" for trans children and teenagers.

"Party of the People" by Patrick Ruffini, a Republican pollster and data maven, brilliantly dissects the changes within the disparate voting blocs in America, combining rich data analysis with vignettes from American history. Democrats misunderstood Hispanics, cringingly insisting on rebranding the ethnic group as "Latinx" and mistakenly assuming their most pressing concern was a pathway to citizenship for illegal migrants. Polls show that Hispanics are almost as likely to support border security as other Americans. Second- and third-generation Hispanics are more likely to be Republican, mirroring a rightward shift that was seen with white Catholics, once the fuel of the Democratic city machines, over the past century.

Although African-Americans remain more steadfast Democrats than their Hispanic and Asian counterparts, the Republican Party could make inroads with them. Already, 21% of young black men vote for Republicans, though black women remain almost unanimously in favour of Democrats. (No one is quite sure what explains this gender divide.)

Because voters are stubborn creatures, few things cause big shifts in public opinion. The uproar over civil rights in the 1960s was one catalyst for realignment, pushing black voters to the Democratic Party and white southern Democrats towards the Republican Party. The advent of populism now appears to be another realignment rather than a mere transient shock that will go away after Mr Trump wins or loses in 2024. (In Europe a similar political sorting along educational lines is taking place, too.)

Whether the movement of the working classes, white and not white, towards the Republicans persists could determine who wins the presidency in 2024. Some are optimistic for Mr Biden, pointing to the continued drift of the educated towards the Democratic Party. But for every American adult who graduated from college, there are two who did not. It is not an ideal trade for Democrats, who are learning that demography is not destiny. ■

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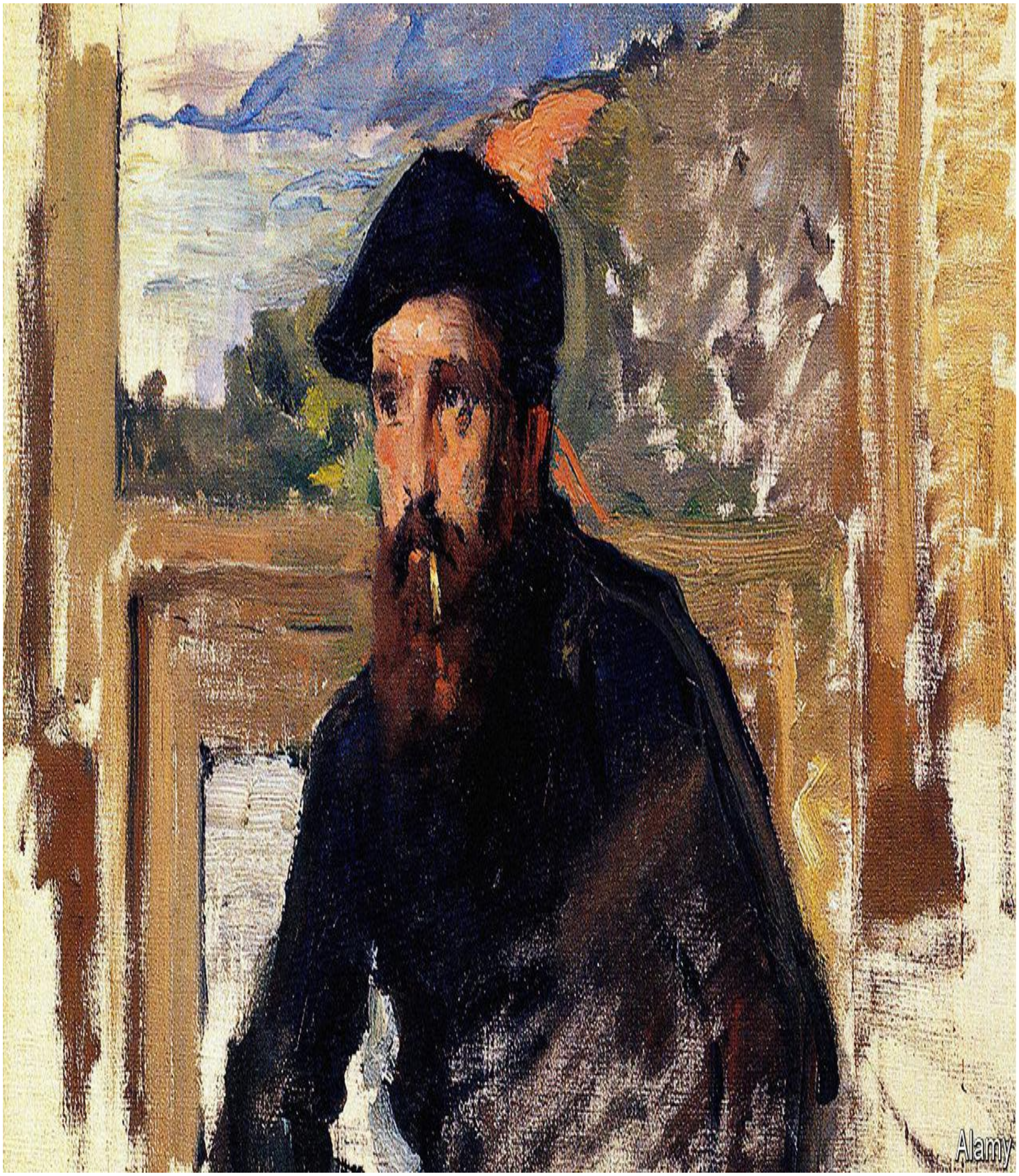
One for the Monet

Claude Monet is celebrated in a colourful new biography

Jackie Wullschläger reveals the tempestuous man behind the canvasses

Nov 23rd 2023



Monet. By Jackie Wullschläger. *Penguin; 576 pages; £35. To be published in America by Knopf in September 2024*

ONCE, WHEN Claude Monet was painting the cliffs at Étretat, he became so absorbed he failed to notice a wave until it crashed into him. He had to crawl from the sea on all fours. But this incident did nothing to dampen his ardour for water: it was the principal motif in over 1,000 of his paintings. It was there in his earliest known sketches from 1856 (when he was 15) and in his water-lilies series, created in the final years of his life and becoming more abstract as his eyesight failed.

Monet was a contradictory, difficult man. He abandoned his penniless muse, mistress and future wife, Camille, six weeks before she was due to give birth to his son, in order to visit other family and paint. But he was also capable of generosity and empathy. Friendships—most notably with Georges Clemenceau, France's prime minister—endured for decades.

In Jackie Wullschläger, the chief art critic for the *Financial Times*, Monet has found a sympathetic, skilled biographer. (Remarkably, this is the first account of the celebrated artist's work and private life written in English.) Ms Wullschläger has a gift for seeing and sifting. Readers peek into the painter's account books, rummage through his correspondence and sit uncomfortably by during his long courtship of Alice, who served as a nurse to Camille before she died and was married to Ernest Hoschedé, a buyer of Monet's paintings.

The biography most excels when it explains Monet's art. "Impression, Sunrise" (1872-73), the painting that gave the Impressionist movement its name, is "a moment of breaking light and its reflections, ghostly boats cloaked in mist, dockyards implied by a few loose strokes". Readers learn that the large canvas of "Women in the Garden" was painted only by Monet digging a ditch, which "assured his stability of viewpoint" far better than climbing a ladder.

Ms Wullschläger lets Monet speak for himself. After a buyer purchases one "Haystack" painting for 2,500 francs ($500 at the time, around $17,000 in today's money), Monet requests that: "If anyone asks, I'd be grateful if you would say" the price was double. Monet once fibbed to a journalist that he worked only *en plein air*. In fact, he usually finished his canvasses indoors and could spend months on a single work. (He tarried so long on one wintry landscape that he had to hire men to strip an oak of its foliage when he found himself still working on it in May.)

The Monet who emerges is complicated. When young, he shamelessly begged friends and family for financial help, but years later he refused to let his stepdaughter marry Pierre Sisley on the grounds that the latter was "an impecunious painter". Perhaps it is no surprise that his most lasting relationship—in art and in life—was with water, a mutable and sometimes fearsome element. ■

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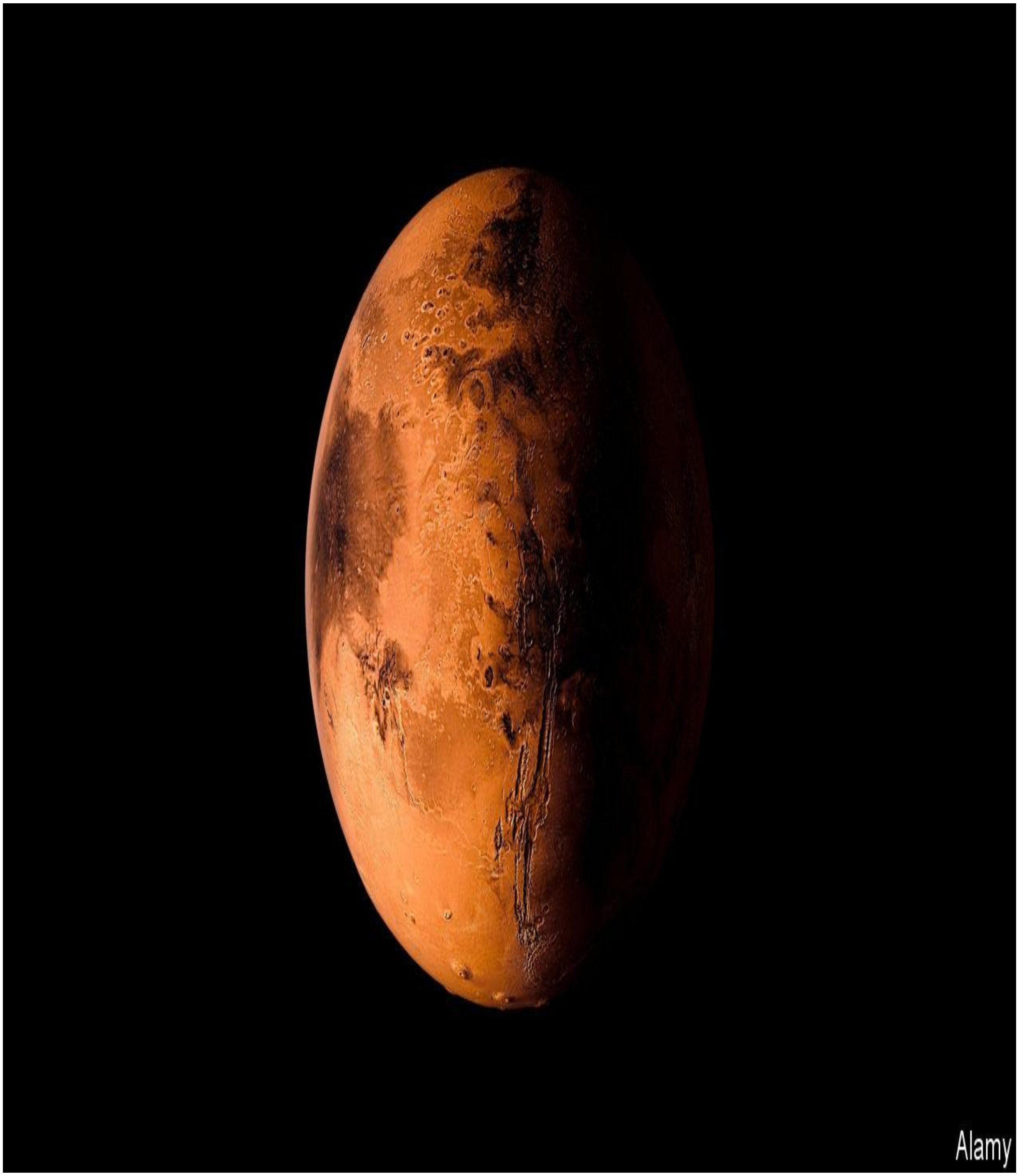
There’s no place like home

The likelihood of living on Mars soon is as remote as Pluto

Even if tech geeks do not want to hear that

Nov 22nd 2023



A City on Mars. By Kelly Weinersmith and Zach Weinersmith. *Penguin Press; 448 pages; $32. Particular Books; £25*

SOME CONVERTS are zealous. Some are reluctant. Kelly and Zach Weinersmith are definitely in the second camp. Both, as they constantly remind the reader, are space geeks. But they are also rationalists (who happen to be married). They began writing their new book in the expectation that off-Earth settlements would soon be on the cards. Their rational appraisal, having finished it, is the opposite. Those, such as Elon Musk, who aspire to make *Homo sapiens* a two-planet species by colonising Mars or somewhere else, are, they conclude, deluding themselves.

That opinion is not popular in the circles in which they move. But they argue their case cogently, contrasting the escapist fantasies of would-be planetary homesteaders with practicality. How, for example, would people feed themselves? Mars's surface is covered with toxic perchlorates, making the planet's "soil" hard to farm; the Moon's has little carbon, life's essential ingredient. Will space-dwellers be able to have babies? Both conception and birth may prove tricky in low gravity.

Will there be a land grab for the few lunar mountain tops that enjoy perpetual sunshine and the equally rare crater bottoms that never see it (and so might harbour the precious resource of frozen water)? Who will control the air supply? (For a fictional take on how this can go wrong, watch "Total Recall".) What will the currency be? Space-shuttle astronauts in the 1990s favoured packets of taco sauce.

Then there is the question of why anyone would want to go in the first place. Escaping an environmentally damaged Earth or even simply having an insurance policy against the chance of nuclear annihilation or an asteroid strike may sound attractive. But Mars is actually far more horrid than any fate likely to be awaiting humanity's home planet—even, probably, the aftermath of a nuclear exchange. And the Moon is worse even than that.

Space may appeal to Mr Musk as a retirement destination ("I'd like to die on Mars, just not on impact" is a saying often attributed to him). But nursing homes for the hyper-rich are a niche market, not the sort of enterprise on which new countries are usually founded. As to the one proper business space-colonisation enthusiasts propose that has a chance of becoming real—the mining of asteroids for precious metals—this would mean pushing space rocks around in ways that might make an asteroid strike more rather than less likely.

And there are even bigger difficulties than these. One is that, however much people might aspire to leave Earth's cares behind and start afresh elsewhere, they cannot. Any successful space settlement will carry inescapable historical baggage, and will, at least to start with, be simply an extension of terrestrial geopolitics. The other difficulty is that people themselves are the problem, and they will continue to be a problem even if they are born and raised in other parts of the solar system.

The Weinersmiths are reluctant to rule out the settlement of space for ever. But they argue that if it is to be done, it should not be piecemeal, in the way now planned. Humanity should instead wait a century or two, garner knowledge, develop technology and accumulate sufficient resources to pull it off properly—and then quickly build a large, planned outpost in a sort of "big bang". Good luck with that. Patience has never been humanity's strong suit (it certainly does not seem to be Mr Musk's). Neither has long-term planning. ■

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Red light, green light

What “Squid Game: The Challenge” reveals about the state of TV

Reality television is more important than you might think

Nov 21st 2023

CONTESTANT 299 sobs and retches; his face turns crimson as he focuses on the fiendish task at hand. Using a needle, he and his fellow players must try to extricate an umbrella shape stamped into a circular piece of honeycomb. If it snaps, they are eliminated from the contest.

The challenge may sound familiar: it featured in an episode of “Squid Game”, a South Korean thriller of 2021. The show remains Netflix’s biggest-ever hit: in the first month after its release subscribers spent around 1.65bn hours watching it, equivalent to 190,000 years.

In the fictional game, the penalty for failure was death. In “Squid Game: The Challenge”, a spin-off competition starring real people, “obviously we weren’t going to do that,” says Stephen Lambert, who co-produced the show. (Players are, however, strapped with ink packs that explode when they are knocked out, grimly mimicking a gunshot.) In this version, the stakes may not be life or death, but they are still hefty: 456 people from across the world vie to win nearly $4.6m.

Mr Lambert describes it as “the largest, most ambitious unscripted show ever produced”. (“Unscripted” refers to game shows, as well as dating and true-crime programmes and some documentaries.) As in the original “Squid Game” drama, the way participants behave during challenges exposes a great deal about their nature. “How you play is who you are,” the tagline declares. But the show is revealing on another level, too, as it points to several trends in television.

First, a show on this scale is testimony to the pre-eminence of reality TV. The genre is ubiquitous partly because viewers like it: “American Idol”, “Jeopardy! Masters” and “Survivor” were among the most-watched programmes in America last year. Unlike prestige dramas, such programmes rarely require your full attention (see final story). But therein lies reality TV’s appeal. Shows challenge the contestants, but viewers not so much.

Television executives are keen on it, too, because it is cheap to make. An episode of a sumptuous drama can cost millions of dollars, whereas an episode of even a flagship game show can be made for less than $100,000. (“Squid Game: The Challenge” is an outlier, costing more than $1m per instalment.)

In the first half of 2023 almost 70% of the shows commissioned globally were unscripted, according to Ampere Analysis, a research firm. In America, reality TV was given a boost by the (now resolved) writers’ and actors’ strikes. During the shutdown, drama producers started developing reality fare instead. This type of entertainment has the benefit of not depending on famous writers, actors or showrunners, says Lucas Green of Banijay, a production company: "The format is king."

Second, "Squid Game: The Challenge" is evidence of the current zeal for exploiting existing intellectual property. That has long been clear on the big screen, with a never-ending parade of familiar Jedi, superheroes and wizards, but it is becoming more evident on the small screen, too. Amazon recently released "007: Road to a Million", a competition show yoked to the James Bond franchise, which features contestants travelling around the world acting like secret agents and trying to win a jackpot of £1m ($1.25m).

If a show resonates in one country, it will traverse the globe, too. "Big Brother", featuring strangers enjoying life under surveillance, has been produced in 67 markets. TV executives now scour the world for new IP. "Married at First Sight", for example, in which people agree to wed strangers, started in Denmark. As well as being an exporter of popular dramas, South Korea is one of the top incubators of reality TV.

Hits can be reconfigured in different ways. "MasterChef" has nine spin-offs from the original cooking-competition show. No wonder Netflix sought to leverage the immense interest in "Squid Game": on TikTok, the hashtag has 84.3bn views.

Finally, the release of "Squid Game: The Challenge" in three batches points to streamers' changing attitude towards parcelling out content. Entertainment bigwigs are fond of saying that staggered releases recreate the kind of "collective viewing experience" and water-cooler chatter lost in the digital age. But media companies are also trying to make their on-demand services more profitable. A steady drip of episodes, rather than a sudden deluge, can keep viewers subscribed for longer. Don't you want to know if contestant 299 can go all the way? ■

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Johnson

Euphemism and exaggeration are both dangers to language

But verbal extremism is now the bigger threat

Nov 23rd 2023

GEORGE ORWELL'S essay "Politics and the English Language", published in 1946, took aim at the bureaucrats, academics and hacks who obfuscated their misdeeds in vague, jargon-packed writing. Abstractions, euphemisms and clichés all served as "the defence of the indefensible". Orwell lamented how "Millions of peasants are robbed of their farms and sent trudging along the roads with no more than they can carry: this is called *transfer of population* or *rectification of frontiers*. People are imprisoned for years without trial, or shot in the back of the neck or sent to die of scurvy in Arctic lumber camps: this is called *elimination of unreliable elements*."

If Orwell were writing today, he would find plenty of euphemisms to complain about. On October 7th an open letter from a clutch of student groups at Harvard University vaguely described the "unfolding violence" in Israel without ascribing blame to Hamas. Abstract brutality "unfolding" shocks rather less than a clearer description of Hamas slaughtering 1,200 Israelis, nearly all civilians, including many children.

As a onetime contributor to the BBC, it is easy to imagine Orwell defying the broadcaster's refusal to use the word "terrorism". Orwell had no trouble doling out his medicine to both sides; he would have also had harsh words for those describing the "collateral damage" buried in Gazan rubble, another abstraction designed to prevent readers picturing dead children. Around 13,000 Palestinians have died since October 7th.

Orwell's famous essay had a long lead time: he was paid in December, and it appeared in print the next April. Today, however, billions of people can publish their thoughts instantaneously. The desire to grab attention seems to incentivise stylistic sin. The social-mediafication of writing has steered the tone from the offence of euphemism to its twin offence of exaggeration.

Taking what they no doubt believe to be an Orwellian starting point—the danger of being too soft in their language—keyboard warriors cannot resist the temptation to reach for the most inflammatory words available. What used to be called chauvinism, then sexism, is now "misogyny", a word once reserved for actual hatred of women. Those who do not ascribe to left-wing views on race are accused not of bias, prejudice or even racism, but of "white supremacy", a phrase that just a decade ago was reserved for neo-Nazis.

Call it the "dysphemism treadmill". In its opposite, the "euphemism treadmill" (a term coined by Steven Pinker, a professor at Harvard), people run from one polite banality to another. They referred to people as "idiotic" until that became pejorative; then they opted for "retarded", which became unsayable; and then they devised “special”, which is now a taunt too. The dysphemism treadmill works the other way round: “prejudiced” seems too mild so is replaced with “racist”, which then suffers the same fate and must be swapped out for “white supremacist”.

As is true of many modern trends, the most extreme words have radiated from America, where “communist” and “fascist” have nothing to do with sickles or swastikas and are sometimes applied to anyone you disagree with. Social media, the “great awokening” on the left and the MAGAfication of the right have contributed to a verbal crescendo.

Countries in west and central Africa have seen seven of the classic storming-the-presidential-palace sort of “coup” in less than four years. Yet the same word has been used recently to describe an iffy deal to stay in power, struck by Spain’s Pedro Sánchez with Catalan separatists, in exchange for a few votes in a freely elected parliament. Spain is not so much witnessing a coup as a political zoo.

The worst crime imaginable—“genocide”—is also being bandied about more often. The word is used correctly when describing the Arab militias in Sudan who are rounding up black African tribes, such as the Masalit, murdering men and boys, raping women and saying “the baby will be an Arab”. But those using the term “genocide” to characterise Israeli attacks on civilians in Gaza are not hewing strictly to what the word’s definition is, which is the intentional destruction of people for the mere fact of their ethnicity.

So here is a suggestion for writers. You cannot outshout the crowds. So distinguish yourselves by choosing accurate, vivid words between the evasions of euphemism and the temptations of exaggeration. Crimes against language, in the long run, make it harder to describe crimes against humanity.■

Read more from Johnson, our columnist on language:
Young Americans are losing the southern accent (Oct 11th)
The importance of handwriting is becoming better understood (Sep 14th)
AI could make it less necessary to learn foreign languages (Aug 17th)

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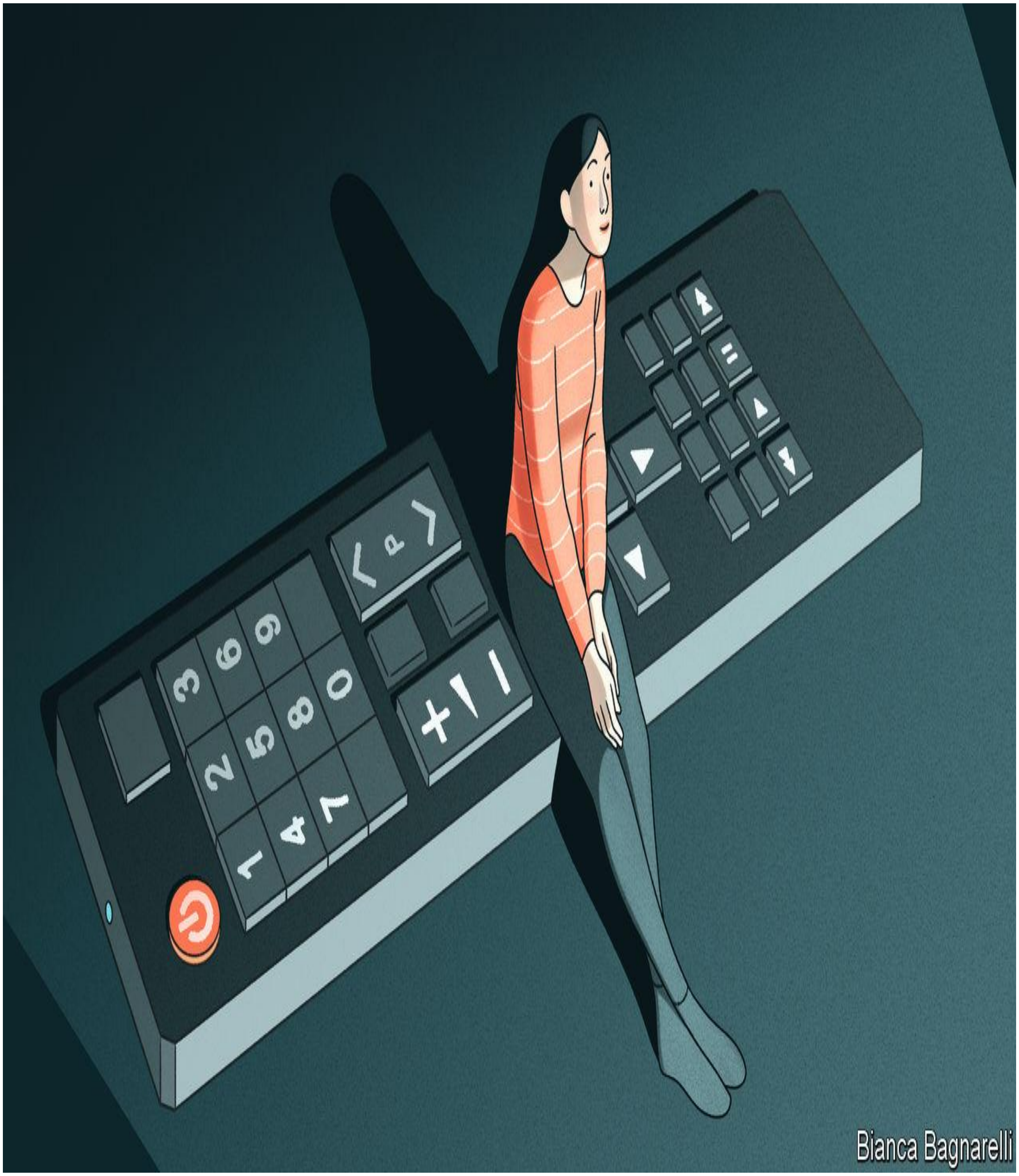
Watch the box

The Economist’s pick of the best television shows of 2023

Exceptional comedies, crime dramas, and psychological thrillers have come to the small screen this year

Nov 17th 2023



“Barry”

The fourth and final season is the darkest and most gripping. Barry Berkman, a hitman, reinvented himself as an actor; now he has lost his cover and his freedom. The show—created by and starring Bill Hader, a comedian

—interrogates Hollywood's love of anti-heroes and offers a satisfying ending.

"The Bear"

In the second season, the run-down sandwich shop that Carmy Berzatto (Jeremy Allen White) inherited following his brother's death has been torn down and reimagined as an haute-cuisine restaurant. Yet "The Bear" feels true to its beginnings, just as Carmy seeks to retain the team behind the original eatery.

"Beef"

Amy Lau (Ali Wong), a woman with lots of money, a perfect home, a stay-at-home husband and an angelic daughter, blows up her life. In this dark and transfixing comedy-drama, a road-rage incident brings her into the orbit of Danny Cho (Steven Yeun), a second-rate contractor. Mutually assured destruction ensues.

"Colin from Accounts"

This charming Australian comedy arrived on American and British screens in 2023. It follows Ashley and Gordon, strangers who are brought together by an injured dog. It is written by and starring Harriet Dyer and Patrick Brammall, who are married in real life. The dialogue is superb.

"The Crown"

Back for its sixth and final season, "The Crown" turns the spotlight on recent history. Viewers already know the dismal ending to the romance between Princess Diana (Elizabeth Debicki) and Dodi Fayed (Khalid Abdalla), but the drama is tightly drawn and mesmerising on screen.

"Dead Ringers"

A gender-swapped remake of the film of 1988. By turns funny and unsettling, the mini-series revolves around twin sisters and gynaecologists, Elliot and Beverly Mantle (both played by Rachel Weisz), as they open their own birthing centre and conduct ethically dubious research.

“The Diplomat”

Kate Wyler (Keri Russell) becomes America’s ambassador to Britain shortly after a hostile power has blown up a British warship in the Persian Gulf. Witty, tense, glossily melodramatic and full of terrific performances, this show is remarkably bingeable. It is the sort of show Netflix was made for.

“Fargo”

Of all the TV spin-offs and sequels of recent years, “Fargo”—based on the black-comedy film of 1996—has been the most surprising. The fifth season, which stars Jon Hamm and Juno Temple, once again enthralls viewers with unique crime capers set in America’s Midwest.

“The Gold”

A dramatisation of the Brink’s-Mat gold-bullion heist in London in 1983. (The haul was worth £26m, about $100m today.) In Neil Forsyth’s hands this becomes a panoramic tale of class, social mobility and police corruption. Hugh Bonneville, Dominic Cooper and Jack Lowden give excellent performances.

“The Good Mothers”

Set in 2010, this show tells the stories of women who dared to defy the ’Ndrangheta, the mafia of Calabria. It has none of the insidious glamour that clings to the “Godfather” movies—and to many productions made since. This is noir that is uncompromisingly dark.

“Happy Valley”

Catherine Cawood (Sarah Lancashire), a police sergeant, has long been haunted by the crimes of Tommy Lee Royce (James Norton), a rapist who attacked her daughter. Set in a Yorkshire town, this blistering drama tackles themes of injustice, poverty and organised crime.

“The Last of Us”

Adapted from a hit game of 2013, this show finished its debut season as HBO's biggest hit since "Game of Thrones". It tells a compelling story of survival in a pandemic-stricken world. Its high point was a love story in the third episode.

"Poker Face"

A casino waitress has an uncanny ability to tell when someone is fibbing. When the gangsters who run the casino turn on her, Charlie (Natasha Lyonne) flees and takes her lie-detector skills on the road. Another rollicking murder mystery from Rian Johnson, the writer and director of the "Knives Out" films.

"Succession"

Jesse Armstrong, the creator, gives the Roy family a superb send-off. In the final season the back-stabbing and blackmailing reach new heights; funerals and weddings alike are opportunities for vituperation. The series reaches a conclusion that somehow exceeds expectations.

"Wave Makers"

This show examines thorny questions of politics and morality in Taiwan. Witty and propulsive, it tells a hopeful story of one person standing up for another—and has inspired real women in the country to speak out about sexual harassment. ■

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Economic & financial indicators

- Economic data, commodities and markets

Indicators

Economic data, commodities and markets

Nov 23rd 2023

Economic data

	Gross domestic product % change on year ago: latest		quarter*	2023†	Consumer prices % change on year ago: latest		2023†	Unemployment rate %	
United States	2.9	Q3	4.9	2.4	3.2	Oct	4.1	3.9	Oct
China	4.9	Q3	5.3	5.5	-0.2	Oct	0.7	5.0	Oct‡§
Japan	1.2	Q3	-2.1	2.0	3.0	Sep	3.2	2.6	Sep
Britain	0.6	Q3	-0.1	0.4	4.6	Oct	6.8	4.3	Jun††
Canada	1.1	Q2	-0.2	1.1	3.1	Oct	4.0	5.7	Oct
Euro area	0.1	Q3	-0.2	0.7	2.9	Oct	5.5	6.5	Sep
Austria	-1.3	Q2	-3.0‡	-0.3	4.9	Oct	7.7	5.5	Sep
Belgium	1.5	Q3	2.0	1.4	-1.7	Oct	2.6	5.6	Sep
France	0.7	Q3	0.4	0.9	4.5	Oct	5.7	7.3	Sep
Germany	-0.4	Q3	-0.3	-0.2	3.0	Oct	6.0	3.0	Sep
Greece	2.9	Q2	5.1	2.4	3.8	Oct	4.0	10.0	Sep
Italy	nil	Q3	0.2	0.7	1.8	Oct	6.1	7.4	Sep
Netherlands	-0.6	Q3	-0.8	0.2	-1.0	Oct	4.5	3.6	Oct
Spain	1.8	Q3	1.3	2.4	3.5	Oct	3.5	12.0	Sep
Czech Republic	-1.1	Q2	-1.2	nil	8.5	Oct	10.4	2.7	Sep‡
Denmark	0.6	Q2	-1.2	1.5	0.1	Oct	3.8	2.9	Sep
Norway	0.7	Q2	0.1	1.4	4.0	Oct	5.8	3.6	Aug††
Poland	0.4	Q3	-5.5	-0.1	6.6	Oct	11.3	5.0	Oct§
Russia	5.5	Q3	na	1.1	6.7	Oct	6.2	3.0	Sep§
Sweden	-1.2	Q3	nil	-0.6	6.5	Oct	6.0	7.4	Oct§
Switzerland	0.5	Q2	0.1	0.8	1.7	Oct	2.2	2.1	Oct
Turkey	3.8	Q2	14.6	3.4	61.4	Oct	53.1	8.9	Sep§
Australia	2.1	Q2	1.4	1.9	5.4	Q3	5.7	3.7	Oct
Hong Kong	4.1	Q3	0.3	3.4	2.8	Oct	2.0	2.9	Oct‡‡
India	7.8	Q2	11.0	6.5	4.9	Oct	5.7	8.1	Apr
Indonesia	4.9	Q3	na	4.9	2.6	Oct	3.8	5.3	Q3§
Malaysia	3.3	Q3	na	4.0	1.9	Sep	2.6	3.4	Sep§
Pakistan	1.7	2023**	na	1.7	26.9	Oct	31.8	6.3	2021
Philippines	5.9	Q3	13.9	4.1	4.9	Oct	6.0	4.8	Q3§
Singapore	1.1	Q3	5.6	0.9	4.1	Sep	4.8	2.0	Q3
South Korea	1.2	Q3	2.4	1.3	3.8	Oct	3.6	2.1	Oct§
Taiwan	2.3	Q3	10.5	1.2	3.0	Oct	2.5	3.4	Oct
Thailand	1.5	Q3	3.1	2.8	-0.3	Oct	1.6	0.9	Sep§
Argentina	-4.9	Q2	-10.9	-1.8	143	Oct	135	6.2	Q2§
Brazil	3.4	Q2	3.7	3.1	4.8	Oct	4.6	7.7	Sep§‡‡
Chile	0.6	Q3	1.3	-0.2	5.0	Oct	7.6	8.9	Sep§‡‡
Colombia	-0.3	Q3	1.0	1.6	10.5	Oct	11.8	9.3	Sep§
Mexico	3.3	Q3	3.6	3.4	4.3	Oct	5.5	2.7	Sep
Peru	-0.5	Q2	1.5	-0.3	4.3	Oct	6.5	6.1	Oct§
Egypt	2.9	Q2	na	3.8	35.9	Oct	37.5	7.1	Q3§
Israel	3.5	Q3	2.8	0.9	3.7	Oct	4.3	3.1	Oct
Saudi Arabia	8.7	2022	na	0.1	1.6	Oct	2.3	4.9	Q2
South Africa	1.6	Q2	2.4	0.7	6.1	Oct	5.9	31.9	Q3§

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. Note: Euro area consumer prices are harmonised.

Economic data

	Current-account balance	Budget balance	Interest rates			Currency units	
	% of GDP, 2023†	% of GDP, 2023†	10-yr gov't bonds latest,%		change on year ago, bp	per $ Nov 22nd	% change on year ago
United States	-2.8	-6.3	4.4		66.0	-	
China	1.8	-3.8	2.6	§§	-7.0	7.15	-0.3
Japan	2.9	-5.1	0.7		45.0	150	-5.6
Britain	-3.2	-3.5	4.2		80.0	0.80	5.0
Canada	-0.4	-1.3	3.6		61.0	1.37	-2.2
Euro area	2.2	-3.4	2.6		59.0	0.92	5.4
Austria	2.6	-2.4	3.1		56.0	0.92	5.4
Belgium	-1.5	-4.5	3.1		55.0	0.92	5.4
France	-1.3	-5.0	3.2		69.0	0.92	5.4
Germany	5.5	-2.4	2.6		59.0	0.92	5.4
Greece	-6.5	-2.1	3.8		-45.0	0.92	5.4
Italy	0.9	-5.3	4.3		41.0	0.92	5.4
Netherlands	8.1	-1.9	2.9		63.0	0.92	5.4
Spain	1.6	-4.1	3.6		57.0	0.92	5.4
Czech Republic	-1.1	-3.8	4.3		-57.0	22.5	5.3
Denmark	11.1	1.5	2.8		57.0	6.86	5.4
Norway	17.1	10.8	3.6		37.0	10.8	-6.1
Poland	1.0	-4.8	5.5		-133	4.02	13.9
Russia	2.8	-2.7	11.7		140	88.6	-31.7
Sweden	4.6	-0.3	2.6		69.0	10.5	1.3
Switzerland	7.4	-0.7	0.9		-6.0	0.89	6.7
Turkey	-4.6	-5.0	27.0		1,641	28.8	-35.5
Australia	0.6	0.5	4.5		86.0	1.53	-1.3
Hong Kong	6.7	-1.5	3.9		24.0	7.80	0.3
India	-1.3	-5.9	7.2		-4.0	83.3	-2.0
Indonesia	0.6	-2.5	6.6		-35.0	15,575	0.8
Malaysia	1.7	-5.0	3.9		-46.0	4.68	-2.1
Pakistan	-0.1	-7.6	15.1	†††	213	285	-21.6
Philippines	-4.5	-7.2	6.3		-91.0	55.5	3.4
Singapore	19.0	-0.7	2.9		-16.0	1.34	3.0
South Korea	2.2	-2.7	3.8		-1.0	1,301	4.3
Taiwan	13.4	-0.2	1.3		-28.0	31.6	-1.2
Thailand	0.5	-2.7	2.8		7.0	35.2	2.5
Argentina	-3.0	-4.8	na		na	357	-53.9
Brazil	-1.3	-7.6	11.1		-240	4.89	9.4
Chile	-4.0	-3.2	5.8		43.0	876	6.4
Colombia	-4.0	-4.2	10.6		-264	4,088	20.1
Mexico	-1.4	-3.8	9.6		39.0	17.2	13.3
Peru	-1.3	-2.9	7.0		-93.0	3.75	2.7
Egypt	-1.8	-6.7	na		na	30.9	-20.7
Israel	5.4	-4.9	4.2		96.0	3.73	-7.0
Saudi Arabia	3.2	-1.7	na		na	3.75	0.3
South Africa	-1.8	-5.2	10.1		-15.0	18.9	-8.4

Source: Haver Analytics. §§5-year yield. †††Dollar-denominated bonds.

Markets

In local currency	Index Nov 22nd	% change on: one week	% change on: Dec 30th 2022
United States S&P 500	4,556.6	1.2	18.7
United States NAScomp	14,265.9	1.1	36.3
China Shanghai Comp	3,043.6	-1.0	-1.5
China Shenzhen Comp	1,905.8	-1.5	-3.5
Japan Nikkei 225	33,451.8	-0.2	28.2
Japan Topix	2,378.2	0.2	25.7
Britain FTSE 100	7,469.5	-0.2	0.2
Canada S&P TSX	20,114.0	0.3	3.8
Euro area EURO STOXX 50	4,352.0	0.8	14.7
France CAC 40	7,260.7	0.7	12.2
Germany DAX*	15,957.8	1.3	14.6
Italy FTSE/MIB	29,154.9	-1.1	23.0
Netherlands AEX	760.0	-0.4	10.3
Spain IBEX 35	9,887.4	2.6	20.2
Poland WIG	74,733.7	1.4	30.1
Russia RTS, $ terms	1,151.9	1.6	18.7
Switzerland SMI	10,832.4	1.2	1.0
Turkey BIST	7,987.0	4.2	45.0
Australia All Ord.	7,277.8	-0.5	0.8
Hong Kong Hang Seng	17,734.6	-1.9	-10.3
India BSE	66,023.3	0.5	8.5
Indonesia IDX	6,907.0	-0.7	0.8
Malaysia KLSE	1,455.9	-0.7	-2.6
Pakistan KSE	58,178.3	2.5	43.9
Singapore STI	3,114.9	-0.5	-4.2
South Korea KOSPI	2,511.7	1.0	12.3
Taiwan TWI	17,310.3	1.1	22.4
Thailand SET	1,414.2	-0.1	-15.3
Argentina MERV	838,616.6	33.2	315.0
Brazil BVSP*	126,035.3	2.3	14.9
Mexico IPC	52,670.0	-0.2	8.7
Egypt EGX 30	25,029.6	3.7	71.5
Israel TA-125	1,807.7	4.9	0.4
Saudi Arabia Tadawul	11,100.0	0.7	5.2
South Africa JSE AS	74,763.9	nil	2.3
World, dev'd MSCI	3,004.8	1.0	15.4
Emerging markets MSCI	983.6	nil	2.8

US corporate bonds, spread over Treasuries

Basis points	latest	Dec 30th 2022
Investment grade	128	154
High-yield	431	502

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

Commodities

***The Economist* commodity-price index**

2015=100	Nov 14th	Nov 21st*	% change on month	% change on year
Dollar Index				
All Items	151.1	152.1	6.0	4.6
Food	135.3	133.9	2.7	-2.1
Industrials				
All	165.8	169.2	8.7	10.1
Non-food agriculturals	116.5	119.2	5.3	-13.4
Metals	180.4	184.0	9.4	16.2
Sterling Index				
All items	185.1	185.2	3.0	-0.9
Euro Index				
All items	154.6	154.3	2.8	-1.6
Gold				
$ per oz	1,968.7	2,002.6	2.1	14.8
Brent				
$ per barrel	82.6	82.5	-6.5	-6.8

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.

The Economist

The Economist explains

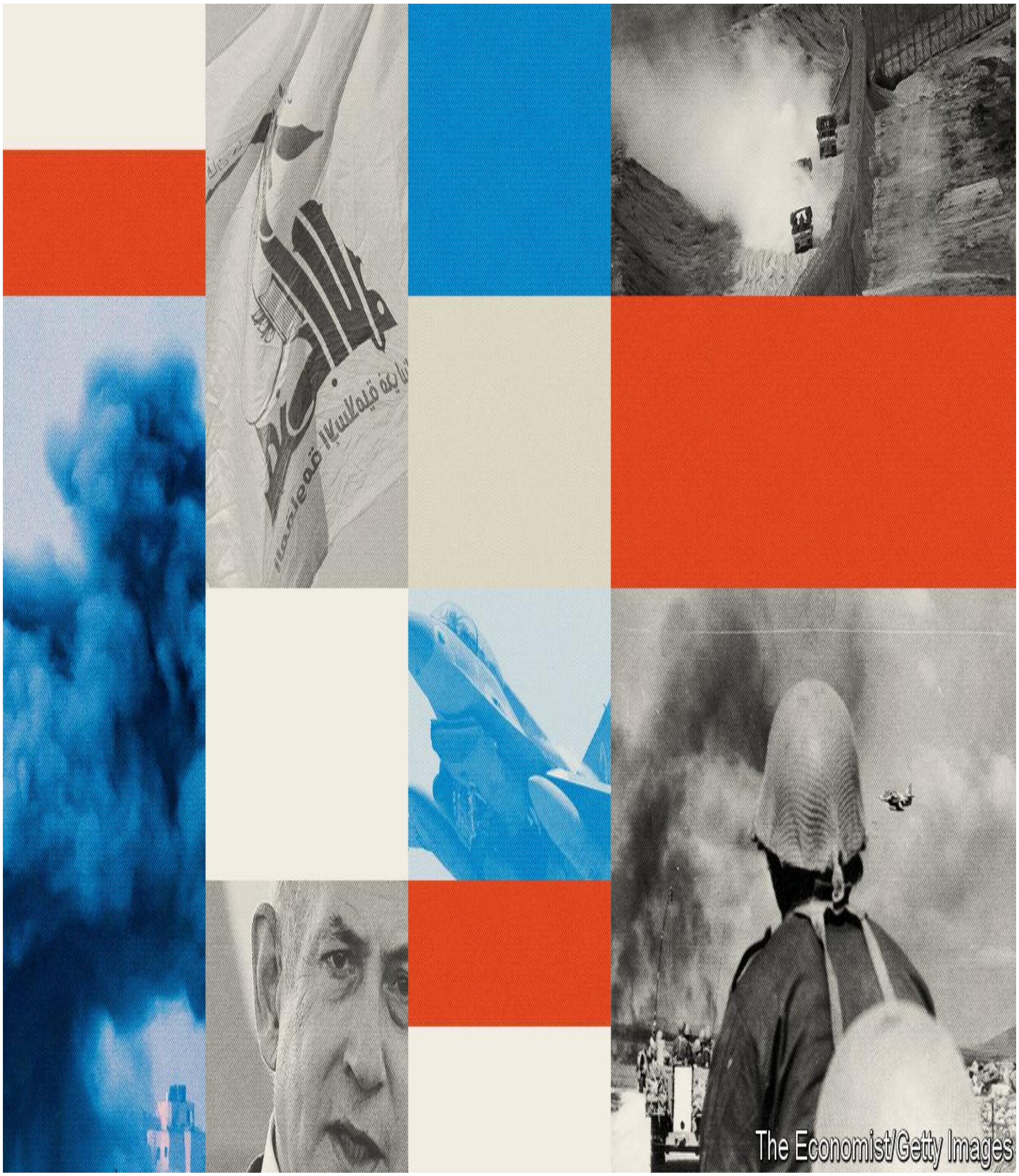
- [The A to Z of the Arab-Israeli conflict]

The Economist explains

The A to Z of the Arab-Israeli conflict

From "Abraham accords" to "Zionism"

Nov 20th 2023



Abraham accords
Bilateral agreements on Arab-Israeli normalisation signed in 2020. The first round of deals were between Israel and the United Arab Emirates and Bahrain in September 2020. Sudan normalised relations with Israel the following month and Morocco in December 2020. Negotiations between Israel and Saudi Arabia were disrupted by the war between Israel and Hamas which began in October 2023.

Al-Shifa hospital
Gaza's largest hospital. Israel claims that Hamas has its underground headquarters below the building, which Hamas denies. Attacking health-care facilities can be illegal under international law.

Arab Revolt in Palestine
In 1936 unrest broke out in the British mandate of Palestine amid frustration at rising Jewish immigration in the wake of Britain's Balfour Declaration. By the summer of 1939 the uprising had been suppressed—but Britain later faced Jewish revolts and after the second world war handed the problem to the United Nations, which voted to partition the land.

1993 The Oslo accords

The Economist

Areas A, B and C
A messy patchwork of control in the West Bank and Gaza Strip, agreed in 1995 as part of the Oslo II accord. In Area A, which includes the main Palestinian towns, the Palestinian Authority was given full civil and security control. In Area B it had power over civil affairs and some aspects of law and order, but Israel retained ultimate security control. In Area C, which includes most Jewish settlements, Israel kept full control. See map.

Armistice (1949)
Peace deals signed after the first Arab–Israeli war of 1948. Israel and Arab states divided up the land. No Palestinian state was created; Egypt controlled Gaza while Transjordan (later Jordan) formally annexed the West Bank. See map.

Axis of resistance
Iran's network of violent proxies and allies across the Middle East. It includes Hamas in Gaza and the West Bank, Shia militias in Iraq, Hizbullah in Lebanon, militant groups in Syria and the Houthi militia in Yemen.

Balfour Declaration
On November 2nd 1917 Britain issued the Balfour Declaration, named after Arthur Balfour, the British foreign secretary, stating its support for "the establishment in Palestine of a national home for the Jewish people". The document also insists that "nothing shall be done which may prejudice the civil and religious rights of existing non-Jewish communities in Palestine".

Binyamin Netanyahu
Israel's longest-serving prime minister and head of the right-wing Likud party. Since December 2022 has led a coalition which includes far-right nationalist and ultra-religious parties. He was previously prime minister from June 1996 to July 1999, and from March 2009 to June 2021. Also known as Bibi. Since 2019 he has faced criminal charges for corruption and fraud.

Black September
A Palestinian terrorist organisation responsible for the massacre of Israeli athletes at the Munich Olympics of 1972.

Blockade
A restriction on imports into Gaza, imposed by Israel and Egypt since 2007 after Hamas, a Palestinian Islamist group, took control of the territory.

Camp David accords
Signed by Israel and Egypt in 1978, after the Yom Kippur war. In a peace treaty six months later Israel agreed to give back Sinai to Egypt, and to grant Palestinians autonomy.

Disengagement from Gaza
In 2005, at the end of the second intifada, Israel's prime minister, Ariel Sharon, withdrew all Israeli troops and Jewish settlers from the Gaza Strip and evacuated four of the 120 settlements in the West Bank. It also built a security barrier in the West Bank.

East Jerusalem
A sector of Jerusalem annexed by Jordan after the first Arab-Israeli war in 1948, then captured and annexed by Israel during the Six Day War in 1967. Legally it is as a *corpus separatum,* a separate entity belonging to no country, under the UN partition plan of 1947 but it is widely regarded as being part of the occupied territories.

Fatah
"Conquest" or "opening" in Arabic. The nationalist party led by Mahmoud Abbas that formed the core of the Palestine Liberation Organisation and dominates the Palestinian Authority, which runs the West Bank. Founded by Yasser Arafat. Its main rival is Hamas.

Gaza city
The largest city in the Gaza Strip.

Gaza Strip
A 365-square-kilometre sliver of land, home mainly to Palestinians, wedged between Egypt, Israel and the Mediterranean. It was administered by Egypt after 1948, and captured by Israel during the Six Day War in 1967. In 2005 Israel "disengaged" from Gaza and pulled out Jewish settlers. It is home to roughly 2.2m people, many of whom rely on international aid, and has been run by Hamas, a militant group, since 2007. It was placed under siege,

bombarded and then invaded by Israel in retaliation for Hamas's attack in October 2023. Read our short history of Gaza.

Genocide
Defined by the UN as acts intended "to destroy, in whole or in part, a national, ethnical, racial or religious group". Israel's critics accuse it of committing genocide against the Palestinians; Israel calls Hamas a genocidal group. Read our full explainer on how the term is misused.

Golan Heights
A mountain plateau that dominates the Sea of Galilee. It was seized by Israel from Syria in 1967. In 1981 it annexed 1,800 square kilometres of the territory. Around half of the area's population of 52,000 people are Druze Arabs. It is home to Israel's only ski resort.

1949 Armistice lines

The Economist

Green Line
A demarcation line drawn during the Armistice of 1949. It served as the de facto border between Israel and Arab states until the Six Day War of 1967. It forms the basis of Palestinian claims to a state in the West Bank and Gaza Strip, with Jerusalem as its capital. See map.

Hamas
Islamic Resistance Movement ("HMS" are its initials in Arabic), the Palestinian Islamist organisation which runs Gaza. It was founded in 1987 during the first intifada with the aim of destroying Israel and liberating the Palestinian people. In 2006 Hamas won a majority of seats in a Palestinian election and later formed a unity government with Fatah. In June 2007, after a brief civil war, it assumed sole control of Gaza, leaving Fatah to run the Palestinian Authority in the West Bank. On October 7th 2023 more than 1,000 Hamas fighters crossed into Israel and killed 1,200 civilians and soldiers, kidnapping 240 more. Read our full explainer about Hamas.

Hizbullah
"Party of God" in Arabic. An Iran-backed militant group and political party based in Lebanon, which borders Israel to the north. It is dedicated to the destruction of Israel, and is the world's most heavily armed non-state actor. Read our full explainer about Hizbullah.

Holocaust
The systematic murder of 6m European Jews by the Nazis during the second world war. It is recognised by most as a genocide. Hamas and other Islamist groups deny the Holocaust happened.

Hostages
Israeli prisoners held by Hamas and Palestinian Islamic Jihad. On October 7th 2023 around 240 people were taken by Hamas from Israel to Gaza.

Humanitarian pause
A "temporary cessation of hostilities purely for humanitarian purposes", according to the UN. Such pauses are usually limited to a defined period of time and to a specific area. A ceasefire goes further—read our full explainer on the differences and why they matter.

Intifada
From the Arabic verb "to shake". It describes campaigns fought by Palestinians against the Israeli occupation of the West Bank and Gaza. The first intifada, which began in 1987, involved mainly strikes and stone-throwing. During the second intifada, from 2000 to 2005, Palestinians used guns and suicide bombs to blow up Israeli buses and nightclubs.

Iron Beam
An Israeli defence system under construction which will use lasers to shoot incoming rockets or drones out of the sky. Read our full explainer on the laser-defence system.

Iron Dome
Israel's system of mobile batteries against short-range rockets and mortars, often fired from Gaza. (The country also has David's Sling for medium-range rockets and Arrow for longer-range ballistic ones.)

2020s Present day

The Economist

Israel
The modern state of Israel was established in May 1948 by Jewish leaders after the withdrawal of Britain from Palestine. The name also refers to a kingdom in ancient Palestine comprising the lands occupied by the Hebrew people. See map.

Israel Defence Forces
Israel's army. Largely made up of reservists with a small core of professional soldiers. Led in 2023 by Lieutenant General Herzi Halevi. Read our profile of General Halevi.

Jerusalem
A city in Israel, holy to Christians, Jews and Muslims. Under the UN partition plan of 1947, Jerusalem was intended to be an international city, part of neither the future Jewish nor Arab states. It was divided by Israel and Jordan in the armistice of 1949. The eastern half was captured by Israel in the Six Day war of 1967, and annexed as part of its "eternal and indivisible capital". Most countries keep their embassies in Tel Aviv, but the United States relocated its mission to Jerusalem in 2018.

Jerusalem day
An Israeli holiday marking Israel's capture of East Jerusalem, the West Bank and Gaza in the Six Day War in June 1967.

Khan Younis
A city and a refugee camp in southern Gaza in which many of the current leadership of Hamas grew up.

Kibbutz
Agricultural communities in Israel often run as collective economies. Kibbutzim close to Gaza were targeted by Hamas on October 7th 2023.

League of Nations
A forerunner to the United Nations. In 1922 the League gave Britain the mandate to run Palestine as an international territory.

Lebanon war, first
Four month conflict between Israel and Lebanon in 1982. Known in Israel as

Operation Peace for Galilee. Israel invaded in order to dismantle Yasser Arafat's Palestine Liberation Organisation which had taken control of the south of Lebanon. The war killed thousands of Palestinian and Lebanese civilians, along with hundreds of Israeli and Syrian soldiers. The PLO subsequently moved its headquarters to Tunisia. In 1985 most Israeli troops were withdrawn from Lebanon, except for a border "security zone".

Lebanon war, second
Conflict between Israel and Lebanon between July and August 2006. Launched by Israel in an attempt to destroy Hizbullah, an Iran-backed militant group and political party which had created a "state within a state" in the south of the country. Israel imposed a naval blockade, bombed Beirut, Lebanon's capital, and invaded the south. Six years earlier Israeli troops had withdrawn from the security zone established in 1985.

Mahmoud Abbas
The ageing head of Fatah and the Palestinian Authority, based in the West Bank. Mr Abbas was elected to serve a four-year presidential term in 2005 but has remained in post ever since. He is also head of the Palestine Liberation Organisation and of Fatah.

Nakba
"Catastrophe" in Arabic. The mass displacement of Palestinians that accompanied the creation of Israel in 1948. Around 750,000 Palestinian Arabs fled or were pushed out of their homes.

Occupied territories
The collective name for the occupied West Bank, Gaza and East Jerusalem.

Oslo accords
In 1993 Israel and the Palestinians, represented by the Palestine Liberation Organisation, signed the first Oslo accord, which set out a five-year period of Palestinian autonomy in the West Bank and the Gaza Strip under a new entity, the Palestinian Authority. The Oslo II accords, under which Israel handed over security responsibility to the Palestinian Authority in parts of the occupied territories, were signed in 1995 with the intention of a permanent treaty five years later. That did not happen.

Palestine Liberation Organisation
A Palestinian organisation recognised by the Arab League as the "sole legitimate representative" of the Palestinian people. Represents Palestinians internationally, including at the UN.

Palestinian Authority
An autonomous government for parts of Gaza and the West Bank founded in 1994. Intended to be the basis of a future Palestinian state. Its first leader was Yasser Arafat, leader of the Palestine Liberation Organisation. Expelled from Gaza by Hamas in 2007. Widely seen by Palestinians as corrupt and incompetent.

Palestinian Islamic Jihad
A militant group with links to Iran which operates in the West Bank and Gaza with the aim of establishing an Islamic state. Unlike Hamas the group limits itself to armed conflict. It has never participated in elections and has provided little support to people in Gaza. Read our full explainer about the group.

Palestinians
A population of around 14m people who trace their origins to British-ruled Palestine. Around 7m Palestinians live in Israel, the West Bank and the Gaza Strip. Another 7m are strewn across the Arab world and beyond. Nearly 6m are registered as refugees.

Rafah crossing
A border crossing between Gaza and Egypt's Sinai peninsula. Used during the war of 2023 to import aid.

Ramallah
A city in the West Bank and the de facto capital of the Palestinian Authority.

San Remo Conference
A conference of European powers and Japan held in Italy in 1920 during which the Ottoman empire was carved up. Britain was given a mandate to rule Palestine, the international territory envisioned under the Sykes-Picot agreement.

Settlers
Around 700,000 Israelis living in the occupied West Bank, East Jerusalem and the Golan Heights. Their presence is considered illegal under international law. Violence between settlers and Palestinians is common.

1967 After the six-day war

The Economist

Sinai peninsula
Territory briefly seized by Israel from Egypt during the Suez crisis in 1956 and again in the Six Day War in 1967. It was returned to Egypt in 1982 as part of a peace deal. See map.

Six Day War
Brief armed conflict between Israel and its Arab neighbours in June 1967. Israel tripled its territory, capturing the West Bank, East Jerusalem, the Gaza Strip, the Golan Heights and the Sinai peninsula. Israel has since moved to build Jewish settlements on some of the land occupied during the war.

Suez crisis
In October 1956 Israel invaded Egypt, capturing the Sinai peninsula and the Gaza Strip. The conflict was planned in collusion with Britain and France in order to allow them to regain control of the Suez Canal which they had run until Egypt's president, Gamal Abdul Nasser, nationalised it in July 1956. America was outraged and pushed Britain to abort the mission. In December 1956 the Israelis withdrew from Sinai and in March 1957 they withdrew from Gaza.

Sykes-Picot Agreement
During the first world war Sir Mark Sykes, a British diplomat, and François Georges-Picot, a French one, were appointed to secretly divvy up the lands of the Ottoman empire. The Arab provinces were to be split up among European powers. Given its significance in Christianity, Islam and Judaism, Palestine was envisioned as an international territory.

Tel Aviv
Israel's largest city and financial capital. Of the 96 embassies in Israel, 91 are located in Tel Aviv (the other five, including the American embassy, are in Jerusalem).

Transjordan
An Arab kingdom under Hashemite rule, created by Britain in 1921 after the San Remo Conference. Now Jordan.

Tunnels
First built for smuggling, tunnels under Gaza are used by Hamas fighters to

attack Israel and to hide from Israeli fire. After the October 7th attacks the Israel Defence Forces unleashed air strikes to damage the tunnels.

Two-state solution
A proposed peace plan to end the Isreli-Palestinian conflict that is widely supported internationally. A Palestinian state would be formed in Gaza and the West Bank; Israel would swap chunks of its territory for portions with large settlements in the West Bank. Jerusalem would be shared, with some sort of joint control over the old city.

UNRWA
The UN's Relief and Works Agency, which looks after the welfare of 5.9m registered Palestinian refugees in the Middle East.

War of Independence
Israel's name for the war of 1947-48. On May 14th 1948 Jewish leaders established the state of Israel. On May 15th a coalition of Arab neighbours invaded. At the end of the war Israel increased its territory to include land the UN had intended for an Arab state, as well as West Jerusalem. Transjordan held the West Bank and East Jerusalem and Egypt held the Gaza Strip. The war was followed by the mass displacement of Palestinian Arabs, known in Arabic as the *Nakba.*

West Bank
Israeli-occupied territory run in part by the Palestinian Authority. Palestinians view it as the core of their would-be state. Right-wing and religious Israelis regard it as their ancestral territory, with many biblical sites, and are pushing for Israel to annex it in part or entirely. Home to increasing numbers of Israeli settlers.

Yom Kippur war
In October 1973, on the Jewish holy day of Yom Kippur, Egypt and Syria launched an attack in Sinai and the Golan Heights. The war lasted three weeks and ended with a ceasefire secured by the UN.

Zionism
A movement founded by Theodor Herzl, an Austro-Hungarian Jew, with the aim of creating a Jewish homeland. In the 1920s the movement was

dominated by socialists, who went on to establish the state of Israel on socialist principles. In more recent years religious Zionism, an offshoot, which regards Zionism as a fundamental component of Orthodox Judaism, has become a powerful force. ■

Obituary

- **Elinor Otto did not realise what giant strides she was making for women**

The fastest gun in the west

Elinor Otto did not realise what giant strides she was making for women

The longest-working "Rosie the Riveter" died on November 12th, aged 104

Nov 22nd 2023

BUSY, BUSY, busy. So Elinor Otto liked to be: always doing, accomplishing something. Starting every working day at 4am with a shower and a drive. Parking the car a long way from the plant to get a brisk morning walk. Coffee, and reading the newspaper, both at once. Then, at 6am, getting down to work on Boeing's assembly line in Long Beach.

She liked neatness, too. So every Thursday, when she felt her hair was mussed or her nails getting dull, she went to the beauty parlour. She taught her grandson proper manners, including correcting, in red ink, the spelling in the letters he wrote to her. And her working days were spent firing neat rows of rivets, *brrr, brr, brrr*, into the wing sections of C-17 cargo planes.

That was in her 90s. By then she had spent almost 70 years as a riveter and would have gone on, if Boeing hadn't closed the plant. She made a fine show on the factory floor: red hair, bright pink or purple nail polish. What's that old bag doing here? she imagined some colleagues saying. Well, if they thought she couldn't handle the two-foot rivet gun, or being on her feet all day, they were wrong. She might be slight, but she was strong. And she'd been using that gun since before most of them were born.

It was in 1942, after Pearl Harbor, that she became a riveter, answering the government's call for women to do the jobs, especially in aircraft and armaments, that the men had left to go to war. She and one of her two sisters both became riveters at Rohr Aircraft in San Diego, where they lived, while her other sister was a battleship welder in the Bay Area. (California was the hub of both ship- and aircraft-making.) The money was great: 65 cents an hour, about twice what she could get as a sad, immobile typist. It was a no-brainer to change. Besides, she was newly divorced with a baby and her mother to look after. The extra money paid for her son's care while she eagerly went off to the production line.

The one drawback was the hours, which were crushing. But she and her friends would find an incentive to jump up and get dressed by playing on the wind-up phonograph the new 78rpm record by the Four Vagabonds, a merry number with a plunky ukulele called "Rosie the Riveter":

> All day long, whether rain or shine
> She's a part of the assembly line
> She's making history, working for victory,
> Rosie, brrrrrrr, the riveter

The fictional Rosie had a boyfriend, Charlie, who was a marine. But not all the men were away. Those who remained were wary of the women at first. They didn't like the fact they had to stop smoking now, and keep their shirts on. They didn't believe women could do their jobs, either. Elinor, like the others, had no doubt she could meet the challenge. There was no time for formal training, so she had to listen to and carefully copy the men for a while. But even on her first day she astonished them by fiercely wielding a big mallet to drive a crooked piece of metal precisely into a casting. No one else could work it out. After that, she soon went faster than they did. And since she was pretty, with blue eyes and masses of dark hair, the men started to hang around her.

> Everyone stops to admire the scene
> Rosie at work on the P-19
> She's never twittery, nervous or jittery...
> Rosie, hm-hm-hm-hm, the riveter

Out of 6m women who took up men's jobs in the war, 300,000 were aircraft riveters like Rosie and Elinor. She was possibly not the last of the Rosies, but certainly the longest-working. Everything about the job appealed: the camaraderie, the routine. Other "female jobs" were boring or even stupid. But once the war was over and the men returned, women were expected to go back to such work, or preferably stay at home. For a while she was a car-hop, running burgers out to drivers. She left when the boss ordered her to do it on roller skates. She didn't make a fuss about losing out to the men; this was how things were. But riveting was proper work, and by 1951 she was back doing it at Ryan Aeronautical in San Diego. "I don't act in movies," she liked to say. "I build planes."

She was deeply proud of that. In wartime, working mostly on the noses and fuselages of B-24 bombers, she felt completely absorbed in this huge thing, "working for victory". Every rivet she fired into place made each plane stronger. But afterwards, too, when she moved on to McDonnell Douglas and then to Boeing, every C-17 cargo plane she riveted (that is, every one of the 279 produced in the 49 years she was there) thrilled her with the thought that it was taking food somewhere, or going to help some other country. They could fly safely, thanks to her.

Women could also make giant strides into the workforce, thanks to her. She and the other Rosies had paved the way, even if not immediately. It took her a while to realise this. In later years the name "Rosie the Riveter" was attached to a poster by J. Howard Miller called “We Can Do It!”, with a woman in blue overalls and a polka-dot bandana powerfully flexing her arm. It was produced in 1943 to motivate workers at Westinghouse. Elinor never saw it until the 1980s, when it was rediscovered. The women’s movement seized on it, and so did she. This was her younger self: same working clothes, same attitude. At the drop of a hat she would pose like this “Rosie”, pumping her right arm even on her 100th birthday when, in a bar in Long Beach named “Elinor” after her, she vigorously blew out all the candles on her cake and perched on a gilded throne, the picture of energy and elegance.

Two years before, in 2017, she had taken her first flight in one of the C-17s she had helped to build. C-17s remained her favourite to work on, alongside the B-17 bomber and the Lockheed P-38 Lightning. They took off towards the heavens. She didn’t especially want aircraft and rivet guns to be waiting for her up there. But she hoped God meant to keep her busy. ■

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